



MUSEUMS & GALLERIES
COMMISSION

Standards 8.
in the
Museum
Care of Costume
and Textile
Collections.

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in the Museum Care of Costume
and Textile Collections 1998

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Foreword

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Recognition of the importance of textiles and costume in our history has been slow to develop. This has been reflected in the place of these subjects in the museums of this country.

Textiles and costume are linked because textile is the most commonly used covering of the human body. However textiles have a long history of use apart from clothing. As a medium of pictorial and decorative design they acquired a place, if not a very high one, in the history of art; and textiles of the finest quality of design and craftsmanship have been collected and gathered into museums of the decorative arts. Amongst these are garments that have been preserved for the sake of their fabric, richly woven silk or fine embroidery, rather than for the garment's interest as a costume.

What separates textiles and costume is the transformation the textile undergoes from its two-dimensional form to a three dimensional one through its draping, cutting and shaping for the human body. The close relationship of the shaped textile with the movements and habits of the body wearing it, and the way of life of the wearer at a particular time and in a particular place, give costume its unique quality and value. But preserved, separated from the human body, it loses much of its form and visual appeal. It may also lose its social context and so a part of its value.

As clothes developed in Europe, they showed widespread diversity. From the sixteenth century, a growing interest in this diversity led to its being recorded, with evidence of costume past gathered from pictorial and documentary evidence. Graphic records of all kinds, supported by documentary evidence, were, from this time, the basis of studies of costume and remain a major source of evidence.

Individual collections of works of art and antiquities were also being assembled during the sixteenth and seventeenth centuries, and later became part of the first generation of museums, though these rarely included costume. Only garments

seen as a link with history by association with important individuals might be found amongst them. A second generation of museums came with the widespread growth of collections during the nineteenth century in the new metropolitan centres.

By the beginning of the twentieth century some of these museums were collecting objects of everyday life which were still, even in the 1930s, rather dismissively called 'bygones'. Costume, the most universal and ubiquitous of everyday objects, had a logical place in these collections, but there was still little enthusiasm for what was generally regarded as 'old clothes'.

Some local museums began to collect material to illustrate the life of their area. Museums at centres of textile industries now hold collections revealing evidence of the textiles available from the nineteenth century onwards, many of which were used in costume. Museums in areas where the making of a particular item of costume, such as stockings, shoes, hats or gloves, was a local industry have also built up collections of these garments. Sometimes, the garments worn by those working in a particular local trade or occupation are a focus of local collections.

Small collections of costume were made for practical purposes by artists seeking realism for historical paintings, for use in drama productions and to meet the successive waves of enthusiasm for fancy dress balls. Many of these individual collections passed into museums, some to become the nucleus of major collections.

By the end of the eighteenth century, interest in costume was centred on one aspect - the changing decorative expression that was the costume worn at the higher and aspiring levels of society. This is the costume recorded at the time through fashion plates, supported by the developing journalism of the day. This has become the major source for studies of costume. From the 1930s, the scope of costume studies widened to meet a growing awareness of its part in social and cultural history, where costume, which was not fashionable, also had its place. A new phase of collecting began and an increasing quantity of costume entered museums. The garments now preserved, and surviving in some quantity from the eighteenth century have, however, not yet been given their full weight as evidence of social and economic change. They are still often considered to be the trivia of history, with their value as an outward and visible sign of it not yet fully appreciated.

The variety of textile and costume collections, with their different approaches to collecting, reflects both the many facets of costume and also the complex relationship with the wearers and the life they lead. It highlights the need for a co-ordinated and co-operative approach to collecting and preservation. Only in this way can the full potential of such collections develop, throwing light on textiles and costume as it passes from the first fabric, through the crafts of its making into garments, to the final wearer, Defoe's 'last consumer'. This means preserving not only the garments, but also identifying how they were used and

by whom, recording not only the material, structure and details, but also the context which gives them their place in a highly complex human activity.

Since the 1930s, much has been written about this activity - rather more of its theory than the practice. It is the evidence of the practice of costume that museums hold, and which is needed to give substance to evidence gathered from other sources. I welcome this book as a guide to the best practice in the managing of textile and costume collections, at a time when the importance and value of such collections is becoming more widely recognised.

Introduction

This publication is one of a series published by the Museums & Galleries Commission (MGC), setting out standards in various areas of museum work. Those already published cover the museum care of:

- archaeological collections
- biological collections
- geological collections
- larger and working objects
- musical instruments
- photographic collections

In this series the Museums & Galleries Commission aims to identify and to promote best practice in caring for museum collections.

The purpose of this book is to set down standards for the museum care of costume and textile collections, and to provide guidance on the interpretation of those standards.

This Standard aims to cover all those objects normally found in museum costume and textile collections, including footwear, headgear and costume accessories like handbags, gloves and umbrellas - although non-textile items are not covered in the same detail. It also includes textiles found in an archaeological context including military uniforms, carpets, flags and banners, furnishing fabrics, tapestries and upholstery. It concentrates on Western textiles, but aims to include those from other parts of the world as well.

The Museums & Galleries Commission drew together a group of practising curators and conservators, and this publication is the result of their work. The standards represent a consensus of current professional opinion of the best practice every museum should aspire to reach.

'Aspire' is the key word. We take the pragmatic view that not all museums will be able to achieve all of them in the short-term. We hope, however, that every museum will work actively towards them in the long-term.

How to use this publication

We envisage that these standards will be used in a variety of ways:

- A curator is asked to draw up a schedule of objectives and performance indicators for the care of collections. The national standards in this book will be a benchmark for the museum's own objectives and performance indicators.
- An auditor (internal or external) may wish to review how a local authority is looking after its collections. This book will give defined national standards against which achievement may be measured.
- A curator is trying to persuade a museum governing body to make more resources available for care of collections. This book will help to make the case.
- A curator of a social history or decorative arts collection has a collection of costume and textiles, and needs advice on their care.
- A local history museum run by volunteers is reviewing its acquisition policy, and is looking for guidance on the implications of acquiring various classes of material. This book will help in drawing up a sensible policy reflecting the constraints posed by the museum's resources.
- A designer is asked to design a new display or store to contain clothing or textiles; this publication sets out the standards of security, environmental control etc. that should be attained.
- A grant-giving body needs reassurance that a museum applying for a grant will use the money responsibly. These standards will help it to judge whether the museum is likely to do so.
- A conservator carries out a survey of collection conditions or drafts a collections care policy; these standards provide a yardstick.
- A trainer is drawing up a training programme in collections care; these standards should provide helpful guidance.
- A museum education officer is using various objects with members of the public. These standards will help him or her to ensure that proper care is taken of objects.

While this publication is aimed primarily at museums, the Museums & Galleries Commission hopes that owners of private collections may also find it useful.

Each aspect of caring for collections is divided into three sections:

The standards themselves: these are the standards which all MGC-registered museums should be aiming to reach. Larger and specialist museums may already be meeting even higher standards.

Guidelines and notes: explaining and enlarging upon the standards.

Sources of advice and help: in general, one or two basic publications and a first-stop address.

We have tried to achieve a balance between the principles and detailed guidelines in each section.

The Museums & Galleries Commission is grateful to the Department for Culture, Media and Sport (DCMS) for funding its standards development programme, and to the members of the Expert Group and others who gave their help. They are listed overleaf.

Users of the publication are warmly invited to comment upon its usefulness, and to make suggestions for improvements.

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Part One: Managing Collections

1

Collecting costume and textiles

- 1.1 The museum's governing body should approve a detailed acquisition and disposal policy, which should be formally reviewed at least every five years.
- 1.2 The collecting policy for costume, textiles and related items should include provision for recording information about the context from which they come.
- 1.3 The museum should consider the possible advantages and implications of creating separate collections for particular purposes, in addition to its permanent accessioned collection.
- 1.4 The museum should ensure that it secures legal title to costume and textiles it acquires.
- 1.5 Every object should be acquired in accordance with the guidelines set out in the Museums & Galleries Commission's *Registration Scheme for Museums and Galleries in the United Kingdom: Registration Guidelines*, 1995, and with the law.
- 1.6 Once a decision has been formally taken to acquire an object for a museum's permanent collection, there must be a presumption against disposal. If disposal of an object is considered, it must be undertaken in accordance with the procedure outlined in the *Registration Scheme Guidelines*.

Guidelines and notes

- 1.7 Most museums have costume and textiles in their collections, many have sizeable collections, but few have ready access to specialist expertise, and even fewer have specialist curators responsible for their care.

The collecting policy

- 1.8 Museums with more than a few costume or textile items should refer to them in their Acquisition & Disposal Policy, a document required by the Museums & Galleries Commission's Registration Scheme. This should include a Policy for collecting costume and textiles, though it may be as part of the social and industrial history collection or applied art collection. Museums should endeavour to harmonise their collecting policies with other museums collecting locally or within the same fields.
- 1.9 A collecting policy for costume and textiles should reflect the overall purpose - the Mission - of the museum; a specialist costume museum will have different priorities from a social history museum or a museum of decorative arts. The strengths and weaknesses of the collection should be identified and the field or geographical area upon which the collection is based should be defined.
- 1.10 Reasons for collecting costume and textiles may include any or all of the following:
 - to record changes in material, techniques and fashion;
 - to show examples of techniques of manufacture, e.g. weaving, stitching, dressmaking;
 - to illustrate the textiles or dress of a particular area, whether rural, urban or national;
 - to record the clothing or textile industry of a particular area, e.g. woollen, cotton, linen, quilting, lace-making, hatting, corsetry, shoemaking, retail;
 - to illustrate particular occupations;
 - to fill significant areas of omission in already established collections of a particular type, e.g. children's dress, men's dress, embroidery, carpets;
 - to illustrate military uniform or other specialist dress;
 - to illustrate changing symbolic meanings of costumes, individual textiles and motifs;

- to illustrate dress associated with particular occasions, e.g. rites of passage;
- to illustrate contemporary or fashionable dress, furnishing or design, e.g. street fashion, local designers' work, modern textiles;
- to illustrate the history of consumerism;
- to record items associated with an individual;
- as part of a contemporary crafts collection;
- for specific displays or research projects;
- to support the National Curriculum;
- to record and celebrate the heritage of diverse communities and different social classes and groups;
- to document local domestic activities, e.g. knitting, quilting, embroidery, mat-making.

1.11 There are dangers associated with the uncontrolled collection of costume, in particular, which the museum's Acquisition & Disposal Policy should guard against. These dangers include:

- the temptation to collect more than the museum needs or can manage;
- accepting unwanted objects because donors are determined to give them (the 'wedding dress syndrome');
- acquiring objects because they are pretty;
- collecting special occasion clothes because they survive in vast quantities, e.g. 1960s cocktail dresses, hats, gloves etc.;
- the ready availability of contemporary and recent costume, and the difficulty of deciding what is significant;
- the temptation to acquire a 'better' example, which can lead to 'trading-up', uncontrolled deaccession and a consequent reputation for a cavalier attitude towards acquisitions.

1.12 It is equally dangerous, though, to ignore important areas of collecting. Three examples might be:

- contemporary furnishing fabrics, because they are so plentiful;
- furs and ivory accoutrements, because they are not 'politically correct';
- rare survivals of everyday clothing, because they are in bad condition, are unattractive and lack provenance.

A clear proactive collecting strategy, closely followed, will help guard against all these dangers.

1.13 The Acquisition & Disposal Policy should make as clear as possible the following:

- the types of costume and textiles the museum will collect;
- why the item is required and, if appropriate, the collection into which it is to be received (see 1.15);
- the rules governing deaccessioning, which must follow the requirements of the Museum Registration Scheme, and should (as a double check) include a requirement to consult a specialist from outside the museum.

1.14 When collecting costume and textiles, it is important to collect or to record other items associated with it, for example:

- bills and receipts;
- packaging;
- photographs, film & video;
- letters and diaries etc. mentioning the objects;
- information from the donor about the object's history e.g. stories about the object in use or its manufacture;
- conservation records;
- exhibition catalogues and publications;
- original artwork for a design;
- designers' or manufacturers' advertisements;
- paper patterns;
- swatches of cloth;
- swing tickets.

Different types of collections

- 1.15 To meet the different demands on its costumes and textiles, a museum might consider maintaining a number of distinct collections. For example, a museum might consider having:
- the permanent, accessioned, collection to be preserved for posterity;
 - unaccessioned support collections, which are regarded as ultimately expendable.
- These might include:
- a handling collection, to meet the needs of - for example - students who need to handle original material;
 - an outreach collection of material sturdy enough or sufficiently easily replaceable to be lent to schools, and drama and community groups;
 - a collection of replicas;
 - a collection of 'props' to be used, for example, for furnishing period rooms.
- 1.16 It is essential that all documentation and object labels clearly identify the collection to which an item belongs to avoid, for example, an object from the permanent collection inadvertently going out on the road in an outreach collection, or being used in the props (set-dressing) collection.
- 1.17 It is also essential to clarify the purpose for which the object will be used when a donation is made.

Recording the context

- 1.18 When a museum acquires an object, it has a responsibility to document every fact available about that object, its history and context.
- 1.19 The context of a piece of costume, related item or textile may include:
- when, why, where and by whom it was designed and made;
 - where, when and by whom it was originally sold;
 - who bought or ordered it, and how much they paid;
 - where, when and how it was worn or used;
 - details of subsequent owners, who they were, their lives and social background;
 - when and why they acquired, used or wore it, what they felt about it, why and when they stopped wearing or using it;
 - items associated with it;
 - the history of any damage, repairs or alterations;
 - the social and economic background of the object;
 - the technical and artistic background of the object.
- 1.20 Techniques to record the context include photography, sketches, film and video recording and tape-recorded interviews.

Sources of advice and help

- Advice on drafting an Acquisition and Disposal Policy (usually included as part of a wider Collections Management Policy) can be obtained from the Area Museum Councils.
- Advice on acquisition and disposal is in:
Museums Association (MA). 1996. *Acquisition: Guidance in the Ethics and Practicalities of Acquisition*. Ethical Guidelines 1. London: MA.
- Advice on collecting and disposal is in:
Museums Association (MA). 1996. *Disposal: Guidance in the Ethics and Practicalities of Disposal*. Ethical Guidelines 2. London: MA.
- Advice on collecting costume and textiles can be obtained from:
Group for Costume and Textile Staff in Museums (see *Museums Yearbook* for contact)
- Advice on collecting and documenting military textiles can be obtained from the National Army Museum.
- Useful introductions to costume collecting are:
Clark, Helen. 1993. 'Special Problems:

Clothing'. In *Social History in Museums*, eds. David Fleming et al. London: HMSO.

Tarrant, Naomi. 1983. *Collecting Costume*. London: Allen & Unwin.

Tarrant, Naomi. 1993. The Decorative Art Approach: Costume'. In *Social History in Museums*, eds. David Fleming et al. London: HMSO.

- Surveys of collections include:

Arnold, Janet. 1973. *Handbook of Costume*. London: Macmillan.

Chapman, S. D. & Donald King. 1984. The Collections and Collecting Policies of the Major British Costume Museums. *Textile History* 15 (2).

Lubell, C, ed. 1976. *Textile Collections of the World, vol. 2: United Kingdom and Ireland*. London: Studio Vista.

- The standard bibliography on costume is: Anthony, P. and J. Arnold. 1977. *Costume: a General Bibliography*. London: Costume Society. This has been augmented since 1977 by annual reviews and listings in the *Costume Society Journal*.

2

Curation and conservation

- 2.1 Every museum with costume and textile collections should ensure that it has access to an appropriate level of specialist advice.
- 2.2 The collections should be examined at least once every five years by a curator and a conservator who have a knowledge of costume and textiles. The most vulnerable objects should receive extra attention.
- 2.3 A planned and systematic programme of training should be provided for all staff and volunteers working with costume and textile collections.

Guidelines and notes

The curatorial and conservation audits

- 2.4 The first requirement of every museum is to know what it has. It is vital to identify what the collections comprise if they are to be put to best use, and the time and money spent on their care is used most effectively.
 - 2.5 A curator with knowledge of costume and textiles should carry out the full curatorial audit of all the collections of original items at least once every five years. This curatorial audit is a requirement of good housekeeping, and should not be confused with any financial or value-for-money audit. It should:
 - locate and check every item against its documentation;
 - confirm or reassess the historical importance of every item; and
 - in the light of any reassessment, identify items requiring accession from ancillary collections, or disposal.
- For very large collections a longer time-scale may be necessary.
- 2.6 Ideally, a full conservation audit of all the collections of original items should also be carried out at least once every five years. The aim should be to have a full condition survey of the collection that can be supplemented later with representative sample surveys. Items at highest risk of deterioration, including fur, feathers and plastics, should be checked at least annually. This audit should be carried out by a conservation or collection care specialist experienced in costume and textiles and should seek to identify any deterioration and its causes.
 - 2.7 As the audit is completed for each discrete museum space, an assessment of the overall environmental, storage and security needs of the collections should be made.
 - 2.8 It will often be convenient to carry out these audits as one operation. In large collections audits of a sample of the collections may be useful for planning purposes, but these should supplement rather than replace full audits.
 - 2.9 Following the audits, the museum should draw up an action plan for resolving any problems or needs they have revealed.

Specialist care

- 2.10 Because costume and textiles are so familiar in everyday life, there is a temptation for workers in museums to believe they automatically have the necessary skills to care for them. Objects in a museum, however, have a quite different status to those in the home and special skills are needed to care for them. This expertise has been developed over many years through the work of specialist curators and conservators.
- 2.11 Few museums in the UK are in a position to employ specialists in costume or textiles. It is therefore important that all museums with such objects in their collections ensure that the

museum workers who look after costume and textiles receive ongoing training, and that they have regular access to specialist help.

- 2.12 Ongoing training and professional development are the most direct ways to improve the quality of a museum's activities. The training needs of all museum workers - staff and volunteers - should be regularly assessed and an appropriate programme of training provided to meet the identified needs (see Appendix E).
- 2.13 Training needs to be reinforced by regular specialist help and guidance. This can often be obtained from staff in larger museums or through Area Museum Councils, County Museums Forums or other partnerships, and from independent specialists.
- 2.14 The museum's Collections Management Policy should ensure that the resources available to the museum match the needs of the costume and textile collections. If the museum is unable to find the resources to look after them, rather than allow them to deteriorate, it should consider transferring them to another museum that does have the resources. Such a decision, however, should be taken by the museum's governing body as a very last resort and only after the fullest consideration. If objects are to be alienated permanently, then the Disposal Procedure required by the Museums & Galleries Commission's Registration Scheme must be followed. The greatest care must be taken to ensure that the integrity and history of the collection are preserved.

Remedial conservation

- 2.15 No work - not even such apparently simple tasks as washing and pressing, let alone 'mending'- should be carried out on museum costume or textiles without the guidance of a suitably qualified conservator. Museums that do not have a conservator on the staff can obtain advice from the institutions mentioned below.
- 2.16 Restoration, that is attempting to put an object back to a former condition, is not normally acceptable in a museum. Occasionally, however, a museum may feel justified in removing alterations made recently for fancy dress purposes, or in restoring an item in a handling collection. Even then, however, it should be done only after full discussion with a specialist, and the decision and reasons should be recorded in the item's Object History File.
- 2.17 Museums commissioning work from an independent conservator should remember that the lowest tender does not always produce the best or most cost-effective work. The reasons for the low tender should always be established.
- 2.18 The assistance of conservation or collection care specialists will be vital in developing preventive conservation programmes. This is discussed in Part 2.

Sources of advice and help

- Advice and help can be obtained in the first instance from the Area Museum Councils.
 - Short training courses are arranged from time to time by the Area Museum Councils, national museums and other agencies.
 - The Conservation Register is a national database maintained by the Museums & Galleries Commission. It contains details of qualified and experienced conservators based in independent practices that provide specialist conservation services and advice. The Scottish Conservation Bureau of Historic Scotland administers a parallel Conservation Register database.
- Conservation Register
Museums & Galleries Commission
16 Queen Anne's Gate
London SW1H 9AA
(Tel: 0171 233 3683 Fax: 0171 233 3686)
- Scottish Conservation Bureau
Historic Scotland
Longmore House
Salisbury Place
Edinburgh EH9 1SH
(Tel: 0131 668 8668 Fax: 0131 668 8669)
- The following free leaflets published by the Museums & Galleries Commission may be helpful:

Choosing a Conservator: Conservation Register

Conservation-Restoration: The Options

Working with a Conservator: A Guide for Curators

- The Museum Training Institute and the Area Museum Councils can give advice on training:

Museum Training Institute
Glyde House
Glydegate
Bradford BD5 0UP
(Tel: 01274 391056 Fax: 01274 394890)

- Helpful introductions to caring for costume and textile collections include:

Glover, Jean M. 1992 (2nd edn). 'Conservation and storage: textiles'. In *Manual of*

Curatorship, ed. J. M. A. Thompson. London: Butterworth-Heinemann/Museums Association.

Lister, Alison. 1996. *Guidelines for the Conservation of Textiles*. London: English Heritage.

National Association of Decorative and Fine Arts Societies (NADFAS). 1991. *NADFAS Volunteers Handbook*. London: NADFAS.

Finch, K. and G. Putnam. 1985. *The Care and Preservation of Textiles*. London: Batsford.

Museums & Galleries Commission (MGC). 1997. *Developing and Training Staff in Museums and Galleries*. London: MGC.

3

Documentation*

- 3.1 Standards for the documentation of costume and textiles should be in accordance with the MGC Guidelines for Registration, and the standard set out in *SPECTRUM: The UK Museum Documentation Standard*.
- 3.2 In addition to the minimum standard, it is important to systematically record technical information and details of the context of the items.
- 3.3 Every object should, wherever possible, have its own Object History File. This should systematically record technical information and details of the context of the items.
- 3.4 Documentation, including that recorded on paper, microfilm, computer disk and magnetic tape should, as far as possible, be maintained to the standards set out in Appendix A.

Guidelines and notes

- 3.5 The Museums & Galleries Commission (MGC) Registration scheme requires museums to maintain the following information about its collections:
- Entry and exit records
 - Movement and location records
 - Accession records (and security copies)
 - Marking and labelling of each item (or group)
 - Loan records
- These are known as the Primary Procedures.
- 3.6 The minimum standards for the Primary Procedures are summarised here:
- a. Entry and exit records (SPECTRUM Procedures 1. ENTRY and 16. DESPATCH)
The institution should have a policy covering the receipt, deposit, and despatch of objects; supported by a procedure that will ensure that a written record is made of any item that enters the museum, whether for identification, loan or as a potential acquisition. This procedure should also provide a means of recording the return of items to owners, either by endorsement of the entry record, or the use of a separate exit record.
 - b. Movement and location records (SPECTRUM Procedure 5. LOCATION & MOVEMENT CONTROL)
The institution should have a policy covering the location control of objects; supported by a procedure that will ensure the museum can locate any object at any time. A location is a specific place within the institution's custody.
 - c. Accession records (SPECTRUM Procedure 3. ACQUISITION)
The institution should have a policy covering the acquisition of objects, which should include a collecting policy; supported by a procedure that will include the maintenance of an accessions register, whether written or computerised, which records the formal acceptance of items into the museum's permanent collection, allocates a permanent identity number, and provides sufficient information for collection management purposes.

Footnote

* 'Documentation' in this book means all the recorded information a museum holds about its collections, and also the gathering, storing, manipulation and retrieving of that information.

- d. Security copies of accession records (SPECTRUM Procedure 3. ACQUISITION)
A second copy of the museum's accession records should be kept off-site. Where accession information is computerised, copies of key accession information should be produced using an alternative medium which meets actual proven archival standards.
- e. Marking and labelling (SPECTRUM Procedure 3. ACQUISITION)
Each accessioned item or, where appropriate, group of items should be marked or labelled with its permanent identity number without damaging the item (see 3.10-14).
- f. Information retrieval (SPECTRUM Procedure 6: Cataloguing)
Museums must compile and maintain primary information describing and formally identifying objects.

Each museum should maintain appropriate indices or equivalent information retrieval facilities. The accessions register provides a method of retrieving information about items in the collection by their identity number: there must be at least one other method of retrieving information, such as by location, donor or subject categories, appropriate to the needs of museum users (see 1.20 Recording the context).
- g. Loan records (SPECTRUM Procedures 2. LOANS IN and 17. LOANS OUT)
The institution must have a policy covering the borrowing of objects and the assessment of loan requests and a standard set of conditions which borrowers must meet; supported by procedures that ensure that the museum maintains records of all loans, whether incoming or outgoing. Long-term loans should be subject to fixed terms which should be periodically reviewed. Loans should be audited on a regular basis allowing for the periodic review of terms and conditions relating to all loans. A standard Facilities Report has been drawn up by the UK Registrars Group to assist the setting of standards for the loan out of objects (see also Section 5. Borrowing and lending).

3.7 As well as meeting the minimum standard, museums should also maintain the following procedures to record information about their costume and textile collection:

- h. Inventory control (SPECTRUM Procedure 4. INVENTORY CONTROL)
The institution must have a policy covering the inventory control of objects and maintain an up-to-date inventory identifying all objects for which the institution has legal responsibility. This includes un-accessioned objects and other collections, for example a handling collection (see 1.15-1.16 Different types of collections).
- i. Condition checking (SPECTRUM Procedure 7. OBJECT CONDITION CHECKING & TECHNICAL ASSESSMENT)
The institution must have a policy covering the condition checking of objects; supported by a procedure that manages and documents information about the make-up and condition of an object and recommendations for both its use, treatment and surrounding environment (see Section 2. Curation and conservation, Section 8. Buildings and environment).
- j. Conservation (SPECTRUM Procedure 8. CONSERVATION AND COLLECTIONS CARE)
The museum must have a policy covering the management and documentation of conservation treatment. A record must be kept of all condition checks, conservation, restoration and repair work, and of treatment against pests. Records should also be kept of all surveys and assessments of the collection and its environment (see Section 2. Curation and conservation, Section 7. Buildings and environment).
- k. Reproduction (SPECTRUM Procedure 9. REPRODUCTION)
The museum must have a policy covering the documentation of the reproduction of objects, including the preparation of images, casts and models. (See Reproductions 4.11-4.14) Records kept on the photography of an object will also provide information on exposure to light (see 7.23 Light).

1. Curatorial and conservation audits (SPECTRUM Procedure 14. AUDIT)
The museum must have a policy covering the auditing of the collections and related information (see 2.5 Curatorial and conservation audits).
- m. Access to costume and textile collections (SPECTRUM Procedure 15. USE OF COLLECTIONS)
The museum must have a policy covering the use of the collection. The management and documentation of all uses of and services relating to the collection and objects within it. These include exhibition, enquiry, reference and research use made of objects and associated documentary archives (see Section 4. Access).

Terminology

- 3.8 Agreed terminology is vital for museum documentation, though in the field of costume and textiles international agreement is developing slowly. At present the terminology most frequently recommended for use in documenting costume is that drawn up by the ICOM Costume Committee and currently being revised. Terminology recommended for textile is that devised by Centre International d'Etude des Textiles Ancien (CIETA). However, for most general museum collections, the widely used second edition of the Social History and Industrial Classification (SHIC2) will be entirely adequate. The SHIC2 section on costume is based on the ICOM Costume vocabulary.

Associated material

- 3.9 Some acquisitions will include original documents associated with the costume and textiles, including:

- receipts;
- photographs, film & video;
- letters and diaries etc. mentioning the objects;
- conservation records;
- exhibition catalogues and publications;
- original artwork for design;
- designers' or manufacturers' advertisements;
- original packaging;
- patterns;
- swing tickets.

These primary records are distinct from the museum's own documentation, and should be accessioned into the museum collections and treated as museum objects.

Labelling

- 3.10 Inappropriate labelling of textile and costume artefacts can lead to permanent damage and disfigurement. Identification numbers should not be written directly on textiles or costume, but on labels.
- 3.11 Labels for textiles should be of unbleached cotton, sewn with fine thread to a strong part of the object. Embroidered cotton labels or nylon tape are also acceptable. These should never be stuck, pinned or ironed on, but should be capable of being removed without damaging the object. Very fragile objects may have to be labelled only on their supports.
- 3.12 The ink used should be permanent, chemically inert and non-toxic. The wet-fastness of the ink should be tested before use, as manufacturers can change its composition.
- 3.13 Labels should be placed so as to reduce unnecessary handling and to be readily visible, but unobtrusive when on display. Local conventions should be developed and followed.
- 3.14 Supplementary labels on boxes, hangers and dust-wrappers are helpful. Supplementary or temporary paper labels with cotton strings should be tied around the neck of a padded hanger. These can be inscribed on both sides to further reduce handling.

Sources of advice and help

- Standards for the documentation of museum collections are laid down in:

Museum Documentation Association (MDA). 1997 (2nd edn). *SPECTRUM: The UK Museum Documentation Standard*. Cambridge: MDA.

In addition, the MDA plans to publish guidelines for documenting costume and textile collections and their conservation, and advice on labelling:

Museum Documentation Association (MDA). (Forthcoming). *SPECTRUM Notes on Costume and Textiles*. Cambridge: MDA.

- Other useful publications include:

Museum Documentation Association (MDA). (1998). *Standards in Action: A guide to using SPECTRUM*. Cambridge: MDA.

Museum Documentation Association (MDA). 1995 (revised edn). *Labelling & Marking Museum Objects*. Cambridge: MDA.

Museum Documentation Association (MDA). 1995. *Missing Links? Labelling and Marking Museum Objects*. Training Video. Cambridge: MDA.

- Advice on cataloguing costume is also contained in:

International Council of Museums (ICOM) Costume Committee (Anne Buck). 1976. 'Cataloguing Costume'. *Museums Journal*. December: 109-110.

- Terminology currently in use for documenting costume and textile collections will be found in:

Burnham, Dorothy K. 1995 (2nd edn). *Warp and Weft: A Textile Terminology*. London: Routledge.

Calasibetta, C. M. 1988. *Fairchild's Dictionary of Fashion*. New York: Fairchild Publications.

Carman, W. Y. 1977. *A Dictionary of Military Uniform*. London: Batsford.

Centre International d'Etude des Textiles Ancien (CIETA). 1964 (2nd edn). *Vocabulary of Technical Terms: Fabrics. English, French, Italian, Spanish*. Lyon: CIETA.

Clabburn, P. 1976. *The Needleworkers' Dictionary*. London: Macmillan.

Cunnington, C. W., P. Beard and C. Beard. 1976. *A Dictionary of English Costume*. London: A & C Black.

Emery, I. 1966. *The Primary Structure of Fabrics*. Washington DC: Textile Museum.

International Council of Museums (ICOM) Costume Committee. 1982. 'Vocabulary of Basic Terms for Cataloguing Costume'. *Waffen-und Kostümkunde*. München, Berlin. 24:110-152. This is now available on the World Wide Web.

Levey, S. M. 1983. *Lace: A History*. London: Maney/Victoria & Albert Museum.

Library of Congress Subject Headings are available online on the World Wide Web and a microfiche version is published twice a year by the Library of Congress.

Montgomery, Florence M. 1984. *Textiles in America 1650-1870*. New York: W.W. Norton & Co.

Seilter-Baldinger, A. 1994. *Textiles: A Classification of Techniques*. Bathurst, Australia: Crawford House Press.

Sierksma, K. 1980. Flag Glossary and Description Rules. In *Symposium Conservation of Flags, Rijksmuseum Amsterdam 1977*.

Social History and Industrial Collections Working Party. 1993 (2nd edn+). *Social History and Industrial Classification*. Cambridge: Museum Documentation Association.

Thornton, J. H. and J. M. Swann. 1986. *A Glossary of Shoe Terms*. Northampton: Central Museum.

Walton, P. and G. Eastwood. 1988. *A Brief Guide to the Cataloguing of Archaeological Textiles*. London: Institute of Archaeology Publications.

Wingate, I. B. 1968. *Fairchild's Dictionary of Textiles*. New York: Fairchild Publications.

- Advice on museum documentation in general can be obtained in the first instance from the Area Museum Councils or direct from:

Museum Documentation Association
Jupiter House
Station Road
Cambridge CB1 2JD
(Tel: 01223 315760 Fax: 01223 362521
Email: mda@mdocassn.demon.co.uk
Website:<http://www.open.gov.uk/mdocassn/index.htm>)

Scottish Museums Documentation Unit
National Museums of Scotland
Chambers Street
Edinburgh E1 1JF
(Tel: 0131 225 7534 Fax: 0131 220 4819)

4

Access

- 4.1 Museums exist for the public benefit. It should be the aim of every museum to allow as much access as possible to its collections and to their associated information. Museums should have an Access Policy in which all forms of access are considered, intellectual as well as physical.
- 4.2 Museums should accept that sometimes physical access to a particular object is not possible. The museum should explain why, and should offer an alternative approach. Demands for access should never be allowed to endanger the preservation of an object.
- 4.3 Museums should make it a priority to have some form of published catalogue which enables users to know the extent and nature of their collections.

Guidelines and notes

- 4.4 The most usual way of making collections of costume and textiles accessible is through displays in galleries.
- 4.5 Costume and textiles may be on display for far less time than other museum material because of their susceptibility to damage by light (see 7.22-31). There is therefore a particular need to ensure that visitors are allowed access to costume and textiles not on display. The museum needs to have an Access Policy that sets out how this is to be achieved; it should set out response times, and how the arrangements are to be advertised.
- 4.6 The museum should accept that it will not always be able to give access to every object all the time. There may be insufficient people (e.g. to lift down a large rolled carpet or a banner) or insufficient space (e.g. to lay out the carpet). Or the carpet may be away from the museum being washed by an outside conservator. Or there may be building work in progress. Or a textile may be simply too fragile to be moved. In such situations, it is essential that the museum explain to an enquirer why access is not possible and offer an alternative source of information. This might be an article on the object, photographs, drawings or a date when access can be given. The museum's Access Policy should refer to this.
- 4.7 All visitors coming to study objects in reserve collections should be briefed on the museum's procedures by staff, and the reasons for any restrictions explained to them. These procedures will include:
- supervision (see 8.3);
 - handling (see 9.4);
 - use of note-taking equipment (see 9.5);
 - removal of jewellery and watches (see 9.5);
 - photography (see 7.27);
 - display of objects for note-taking (see 9.5);
 - wearing (see 9.26).
- 4.8 People with severe visual impairment can only enjoy and experience costume and textiles by touching them. Museums should try to make special arrangements to allow them to do so.
- 4.9 A good catalogue saves wear and tear on objects by reducing browsing through rails, trays, drawers and boxes of objects, whether by staff or visitors. Image databases can provide appropriate images and information for the general public, researchers and curatorial purposes. Even a simple hand-list to an exhibition or part of the collection can be very useful in providing basic information for staff and visitors.
- 4.10 Accessibility should always be considered when designing storage systems and packing (see Section 9).

Reproductions

- 4.11 An important aspect of access to costume and textile collections is through the use of reproductions.
- 4.12 Replica items of dress or textiles are often used for purposes of display, for example replica curtains in a period room or costume in a room-setting. Replica items should, however, be as correct as possible in their fabric, colour, shape and method of manufacture, and should always be labelled as reproductions.
- 4.13 Replica dress can also be used for interpretation; this too should be as historically accurate as possible. Both costume worn by interpreters and costume lent to visitors for 'dressing up' should approach, as nearly as possible, to the historic example. Any presentation should be based on sound scholarship.
- 4.14 The same sound principles should be followed in the making and interpretation of replica dress for educational groups. Any adaptations that do have to be made - for example in the size of a costume or the type of material - should be as discrete as possible. Where a significant change has to be made it should be explained to visitors. It is also important that visitors be made aware that an item is a replica and not an original.

Commercial aspects

- 4.15 Museums are increasingly looking for ways to maximise the commercial exploitation of their collections. This is a field in which the greatest care needs to be exercised; the copyright and other legal aspects must be correct (specialist legal advice is essential), and the physical and intellectual integrity of museum objects must be protected at all times.
- 4.16 Items can be produced for sale in three ways:
- by the museum developing products directly with manufacturers;
 - by working through an agent;
 - by working in conjunction with an in-house commercial unit or subsidiary company which commissions products from manufacturers, or awards them trademark and copyright licences, and follows through all stages of negotiation, contracts and product development.
- 4.17 Some general pointers, once a decision to pursue collection-related merchandise has been taken, include:
- compile, well in advance, a Merchandise Plan;
 - obtain the approval of the museum's governing body to take the plan forward, with immense caution, stage by stage;
 - check copyright on each work in question. This is crucial. Copyright is a highly complex field and it is imperative that it be resolved with complete accuracy. The copyright laws of other countries must not be neglected. The French are particularly skilled at protecting fashion and textiles copyright. Infringement of copyright can result in criminal proceedings with all the associated costs. If in any doubt whatsoever, consult a copyright lawyer. For a fee their advice will include extracts from the latest copyright, patents and trademarks legislation.
 - draw up a contract involving all concerned bodies. This must be watertight, and elements to be covered include:
 - costs to be born by the manufacturer;
 - methods of operating, including access to the collection, photography, colour-matching and pattern-taking;
 - production schedule;
 - number of works to be made: limited, numbered edition or other;
 - payments to the museum: lump sum and/or royalties on the first product run;
 - payments to the museum on any subsequent product runs;
 - geographic area of sales and rights: world-wide or Europe;
 - integrity of the object must be respected in any associated product;
 - museum's right to reject sub-standard products on two levels: quality control and inappropriate interpretation of the source material;

work on selected piece or pieces (only when the copyright issues have been resolved and the contract signed) on an annual basis via one of the methods outlined above;

quality control and the right of the museum to make regular checks on product development must be written into the contract;

the museum should write the associated advertising copy and descriptions or insist on the right to approve product-associated literature;

the museum should insist on the right to approve packaging;

the museum should retain authority over any use of its name or logo;

arrangements for disposal of unsold stock should be agreed.

- 4.18 The law on publication right gives exclusive rights equivalent to copyright for a fixed period of 25 years to the first person who publishes (i.e. makes available to the public) an out of copyright but previously unpublished work. A 'work' can include any object. Museums must therefore be careful to ensure that they publish every object first, perhaps by displaying it in a public gallery for a short period.
- 4.19 The museum must be extremely strict in ensuring that the making of copies does not endanger objects. Designers tend to want to trace designs directly from textiles, to match colourways with pots of paint, and to send the originals, or fragments of them, directly to printer or weaver. The museum must assess the risks and act in the best interests of the collection.

Sources of advice and help

- A number of official bodies may be consulted on commercial aspects, including the Patent Office and the Design and Artists' Copyright Society.

Much expertise in the creation of replica costumes and textiles has been developed by people active in the fields of historical re-enactment, by theatrical costumiers and by interpretation specialists at historic sites. They tend to refer to the larger collections of relevant material in museums, and the curators of those collections are probably best placed to give advice.

- The following publications will also be useful:

Anderson, Jay. 1985. *The Living History Sourcebook*. Nashville: The American Association for State and Local History.

International Council of Museums (ICOM) International Costume Committee. 1994. *Guidelines for Costume*. Paris: ICOM. These are regularly updated.

Museums Association (MA). 1995. *Codes of Ethics*. London: MA.

Museums Association (MA). 1994. *Museums Briefing 6*. Copyright for Museums.

Museums & Galleries Commission (MGC). 1993. *Quality of Service in Museums and Galleries: Customer Care in Museums, Guidelines on Implementation*. London: MGC.

Museums & Galleries Commission (MGC). 1992. *Guidelines on Disability for Museums and Galleries in the United Kingdom*. London: MGC.

Museums & Galleries Commission (MGC). 1993. *Disability Resource Directory for Museums*. London: MGC.

Palfreyman, T. 1993. *Designing for Accessibility*. London: Centre for Accessible Environments.

5

Borrowing and lending

- 5.1 Every museum should have a written policy and procedure for lending plus standard conditions that borrowers must accept in writing before the loan is made.
- 5.2 The *Standards for Touring Exhibitions* published by the Museums & Galleries Commission should be observed.

Guidelines and notes

- 5.3 Museums may be asked to lend objects for both exhibition and study; where possible museums will wish to comply. However, the potential risks should be weighed most carefully; costume and textiles, because of their fragility, are particularly at risk. Each request to lend should be considered in the context of a carefully thought out policy which takes this risk fully into account.
- 5.4 Standard loan conditions for items from the permanent collections should normally cover:
- copyright conditions;
 - object condition reporting;
 - insurance arrangements;
 - length of loan, and arrangements for renewal or cessation;
 - arrangements for display;
 - conditions of security, handling, and environmental monitoring and control (see Part 2);
 - exchange of environmental information between lender and borrower;
 - borrower's disaster response arrangements;
 - no conservation work (including pressing and cleaning) to be carried out without written permission;
 - no photography or filming without written permission;
 - use in marketing and public relations;
 - agreement on where and how the object is to be kept and displayed;
 - packing;
 - transport arrangements;
 - reproduction, exhibition and commercial use;
 - regular inspection by curator and conservator;
 - acknowledgement of the lending institution;
 - arrangements for return;
 - arbitration and successors.
- 5.5 All such conditions should be discussed, fully understood, and agreed in writing before substantive arrangements for the loan are put in place.
- 5.6 In order to allow the lender to monitor the condition of costume and textile while on loan, it is reasonable to expect the borrower to:
- contribute towards a courier's travel and subsistence in taking and fetching the object, and on an agreed number of monitoring visits during the loan period;
 - provide appropriate access to the object;
 - make available during the loan period information on environmental conditions;
 - alert the lender to any significant change in conditions, or any new risk.
- 5.7 The lending museum should ensure that it has already published every object before lending it (see 4.18).
- 5.8 The lending museum will need to assure itself that any items it loans are handled only by people with the necessary skills and understanding of such objects. This normally involves the museum's own staff couriating the object.

- 5.9 A permanent record of every loan should be kept, for example by keeping the exit record and loan agreement in the item's Object History File (see 3.3).
- 5.10 Borrowing items from a variety of sources, even for a modest exhibition, imposes a considerable burden of documentation and administration; these must not be underestimated, or skimmed (see Section 3).
- 5.11 Borrowed items may bring the risk of pest infestation (see Section 10) and even of unforeseen health risks (see Section 15).

Sources of advice and help

- Helpful advice on lending and borrowing, not only for exhibition, will be found in:
 - The UK Registrars Group (UKRG). 1995. *UKRG Standard Facilities Report*. London: UKRG.
 - McNeff, D. 1994. 'The Use of Facilities Reports by UK Museums & Art Galleries'. In *Exhibitions and Conservation*, ed. J. Sage. Edinburgh: Scottish Society for Conservation and Restoration (SSCR).
 - UNESCO, 1981. *Procedure and Conservation Standards for Museum Collections in Transit and on Exhibition*. Paris: UNESCO.
 - Museums & Galleries Commission (MGC). 1995. *Standards for Touring Exhibitions*. London: MGC.

6

Museum research

- 6.1 The Forward Plan of every museum should reflect the museum's duty to undertake and to facilitate research. The museum's governing body should ensure that time and resources are provided to enable research to be done.

Guidelines and notes

- 6.2 Research is fundamental to the function and purpose of a museum, though its form will vary greatly between museums of different sizes and types. It includes research into an object, wider historical or scientific research, and research into the history of the museum collection. Research into techniques of preservation may also be undertaken in museums that have specialist textile conservators or suitably experienced scientific staff.

The research policy

- 6.3 Every museum should have a research policy, preferably written as part of the museum's Forward Plan or Collections Management Policy. It should be realistic and relevant to the museum's collections, to its staff and resources, and to its public role.
- 6.4 The museum's research policy should take into account the opportunities offered by the costume and textiles in its collections.
- 6.5 The research policy should be drawn up in consultation with neighbouring and related museums and collections, and with appropriate local and national (and international, where appropriate) academic societies, and specialist groups or interested individuals in the field.
- 6.6 The museum's research policy should include details of its access policy for researchers, taking into account both its general access policy (see Section 4) and the needs of security (see Section 8).

Costume and textiles: research opportunities

- 6.7 Because everyone needs textiles and clothes, they offer numerous opportunities for research projects that cover many aspects of society.
- 6.8 Some examples of research by museums, based on costume and textile collections, are:
- Gunnersbury Park Museum undertook a contemporary photographic survey of the manufacture, retailing, cleaning, care and use of clothing in the London boroughs of Hounslow and Ealing. This resulted in an exhibition 'A Stitch in Time: Clothing in West London, 1880s-1980s' and an accompanying booklet.
 - The Victoria & Albert Museum's exhibition 'Street Style' was the product of a three-year research project into popular youth culture, and the role of dress in defining sub-cultural groups, which successfully used fashion and design history and anthropological approaches.
 - The Museum of Mankind's exhibition on Palestinian Costume, based on original fieldwork and collecting, showed how costume can be used to illustrate social and economic change.
 - Beamish, The North of England Open Air Museum undertook research into quilting in the North East which resulted in an exhibition and a booklet.
 - Norfolk Museums Service's exhibition and booklet 'Norwich Shawls' was based on research into their rich collection.
 - 'Clothes for the Job', an exhibition at the Science Museum, resulted from a major campaign to build up a collection of protective clothing.
 - 'In Royal Fashion' at the Museum of London used the museum's collections of royal clothing to cast light on the British royal family in the 19th century and their clothing suppliers.

- 'The Subversive Stitch' at the Whitworth Art Gallery and Cornerhouse, Manchester, drew on recent research by feminist art historians to document the historical process whereby embroidery came to be associated almost exclusively with women.

6.9 Costume and fashion is an area of research that interests many university departments, notably those of design history and cultural history; this could provide opportunities for fruitful collaboration with museums. Museums should ensure they obtain copies of the resulting studies.

6.10 Costume and textile collections also provide opportunities for conservation research, particularly when dealing with modern synthetic materials.

Academic standards

6.11 Research without publication or proper documentation is of limited use. The museum should ensure that its own staff and, as far as it can, other researchers using its collections, work to the highest academic standards, with proper citation of sources including reference to objects' Accession Numbers.

Sources of advice and help

- Some of the research projects mentioned above are described in:

Griffiths, Gareth. 1987. *A Stitch in Time: Clothing in West London, 1880s-1980s*. London: Gunnersbury Park Museum.

Haye, Amy de la and Cathie Dingwall. 1996. *Surfers, Soulies and Skinheads: Subcultural style at the V&A*. London: V&A Publications.

Haye, Amy de la. 1996. Travellers' Boots and Body Moulding Rubber Fetish Clothes'. In *Making Histories in Museums*, ed. Gaynor Kavanagh. Leicester: Leicester University Press.

Harris, Jennifer & Pennina Barnett. 1988. *The Subversive Stitch*. Manchester: Whitworth Art Gallery & Cornerhouse.

Staniland, Kay. 1998. In *Royal Fashion: the Clothes of Princess Charlotte and Queen Victoria, 1796-1901*. London: Museum of London

Weir, Shelagh. 1989. *Palestinian Costume*. London: British Museum Publications.

- See also:

Flury-Lemberg, M. 1988. *Textile Conservation and Research*. Schriften der Abegg-Stiftung, Band 7. Bern: Abegg-Stiftung.

Part Two: Protecting Collections

7

Buildings and environment

- 7.1 Textiles are extremely susceptible to damage from environmental factors, and the situation may be complicated if they are made from a variety of materials; hence the importance of environmental monitoring and control.
- 7.2 The planning phase of all significant activities within the museum building, such as building work, refurbishment and exhibitions, should include an assessment of the impact they will have on the museum's environmental conditions, and of their potential risks to the collection.
- 7.3 All buildings used to house costume and textile collections should be inspected annually to ensure that they provide adequate physical protection against the weather, keep out pollutants, pests, dust and dirt, and are generally fit for their purpose. Building maintenance should have a high priority and an adequate budget.
- 7.4 All heating, ventilation and air-conditioning systems should be checked and maintained regularly by suitably qualified engineers. Spare parts should, wherever possible, be held on site, as should a maintenance record log.
- 7.5 An ongoing environmental monitoring programme should be in operation with the environmental records regularly analysed and appropriate control measures taken.
- 7.6 A programme for the regular calibration and maintenance of all environmental monitoring and local control equipment should be in place.

Guidelines and notes

- 7.7 Managing the museum environment involves the monitoring and control of relative humidity, temperature, light (including ultraviolet radiation), pollutants and pests.

The building envelope

- 7.8 New buildings intended to house collections should be constructed so that they work as good buffers to the weather. They should use materials and low-energy design features that help achieve as stable an internal environment as possible.
- 7.9 When considering the refurbishment or re-use of an ageing building, an assessment of both the building fabric and the engineering services should be carried out by a suitably qualified technical expert prior to any decision on environmental control methods being made. This will ensure that the building is stabilised first before expensive equipment is installed.
- 7.10 When an historic house is used as a museum, decisions on environmental control should aim to achieve a balance between the merit and sensitivity of the building fabric, and the specific needs of the collections.
- 7.11 Building work must be carefully planned to avoid damage to collections (see 10.13-14).

Monitoring and control

- 7.12 Routine environmental monitoring should cover all four seasons, should be related to external climatic conditions and should take account of visitor numbers in both display and storage areas. One person can release approximately the same heat as a 60 watt light bulb and approximately a wineglass-full of water per hour.
- 7.13 Engineering services to control the environment should be designed and used to support and improve, and not to replace the stability provided by the building fabric.
- 7.14 Prior to the acquisition of a new building there should be an adequate period of intensive monitoring outside the building and at appropriate locations within the building. This will

establish whether the building is worthy of consideration at all. If it is, then a strategy should be explored of zoning for different activities according to their natural environmental stability.

7.15 Zones within buildings can be created by identifying groups of rooms with similar environmental characteristics, or by locally conditioning one room, or by the use of micro-climates within display cases.

7.16 Passive measures to stabilise the environment within a building or a room should be taken first. Draught-proofing, thermal insulation and multiple glazing are ways in which temperature fluctuations can be reduced. However, these measures can also reduce air movement in a space, which can have a harmful effect on both collections and buildings, as well as on visitors' and workers' health and comfort. Technical advice from a building specialist may be needed to identify the causes of instability before any decision on changes are made.

Maintenance

7.17 Appropriate levels of relative humidity and temperature can be more easily attained if the building is watertight, with all possible sources of damp - such as failed or missing damp-proof membranes, leaking pipes or water tanks, faulty guttering and missing roof tiles - identified and remedied.

Relative humidity and temperature

7.18 Relative humidity (RH) affects both the physical properties of textile artefacts and their rates of deterioration. Extremely low or high RH can be damaging: the former has a desiccating effect and the latter provides suitable conditions for the growth of micro-fungi. Until recently the conditions of temperature and RH recommended for collections of organic artefacts in the UK were 18°C +/- 2°C and 55% +/- 5% respectively. Maintaining stable conditions within recommended limits is still considered ideal, but current research indicates that it is wiser to think in terms of optimal ranges for different collections, based on the needs identified by condition surveys and the use to which the collection is put (see 1.15 and 2.6).

7.19 Conditioning a smaller space, such as a showcase or box, rather than a large room, is cheaper, simpler and more sustainable for the objects. Humidity modifiers such as silica gel can be used to control relative humidity in small spaces such as display cases; it comes in many forms, including self-indicating crystals and impregnated sheets, and relies on cases being well sealed (see also Appendix D).

Air-conditioning

7.20 Air-conditioning can work successfully when a volume of air is tightly controlled, such as in a display case, or when a system is installed in a new building. Air-conditioning should preferably be localised, bearing in mind the risks posed to objects from the seemingly inevitable malfunction of equipment. Such local control can often be effected by humidifiers or dehumidifiers, or even by simple heaters controlled by humidistats.

7.21 A decision to install air-conditioning should be based on:

- a demonstrable need for tight control of relative humidity and temperature for the collection (see 2.6 - 2.8);
- a demonstrable need to control the heat and moisture effects of large numbers of visitors;
- the affordability of the system, including the running and maintenance costs for the duration of its life;
- the availability of staff to maintain and quickly repair the equipment.

Light

7.22 Light is a form of energy (electromagnetic radiation). Textiles are very vulnerable to damage from this form of energy. Familiar signs of the damaging effect of the absorbed

light energy are the fading of dyes or other colour changes and loss of strength or embrittlement. This damage cannot be reversed.

- 7.23 Restricting the duration and intensity of all light exposure is therefore of paramount importance. Daylight should, if at all possible, be totally excluded. If this cannot be done then it is important to monitor both light levels and period of exposure at different times of the day and of the year.
- 7.24 All storage and display areas should be kept dark when not in use. Curtains, blinds, screens or opaque dust-sheets provide an effective and economic way of reducing light level and exposure time.
- 7.25 For textile objects on display, a maximum light intensity of 50 lux is a good guideline to adopt. Most people can appreciate a textile illuminated at this, or even lower light levels. However, you may wish to provide supplementary lighting for those who require it, though this should be done so that the duration of exposure is controlled to a minimum. Displays should be lit carefully so that there are no very bright or very dark spots to distract the visitor and so that the visitor's eyes adapt gradually to changes in the level of illumination. Lighting dressed mannequins is very difficult: with overhead lighting the shoulders of a costume receives the most light and the lower half may be in darkness.
- 7.26 Lux levels can be allowed above 50 lux for limited periods if this is compensated for by periods of low or zero light level. The annual lux-hour exposure is calculated by taking the number of hours during which the textile object is exposed to any light during an average year, then multiplied by the average lux level for the period. For example a textile kept at 50 lux for 8 hours every day during a year (50lux x 8hours x 7days x 52weeks) will be illuminated for 145,600 lux-hours (sometimes expressed as 145.6 Kilo lux-hours), which is a useful guideline figure to adopt as a maximum exposure level. This is an equivalent energy exposure of 100 lux for 4 hours per day for a year. If the display is actually shorter than one year, the light level can be increased to match a chosen annual lux-hour total. Photographic, television, film and conservation laboratory lights are brighter than the recommended display conditions and should be included in the calculation.
- 7.27 Sufficient research has not yet been done to allow a recommended maximum number of lux-hours per year. Different fibres and dyes are able to tolerate different amounts of light. It is good practice, as well as keeping light to the minimum, to keep a record of the lux-hours each object or gallery receives, including that absorbed while in conservation studios, study areas etc.
- 7.28 The ultraviolet (UV) component of light is the most damaging. As UV light is not necessary for seeing, the safest option is to eliminate it completely. This can be achieved simply and cheaply by the use of ultraviolet filters. All daylight, fluorescent lamps and quartz halogens have a UV component and should be filtered. Filtering of UV light is not a substitute for keeping light levels low but should be seen as an additional preventive conservation measure.
- 7.29 Every museum should have a good lux monitor and UV monitor with people trained to use them and recognise the significance of the data collected. Combined lux/UV meters are available. All equipment needs to be calibrated regularly in order to avoid inaccurate readings.
- 7.30 Most light sources give off heat, and care should be taken to keep objects well away from heat sources. Some display lighting equipment, notably low-voltage types, produce less heat - though care needs to be taken when positioning transformers. These should always be outside of display cases. Fibre optics, though expensive, do provide directional illumination with good control of light level and do not give off either heat or UV light. A variety of lenses attached to the fibre optic tails offer a range of applications.
- 7.31 Low light levels may prevent people with visual impairments being able to enjoy the displays at all. The museum should consider special arrangements, such as replicas, swatches of material to be handled, etc. that could be made available.

See overleaf for sources of advice and help

Sources of advice and help

- Advice can be given by:

Area Museum Councils
Museums & Galleries Commission

- A comprehensive introduction to the whole field is:

Cassar, May. 1995. *Environmental Management: Guidelines for Museums and Galleries*. London: Museums & Galleries Commission and Routledge.

- Many important papers on current practice and research in the field of preventive conservation are contained in:

Roy, Ashok, and Perry Smith, eds. 1994. *Preventive Conservation: Practice Theory and Research*. London: International Institute for Conservation. Copies are available from International Institute for Conservation of Historic and Artistic Works, 6 Buckingham Street, London WC2N 6BA.

- Other useful publications include:

Cassar, May. 1995. *Museum Collections in Industrial Buildings: A design and adaptation guide*. London: Museums & Galleries Commission.

Greeves, Margaret, ed. 1990. *Caring for Museum Collections. A video and information pack*. Edinburgh: Scottish Museums Council.

Staniforth, S. 1992. 'Control and Measurement of the Environment'. In *Manual of Curatorship*, ed. J. M. A. Thompson et al. Oxford: Butterworth-Heinemann/Museums Association.

Frost, Murray. 1991. 'Planning for Preventive Conservation'. In *Manual of Museum Planning*, eds. B. Lord and G. Dexter Lord, 127-160. London: HMSO.

Energy Efficiency Office. 1994. *Introduction to Energy Efficiency in Museums, Galleries, Libraries and Churches*. London: Department of the Environment.

8

Protecting from theft

8.1 Physical protection

- 8.1.1 The structure of the building should be designed and/or defended to a degree that will deter an attack by a thief or vandal.
- 8.1.2 Windows, doors, ventilation shafts and ducts should be designed, constructed and secured so that an intruder is deterred from trying to enter, or is delayed long enough to allow an alarm to trigger a response before the intruder can enter, steal and escape.

Guidelines and notes

- 8.1.3 Further advice on these standards and guidelines can be obtained from the Museums & Galleries Commission's Museums Security Adviser. The difficulties in achieving the above standards of physical protection in some historic buildings are well understood. Indeed, it may sometimes only be possible to counterbalance physical weaknesses by the use of supervisory regimes involving people or equipment.
- 8.1.4 The structure of any building in use should be such that penetration through the walls and roof is difficult and time consuming. Even relatively weak buildings, for example those of wooden construction, can be improved to meet this requirement.
- 8.1.5 The number of windows should be reduced to the essential minimum, though necessary ventilation must be maintained. Windows no longer required should be filled in to a strength similar to the surrounding structure. Windows in use, and those in historic buildings, should be protected by a means agreed with the Museums & Galleries Commission's Museums Security Adviser.
- 8.1.6 The number of doors to the outside should be reduced to the minimum, leaving only those required for entry or as Emergency Exits. Unused doors or windows should be filled in or blocked by other methods agreed with the Museums Security Adviser. Remaining wooden doors should be of at least 50mm thick solid construction and fitted with security-standard mortice deadlocks. Emergency exit doors should be fitted with modern quick release door furniture which must be capable of being deadlocked when the building is unoccupied. Exterior doors should wherever possible have no external furniture.
- 8.1.7 Pitched roofs of slate or tile should be fitted over close-boarded timber. Measures to modify roofs constructed of other materials should be agreed with the Museums Security Adviser. Unauthorised access to the roof should be limited by physical barriers, such as fencing, anti-climb paint or anti-vandal barriers.
- 8.1.8 The risk to costume and textiles on display will vary enormously. These risks need to be assessed and countered by the mode of display. Factors which should be considered are the value - or simply attractiveness - of the object, its location in the building and the location of the building itself.
- 8.1.9 A vital line of defence is the showcase, which must have good quality locks, well-fitting doors and the appropriate quality of glass. The use of small security alarms within showcases may help to reinforce invigilation.
- 8.1.10 All objects on open display are at risk, costume accessories particularly so. Designer labels have been stolen from clothes on open display in a number of museums across the world.
- 8.1.11 Small, high-value items such as jewellery should be housed in a separate, secure storage cabinet.
- 8.1.12 Modification of historic buildings may require Listed Building or other consent. Where the museum shares a building with another user it is important to ensure that strict security arrangements are agreed and adhered to by all parties. In shared buildings, the internal perimeter of the museum premises should be treated and strengthened in the same way as the external perimeter.

8.2 Perimeter alarms

- 8.2.1 All openings in the building fabric, such as doors, windows, roof-lights and ventilation shafts (including those giving internally into adjacent accommodation outside the museum area), should fall within the protected zone of an intruder detector.
- 8.2.2 An intruder detection system that qualifies for a National Approved Council for Security Systems (NACOSS) certificate and is to BS 4737 specification should be fitted by a company recognised and approved by NACOSS for such installations. All alarm systems must also satisfy conditions laid down by the Association of Chief Police Officers (ACPO).

Guidelines and notes

- 8.2.3 The system should be as simple as possible to avoid an unacceptable false alarm rate; and should depend upon suitable sensors fitted to doors and other openings. Separate movement and body heat detectors are prone to false alarms, but devices that combine both techniques ('duo-tec') are more reliable. One situation where this is particularly useful is where there are hanging textiles; these can move and cause false alarms if only a movement detector is used.
- 8.2.4 The signalling of an alarm condition should be by means of a monitored line to an alarm company's central station. The system should also give an alarm if the line is cut.

8.3 Invigilation

- 8.3.1 The level of invigilation must be appropriate to the risk.
- 8.3.2 The bona fides of all researchers and others with access to costume and textiles collections should be checked and recorded, and they should be adequately supervised at all times.
- 8.3.3 Nobody should be allowed into museum stores unless supervised by an authorised person at all times.

Guidelines and notes

- 8.3.4 The risk to items on display should be assessed and an appropriate level of invigilation should be provided. This level should never be reduced. If sufficient invigilators are not available then the gallery or even the whole museum should be closed.
- 8.3.5 Special care should be taken at unusual times, for example while an exhibition is being installed or during evening events.
- 8.3.6 Researchers have, unfortunately, been responsible for serious thefts from museums. Everyone using the collections should be made aware that access is subject to guidelines (see 9.5); even the most senior researchers should be obliged to follow them. A record should be made of every use of the collections: the researcher's name and address, their purpose and the items to which they had access.
- 8.3.7 The Museums Association's 'Guidelines on Security when using Outside Contractors' should be observed.

8.4 Key security

- 8.4.1 A strict policy regarding the possession, storage and logging of keys should be devised and enforced.
- 8.4.2 As far as possible a record photograph should be kept of every object in the collection.

Guidelines and notes

- 8.4.3 There should never be more keys than is strictly necessary, and the number of people in possession of keys should be kept to the minimum. All keys, other than the external door keys held by key-holders, should remain within the building in a secure key cabinet or safe, and should be identified by a coding system. An issue and return system against signature should be used as a security measure. Modern key systems can record every use of a key, a valuable precaution against staff theft.
- 8.4.4 All items on display, and at least all the most vulnerable objects in store, should be photographed.
- 8.4.5 Any theft or security incident should be reported immediately to the Police and to the 'Crimefile' information exchange maintained by the Area Museum Councils.

Sources of advice and help

- Advice is readily available from the Museums & Galleries Commission's Museums Security Adviser (Tel: 0171 233 4200) and from the Area Museum Councils. Museums Association (MA). (Annual publication). 'Guidelines on Security when using Outside Contractors'. In *Museums Yearbook*. London: MA.

The following publications are useful:

Kluwer Handbooks, (updated periodically). *Handbook of Security*. Kingston-upon-Thames: Croner Publications Ltd.

Cassar, May and Peter Osborne. 1996. 'Showcases: Checklist for Specifiers'. *Museum Practice*. Vol 1 (2).

Museums & Galleries Commission (MGC). 1997. *Improving Museum Security*. London: MGC.

Protecting from physical and chemical damage

- 9.1 Costume and textiles must be handled, stored and displayed in a manner which protects them from damage and does not expose them to unnecessary risks.
- 9.2 The movement of costume and textiles - whether across a room or across a continent - should be meticulously planned, and effected using the appropriate equipment and people.

Guidelines and notes

- 9.3 A conservation or collection care specialist should be asked to devise storage and handling arrangements, and an appropriate training programme for museum workers.

Handling costume and textiles

- 9.4 A great deal of damage is caused to costume and textiles by inappropriate or thoughtless handling. It is important to plan carefully each time an item is handled, for whatever purpose. For example, all parts of a textile or garment need to be fully supported and with no part trailing. A costume or textile can be heavy. Its condition, construction or embellishment may pose particular needs, both in the manner in which it is handled and for special equipment.
- 9.5 Many museums have rules for researchers in order to protect the textile objects that are being studied. The following rules are recommended for both staff and visitors:
- accession numbers should be easily visible, to avoid unnecessary handling (see 3.13);
 - prepare a clean clutter-free work surface which is the right size for the object;
 - handle costume and textiles only with clean hands;
 - rings, bracelets or other jewellery which might damage a textile should be removed;
 - objects should be placed on trays or in boxes or baskets for moving, and kept there whenever possible;
 - items should be given as much support as possible and kept on a support board whenever possible;
 - both hands should be used to lift or turn an item;
 - large items may require two or more people to manage;
 - extra care should be taken with fastenings, particularly hooks and eyes, and with any attached decoration such as beading or sequins;
 - pens and markers should not be used, only pencils or computers for note-taking away from the textile; erasers should not be permitted;
 - no pins or scissors should be allowed in collections areas;
 - eating, drinking and smoking should not be permitted in any collections area.

Storage of costume and textiles

- 9.6 Common sense should prevail: ideally objects should never be placed on top of each other; each should be padded or supported, using inert materials, so that it retains its shape. Trims and fastenings must not be crushed. Boxes should not be over-stacked, nor over-filled.
- 9.7 Storage furniture should be made as safe as possible, using inert materials, having no sharp edges and being manageable for one person working on their own. Cupboards should be as dust-proof as possible.
- 9.8 Accessories placed in cupboards or drawers should not be crowded and will need some form of support. Clearly labelled containers and storage mounts for each object aid identification and retrieval, and eliminate the need for direct handling. Shoes and hats generally require some padding and internal supports. Similarly, fans, small bags, gloves and other small accessories should each have a solid support that can be used to move them

without the need for direct handling. Items such as jewellery also benefit from being placed in clearly labelled individual containers such as those made from a stable transparent plastic such as polycarbonate or acrylic. Ideally, large textiles such as regimental colours, especially painted ones, should be stored flat in specially designed cabinets with large drawers.

- 9.9 Folding should be kept to a minimum and folds cushioned with plenty of acid-free tissue or 'sausages' made from tubes of pre-washed, cotton surgical-knit lightly stuffed with untreated polyester wadding. Folded textiles should be periodically unfolded and refolded so as to avoid damage resulting from repeated folding in the same place. Silk is at particular risk from over-tight repeated folding.

Conservation materials

- 9.10 Conservation quality materials should be used near textiles and costume. Wrapping paper and boards used for packing is available that is naturally pH neutral (i.e. pH of 7, neither acid nor alkaline) and which remains acid-free for much longer than other types of acid-free material. Some are made from cotton rag and others are made from abaca fibre, derived from the Manila hemp plant (*Musa textilis*). This latter type is normally specified as the only paper or board suitable for use with the more sensitive items such as photographs and textiles. It is much more expensive than buffered materials. Special papers are now available which can absorb pollutants (such as *Charcoal Cloth*). These too can lose their effectiveness over time and will need replacing with fresh. Wrapping tissue should be checked from time to time and changed when it is yellowed. Pre-washed unbleached calico or cotton sheeting can be used as curtains, dust-covers, garment bags, drawer linings etc. It is readily available and inexpensive, and can be washed for reuse. Polyester wadding obtained from haberdashers and department stores may have been treated with fire-retardant and should be avoided. See Appendix D for more information on conservation quality materials.

Warning. Never be tempted to use the blue tissue paper that was traditionally used for wrapping textiles. This is quite acid and is not suitable for long-term storage.

Hanging storage

- 9.11 Only very strong costumes should be hung, and this done using hangers that are padded to suit the individual costume. Hanging storage is not suitable for heavily decorated costumes such as beaded dresses, nor for garments made from loose knits or bias cut fabrics, as these will gradually stretch out of shape.
- 9.12 Wire hangers must *never* be used and wooden hangers should be padded to fit. Untreated polyester wadding covered with clean, washed calico is the most commonly used form of padding; polyester is normally stable and inert and will not absorb moisture as cotton wool does. Polyester wadding must be untreated. The covers can be made removable in order to wash them occasionally. Hangers with long necks must be used for costumes with high collars.
- 9.13 Hanging costumes must be protected from light, dust and crushing. Covers of well-washed cotton cloth (such as plain, unbleached calico) or archival quality *Tyvek* (spun-bonded non-woven polyester) should be made for each item. Dresses with trains should have room to hang and any costume with delicate trimmings will need protection if bags are not used. *Tyvek* bags for furs make it easier to check for moth frass and eggs, as the *Tyvek* is smoother than calico. Woollen items are easier to check if stored separately. Some textile finishes can be damaging to objects, so the washing of calico and *Tyvek* prior to use as dust covers etc. is recommended.

Rolled storage

- 9.14 Although flat textiles should ideally be stored flat, some are too large and have to be rolled. Rollers should be of as large a diameter as possible and should be longer than the width of the textile. They should be made from acid-free materials or, if not, they should be covered with a barrier film and pre-washed cotton. Rollers may need to be padded. The

textile is rolled together with sheets of acid-free tissue paper and given a dust-proof cover. The rollers can then be supported or suspended by their ends.

- 9.15 Rolled painted textiles should be interleaved with silicone-release paper if the paint shows any sign of tackiness. They should be rolled right-side out on the widest possible roller to reduce stress at the interface between textile and paint.

Special storage

- 9.16 Furs and items with fur or feather trims should be identified on their containers and, if possible, stored in a separate area to contain potential pest infestation. Cold storage benefits fur by extending the time before the hair falls out naturally. Recommended temperatures for such stores are in the range 0-4°C, but even temperatures of 10-12°C will help reduce rates of deterioration.
- 9.17 Small costume accessories can be stored in acid-free tissue paper nests in boxes, or (better) in nests cut into *Plastazote* foam in drawers, or in individual plastic boxes.
- 9.18 Objects made wholly or partly of rubber, including elastic, should be stored separately to prevent the sulphur released by natural ageing from damaging nearby items. Recent research into oxygen-free storage to slow the degradation of rubber is encouraging. Items are wrapped in a barrier film, which is usually clear, and sachets of an oxygen scavenger such as *Ageless* are added before sealing the film. Rubber removed from such packaging should be allowed several hours to acclimatise to ambient conditions before being handled.
- 9.19 Plastics and lacquered leather are another problem area. Plastics are found throughout costume collections, as jewellery, accessories, shoes, parasols, handbags, and costumes themselves. As the chemistry of each type of plastic is so different and the deterioration processes incompletely understood, it is difficult to specify the best storage conditions. A well ventilated storage space and the use of acid-free packing and storage material is recommended. Some plastics release plasticisers and organic acids and become sticky as they degrade; they should be checked regularly. Tissue paper may become permanently stuck to such objects and should be used with care, or not at all, to cover shoes, bags etc. *Tyvek* or silicone release paper is a safer alternative in such situation. (For the fire dangers of cellulose nitrate see 11.6).

Display of costume and textiles

- 9.20 The display of costume and textiles presents a range of curatorial and conservation challenges, often necessitating compromise to achieve an appropriate balance between presentation and preservation. The vulnerability of costume and textiles means that damaging factors must be eliminated or reduced as far as possible. For this reason textiles and costume are not kept on display for extended periods.
- 9.21 Costume and textiles should be supported adequately, both in storage and on display. Large flat textiles can sometimes be displayed hanging, by means of a hook and loop fastener (such as *Velcro*) or pole sleeves (but see 10.18). Hook and loop type fasteners must be sewn on, never stuck. Supports of adequate size should be provided.
- 9.22 On display, too, costume and textiles are vulnerable to damage from fumes from display materials, wall-finishings, floor-coverings etc. (see Section 10).
- 9.23 Mounting costume on mannequins or other shaped forms requires skill and time. What matters is that the form be made or adapted to meet the unique shape of each garment. Commercially available modern mannequins might be suitable for the temporary display of modern dress, but it is inadvisable to use - for example - redundant shop dummies for historic dress; their shape is rarely suitable, while the materials they are made of may be damaging.
- 9.24 Open display poses considerable risks and should be avoided whenever possible; textiles and costumes should always be kept out of visitors' reach. In furnished rooms either supervision or physical barriers will be needed to prevent visitors touching textiles or small children rolling on bedclothes. Providing textile samples specifically for visitors to feel may help protect museum objects. Textiles on open display are also at greater risk from pest infestation and soiling by dust.

- 9.25 When a textile is framed, sufficient depth must be allowed to prevent it being crushed against the glass by incorporating a spacer of appropriate depth. The textile must not be folded or stretched. The materials used in the frame should be conservation quality, and the frame should be dust-proof. A conservation or collection care specialist should always supervise the framing of textiles.

Using textiles and wearing costume

- 9.26 No accessioned costume or textile should ever be worn or used. Modern stance and movement, as well as corseting, are different from those of the past, and historic costume will inevitably be damaged by being worn. In addition, damage can be caused by sweat, body lotions, deodorants and make-up.

Moving costume and textiles

- 9.27 The handling and movement of all items should be kept to an absolute minimum. Moving any object involves a risk of damage; costume and textiles can be large and heavy as well as unexpectedly delicate, so they require particular care.
- 9.28 It is essential to plan and prepare any move meticulously, however short the distance.
- 9.29 A sufficient number of trained people should be available and one person clearly in charge. If contractors are used, they should have proven experience in the field and should work closely with museum staff.
- 9.30 Appropriate equipment should be available. Thus trays, trolleys and boxes - cushioned for example with *Plastazote* (polyethylene foam) - should be available for the moving of smaller objects. Rollers and slings will be needed for tapestries, carpets and banners. If costumes mounted on mannequins have to be moved, the greatest care will be required since they are often heavy, unstable and highly vulnerable. They require stable, smooth-riding low-level trolleys. It is possible to move certain items indoors on garment rails, given a suitable means of preventing excessive vibration. Good lighting must be available (but see 7.22 et seq).
- 9.31 Mechanical handling may occasionally be needed for the movement of very large textiles. Objects moved in this way should be secured to pallets or other structure by strapping, net webbing or wrapping sheets. Everyone who uses such equipment should be given appropriate training.
- 9.32 The weight alone of a load is no longer considered a sufficient indicator of whether it may be carried by one person without risk of injury. The object's weight, size and the distribution of weight must all be considered. However, the *Manual Handling Operations Regulations* indicate maximum guideline figures for a load, carried at elbow height close to the body, of 25 kg for men and 16.7 kg for women. The maximum weight for loads carried in any other position should be reduced by at least 5 kg, and by 10 kg when lifting from points below elbow height. A heavy load should not be carried a distance of more than ten metres by one person in a single stage.
- 9.33 The route of the move should be planned very carefully. Before the move, ask questions such as: will the rolled tapestry go round the corners; will the case fit the van, aircraft, or even the lift? Wherever possible, self-opening doors and lifts should be used to make moving objects around the museum easier; otherwise someone must be available to open doors. Floor surfaces should be clear of obstacles (including matting) and should not be slippery; lighting should be adequate and there should be sufficient space. If the object is to be moved outside the museum, ensure that it will be in safe conditions at all points of the journey. For example, the packing case could be left on the quayside or airport runway and it could get wet or frozen.
- 9.34 The standards set out in *Standards for Touring Exhibitions* should be observed.
- 9.35 The destination of the move, whether the other side of the room or many miles away, should be carefully considered. Is there sufficient clean, clear space? What are the environmental conditions? What are the security arrangements?

Sources of advice and help

Advice and help can be obtained from:

Area Museum Councils
Museums & Galleries Commission
Scottish Conservation Bureau

- Further reading:

Finch, K. and G. Putnam. 1985. *The Care and Preservation of Textiles*. London: Batsford.

Flury-Lemberg, M. 1988. *Textile Conservation and Research*. Schriften der Abegg-Stiftung, Band 7. Bern: Abegg-Stiftung.

Glover, Jean M. 1992 (2nd edn). 'Conservation and storage: textiles'. In *Manual of Curatorship*, ed. J. M. A. Thompson. London: Butterworth-Heinemann/Museums Association.

Landi, S. 1992 (2nd edn). *The Textile Conservator's Manual*. Oxford: Butterworth-Heinemann.

Lister, A. 1996. *Guidelines for the Conservation of Textiles*. London: English Heritage.

Odegard, N. 1992. *A Guide to Handling Anthropological Museum Collections*. Tucson, USA: Western Association for Art Conservation.

Rose, C. and A. R. de Torres, eds. 1992. *Storage of Natural History Collections: Ideas and Practical Solutions*. Pittsburgh: Society for the Preservation of Natural History Collections. This contains many useful ideas for storage that could be adapted for awkward costume shapes.

Roy, A. & P. Smith, eds. 1994. *Preventive Conservation, Practice, Theory and Research*. London: International Institute for Conservation.

Sandwith, H. & S. Stainton. 1984. *The National Trust Manual of Housekeeping*.

Harmondsworth: Penguin Books in association with The National Trust.

Strang, T. 1992. Museum pest management. In *Systematic Approach to Conservation (Care) of Museum Collections*. S. A. Michalski. Ottawa: CCI.

Tetreault, J. 1994. Display materials: The Good, the Bad and the Ugly. In *Exhibitions and Conservation*, SSCR, 79-89.

White, S. The role of costume mounting in preventive conservation. In *Preventive Conservation, Practice, Theory and Research*. London: IIC.

Shashoua Y. and S. Thomsen. 1993. 'A field trial for the use of Ageless in the Preservation of Rubber in Museum Collections'. In *Post-prints of Saving the Twentieth Century: The Conservation of Modern Materials*, ed. D. Grattan, Ottawa. 363-372.

- Guidance on manual handling will be found in:

Health and Safety Executive (HSE). *Manual Handling; Guidance on Regulations (Manual Handling Operations Regulations)*. London: HSE.

- Standards and guidelines for moving objects, including handling, packing, carriers and agents and couriers, will be found in:

Museums & Galleries Commission (MGC). 1995. *Standards for Touring Exhibitions*. London: MGC.

Lee L. R. and D. Thickett. 1996. *Selection of Materials for use in the Storage or Display of Museum Objects*. Occasional Paper No. 111. London: British Museum Press.

10 Protecting from dust, dirt, pollutants and pests

- 10.1 All collection and storage areas should be kept clean and tidy and a regime for regular cleaning and record-keeping instituted. Maintenance, monitoring, cleaning, pest control or related work should be undertaken or supervised by fully trained and experienced people.
- 10.2 Costume and textiles should be protected from contact with harmful substances such as gases, fumes or other pollutants.
- 10.3 All harmful biologically active agents must be eliminated from collections and from all areas within a museum building.
- 10.4 Collections should be regularly inspected for pest damage or for any signs of physical or chemical deterioration. Reports based on these inspections should be recorded in the relevant documentation.

Guidelines and notes

- 10.5 Dust and dirt encourage deterioration by attracting and holding moisture. They can act as a catalyst for other chemical reactions, such as fading of colours, photo-deterioration of fibres and corrosion of metals, and can actually abrade artefacts. They may also foster mould growth and attract pests.
- 10.6 However, dirt acquired, for example, while a costume was worn or a textile used, may itself be part of the object's history. This aspect should be considered carefully before an object is cleaned.

Prevention

- 10.7 Dust can originate from both internal and external sources; good housekeeping and simple preventive measures can reduce levels of dust and dirt to a minimum. Special precautions, such as the temporary relocation of the collection, is advisable during building work, however minor. Windows should be close fitting and kept shut, and concrete floors covered or sealed. All costume and textiles in store should be wrapped or protected by dust sheets and there should be large loop-piled doormats and under-door brushes at the doors to store-rooms, as well as at all entrances to the building.
- 10.8 A regular and effective cleaning-of-premises regime should be established in consultation with a conservation or collection care specialist.
- 10.9 Wet cleaning of floors can create serious humidity problems and should be done with great care, and preferably not at all. Where dust is a problem a well-wrung-out damp cloth may be used.
- 10.10 Indoors, all surfaces should be vacuum cleaned - not swept - using vacuum cleaners with ultra fine filters; they should conform to Section 2.2 Supplement 1 in BS 5412: Specification for Type H Industrial Vacuum Cleaners for Dusts Hazardous to Health. Bags should be emptied and filters cleaned and changed regularly, and care must be taken that pests are not spread by vacuum cleaners previously used in affected areas.
- 10.11 Only cleaning materials and techniques approved by a conservation or collection care specialist should be used in close proximity to objects; some domestic and industrial cleaning materials give off damaging chemicals.
- 10.12 All curtains, dust covers etc. should be kept clean. The fabric should be well washed before they are made up, and a few extra covers should be made to temporarily replace those being laundered.

Pollution

- 10.13 New building work and redecoration can introduce contaminants such as dust, paint and other solvent fumes or large quantities of moisture, which are potentially harmful to objects. Action should be taken to remove dust, excess moisture and other contaminants before collections are re-housed following such work. Whenever possible, a newly decorated space should not be used to house objects until tests show that emissions have been reduced to acceptable levels.
- 10.14 Building and finishing materials give off particles (e.g. sawdust and concrete dust) and vapours (e.g. ammonia and water), especially during and soon after application. This may continue for some months; good ventilation will speed the process. The drying out of a building can be speeded up if appropriately sized industrial dehumidifiers are used. As soon as practical after drying out, all porous surfaces should be sealed.
- 10.15 Concentrations of external pollutants, such as sulphur dioxide, ozone and nitrogen oxide, as well as smoke, dust and deposits from diesel fumes, can rise to high levels in city air, causing fading and degradation of organic materials, deterioration of inorganic materials and particulate matter causing staining and soiling. The ingress of pollutants can be reduced by draught-proofing doors and sealing windows. Displaying and storing objects in sealed containers provides additional protection. The reduction of pollutants can be carried out efficiently by mechanical ventilation equipment (air-conditioning plant) that incorporates air-scrubbers or activated charcoal filters (but see 7.20).
- 10.16 Many materials, both inorganic and organic, are affected by gases, organic vapours and other compounds given off by construction or display materials such as manufactured boards, natural fibres including wool felt, fire-retardant coatings, recently applied paint and adhesives, and some hard woods including oak. Time needs to be allocated during the planning of any work for materials to be tested before use. Good ventilation discourages such pollution.
- 10.17 The design of showcases needs to balance keeping any pollutants out against avoiding the generation of pollutants within. All materials that are in close proximity to objects, whether used for display, storage or transport of objects, should be tested by a recognised method. The 'Oddy' tests are routinely used by many museums. These tests use metal coupons that have very reactive surfaces. They are placed in a closed vessel with a sample of the fabric, board or adhesive etc. which is being tested. Any resulting corrosion indicates the type of pollutants being given off by the material. For example, if a silver coupon tarnishes, then a sulphur compound is being given off. The nature and extent of any corrosion is used to decide whether the material is suitable for use with particular types of museum objects. The test takes up to six weeks to complete.
- 10.18 Of the hook and loop type of fastenings, only those manufactured by *Velcro* are currently considered safe for museum use. A barrier of scoured, unbleached fabric or fabric tape should be sewn between the *Velcro* and the museum textile (see 9.21).
- 10.19 There is also a risk of damage from the objects themselves (see also 9.18-19):
- degraded rubber (present in elastic, as carpet-backing, in some raincoats and shoes, and sometimes hidden in the waistline of costume) releases sulphur into its immediate surroundings, which can cause fibres to disintegrate and metals to corrode;
 - plastics (present as buttons, modern clothing, shoes and dolls) lose the chemicals collectively called plasticisers, which can also be absorbed by fibres and can cause damage;
 - metals (present as buttons, sequins and metal threads) can tarnish and corrode, and their corrosion products can have a deteriorating effect on the surrounding textile;
 - cellulose nitrate is well known for its self-destroying character, giving off corrosive acid products during ageing. Combs, buttons, buckles and purse-frames are just a few of the things that may be made from this material (see 11.6);
 - glass (beads etc.) can also be chemically unstable as well as easy to break, and may affect the underlying fabric, for example by bleaching the colour;

- chemicals used in the production, finishing and treatment of fabrics, and even in previous conservation treatment.

Pest management

- 10.20 'Biologically-active agents' which threaten museum collections include - besides people - rats, mice, birds, insects (especially moth, carpet beetle and silverfish), fungi, algae and bacteria.
- 10.21 Regular inspection and maintenance procedures will ensure that such agents remain inactive. Pest traps should be used in storage and display areas to indicate the presence of pests. Specialist advice should be taken and an Integrated Pest Management (IPM) strategy followed. Procedures should be in place for the quick and effective eradication of pests in case an outbreak occurs.
- 10.22 All incoming objects, together with their associated packaging materials should be inspected - preferably in a separate quarantine room - for the presence of biologically-active agents, before being introduced to the main storage or display areas. Any which might harbour hidden pests should be isolated until it is quite certain they do not.
- 10.23 Great care should be taken to avoid introducing pests through fresh or dried flower displays, Christmas trees etc.
- 10.24 The storage and use of biocides is controlled under the Control of Pesticides Regulations, 1986. Remedial treatments using biocides to eliminate any biological pest should be minimal, in order to reduce the potential risk of damage to objects, the environment, to staff and to visitors. Very specific regulations control the use of biocides in museums, and COSHH regulations apply. Check with a conservation or collection care specialist before considering the use of any sort of biocide in an area where objects are stored or displayed (see below for sources of advice).
- 10.25 A range of new pest control methods is being developed. These include heat treatment, freezing and the use of gases such as carbon dioxide or nitrogen. Again, the advice of a conservation or collection care specialist experienced in pest eradication should be sought before a decision to use one of these newer techniques is taken.
- 10.26 A commonly used and readily available pesticide is *Vapona*, which contains Dichlorovos. It should only be used as specified in the manufacturers instructions. One museum has obtained a license to use it in a different way (cut up strips placed in drawers containing natural history specimens etc.). Other organisations can obtain permission to do this but it must be as specified in the license. No variation is permitted.
- 10.27 The continued use of naphthalene, (the active component of mothballs and moth flakes) as a moth repellent is currently under review by the EU.

Cleaning of objects

- 10.28 Cleaning an object is conservation, and should normally only be done by a conservator. Occasionally, however, others may have to clean an object. In that case a conservator should make an assessment of the appropriate cleaning method for each artefact, based on an appreciation of its importance and condition, and this should be recorded in its documentation. Cleaning should be undertaken only by appropriately trained and supervised staff. All cleaning is an irreversible process which if wrongly applied can cause damage or destroy part of the object or evidence of its past use. Even modern costume should be treated with great care where cleaning is concerned. No textile should be unpicked in order to clean it.
- 10.29 Objects on display inevitably get dusty, although dust should be kept to a minimum by careful display. Only the most robust textiles should ever be vacuum cleaned, and then only using a vacuum cleaner set at low suction power, and through a gauze sheet or fine netting placed over the textile so as not to disturb loose attachments. Some textiles can be brushed using a soft brush, and the dislodged dust caught in a vacuum cleaner set at low suction power and with gauze over its nozzle.

Sources of advice and help

- Area Museums Councils can point to sources of advice on particular problems and types of object.

- The following publications are useful:

Eastop, D. & M. Brooks. 1996. To clean or not to clean: The value of soils and creases'. *Post-prints of the Meeting of the ICOM Conservation Committee, Edinburgh.*

Knell, Simon, ed. 1994. *Care of Collections*. London: Routledge.

Museums Association (MA). Three issues a year. *Museum Practice*. London: MA

Pinniger, D. 1994. *Insect Pests in Museums*. London: Archetype Publications.

Rose, C. and A. R. de Torres, eds. 1992. *Storage of Natural History Collections: Ideas and Practical Solutions*. Pittsburgh: Society for the Preservation of Natural History Collections.

Museums & Galleries Commission (MGC). (Forthcoming). *Guidelines for Pest Management in Museums*. London: MGC.

Sandwith, H. and S. Stainton. 1993. *The National Trust Manual of Housekeeping*. Harmondsworth: Penguin, in association with the National Trust.

Cassar, May and P. Osborne. 1996. Show-cases: Checklist for Specifiers. *Museum Practice*. Vol 1 (2). London: Museums Association.

Strang, T. 1992. 'Museum pest management' In *Systematic Approach to Conservation (Care) of Museum Collections*. S. A. Michalski. Ottawa: CCI.

Lee L. R. and D. Thickett. 1996. *Selection of Materials for use in the Storage or Display of Museum Objects*. Occasional Paper No.111. London: British Museum Press.

The Health and Safety Commission and the Health and Safety Executive publish a great deal of information which is of interest to museums. Many publications are available free of charge. Contact HSE Books, PO Box 1999, Sudbury, Suffolk, CO10 6FS. Tel: 01787 881165.

Testing of storage and display materials
The manufacture and components of materials used for storage and display are always changing; materials should always be tested independently before use in the museum. Most museums with a large conservation department undertake their own basic testing, and they or the Area Museum Council will be able to advise and perhaps help. Several organisations, including some commercial conservation firms, offer a testing service for the suitability of materials for use in the exhibition or storage of museum specimens. These include:

British Museum
Department of Conservation
Great Russell Street
London WC1B 3DG
Tel: 0171 323 8772

Wiltshire Library and Museum Service
Conservation Centre
Wyndham House
65 The Close
Salisbury SP1 2EN
Tel: 01722 331321

- Advice on pesticides is available from all regional offices of the Health and Safety Executive and from:

Health and Safety Executive
Registration Section
Magdalen House
Stanley Precinct
Bootle
Merseyside L20 3QZ
Tel: 0151 9513535

11 Protecting from fire

- 11.1 Museum buildings should be designed or adapted to minimise the risk of fire and to prevent its spread.
- 11.2 Museum buildings must comply with all fire safety legislation. This will normally be the Fire Precautions Act 1971 as amended. Where no specific legislation applies, the following should be provided as a minimum:
- means of warning of fire;
 - means of escape from premises;
 - means of fighting fire;
 - arrangements for ensuring that all these means are maintained and available at all times;
 - training of staff and volunteers in the correct action to take in the event of a fire.
- 11.3 Fire-resistant cabinets should be provided to house the primary records and museum documentation, and wherever possible copies of records and back-up computer disks should be kept in a different building.

Guidelines and notes

Legal requirements

- 11.4 Depending on the use of a building and the number of people working in it, a fire certificate as required by the Fire Precautions Act 1971 may be needed.
- 11.5 If chemicals and potentially hazardous substances (including cleaning materials) are kept within the building, the conditions must be in accordance with the advice of the local authority's Fire Officer and must comply with Control of Substances Hazardous to Health (COSHH) Regulations. A suitable COSHH assessment must be made and a copy kept in a convenient place for passing to emergency services on their arrival at an incident.
- 11.6 Some belts, handbags, fans, buttons etc. may be made of cellulose nitrate (see 10.19). It is important that these be identified and monitored. Cellulose nitrate is a potential fire hazard and special storage is required to prevent the build up of the gases and so interrupt the auto-catalytic deterioration cycle. Forced ventilation of the storage container or the use of activated charcoal to absorb the gases is required. If a large number of items made of cellulose nitrate are present in the collection then the advice of the local Chief Fire Officer should be followed. The presence of cellulose nitrate in the museum may invalidate the premises' insurance.
- 11.7 Revised proposals for Fire Precautions (Places of Work Act) Regulations was published in 1997 and Associated Guidance will be published in the near future.

Reducing risk through design

- 11.8 Areas housing collections should be rigorously insulated to a high standard (not less than half an hour protection, but preferably one hour) against fire spread from areas of risk, e.g. workshops, laboratories, kitchens, boilers, plant room or chemical stores. The degree of risk from 'risk areas' must be reduced as much as possible, for example by using an external chemical store.
- 11.9 Risk of damage by fire may be indirect (e.g. from meltdown of mannequins or showcase interiors) as well as direct by burning. Textiles on open display can be a fire hazard and can contravene regulations. These risks need to be assessed and built into preventive and salvage procedures.

- 11.10 The advice of the Building Control Officer and Fire Authority should be sought on the selection of all materials used in displays and storage areas. Normally, all such materials should be fire-retardant, class O or A. However, the chemicals used for flame-proofing can be harmful to textiles, especially long-term, and should not be applied to museum objects.
- 11.11 Independently of their statutory responsibilities, these officers should be invited to inspect the premises at least once a year, and should be made aware of the particular requirements of museums. Their recommendations should be reported to the museum's governing body. A formal application for Building Regulation Approval is normally required for any structural work.
- 11.12 Modification of historic buildings may require Listed Building or other consents.
- 11.13 The use of boxes, bags and dust sheets may reduce the damage caused by smoke and soot, or even water.

Electricity and gas

- 11.14 In museum buildings, all electrical wiring and equipment (including portable equipment) must be installed in accordance with the appropriate British Standard, the Institution of Electrical Engineers' Regulations, and the Electricity at Work Regulations. Electrical installations should be regularly maintained and checked, as required by those regulations.
- 11.15 Gas, oil and mechanical equipment must also be installed in accordance with appropriate British Standard and statutory instructions, and must be regularly checked and maintained. A Register of each piece of equipment should be established, which should contain maintenance records and inspection certificates. A detailed plan of all installations should be kept in a convenient place for passing to the emergency services on their arrival at an incident (see 14.4).

Fire detection devices

- 11.16 A survey is needed to decide the type, number and location of fire-detection sensors appropriate to the premises. Indeed, a wider ranging survey can be undertaken to identify specific risks and any necessary precautions, to provide a fire precautions manual containing checklists and disaster response plans (see Section 14), and to set out a reporting procedure. Specialist companies and many major security firms can give such advice.
- 11.17 Published standards for fire detection and suppression systems include:

United Kingdom - British Standards Institute:

- BS 5839: *Fire Detection and Alarm Systems in Buildings*;
- BS 5423: *Portable Fire Extinguishers*;
- BS 5306: *Fire Extinguishing Installations and Equipment on Premises*.

United States - National Fire Prevention Association (NFPA):

- *Protection of libraries and library collections* (1991) NFPA Code 910;
- *Protection of museums and museum collections* (1991) NFPA Code 911;
- *Protection of cultural resources* (1996) NFPA Code 915.

Fire precautions

- 11.18 The premises should be equipped with fire-fighting equipment as recommended by the Fire Officer and complying with BS 5423: *Portable Fire Extinguishers* and BS 5306: *Fire Extinguishing Installations and Equipment on Premises*. Carbon dioxide type extinguishers are preferable to water based ones in costume and textile collections.
- 11.19 Sprinkler systems are a highly effective method of controlling outbreaks of fire. Modern systems are designed to operate only in the locality of the heat source and will close off the water supply once the heat source has been neutralised. (Experience in the Los Angeles riots, though, suggests that ideally they should be able to be turned off from outside the building. See 14.2). It is important to ensure that the water delivered by sprinkler systems is perfectly clean; new sprinklers can contain a significant amount of machine oil which must be flushed out.

11.20 When sprinklers are installed or tested the collections should be removed to temporary storage.

A preventive regime

11.21 All staff and volunteers should receive regular training in preventing and responding to fires, and this training should be at least consistent with Part 1 (18) of the Fire Precautions Act 1971. All staff and volunteers should be familiar with the museum's disaster plan (see 14.3-4).

11.22 Smoking should be forbidden in all parts of the premises that contain collections or records. This should be a condition in all contracts.

11.23 Public events - for example concerts or exhibition openings - pose a particular fire hazard, as does film location work. Careful thought should be given to fire prevention when planning such events. Emergency procedures should be planned and practised.

11.24 Contracts for work on the premises - at least those for hot-working, work in stores and work on dangerous equipment - should be on a 'Permit to Work' basis, and no work involving heat sources such as blow torches or arc welding machines should normally be permitted. If such heat sources have to be used, the FPA's *Joint Code of Practice for Fires on Construction Sites* (FSB9) should be followed.

Sources of advice and help

The local authority Fire Prevention Officer and the local authority Building Control Department will both be glad to give advice and can often also provide training.

- Three useful sources of advice, published annually, are:

Security and Fire Prevention Yearbook (Paramount Publishing, 17-21 Shenley Road, Borehamwood, Herts WD6 1RT)

Fire Protection Association's *Fire Protection Yearbook* (Fire Protection Association, Melrose Avenue, Borehamwood, Herts, WD6 2BJ) which is supplied free each year to members of the Fire Protection Association.

Fire Directory (FMJ Publications, Queensway House, Redhill, Surrey, RH1 1QS)

- Many museums are in historic buildings, whose adaptation to meet fire prevention and security requirements often causes problems. *Heritage Under Fire*, 2nd edition 1995, published by the Fire Protection Association, is a useful source of advice.

- Area Museum Councils can also give advice directly or through consultants on possible solutions.

- Useful information on the interpretation of the Fire Precautions Act 1971 can be found in:

Fire Protection Association's *The Fire Protection Yearbook*, (see above).

Fire Protection Association (FPA). 1997. *Joint Code of Practice for Fires on Construction Sites*. FSB9. Borehamwood, Herts: FPA.

Her Majesty's Stationery Office (HMSO). 1989. *Code of Practice for Fire Precautions in Factories, Offices, Shops and Railway Premises not Required to have a Fire Certificate*. London: HMSO.

Her Majesty's Stationery Office (HMSO). 1971. *Fire Precautions Act 1971: Guide to Fire Precautions in Existing Places of Work that Require a Fire Certificate*. London: HMSO.

NFPA publications are available from: National Fire Protection Association, 1 Batterymark Park, PO Box 9101, Quincy, MA 02269-9101, U.S.A.

Museums & Galleries Commission (MGC). (Forthcoming). *Working with Contractors: Guidelines on Environmental and Security Protection during Construction Work in Museums*. London: MGC.

12

Protecting from flood

- 12.1 As far as possible no pipe-work or tanks should be permitted in new buildings in or above areas where collections are kept; every effort should be made to exclude pipe-work from such areas in old buildings. Adequate drainage should be provided in buildings where there is a possibility of flooding.
- 12.2 Objects should be placed at least 150mm (6 inches) above the floor, preferably higher.
- 12.3 Appropriate precautions should be taken in museums liable to flooding.

Guidelines and notes

- 12.4 'If a flood can occur, one day it will'; this assumption should guide all arrangements in the museum.
- 12.5 Compliance with relevant building regulations and recommendations, especially in old buildings, may make difficult the complete exclusion of pipe-work. Every effort should be made, in discussion with the appropriate technical consultant, to find a satisfactory compromise solution. In areas where objects can be raised off the floor, one solution may be to run the pipe-work at ground level rather than ceiling level. Automatic cut-off valves should be installed, and leak detectors are desirable. The danger of leaks from humidifiers and dehumidifiers should be considered.
- 12.6 The possibility of installing flood detection alarms should be considered.
- 12.7 Shelving and racking which house costume and textiles may be protected with waterproof sheeting to provide extra protection should water leak from above. But care must be taken to avoid creating micro-climates (see 7.18) or using materials which attract dust, as both can act as a focus for accelerated deterioration.
- 12.8 Every effort should be made to check and reduce the danger of flooding from adjoining or neighbouring premises. The local authority and local water authority should be asked for advice on the likelihood of flood; long-resident neighbours should also be consulted. Bund walls, stop boards, sandbags and other precautions may be appropriate in some museums.
- 12.9 All pipe-work and stop-cocks should be labelled in accordance with BS 1710: *Identification of Pipelines and Services*, 1984, and their locations should be noted on the building plan in the museum's disaster response plan (see Section 14). All pipes liable to freezing should be well lagged and should be inspected frequently during frosts. There should be drainage to cope with flooding; all drains should have non-return traps. All taps to sinks should be of the spring-loaded, automatic turn-off type.
- 12.10 The danger of water damage as a result of fire should be considered in the disaster response plan (see Section 14), and should be regularly discussed with the Fire Service.
- 12.11 All staff and volunteers should receive regular training in flood prevention and response.
- 12.12 When new buildings are planned, the danger of flood posed by central heating must be weighed against the danger of fire posed by other forms of heating.
- 12.13 The museum's Disaster Box (see 14.4) should contain equipment for dealing with floods, including materials ('absorbent pillows' or 'super slurper') which absorb moisture in large quantities.

Sources of advice and help

- The Fire Service will provide advice on the prevention of flooding.
- Useful information is contained in:

Martin, John H. ed. 1977. *The Corning Flood: Museum Under Water*. Corning (NY): Corning Museum of Glass.

13 Protection of primary records

- 13.1 Records, including paper, micro-form, computer disk and magnetic tape, should as far as possible be kept to the standards set out in Appendix A.
- 13.2 Photographs should be kept to the standards set out in Museums & Galleries Commission's *Standards in the Museum Care of Photographic Collections*.

Guidelines and notes

- 13.3 Some acquisitions will include original documents such as field notebooks, tape recordings and makers' catalogues (see 3.9). These primary records are distinct from the museum's own documentation (see Section 3), and should be accessioned into the museum collections as museum objects. They need the highest standard of preservation, for they are of equal importance to the costume and textiles themselves in the museum's collection.

Sources of advice and help

- Valuable guidance is contained in:
 - Royal Commission on Historical Manuscripts. 1990. *A Standard for Record Repositories*. London: RCHM.
 - Public Record Office (PRO)
Kew
Richmond
Surrey TW9 4DU
Tel: 0181 876 3444
Fax: 0181 392 5295
E-mail: presspub.pro.kew@gnet.gov.uk
Web site: <http://www.open.gov.uk/pro/prohome.htm>
- Also relevant is:
 - Museums & Galleries Commission (MGC). 1996 (revised edn). *Code of Practice on Archives for Museums and Galleries in the United Kingdom*. London: MGC.
 - Scottish Record Office
HM General Register House
Princes Street
Edinburgh EH1 3YY
Tel: 0131 535 1314
Fax: 0131 535 1360
 - Museums & Galleries Commission (MGC). (Forthcoming). *Guidelines in the Care of Photographs and Related Media*. London: MGC.
- Advice can be obtained from:
 - Royal Commission on Historical Manuscripts
Quality House
Quality Court
Chancery Lane
London WC2A 1HP
Tel: 0171 242 1198
Fax: 0171 831 3550
 - Public Record Office of Northern Ireland
66 Balmoral Avenue
Belfast BT9 6NY
Tel: 01232 251 318
Fax: 01232 255 999
E-mail: proni@nics.gov.uk
 - National Sound Archive
29 Exhibition Road
London SW7 2AS
Tel 0171 412 7000
Fax 0171 412 7441
 - National Preservation Office
British Library
Great Russell Street
London WC1B 3DG
Tel: 0171 412 7612
Fax: 0171 412 7796
E-mail: npo@bl.uk
 - Society of Archivists
Information House
20 - 24 Old Street
London EC1V 9AP
Tel: 0171 253 5087
Fax: 0171 253 3942

14 Planning response to disasters

- 14.1 The museum should draw up a disaster response plan for the protection and rescue of the collections in the event of fire, flood or other catastrophe.
- 14.2 All museum staff and volunteers should receive regular training in how to respond to disasters.

Guidelines and notes

- 14.3 The disaster response plan is a written document that sets out procedures to be followed in an emergency. Its general contents should be known to all museum workers through prior discussion and through regular training sessions and emergency exercises. Liaison with the public emergency services over its contents is essential. Once written, a disaster response plan requires continued revision to ensure that it remains relevant.
- 14.4 The plan should include:
- the responsibilities of personnel, and methods of raising the alarm and communication to others;
 - emergency telephone numbers, including home numbers of staff and volunteers. A working telephone should be immediately available to the first staff member on site; a confidential up-to-date plan of site and buildings clearly showing all services, hazardous stores, etc. A separate copy of this should be lodged with the Fire Service or be available to them on arrival;
 - priorities in limiting damage to the collection and to its documentation. Careful consideration must be given to which items should have priority for rescue;
 - sources of relevant expertise, including conservators and nearby museums, archives, etc. as agreed beforehand;
 - a list and locations of material and equipment (every museum should have a 'disasters box', kept separately but nearby, containing mops, buckets, cloths, overalls, rubber and heat-resisting gloves, etc.);
 - a list of suppliers and services;
 - a safety policy for working in hazardous conditions;
 - security measures for the collections if the premises are damaged (e.g. pre-arranged off-site safe storage);
 - arrangements for documentation of objects taken off-site;
 - first aid measures for damaged collections, by type of material, drawn up in consultation with conservators;
 - an agreed budget including petty cash and/or chequebook, with a hierarchy of authority to spend money in an emergency. The hierarchy should extend as far as possible in order that someone present at a disaster is authorised to spend money;
 - security measures for the buildings, if damaged (e.g. boarding-up contractors).

The East Midlands Museums Service (EMMS) and North West Museums Service (NWMS) joint publication, *The Museums, Record Office and Historic Properties Emergency Manual*, is an excellent place to start when planning to cope with emergencies.

- 14.5 A complete record of the collection and its disposition within the stores or displays should be available at some distance from the collection itself, and a duplicate should be held in another building.
- 14.6 Those items that have priority for rescue should be listed and clearly marked, while staff should be trained in their removal. Costumes on mannequins, carpets and tapestries can give particular problems because of their size, weight or situation, and special care should be taken for such items during staff training.
- 14.7 It is essential that the disaster response plan be drawn up in close co-operation with the Fire Service, and be regularly reviewed with them.

Books and papers are routinely saved after disasters by firms which freeze the wet items and then freeze-dry them to remove the ice. This can be dangerous to wet textiles, which could suffer damage from the ice crystals. Even if it were completely safe, very few freeze-dryers are large enough to take even a normal size dress; larger costume and textiles would be very difficult to treat in this way. The safest method is probably to dry wet textile objects slowly and carefully, flat and opened out, but the advice of a conservator should be taken as quickly as possible.

In every museum, the disaster response plan should be only part of a wider policy for the protection and rescue of people (first) and of the collections.

Staff should be given regular training in responding to disasters and should regularly practice their response. External conservators who might be brought in to help in the event of a disaster should be regularly briefed.

Sources of advice and help

- The following publications are useful:

North West Museums Service (NWMS) and East Midlands Museums Service (EMMS). 1997. *The Museum, Record Office and Historic Properties Emergency Manual* Blackburn: NWMS and EMMS.

Barton, John P. and Johanna G. Weltheiser. 1985. *An Ounce of Prevention: A Handbook on Disaster Contingency Planning for Archives, Libraries and Record Centers*. Toronto: Toronto Area Archivists Group Education Foundation.

Anderson, Hazel and John McIntyre. 1985. *Planning Manual for Disaster Control in Scottish Libraries and Record Offices*. Edinburgh: National Library of Scotland.

Jenkins, I. A. 1987. *Disaster Planning and Preparedness: An Outline Disaster Control Plan*. London: British Library.

Society of Industrial Emergency Services Officers. 1986. *Guide to Emergency Planning*. Borehamwood: Paramount Publishing.

- Advice can be obtained from the Area Museum Councils. In addition, the Museums & Galleries Commission (Tel: 0171 233 3683, Fax: 0171 233 3686) maintains a Register of private conservators throughout England, Wales and Ireland and a list of suppliers of materials. In Scotland this information is held by Historic Scotland's Conservation Bureau (Tel: 0131 668 8668, Fax: 0131 668 8669).

The Loss Prevention Council offers a number of useful training courses including: Fire safety management; Intermediate sprinkler system design school; Advanced sprinkler systems; Advanced protection for special risks; Passive Fire Protection and the LPC Design Guide; Portable fire extinguisher recharging & maintenance.

- In some areas emergency conservation units are available. Contact your local Area Museum Council for details.

Part Three: Health and Safety

15 Protecting people

- 15.1 All museums must comply with the letter and the spirit of all legislation designed to protect the health and safety of people on the museum site or who might be affected by museum operations.
- 15.2 The museum must draw up and maintain a Health and Safety Policy covering all aspects of its work. The Policy should take into account the various categories of people using its premises, from schoolchildren to specialists.
- 15.3 The Policy should identify and prescribe for all risks inherent in the museum's premises, collections and activities.
- 15.4 All museum staff and volunteers must receive regular information, training and instruction in health and safety aspects, and should be fully familiar with the museum's Health and Safety Policy.

Guidelines and notes

- 15.5 Although this book is principally concerned with the protection of objects, the museum's first responsibility is to protect people, and the two need to be parts of one policy and approach. Costume and textiles pose far fewer hazards than some other types of museum collection, but they do contain risks; this section draws attention to some of them.
- 15.6 Common hazards associated with costume and textile collections include:
- sharp rusty buckles, pins etc. which can present a risk of tetanus;
 - arsenic, found as a manufacturing treatment in wool felt hats, as a former insecticide treatment in furs and stuffed birds, and as a finishing agent on some silks;
 - asbestos is found in some collections of 20th century costume;
 - mercury and lead, which may be found in dyes and pigments;
 - DDT, dieldrin, naphthalene, para-dichlorobenzene and camphor, all formerly used as insecticides, which can remain in textiles as toxic residues. DDT is frequently found in military textiles;
 - textiles from some archaeological contexts, notably post-medieval graves, which can harbour dangerous diseases;
 - anthrax, which can occasionally be found in raw wool;
 - mildew and moulds, which can generate allergic reaction;
 - dust and dirt can cause dermatitis and aggravate asthma;
 - weight or size can make handling difficult (see 9.32);
 - difficulty of gaining access to large displayed objects such as flags or banners.
- 15.7 A wide variety of health and safety legislation applies to museums, and serves to help protect visitors, volunteers and staff. The key to the legal situation is the *Health and Safety at Work Act 1974*. This is an enabling act from which the various Regulations and Approved Codes of Practice. Its Regulations and Approved Codes of Practice supersedes earlier acts such as the *Offices, Shops and Railway Premises Act 1963* in situations where they have been developed. In other situations the provisions of earlier Acts still apply.

Relevant Acts of Parliament:

Control of Pollution Act 1974
Environmental Protection Act 1990
Factories Act 1961
Health and Safety at Work Act 1974
Offices, Shops and Railway Premises Act 1963
Transport and Works Act 1992
Wildlife and Countryside Act 1981

Regulations and Approved Codes of Practice

Chemicals (Hazards Information and Packaging) Regulations 1994 (CHIP 2)
Construction (Design and Management) Regulations 1994
Construction (Head Protection) Regulations 1989 (Amendments 1992)
Construction (Health, Safety and Welfare) Regulations 1996
Control of Pesticides Regulations 1986
Control of Substances Hazardous to Health Regulations (COSHH) 1994
Dry Cleaning Special Regulations 1949 (Amendments 1983)
Electricity at Work Regulations 1989
Environmental Protection (Duty of Care) Regulation 1991
Fire Certificates (Special Premises) Regulations 1976, (Amendments 1985)
Fire Precautions (Work Place) Regulations 1997
Health and Safety (Display Screen Equipment) Regulations 1992
Health and Safety (First Aid) Regulations 1981, (Amendments 1989)
Health and Safety Information for Employees Regulations 1989, (Amendments 1995)
Health and Safety (Miscellaneous Provisions) Regulations 1992
Management of Health and Safety at Work Regulations 1992 (Amendments 1994)
Manual Handling Operations Regulations 1992
Offices, Shops and Railway Premises (Hoists and Lifts) 1968 (Amendments 1974, 1983, 1992)
Personal Protective Equipment at Work Regulations 1992
Personal Protective Equipment (EC Directive) (Amendment) Regulations 1993, 1994
Provision and Use of Work Equipment Regulations 1992, (Amendments 1994)
Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 1995
Safety Signs Regulations 1994
Workplace (Health, Safety & Welfare) Regulations 1992

Sources of advice and help

• The Health and Safety Executive (HSE) has a number of local offices throughout the United Kingdom, and should be consulted at an early stage. A full list of current Health and Safety Commission/Health and Safety Executive publications, Publications in Series, is published twice yearly. Contact: HSE Books, PO Box 1999, Sudbury, Suffolk CO10 6FS (Tel: 01787 881165).

• Useful publications include:

Free Leaflets from HSE:

A Short Guide to the Personal Protective Equipment at Work Regulations, 1992, INDG 174, 1994

COSHH: A New Brief Guide for Employers, INDG 136, 1996

Everyone's Guide to RIDDOR, HSC 31, 1996,

Health and Safety Regulations: A Short Guide. HSC 30, 1995

Health and Safety in Small Firms, Misc 071, 1997

Introducing the Noise at Work Regulations, free leaflet, INDG 75, 1991

Manual Handling: Guidance on Regulations, INDG 143, 1993

Priced Publications from HSE:

Maintenance, Examinations and testing of Local Exhaust Ventilation, HSG 54, 1990

Manual Handling: Guidance on Regulations, L23, 1992

Occupational Exposure Limits (annually updated), EH 40/97, 1997

Management of Health and Safety at Work Regulations 1992 - Approved Code of Practice L21

Display Screen Equipment Work - Guidance on Regulations L26

Manual Handling - Guidance on Regulations L23

Work Equipment - Guidance on Regulations 1992 L22

Publications from the British Standards Institution (389 Chiswick High Road, London W4 4AL; tel: 0181-996 9000; fax: 0181-996 7448)

British Standard BS: 2037:1994 *Specification for Portable Aluminium Ladders, Steps, Trestles and Lightweight Stagings*

General advice is given in:

Howie, F, ed. 1988. *Safety in Museums and Galleries*. London: Butterworths.

- Useful advice is available through trade unions such as the TUC or Unison, and the Labour Research Department, 78 Blackfriars Road, London SE1 8HF. Publications are available at reduced rate for members.

Other organisations able to offer advice and help to members are:

RoSPA

Cannon House

The Priory

Queensway

Birmingham B4 6BS

Tel: 0121 200 2461

Fax: 0121 200 1254

The British Safety Council

National Safety Centre

Chancellors Road

Hammersmith

London W6 9RS

Tel: 0181 741 1231

Fax: 0181 741 4555

A

Relative humidity and temperature for the storage of records relating to textile objects

There is great debate about acceptable levels for general storage and display and best practice standards for long-term preservation. Many Standards publications exist from organisations such as the British Standards Institute, International Standards Organisation and American National Standards Institute.

We have attempted to summarise here the temperature and RH recommendations. Control of the environment is a major factor contributing to the safe storage and display of documentation and archives.

Type of Material	Optimum Storage Conditions	Practical Working Environment Conditions
Documents on paper	Constant temperature 13-18°C Constant RH 55-65%	20±5°C, 40-70%RH
Photographic material with gelatin emulsions including: B&W prints B&W negatives - Cellulose ester base - Polyethylene terephthalate base Glass negatives (silver images) Microform/Film (master & copies) - Cellulose ester base - Polyethylene terephthalate base Colour slides/negatives Colour prints	Cold storage as described in Section 13 of the MGC's publication <i>Standards in the Museum care of Photographic Collections</i> e.g. 20-40 % RH at -25°C Prevention of condensation on cooled materials is extremely important.	32-56% RH at 15°C 34-58% RH at 20°C 35-60% RH at 25°C Within this environmental range, cooler and drier conditions increase chemical stability.
Magnetic recording media Optical or laser discs Computer discs	Cold storage (see Section 13 of the MGC's publication <i>Standards in the Museum care of Photographic Collections</i>) Not below 5°C e.g. 29-52% RH at 5°C	15-20°C 30-40% RH

B

Sources of advice and information

Area Museum Councils

Area Museum Council for the South West
Hestercombe House
Cheddon Fitzpaine
Taunton TA2 8LQ
Tel: 01823 259 696
Fax: 01823 413 114

Council of Museums in Wales
The Courtyard
Letty Street
Cathays
Cardiff CF2 4EL
Tel: 01222 225 432
Fax: 01222 668 516
E-mail: e-bost cmwcardiff@btinternet.com

East Midlands Museums Service
Courtyard Buildings
Wollaton Park
Nottingham NG8 2AE
Tel: 01159 854 534
Fax: 01159 280 038

North of England Museums Service
House of Recovery
Bath Lane
Newcastle upon Tyne NE4 5SQ
Tel: 0191 222 1661
Fax: 0191 261 4725
E-mail: nems@nems.co.uk

Northern Ireland Museums Council
66 Donegall Pass
Belfast BT7 1BU
Tel: 01232 550 215
Fax: 01232 550 216
E-mail: museums.council@nimc.org.uk

North West Museums Service
Griffin Lodge
Griffin Park
Blackburn BB2 2PN
Tel: 01254 670 211
Fax: 01254 681 995
E-mail: nwms@nwms.demon.co.uk

Scottish Museums Council
County House
20 - 22 Torphichen Street
Edinburgh EH3 8JB
Tel: 0131 229 7465
Fax: 0131 229 2728
E-mail: inform@scottishmuseums.org.uk

South Eastern Museums Service

Ferroners House
Barbican
London EC2Y 8AA
Tel: 0171 600 0219
Fax: 0171 600 2581

West Midlands Area Regional Museums Council

Hanbury Road
Stoke Prior
Bromsgrove
Worcs B60 4AD
Tel: 01527 872 258
Fax: 01527 576 960

Yorkshire and Humberside Museums Council

Farnley Hall
Hall Lane
Leeds LS12 5HA
Tel: 0113 263 8909
Fax: 0113 279 1479
E-mail: yorh71yg@ymn.co.uk

Committee of Area Museum Councils
141 Cheltenham Road
Cirencester
Glos GL7 2JF
Tel: 01285 640 428
Fax: 01825 640 428

Other Organisations

British Museum
Department of Conservation
Great Russell Street
London WC1B 3DG
Tel: 0171 323 8772
Fax: 0171 323 8480

British Safety Council
National Safety Centre
Chancellors Road
Hammersmith
London W6 9RS
Tel: 0181 741 1231
Fax: 0181 741 4555

British Standards Institution
389 Chiswick High Road
London W4 4AL
Tel: 0181 996 9000
Fax: 0181 996 7448

Conservation Register
Museums & Galleries Commission
16 Queen Anne's Gate
London SW1H 9AA
Tel: 0171 233 3683
Fax: 0171 233 3686

Croner Publications Ltd
Croner House
173 Kingston Road
New Maiden
Surrey KT2 6SR
Tel: 0181 547 3333
Fax: 0181 547 2637

FMJ Publications
Queensway House
Redhill
Surrey RH1 1QS

Fire Protection Association
Loss Prevention Council
Melrose Avenue
Borehamwood
Herts WD6 2BJ
Tel: 0181 207 2345
Fax: 0181 236 9701

Health and Safety Executive
Pesticides Registration Section
Magdalen House
Stanley Precinct
Bootle
Merseyside L20 3QZ
Tel: 0151 951 3535

Health and Safety Publications
HSE Books
Sudbury
Suffolk CO10 6FS
Tel: 01787 881 165

International Institute for Conservation of
Historic and Artistic Works (IIC)
6 Buckingham Street
London WC2N 6BA
Tel: 0171 839 5975
Fax: 0171 976 1564

Labour Research Department
78 Blackfriars Road
London SE1 8HF
Tel: 0171 928 3649
Fax: 0171 928 0621

Museum Documentation Association
Jupiter House
Station Road
Cambridge CB1 2JD
Tel: 01223 315760
Fax: 01223 362521
Email: mda@mdocassn.demon.co.uk
Website: <http://www.open.gov.uk/mdocassn/index.htm>

Museum Training Institute
Glyde House
Glydegate
Bradford BD5 0UP
Tel: 01274 391056
Fax: 01274 394890

National Fire Protection Association
1 Batterymark Park
PO Box 9101, Quincey
MA 02269-9101
U.S.A.

National Sound Archive
29 Exhibition Road
London SW7 2AS
Tel 0171 412 7000
Fax 0171 412 7441

National Preservation Office
British Library
Great Russell Street
London WC1B 3DG
Tel: 0171 412 7612
Fax: 0171 412 7796
E-mail: npo@bl.uk

Paramount Publishing
17-21 Shenley Road
Borehamwood
Herts WD6 1RT
Tel: 0181 207 5599
Fax: 0181 207 2598

Public Record Office (PRO)
Kew
Richmond
Surrey TW9 4DU
Tel: 0181 876 3444
Fax: 0181 392 5295
E-mail: presspub.pro.kew@gnet.gov.uk
Web site:
<http://www.open.gov.uk/pro/prohome.htm>

Public Record Office of Northern Ireland
66 Balmoral Avenue
Belfast BT9 6NY
Tel: 01232 251 318
Fax: 01232 255 999
E-mail: proni@nics.gov.uk

Royal Commission on Historical Manuscripts
Quality House
Quality Court
Chancery Lane
London WC2A 1HP
Tel: 0171 242 1198
Fax: 0171 831 3550

Royal Society for the Prevention of
Accidents (RoSPA)
Cannon House
The Priory
Queensway
Birmingham B4 6BS
Tel: 0121 200 2461
Fax: 0121 200 1254

Scottish Conservation Bureau
Historic Scotland
Longmore House
Salisbury Place
Edinburgh EH9 1SH
Tel: 0131 668 8668
Fax: 0131 668 8669
E-mail: cbrown.hs.scb@gtnet.gov.uk

Scottish Museums Documentation Unit
National Museums of Scotland
Chambers Street
Edinburgh E1 1JF
Tel: 0131 225 7534
Fax: 0131 220 4819

Scottish Record Office
HM General Register House
Princes Street
Edinburgh EH1 3YY
Tel: 0131 535 1314
Fax: 0131 535 1360

Society of Archivists
Information House
20 - 24 Old Street
London EC1V 9AP
Tel: 0171 253 5087
Fax: 0171 253 3942

Wiltshire Library and Museum Service
Conservation Centre
Wyndham House
65 The Close
Salisbury SP1 2EN
Tel: 01722 331321
Fax: 01722 415 017

C

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Factories Acts 1961.
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Health and Safety at Work Act 1974.
Wildlife and Countryside Act 1981.
Environmental Protection Act 1990.
Transport and Works Act 1992.
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- Barton, John P. and Johanna G. Weltheiser. 1985. *An Ounce of Prevention: A Handbook on Disaster Contingency Planning for Archives, Libraries and Record Centers.* Toronto: Toronto Area Archivists Group Education Foundation.
- British Standards
 - BS 1710: *Identification of Pipelines and Services.*
BS: 2037:1984 Portable aluminium ladders, steps, trestles and lightweight stagings.
BS 4737: Intruder Alarm Systems in Buildings.
BS 5412: Specification for Type H Industrial Vacuum Cleaners for Dusts Hazardous to Health.
BS 5423: Portable Fire Extinguishers.
BS 5454: Storage and Exhibition of Archival Documents.
BS 5839: 1989 Fire Detection and Alarm Systems for Buildings Part 1 Code of Practice for System Design, Installation and Servicing.
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A Short Guide to the Personal Protective Equipment at Work Regulations, 1992, INDG 174, 1994
COSHH: A New Brief Guide for Employers, INDG 136, 1996
Everyone's Guide to RIDDOR, HSC 31, 1996,
Health and Safety Regulations: A Short Guide. HSC 30, 1995
Health and Safety in Small Firms, Misc 071, 1997
Introducing the Noise at Work Regulations, free leaflet, INDG 75, 1991
Manual Handling: Guidance on Regulations, INDG 143, 1993
Priced Publications from HSE:
Maintenance, Examinations and testing of Local Exhaust Ventilation, HSG 54, 1990
Manual Handling: Guidance on Regulations, L23, 1992

Occupational Exposure Limits (annually updated), EH 40/97, 1997
Management of Health and Safety at Work Regulations 1992 - Approved Code of Practice L21
Display Screen Equipment Work - Guidance on Regulations L26
Manual Handling - Guidance on Regulations L23
Work Equipment - Guidance on Regulations 1992 L22
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Code of Practice for Fire Precautions in Factories, Offices, Shops and Railway Premises not Required to have a Fire Certificate 1989

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D

Conservation quality materials and list of suppliers

The following is an extract from *Ours for Keeps: A resource pack for raising awareness of conservation and collection care*, published by the Museums & Galleries Commission in 1997.

Introduction

Many different products and materials are mentioned in the '*Caring for...*' information sheets. These notes will give you a little more information about them and will explain some of the terms used. A list of suppliers is included in the Reference Section.

The terms 'acid-free', 'archival quality' and 'conservation approved' are frequently used to describe materials you should select and use for the safe packing and storage of objects you wish to look after carefully. In particular, 'archival quality' is a non-technical term which implies that materials are durable or chemically stable and are most suitable for the purpose.

Good quality materials should be chosen for use in contact with, or in close proximity to objects. The use of boxes made from archival or acid-free materials or the wrapping of objects in acid-free tissue paper is recommended throughout this resource pack.

Many of the products described below meet the specific requirements of historic objects. They are available from the conservation suppliers listed. Their catalogues contain much useful information but if you are in doubt then contact a conservator or your Area Museum Council for advice.

Wrapping, boxing and protecting

'Acid-free' paper and board

Many products that are marketed as acid-free (tissue in particular) are made from cellulose fibre pulp derived from wood or cotton that is naturally acid but which is buffered by the addition of chemicals (commonly calcium carbonate) to neutralise the acid. There are two important points to remember about materials that are manufactured to be acid-free, rather than being naturally pH neutral. These are:

- Buffering chemicals will lose their effectiveness over time (a few years) by the action of the natural acid in the paper or atmospheric pollutants. Once this process is complete, the paper will become acidified and potentially harmful to objects it surrounds;
- Some paper or board that is labelled as acid-free is, in fact, over-buffered to be alkaline (usually to pH 8.5) rather than neutral pH of 7.0 that you might expect, and these too could be harmful to some types of objects. The catalogues explain about this but you should also ask the supplier.

It is also worth remembering that paper and board can become acidified by the action of residual chlorine from bleaching, aluminium sulphate from sizing or pollutants in the atmosphere.

Although you should be aware of these facts, in most cases it is safe to use the much cheaper buffered type of acid-free wrapping paper, mounting board or boxes, though many museums will replace wrapping tissue every five to ten years. The signs of acidifying of the paper are that it discolours, turns yellow, and becomes brittle. You are probably familiar with the way newsprint discolours and becomes brittle over a relatively short time. This is the same process in action, but it is more rapid as newsprint is made from unrefined wood pulp that does not contain chemicals to buffer the natural acidity.

Wrapping paper and boards used for boxes or framing is available that is naturally pH neutral (i.e. pH of 7, neither acid nor alkaline) and which remains acid-free for much longer. Some are made from cotton rag and others are made from abaca fibre, derived from the Manila hemp plant *Musa textilis*. This latter type is normally specified as the only paper or board suitable for use with the more sensitive items such as photographs and textiles. It is much more expensive than buffered materials.

Special papers are now available which can absorb pollutants (see *Charcoal Cloth*). These too can lose their effectiveness over time and will need replacing with fresh.

Warning: Never be tempted to use the blue tissue paper that was traditionally used for wrapping textiles. This is quite acid and is not suitable for long-term storage.

Charcoal cloth

This is one of a range of materials that actively absorb atmospheric pollutants such as acetic acid, formaldehyde, hydrogen sulphide and ammonia which are particularly harmful to polished metal surfaces, works of art on paper and textiles. The 'activated' charcoal is enclosed between layers of fibre which allows it to be cut and sewn like cloth. It is used inside the backing board of framed works of art and to line display cabinets and storage boxes to neutralise harmful vapours. These can be given off by new wood, fibre and particle boards, and newly painted surfaces which are just as common in the home as in museums. *Charcoal Cloth* is cheap, easy to use and effective. It is available in rolls and as made-up bags. Like buffered acid-free tissue, its power to absorb will be used up eventually and it must be replaced with fresh.

Calico cloth and unbleached linen

These are light fabrics available from haberdashers. They are washed to remove size and proofing substances, and are used as covers for individual textiles or for racks of hanging costumes. This is an economical and very effective way of keeping dust from objects and protecting them from snagging etc. Covers should be washed regularly, at least once a year.

Tyvek

Tyvek is the trade name for spun-bonded, non-woven polyester fabric. It is non-abrasive, waterproof, rot-proof and dust-proof. Its original use in conservation was for labelling objects from archaeological excavations but it now has wider uses. These include individual covers for textiles and dust covers. It is available in wide rolls and as label tags, with or without perforation.

Polyester film

This plastic film is often specified for house documents and photographs. You will usually see it under one of its common trade names of *Melinex* or *Mylar*. It is crystal clear and chemically stable, and contains none of the fillers, plasticisers or other additives that are present in many other plastics. It is these additives which deteriorate or leach out, causing damage to sensitive objects. Polyester film is available as cut sheet, rolls or in a wide range of made-up sleeves and envelopes. Welded rather than glued seams are preferred for museum-type use and in some cases an unsealed, four-fold design is used. One of the advantages of polyester is that it can be heat or ultrasonically welded, and this property is used in the encapsulation of documents such as ephemera. Special equipment is necessary to do this.

Polyethylene film or sheeting

Bags, sleeves and envelopes made from polyethylene film are a cheaper alternative to polyester enclosures and will protect ephemera and matted prints or photographs from dust, abrasion and fingerprints. They are not as crystal clear as polyester film is and are not as tough or stable.

Plastazote

This is dense, inert polyethylene foam that is available in a range of densities and thickness. It contains no harmful additives and the foaming agent is ozone-friendly. It is used to line drawers and the base of cupboards to cushion objects and for packing. It is possible to cut out a shaped hole in which an object can 'nest'. This can be done using a sharp modelling knife or a special hot-wire cutter. In many cases the object is further protected with several layers of acid-free tissue.

Bubble wrap

Bubble wrap is a protective cushioning material made from low-density polyethylene. Various bubble sizes are available, though the 9mm size is probably most useful for normal packing purposes. It should not be used on objects that have a fragile surface unless these have been protected first with several layers of acid-free tissue. It is available as rolls of varying width.

Cotton gloves

These are used for safe handling of slides, negatives, documents and most other types of objects. They prevent oils, salts and acids present on the skin from damaging the surface of objects, and are recommended for general use though extra care is required when handling objects with hard, smooth surfaces such as porcelain. Here, a type of glove with rubber 'polka dots' (similar to the face of a table tennis bat) is recommended as they give an improved grip.

Silica gel

Silica gel is a porous form of amorphous silica that acts as a desiccant and is used to control humidity levels in storage containers and display cases. You may be familiar with the sachets containing silica gel that are often included in the packaging of new cameras or pieces of electronic equipment. The silica gel is normally sold in the form of white granules but a self-indicating type is available. This turns from blue to pink when it has absorbed moisture from the atmosphere and is no longer active. Both types can be regenerated by heating in an oven to 105°C-120°C. Silica gel is available loose or in a range of standards sized sachets. It is most effective when used to create a dry atmosphere in a well-sealed display case or a box such as the type made of polythene and sold as food storage containers.

Art-Sorb is a highly efficient form of silica gel that is available as beads or sheet, and in two sizes of sealed cassette suitable to control volumes of 1.0 and 0.7 cubic metres.

Tarnish inhibitors

Capsules and tablets containing a tarnish inhibitor that will protect polished silver for up to 12 months. Various sizes are available to protect volumes from 150 cubic inches to 33 cubic feet. Carosil is a commonly available brand. Variations on these are plastics, papers and cloths that contain chemicals which absorb tarnish forming chemicals. They are used to encase polished metals such as coins, medals, silverware.

Ultraviolet protection

Ultraviolet light can cause damage to textiles, paintings, prints and photographs, resulting in fading, discoloration and embrittlement. Daylight contains a significant amount of ultraviolet wavelength light and the content in electric sources varies with the type of lamp. Sensitive objects will need to be protected unless they are stored in light-proof containers.

Action you can take includes fitting filters to fluorescent lamp arrays or sleeves to the individual tubes. Ultraviolet absorbing sheet, film or varnish can be applied to protective glazing or windows. These are crystal clear and types include thin Perspex sheet and polyester film with a self-adhesive coating. The ultraviolet absorbing property of the films and varnishes has a limited life and the effectiveness needs to be monitored after 3-5 years of life.

Keeping pests at bay

Pests such as the common clothes moth and furniture beetle were once very common in the home. Modern cleaning methods and materials together with more efficient heating and ventilation systems have dramatically reduced the threats they pose. At the same time, health and safety, and environmental concerns have led to a re-appraisal of the techniques used to control pests. There are now far fewer commercially available products for dealing with pests and non-chemical methods are being devised. However, the most effective method of keeping pests at bay remains good housekeeping and sensible storage of your treasures using the materials described above. If you are worried that any of your heirlooms are being damaged by pests then contact a conservator.

Monitoring

Measuring the environmental conditions

It is always useful to know if the environment in which you are storing or displaying your treasures is possibly causing them harm. The increased use of central heating and air-conditioning has resulted in our homes and work places having a much warmer and dryer environment than in the past. This has an impact on objects including causing wood to dry out and split, and paper to become brittle. A number of simple devices are now on the market which measure the moisture in the air, normally referred to as relative humidity. As this is closely related to temperature they often measure this too. It is difficult to specify the ideal conditions for an object, but it is useful to know that mould and mildew can start to grow on organic materials at relative humidity of 70% and above and unprotected iron or steel will begin to rust at similar levels. On the other hand, organic materials should not be subjected to long periods at relative humidities of 35% and below. In general, lower temperatures are better for objects, and rooms housing objects should ideally be kept at a stable temperature between 18-21°C. These figures are guidelines only and advice for specific materials and objects should be obtained from a conservator.

Humidity indicator cards

These are impregnated paper strips divided into nine sections which exhibit various colours from blue through lavender to pink. The position of the lavender section on the printed scale indicates the relative humidity of the surrounding air. They offer a very simple and cheap means of checking the relative humidity of your display cabinets or storage cupboards.

Dial hygrometers

The earliest and simplest device used to measuring relative humidity is the dial hygrometer. It is based on the principle that a hair expands and contracts proportionally as relative humidity increases and decreases. You will often see one of these round dials in museum display cases. They are cheap, easy to read and reasonably accurate if calibrated regularly.

Thermohygrometers

Inexpensive, hand-held digital devices are now available which use an electronic sensor to measure relative humidity and temperature of a room or display case. They are small, simple to operate, have an easy-to-read display panel and run off batteries. They give spot readings only and have an accuracy of about +/-5% for relative humidity and +/-1-2°C for temperature.

Light meter

Excessive exposure to light is potentially harmful to materials such as paper, paintings and textiles, causing fading and embrittlement. For this reason, maximum levels of illumination are specified for their long-term preservation. Measuring the light level is done using a light (lux) meter. These operate on the same principle as a camera light meter. Battery operated electronic monitors that give an instant reading are inexpensive. They operate over several ranges to cope with light levels varying from full sun to near darkness.

Meters to measure levels of ultraviolet light radiation are also available, and a combined light/ultraviolet meter is produced. They are considerably more expensive than ordinary light meters.

Suppliers

The companies listed below sell their products mainly to museums and conservation practices. Many of the items they stock have very specialised applications and should only be used by trained conservators. However, they also sell the basic collection care materials and equipment described above, and do so in quantities likely to be required by a private owner.

Atlantis European Ltd
146 Brick Lane
London E1 6RU
Tel: 0171 377 8855
Fax: 0171 377 8850

Conservation by Design Ltd
Timecare Works
60 Park Road West
Bedford MK41 7SL
Tel: 01234 217 258
Fax: 01234 328 164

Conservation Resources UK Ltd
Units 1, 2 and 4 Pony Road
Horsparth Industrial Estate
Cowley
Oxford OX4 2RD
Tel: 01865 747 755
Fax: 01865 747 035

Preservation Equipment Ltd
Church Road
Shelfanger
Diss
Norfolk IP22 2DG
Tel: 01379 651 527
Fax: 01379 650 582

Secol Ltd
15 Howlett Way
Fison Way Industrial Estate
Thetford
Norfolk IP24 1HZ
Tel: 01842 752 341
Fax: 01842 762 159

NB

- This article gives only very general advice on this topic; for your own special requirements you may wish to seek further professional advice;
- The inclusion of a supplier within this handbook does not imply the approval or endorsement by the MGC of the product or service. You are therefore urged, in your own interests, to ensure that any product or service is appropriate to your own needs.

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The Museum Training Institute and training for museum personnel

Introduction

Through a forward planning process, museums describe their objectives, priorities and strategies for their collections and their organisations, and indicate the range and type of skills and knowledge required by those they employ for the achievement of their goals. For the commitments outlined in the forward plan to be achieved, all those engaged in delivering the objectives need to be competent, knowledgeable, and skilled; supported by effective training and development programmes designed to meet all identified needs. Through the use of occupational standards of competence, and the related qualifications (National Vocational Qualifications, NVQs, and Scottish Vocational Qualifications, SVQs), in a training and development context, there are now opportunities for all in museums (from trustee to volunteer) to achieve and sustain nationally recognised levels of performance.

The Museum Training Institute (MTI) has produced these occupational standards of competence on behalf of those in museums and other heritage organisations. A great number of practising museum professionals were involved in producing the specifications which describe best practice in a range of occupational areas including conservation, curation, warding and visitor services. The standards contain detailed information relating to the range of knowledge required in museums, including appropriate references to MGC's standards for the care of collections. The occupational standards are regularly updated, usually every three years to ensure relevance to museum practice.

Training and development activity benefits from being systematic, well organised, and integrated with all other aspects of museum activity. The forward planning process, supported by the MGC's Registration Scheme and its advocacy of the need for museums to have training policies and plans, provides such an opportunity. The training cycle, described in the MGC's Guidelines for Good Practice, provides a tried and tested method for ensuring that needs are properly identified and met, and that evaluation takes place before the cycle is repeated, usually annually.

Standards provide benchmarks against which individual performance can be measured. Museums are fortunate in having available a range of complementary standards, which can be used to ensure that the needs of museum objects and the people employed to provide for their care are properly met. These are:

- Standards for the care of museum objects
- Standards for documenting museum objects
- Occupational standards (and related NVQs and SVQs) for the people engaged by museums

Standards related to objects are used as a basis for an initial assessment of need and then as a guide when specifying and providing an appropriate regime of care. Similarly, occupational standards can be used to inform an assessment of individual training and development needs, and later the provision of a training and/or an educational programme. Occupational standards of competence for those in museums are now available and are used in a range of National Vocational Qualifications and Scottish Vocational Qualifications. They are also available for use as free standing documents which can be used to inform all of the processes that make up the training cycle.

The training cycle and standards

The training cycle is widely used and forms the basis of training in a wide range of different contexts. It comprises:

- Identifying training and development needs
- Drawing up a training plan
- Implementing the training required
- Evaluating training

Standards and National Vocational Qualifications and Scottish Vocational Qualifications can be integrated with the training cycle to good effect when used in all stages of the cycle.

Identifying training and development needs

Object-related standards, together with occupational standards, can be used to provide detailed information about individual training requirements as they relate to the care of particular collections or objects. Both sets of standards provide independent benchmarks against which individual performance (competence) can be assessed in relation to the needs of museums and their objects. The identified need might be one of knowledge e.g. specific organisational procedures, or of skill e.g. not being familiar with the use of specific equipment. Whatever the specifics, the use of object and occupational standards in tandem provides a means by which precise descriptions of individual need can be produced. There are standards for all of the main museums occupations and professions which can be used in this way.

Drawing up a training plan

The purpose of a training plan is to ensure that the needs of individuals and groups are met in an effective, efficient and timely manner. Using occupational and object-related standards together when planning enables issues of timing to be properly addressed. This ensures that training provision reflects the needs of the museum, the individuals concerned, and the requirements of the objects.

Implementing the training required

There are many ways in which to provide for the training and developments needs of staff. To meet some needs may require training courses, other needs may be better met through personal study or research. Increasingly, on-the-job training is offered and this encourages the participation of all museum staff in the learning process. Whatever the particular form of provision, occupational standards provide a means of focusing training specifically to meet identified needs. All provision involves matching training delivery with the needs of staff and the museum. Occupational and object standards can be used as the basis for specifying, designing and delivering training. It can also be used as a tool for identifying the best providers of training by measuring their training programmes against what is required by individuals and set out in the standards.

Evaluation

(a) Confirming changes in performance

Confirming that the desired changes in performance have been brought about is an important part of the learning cycle. It is a natural response to verify that changes in the environmental conditions for an object in the collection have had the desired effect. Training interventions too require similar confirmation. It is important to verify that the desired changes in performance have been realised in practice.

Returning to the standards as the benchmark at this stage enables the level and quality of individual performance, and whatever changes have occurred, to be clearly established. The process of assessing performance and confirming that it reaches the required standard is an important part of the process, made easier by the use of occupational standards (and National Vocational Qualifications and Scottish Vocational Qualifications if felt to be appropriate).

The confirmation of achievement can be regarded as a museum matter without external accreditation, although achievement can be also accredited externally with the award of a National Vocational Qualification or Scottish Vocational Qualification.

(b) Evaluating training provision

As a part of the longer-term strategy, taking a long look at the effectiveness of the training provided is an important aspect of improving performance.

Through evaluation, museums are able to take stock of the degree and quality of the changes achieved, and return to the planning cycle having derived some information about the effectiveness of training delivered. Again, returning to the occupational and object standards ensures that evaluation is measured against the same benchmark used at the outset of the training cycle.

Museum Training Institute

National Vocational Qualifications and Scottish Vocational Qualifications available from the Museum Training Institute:

- Heritage Care and Visitor Services Level 2
- Collection Care and Visitor Services Level 3
- Conservation Level 4
- Conservation Level 5
- Collection Management and Interpretation Level 4
- Collection Management and Interpretation Level 5

The following are also available from the Museum Training Institute:

- occupational standards of competence
- information on accessing National Vocational Qualifications and Scottish Vocational Qualifications
- information and advice about the use of occupational standards of competence

For further information contact:

Museum Training Institute
Glyde House
Glydegate
Bradford BD5 0UP
Tel: 01274 391056
Fax: 01274 394890