



United Nations
Educational, Scientific and
Cultural Organization

Tashkent
Office



ANTONIO MIRABILE

FROM ACQUISITION TO EXHIBITION

**A HANDBOOK
FOR LIBRARIES AND ARCHIVES
IN UZBEKISTAN**

"Every Library collection is established for one or more definite purposes. A collection development and management program organizes and directs the processes of acquiring materials, integrating them into coherent collections, managing their growth and maintenance, and deselecting them when appropriate in a cost- and user-beneficial way."

Bonita Bryant, ed., "Guide for Written Collection Policy Statements." *Collection Management and Development Guides*. (Chicago and London: American Library Association, 1989).

"A museum is a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment."

ICOM Statutes, article 3, paragraph 1.



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FOREWORD

Thousands of libraries, archives, museums and historical organizations across the world maintain important collections of books and manuscripts, photographs, sound recordings and moving images, archaeological and ethnographic artefacts, art and material culture collections, electronic records, and digital objects. The challenge of preserving and making accessible such large and diverse holdings is enormous and the need for knowledgeable staff is significant and ongoing.

At first sight these two missions, preservation and access, might seem incompatible. How can documents be made available without damaging them? How can documents be preserved even as they are being used? To fulfil both of these missions successfully it is necessary to draw up precise and long-term policies with the goal of preventing, stopping or slowing down the deterioration of the documents. If necessary, these policies can also improve the preservation conditions of the collections or, at least, safeguard the content by creating surrogate documents.

These policies must guarantee the development of the library as well as access to the information while at the same time minimizing document deterioration. The overall challenge is to favor use of documents in a way that systematically integrates preservation criteria.

Antonio Mirabile

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OVERVIEW

USING THIS DOCUMENT

This document was realised within the framework of the UNESCO project “Preservation of the Manuscripts Collection of the Abu Rayhan Beruni Institute of Oriental Studies under the Academy of Sciences of the Republic of Uzbekistan,” and sets out a logical approach to preservation. This document also offers a set of principles and recommendations for the establishment of policies and procedures of Library and Archive collections with the master plan that every document must be protected at all times from all sort of damage and with the recognition that these collections, as documentary heritage, must be transmitted to future generations.

The aim of this document is to help ensure consistency in the establishment of preservation programs and to contribute to the development of regional and national preservation and conservation policies and practices.

1. The **Introduction** (pages 10–12) explains the aim of this handbook, the common elements of each policy and procedure, and the adopted terms.
2. The **Acquisition** (pages 13–17) chapter enunciates the goals the collections are to achieve and the audience to whom they are addressed. It is organised under the following headlines:
 - a. Accession
 - b. Deaccession
 - c. Copyright/Illicit Traffic
 - d. Accession responsibility
 - e. Acquisition criteria
 - f. Mode of acquisition
 - g. Material processing
3. Defining **Storage** (pages 18–36) policy and corresponding procedures is the issue of this chapter that describes the function of storage that must answer the requirements of preservation, set up favourable conditions of preservation, and facilitate access to the collections. It shows the considerable importance of storage through:
 - a. Environment
 - b. Space organisation
 - c. Processing/Manipulation
 - d. Furniture
 - e. Shelving/Packaging
 - f. Maintenance

4. Understanding **Conservation** (pages 37–44) is the subject matter of this chapter which provides a comprehensive framework for the realisation of conservation activities and explains the three fundamental elements of this profession:
 - a. Code of ethics
 - b. Treatment phases
 - c. Workshop
5. The tensions between preservation and accessibility and the way they can be diminished is the main subject of this chapter on **Communication** (pages 45–54) which integrates four main components:
 - a. Consultation
 - b. Digitisation
 - c. Publication
 - d. Exhibition
6. A list of bibliographic references is organised in the **Bibliography** (pages 55–59) chapter complete with a list of interesting web sites and standards in the preservation field.
7. The last section, the **Appendix** (pages 60–63), includes some technical information supporting the qualification of the handbook that may be of additional interest to the reader.
8. This handbook, developed through a set of principles and recommendations, shows that some of the principles have a close relationship to some actions and recommendations. It is important that they are interpreted in the context of the Institute as a whole and adapted to each specific situation and must be followed by a written text so the information recorded in writing is not forgotten nor disregarded.

INTRODUCTION

This handbook is primarily intended to provide a logical approach to preservation while offering a set of theoretical and practical guidelines that will ensure consistency in decision making. The principal intention is to contribute to the development of regional and national preservation and conservation policies and practices with the hope that all recommendations will be read and used by local authorities, directors, librarians, users and advisers.

This handbook is a living document that should provide a framework for the Library to achieve its objectives. If there do not seem to be any policies and procedures that apply to a situation or the care of particular types of collection items, specialists should always be consulted. Professional advice can be used to provide immediate assistance; expert Library service will research and develop appropriate guidelines for the future. This evolving system will help develop and implement standard-based policies.

While each Library is unique with its own mission, objectives, types of documents, problems and constraints, it is inevitable that not all operational details can be included in the handbook. Nevertheless, it is possible to have an approach, principles and a list of suggestions and recommendations as comprehensive and universal as possible. The overall handbook can be reviewed, completed and adapted to each institution to ensure that the information and principles outlined in the policy are consistent with its mission, objectives and staff.

9. While some principles and guidance are peculiar to each policy, all policies have some essential and common fundamentals:
 - a. Department and staff
 - b. Training of personnel
 - c. Survey
 - d. Relationship to other documents

DEPARTMENT AND STAFF

The organisation of a Library depends on the number of employees and departments. Each department is headed by a sub-director who has overall responsibility for the implementation of strategic planning and development within that department.

10. Personnel should know the policy and procedure they are a part of, what their role and responsibility is, and “to whom they refer.” It is vitally important that an overall clear document is maintained that outlines the role and responsibility of each human resource.

TRAINING

Training of Library personnel and its users is essential to raise preservation awareness. This concerns all Library personnel—conservators, cataloguers, maintenance personnel, technicians, etc.

11. The appropriate training must follow every new procedure defined to respect a policy.
12. All personnel will carry out a biannual review of the standards and procedures in consultation with each department director and the Library director to ensure that the procedures and recommendations are based on the most current standards and information, and that they provide a good operational framework for the preservation, management programmes and projects.

SURVEY

A structured survey clearly thought through, and with achievable goals, can provide information on a number of different levels. It can outline the generalities, give very detailed analysis, and provide unique management information. It is not always possible or desirable to look at every element. A percentage sample will give enough indicators to enable policy decisions to be formulated and priorities drawn up.

13. It is recommended that the methodology of a survey plan be tested before embarking on the project. The commitment of time and resources on a major survey project is significant and should not be underestimated. A survey will probably only be carried out once and can be traumatic for the material. The availability of useful data may come very late in the process, and management expectations should be realistic from the beginning.
14. It is important to define the frequency, objectives and survey procedures. Representative samples of the manuscripts and archives, for example, should be surveyed at least every two years. A random sampling plan established in advance shall be used, and a different lot shall be surveyed each time. Use appropriate measuring equipment and procedures to objectively determine deterioration. Determine and eliminate the cause of the problem whenever possible as part of the survey process. To ensure that corrective actions are effective, periodic re-inspection is required.

RELATIONSHIP TO OTHER DOCUMENTS

15. This handbook integrates knowledge from the different disciplines of engineering, conservation science and conservation practice as well as conservation standards. In particular, this document distils from all the international standards on the preservation of cultural heritage, from the most relevant publications and researches on preservation programs and from the endless publications of IFLA PAC¹.

¹ The International Federation of Library Associations and Institutions (IFLA), Preservation and Conservation (PAC).

16. For the general principles which are applicable to cultural heritage many of the recommendations and information in this handbook reflect, at the international level, the Nara Document on Authenticity (UNESCO 1994), the Code of Ethics for museums (ICOM, 1986, revised in 2004), the Conservator-Restorer: a Definition of the Profession (ICOM, 1984), and the Professional Guidelines (E. C. C. O., 2002).

EXPLANATORY NOTE

17. The terms of Library, Institute and Archive are used here as synonyms of an organisation that hosts collections on cellulose-based material.
18. The terms of documents, book, manuscript or object indicate an item in a collection of cultural heritage.
19. This handbook deliberately avoided the use of “high level” terminology with the aim to make it user friendly. When an essential technical term appears it is explained in a footnote.

ACQUISITION

ISSUE DEFINITION: ACQUISITION POLICY

Acquisition Policy and Collection Development policies work together to ensure that quality and consistent materials are chosen and included in the collection. An Acquisition Policy sets guidelines that assist in: selection and collection development, determining how to process requests for an item to be added to the collection, monitoring a budget, and maintaining all documents of purchases and expenditures.

The Acquisition Policy is based on the institutional mission statement, which enunciates the goals the collections are to achieve and the audience to whom they are addressed. It should also include brief statements about the community or user groups; descriptions of the types of programs the Library collection serves; the size of the collection; a detailed budgetary overview of the money the Library will spend on the different types of information resources; and any formal or informal cooperative agreements that affect the collection policy or practices. The policy defines the scope of current collections and indicates areas in which future collections may be developed. It specifies the subjects and formats² to be included in or excluded from the collections and the policy encourages consistency in the selection of good condition materials.

Acquisition decisions should consider not just the importance of a title to a subject area or the format (hard, microform or electronic copy) but also, when possible, the long-term preservation requirements of those formats. Sometimes the cost of preservation of an object can outweigh the intellectual value to the institution or represent a danger for the rest of the collection.

The Acquisition Policy aims to develop and update its collection of manuscripts, books, reference materials and other Library or research materials through the purchase of these items. The acquisition process supports and implements the criteria that have to be established in a written document.

Acquisition Policy serves as a reference for the Library staff to follow when assessing potential acquisitions for the Library collections. The Acquisition Policy also includes guidelines for the acceptance and processing of gift resources. The mission of the Acquisition Policy is to ensure that the selection of Library resources support the needs of the academic area, researchers and users of the Library.

² Formats: Material form or layout of a publication.

OPERATIONAL RECOMMENDATIONS FOR ACQUISITION PROCEDURES

Accession

When an object is accessioned³ into the collections of a Library, that Library makes a commitment and accepts responsibility for the preservation of that object. The integrity and meaning of an object should be recognised as the combination of several values and types of information including aesthetic, historical, technological, social, religious and spiritual. Preservation of the object therefore requires an understanding that these aspects must be considered in the same way as the basic chemical and physical characteristics.

20. The Institution must define in a very precise way the type of material to be collected (manuscripts, books, periodicals, maps, drawings, audiovisuals, DVDs, etc.), while acknowledging the continuous change and evolving process of information technologies and be open to new formats that support the mission of the Institution. At the same time, the Institution has to describe the resources not normally purchased.
21. Every type of material or object demands a specific way to be documented, stored, conserved and manipulated. In this regard, before accepting a new type of document, the Institution must be sure that at each stage of the process of acquiring, processing, storing, providing access to and maintaining the collection, all Institution staff is familiar with the preservation implications of that specific material (see Appendix A).

Deaccession

22. The Institution should state clearly its procedure of deaccession⁴ items from the collection not just because they are out of scope or duplicate existing holdings, but also because of the costs of preservation.

Copyright/Illicit Traffic

Works of art may be added to the Institution collection by means of gifts, bequests⁵, purchases, exchange, or any other transaction by which legal title to an object passes to the Institution.

23. The provenance of all acquisitioned works of art must be satisfactory to the Acquisition Committee of the Institution. Outside counselling and expertise to verify the provenance should be used if necessary. The Institution adheres to the Nov. 14, 1970, UNESCO Convention on the means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property.

³ Accession: Process by which a new item is added to an existing collection of books, paintings or artefacts. It should include specific guidelines regarding who is responsible for enriching the collection, how often it is done and how the selected items will be accessioned.

⁴ Deaccession: Process by which the collection is purged of materials that are damaged beyond repair, outdated, or no longer in use. It should include specific guidelines regarding who is responsible for purging the collection, how often it is done and how the selected items will be deaccessioned.

⁵ Bequest: Transfer of custody and title of documents by last will and testament.

24. The Institution makes every effort to comply with international copyright laws when acquiring or duplicating resources.

Accession Responsibility

The primary responsibility for the selection and accession of Library resources is with the Acquisition Committee under the direction of the director/curator of the Institution. This process is a joint effort among director, curators, researchers, students, staff, and administration; they are all encouraged to make recommendations for the collection.

25. Researchers serve as subject specialists for their respective disciplines and are encouraged to assess the adequacy of resources.
26. Acquisition meetings are scheduled at different times of the year to review documents recommended for acceptance into the permanent collections.
27. The Library director and those responsible for different departments will present recommendations for the acceptance or rejection of documents for the permanent collections, providing a statement explaining the rationale reasons for rejection or describing the provenance, quality, and desirability for accepting the gift⁶ or making a purchase⁷.

Acquisition criteria

28. Precise criteria have to be defined to support and provide resources that will enhance the Institution:
 - historical/cultural value;
 - reviews from authoritative sources and selection aids;
 - recommendations from academic area;
 - recommendations from researchers, staff, administration;
 - relevance to the curriculum;
 - adequacy of current holdings;
 - availability of resources from other sources;
 - relevance to professional growth;
 - level of interest for the university, researchers and students; and
 - cost.

Mode of Acquisition

The Institution shall acquire by purchase, gift or bequest all manner of material evidence originating from its collecting area, as considered appropriate for the Institution purposes.

The Institution shall acquire selected materials in a format and quality that have the depth and diversity to support the Institution users. In order to fasten partnerships with vendors

⁶ Gift: Mode of acquisition by which an individual or corporate body transfers, freely and without charge, the full ownership of records to the Library.

⁷ Purchase: Procurement of an object's legal ownership through the payment of money.

and professionals of Library materials, the Institution issues accurate guidelines in order to achieve optimum success.

Purchase

29. A periodical evaluation must be conducted to evaluate the performance of vendors based on the following criteria:
- fast reply on price inquiries;
 - competitiveness;
 - special offers and discounts;
 - easy and professional communication tools;
 - delivery on time; and
 - condition of the materials delivered.

Gift/Bequest

30. Donations can come from national or international friends, professors, collectors, families of deceased authors, governments, institutions, casual visitors or individuals based on the nature and the mission of the Library.
31. Accepting or refusing a gift is a sensitive matter. If a person thinks the items they have are worth depositing in the Institution, it is important to explain how their gift fits or does not fit into the collection.
32. Large gift collections can be accepted only after proper consultation has been made with the director and the Acquisition Committee. Accepting a large gift can represent important costs for inventory, cataloguing, housing, shelving and eventual conservation treatment. This accession process can be long and the director of the Library must advise the donor about the possible delay in the selection of donated material.
33. Potential donors must be advised that the Library does not make a monetary appraisal⁸ of any donated materials. The Library can suggest outside agencies that potential donors may contact for an appraisal. Arrangements should be made in advance in order to decide who is responsible for sending the gift to the Library.
34. Development of good donor relations requires that acknowledgements⁹, with a listing of the donation, the date, and the items received, will be sent to the donor after the gift is acquired. The Library provides the donor of acquisitioned materials with a deed of gift¹⁰ that is signed by the Library director. Donors are offered the opportunity to place a bookplate in the verso of the documents they donated with wording of their choice.
35. Donors must be advised that any material not added to the collection may be placed in the Library book exchange lists to be shared with other libraries. Gift items are often used to replace lost or missing volumes, as well as to enhance the collection with

⁸ Appraisal: Professional opinion, usually written, of the market value of a property or of a collection.

⁹ Acknowledgements: Document used by the Institution for the approval and acceptance of donations, and to acknowledge the receipt of such property.

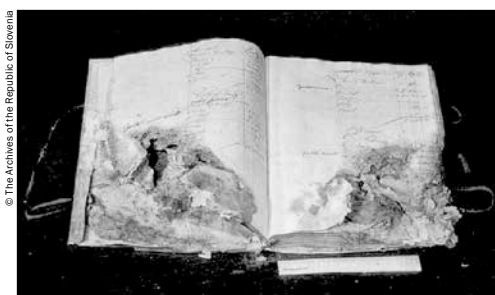
¹⁰ Deed of gift: Legal document that transfers property ownership without the requirement of a purchase price.

new titles. Gifts that duplicate items already in the collection should be compared with the items that are owned. If the donated copy is in better condition, it can be used to replace the Library copy.

36. Items that are in poor physical condition and cannot be restored will be discarded. Donated items that are not added to the collection may be made available to other local libraries through the exchange program.
37. A precise procedure for the examinations of the gifts must be defined. It should contain:
 - the staff that will examine the donation;
 - separation criteria;
 - catalogue and stamping of the accepted material;
 - state of conservation; and
 - needs in terms of preservation and conservation.

Material Processing

38. After the accession of a document or object to the permanent collection, the appropriate staff of the Institution will issue the document a permanent accession number. This permanent accession number will be marked or stamped on the document.
39. All acquisitioned documents will be catalogued and photographed for purposes of record and identification. All records pertaining to acquisitioned materials will be kept by the Institution and maintained by the collections manager.
40. A specialist should examine new acquisitions before being added to the collection. Books that have been affected by insects, microorganism infestation (Figures 1 and 2), or chemical pollution must be isolated in a quarantine¹¹ room to reduce risk of contaminating other materials.



Figures 1 and 2: Microorganism, insects and careless damage.

¹¹ Quarantine: Period of isolation of persons, animals or materials arriving from abroad and suspected to be contagious. Usually consisting of the maximum known incubation period of the suspected disease.

STORAGE

ISSUE DEFINITION: STORAGE POLICY

Storage Policy is a structured set of statements and recommendations used to guide how to organise and preserve the documents, books and manuscripts of the Library in the storage area. It defines the role and function of the storage and presents the main principles for accessibility, preservation, safety and security in the storage area.

Storage areas are a part of the Institution in the same way as the spaces of consultation and exhibition and are conceived according to the Library environment. A Storage Policy has to be integrated into the functioning of the Institution.

A good Storage Policy must answer the requirements of preservation by limiting and anticipating the risks of damages and by setting up the favourable conditions of preservation and facilitating access to the collections to make possible the study and the dissemination of cultural property. It also has to permit the movement of collections while guaranteeing the conservation and safety of cultural property.

Storage Policy has to take into account the evolutions and growth of the Library. Storage Policy is an evolving system that should be adapted to the changing of the Institution and to the most recent standards.

Proper storage and housing can greatly affect the life and health of manuscript, book, document and photograph collections. Unacceptable storage methods have a direct effect on the useful life of materials. There are many different factors that need to be considered when deciding where and how a collection should be stored.

These factors include:

- environment;
- space organisation;
- processing/manipulation;
- furniture;
- shelving/packaging; and
- maintenance.

Exhibition furniture, office records, publications and other non-collection material should be kept in a separate storage area for both safety and convenience.

OPERATIONAL RECOMMENDATIONS FOR STORAGE PROCEDURES

Environment

The good preservation of collections requires a controlled environment.

41. The regulation of parameters such as natural and artificial light, temperature, hygrometry¹² or pollution permits to decrease the risks of alteration and degradation of manuscripts and books.

Temperature and Relative Humidity

Temperature is a measure of heat. Humidity is the concentration of water in the air. Control of temperature and relative humidity is critical in the preservation of Library and archival collections because unacceptable levels of these contribute significantly to the breakdown of materials. Heat accelerates deterioration and harmful chemical reactions. High relative humidity provides the moisture necessary to promote damaging chemical reactions in materials and, in combination with high temperature, encourages microorganism growth and insect activity. Extremely low relative humidity, which can occur in winter in centrally heated buildings, may lead to desiccation and the embrittlement of some materials.

42. It is important to realise that temperature and relative humidity are interrelated; a change in one will bring about a change in the other.
43. If all the causes of damage for the collection cannot be eliminated without limiting the access and the divulgation to collections, moderating environment can significantly slow deterioration.
44. Storage spaces should be separate from working areas. Stable or low temperature and relative humidity are difficult to maintain in spaces where people are present.
45. Keep relative humidity between 35 and 55 percent and temperatures under 20°C. Mould growth occurs with a relative humidity more than 60 percent; cooler temperatures slow down the destructive chemical reaction inside paper (Appendix A).
46. Choose an area with a stable environment; avoid basements, attics and other unstable areas in the building. Wide variations of temperature and relative humidity can cause physical stress to the documents and can cause cockling and distortion in books and paper. These fluctuations can be buffered by storage enclosures and by improving the insulation of the building.
47. Monitor temperature and relative humidity to determine if the environment is good or inadequate and to justify possible environment regulations. Each Institution has to evaluate its needs and chose the appropriate environment monitoring device. It is important to settle on regular maintenance for hydro thermographs such

¹² Hygrometry: The science of the measurement of the humidity in the air.

as protection of the mechanism from dust, calibration¹³ once a year, regular control of the battery level and manufacturer's recommendations.

48. Choose a climate-control consultant with experience in libraries, archives and museums. Ask for references. Based on the function of the results, the region, the climate of the areas, their volume and surfaces and the costs, the consultant will choose a reasonable mechanical system to control and regulate climate.
49. For small regulations the use of portable air conditioners, humidifiers, and dehumidifiers can be included in the environment control.
50. The climate-control system should never be turned off. Settings should not be lowered at night, on weekends, or at other times when the Library or archives is closed. Additional costs incurred by keeping the system in constant operation will be far less than the cost of future conservation treatment to repair damage caused by poor climate.
51. Install a double system for the regulation and control of the climate. One system should be a mechanical climate control while the second one should be independent system that records climatic data. Include an automatic stop in case of important deregulation.
52. Train Institution personnel on how to perform basic maintenance of the engine and to read and understand climatic data. Sign a contract for the maintenance of filters and immediate repair of the engine in case of breakdown.
53. Continue monitoring, checking and controlling after the modification.

Air pollution

An important factor that contributes to the damage of a collection is air pollution composed of chemical air pollutants and dust. The dust, consisting largely of organic material, is strongly hygroscopic and can constitute a microclimate convenient to the development of microorganisms, as well as a depot of nourishing elements for insects. Chemical pollutants (Appendix B) can be emitted from poor quality storage furniture and packaging materials, or even from other collection items manufactured from unstable materials. Both dust and pollutants are dangerous for human health and for collections.

54. The control of air quality can be very difficult. The objective is to reduce as much as possible the amount of pollutants.
55. The most dangerous particulate pollutants are dust and soot¹⁴. The most damaging gaseous pollutants are sulphur dioxide, nitrogen oxides, VOCs¹⁵ and ozone. The amount of these pollutants has to be measured. For the maximum recommend-

¹³ Calibration: to determine, check, or rectify the graduation of any instrument giving quantitative measurements.

¹⁴ Soot: Fine black particles, chiefly composed of carbon, produced by incomplete combustion of coal, oil, wood or other fuels.

¹⁵ VOCs: Volatile organic compounds (VOCs) are organic compounds which easily evaporate and enter the atmosphere.

ed levels see Appendix B. The equipment chosen to filter gaseous pollutants must suit the needs of the Institution and the pollution level. Chemical filters can be used to remove gas pollutants; filters must be regularly replaced.

56. Keep exterior windows closed and provide filtered and clean air in the storage areas.
57. Some enclosures are made of materials (activated carbon or zeolites) that can absorb pollution.
58. No cigarettes, carpets, wood and other pollutant materials should be allowed in the storage areas.
59. Regularly clean the storage areas.

Light

All light contributes to the deterioration of Library and archival collections by providing energy to stimulate destructive chemical reactions within the paper (Figures 3 and 4). Light also damages bindings, photographic emulsions, and other media, including the inks, dyes, and pigments used in many Library and archival materials. This damage is cumulative so every little bit of prevention helps.

60. Identify materials that are more sensitive to light and limit the exhibition duration of these materials (Appendix A).
61. Buy a lux and a UV meter to measure and control the light.
62. Visible light levels will not exceed:
 - a. 50 lux¹⁶ (5 footcandles¹⁷) for very sensitive materials
 - b. 100 lux (10 footcandles) for moderately sensitive materials
 - c. 250 lux (25 footcandles) for materials with low light sensitivity
63. Ultraviolet (UV) levels must be limited to a maximum of 75 microwatts¹⁸ per lumen¹⁹.
64. Use blinds, screens and shutters to protect documents against sunlight. A good material is SCREEN® textile. It has good resistance to heat, rejecting up to 70 percent of heat, and offers good transparency.
65. Ultraviolet light is very damaging to documents. Ultraviolet light comes primarily from sunlight and fluorescent lights. Exclude ultraviolet light from the storage areas by using UV filtering glass, blinds, filters and low-UV lighting.

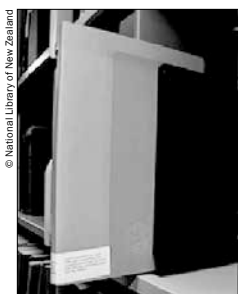
¹⁶ Lux: Measurement of the intensity of the light. Sunlight on a clear day is approximately 32,000 lux. 1 lux = 1 lumens/meter².

¹⁷ Footcandles: Unit of measure of the intensity of light falling on a surface, equal to one lumen per square foot and originally defined with reference to a standardized candle burning at one foot from a given surface.

¹⁸ Microwatt: A unit of power equal to one millionth of a watt.

¹⁹ Lumen: Unit of measurement of the amount of brightness that comes from a light source.

66. Never put a lamp near a document or near the fire-extinguishing system.
67. Turn off lights when the room is not in use.



Figures 3 and 4: Light degradation

Safety and Security

Most Libraries are public access buildings and should be subjected to strict legislation concerning safety and security.

A written Disaster Plan²⁰ will make it possible to respond efficiently and quickly to an emergency. This plan should include preventive and recovery measures as well as training components. It is very important to have a Disaster Plan written because in the confusion of an emergency some instruction can be forgotten. Distribute a copy of the plan to each person responsible for assisting in an emergency. Review the plan at least every two years.

Fire

The risk of fire is very high in a Library because the collections are largely flammable (Figure 5).

68. Equip all storage areas with a fire detection alarm wired directly to the local fire department or to a 24-hour monitor. Consult a fire safety engineer for the choice of the most appropriate detectors and alarms. Follow the manufacturer's specifications for installation, maintenance and tests.
69. Find the most appropriate way for fire suppression. Sprinklers are considered by most fire safety professionals, librarians, archivists, and conservators to be the best protection from fire for libraries and archives. Consult a fire safety engineer to know the latest technologies in this field. Never use a system that can have a damaging effect on the environment.
70. Every storage area should have several portable fire extinguishers. Staff should be trained in their use. Inspect and regularly maintain the portable extinguishers.

²⁰ Disaster Plan: Set of systematic and organised procedures that clearly detail what needs to be done, how, when, and by whom before and after the time an anticipated disastrous event occurs.

71. Illuminated panels must be placed at each door and emergency exit, indicating the way out. Train staff on evacuation procedures.

Water

Another important risk is water (Figure 6); even a minor water accident such as a permeable pipe can cause extensive and irreparable damage to collections.

72. Avoid storage in basements. Install water-sensing alarms to detect the presence of water if the documents have to be stored in a basement or in another place where there is a threat of flooding. Regularly inspect roof coverings, ducts and pipes.
73. Never store materials under water pipes, air-conditioning equipment or other sources of water. To protect the books against dampness coming up from the floor, the lower shelf must be at least 15 centimetres above floor level. Never store books on the floor, not even for a temporary period.
74. Train staff in the different drying techniques for damp and wet books.



Figures 5 and 6: Damage caused by fire (left) and water (right)

Theft/Vandalism

Because of the high value of materials in libraries and archives, adequate protection from theft and vandalism must be provided. This protection can range in complexity from simple locks to elaborate security systems. In general, libraries and archives that house collections of permanent value should be well secured during hours when the building is closed to the public and well controlled during opening hours.

75. During working hours only one entrance/exit is working. All other doors should be under alarm.
76. Never leave a researcher alone in the storage area. He/she must be accompanied at all times by a staff member.
77. The access to storage areas and to storage keys should be strictly limited. Keys should be not reproducible. A list of key holders should be kept current and the keys should be returned when a staff member leaves the Institution.

78. Perimeter intrusion alarm and motion detection should be installed and connected with the local police department or another security agency working with the Library.
79. Researchers should present an identification card and leave the card at the entrance.
80. If any materials are stolen, contact the police. Give the police a written description of the document(s) stolen with a photo and some identifying details.

Biological agent

The primary biological agents that cause damage to Library and archival collections are mould, rodents and insects (Figures 1 and 2), although dogs, cats, birds and humans also harm materials. Mould and insect damage can pose a serious threat, especially to Institutions located in a hot, humid climate or near a large body of water where humidity is high. These damages can be devastating and measures should be taken to avoid its occurrence.

81. Maintain a proper level of temperature and relative humidity and good air circulation of air. Clean the storage area regularly. Ideally the temperature should never go above 22°C and the relative humidity above 60 percent.
82. Doors and windows should be kept closed as much as possible. Fit all openings with a grid that has a small enough mesh to keep insects out while not restricting airflow.
83. Check new material that enters the storage areas. Develop a strict procedure for new acquisitions or for documents coming back from an outside exhibition. See if there is any evidence of infestation. When possible, isolate this material for observation in a space away from the storages areas. Inspect this material routinely for at least one month.
84. Avoid the accumulation of clutter, dust or food that may attract insects or rodents. Remove garbage every day. Eating and drinking is prohibited in the storage areas.
85. Storage areas must be cleaned routinely. Check for stains and signs of a biological agent. If any insect body or egg case is discovered remove it immediately. Use a vacuum cleaner fitted with a HEPA filter.
86. If an infestation is discovered contact a conservator and preservation professional for advise. Isolate the infested documents. Identify the biological agent.
87. Never spray general insecticide directly on the documents.
88. Use gloves and masks when microorganisms appear.
89. Observe and document each insect or unusual thing on manuscripts. Keep an accurate documentation on all types of intervention on the building, products or equipment.
90. Choose a treatment—chemical or non-chemical.

SPACE ORGANISATION

While each storage area is unique with its own set of problems and constraints, it is possible to have a list of suggestions and recommendations that are universal. It is important to organise storage spaces in the best way so that the location of shelves is as safe as possible and circulation in the storage area is easy and doesn't represent a risk of degradation for the documents (Figures 7 and 8).

91. Weight estimates need to include floor treatment, furniture tracks and fittings, and shelf and drawer loads as well as the furniture. A structural engineer should be consulted.
92. Shelves should be as open as possible. Good air circulation helps prevent the build-up of moisture and acidic gasses. Spacing of shelves must be large enough to ensure proper air circulation.
93. Corridors between shelves must be large enough to allow the easy circulation of persons and trolleys.
94. The lower shelf must be at least 15 centimetres above floor level. This is to protect the books against rodents and dampness coming up from the floor.
95. Try not to place shelves or other storage units along exterior walls. These areas are subject to temperature and humidity changes from outside which can lead to moisture, condensation and mould. Leave a few inches of free space between shelving units and the wall to allow for air circulation.

Furniture

There are as many varieties of Library stacks and shelving as there are materials that sit on the shelves. Since book stacks can occupy more than 50 percent of a Library's space, careful planning for shelving can be a large part of a Library building project. Components and accessories include end panels, canopy tops, sloped shelves, slotted divider shelves, display shelves, and retractable index shelves. The selection of suitable storage furniture is a complicated task. What constitutes acceptable storage furniture can change rapidly (Figures 7 and 8). Poor quality storage furniture greatly accelerates the deterioration of collections.

96. Consult a preservation specialist or a preventive conservation specialist for the choice of the adapted furniture.
97. Furniture has to be inert²¹, non-combustible, non-corrosive. The best furniture for storage is made from steel with various powder coatings. Ask the vendor for technical specifications. Avoid baked enamel coatings because they can give off formaldehyde²²

²¹ Inert: Stable and unreactive under specified conditions. Not readily reactive with other elements; forming few or no chemical compounds.

²² Formaldehyde: (HCHO) Toxic, colourless, foul-smelling, used as a common constituent of adhesives in particle board, carpeting and furniture. Can cause health problems to people and damage to documents like photos.

and other volatile pollutants. Another possibility is anodized aluminium storage furniture; it is strong and light but expensive.

98. Shelves in chrome plate steel are a suitable choice for boxed materials. Another option is to line such shelves with an inert material.
99. Wood can be harmful to collections as it releases acids²³ or other substances coming from adhesives. Generally it is strongly recommended not to use wooden storage furniture, but sometimes the furniture is already in place and must be adapted. Wood furniture should be sealed or lined with an effective barrier like a two-part epoxy paint, inert metallic laminate²⁴, barrier film²⁵, glass, polymethyl methacrilate²⁶, etc. After sealing the wood, allow it to cure for several weeks before shelving your collection. Wait until there is no longer an odour coming from the sealant. A chemical smell means that the finish is not yet safe for your collection.
100. Storage furniture should have a smooth, non-abrasive finish. The furniture should be free of sharp edges and protrusions. Exposed nuts and bolts are particularly hazardous. The furniture should be strong enough that it will not bend or warp when filled. Shelving should be bolted together as well as bolted to the floor.
101. The lowest storage area in the furniture should be at least 10 to 15 centimetres off the floor to protect collections from water damage in the event of a flood. Use shelves closed by a panel at their top to protect the documents against dust. Avoid shelves that are too high as documents must be within easy reach.
102. Due to the frequency and potential severity of seismic activity throughout Central Asia, this document on the design, features and use of shelving must accordingly address these seismic forces and their potential impact on both the construction and installation of Library shelving. The task of attempting to resist the vertical and lateral forces created in an earthquake requires structurally enhanced shelving structures and special anchoring procedures in installation.



Figures 7 and 8: Appropriate space organisation and furniture

²³ Acid: Substance or material with a pH between 0 and less than 7.

²⁴ Marvelseal® 360 and 470 or PCTFE: polychlorotrifluoroethylene.

²⁵ Alclar

²⁶ Plexiglass®

PROCESSING/MANIPULATION

Properly preparing or processing documents prior to storage can save the documents from a lot of future damage. Safe processing and handling of materials is basically a matter of common sense but what is necessary is to be constantly aware that the documents processed and manipulated are often old, fragile, and irreplaceable.

103. Provide free spaces to lay out the documents under process.
104. Clean hands are very important. Dirt and oils can cause permanent damage to a document that may not be noticed until years later. Do not eat, drink or smoke when handling documents. Some types of documents like photos, parchments, leather, etc., are especially sensitive to fingerprints and oils. White cotton gloves should always be worn when handling photos.
105. Remove fasteners such as rubber bands, staples and paper clips before storage (Figure 9). To keep groups of documents together after a fastener is removed, you can make a folder out of a piece of good quality paper and place the documents inside. Any additional materials such as pressed flowers, locks of hair and newspaper clippings should be removed and stored separately from the other materials.



Figures 9: Remove fasteners

106. Avoid using pressure-sensitive tape of any kind on documents when preparing them for storage. Tape adhesives can sink into and saturate the paper. They can also ooze out from under their carriers, sticking to and staining nearby documents. Even the so-called “archival” tapes will degrade over time and are not recommended for use on documents.
107. Define a protocol for stamping. The stamp should be non-fading (stable at least 100 years), not removable with solvents, non-destructive to paper and should neither bleed nor migrate onto adjacent paper. Stamps are made of high quality, sharply cut rubber, plastic or wood. The image of the mark should consist of thin lines. The ink used for the stamp has to be non-bleeding, non-migrating, resistant to solvents and bleaching and not be chemically damaging for the document. The exact placement of stamps on paper-based materials is governed by preference, established practice, and common sense. For example they can be placed in the same place of the same page on each document where they are easy to locate and readily visible.

108. Keep a free space of at least 5 centimetres between books and the rear panel of the shelf.
109. Store leather bindings apart from paper/cardboard and fabric bindings. Tanned and acid leather might soil paper and fabric bindings.
110. Damaged books should never be held together with rubber bands or string. They should be boxed or wrapped in paper or tied with a flat undyed cotton, linen or polyester tape.
111. A flat paper collection should be organised by size and stored flat. Documents should be housed in acid-free²⁷ folders. Ideally no more than 10 to 15 sheets should be placed into each folder. The more valuable or fragile documents should be placed into individual folders. If the space is not large enough to store a large document flat, rather than folding the document it would be better to roll the item on (not in) a rigid, chemical inert tube several centimetres larger, in both dimensions, than the largest item being rolled. After the document is rolled, put one to six similar-size documents on the tube and wrap it with a piece of good-quality paper to protect it from dust and handling. Rolled documents should be stored horizontally.
112. Do not pull books out by their headcap. Headcaps are fragile and their deterioration leads to the loosening of the spine. Grasp the book in the middle of the spine and slightly lift it while moving aside the volumes flanking it. In the event of sufficient space above, slide the book towards you on its fore edge.
113. Never force a book into its shelf position.
114. Always manipulate a document—flat, rolled or bound—on a flat, rigid, clean and sufficiently large surface. Be careful with all types of manipulation like unfolding or unrolling. Seek the services of a professional conservator.

Shelving/Packaging

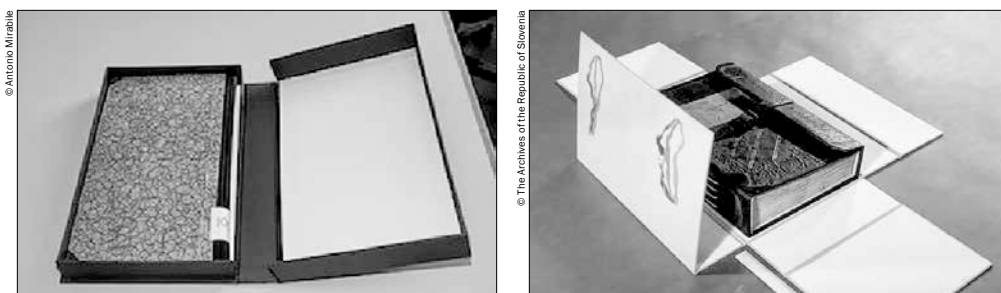
Books must be shelved in a logical, structured system, otherwise locating specific books quickly becomes impossible (Figures 12 to 19). Each Library can have a different system to organise books. This system should be the result of active research that dictates the most useful option for the Library. Follow national or international standards.

115. Box, 4-flap enclosures and folders should protect manuscripts and archive documents (Figures 10 and 11). Storage containers protect collections from dirt and light, they facilitate organisation, handling and identification, and they help buffer²⁸ rapid environmental changes that can stress the documents. Drop-spine boxes are preferable because they provide better support and keep books cleaner.

²⁷ Acid-free: Material, generally paper or board, that has a neutral or basic pH (7 or slightly greater). It can be made from any cellulose fibre as long as the active acid pulp is eliminated during processing.

²⁸ Buffer: Something that minimises, mitigates or absorbs the shock of an impact.

116. Store rare manuscripts and books that are in vellum, are deteriorated or have valuable binding in tailor-made boxes and lay them flat. Store books with metal components in tailor-made boxes specifically designed for these volumes. If stored on shelves, the metal components are likely to damage the books stored on either side.
117. Define a protocol for the labelling and location of books and documents; attach the label to each book. Labels are a great aid when books are ready to be shelved and will help to locate a book when it is already shelved.
118. Label each book, document, enclosure or folder with complete information about its contents to minimise unnecessary handling of the documents inside. Use an HB pencil to place identifying information on the enclosures. Felt-tipped pens and ball-point pens should never be used, even on enclosures, as these inks can bleed and permanently stain your documents. Ideally, volumes should be boxed and the call number placed on the box. For volumes that are not boxed, call numbers should be typed onto heavy, acid-free paper flags placed inside the volume.
119. If the books have a spine label, care should be taken to ensure that the label adhesive remains effective, clean and flexible over time.
120. Protective containers must be made of chemically-stable materials and should meet preservation standards. Poor-quality containers can deteriorate and threaten the physical and chemical stability. The biggest threat comes from acid materials. For this reason it is essential that storage containers are made of acid-free or chemically inert materials. Interleaving sheets or folders should also meet these specifications.



Figures 10 and 11: Appropriate storage containers

121. The acidity and alkalinity²⁹ of paper-based materials, including various types of board for storage boxes and mats, is expressed by pH³⁰ and based on a logarithmic scale of zero through 14. Seven is the neutral³¹ point. Moreover, a primary criterion for choosing photograph enclosures is whether the enclosure has passed the Photographic Activity Test (PAT). If the enclosures are made of plastic materials

²⁹ Alkali: Substance or material with a pH greater than seven and up to 14.

³⁰ pH: potential Hydrogen—a measure of the acidity or alkalinity of a solution. Pure water has a pH of seven; acid solutions have a pH less than seven; and alkaline solutions a pH greater than seven.

³¹ Neutral: Substance or material having a pH of seven, having neither acid nor basic properties.

be sure that they meet preservation standards. So far only three of them are considered inert: polypropylene, polyester³² and polyethylene. They can be used, in function of their thickness and their surface, as boxes, trays, folders and interleaves.

122. Much damage can be caused by compressing items together in an enclosure that is too small, or allowing a small item to rattle around in a large enclosure. Be sure the edges of a document don't stick out past the edges of the enclosure, as this leads to tearing, soiling and loss of the edges on the document.
123. It is safest to buy enclosures for archival collections from reputable dealers who understand and address the issues involved in records preservation.
124. Every document or collection of documents has different needs. It is important when purchasing enclosures to give serious thought to what is best for each situation. It is usually a good idea to place documents inside folders, then place the folders inside a box or other rigid enclosure. All folders within a box should be of a uniform size, regardless of the size of the documents inside them. Remember to allow space for safe access to folders inside flat boxes.
125. Be aware that formulas and materials can change at any time without you knowing it. The brand of good quality sleeves thoroughly examined two years ago might be completely different now. Therefore, it is a good idea to ask these questions periodically to be sure that you have the most up-to-date information.
126. Only standard size and small books that are in good condition may be kept upright. If shelves are not full they can be kept upright with bookends. Bookends must have a smooth and large surface.
127. Do not store books on their fore edge or spine. This might squeeze the spine and binding. Do not let books protrude beyond shelf edges. This could lead to the books being damaged by passing trolleys or persons.
128. Lay large volumes flat without extending beyond the edge; stack no more than two or three of the same format. Ideally all books that are stacked should be individually boxed. Books with bindings of special value should be stacked only if they are boxed to prevent abrasion to the bindings. Special care should be taken to insure that call number³³ flags or titles of books that are stored flat are visible so the books can be identified without being moved.
129. Do not put small formats next to large formats. This could cause large format books to be insufficiently supported. Do not excessively tighten or space the books on shelves.
130. Leaning books get deformed (Figure 14).

³² Polyesters are free of plasticizers, ultraviolet inhibitors, dyes, and surface coatings and are chemically stable but they have an electrostatic charge that can lift loosely-bound media from the surface of paper. For this reason they should not be used for items with dry media such as pastel, chalk, charcoal and soft graphite pencil.

³³ Call number: Number, letter, symbol or combination of these, indicating the specific location of a work in a Library.



Figures 12 and 13: Inappropriate storage

Maintenance

To reduce the amount of dust and dirt that accumulates on books and shelving, floors in book storage areas should be kept as clean as possible. Dust and dirt abrades pages and binding surfaces, attracts insects, and contributes to an environment that supports microorganism growth. With regular dust removal and a cleaning program, personnel can contribute greatly to the preservation of the collections. This basic task is one of the most important in preserving collections.

131. Floors should be vacuumed regularly. Floors can also be cleaned by mopping with a minimum amount of water and immediately dry mopped.
132. Dust and heavy dust should be removed by vacuuming using a HEPA³⁴ exhaust filter. Non-chemically treated, clean and static-free wipes can be used to remove dirt and dust from shelves and from exterior surfaces of containers but not from books.
133. Thick accumulations of dust and dirt may require that shelves be washed with a mild detergent. These shelves must be dried completely before re-shelving books, especially if they have been cleaned with water.
134. Bindings and text block edges can be cleaned with a soft brush. When cleaning books, it is important to hold them firmly closed. Book edges should be wiped or brushed away from the spine to avoid pushing dirt into the quires or down into the spine of the binding. The top of the book, usually the dirtiest area, should be cleaned first, and then the rest of the book wiped or vacuumed.
135. Personnel have to be trained in proper dust removal procedures since cleaning has the potential to damage books. Instruction in careful handling techniques is essential. They have to work in a systematic way, starting from the top to the bottom of each shelf, removing the books and cleaning and replacing them in the same order.

³⁴ HEPA: High Efficiency Particulate Absorbing (or Arrestance)—an air filter that removes 99.97 percent of all particles larger than 0.3 micron.

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Figures 14 and 15: Improper shelving

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Figures 16 and 17: Appropriate shelving

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Figures 18 and 19: Appropriate storage for flat documents



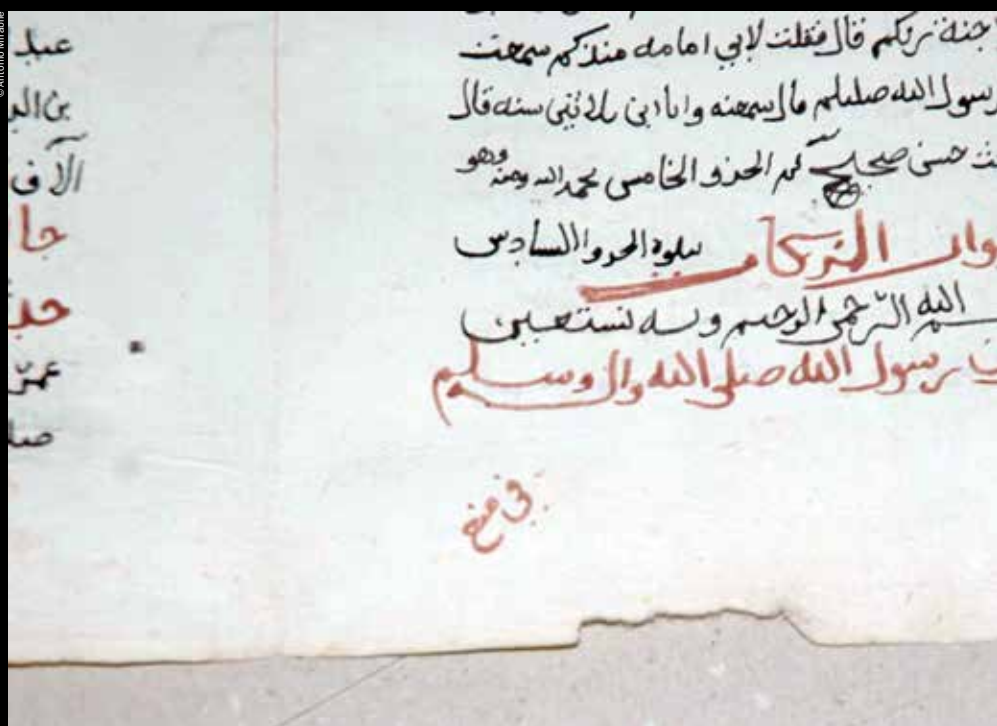
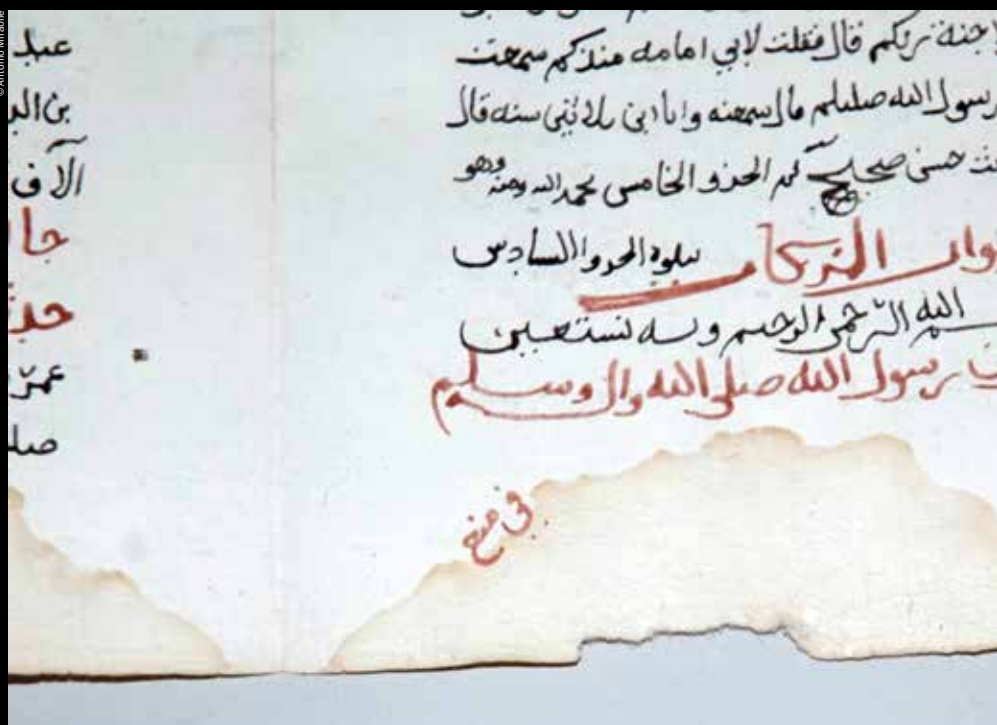
Bad and good storages



Bad and good storages



Simple and scroll boxes



Wet treatment before and after

CONSERVATION

ISSUE DEFINITION: CONSERVATION POLICY

Conservation Policy encompasses all preventive, remedial and restorative measures and actions aimed at safeguarding tangible cultural heritage while contributing to its accessibility to present and future generations. All measures and actions should respect the significance and stabilise both chemically and physically the cultural heritage item. This is achieved through professional level examinations, comprehensive and permanent documentation of the actions, suitably trained staff and the establishment of a plan for the long-term treatment and care of the collections.

Conservation is used with preservation, safeguarding and protection in the Operational Guidelines of the World Heritage Convention. The Nara Document on Authenticity defines conservation, specifically with reference to the cultural heritage, as all efforts designed to understand cultural heritage, know its history and meaning, ensure its material safeguard and, as required, its presentation, restoration and enhancement. In fact conservation is a good example of the accumulation of knowledge, skills, abilities and experience.

According to the Resolution adopted by the ICOM-CC membership at the 15th Triennial Conference, New Delhi, 22–26 September 2008, conservation is a term that includes “preventive conservation³⁵,” “remedial conservation³⁶” and “restoration³⁷.”

The role that conservation can play crosses many of the boundaries covered by a preservation program. Materials that have suffered damage will require different levels of conservation from appropriately-trained staff and in a specific place. A good Conservation Policy must consider three fundamental elements:

- Code of Ethics³⁸
- Treatment phases
- Workshop

³⁵ Preventive conservation: All measures and actions aimed at avoiding and minimizing future deterioration or loss. They are carried out within the context or on the surroundings of an item, but more often a group of items, whatever the age and condition of the items. These measures and actions are indirect—they do not interfere with the materials and structures of the items. They do not modify their appearance.

³⁶ Remedial conservation: All actions directly applied to an item or a group of items aimed at arresting current damaging processes or reinforcing their structure. These actions are only carried out when the items are in such a fragile condition or deteriorating at such a rate that they could be lost in a relatively short time. These actions sometimes modify the appearance of the items.

³⁷ Restoration: All actions directly applied to a single and stable item aimed at facilitating its appreciation, understanding and use. These actions are only carried out when the item has lost part of its significance or function through past alteration or deterioration. They are based on respect for the original material. Most often such actions modify the appearance of the item.

³⁸ This chapter is a summary of two fundamental documents: “The Conservator-Restorer: a Definition of the Profession,” (ICOM, 1984); and “Professional Guidelines.” (E. C. C. O., 2002).

OPERATIONAL RECOMMENDATIONS FOR CONSERVATION PROCEDURES

Code of Ethics

The profession of conservator constitutes an activity of public interest and must be practiced in observance of all pertinent national and international laws and agreements, particularly those concerning stolen property.

136. The conservator is an expert who can perform the duties of conservation through specialised education, knowledge, training and experience. A skilled conservator should be competent with conservation history, ethics and philosophy, values and significance, history of technology of cultural heritage, scientific principals and methods, processes of deterioration and change, preventive care and measures, examination methods, documentation, and treatment methods.
137. Conservation is a complex and rapidly developing field. Therefore, the qualified conservator has a professional responsibility to keep up to date with new findings and ensure that he practices his profession in line with current ethical thought.
138. The conservator works directly on cultural heritage and is personally responsible to the owner, to the heritage and to society. He has the right in all circumstances to refuse any request that is contrary to the terms or spirit of the Code of Ethics. Before starting a conservation project he must receive, by owner or custodian, all the relevant information concerning the project.
139. The conservator shall respect the aesthetic, historic and spiritual significance and the physical integrity of the cultural heritage entrusted to his care and, in collaboration with other professional colleagues involved with cultural heritage, he shall take into account the requirements of its social use while preserving the cultural heritage.
140. The conservator must work to the highest standards regardless of any opinion of the market value of the cultural heritage. The conservator-restorer should take into account all aspects of preventive conservation before carrying out physical work on the cultural heritage and should limit the treatment to only that which is necessary.
141. The conservator shall make every effort to use only products, materials and procedures that, according to the current level of knowledge, will not harm the cultural heritage, the environment or people. The action itself and the materials used should not interfere, if at all possible, with any future examination, treatment or analysis. They should also be compatible with the materials of the cultural heritage and be as easily and completely reversible as possible.
142. The conservation treatment of cultural heritage should be documented in written and pictorial records of the diagnostic examination and include any conservation intervention and other relevant information. The report should also include the names of all those who performed the work. A copy of the report must be sub-

mitted to the owner or custodian of the cultural heritage and must remain accessible. The record remains the intellectual property of the conservator and shall be retained for future reference.



Figure A: Documentation of the restorative action

143. The conservator must undertake only such work as he is competent to carry out. He must strive to enrich his knowledge and skills with the constant aim of improving the quality of his professional work. Where necessary or appropriate, the conservator-restorer shall collaborate with other professionals and shall participate with them in a full exchange of information.
144. The conservator shall not remove material from a cultural heritage piece unless this is indispensable for its preservation or it substantially interferes with the historic and aesthetic value of the cultural heritage. Materials that are removed should be conserved, if possible, and the procedure fully documented. When the social use of cultural heritage is incompatible with its preservation, the conservator shall discuss with the owner or legal custodian whether making a reproduction of the object would be an appropriate intermediate solution. The conservator shall recommend proper reproduction procedures in order not to damage the original.
145. The conservator should inform the owner fully of any action required and specify the most appropriate means of continued care. He is also bound by professional confidentiality. The conservator should never support the illicit trade of cultural heritage. Involvement in the commerce of cultural property is not compatible with the activities of the conservator.
146. The conservator must maintain a spirit of respect for the integrity and dignity of colleagues, the conservation profession, and related professions and professionals. He should, within the limits of his knowledge, competence, time and technical means, participate in the training of interns and assistants. The conservator is responsible for supervising the work entrusted to his assistants and interns and has ultimate responsibility for the work undertaken under his supervision. He must contribute to the development of the profession by sharing experience and information.
147. Each national professional body has the responsibility to ensure that its members comply with the spirit and letter of the Code of Ethics.

Treatment phases

As it is not possible to reverse the process of decay of a document, conservation in the absolute sense is therefore not possible.

Before the conservation treatment of a document is undertaken, the librarian must assess, with technical advice from conservation and restoration experts, whether restoration is necessary or whether the object can be suitably preserved for its normal usage by taking appropriate conservation and protection measures. Restoration work on Library collections is inherently an expensive process in labour and sometimes also in materials. As the aim is to make an item fit for use as long as possible, the Institute may decide if the need of the readers may be met more economically by a microfilm, reprint or digitised copy of the book or document while the original is withdrawn from use and placed in safe, long-term storage.

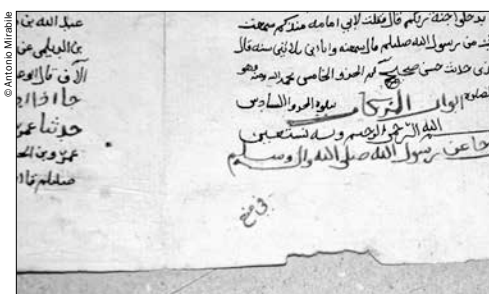
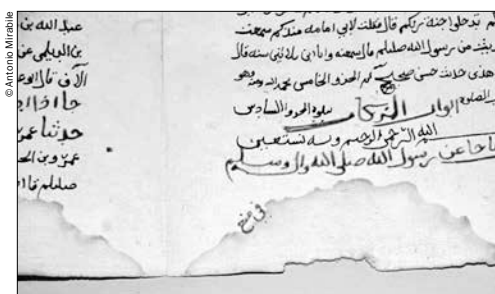
148. To assist in deciding when conservation treatment needs to be undertaken in a collection or on an individual document, a survey needs to be done even if it is only possible on a limited scale. The results of the survey should be regularly updated so they reflect the current condition of items in the collection.
149. A primary focus of the restoration treatment of cultural heritage is the continual development of treatment techniques designed to meet the specific preservation requirements of artefactual material that balance both condition and structural factors with ethical considerations. The objective of the procedures is to retain as many of the item's original components as possible while restricting the degree of physical alteration by minimizing the incorporation of repair material.
150. The relationship between the physical condition of the document and the acceptable degree of alteration has to be defined. This step is of particular importance when dealing with bookbinding where structural concerns related to poor construction practices have to be taken into account as well as problems associated with deterioration and the use of poor quality material.
151. Restoration should never be undertaken unless it is inevitable.
152. Before beginning the work on the document it is essential that the following information and documents be provided by a professional conservator together with appropriate experts and written down on a conservation sheet:
 - description of the document with inventory data, formats, materials and structure;
 - condition report with determination of physical and chemical damage, the extent of deterioration, and previous treatments;
 - a set of tests (solubility of media, acidity, etc.) and, when required, an analysis of the chemical and physical nature of each element; and
 - detailed, current photographs before, during and after treatment and, when applicable, sketches on particular details that cannot be explained with photos.
153. The examination of the document will originate a written treatment proposal showing that the damaged document has been observed accurately, that the degradation

has been understood and that the most suitable materials and methods are available for the treatment.

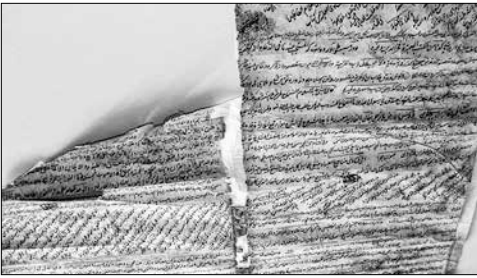
154. The catalogue of paper conservation contains the following:

- dust removal;
- disinfection, disinfestations;
- dry cleaning;
- cover and binding removal;
- wet and humid treatment;
- solvent treatments;
- alkalization and neutralization;
- consolidation/fixing/sizing;
- backing removal;
- mending;
- filling and compensation;
- humidification;
- lining;
- drying and flattening;
- textblock organisation;
- sewing;
- spinelining;
- board making;
- endbanding;
- covering;
- finishing;
- retouching;
- collage and composite pieces;
- labelling;
- boxing;
- storing;
- exhibiting;
- packaging; and
- transporting.

(The above list of treatments is organised in a sequential way. Most of the time, however, a document will need only a restricted number of these treatments.)



Figures B and C: Local wet and humid treatment



Figures D and E: Filling a gap of a rolled document

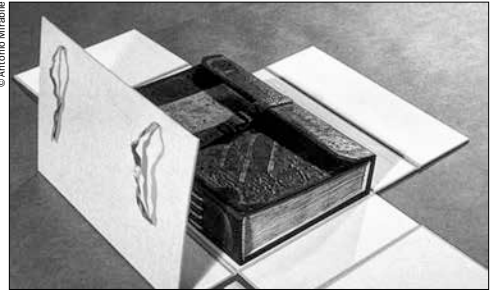


Figure F and G: Sewing and covering

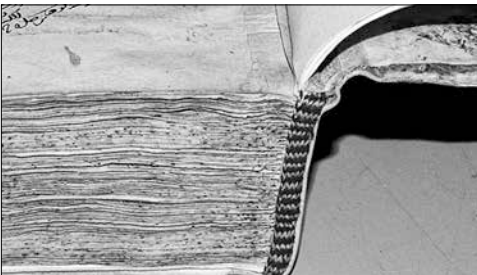


Figure H and I: Endbanding and boxing a rolled document

155. It is essential that the restoration techniques be adaptable, not rigid, imposed solutions
156. Materials for restoration work (papers, leathers, tissues, adhesives, etc.), especially chemicals (solvents, solutions for neutralization, etc.) should meet the conservation criteria of maximum chemical stability (inertness), permanence, and reversibility. The handiness of rapid and inexpensive treatment or the easy availability of alternate materials should be regarded as secondary to these prime requirements.
157. The quality of the restoration materials should match or even surpass the durability and functional quality of the original. It is, however, important that the visual and tactile qualities of the original object be changed as little as possible.
158. If nothing of an original binding has survived, a simple binding should be provided that uses neutral materials and compatible techniques with the body and period of the book.

159. The documentation process must include:

- description of the book with condition report and previous tests;
- photographic records before, during and after treatment;
- the sequence of treatment, from beginning to end, of the entire conservation and restoration procedure and techniques;
- the nature and quality of the materials used in the treatment;
- care recommendations for the future; and
- the name of the conservator and timeframe of the restorative action.

Workshop

The conservation workshop has a very important role to play in the development of a culture dedicated to the preservation of heritage materials. It establishes a specialist activity within a public service and represents a significant commitment to the long-term preservation of cultural heritage. The workshop is a place where important and complex activities are carried out. The conservation facilities reflect the needs of the organisation.

160. The ideal position for a conservation facility is within easy access of the repository and the digitisation and documentation areas. The workshop should have adequate natural light via windows and good artificial light, a main water supply and local drainage facilities.

161. Security is important because the conservation area will contain materials, equipment, documents and books undergoing treatment. All of this material can be stolen. For this reason the room must be locked when staff is absent and consideration must be given to identify which staff members are to be designated as key holders.

162. Another issue is related to health and security. All staff must be made aware of the risks associated with a primarily craftbased, practical workshop area where cutting machines, sharp knives and chemical solvents are in regular use.

163. The area must have specific fire protection and appropriate fire extinguishers for fire that is related to chemical materials.

164. A workshop needs to provide an adequate area for each of the different specialised functions. Each part of the workshop should be considered and organised in a logical way. Space and circulation around the areas must permit the staff to work and move safely and efficiently.



Figure J and K: Two examples of conservation workshop

165. Wet and humid areas must be organised away from the workbenches. All wet processes are kept under control to minimise damage to other material or minimise slipping hazards.
166. Adequate ventilation will generally be available with windows, which must have a fine metal mesh that is small enough to keep insects out while not restricting airflow. The use of blinds, screens and shutters is recommended to protect both individuals and documents against sunlight.
167. If chemicals are to be used, it is advised that an adequate source of ventilation is available. This can be done with a fume cupboard or local exhaust system, or work with chemicals can be carried out in proximity to an open window in a separate room. The inhalation of harmful dusts and vapours is a very real risk and must never be disregarded. Masks and respirators are not a substitute for ventilation and should be worn only to protect against infrequent short-term exposures. Careful consideration must be given to the use of chemical procedures, especially solvents.
168. Chemicals must only be stored in specially-designed cabinets. All personnel involved in the use of chemicals must be aware of their responsibility to dispose of toxic and flammable materials properly and in line with local and international legislation.
169. Dust removal and other treatments that tend to produce off-cuts and dust must be realised outside the workshop.
170. Electricity sockets must be available along the perimeter of the workshop at approximately one-meter intervals and above the workbenches.
171. Ceiling lighting will be ultra-violet filtered and must produce a homogeneous and strong light. Extra bench light will be required. It is suggested that this lighting be portable or moveable to aid close-up and detailed work.
172. Benches should enable the conservators to work standing up or while sitting on a high chair. The bench should be large enough to place a large-size document flat when it is receiving a treatment. It is recommended that the bench height be 90/95 centimetres with a depth of 75/100 centimetres. The bench must be connected to the electrical supply with a double socket to allow for a light box and the use of smaller electrical hand tools. The bench surface has to be smooth, resistant to solvents, light in colour and with round edges. Wall shelves, plan chest-style drawers and movable furniture on wheels under the benches will complete each workstation.
173. Personal tools, equipment and other materials (Appendix C) can be purchased by establishing a dialogue with specialised suppliers who will provide specific, detailed advice on each product.

COMMUNICATION

ISSUE DEFINITION: COMMUNICATION POLICY

Communication Policy puts in plain words what communication tools are used at the Institute and under what conditions it gives access to collections. Access incorporates features that reflect safety, security and environmental needs of the collection items. The Communication Policy sets appropriate standards for the transfer, access and display of collection items and also develops procedures for the publication and dissemination of cultural heritage recognising and respecting that the cultural institution is both owner and manager of the intellectual property.

Each Library makes its collections available for research and higher education, disseminates knowledge and experiences, and carries on research within the tasks, functions, subjects and collections of the Library. Its strategic goals should be fulfilled by continued dissemination of information, ease of access to the collections, and by promoting exploitation of the potential of the collections. This can be done with a consistent Communication Policy that includes:

- Consultation
- Digitisation
- Publication
- Exhibition

The use and exhibition of documents are at the opposite spectrum from collection preservation. The goal of a good Communication Policy is to create another dynamic where use of the collections does not necessarily conflict with their preservation. The overall challenge is to favour the use of documents in a way that systematically integrates preservation criteria. A successful Communication Policy can fulfill its educational intent, give access to cultural heritage and conscientiously protect the document. The tension between preservation and use, therefore, can be alleviated or at least greatly diminished.

As use should never compromise the preservation of a document it is essential that a well-trained conservator examine the document before accepting a consultation, digitisation or exhibition project. If the document presents an uncertain state of condition only a conservation and restoration expert can decide whether restoration is necessary, or whether the object can be suitably used by taking appropriate conservation and protection measures.

Access to the collection is secondary to its preservation.

OPERATIONAL RECOMMENDATIONS FOR COMMUNICATION PROCEDURES

Consultation

The collections should be used to advance research and, therefore, are accessible to universities, researchers and the community for study and research. A primary consideration of availability of items for examination and use will be based upon the condition of the document and availability of other sources and information.

174. It is expected that all researchers, both in-house and visiting, who make use of the collections will adhere to any legal or ethical restrictions on research imposed by the Institute, and that they will operate in accordance with the generally accepted ethical standards of the field in which they are working.
175. A written request stating the purpose for consultation and anticipated use of their research is needed for access.
176. The working hours of the reading room must be clear. The time that a researcher may use a book is subject to the discretion of the responsible Library. If a researcher has requested a number of different documents or files, the collections staff may limit the number of documents used at one time.
177. The document can be consulted only if it is in good condition, properly catalogued and stamped. Access to a book from the collections must be conducted under the supervision of those responsible for the reading room. Unsupervised use of books is not permitted.
178. Books must be transported horizontally in a box or in a trolley. The use of a trolley fitted with large rubber wheels is recommended. Such wheels keep the manuscripts in a stable position and dampen vibrations.
179. Proper surveillance of the consultation room must be provided and the following essential handling rules must be displayed to ensure that researchers will respect them:
 - Wash and dry hands before any handling action.
 - Do not drink, eat or smoke in the Library or reading room.
 - To consult any manuscript, lay it down on a clean table free of any object or use a book-rest suited to the size of the volume (Figures 20 and 21).
 - Open the manuscript gradually.
 - Lay the manuscript down on a table and first open its centre pages, then go back to the beginning.
 - Do not place manuscripts facing a window and do not expose them to direct sunlight.
 - Do not stack open manuscripts.
 - Do not tear or cut pages.
 - Do not mark manuscripts in any way whatsoever (paper clip, needle, post-it®, ink, ball-point pen, correction fluid, marker, turn the corner of a page, etc.).
 - To jot down notes, only pencils are authorised.
 - Do not rest on manuscripts while reading them or taking notes.
 - Do not touch the illuminations, manuscript and printed zones.

- Close the manuscript after consultation.



Figures 20 and 21: Appropriate consultation of documents

180. Before taking photographs for further research of the document, permission must be given from those responsible for the collection. No other photography is allowed. Researchers may use laptop computers in the reading room, however, the use of optical scanning equipment is not permitted.

181. At all times, copyright, public information and privacy laws will be strictly enforced.

Digitisation

Each digitisation project has its own reason for being executed. Often, the reasons involve providing access over the Internet to cultural holdings which would otherwise be under-used, or protecting fragile holdings from the wear and tear of hands-on access. The reasons for the digitisation project will have a profound effect on the criteria used for selecting the material to be digitised. They will also affect the project management, the meta-data³⁹, the online publication (if any) of the project output, quality control, etc.

A digitisation project must have clearly specified goals and objectives and suitable personnel with appropriate knowledge and skills, as well as a training plan in place to provide any additional expertise that the project may require.

The project must have concrete, explicit aims. These aims must be realistic and documented. The project aims should document the value which the project will bring to the institutions involved in the project.

Digitisation projects often expose the staff of cultural institutions to new technologies and terminology for the first time. Such technologies include digitisation hardware, Web publication, image processing, meta-data, database development and population, etc. If possible, include at least one person with appropriate information technology skills on the project team.

³⁹ Meta-data is usually described as data about data. More accurately defined, meta-data is data that contains information about other data. For example, the meta-data associated with digital photography is usually not pictorial data embedded in the image file. It could provide information about its creator, about its copyright protection, the equipment used during the shot, about its contents, its file format, etc.

Building a digital collection is normally very expensive. Projects, therefore, have to take into account all start-up and infrastructural costs as well as costs for running the project. That means costs for initial planning, data specifications, tracking and documentation systems, staff training, and so forth, as well as the incremental cost for digitising the actual source material.

The success of any project, including digitisation projects, is influenced to a large degree by the management of the project.

182. Identify training requirements, including information technology training and education in the handling of delicate artefacts and documents. There is a possible risk to irreplaceable artefacts and documents if the resourcing is not properly handled. Favour a small core of skilled staff dedicated to the project rather than a large group of 'occasional' staff.

183. Put the project team in contact with others who have completed similar projects to give them the opportunity to learn from their experiences.

184. It is essential to establish criteria for the selection of material to be digitised. The selection criteria must reflect the goals of the overall project. At least the following criteria may be considered:

- access to material which would otherwise be unavailable or of limited availability;
- wider and easier access to very popular material;
- condition of the originals;
- preservation of delicate originals by making digital versions available as an alternative;
- project theme;
- copyright⁴⁰ and Intellectual Property Right⁴¹ (IPR);
- availability of existing digital versions;
- cost of digitisation; and
- appropriateness of the source material for online viewing.

185. Be sure that you have all the required equipment for a digitisation project:

- hardware⁴² for the digitisation process itself (e.g. scanners, digital cameras, copy stands, other hardware);
- computing infrastructure to which the hardware is connected;
- software⁴³ for image capture and processing software; and
- software for meta-data and quality control.

186. The working environment should be appropriate to the material being digitised, paying special attention, for example, to light, humidity, vibration, disturbance, move-

⁴⁰ Copyright: The legal right granted to an author, composer, playwright, publisher or distributor to exclusive publication, production, sale, or distribution of a literary, musical, dramatic, or artistic work.

⁴¹ IPR is a right that is had by a person or by an institution to have exclusive rights to use plans, ideas or other intangible assets without the worry of competition at least for a specific period of time. These rights can include copyrights, patents, trademarks and trade secrets.

⁴² Hardware refers to a physical piece of a computer. This could be a hard drive, monitor, memory chip or other physical piece of a computer. The key idea is that the hardware is something that can be touched.

⁴³ Software is a general term for the various kinds of programs used to operate computers and related devices.

ment of the originals, etc. Two different digitisation methods using different hardware can be distinguished: scanning and the use of digital cameras. The use of a scanner equipped with a cradle is normally preferred when digitising bounded books (Figures 22 and 23). Flatbed scanners should be used only for flat documents (Figure 24)



Figures 22 and 23: Cradle for digitisation of bound material



Figures 24: Flatbed scanner for digitisation of flat documents

187. Many rare or delicate materials require a particular environment. This environment must be as close as possible to the preservation conditions. It is important that any digitisation process, manipulation (Figure 24), exposure to light, temporary storage, etc. have the least negative effect on the original documents. Consult the person usually responsible for the source material before moving or handling it.
188. The digital production of the digitisation process is usually a master file in uncompressed TIFF⁴⁴ format with some meta-data embedded. The file format as well as the compression used will have a major impact on the usability of the digitisation output. At this time, issues such as file format (Appendix D), standard file size, network transmission time, and different kind of outputs (monitor or printer) need to be taken into account.
189. The production of the digitisation project will be held on server machines. However, these machines need to be backed up⁴⁵. Also, if a server is not dedicated to a digitisation project, the digital content should be stored on removable media (CD, DVD, hard

⁴⁴ TIFF (Tagged Image File Format): A high quality file format, perfect for storing and exchanging images.

⁴⁵ Back up or backup: To make a copy of information on a separate storage service.

disk, etc.). Regardless of the choice of medium, it must be clear in mind that the medium will become obsolete in the near to mid-term future. Within five years, migration⁴⁶ to new storage media is likely to be a necessity.

190. Migration from one format to another should avoid migrating from a lossless file format (e.g. TIFF in the image domain) to a lossy⁴⁷ one (e.g. JPEG⁴⁸), for master digital material. Once information is lost, it cannot be replaced (Appendix D).
191. Choose an appropriate standard for meta-data. Certain important standards already exist for meta-data. In the bibliographic domain, the Dublin Core⁴⁹ standard is of great importance.
192. Preparation for publication involves processing the newly-created material prior to publication. Typically, publication means display on the Internet; processing means reduction in an image/audio/video file size, quality and downloads to fit the operational characteristics of the Internet.
193. The original master files⁵⁰ created during the digitisation process, normally a TIFF file, are typically very large (from a few to many megabytes). Such files are not appropriate for electronic or Internet publication due to the great length of time they would require to download for the end user.
194. Delivery versions are created by opening the master TIFF file in an image processing package and exporting it in JPEG and PDF file formats. In general, the total image files on a Web page should not greatly exceed 100 kilobytes. Larger images can certainly be published, however, these should be accessed via a link from the Web page with suitable warning text that the download time may be long.
195. The publication of any material online must be accompanied by some consideration of the Intellectual Property Right (IPR) associated with the material. Establish the ownership of the copyright.
196. Establish and document each of the steps that an item must go through during the digitisation process. These will include, for example,
 - retrieval from storage/usual location;
 - cleaning or preparation;
 - scanning or photography;
 - return to the usual location;

⁴⁶ Migration: The process of moving data from one storage device to another. The process of translating data from one format to another. Data migration is necessary when an organisation decides to use a new computing system or database management system that is incompatible with the current system.

⁴⁷ The term lossy is used to describe a compression algorithm that produces a file that is not identical to the original.

⁴⁸ JPEG (Joint Photographic Expert Groups) is a file format which supports compression and works at all colour depths. The image compression is adjustable, but beware: too high a compression could severely reduce image quality since JPEG compression is lossy.

⁴⁹ Dublin Core: a meta-data format being discussed internationally to define a minimal information resource description for use in a World Wide Web environment.

⁵⁰ A master file is a computer file that is used as the first and original in a given work or project and one that is relatively permanent.

- file naming;
- file storage;
- creation of online delivery versions of large master files; and
- backup of servers/storage media.

Publication

Publication through exhibition catalogue, periodical or occasional professional or popular papers of research is essential for the dissemination of knowledge and the divulcation of cultural heritage to scholars and to the public. Publication involves certain necessities and rights relative to the author, rights and institutional requirements.

Written permission must be obtained from the Institute to use reproductions in any publication or product. The Institute will only grant reproduction permission for materials in which the Institute is the copyright holder or for which there are no restrictions in terms of intellectual property rights.

The Institute, through its director, retains the right to edit and revise drafts of publications to be issued in order to maintain institutional standards and to meet contractual obligations. Institute publications must meet certain standards of acceptability including high quality of research and clarity in presentation.

Publication authorship should accurately reflect the relative contributions of participants in manuscript preparation. Persons responsible for writing any portion of a manuscript will be credited through authorship. Persons responsible for designing and directing research also should be recognised. Authorship credit will also be shared with those who substantially revise inadequate drafts. In manuscripts with multiple authors, the individual responsible for design and direction of research and final coordination of the manuscript will be designated as 'editor' with other persons receiving authorship credit for chapters they produced.

197. All requests for images and/or reproduction permission must be submitted **in writing**. When placing an order, please give as much information as possible about the book, including language, country, date, writer, title, medium and the Institute accession number.
198. State fully the intended use of the material requested. If there is to be a publication, provide a complete project description including title, author, publisher, media, intended date of publication, print run, languages, and distribution.
199. A permission form will be sent if the image is to be reproduced. Permission is granted only after the fee is paid and the application form is fully executed. Payment of the fee in itself does not constitute permission to reproduce. A researcher who has obtained an image and later decides to publish it should contact the Institute.
200. The publication must include the **complete** credit line (including photo credit, if given) provided by the Institute. The applicant must provide one copy of the publication to the Institute, gratis.

Exhibition

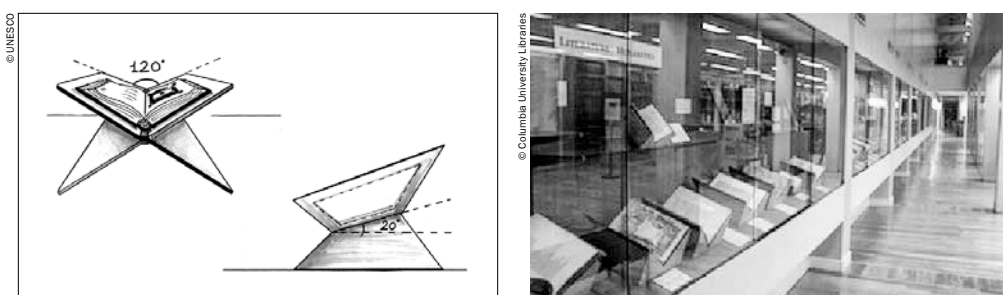
Exhibitions are a powerful alternative medium by which the Library can facilitate access to information and knowledge while also providing an environment conducive to learning. The Library aims to provide a physical environment that promotes and supports teaching, learning and research. A good Exhibition Policy will contribute to the public's awareness of the Library as a significant national cultural institution.

The exhibition has to be of a high standard, readable, attractive, and eye catching. Any material which is not of a suitable standard will not be displayed. Exhibitions should strive for objectivity with an instructional or informational theme. Materials of a controversial or discriminatory nature may be refused.

Develop a balanced program of exhibitions and displays considering available resources. Maintain this program over a three-year cycle of exhibitions.

201. Check the state of conservation of the documents before displaying them; only documents in good condition can be exhibited.
202. All aspects of the exhibition budget for each exhibition should be considered, including installation costs, participation fees, transport and research. Once a reasonable estimate of these exhibition costs is established it should be presented and discussed with those responsible at the Institute so a plan of action as to how this exhibition will fit into the Institute's overall budget is understood.
203. A second part of exhibition budget development should include the costs for any and all educational programs that may be associated with the exhibition. This would include speakers and/or materials associated with learning outcomes such as gallery publications or handouts.
204. The final part of the overall exhibition budget should estimate the costs for printed materials such as invitations, receptions and advertising. Those responsible of the exhibition will need all of these numbers to annually prepare for the overall budget.
205. Display space is booked in advance and allocated on a first-come basis. The normal period of time for an exhibition to remain on display is two weeks to three months.
206. Close the display area to the public during the installation and removal of the exhibition. Install and remove the exhibition on the agreed-upon date and at the agreed time.
207. Define who is responsible for the preparation and painting of gallery walls, fabrication of temporary, exhibition-related structures, placement of exhibition casework, in-house matting and framing, fabrication and installation of exhibition labels and didactics, and final lighting. The installation of all documents for an exhibition is completed in conjunction with the registrar and curator.
208. Identify who is responsible for maintaining the appearance of the exhibition and for checking the exhibition regularly to ensure it remains tidy.

209. Maintain display areas for collection materials at internationally recognised standards for environmental control, lighting and security. Any concerns of a conservation nature need to be addressed with the conservators of the Institute.
210. All artwork should be appropriately framed, mounted or in a secure showcase unless the form or structure calls for alternative display methods.
211. Display the books on a book-rest made of or lined with neutral cardboard. The manuscript must be held open by polyester ribbons that fit the profile of the manuscript. The opening angle shall not exceed 120° and the tilting angle, with respect to the horizontal plane, shall not exceed 20° (Figure 25).
212. Fit the display cabinet/showcase panes with anticaloric and UV filters. Place the light source at the outside of the display cabinet/showcase (Figure 26). The intensity of the light shall be limited to 50 lux.



Figures 25 and 26: Appropriate book-rest and showcase

213. Materials in the display cases may fade or become discoloured because of exposure to light. If this is a concern because the light is too strong, the duration of exposure is too long or the document too sensitive to light, please use copies and not original materials in the exhibition.
214. Interpret exhibitions and displays for the visitor in ways that enhance the experience of those attending the Library exhibitions. This can be done through signs, captions, wall texts, room brochures, catalogues, guided tours, and other public programs such as audio tours, lectures, floor talks, audio-visual and musical presentations.
215. Regularly evaluate the effectiveness of exhibitions, for example, through visitor surveys or include a feedback box or a commentary book so that viewers can share their views on the exhibition theme and material.
216. All written materials must be completed in a timely fashion scheduled by the curator and graphic designer to allow for sufficient planning and implementation, including proofreading and editing.
217. Enhance the ongoing development of in-house curatorial, registration and design skills through training and other professional development opportunities or contract spe-

cialist curators, designers or other specialists to assist in the development of exhibitions as necessary.

218. In the case of an external exhibition it is important to work with a registrar whose activities will define the loan policy and form, boxing, shipping schedules and arrangements, checklists, insurance and other correspondence, and who is also responsible for the unpacking and packing of exhibitions as well as completing all reports concerning the condition of the objects.

219. A file should be compiled in the course of every exhibition's development and duration and maintained in the Institute as a permanent record of that exhibition project. It should include whenever possible:

- the exhibition contract;
- pertinent correspondence;
- a complete checklist of the exhibition;
- loan forms;
- pertinent document information;
- visuals of the installation;
- installation floor plan;
- project budget and revisions;
- wall text and labels;
- credit line regarding sponsorship of the exhibition and copies of any documentation of that sponsorship;
- all educational programming information related to the exhibition, including lesson plans, school activities, and recordings of lectures or public presentations;
- all publications related to the exhibition including catalogues, brochures, newsletters, rack cards, invitations, audio-visual and digital media;
- press releases, media coverage;
- shipping arrangements;
- exhibition evaluations;
- visitation count; and
- any other relevant materials.

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RESOURCES ON LINE

Preservation and Conservation

- AATA Online—Getty Conservation Institute
- The American Institute for Conservation of Historic and Artistic Works (AIC)
- The Book and Paper Group
- American Library Association—Preservation Policy
- Asian Academy for Heritage Management
- Canadian Conservation Institute
- Canadian Heritage Information Network
- Conservation OnLine (CoOL)
- Council on Library and Information Resources (CLIR)
- E.C.C.O. is the European Confederation of Conservator-Restorers' Organisations (E.C.C.O.), <http://www.ecco-eu.org/>
- European Preservation Information Center (EPIC)
- Heritage Preservation Library of Congress Preservation Directorate
- International Council of Museums, <http://icom.museum/>
- National Archives and Records Administration (NARA)
- National Center for Preservation Technology and Training (NCPTT)
- National Library of Australia
- PreservationDirectory.com
- Regional Alliance for Preservation (RAP)
- Society of Rocky Mountain Archivists
- The International Federation of Library Associations and Institutions (IFLA), Preservation and Conservation (PAC) <http://www.ifla.org/pac>

- Western Association for Art Conservation (WAAC)

Preservation Education

- Amigos Library Services Preservation Service
- Association of North American Graduate Programs in Conservation (ANAGPIC)
- <http://www.ischool.utexas.edu/%7EanagpicBooks> at Virginia: Rare Book School
- The Kilgarlin Center for Preservation of the Cultural Record

Books, Paper, and Photographs

- Antiquarian Booksellers' Association of America
- Canadian Bookbinders and Book Artists Guild
- The Daguerreian Society
- Friends of Dard Hunter
- Guild of Bookworkers
- A History of Photography by Dr. Robert Leggat
- Image Permanence Institute
- The Royal Photographic Society
- Wilhelm Imaging Research
- Robert C. Williams Paper Museum

Library/Archives/Museum Associations and Organizations

- ALCTS Preservation and Reformatting Section (PARS)
- American Association for Information and Image Management (AIIM)
- American Association for State and Local History (AASLH)
- American Association of Museums (AAM)
- American Library Association (ALA)
- Association of Research Libraries (ARL)
- Massachusetts Board of Library Commissioners (MBLC)
- National Park Service Museum Management Program
- National Park Service Museum Resource Center (NPS)
- New England Archivists (NEA)
- New England Museum Association (NEMA)
- Society of American Archivists (SAA)

Standards Organisations

- American Association for Information and Image Management (AIIM)
- American National Standards Institute (ANSI)
- American Society for Testing and Materials (ASTM)
- National Information Standards Organization (NISO)
- Association Française de Normalisation (AFNOR): <http://www.afnor.org/>
- Ente Nazionale Italiano di Unificazione (UNI): <http://www.uni.com/>
- International Organisation for Standardisation (ISO): <http://www.iso.org/iso/home.htm>

REFERENCE TO CONSERVATION STANDARDS

General (Library and Archival Materials)

- BS 5454:2000 (ICS 01.140.20)—Recommendations for the storage and exhibition of archival documents

- ANSI/NISO Z39.79-2001 (ISSN: 1041-5653)—Environmental Conditions for Exhibiting Library and Archival Materials
- XP X80-001—Conservation des biens culturels, Pôle de conservation, Définition et caractéristiques fonctionnelles des espaces permettant la conservation et l'exploitation de biens culturels

Magnetic Tape and Optical Media

- IASA-TC 04, Guidelines on the Production and Preservation of Digital Objects
- IASA-TC 03 The Safeguarding of Audio Heritage: Ethics, Principles and Preservation Strategy
- ISO 18921:2002(E) Imaging materials—Compact discs (CD-ROM)—Method for estimating the life expectancy based on the effects of temperature and relative humidity
- ISO 18925:2002 Imaging materials—Optical disc media—Storage practices
- ISO 18927:2002(E) Imaging materials—Recordable compact disc systems—Method for estimating the life expectancy based on the effects of temperature and relative humidity
- ISO/DIS 18933 (2003 Draft) Imaging materials—Magnetic tape—Care and handling practices for extended usage

Paper

- ANSI/NISO Z39.79-2001 (ISSN: 1041-5653) Environmental Conditions for Exhibiting Library and Archival Materials
- ISO/WD 11799 (1999). Document Storage Requirements
- ANSI/NISO Z39.77-2001 ISSN: 1041-5653—Guidelines for Information About Preservation Products

Photographic film, glass and prints

- ISO 18902:2001 Imaging materials—Processed photographic films, plates and papers—Filing enclosures and storage containers
- ISO 18911:2000 Imaging materials—Processed safety photographic films—Storage practices
- ISO 18918:2000 Imaging materials—Processed photographic plates—Storage practices
- ISO 18920:2000 Imaging materials—Processed photographic reflection prints—Storage practices

APPENDIX

APPENDIX A:
CONSERVATION CONDITIONS FOR MOST IMPORTANT MATERIALS IN LIBRARIES

Material	Temperature	Relative Humidity	Light	Major risk
Paper	16 to 22°C	35 to 55%	50 or 150 lux	insects, micro-organism, chemical and photo-chemical degradation, dimensional stability
Cellulose nitrate	10°C	< 50%	50 lux	heat, light
Photos	2°C for coloured photos 18°C for other types of photos	30–50%	Varieties	light, climate
Leather	16 to 22°C	40 to 55%	50 or 150 lux	insects, microorganism
Wood	16 to 18°C	50 to 60%	> 150 lux	insects, dimensional stability
Textile	16 to 20°C	40 to 55%	50 or 150 lux	insects, micro-organism, chemical and photo-chemical degradation

APPENDIX B:
MAXIMUM RECOMMENDED LEVELS OF POLLUTANT GASES

Sulphur dioxide	1 µg/m³
Oxides of nitrogen	5 µg/m³
Ozone	25 µg/m³
Carbon dioxide	45 µg/m³
Dust particles	75 µg/m³

APPENDIX C: EQUIPMENT OF A BOOK AND PAPER WORKSHOP

The following lists of materials and equipment comes from: “Conservation and Preservation Activities in Archives and Libraries in Developing Countries, An Advisory Guideline on Policy and Planning” by Jonathan Rhys-Lewis, November 2000, downloaded July 2011 from: www.acarm.org/documents/Guidelines%20on%20Preservation.pdf

The following equipment is essential and recommended:

- 1 stainless steel conservation sink (for specialist staff use only)
- 1 stainless steel domestic sink with bowl and drainer (for conservation staff use only)
- 1 drying rack
- 1 domestic refrigerator and × 1 domestic chest freezer with UPS power supply to protect against power outages
- 1 microwave oven (for conservation use only)
- 1 board chopper
- 1 Rotatrim cutter
- 1 portable lightbox
- 2 nipping presses (to accommodate A3 size sheets)
- 1 nipping press (to accommodate A2 size sheets)
- 1 ultrasonic humidifier
- 1 hand-held thermohygrometer (for environmental monitoring)
- 1 temperature-controlled tacking iron
- 1 weighing balance

The following furniture is essential and recommended:

- 4 draughtsmen's chairs
- 2 plan chests
- 2 large benches and cupboards (modular system; mobile—× 1 to include built-in light-box)
- 1 roll storage rack

The following hand tools are essential and recommended:

- Steel rulers 50 cm × 2
- (Non-slip) 100 cm × 2
- Carpenters set square × 2
- Small tacking hammer × 2
- Retractable steel measure 5 m × 2
- Bone folders (rounded and pointed) × 5 of each
- Scissors medium × 2
- small × 2 C
- Scalpel handles (No. 3 and No. 4) × 5 of each
- Scalpel blades (10a, 12, 15, 23, 26) × 500 total
- Dividers × 2
- Awl or bodkin × 2
- Needle holder × 2
- Needles (sizes 17&18) × 2 packs of each
- Brushes (different sizes and widths) × 20

- Utility knife with retractable blade × 2
- Utility knife blades × 10 packs
- Tweezers/forceps × 2

Other recommended items:

- Weights (various sizes and weights) × 50
- Perspex sheets (60 cm × 44 cm × 2 cm) × 20
- Wooden pressing boards (60 cm × 44 cm × 2 cm) × 50 [To be either Medium Density Fibreboard (MDF) or wood that is not easily splintered—not chipboard]
- Self-healing cutting mat large (2 m × 1 m) × 1
- Medium × 2
- Small × 2
- Sponges various sizes × 20
- Water spray × 10
- Sewing thread (16/3 and 18/3) × 1 skein of each
- Cotton wool
- Cotton buds

The following chemistry supplies are recommended:

- Distilled water (start-up quantity) × 10 litres
- Stainless steel spatula × 5
- Polypropylene beakers—100 ml × 5, 400 ml × 5, 1 litre × 5
- Plastic bowls × 5
- Plastic containers with airtight lids (various sizes) × 10
- Stainless steel spoons × 5
- pH indicator strips (pH 4.4–10) × 10 boxes
- Disposable “sharps” container (For scalpel and cutting blades) × 1
- Disposable dust masks × 50
- Disposable rubber gloves (different sizes) × 20 boxes

The following selection of materials are recommended to form the basic “starter pack:”

- Once established, a precise stock-checking system will need to be devised so that levels of use are recorded and replacements are ordered well in advance to ensure that no stocks reach zero.
- Archival Kraft paper × 5 packs
- Archival manila paper × 10 packs
- Archival cover paper × 5 packs
- Archival boxboard (1000 micron) × 10 packs
- Archival quality photographic enclosures (4-flaps) × 500
- Archival quality glass negative boxes × 10 CBD
- Bondina support fibre (30 gsm and 100 gsm) 1 roll of each
- Polyester felt support material (6 mm thickness) × 3 rolls
- Archival blotting paper (“Megisorb” and “Aquaforce”) × 10 packs and × 2 rolls
- Archival repair tissue (“Spider” and “OK”) × 3 rolls of each
- Archive Text archival machine-made paper (85 gsm) × 1000 sheets
- Fraynot archival backing cloth × 1 roll
- Terylene × 2 rolls
- Polythene (250 gauge) × 5 rolls

- Melinex archival polyester × 20 rolls (Micron thickness 75 [x 10], 100, 125)
- Archive linen tape × 20, 50 m rolls
- Tyvek labels × 10,000 PE
- Waterproof pens × 10 KCS
- Wheat starch paste × 5 1 kg jars

The following binding equipment is essential and recommended:

- 1 blocking press
- 1 sewing frame
- 1 laying press
- 1 backing hammer
- 12" steel rulers
- 1 pair of backing boards
- glass paper and sand paper
- sewing tapes (various sizes)
- Archival Buckram bookcloth × 2 rolls (brown and black)
- Millboard (various thickness) × 25 of each
- Greyboard (various thickness) × 25 of each
- Cartridge paper (white and cream) × 100 sheets of each

Personal protective equipment (PPE) is the first and most basic protection for the individual involved in the use of chemical procedures.

- Hands—by the use of gloves (usually latex or Nitrile)
- Nose and mouth—by the use of dust masks and respirators
- Eyes—by the use of goggles or safety glasses
- Face—by the use of face shields
- Clothes—by the use of aprons and overalls

APPENDIX D: MOST USED FILE FORMATS FOR DIGITISATION

Name	TIFF 6.0 (Tagged Image File Format)	JPEG (Joint Photo-graphic Expert Group)/ JFIF (JPEG File Interchange Format)	GIF 89a (Graphics Interchange Format)	PDF 1.4 (Portable Document Format)
Extension(s)	.tif, .tiff	.jpeg, .jpg, .jif, .jiff	.gif	.pdf
Compression	Not lossy: ITU-T.6, LZW lossy : JPEG	Lossy : JPEG	Lossy : JPEG	Not lossy: ITU-T.6, LZW, JBIG Lossy: JPEG



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