

GUIDE TO MANAGING HISTORICAL SOCIETIES

Developing a significant collection

Conservation of Collections and Collection Management Plans

Daisy Searls (2007)

The aim of this section is to outline conservation planning and preventative conservation techniques. It also gives an outline of what is a Conservation Management Plan and how to approach a Collection Management Plan. There are a number of tables, and guides, for technical information as well as web links to assist finding more detailed information.

The following are definitions for some of the terms used in collection management which refer to different kinds of conservation practices

Preventative conservation

Preventative conservation is when steps are taken to prevent conservation being necessary – that is the prevention of items deteriorating. Preventative conservation is achieved by the way the collection is packed, stored, displayed, handled and generally maintained.

Remedial conservation

Remedial conservation is the often expensive and complex technique of repairing damage or decay to items in the collection.

Preservation

Maintaining a structure in its existing state and preventing further deterioration.

Restoration

Returning a structure to a known earlier state by the repair of existing fabric without the introduction of new materials.

Reconstruction

Returning a structure to a known earlier state by the introduction of new material into any remaining fabric.

Conservation Management Plan (CMP)

A conservation management plan is a document that reports to the owner of a building or site (usually a council) on the significance of that site, by detailing its history and outlining its material and immaterial and heritage value. A CMP then makes comprehensive recommendations including costs on the best way of conserving and managing that site. A CMP might be carried out on a house, a complex of buildings, a garden, an archaeological site, a streetscape or a monument.

Collection Management Plan

A collection management plan is a report created by an audit of an organizations collection. The audit provides a background on which a review will indicate the steps required to best preserve or conserve that collection. The framework for the review will need to take into account the organizations mission statement and collection policy. To be worthwhile the plan must include a section on implementation.

Understanding the Burra Charter

The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance is the document adopted in 1979 by Australian National Committee of International Council on Monuments and Sites (ICOMOS). The document sets out the framework for the management and conservation of *places* of cultural significance. Named after the historic mining town of Burra in South Australia where it was adopted, the charter is based on the concepts of the ICOMOS *Venice Charter*¹. The Australia ICOMOS Burra Charter accepts the principles of the Venice Charter in a form, which is practical for Australia. The Burra Charter was revised in 1981, 1988 the current accepted version is dated 1999.

The thirty-page document includes The Burra Charter with beginning with a preamble and listing thirty-four Articles, with explanations, definitions, conservation principles, conservation process, conservation practice for places of significance. A further 4 sections set out guidelines for:

- Establishing cultural significance;
- Developing a conservation policy;
- Procedures for undertaking studies and reports;
- A code on the ethics of coexistence in conserving significant places.

The Burra Charter is a strategic tool for devising conservation management plans for places and the artefacts associated with them. The charter provides universal definitions to language and terms used in the cultural heritage sector. The charter can be found at <http://www.icomos.org/australia/charter.html>.

The idea behind the charter is one that endeavours to put ‘everyone on the same page’ and provides a benchmark for the thinking needed when planning to recognise, conserve, and preserve, places of cultural significance.

Articles	Explanatory Notes
Article 1. Definitions	
For the purposes of this Charter:	
1.1 <i>Place</i> means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.	The concept of place should be broadly interpreted. The elements described in Article 1.1 may include memorials, trees, gardens, parks, places of historical events, urban areas, towns, industrial places, archaeological sites and spiritual and religious places.
1.2 <i>Cultural significance</i> means aesthetic, historic, scientific, social or spiritual value for past, present or future generations.	The term cultural significance is synonymous with heritage significance and cultural heritage value.
Cultural significance is embodied in the <i>place</i> itself, its <i>fabric, setting, use, associations, meanings, records, related places and related objects.</i>	Cultural significance may change as a result of the continuing history of the place.
Places may have a range of values for different individuals or groups.	Understanding of cultural significance may change as a result of new information.
1.3 <i>Fabric</i> means all the physical material of the <i>place</i> including components, fixtures, contents, and objects.	Fabric includes building interiors and sub-surface remains, as well as excavated material.

Section of The Australia ICOMOS Charter for Places of Cultural Significance

¹ *The Venice Charter for the Conservation and Restoration of Monuments and Sites 1964*

Collections

Historical societies and small museums are great; they bring people together and provide important safe places to store historical objects and documents that might otherwise be lost. The collections in the care of the society form the primary resource from which all other activities flow. The goal of any society is then to make sure the collection lasts the distance, because without a collection there is nothing. The point of a society *is* the collection.

Collection Management

Collections are under a constant process of aging and will thereby deteriorate. With correct procedures in place the process can be slowed and the expected life of most objects or documents can be extended. Preventative conservation is the first step in the process that will prevent, reduce and mitigate the effect of all the factors that threaten an objects continued survival.

Collection management requires an all embracing approach and constant assessment. How the collection is stored, handled, displayed and maintained involves all the people who work with it. Many of the techniques employed are based on common sense and good housekeeping. Activities such as

- Environmental monitoring– to ensure appropriate storage conditions in relation to temperature, relative humidity, air quality, and light
- Integrated pest management to protect works from damage
- Implementing and supervising handling and maintenance procedures for the storage, exhibition, packing of items. (Including transport of objects)
- Disaster planning and training.

An active approach needs be taken to ensure appropriate standards are met in continued training, active planning and supervision.

Collection Management Basics

Different types of objects have different tolerances and requirements. Reactions take place continually causing objects to deteriorate. Common materials found in a collection include paper, textiles, metal, plastics, wood, and leather.

From this list further define the items by the materials they are made from.

Organic Animal - Leather, ivory, horn, bone, vellum, feathers, silk, wool, insect/animal specimens, some paint pigments

Vegetable Paper, parchment, cotton, wood, cork, canvas, botanical specimens, some paint pigments

Inorganic Man-made - plastic, metal (iron), metal (non-ferrous), enamel, ceramic, tile, glass

Natural stone, geology

Composite (organic)

Examples: Oil painting on canvas; painted carved-wood ethnographic mask

Composite (inorganic)

Examples: Metal & enamel badge; Bakelite radio, with metal components

Composite (mixed organic/inorganic)

Examples: Fork with bone handle; Iron tool with wooden handle; Leather sword scabbard with metal decoration

It is not always possible or practical to create perfect conditions for each time of object. Some items made of composite material, which have wildly different requirements, will pose particular problems that may not always be resolved. Compromise in this situation is the your objective.

The following table can be used as first basic guide to understanding some of the threats to materials that make up the collection.

<i>Object Materials</i>	<i>Deterioration</i>	<i>Primary Air Pollutants</i>	<i>Environmental Factors Accelerating Damage</i>
Metals	Corrosion/ Tarnishing	Sulfur Oxides and Other Acid Gases	Water, Oxygen, Salts
Stone	Surface Erosion, Discoloration	Sulfur Oxides and Other Acid Gases	Water, Temperature, Salts, Vibration, Micro-organisms, Carbon Dioxide
Paint	Surface Erosion, Discoloration	Sulfur Oxides, Hydrogen Sulfide, Ozone, Particulate Matter	Water, Sunlight, Micro-organisms
Textiles	Weakened Fiber Strength, Soiling	Sulfur Oxides, Nitrogen Oxides, Particulate Matter	Water, Sunlight, Mechanical Ware
Paper	Embrittlement	Sulfur Oxides	Moisture, Mechanical Ware
Leather	Weakening, Powdered Surface	Sulfur Oxides	Mechanical Ware
Ceramics	Changed Surface Appearance	Acid Gases	Moisture

A table highlighting the main threats to a collection and their possible remedies is available on the next 3 pages.

Threats and Remedies

Threat	Specific	Damage	Cause	Prevention
People	Staff Visitors Intruders	Breakage Abrasion Crushing Theft	Unnecessary handling though open displays, badly organised storage and inadequate labelling. Incorrect handling Inappropriate cleaning Insufficient supervision Inadequate physical or electronic protection	Prevent touching objects Organise stores for clear and efficient access. Clearly label stored objects Handle objects only as required using approved procedures Upgrade physical and electronic security Train and motivate staff
Relative Humidity	Humidity levels too high or too low Rapid fluctuation in relative humidity (RH)	High humidity causes mould growth, corrosion Low humidity causes embrittlement. Fluctuations in RH cause splitting, cockling and warping	Changes in weather Floods and leaks Damp visitor clothing Mopping floors Rising damp Building works Poor insulation Poor ventilation Inappropriate heating and temperature control	Regularly measure and record RH Move the collection to the best environment Improve air circulation Improve insulation Introduce a cloakroom Attempt RH control by humidifiers or de-humidifiers, air-condition or use of temperature control.
Temperature	Incorrect temperature (high or low) Rapid fluctuation	High temperature - embrittlement. Fluctuations in temperature -splitting, cockling and warping	Changes in weather Poor building insulation Poor regulation of heating Radiant heat from display lighting	Regularly measure and record temperature Insulate Externally mounted display lights Temperature control by air-conditioning or use of heating and humidity control.
Light	Over exposure to light High intensity light Short wavelength light (ultraviolet)	Fading Discolouration Embrittlement Complete destruction	Natural and artificial light Too many windows Objects position Inappropriate lighting sources Lack of filters or blinds	Measure light levels Filters to reduce UV light Reduce light intensity to displays Reduce display times If appropriate set annual lux hours exposure limit Block light from stores Use scanned facsimiles of images in displays

Threat	Specific	Damage	Cause	Prevention
Pests	Rodents -Rats and mice Birds Insects - Moths, beetles, termites Mould and Fungus	Objects eaten or soiled	Entry through gaps in the building -Cracks, windows, vents, openings into roof spaces through gutters and eaves Unchecked new acquisitions or loans Poor housekeeping Attractant food sources such as food and plants.	Lay traps Monitor traps regularly Quarantine and inspect any new acquisitions. Schedule regular inspections of vulnerable items Isolate infested items Maintain building Keep store area cool Avoid creating damp or humid areas Schedule regular and thorough cleaning of stores and display areas
Pollutants	Wind-borne gases and particulates - Dust and dirt - Oxidants and sulphide gases	Degradation of materials	Proximity to roads Poor air filtration Open vents Poor door and window seals Building works Inappropriate cleaning methods and agents	Identify type and source of pollutants and determine degree of risk Reduce entry points and circulation by - dust breaks - air filters - repairs to building Never use a duster and reduce impact on objects by boxing or wrapping object in store Practice housekeeping regimes that remove dust and dirt
Storage & Display Materials	Chemical gases and particulates transferred from materials used in display & storage construction - cases & mounts - frames - storage racks - boxes and packaging	Corrosion Discolouration Physical damage such as staining	Use of inappropriate materials with high acidic and migratory characteristics - boards & papers - composite woods - many paints - glues & adhesives - some plastics - felt and other woollen material	Ideally, use only tested and approved materials for each situation. Avoid known problem materials If a material is unknown test it if possible or mitigate problems by sealing, covering or venting to reduce possible effects.

Threat	Specific	Damage	Cause	Prevention
Disasters	Fire and Flood	Flood damage - staining - ink & dye run - mould growth - warping - swelling - disintegration Fire damage - incineration - scorching - chemical depositing - all of the above in conjunction with water damage	Flood - burst pipe - leaking roof - fire-fighting water Fire - electrical fault - arson - accident - lightning	Formulate a comprehensive <i>Disaster Plan</i> that includes for all housekeeping routines and situations, including - contractors (care to be taken during building works - maintenance checks (internal and external) Enforce no smoking Train, motivate and test staff.

Collection Management Plan

Compiling a Collection Management plan should begin with a collection wide audit. Using your society's mission statement and collection policy as rationale, the audit will include a detailed inspection of the three layers that surround your collection –

1. The building
2. The way the collection is stored within the building environment
3. Collection handling and in-house procedures.

and ending with a list of recommendations, implementation time line and budget.

A consultant or the in-house collection representative can put this together. (Be it a Curator, Conservator, Collection Manager)

The Building

The building is the first barrier to the outside world. Assessments of the outside conditions and structure of the building will indicate how well the inside is protected from the elements. Improvements to the external building should come before considerations of modification to the internal.

Environmental conditions inside the building should be surveyed using a 24-hour recording device over a full calendar year². Ideally the temperature and humidity of external conditions should also be metered and the contrast of both records will assist in judging the efficiency of the building.

Some immediate responses to this kind of information might be to move sensitive items to the most stable and easily controlled parts in the building. For example, moving objects to rooms in the centre of the building or furthest away from the effects of light or weather.

² Thermohygrograph which records Temperature and Relative Humidity
See suppliers list at the end of this section

The Collection in Storage

Different kinds of collections require different forms of care. Like the building, an audit is required of the current condition of the collection. Methodically listed section by section –perhaps by group or type eg; *The Archibald Collection* or books, documents, textiles, machinery, photographs etc.³ The audit must document the ‘how and where and why’ of the collection and its storage.

The how & where – How is it stored and where is it stored?

For instance you might describe a part of your collection as a set of tractors donated by a local manufacturer. They are currently stored in a closed metal shed located in a cleared area on the western boundary of your address. The buildings position might seem superfluous but it will soon be apparent when data is collected on temperature that the building receives a large amount of heat from midday and late afternoon sun. Did the donation come with any obligations or conditions and are tractors important to the spirit of your collecting policy? They may or may not have, but all this information is important for recommending a plan for the collections future management. Recommendations may eventually include a revision of collection policy - not to include tractors.

The ‘how and where’ the collection is stored will include data from a prescribed period of environmental monitoring, together with detailed materials used in the storage –types of shelving, cupboards, displays, boxing and packing material. Conditions such as crowding and stacking are also very important to the report.

The comparison of the current situation with a gained knowledge of what is best practice will show where action needs to be taken.

The why – Why have we got it?

The audit must detail the significance -that is a description why is this/these item(s) are important put in the context of their unique value to the collection by way of historical import, provenance, rarity or prime example of type and their relevance to collection policy.

Remedial Conservation

While preparing a Collection Management Plan, objects in the collection will come to light as requiring some form of remedial conservation. Perhaps a torn painting or textile, a broken ceramic or a brittle rolled up map. Notate the items location and store safely to prevent further damage. Only an experienced and trained conservator should carry out remedial work on items in your collection. A conservator can be located through a number of organizations listed at the end of this section.⁴ Different materials will require different approaches and it is important to avoid damage caused by untrained or unsupervised persons attempting to carry out remedial work.

A costed and prioritised program of remedial conservation should be included in a Collection Management Plan.

³ See table on page 15 outlining problems, general rules and best and worst scenarios.

⁴ See listing at the end of this section

There are strategies for caring for items in immediate danger (a dropped vase) and this is covered in disaster planning.

The following pages and the appendix include a number of useful tables. The table that contrasts a well-managed collection to a neglected collection makes a useful checklist to storage and collection management – illustrating the good, bad and ugly.

ACTION

INACTION

	Collection well managed		Acceptable	Collection at risk	
Environment	Monitoring Air-conditioned Stable	Monitored Controlled heating Humidifiers or dehumidifiers Stable	Monitored Relatively stable within acceptable limits	Not monitored No visible deterioration of objects	Fluctuation problems Leaks, rising damp
Light	No daylight Monitored Control of individual lighting (dimmers and selective lighting) Filters	Some daylight Monitored Controlled by other means (eg. blinds, curtains) Filters	Daylight No monitoring Control by other means (blinds, curtains) Filters	Daylight No monitoring No controls No filters	Substantial daylight No monitoring No control No filters Sensitive items at risk
Cleanliness	Regular cleaning Dust prevention Scheduled checking of items	Regular cleaning Dust prevention (Dust sheets, filters)	Regular cleaning Anti dust measures (floor covering)	Erratic cleaning Poor dust measures Inadequate floor coverings Evidence of pest attack	Filthy Neglected
General Storage	Racks Boxes labelled by subject and item Hand lists Plenty of space Access clear Dedicated handling area	Racks Boxes labelled by subject and item Space Small overspill to floor Access good	Racks Boxes labelled by subject Large overspill to floor area Reasonable access	Partially racked Boxes Crowding Stacking Poor access	No racks No boxes Stacking causing crushing Very poor access Traffic risks leading to damage
Individual Storage (<i>"Storage within the storage"</i>)	Use of acid free or suitable boxes and packing Plenty of space given to objects Items individually packed, compartmentalised & labelled	Use of acid free or suitable boxes and packing Plenty of space Items individually wrapped padded and packed to prevent damage	Use of acid free or suitable boxes Adequate wrapping, padding and packing	Acidic or inappropriate materials used to box or pack items Crowding likely damage through movement	Acidic or inappropriate materials used to box items. No wrapping or padding Crowding, stacking and crushing

Collection Handling and In-House Procedures

Collection handling and in-house procedures are the part of your audit that details the comings and goings of all people in and around your organisations.

- The society's hours of operation, staff and volunteer numbers, any procedures for people signing in out. (Assisting with the security of your collection)
- A management chart showing the chain of command— particularly where issues of personal and collection safety are concerned.
- Evacuation plans should be part of in house procedures.
- Descriptions of access of instructions for visitors, researchers and volunteers on the use and correct use and protocols involved with the accessing and use of the collection.
- Currant training and supervision of handling procedures for staff and volunteers.
- Procedures for recording accessioning, quarantining and movement of objects.
- Currant OH&S standards, implementation and regimes.
- Disaster planning.

In summary a Collection Management Plan is a *warts and all* reporting on the current conditions of the collection. Following on from the facts that are presented from this audit, an implementation program is then written. A list of prioritised actions to mitigate the dangers and threats to the collection and providing a written ongoing program of improvements. The Collection Management Plan should quantify both financially and materially the benefits of any changes the plan will introduce.

Outcomes should be

- A program of remedial building works
- Improvements in environmental zoning
- Installation of environmental control equipment
- Creation of better microenvironments.
- Improvements in storage, packing and labelling
- Sound guidelines for displays and exhibitions
- Improvements in handling and training
- Remedial conservation program

APPENDIX⁵

Temperature and Relative Humidity (RH)

Temperature and humidity are key factors in the deterioration of items held in a collection. Relative Humidity (RH) is a ratio of water vapour held in the air to the amount it could hold if fully saturated. It is expressed as a percentage. Low levels of relative humidity mean conditions are dry and the air is capable of taking up more moisture.

Temperature is measured with a thermometer and RH is measured with a hygrometer therefore a thermohygrometer measures both

Rapidly fluctuating RH poses the greatest threat especially to organic materials. The goal guiding most collection management is to avoid a change in RH no greater than +/- 3% in one hour, +/-5% in 24 hours while sustaining a range of 40-65% RH.

If RH is controlled, temperature control is generally less crucial, However since the human body is sensitive to heat and cold it is temperature control that is more often seen as a priority in public buildings. Public areas are usually kept 17-19°C (63-66°F). For collections a range of 15- 25°C is acceptable. Stores can be kept at lower temperatures (there is no lower limit provided humidity is controlled.)

Light

Light will cause serious and irreversible damage to items in a collection. Light will cause fading and deterioration in the material from which an object is made. Most objects will be affected by light in one-way or another, although metals and ceramics to a lesser extent.

Light is measured in LUX (or lumen per square metre)

10 lux equals the amount of 1 candle at a distance of one foot (10 lux =1 foot candle)

Light damages objects in proportion to its intensity and the exposure over time. A light of 500 lux will theoretically cause the same damage in one year as a light one-tenth the strength (50 lux) over ten years. – Or if 2 100-watt lamps are put in place of one, then the same amount of damage will occur in half the time. So short exposure to a high lux (for example; light used to scan or photograph an item or displaying at 200 lux for an exhibition) need not cause undue damage over the total life of an object provided this exposure is compensated by a proportionate period of time at a lower than normal illumination. - Or indeed in total darkness.

It might be useful to establish an annual lux hour appropriate exposure for light sensitive objects.

An example of how to calculate the annual lux hour exposure assuming that there is no light falling on an object when the display closed or covered and only accurate if the light source is constant.

⁵ Tables in this document and Information in appendices are taken and adapted from <http://www.meaco.com/preventa.htm> Compiled by Fergus Read, former Assistant Director, EMMS, now Deputy Director, North West Museums Service (Tel: 01254 670211; Fax 01254 681995)

Lux for display light sources (=50)

Number of hours on display (exposure) = 1920 (8 hours x 5 days a week x 48 weeks a year)

= 96,000 lux hours per year.

The following is a general guide to recommended annual levels for different types of objects

MATERIAL	RECOMMENDED VISIBLE LEVEL	RECOMMENDED MAX ANNUAL LUX HOURS
Costumes, textiles Watercolours, prints, drawings Paper items including wallpapers and manuscripts Photographic prints (colour) Transparencies	#50 lux	96,000
Natural History (most) Ethnography (most)	#50 lux	96,000
Minerals (light sensitive examples include argentine, celestite, chalcocite, fluorite, lepidolite, pyrostilpnite)	50 – 200 lux	96,000 – 384,000
Furniture (inlaid or grain surface features) Plastic (especially Bakelite, Ebonite and polythene)	100 – 200 lux	192,000 – 384,000
Paintings Undyed leather, wood, horn, bone, ivory Lacquer ware Furniture Photographic Prints (B&W)	200 lux	384,000
Metals Stone Glass Ceramics Geology	300 lux (materials would not be unduly harmed at higher level, but visitors would find their vision adaptation compromised were other displays are shown at lower levels)	576,000+
<p>Explanation of symbols</p> <p># 50 lux is most often the given acceptable light level for this category, although Japanese authorities have chosen 100 lux as the lower threshold. Designers and curators generally prefer this higher value for obvious reasons of viewer perceptions. Tungsten light is better at low levels as it is warmer feel.</p> <p>* These recommendations are calculated on an assumption that exposure to the recommended maximum lux for 8 hours a day 5 days a week and 48 weeks a year. In most situations an organization will be doing well if they restrict the exposure to no more than double these amounts.</p>		

Light can come from natural and artificial sources and mostly emits some level of UV radiation. This light is beyond the limit of human vision. Since UV is not needed to view objects it can be reduced through the use of filters although total elimination is the target. A meter is used to measure the proportion of UV⁶ in the light source in microwatts per lumen ($\mu\text{W}/\text{lumen}$). A maximum acceptable reading is $75\mu\text{W}/\text{lumen}$, although filters should be able to reduce this to less than $10\mu\text{W}/\text{lumen}$. A periodic check is needed to test the continuing efficiency of UV filters (especially window coatings or film as they decline over time).

Heats created by lights in display cases pose a particular problem. Low-voltage bulbs radiate high heat. Fluorescent tubes are generally the coolest and are much used inside enclosed cases. Even so they should be used with a diffuser or sleeve to counter the relatively high UV radiation they emit.

Summary on reducing light levels

<p>Reduce the amount of time an object is illuminated</p> <ul style="list-style-type: none"> Reduce display time (use screens or covers and timer switches) Reduce overall exposure (close curtains when closed, rotate exhibits and set an annual exposure limit)
<p>Reduce the intensity (lux) of the illumination</p> <ul style="list-style-type: none"> Move displays away from light sources Reduce number of light sources Reduce intensity of light source
<p>Reduce or eliminate the proportion of UV light striking the object</p> <ul style="list-style-type: none"> Use UV filter adhesive film or varnish Use UV filtering glass on windows, display cases, picture glass Fit UV diffusers or sleeves on electric lighting Reflect the light used to illuminate an object off a UV absorbing material (white painted wall)

Pests

Setting traps in storage, display or public areas to detect the presence of pests, such as insects and rodents is the way to monitor and eliminate pests. The best line of defence is prevention.

- Quarantine – any object that shows signs of infestation. Always quarantine new donations
- Starvation – No food or drink in stores, confine eating or kitchen areas well away from objects and their storage.

⁶ Light meters see listing in Suppliers' List section

- Block – Points of entry, such as vents and windows. Ensure window seals are secure or covered with tape. Gaps and wholes in the building can also become nesting places for insects, birds or rodents.
- Policing – regular monitoring of traps⁷
- Housekeeping – to deprive pests of food and lodgings. Clean for dust, wood, paper and food particles and insect remains – deprive pests of food sources. Regular movement of furniture while cleaning will deter pests finding a home and allow you to monitor their presence.

Pollutants

The main danger to a collection from pollutants comes from chemicals in them that cause reactions with other materials near them (even dust particles). It is important to have some understanding of the different compounds in the materials in order to identify risks to the collection.

Pollutants arrive in a building in many different ways. Some arrive as the materials used to store, pack or display objects, some pollutants arrive as they float in through windows or vents. These external sources bring both gas and particle pollution from vehicle and factory emissions. Pollutants may derive from building works inside the building, from items in the collection, from cleaning agents.

Materials for Storage and Display

MATERIAL	PROBLEMS	GENERAL RULES	BEST	WORST
Wood & Wood Panel Products	Acids are released, as vapour or liquid, from wood; acidic vapours arise from formaldehyde- based resins used as the bonding adhesive There is little control over the wood species used in wood products	No wood or wood product is perfect. Consider substitutes (eg acrylic sheet, glass) If used in a display case, cover the side facing inside with an impermeable material ¹ to improve the seal around the wood or wood product Wherever possible seal wood and wood products (especially cut edges) with suitable paint, varnish or lacquer	Aged/Seasoned Dry Certain species (eg beech; birch, mahogany) Wood products for marine or exterior use Overlaid plywood (eg high or medium density overlaid plywood) Plastic-laminated panel (eg Formica, Melamine) Block board	Green Unseasoned Knots Certain species (eg red cedar, oak, Douglas fir, sweet chestnut) Chipboard Hardboard Plywood (interior grade)

⁷ Traps available - see listing in Suppliers' List section

MATERIAL	PROBLEMS	GENERAL RULES	BEST	WORST
Plastics & Rubber, Foams & Foam-boards	Some plastics release harmful degradation products and additives Rubber is unstable & perishes under most conditions over time	Choose acid-free (or acid- reduced) products Avoid Polyurethane or rubber-based materials	Polyethylene (PE) Polypropylene (PP) Polyester Polyethylene (PE) foam (eg plastazote)	Poly vinyl chloride (PVC) Rubber with sulphur vulcanising agents Polystyrene Polyurethane foam board PVC foam board
Paints, Varnishes & Stains	Release organic acid vapours, peroxides etc at different rates Products have variable efficiency as a barrier to volatiles No coating is a complete barrier	Wait at least one month before putting object in a closed system, to allow for evaporation of solvents Cover coating on side facing inside a case with an impermeable material to improve the seal around the coating	Water-based paints	Corrosion-resistant paints Oil-based paints Oil-modified polyurethane varnish
Adhesives	Release corrosive or otherwise damaging gases during curing or on ageing Solvents & adhesives may be transferred to objects Adhesives may embrittle, ooze, yellow, become acidic	Use alternatives if possible (eg screws for joints, brass staples for attaching lining fabrics) Wait at least one month before putting object in a closed system, to allow for solvent evaporation Never use adhesives to secure objects or their labels (substitute with perspex mounts, brass pins etc)	Acrylic contact cements Certain acrylics & 2-part epoxies Certain poly vinyl acetate (PVA) emulsions & ethylene/vinyl acetate copolymers (EVA) Transparent acrylic adhesive on polyester tape Pure acrylic tape without carrier	Polysulphides Most poly vinyl acetate (PVA) emulsions & solids Natural & synthetic rubber cements (most contact cements) 'Blu-tack' (& similar) 'Sellotape' (& similar) 'Plasticine' (& similar) Masking tape
Textiles	May have finishing treatments that compromise their inherent good qualities	Avoid wool products (includes standard felts) Check dyes are colourfast and sulphur-free Wash fabrics before using Use undyed, unbleached fabrics for storage (eg dust covers)	Unbleached cellulose-based materials - cotton - linen - hessian Polyester	Wool (tarnishes silver) Fire retardant treatments Carpet material (accumulates dust; especially avoid rubber-based backings)

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List of Organisations and Resources for additional information

Australia ICOMOS

International Council on Monuments and Sites

<http://www.icomos.org/australia/>

Includes links to the Burra Charter: The Australia ICOMOS charter for the conservation of places of cultural significance

Information on Conservation Management Plan

Heritage Victoria

Heritage Victoria is located at:

Department of Planning and Community Development

Level 7, 8 Nicholson Street

East Melbourne

Victoria 3002

Telephone:(03) 9637 9475

Fax: (03) 9637 9503

Email: heritage.victoria@dpcd.vic.gov.au

Conservation Management Plan

<http://www.heritage.vic.gov.au/page.asp?ID=414>

Heritage Victoria's postal address is:

PO Box 500

East Melbourne

Victoria 8002

DX 210098

Heritage Branch, NSW Department of Planning

<http://www.heritage.nsw.gov.au/>

3 Marist Place, Parramatta NSW 2150

Postal Address:

Locked Bag 5020, Parramatta NSW 2124

Phone: (02) 9873 8500

Fax: (02) 9873 8599

Conservation Management Plan

http://www.heritage.nsw.gov.au/13_subnav_04.htm

A list of professional organisations that have members with recognised specialist heritage experience can be found at

http://www.heritage.nsw.gov.au/13_subnav_07.cfm

Draft Conservation Management Plan National Library of Australia

<http://tinyurl.com/23h9dyn>

Information on Collection Management Plan

Museums Australia Vic.

Developing a Conservation Plan for Community Museums 2006 Museums Australia

(Vic) www.mavic.asn.au/assets/MA_Consevation_Plan.pdf

Collection Management for Tompkins County Public Library

www.tcpl.org/policies/collectiondevelopmentplan2006.pdf

Glenelg Shire Council Library Collection Management Plan

http://www.glenelg.vic.gov.au/Page/Page.asp?Page_Id=959&h=0

Australian Institute for the Conservation of Cultural Material Inc (AICCM)

website www.aiccm.org.au

In Australia, the national organisation for conservators and people interested in the preservation of cultural material is the Australian Institute for the Conservation of Cultural Material Inc. (AICCM)

Tel: (03) 9013 0933 Fax: (03) 9527 2383 email secretariat@aiccm.org.au

Centre for Cultural Materials Conservation

<http://www.culturalconservation.unimelb.edu.au/>

Telephone: (+61 3) 8344 7989

Fax: (+61 3) 8344 0329

Email: conservation-info@unimelb.edu.au

Conservation: services, advice and treatments

Our commercial conservation services are offered through our North Melbourne premises (located within the Public Records Office building):

99 Shiel Street

North Melbourne VIC 3051

Australia

Australian Garden History Society (AGHS)

Gate Lodge

100 Birdwood Avenue

Melbourne Victoria 3004

Phone: 03 9650 5043 or Toll free 1800 678 446

Fax: 03 9650 8470

General Information: info@gardenhistorysociety.org.au

The Australian Association of Consulting Archaeologists Inc. (AACAI)

<http://www.aacai.com.au/>

Box 214, Holme Building, University of Sydney

Sydney

NSW

Telephone: (08) 8340 9566

Fax: (08) 8340 9577

Museums Australia Victoria

PDF information sheets on various topics

<http://www.mavic.asn.au/services/resources/>

Preservation 101

<http://www.preservation101.org/session1/default.asp>

http://www.preservation101.org/session5/taking_address.asp

National Parks Service – Museum Management Program

<http://www.nps.gov/history/museum/>

National Parks Service - Conserve O Grams – Information provided in PDF format on various topics

http://www.nps.gov/history/museum/publications/conserveogram/cons_toc.html

Google Books – Books online

Museum Basics

By Timothy Ambrose, Crispin Paine, International Council of Museums

Published by Routledge, 1993

ISBN 0415057701, 9780415057707

319 pages Various topics

Unit 44 Conservation Planning page 158

<http://tinyurl.com/23dlv8m>