

Preserving heritage collections



Source: <http://www.queenslandplaces.com.au/exhibit/postcard-folder/pc0747>

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**" Give me
a museum
and I'll fill it. "**

Pablo Picasso

Take stock



- Assess your collection on a regular basis
- Collection development policy ?
- Significance ?
- Object condition
- Keep or deaccession ?
- Prioritise your time and resources



Oilfields at Roma, Queensland, ca 1927.

(Source: State Library of Queensland. <https://hdl.handle.net/10462/deriv/211499>)

PRESERVATION PLANNING

Preservation Needs Assessment

1. Work with a qualified conservator (refer to AICCM list of private conservators:

<https://aiccm.org.au/civicism/profile?reset=1&gid=99>

2. Template:

<https://aiccm.org.au/sites/default/files/docs/AICCMBusinessDocs/PresNeedsTemplate.pdf>

3. Recommendations should include collections' preservation needs, policies, staffing/volunteer training requirements, building and maintenance, environmental conditions, security, disaster preparedness, collection care and handling, display methods.

Preservation planning

1. A preservation plan is an important planning tool for overall collection management
2. Feeds into the business plan
3. Identifies needs, determines priorities, and resource requirements for short and long term care of collection.



DOCUMENTATION

Condition reporting

- Invaluable tool for managing collections and identifying issues as they arise.
- Essential for outgoing loans/exhibition items
- Need to work in clean uncluttered area with good light.
- Implement standard condition report form with consistent terminology
- Take good photographs, highlighting areas of damage or concern.
- Keep digital and archival hard copy.



The Romaville Vineyard. 1966
Source: Jim McDougall. <http://www.queenslandplaces.com.au/roma>

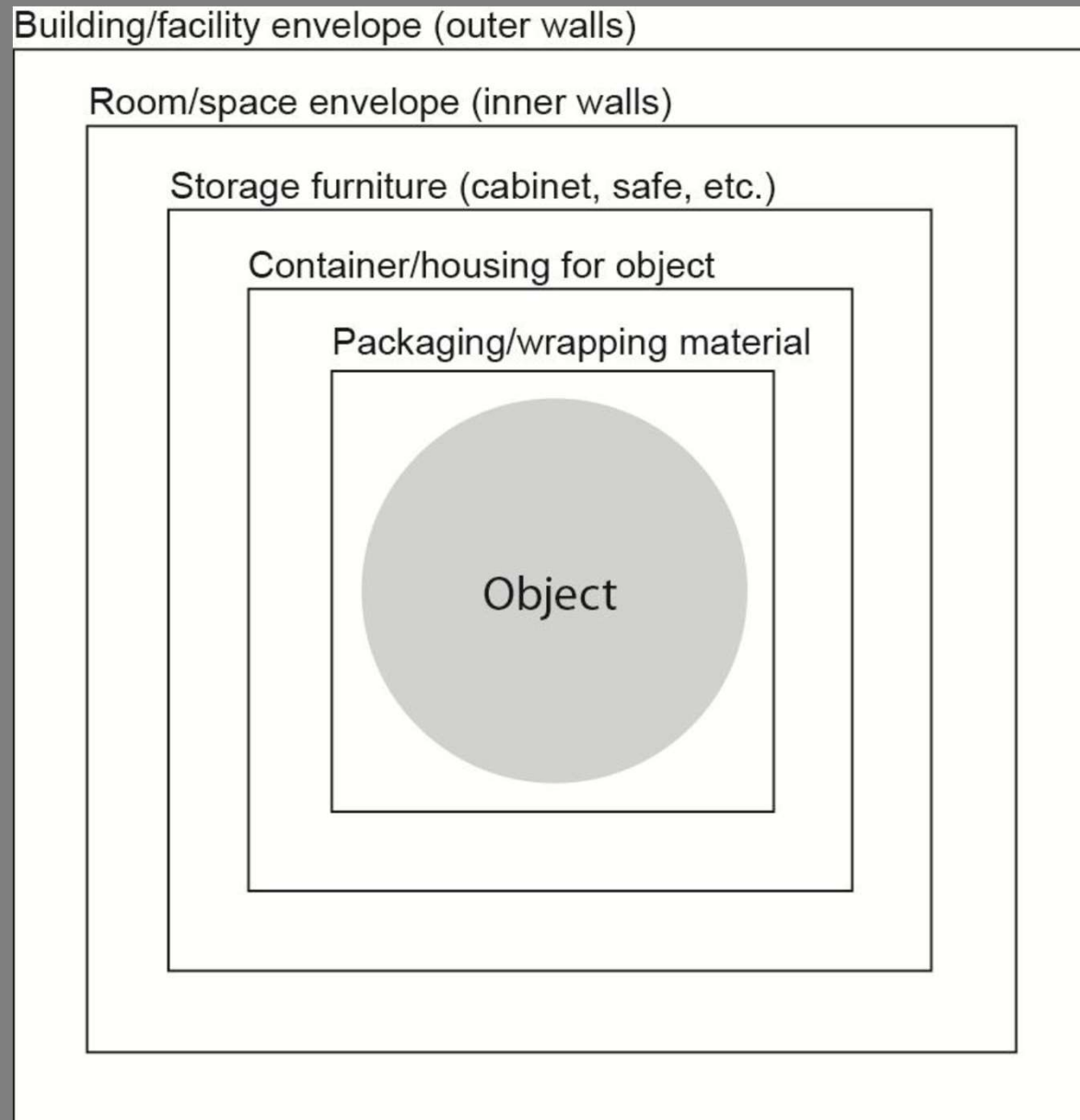
CREATING A STABLE ENVIRONMENT

Main factors

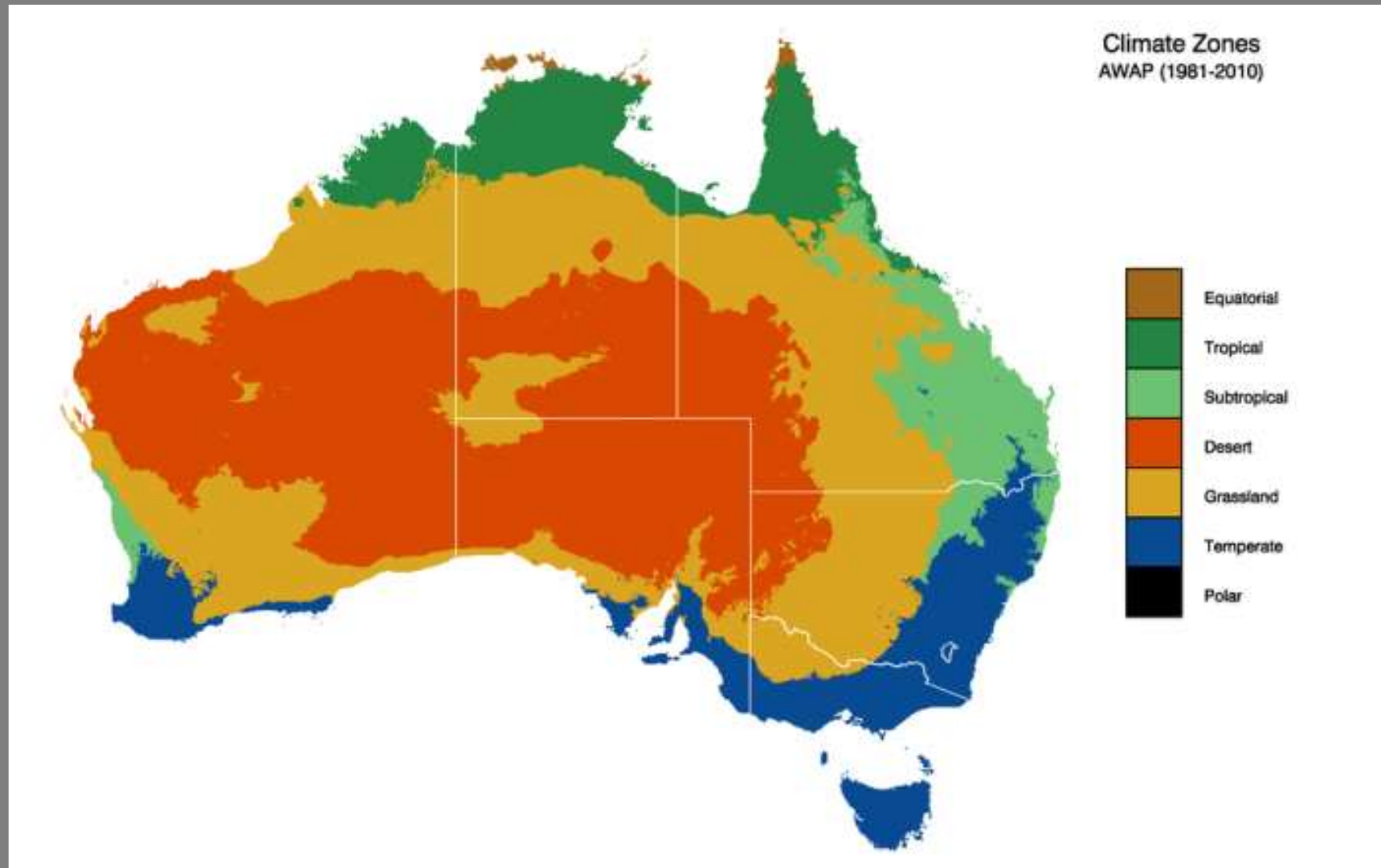
1. Physical and chemical deterioration
2. Storage and display environment
3. Use and handling
4. All interrelated !!!



Multilayered approach



External conditions



Disaster Preparedness

- A disaster preparedness plan is very important
- Must be updated regularly and be easy to implement
- Disaster team must be regularly trained
- Learn from each disaster



Assessing your collection

- What are the greatest risks that currently face your collection ?



Disaster kits

- Ensure contents of kit suit your collections, building and risk factors.
- Keep a regular inventory and restock as needed
- Only use in disaster scenarios
- Locate kits near collection storage/and /or display areas.
- Keep accessible



Layer 1: Building/s



The Queensland Museum, Brisbane, Q.

Source: https://static.domain.com.au/domainblog/uploads/2015/08/01032757/0_gal_qldmuseum-1024x684.jpg

Layer 2: Room space



Creating a stable environment

- Understand your climate
- Locate collections away from sources of light, heat, moisture & air pollutants
- Passive environmental solutions
- Select chemically stable and well designed housing & furniture
- Good air movement, uncluttered storage and display
- Monitor buildings and collections carefully
- Implement Integrated Pest Management

Physical deterioration

- Change in the physical structure
- Often caused by environmental factors and poor handling methods
- Examples:
 - Cracking of wood caused by fluctuating relative humidity (RH)
 - structural failure (for example, metal fatigue, tears in paper, rips in textiles)
 - shattering, cracking, or chipping caused by impact



Chemical deterioration

- Change in the chemical composition
- Chemical change usually occurs because of reaction with another chemical substance or radiation (light and heat).
- Rates of chemical change are often effected by temperature and RH.
- Examples:
 - Oxidation of metals
 - Fading of dyes and pigments
 - Embrittlement of paper and textiles



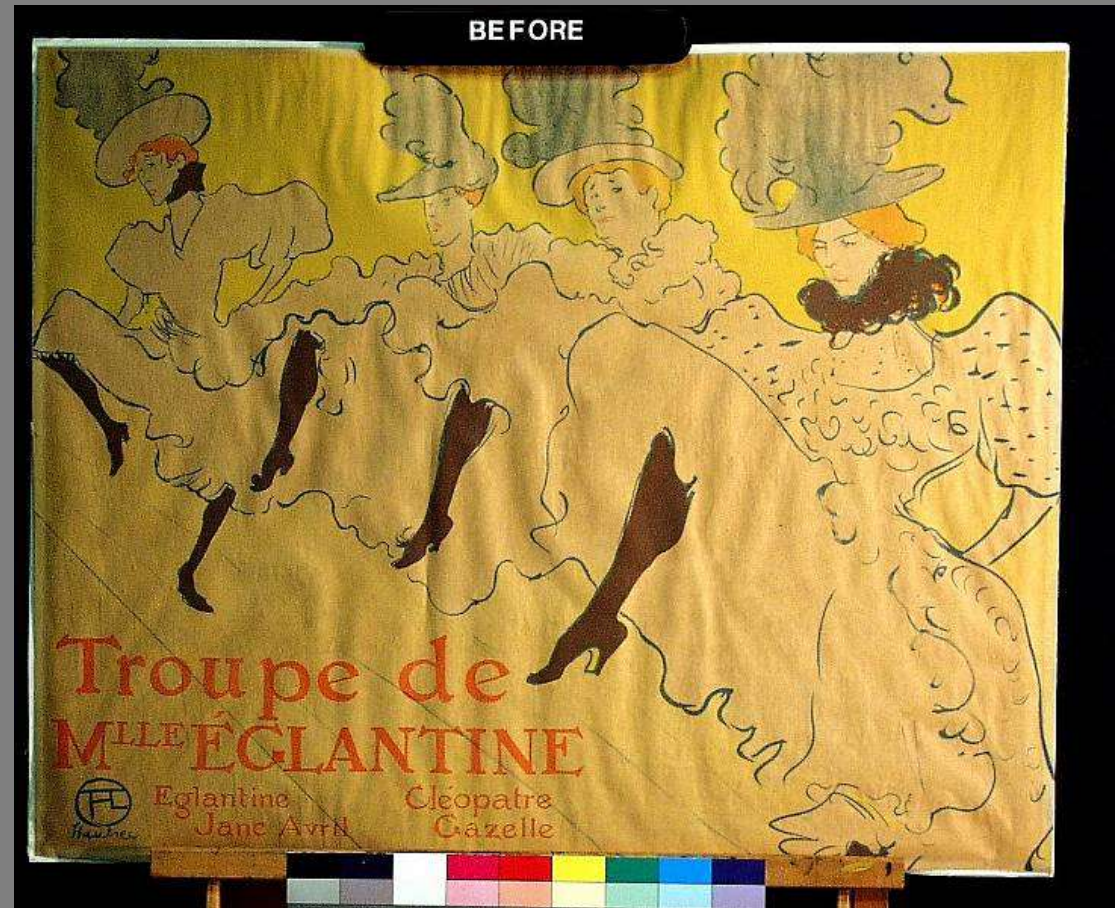
Storage & display environment

- Temperature & RH
- Light
- Air quality
- Biological agents
- Storage & display furniture
- Enclosures and display supports



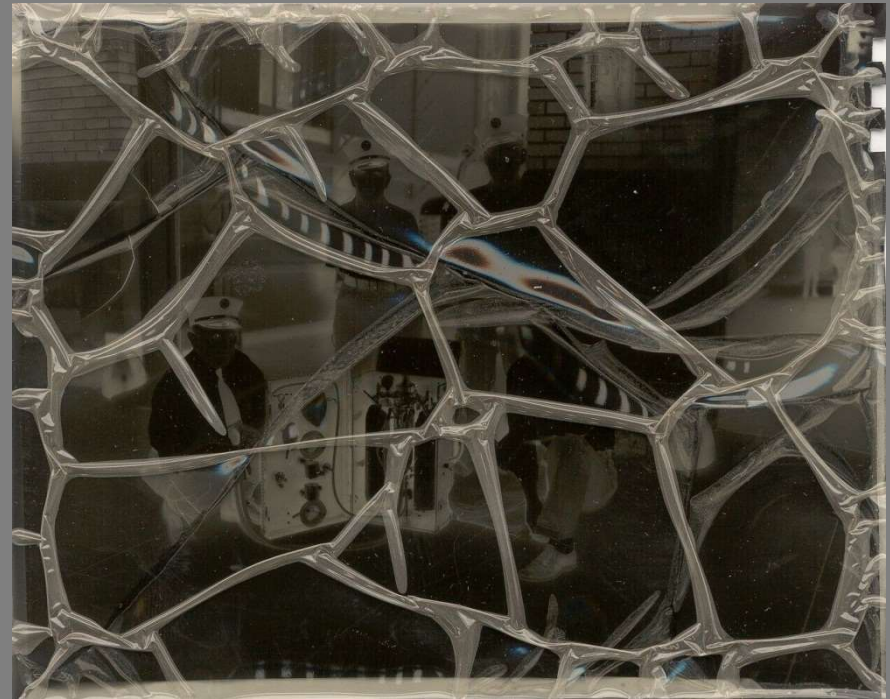
Temperature & RH

- Interrelated
- Too high
- Too low
- Fluctuating



High relative humidity & temperature

- Speeds up chemical deterioration
- “Vinegar syndrome”
- “Silvering” of silver based photographic processes.
- Increases chance of insect and fungal activity



Cellulose acetate negative affected by “vinegar syndrome”, the rate of deterioration is accelerated by high temperature and relative humidity.

High relative humidity & temperature



Severe oxidative-reductive reaction on silver gelatine print



Blocked prints



Mould outbreak on scrapbooks

Low relative humidity

- Dries out hygroscopic components:
 - paper
 - gelatine emulsion
 - leather
 - pigments

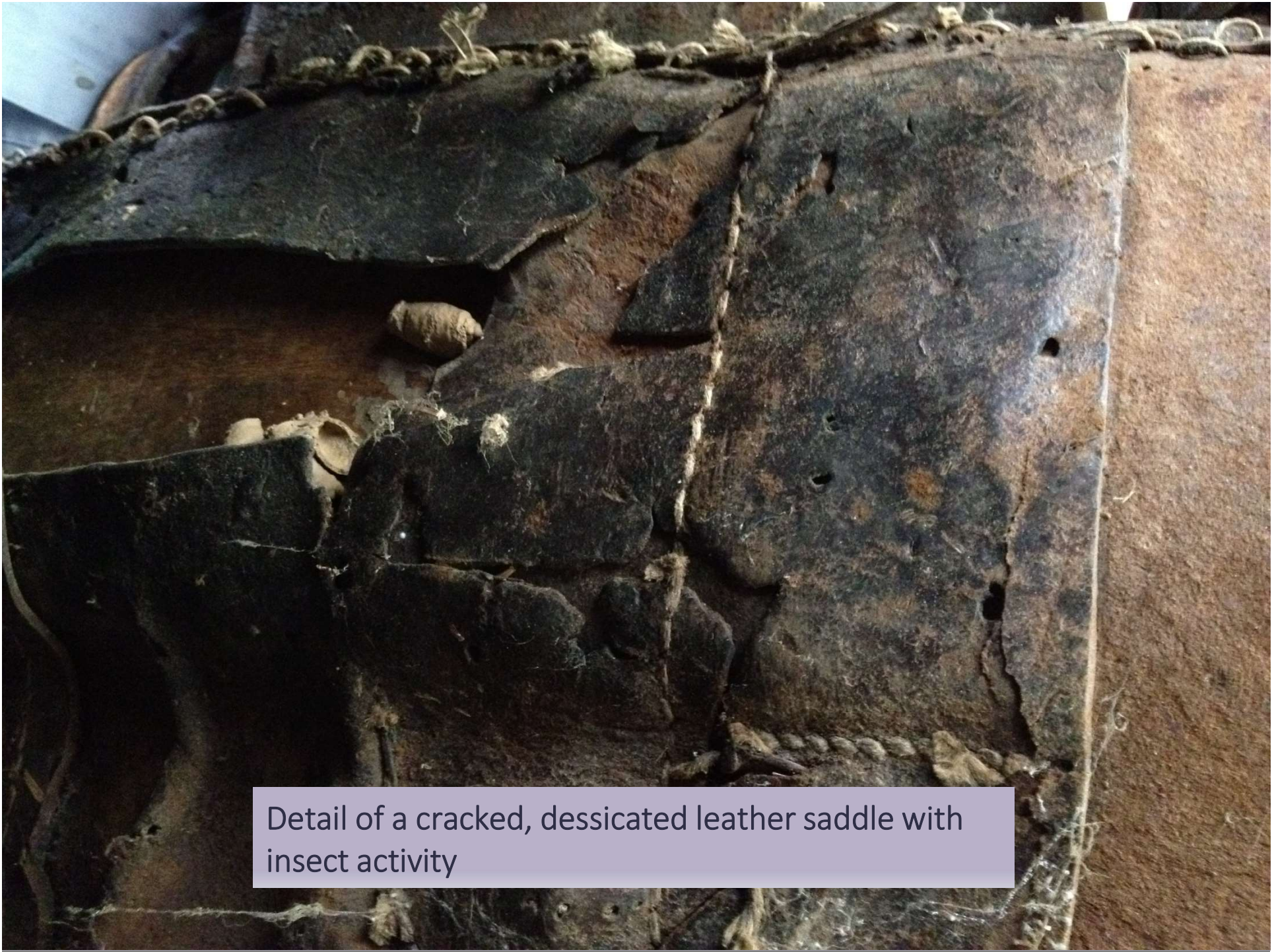


Flaking pigment.

Low relative humidity



Embrittlement of wood pulp paper.



Detail of a cracked, dessicated leather saddle with insect activity



Fluctuating humidity



Flaking gelatine emulsion

Light

- Both UV and visible light causes damage
- Damage is cumulative and irreversible
- Different objects have different light tolerances.
- Most sensitive: textile; photographic material; works on paper



Air quality

- Gaseous: e.g. sulphur dioxide; nitrogen dioxide; ozone etc.
- Sources: car exhaust; factory emissions; paint and cleaning materials; floor coverings; wood and wood by-products
- Particulate matter – dust, soot
- Accelerates chemical deterioration of leather, metals, photographs, textile, paper etc.

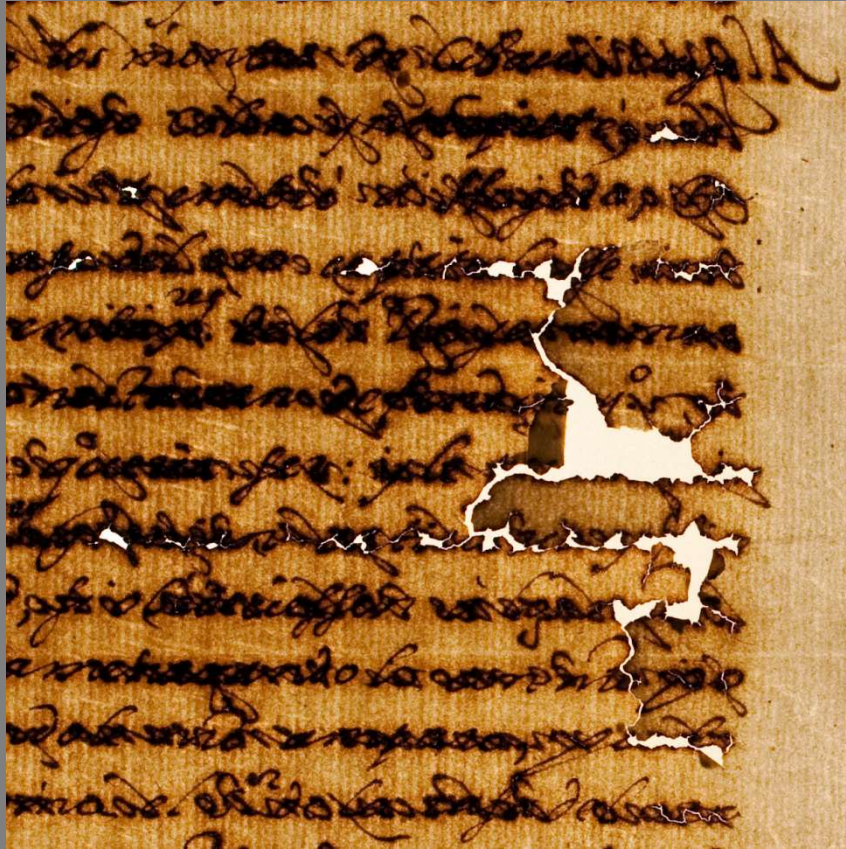


Physical structure



- Carte-de-visite album: board pages too heavy; page design causes damage when getting print in to album

Inherent vice



Left: Iron gall ink “corrosion”.

Right: Wood pulp paper – high lignin content

Processing

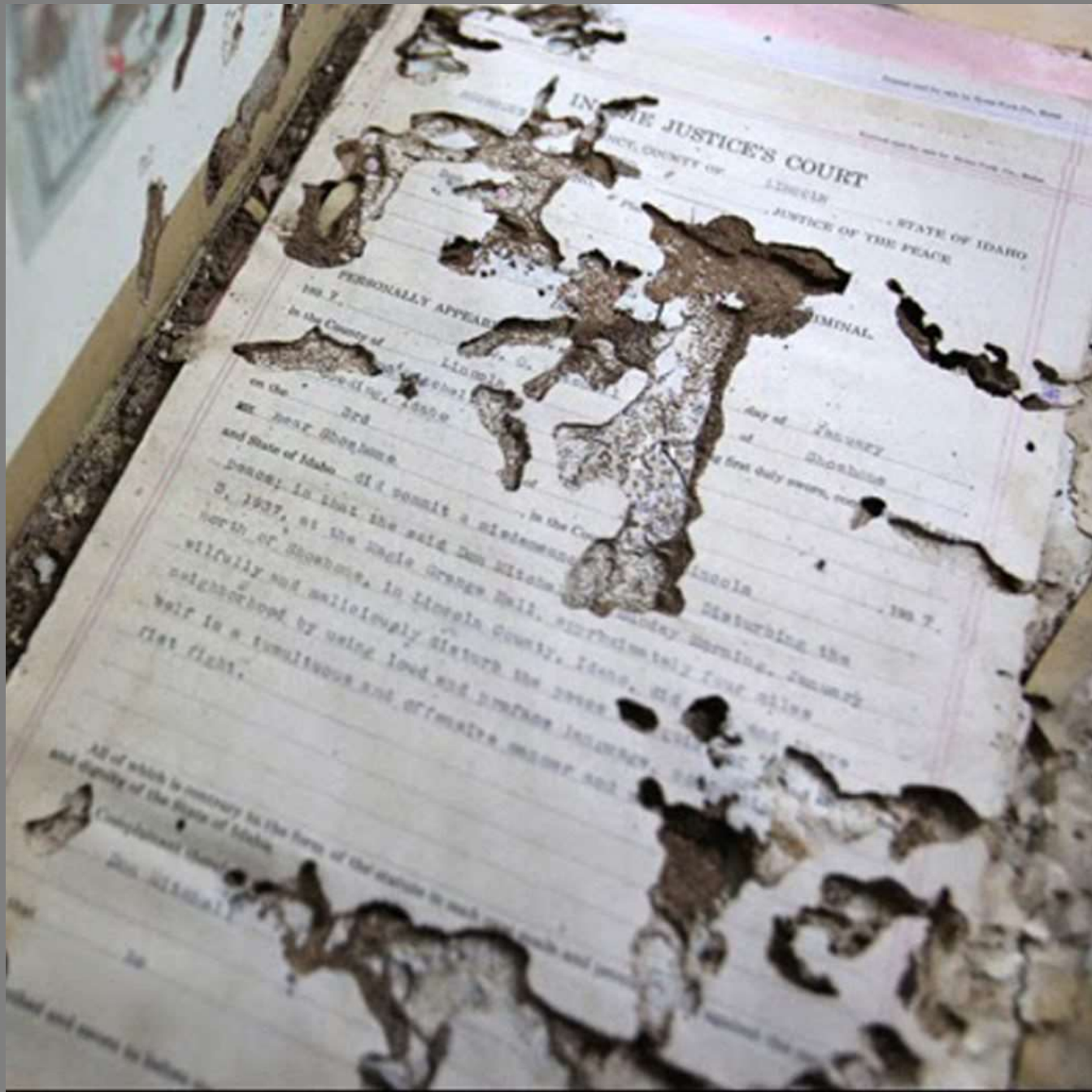


Left: Yellowing and loss of density common in silver gelatine DOP Right: Selenium toned silver gelatine DOP. Much more stable image

Biological agents

- Insects and other pests (rodents, geckoes etc.)
- Fungal activity
- Irreparable damage





Housekeeping

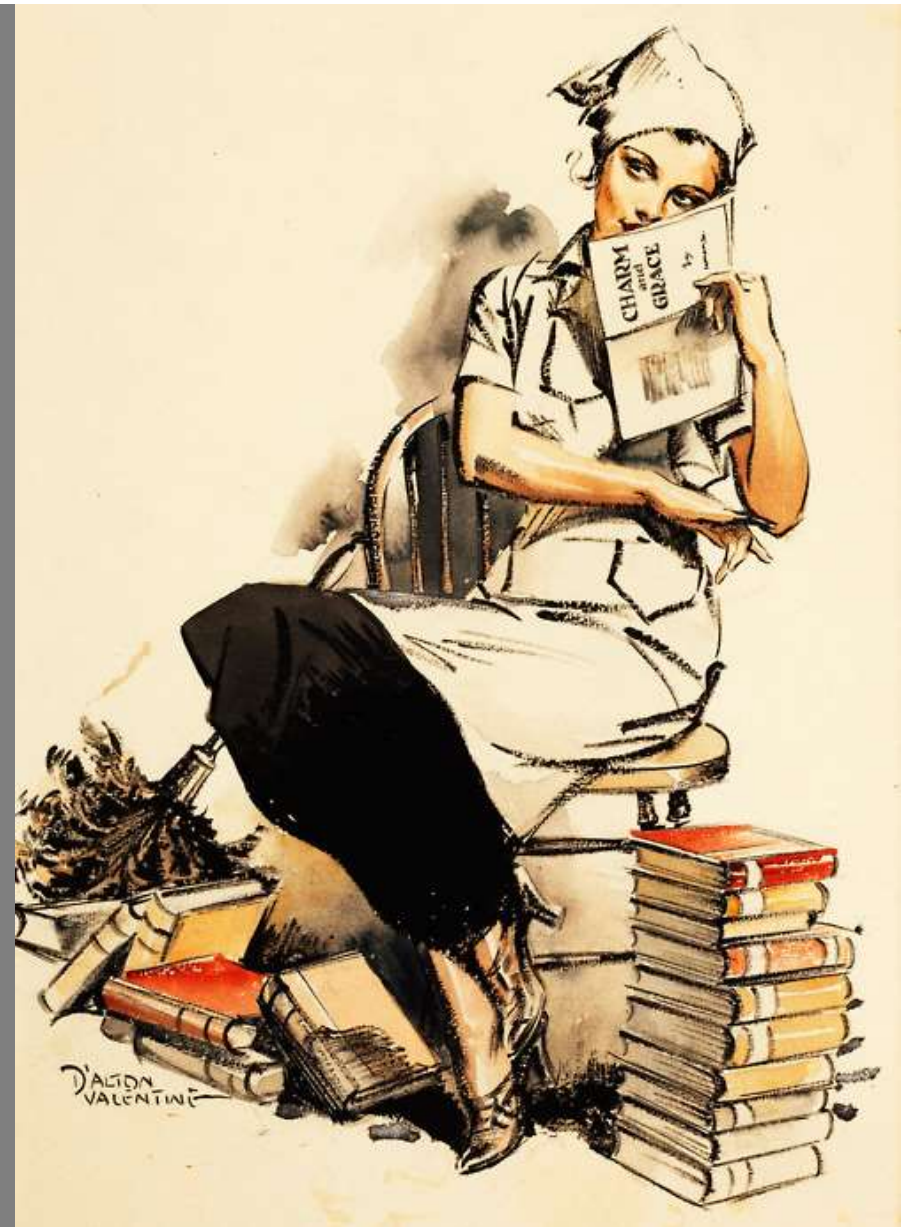


- **Dust is your enemy !**
- It encourages biological activity and chemical deterioration
- Physical damage such as abrasion
- Implement a regular cleaning regime for the buildings and for the collections.





Small intestine meets powerful suction. What could go wrong?



Safe methods of vacuuming are more effective than dusting

Integrated Pest Management

- Vital to implement an Integrated Pest Management program
 - Prevention
 - Monitoring
 - Identification
 - Treatment



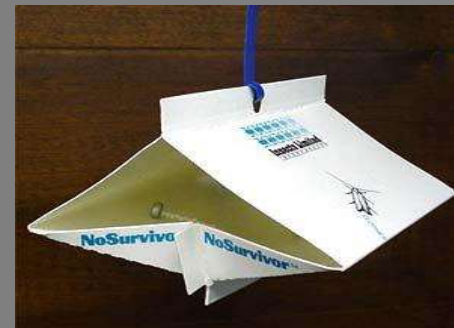
Monitoring

- Find out what pests are in your building and collections ?
- Implement a trapping program using traps
- Log inspection results.
- Understand seasonal trends and risk locations



Trap selection

- **Blunder traps:** for crawling insects. Not good in dusty areas
- **Hanging traps:** Hanging trap to be used indoors with pheromone lures for strong-flying moths and beetles only.



Know your enemies !



Cigarette beetle (often mistakenly called bookworm)
(*Lasioderma serricorne*) – paper based collections especially bound volumes



Silverfish (*Lepisma saccharina*)
– paper and photographic emulsion

Hide beetles



Common hide beetles (*Dermestes maculatus*) – risk to objects containing keratin (e.g. human hair, feathers, horns, hooves). Also furs, skins, hides and bone.

Carpet beetles



Variegated carpet beetles (*Anthrenus verbasci*) and Black carpet beetles (*Attagenus unicolor*) - feed on dry materials such as wool (including insulation), fur, silk, dried meat, insect collections, carpets, and clothing.

Powderpost beetle



- Powderpost beetle ((family *Lyctidae*) – found in dead and dried wood. Can affect structural wood and wooden objects.

Poor treatment decisions



Handling & use

- Irreparable damage
- The factor you have the most control over
- Training of volunteers/staff in safe handling and usage practices essential



Some tips

- Minimise handling, digitise regularly accessed material.
- Minimise scanning and photocopying. Do it once and do it at high resolution (uncompressed).
- Support objects at all times.
- Avoid adhesive tape, Post-it notes, metal staples or clips etc.
- Use only pencil around collections
- Understand the structure and mechanics of the object
- Respect the collection

Bound volumes



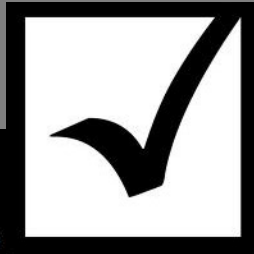
What do you do?



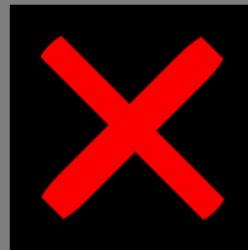
- Understand the mechanics of different book designs (tight back; hollow back etc.)
- Provide support when displaying and reading

Instigate handling and use procedures





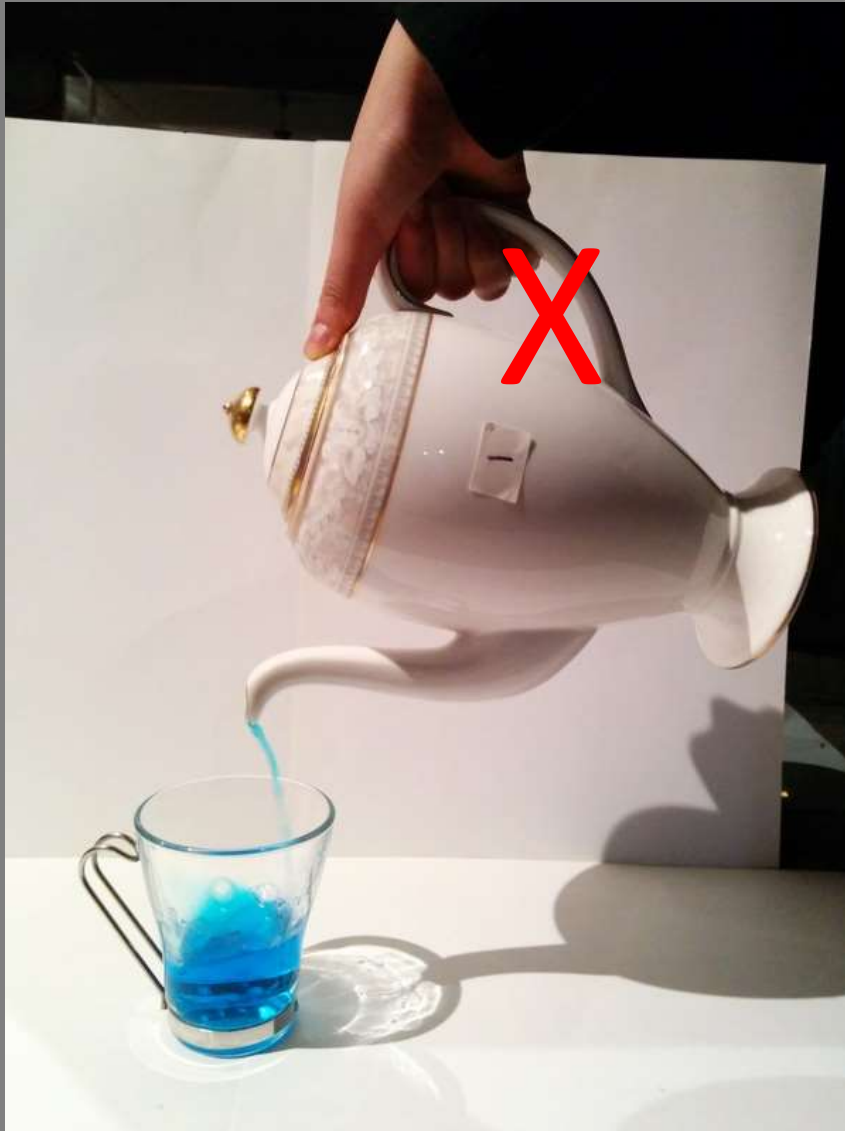
The glove dilemma



Gloves

- Wear **nitrile** gloves especially for metal objects. (check quality !)
- Many synthetic rubber gloves contain high sulphur and chloride content causing damage to Ag and Cu alloys.
- Cotton gloves are porous and usually ill-fitting

3D Objects



- Always lift objects from their centre of gravity.
- Do not lift by protruding or vulnerable areas such as handles or spouts; the object may have unseen weaknesses

Layer 4 - Safe display support materials and design



Object cleaning

- Ensure cleaning methods are safe and suitable for the type and condition of the object.
- Consult a qualified conservator for advice/training.

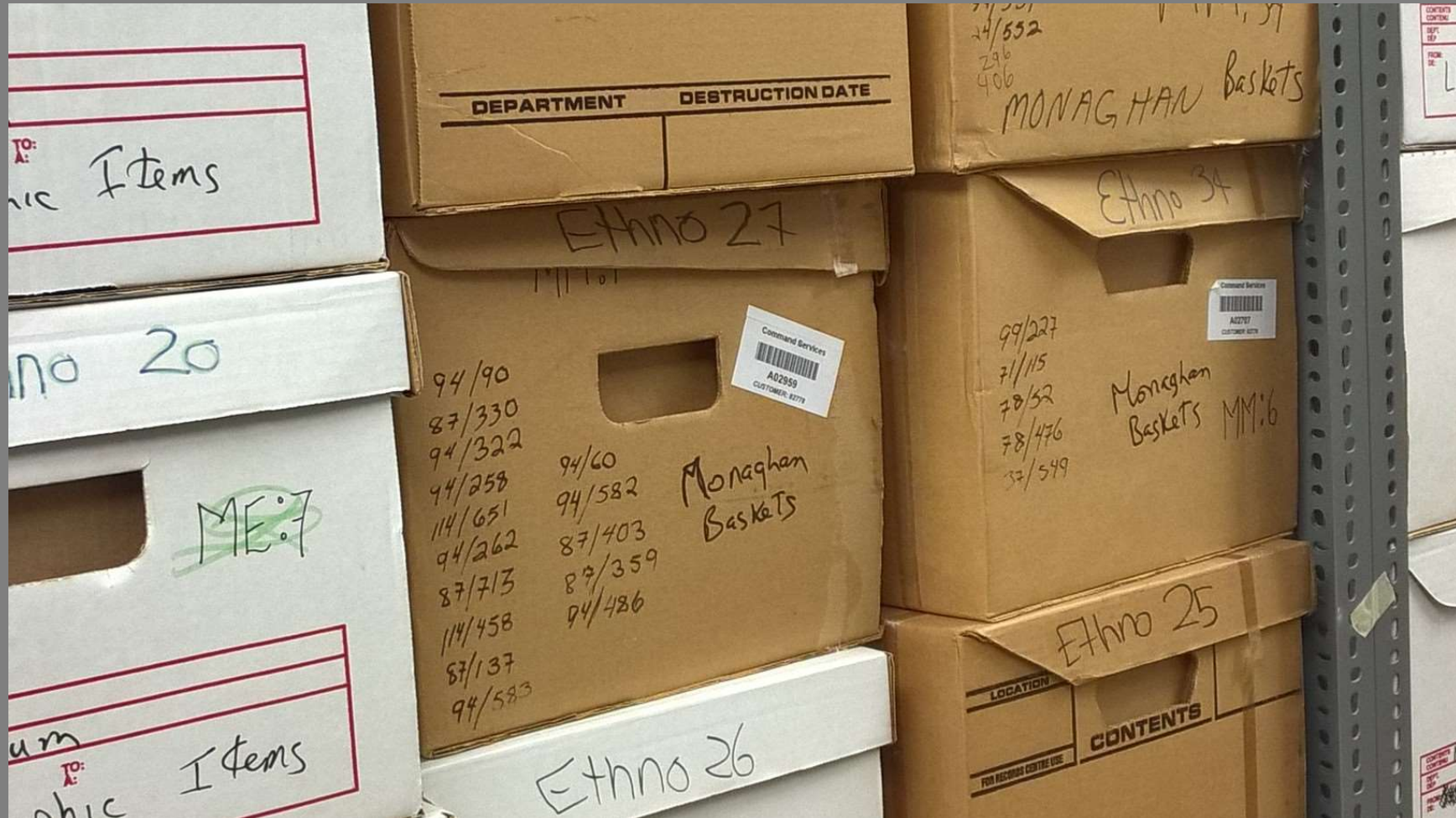


Layer 3 –Storage and display furniture

- Select chemically stable, well designed systems.
- Or modify to improve if no funding for stable options



Layer 4 – Storage enclosures



It's all about boxing !



Getting the design right

- The object can be accessed easily without damage
- Understand how the object is going to be used and what vulnerabilities it has.
- Where is it going to be stored and in what conditions?
- Who has access ?

Paper or plastic ?

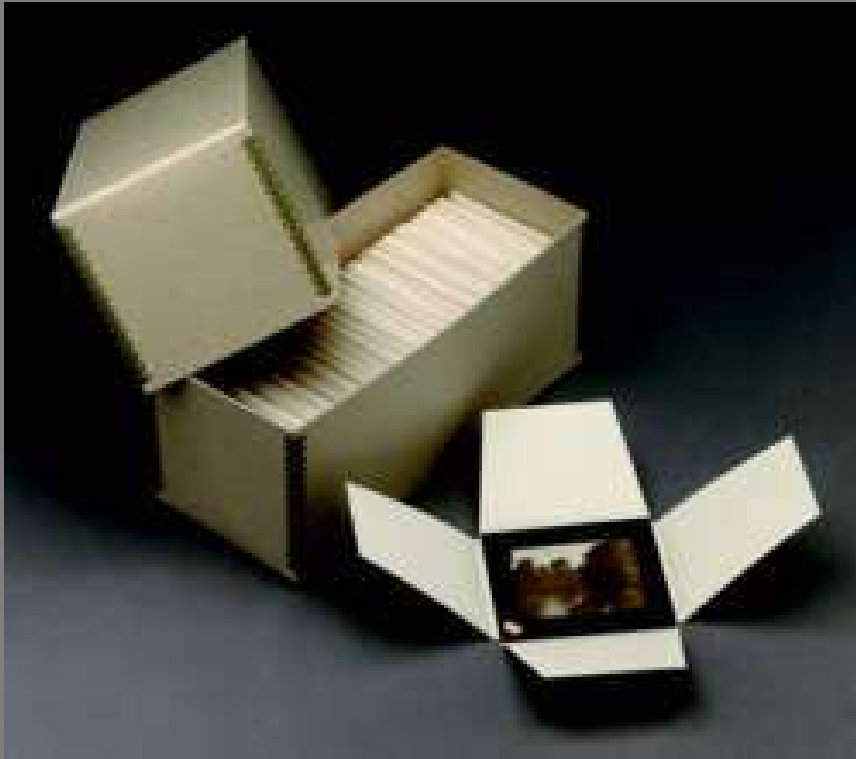
- Paper/board – uncontrolled environments with regular high humidity.
 - Ideally 100% cotton cellulose (lignin free).
 - pH 7 (unbuffered can be used for all materials)
- Plastic (uncoated polyester or polypropylene)
 - humidity controlled or low humidity environments. Regularly accessed

Loose prints & polymer negatives



- Individual sleeves in archival boxes or modified filing cabinets.
- Don't over pack
- Albums that prints can be easily removed.
- Oversized – plan chests, boxing.

Glass plates & cased processes



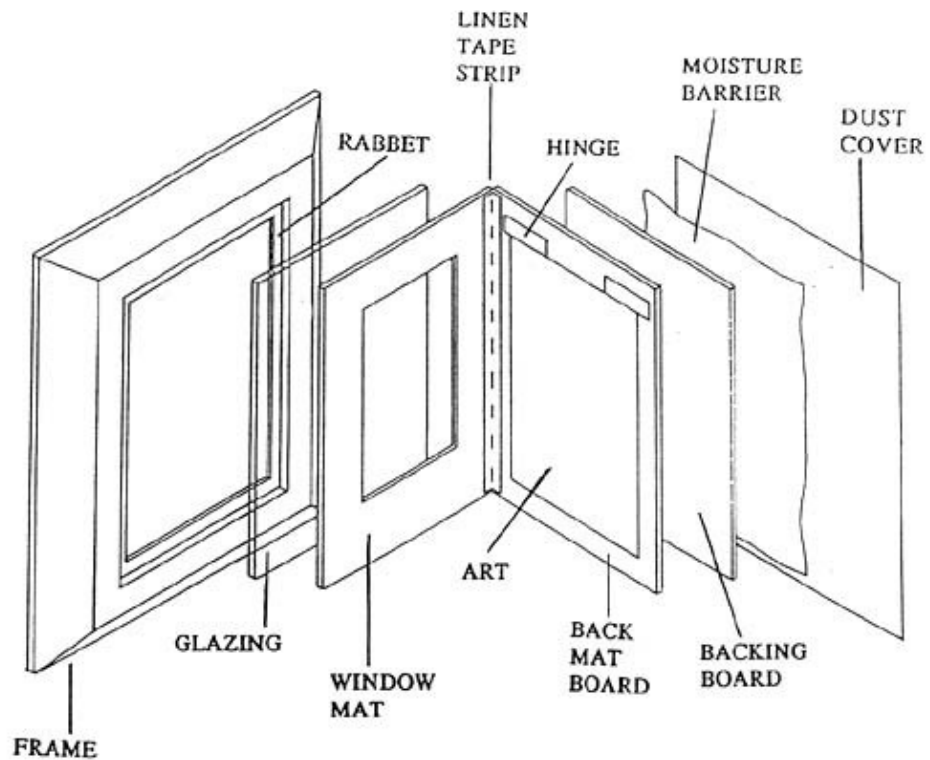
- Glass plate negatives
- Lantern slides
- Cased
daguerreotypes,
ambrotypes &
tintypes
- Standard prints



Unbound paper

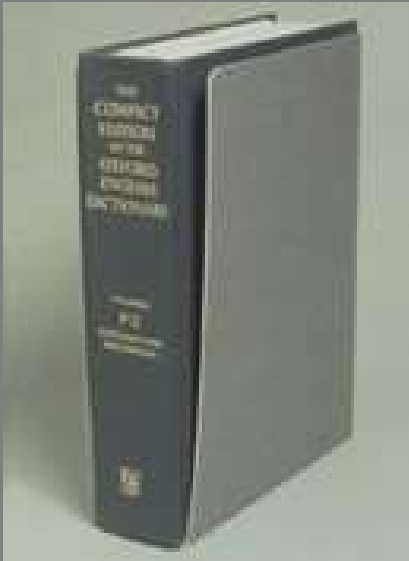


Mounting works



MATTING AND FRAMING
PACKAGE

Bound volumes



Textiles

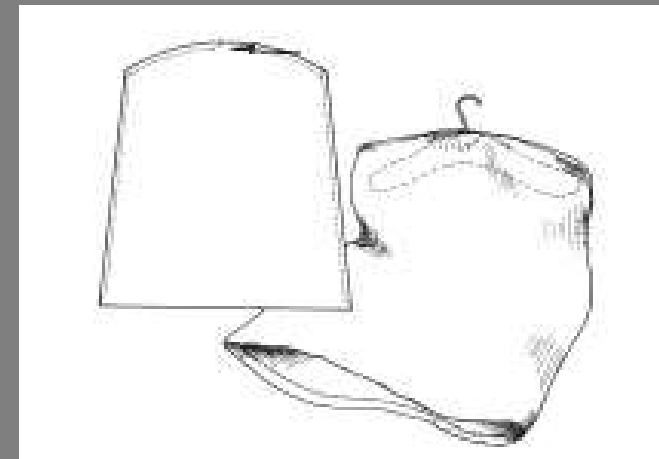


Flat textile storage

- Same archival housing materials as for photographs (pH 7)
- Avoid creases and folding but if necessary pad out with polyester wadding or unbuffered acid free tissue
- Avoid placing objects on top of each other. Fabrics and their fastenings and attachments can cause chemical reactions (especially silk and wool are reactive)

Hanging garment storage

- Only if in very good condition.
- Should be checked regularly
- Avoid wire hangers.
- Pad plastic or wooden hangars with polyester wadding covered with unbleached calico
- Store in unbleached calico cover.



Rolled textile storage

- Wrap in unbuffered archival tissue around an archival core (see Notes).
- Store in archival boxes or wrap outer layer heavy archival wrapping paper
- Keep away from light





Objects



Metals

- House like with like
- Relative humidity above 65% accelerates oxidation
- Identify active corrosion in metals. Weeping
Separate and store in very dry conditions
(Iron based objects particularly vulnerable)
- Dust encourages corrosion
- Non-reactive storage materials – e.g.cotton.
Avoid wood.

Boxing or shelving ?



Glass



Ethafoam



Machinery & Vehicles



Machinery & Vehicles

- House under cover (building or framed out heavy duty poly tarp – not good in humid conditions)
- Protect against water, must be kept clean & dry (remove dirt, bird droppings etc. regularly)
- Block water entry points (e.g. exhaust pipes, smokestacks & vents)
- Remove absorbent debris and don't let water pool
- Protect organic components found in interiors (leather, canvas etc.). Cover to minimise light damage

- **Coatings** – check with metals conservator prior to application of rust preventive compounds (keep changing)
- **Supports** – to protect tyres (especially rubber) use axle supports or blocks to raise off ground.
- Chose load bearing points that evenly distribute weight.
- With most vehicles these will be under the axles or the lifting points of the chassis
- **Implement maintenance plan**



Inscription on back of photo reads: [sic] "The rear end of the Labor day procession. Note the sacred animals - the blasted goats..." Surat c.1925 (Source: State Library of NSW: At Work and Play – 03604. <http://archival.sl.nsw.gov.au/Details/archive/110308239>)

Questions ?

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MDO blog: <http://qmmdo.com.au/>



COBB & CO. COACH IN THE YULEBA RAILWAY YARDS - LOADED AND READY TO ROLL.

Source: <http://visityuleba.com.au/wp-content/uploads/2013/10/Cobb-and-Co-Coach-Yuleba-Railway-Yards1.jpg>