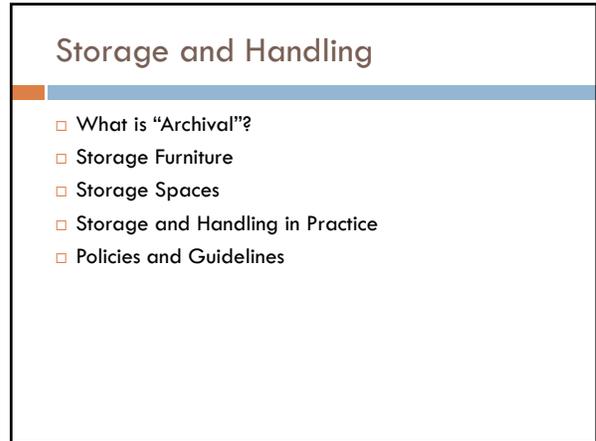


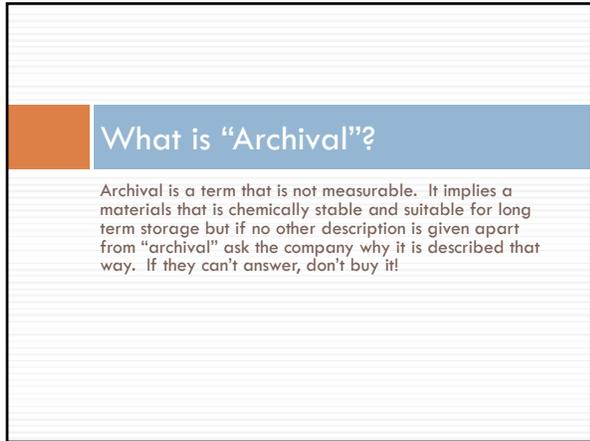


## STORAGE AND HANDLING



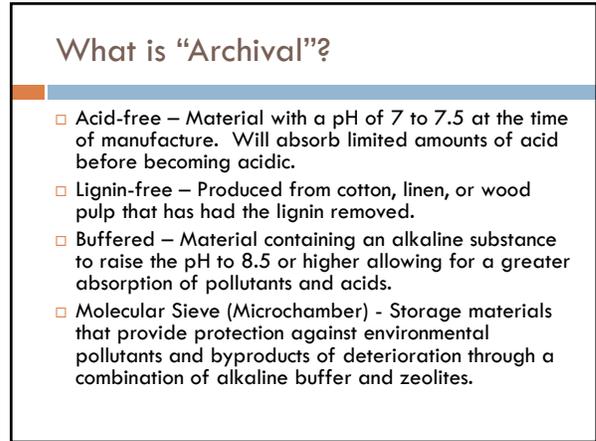
### Storage and Handling

- What is “Archival”?
- Storage Furniture
- Storage Spaces
- Storage and Handling in Practice
- Policies and Guidelines



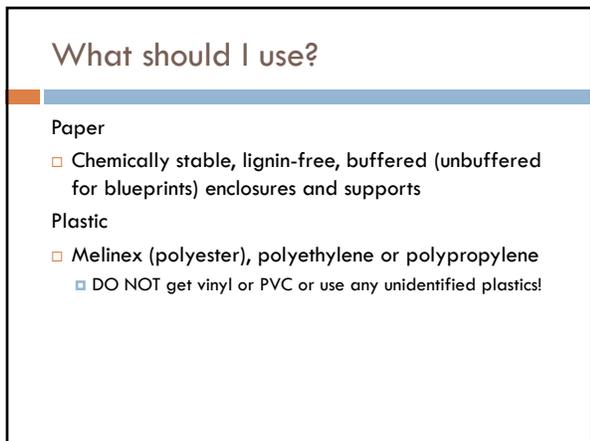
### What is “Archival”?

Archival is a term that is not measurable. It implies a materials that is chemically stable and suitable for long term storage but if no other description is given apart from “archival” ask the company why it is described that way. If they can't answer, don't buy it!



### What is “Archival”?

- Acid-free – Material with a pH of 7 to 7.5 at the time of manufacture. Will absorb limited amounts of acid before becoming acidic.
- Lignin-free – Produced from cotton, linen, or wood pulp that has had the lignin removed.
- Buffered – Material containing an alkaline substance to raise the pH to 8.5 or higher allowing for a greater absorption of pollutants and acids.
- Molecular Sieve (Microchamber) - Storage materials that provide protection against environmental pollutants and byproducts of deterioration through a combination of alkaline buffer and zeolites.



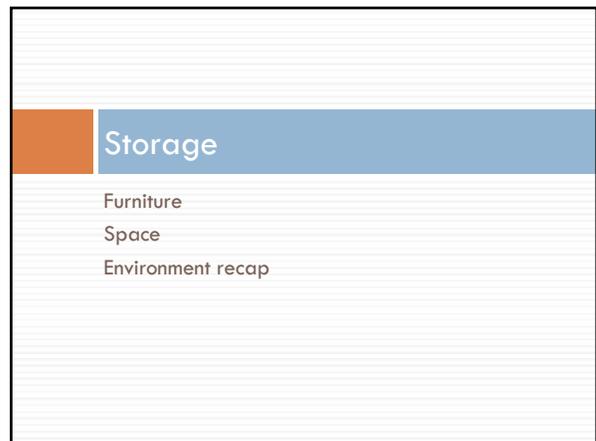
### What should I use?

#### Paper

- Chemically stable, lignin-free, buffered (unbuffered for blueprints) enclosures and supports

#### Plastic

- Melinex (polyester), polyethylene or polypropylene
  - DO NOT get vinyl or PVC or use any unidentified plastics!



### Storage

- Furniture
- Space
- Environment recap

## Storage furniture

Beware of furniture or finishes that have:

- Inadequate strength
- Rough surfaces
- Projections, ridges, obstructions, sharp edges
- Finishes, lubricants, adhesives, or other materials that off-gas



## The Storage Area

- Allow for easy access and safe movement of collections
- Allow air to circulate around shelving
- Have a reasonable shelf height for safe retrieval or supply sufficient stools

## The Storage Area

- Keep collections at least 4 inches off floor
- Meet preservation needs of special formats
- Keep collections out of basements & attics



## Environment in Storage - reminder

- MINIMIZING FLUCTUATION WITHIN a set temperature and RH is the most important factor rather than exact settings
- Set points for different materials range from 30% to 55% (+/- 5%) for RH
- Set points for temperature should be no higher than 70°F if possible

## What if you need variety?

- Climate zones
  - ▣ Through your HVAC system
  - ▣ Room within room
- Microenvironments
  - ▣ Controlled or uncontrolled

## Poll Question

- How many of us could use improvements to our storage areas? (I expect this to be a 100% – or close to it – response, don't disappoint me!)
  - ▣ Y/N or raise hand

## Care and handling

Books  
Documents  
Frames & Paintings  
Photographs  
Silver  
Textiles  
Hazards in your Collection

## Storing Bound Volumes

- Vertical shelving for regularly-sized volumes
  - ▣ Shelf volumes of like size together (octavos and folios separate)
  - ▣ Books should not lean
  - ▣ Use bookends that won't razor books
- Horizontal shelving for oversize volumes (more than 18 inches tall)
  - ▣ Stacks no more than 2-3 volumes
- Books should be fully supported by the shelf
- Practice shelf maintenance
- Fragile books may need to be placed in a protective enclosure



## Documents & Manuscripts

- Do not overcrowd folders
- Keep the folders upright, and do not allow them to slump
  - ▣ Use spacer boards
- Remove damaging fasteners
- Are any of the papers fragile?
  - ▣ Note the general condition
- How are fragile papers housed?
  - ▣ House extremely fragile papers in individual acid-free folders, in polyester (Mylar or Melinex) sleeves in acid-free folders, or in a paper sling within an acid-free folder
- Separate acidic papers from those of better quality by interleaving



## Framed items

- Archival framing with UV filtering glass
- Vertical storage
  - Compartments or racks
- Flat storage
  - Boxed
- Keep them off the floor!



## Paintings

- Steady environment due to composite nature
- Handle at edges and use caution not to torque
- Good airflow behind painting, especially if on exterior wall
- Use caution when hanging over fireplace, vents, air conditioners, etc.



## Photographic Materials

- Ensure any materials bought for storage have passed the PAT (Photo Activity Test) that was developed to evaluate the suitability of enclosures for photographic materials.
- Store photographs (prints & negatives) in individual folders
  - Acid-free, lignin-free folders
  - High alpha-cellulose content
- Archival boxes best, hanging files OK
- Melinex (polyester), polyethylene or polypropylene sleeves can prevent handling, but be cautious of elevated RH
  - DO NOT get vinyl or PVC sleeves!
- Wear clean cotton gloves without dots to handle photographs or negatives.

## Cellulose Nitrate Film (1889-1951)

- Recipe (gun cotton):
  - Cotton fibers dissolved in nitric and sulfuric acids to form viscous fluid
  - Emollients added to increase flexibility
- Hazards:
  - Extremely flammable
  - Releases hazardous gases
  - Decomposes naturally



## Cellulose Acetate Film (1920s-present)

- Characteristics:
  - Slow burning
  - Releases gases harmful to neighboring collections
  - Chemically decomposes over time
- Vinegar syndrome (acetic acid)
- Acetate and Nitrate films should be in cold storage [http://www.nps.gov/museum/coldstorage/html/intro1\\_1.html](http://www.nps.gov/museum/coldstorage/html/intro1_1.html)



## Silver

- Big question – how often do you use it.
- Silver that is used often, does not tarnish but when unused will.
- NEVER put silver in the dish washer
- Don't wrap in plastic wrap or wool as both will cause the silver to tarnish
- Use careful handling when cleaning to prevent scratching or denting
- Go slowly when polishing to not remove too much of the silver with the abrasive.



## Textiles

- Keep out of direct light and filter any UV lights in the house
- Minimize exposure to pollution and dirt
- Do not wash historic textiles
- Proper padding if folded, rolled if large
- Hung on properly padded hangers to give best overall support

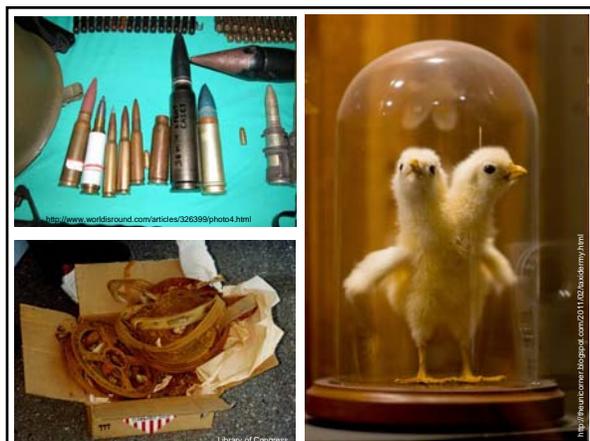


<http://duringquietime.blogspot.com/2010/03/textile-quit-storage.html>



## Hazards in The Collections

- Cellulose nitrate, stuffed or jarred natural history specimens, ordinance/ammo...
  - ▣ Do you need to keep them?
- What is the value of these materials to your collection?
  - ▣ Monetary
  - ▣ Research
  - ▣ Mission

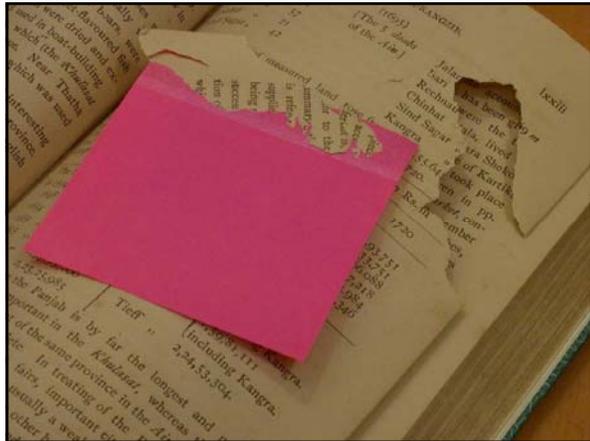


## Pop Quiz

- When you encounter hazards (or know of them) in your collections you should:
  1. Label them as such and include this information in your catalog
  2. Ignore them, what harm can they do
  3. Get rid of them – they are dangerous!
  4. Consult with experts to ensure the dangers are minimized or eliminated
  5. Answers 1 and 4
  6. Depends – could be all of them

## Processing Policies and Guidelines

- Policies can include food and drink in workspaces, workplace habits, and personal items in workspace
- Guidelines can include materials used (and not used) in processing, handling during processing procedures, removal of fasteners, and treatment of fragile or damaged materials



## Storage Tips

- Storage furniture and enclosures for collection materials should be durable and chemically stable.
- Microenvironments may be necessary for some items
- Enclosures should fit the item(s) properly and provide support.
- Identify materials in collections stored in deteriorating or damaging materials and replace.



## Storage Tips

- Avoid:
  - Pressure-sensitive tapes or labels
  - Rubberbands
  - Paper clips
  - Post-it Notes
  - Standard glue or glue-sticks

## Resources

- Connecting to Collections Topics
  - ▣ <http://www.connectingtocollections.org/all-topics/>
- Library of Congress
  - ▣ <http://www.loc.gov/preservation/care/>
- American Institute for Conservation
  - ▣ <https://www.conservations.org/index.cfm?fuseaction=page.viewpage&pageid=497>
- Net Nebraska Saving Your Treasures
  - ▣ <http://www.netnebraska.org/basic-page/television/saving-your-treasures>

## Questions?



I don't do legal questions.  
You need Sanji, two peaks over.

## Homework

- Select a discrete collection at your institution.  
Where is it stored? Is it appropriate for this collection?