

Preservation Concerns in Planning a Records Center

Developed by
Taten Stamm
June 18, 2014

Last Update
February 6th, 2018
Pictures Still WIP

Preservation Goals

1. Ensure Longevity of Records
2. Provide Protection Against All Forms of Damage
3. Provide Ease of Access for Audit and Emergency Management
4. Provide Security Against Theft and Damage

INTENTIONALLY BLANK

Locational Awareness and Site Understanding

While many hazards are impossible to mitigate, it is still important to understand the hazards that your site may face while under operation.

Water and Chemical accidents are the most common record destructors and can be caused by seasonal issues. Weather management will be critical to protecting your center.



Hazards to Understand

1. Flood Plains
2. Nearby Railroad Tracks
3. Seasonal Issues
4. High Traffic Areas (Both Exterior and Interior)

Interior and Exterior Building Features

Lighting

Lighting has the largest impact on your facility than any else. Light damage is cumulative and irreversible; some of the effects of lighting are as follows:

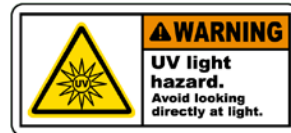
1. *Weakens Paper Fibers*
2. *Creates Brittleness*
3. *Causes Bleaching/Yellowing*
4. *Causes Fading and Color Change*

Exterior lights should be placed away from the building and shine onto it. These lights will attract bugs towards the windows and entry areas at night.

Interior lights should be placed away from windows and not inside the frames. Locate lights over aisles and run parallel to shelves or intersections. Lights should be 14 inches above the highest box/shelf.

Remember, All Light is Damaging: UV light is especially harmful. Centers should avoid fluorescent and sunlight over the following limits:

1. *No Visible Lights Over 55 Lux*
2. *No UV Light Over 75 Microwatts*



Sunlight is the worst; the following measures can be taken to protect documents:

1. *Use Blind or Drapes with UV Filters*
2. *Install Fluorescent Light Controls*
3. *Buy Low UV Fluorescent Bulbs*
4. *Install UV Filtering Films and Sleeves*

Pest Management

Create a Quarantine Space for incoming collections. Records should be kept here for 2-4 weeks before bringing them into the record center. Low temperatures will cause bugs to leave and not follow documents into the record center.

Eliminate sources of moisture – no water, no pests. Food and drink needs to be restricted from within the record center. Keep trash in tightfitting containers and remove daily.

Pest Monitoring

Establish a regular program for monitoring pests in the records center. Consistent ground maintenance is key to preventing pests from entering the center.

Don't let the situation get out of hand.



Windows

Glass should be intact with no cracks or broken sections. Ensure all frames and sills are in good condition and caulking is intact. Replace all damage sections and check regularly.

Screened Openings

Screens in doors, windows, crawlspace vents, and HVAC locations should be under ¼ inch; otherwise it will be large enough to allow mice to enter. Any screen above ¼ inch should be replaced.

Exterior Envelope

Roof and Gutters

Determine age and projected life of roof, maintain and replace on schedule. Gutters need be intact and cleaned regularly, if damage, gutters should be replaced immediately.

Downspouts

Unobstructed and draining freely, all outputs must drain water away from the foundation. Any existing outputs found to drain onto/around the foundation must be redirected away from the building. Parking lots are a perfect place to drain water to.

Landscaping

No Organic Material should be within 12 inches of the building. Organic materials provide food and shelter for insects and rodents that can move into the building. Use rock instead of mulch to ensure pests do not have a home.

Shrubs should not obscure windows and doors – these both protects from insects and rodents, but also burglars.

Interior Envelope

Floors

Load bearing capacity should be a minimum of 300 pounds per square foot.

No carpeting should be allowed in storage areas, carpeting and rugs harbor insects, are a breeding ground for mold, and complicate disaster recovery efforts, especially for water leaks

Public/reference areas should avoid carpet if possible, and instead use hardwood.

Plants

No live plants inside the building, they harbor insects and can cause water seepage.

Plumbing

No water bearing pipes above record storage area. Regular checks for leaks are required and a necessity.

Storage issues

Reduce storage of hazardous materials inside the main building

I.E. No Gas Powered Equipment, Paint, Solvents, and Flammable Cleaning Supplies

Environmental Controls

Temperature

All heat accelerates the chemical reactions that cause paper to deteriorate; the lower the temperature, the longer paper will last.

Controlling Temperature

- Avoid Basement and Attic Storage
- Keep Temperatures Low and Stable
- Install/Upgrade Air Conditioning
- All Heating and Cooling need to be outside of Aisles and Walkways
- Install Dehumidifiers for Summer Use
 - Must have Dedicated Drain Line
 - Check periodically

Furnace

Dirt and pollutants increase acid formation in paper and speed its deterioration. Dirt and dust is a breeding ground for insects.

Heating Systems must be well maintained to protect Staff and Records. Failure to do so can result in irreversible damage.

- Inspect annually
- Carbon Monoxide detectors for personal are a must
- HVACT Must have filtration systems
 - Change Filters Regularly
 - Update When Needed

See Humidity Section for More Details on Temperature Control and Monitoring

Not All Records Require the Same Controlled Environment

Different Records have Different Features and Requirements for Both Storage and Handling

Record Separation is Key to a Climate Controlled Mixed Record Center

Permanent Records

- Strict Feature and Humidity requirements for Long Term Preservation and Storage
- No Self-Storage or Storied Types will Meet Any Archival Requirements
- Permanent Records will not Require Optimum Temperature or RH with Archival Microfilm Stored Offsite

Short-Term Records

- Room Temperature Conditions that Meet Staff Requirements
- Generally Used for Records that will be Accessed Monthly to Daily
- Humidity Requirements Maintain the Same as Permanent Records Unless Microfilm Backups are Stored Offsite
- Windows should still be Minimized

Permanent Records will Age Prematurely if Good Climate and Storage are not Provided

You Will Waste Money Providing Optimum Environment for All Records If Combined Together

You Can Use Low-Tech Warehouse Structures For Most Records With A Small Engineered Vault for Permeate Records. (See Bound Collections Examples)

Relative Humidity (RH)

Moisture Accelerates the Chemical Reactions That Cause Paper to Deteriorate

Wide, Frequent Humidity Fluctuations are Divesting to Paper

Mold Grows at a High Rh (50-70%)

Keep the Rh as Lows as Possible, But Above 20 To 30%

(See temperature/rh for Paper Chart – to be inserted after finalization of sections)

(3 pages together)

Monitoring Devices

Measures Temperature and Humidity to Access Current Conditions

Data Loggers may be Available from Local Records Preservation Programs (LRPP)

Shelving and Storage

Avoid Shelving Along Exterior Walls; Keep Boxes 6 Inches Away From Exterior Walls

Use Metal – Preferably Steel – Shelving

Standard Steel Shelving – 13to 16 Gauge

Avoid Wooden Shelving and Storage Units

- Wood Accelerates Aging of Paper Due to the Acidic Components Within
- Wood Is Also Highly Combustible And Accelerates The Spread Of Fire
- Finishes Should be Baked-Enamel or Powder Coated Finishes
- Other Varnishes /Paints Can Potentially Cause Damage or Increased Fire Risk

Map Cabinets, Microfilm Cabinets and So On should also be Made Of Metal with Backed Enamel Or Powder Coated Finish.

Fire Proof Cabinets May Cause Increased Deterioration and Should Be Avoided.

Employ Proper Removal and Re-Shelving.

Shelves Should Be No More Than 80% Full Using No Knifing Bookends.

Oversized Storage

- Flat Is Preferable With Short Stacks
- No More Than 4 Volumes Per Stack
- Roller Shelves will Allow Empty Space For Staff Handling
- Compact Mobile Shelving Is A Great Solution For Tight Quartered Area
- Avoid Rolls as this inhibits Digitization

_wide Profile Picture Here

Transportation

Provide Covered Areas for Loading and Unloading Records

Covered Areas will Protect from Environmental Damage during Transfer

In A Large Facility, Remember to Allow Space for Forklift, Pallet Jacks, and any other Transfer Tools.

_wide Profile Picture Here

Fire Protection

77% of Fires are Attributed to Arson

70% Occur between 9pm and 9am

18% Occur between 5pm and 9pm

The Rest are during Operational Hours

- Automatic Detection is a Must
- Manual Pull Alarms Are Only Useful For Saving Personal, Not Records
- Automatic Detectors Must Detect Ionization And Smoke
- Fire Suppression Types Should All Be ABC Type And Near All Exits
- Regular Training And Inspection is a Must

Sprinkler Systems

Sprinklers are the Top Rated Firefighting Strategy Anywhere

- Only 1 In 1,000,000 Heads Malfunction
- Modern Systems Are Superior to Earlier Systems
- Most Fires Are Extinguished By Activation of One Sprinkler Head
- Sprinklers Minimize Damage to Records
- Wet Pipe And Dry Pipe can be used for Heated And Unheated Areas
- Insurance Savings Will Offset Installation Cost

Gaseous Fire Systems

Good for Closed Record Vaults

- Eliminates oxygen available
- FM200 most common in United States

See Your Local Fire Marshal and Local Emergency Management Agency for Area Requirements and More Information

Water Damage

Most Archival Disasters Involve Water Damage So Protection is a Must

- Consider Where Water Can Enter
- Exterior and Interior Drains Need To Be Clear and Functional With Back Flow Protection
- Locate All Water Carrying Pipes and Investigate Regularly For Leaks
- Records Should Be Stored 4 Inches above The Floor, Use Pallets If Nothing Else is Available

Earthquake Protection

Use California Seismic Standards in Building Design and Construction

- Brace Shelves and Fixtures to Protect Staff and Prevent Records From Falling
- Shelving Units Should be Bolted Into the Floor or Braced onto a Wall

_wide Profile Picture Here

Security

Depending On Area, a Secure Facility Maybe Required to Protect Against Theft and Arson

Remember 77% Of Fires in Cultural Institutions Worldwide are from Arson

Building Security

- Perimeter Secure, Exterior Lighting, Locks, Patrols, Electronic Surveillance
- Changing Of Keys among Exiting Staff
- Motion Detectors
- Glass Break Alarms

Research Room Security

- Provide Lockers Outside The Research Area So All Briefcases, Purses, Etc. Can Be Left There
- Arrange Room So Staff Have Clear Sightlines to Observe Outside Researchers

User Guidelines

- Depends On Record Type
- Pencil Only
- No Writing/tracing Atop Documents
- No Sticky Notes
- Use Only Approved Book Snakes and Weights
- Training For Hands On Use to Provide Understanding of Touch and General Usage

Exhibition

- Records Should Be Placed in Cases of Metal
- Exterior Lighting Only, No Building Lighting
- Temperature Controlled With Monitors
- No Exhibit Should Be On Display for More Than 3 Months
- Provide Adequate Support for All Items Lying Inside Cases

_wide Profile Picture Here

Document Reception Features and Policy for Digitization

1. Site Visit and Setup
2. Document Packaging and Preparation for Shipping
3. Document Arrival and Staging
4. Document Indexing
5. Document Preparation
6. Document Scanning
7. Quality Control
8. Key by Image/Bookmarking/OCR
9. Image Convert
10. Database Merge
11. Name Verification
12. Document Migration
13. Destruction/Reprep/Perm Storage