

# UNDERSTANDING ARCHIVES

## AGENTS OF COLLECTION DETERIORATION<sup>1</sup>

Agent of Deterioration	Nature of Agent	Control Measures
Physical Forces	Cumulative or catastrophic forces, including sudden and gradual physical forces (e.g., impact, shock, vibration, pressure); deterioration caused by the intrinsic nature of the material (inherent vice)	Staff training; proper object supports; stable collection storage environment; design of storage facilities
Thieves and Vandals	Human activities, intentional damage, security issues.	Staff training; good security
Dissociation	The tendency of ordered systems to fall into disorder (entropy); damage from misplacing objects; removing tags or labels, recording information in an illegible, ambiguous, or non-permanent manner; errors in transcription, curatorial neglect	Planning; use of standard operating procedures (SOPs)
Fire	Damage from fire, smoke, heat, the water and other fire suppression chemicals; damage from the clean-up process	Building integrity; adherence to safety standards; control of fuel and ignition sources
Water	Flooding; leaking pipes; inadequate seals on windows; penetration through roof or ceiling	Building integrity; regular facilities inspections
Pests	Any organism that damages collections or serves as a food source for other pests	Program of integrated pest management
Pollutants and Contaminants	Organic and inorganic gases; particulate pollutants (acidic and/or abrasive)	Staff training; building integrity; control of chemicals used in building; application of microenvironments
Radiation	Ultraviolet, visible, and infrared radiation	Use of barriers and filters; use of low-radiation producing energy sources
Incorrect Temperature	Temperatures that are too high, too low, or with extreme fluctuations	Building integrity; HVAC control; staff training; application of microenvironments
Incorrect Relative Humidity	Humidity that is too high, too low, or with extreme fluctuations.	Building integrity; HVAC control staff training; application of envelope concept; application of microenvironments.

<sup>1</sup> J.E. Simmons (2006) "Table 12.1. Agents of Deterioration in Collections (after Michalski, 1994a; Rose and Hawks, 1995; and Waller, 1995 and 2003)," *Things Great and Small Collection Management Policies*. Washington D.C.: American Association of Museums. p. 101.

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## Solutions to Deterioration

Listed below are some basic steps to take to reduce the environmental threats and lengthen the life of the records.

### Light

- To help minimize light damage, store records in an area without windows, or block out the windows using dark shades or other means.
- Keep lights off when the area is not in use.
- Install ultra-violet sheaths on florescent lights.

### Temperature

- Keep temperature at a low, constant level (58 to 77 degrees Fahrenheit if possible).
- Temperature fluctuation is more damaging than high temperatures, so it is better to maintain a constant high temperature of 80 for a 24-hour period, for example, than to have a nighttime reading of 70 and a day time reading of 85.

### Humidity

- Maintain a relative humidity of 45-55%, +/- 5%.
- The use of de-humidifiers, humidifiers, and air-conditioning can help maintain a good environment.
- When possible, photocopy materials that are already brittle onto acid-free paper.

### Handling/Storage

- Handle permanent records with care.
- Make sure books and files are not being curled, folded, or bent in storage.
- Store materials in appropriate acid-free folder and boxes.
- Do not use tapes or metal fasteners (staples, metal paper clips, etc.).
- Do not use Post-it notes on permanent records. The glue remains on the paper and accelerates deterioration.
- Store permanent records in a dark, cool, dry environment away from food areas and any areas that can cause damage through leaks, floods, excessive light (natural or artificial) and pests.
- Do not store permanent records on electronic media such as computer hard drives or disks, CD-ROMS, DVDs etc. New technologies increase the problem of accessing records with outdated or no-longer-extant software or hardware, and data loss can occur in storage as well as during active use.
- For short- term storage, back-up copies should be made regularly and stored off-site. For long-term storage, the records should be transferred to paper or to microfilm.