

GUIDELINES FOR RENOVATION, TEMPORARY STORAGE, AND MOVING

During renovation, considerable damage can occur to collections. Damage can be caused by improper handling during moving, inadequate safety precautions and housings in temporary storage, or premature introduction into the new storage areas. The steps involved in renovation, moving, temporary storage, and introduction of the collections into renovated spaces must be planned with the greatest care. There must be consultation and cooperation with all staff throughout the entire process.

A. RENOVATION

1. Coordinating Personnel

- a) **PROJECT LIAISON:** One person needs to be appointed the Project Liaison between the institution and the architects, engineers, and systems engineers that are planning and executing the renovations. When construction begins, the Project Liaison must also become the institution's on-site liaison with the contractors and the quality control supervisor of the project.
- b) **MOVE COORDINATOR:** The same, or a second person, needs to be appointed the Move Coordinator to work closely with the Project Liaison.

2. Planning

- a) **Interaction with Architects and Engineers**
Through the Project Liaison, the staff member mainly responsible for collections care (i.e. the Head Librarian, Archivist, or Curator) needs to be involved in the early planning stages of the new storage areas. This staff person must specify to the architects and systems engineers the recommended environmental conditions and building details that will ensure a safe and stable environment and safe access to the collections.
- b) **Design Considerations**
Building details should include such specifications as appropriate locations of heating, ventilation, and air conditioning (HVAC) equipment, HVAC air intakes, HVAC interior vents, and water pipes; appropriate finishing materials, such as paint types and flooring; location of light banks and switches; door sizes to accommodate oversized collection items; required open areas for accessioning and handling of the collections and for free standing storage units; appropriate reconfiguration of remaining shelving; and other specifications that may be dictated by the scope and contents of the collections.

c) **Appropriate Materials**

The use of appropriate building and storage materials, properly tested before installation, will eliminate a large area of potential future harm. See the National Park Service publication "Exhibit Case Construction Materials"¹ (much information in this document is pertinent for collections storage furniture as well as exhibition furniture) for information on materials that are considered safe to use in proximity to collections materials.

Unknown or untested materials should be tested by a conservator or other scientist to determine if the products will have a negative impact on collections items. The test used to determine suitability of materials to be used with collections is known as the Oddy test.

See Jan Carlson, "Preparations for the NEB: Winterthur's Experience with Materials Testing, Passive Scavengers, and Monitors,"² and L. R. Green and D. Thickett, "Testing Materials for Use in the Storage and Display of Antiquities--A Revised Methodology,"³ for examples of materials testing using the Oddy method.

d) **Consultant Engineer**

If the systems engineers have not previously designed an HVAC system for a cultural institution, the institution may wish to have a consultant familiar with the special needs of collections review the plans and specs to determine if the proposed system can provide an environment that meets recommended conservation standards.

B. SAFETY

The Project Liaison and the Move Coordinator must have as a first priority the safety needs of the institution's personnel and its collections.

1. The Project Liaison must review the plans, contracts, and specifications of the renovation to ensure that they provide adequate protection for the institution and its collections. The Liaison must develop, with the contractors' applicable regulations, a plan to prevent any disconnection of security and fire alarm systems, and a daily checklist to ensure that all safety standards are being met during the different stages of renovation and construction.

For a discussion of these issues see Dale H. Frens, "Specifying Temporary Protection of Historic Interiors During Construction and Repair"⁴ (most of this article is applicable to any cultural institution).

¹ National Park Service. "Exhibit Case Construction Materials." *Technical Notes 5*. National Park Service, April 1999.

² Carlson, Janice H. "Preparations for the NEB: Winterthur's Experience with Materials Testing, Passive Scavengers and Monitors." Edinburgh: Scottish Society for Conservation and Restoration, 1994.

³ Green, L.R. and D. Thickett. "Testing Materials for Use in the Storage and Display of Antiquities – A Revised Methodology." *Studies in Conservation*, 40, 1995, pp. 145-152.

⁴ Frens, Dale H. "Temporary Protection: Specifying Temporary Protection of Historic Interiors During Construction and Repair." *Preservation Tech. Notes No. 2*. Washington, D.C.: National Park Service, 1993.

2. Emergencies and Disasters

- a) An Emergency Preparedness and Response Plan needs to be written or updated in anticipation of such misfortunes as injuries from accidents; systems failures; flooding from broken pipes or leaking roof; or fire from welding torch or cutter sparks, temporary heaters, or clandestine smoking.
- b) Develop a list of emergency resources available for coping with a disaster. See the Getty Conservation Institute publication *Building an Emergency Plan: A Guide for Museums and Other Cultural Institutions*⁵ for a list of personnel (p. 230) and equipment (pp. 242-245) commonly needed. The Conservation Center for Art & Historic Artifacts can provide information on and contracts for vendors with specialized services.
- c) Stockpile emergency supplies, such as plastic sheeting, plastic gloves, rolls of unprinted newsprint paper, sturdy boxes or plastic crates, paper towels, and other products to assist in emergency response and recovery.
- d) Evacuation procedures need to be in place, and all personnel need to receive training in safety and disaster response.
- e) Fire fighting plans need to be developed in conjunction with the Fire Department.
- f) Security arrangements need to be developed in conjunction with the police and the contractors.

3. Collections Priorities

A Collections Priority List needs to be developed that outlines the most historically and monetarily valuable parts of the collection. The locations of these materials during all stages of renovation and temporary storage need to be noted. Appropriate staff persons and responders need to be made aware of these priority items and location list so that the collections receive preference in the event of a disaster. It may be appropriate to provide a tour for the Fire Department, or provide them with a marked floor plan of the locations of the priority collections so that, if time permits, these collections can be evacuated in the event of a fire.

C. COMPLETION OF RENOVATION

The Project Liaison, the Move Coordinator, and the outside engineering firm must decide upon an appropriate time schedule for staff training in the use of the new equipment, testing of the new HVAC system, and monitoring of the environment (temperature, humidity, air quality, and light) *before* the collections are moved into the renovated storage areas. Several institutions have had small-scale emergencies when they have occupied a new space without leaving adequate time for testing and adjustments to new equipment.

A minimum of two weeks is recommended for training of personnel and testing and monitoring of conditions in the storage rooms and in any untested storage cases. Testing and recording equipment need to include a recording hygrothermograph or environmental datalogger for temperature and relative humidity, a light meter for visible light levels, an ultraviolet light monitor for ultraviolet levels, and metal coupons, such as Purafil's 'Museum Silver 6 Pak' Corrosion Test Kit,

⁵ Dorge, Valerie, and Sharon L. Jones, eds. *Building an Emergency Plan: A Guide for Museums and Other Cultural Institutions*. Los Angeles: The Getty Conservation Institute, 1999.

http://www.getty.edu/conservation/publications/pdf_publications/emergency_plan.pdf

to monitor for gaseous pollutants.

Prior to collections being moved into renovated storage rooms there should be two complete air changes with fresh, outdoor air to remove the solvents and other air pollutants that off-gas from newly applied adhesives and paints. Acrylic paints off-gas 95% of their solvents in the first 24 hours.

D. PROTECTION OF THE COLLECTIONS IN TEMPORARY STORAGE

The following precautions should be followed while the collection is in any temporary storage area:

1. Completely secure the area from unauthorized entries.
2. Make sure that all fire/smoke detectors and alarms and security alarms are operative and that fire extinguishers are readily accessible.
3. For water protection, place everything in the room on pallets or shelving that is at least 4-6" off the floor.
4. For dust and debris protection, cover everything in the room fully with polyethylene sheeting or Tyvek®. If the sheeting would be directly in contact with an object, such as furniture or sculpture, first place pieces of acid-free paper at vulnerable points of contact or soft cotton sheeting overall to prevent abrasion.

E. ADVANCE PLANNING FOR THE MOVE

A move can be used as an opportunity to begin an inventory of the collection. Measure the linear feet and size of the different collections. Develop a coding system of numbers, letters, or other such labeling devices that can be applied to the inventory list, the packing boxes, and the temporary storage locations.

Draw a floor plan of the temporary storage area, and determine where in the temporary storage area each type of collection will be placed. Tape out the floor and assign the code of number, letter, or other labeling method to each area. Label the boxes and other materials to be moved to coordinate with the floor plan and taped areas so that the correct location of each item is clearly understood before the move begins.

Analyze and plan the move route very carefully. Determine all areas where the moving carts' wheels could snag or a mover could trip. If there are such areas, two people will be needed for each run of a cart to manipulate the cart over the difficult area, and a person may need to be stationed at the trip point to warn the movers of the danger.

Determine beforehand how you want each type of collection moved. In advance of the move, train the movers in moving techniques, and conduct dry runs of the moving routes. If outside movers are employed, place detailed moving specifications in their contract.

Two types of moving carts should be employed. A cart with a shelf directly above the wheels and sides front and back should be used for book boxes, which can be stacked three high on the cart, and for large objects, such as sculpture. A cart with a high shelf and low sides around the shelf should be used for small boxes, small individual items, and small flat folders.

During the move flexibility will be needed. Have alternative responses to day-to-day situations, and apply plans and schedules with imagination.

F. **PACKING AND MOVING OF THE COLLECTION**

1. Packing books and archival files

These paper-based materials can be packed in cardboard book boxes, as long as the boxes are for temporary storage only. All materials should be stacked flat in the boxes with crumpled packing paper stuffed carefully into unfilled areas, including the top, to prevent shifting of the contents or crushing of the boxes during moving and stacking. Do not pack any of the items on their narrow sides or ends, even to finish filling a box.

Label each box with the following: a sequential number that is keyed to a separate sheet that lists the box's contents; an identification label of the contents, if it is deemed safe to reveal the box's contents; and a handling label: ↑ THIS SIDE UP.

Move the boxes stacked no higher than 3 or 4 on a low cart, or one at a time by hand. Be sure that the boxes are set down, not dropped.

2. Flat paper in flat files

Empty the drawers. Smaller items can be placed, in their folders, flat on a cart and moved to the temporary or new storage area. Place the larger contents of each drawer in one or more acid-free folders, larger than the paper objects. Larger items, in folders, will need to be placed in a rigid V-folder made by taping together the long edges of two pieces of Fome-cor® or corrugated board. This "sandwich" of Fome-cor®, acid-free folder, and collection items, when held firmly closed at either end, can be carried upright by two people to the temporary or new storage area.

3. Framed items

If small, pack in open topped boxes, frames placed front to front and back to back. Keep the correct orientation of the picture (vertical or horizontal) to prevent shifting of the paper object inside. Place a piece of rigid cardboard against the face of any very delicate frame and between any disparately sized frames that are placed together. Move several boxes at a time side by side on a low cart, or move one box at a time by hand.

If too large to pack in boxes, framed items should be carried by hand or on a specially designed care for moving framed artwork. Frames must be held two-handed on either side of the frame, not the top of the frame or the stretcher. For particularly large framed items, this may require the work of two people.

4. Furniture

Carry furniture by supporting it at its frame, not at a weak element, i.e., do not grasp table tops, arm rails, chair backs, etc. Remove any drawers if possible, and secure doors shut on furniture such as cabinets.

5. Sculpture and other three-dimensional objects

Handle with clean, cotton gloves. Lift only by the strongest part, as the main body of the sculpture; never by a projecting member, such as an arm or head. Always lift with two hands. Hold objects with one hand supporting the bottom and the other supporting the side or top. Tie down any loose parts of an object with cotton tape or strips of muslin. Remove detachable parts such as lids and move separately.

If large, place on low cart with protective padding beneath; have two people, one on each side, supporting the sculpture and a third moving the cart.

If small, pack in a small box with surrounding support or padding material; move on high shelf cart. Do not pack fragile objects and heavy objects in the same box. Alternately, place the item directly on a high shelf cart with padding material under and around it, if it can be completely secured this way.