

# GUIDELINES FOR RE-HOUSING: RENOVATION AND MOVING

During renovation and collections moves, the potential risks increase for damage to collection objects. Improper handling during moving, inadequate safety precautions and housings in temporary storage, facilities emergencies, and premature introduction into the new storage areas can inadvertently cause harm to collection objects. It is important to remember that shock, vibrations, and changes in environmental conditions can negatively affect objects and result in severe damage to their structure and mechanical properties.

The steps involved in renovation, moving, re-housing, and temporary storage arrangements must be planned with collection preservation strategies in mind. Moreover, consultation and cooperation with all staff is key to making the entire process successful.

This technical bulletin is intended to give a quick overview of stakeholders included in these projects and their responsibilities, as well as acting as guideline for moving collections with precautions. Staff positions listed in the document are not exhaustive and are intended to illustrate roles, which can vary between institutions.

## **Renovation**

Whether the institution is housed in a purpose-built building or an existing building, renovation projects can happen for various reasons, such as upgrades to the HVAC system, gallery rearrangements, lighting and security improvements, and more. To prepare and design an appropriate plan, it is very important to address the following subjects.

## **Staff Coordination**

**PROJECT LIAISON:** staff member(s) to facilitate communication between the organization and external contractors (such as architects, HVAC and security systems engineers, and other vendors) that are executing the renovations. When construction begins, the Project Liaison can become the institution's on-site manager responsible for the supervision of all third parties and the quality control of the project.

**MOVE COORDINATOR:** staff member(s) that acts as the collections manager and registrar throughout the whole project development. Responsible for the physical and intellectual safety of the collection.

**PREVENTIVE CONSERVATOR:** staff member(s) responsible for collection care needs. It is vital that this role be consulted from the early planning stages through the completion of the project. The Preventive Conservator collaborates with the Move Coordinator, architects, and engineers to achieve the recommended environmental conditions and building details that will ensure a safe and stable environment as well as secure access to collections.

## **Pre-Planning: Security and Safety Measures**

Determining collection needs, keeping in mind the mission and policies of the institution, is a fundamental phase when designing a renovation project. Analyzing and understanding the past

and current environmental conditions in the current, temporary, and new collection spaces is also essential to developing a new environmental context survey. Building details should include specifications for 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 based on the scope and contents of the collections.

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” for information on collection storage and exhibition furniture and materials that are considered safe to be used in proximity to collections. Unknown materials should be tested (e.g., Oddy Test) by a conservation scientist to determine if the products will have a negative impact on collection items.

A Collections Priority List that outlines the most historically and monetarily valuable parts of the collection needs to be developed. Locations of these materials during all stages of renovation and temporary storage should be tracked. The Priority List can be shared with designated staff persons and first responders so that these collections can receive preference in the event of a disaster. It is advisable to provide a tour for the local fire department and ensure they have a marked floor plan of the locations of the priority collections so that, if time permits, these objects can be evacuated in the event of a fire.

The safety needs of the institution's personnel and its collections are the priority for the Project Liaison and the Move Coordinator. 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 should develop, with contractors' applicable regulations, a plan to prevent any disconnection of security and fire alarm systems, as well as a daily checklist to ensure that all safety standards are being met during the different stages of renovation and construction.

Construction projects bring the potential for increased risks such as accidents, systems failures, flooding, and fire. The Move Coordinator should review the site's Emergency Preparedness and Response Plan in advance of the project launch and make sure it is updated and shared with staff and stakeholders. Site evacuation procedures should be established, and all staff should receive training in safety and emergency response protocols.

A list of emergency resources is invaluable in coping with a disaster. See the Getty Conservation Institute's publication *Building an Emergency Plan: A Guide for Museums and Other Cultural Institutions* for a list of key personnel (p. 230) and equipment (pp. 242-245) to include. Emergency supply kits containing items to assist in response and recovery, such as plastic sheeting, gloves, towels, mops and buckets, and flashlights, should be kept well-stocked and clearly marked on site maps. The Conservation Center for Art & Historic Artifacts can provide information on the creation of emergency supply kits as well as vendors for specialized emergency response services.

## **Planning: Training and Testing**

The Project Liaison, the Move Coordinator, and the Preventive Conservator 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 personnel and testing and monitoring of conditions in the storage rooms and in any untested storage cases. Testing and recording equipment should include environmental dataloggers for capturing temperature and relative humidity and light meters able to measure both visible light and ultraviolet light levels. A variety of low-cost methods, including A-D Strips and handheld air quality monitors, can help with monitoring for off-gassing materials and measuring particulate concentration and volatile organic compounds (VOCs).

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. While drying times can vary by coating and material, in general, a four-week period is suggested to allow sufficient off-gassing of volatile compounds.

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 carefully. Identify any potential problem areas, such as places where a cart's wheels could snag, or a mover could trip. For any such obstacles, 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 staff of the danger.

Determine beforehand how each type of collection should be moved and the best equipment for each component. Various types of moving carts, dollies, pallet jacks, and hand trucks can be used to provide the most stable and smooth transport for the different collection types. In advance of the move, discuss the moving techniques with staff and conduct practice runs of the moving routes. If outside movers are employed, be sure to go over the moving plan with their supervisor and staff before any artifacts are moved. If possible, place detailed moving specifications in their contract.

### **TEMPORARY STORAGE**

The following precautions should be noted while the collection is in a temporary storage area:

- Completely secure the area from unauthorized entries.

- Make sure that all fire/smoke detectors and alarms and security alarms are operative and that fire extinguishers are readily accessible.
- For protection from flooding, place everything in the room on pallets or shelving that is at least four to six inches off the floor.
- 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.

## PACKING AND MOVING

### **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; a general identification label of the contents, as appropriate; and a handling label such as "THIS SIDE UP". Stack the boxes no higher than three or four on a low cart or move them one at a time by hand. Be sure that the boxes are set down, not dropped.

### **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.

In case of drawings, each of them should ideally be window matted and interleaved with acid free tissue or glassine. They can then be sandwiched between two sheets of mat board, acid free cardboard, or Fome-cor®. If the drawing is made of chalk or other friable material, do not interleave or allow anything to come in contact with the surface.

### **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 cart for moving framed artwork. Frames must be held with one hand on either side of the frame

or one hand on a side and the other hand on the bottom; do not hold by the top of the frame or the stretcher. For large, heavy, or awkward framed items, this will require the work of two people. Be careful to have any hardware or hanging devices removed or secured before moving the piece.

## **Furniture**

Carry furniture by supporting it at its frame, never at a weak element (i.e., do not grasp tabletops, arm rails, chair backs, etc.). Remove any drawers if possible, and secure hardware and doors shut on furniture such as cabinets.

## **Sculpture and Other Three-dimensional Objects**

Handle with clean, nitrile gloves. Lift only by the strongest part or the main body of the sculpture, never by a projecting member, such as an arm or head. Always lift with two hands, using one hand to support the bottom of the object and the other to support the side or top. Tie down any loose parts of an object with cotton tape or strips of muslin. When it is safe to do so, disassemble objects with detachable parts such as lids and move each component separately.

If the object is large, place on a low cart with protective padding beneath; have two people, one on each side, supporting the object and a third moving the cart. Use wadded acid-free tissue to fill in voids and to wrap all the protruding parts. Wrapping can be taped to itself, with low-tack or Artist tape.

If the object is small, pack it in a small box with surrounding support or padding material and move it using a 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, ensuring that the object is completely secured.

## **REFERENCES AND FURTHER READINGS**

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