Stabilizing Special Collections for High-Density Storage at the Library of Congress

INTRODUCTION

• In 2005, the Library of Congress opened a state-of-the-art, high-density storage facility thirty miles from Capitol Hill at Fort Meade in Maryland
• The facility has been constructed on a modular basis: Modules 1 and 2 were designed for traditional bound library materials; Modules 3 and 4 (on which this report focuses) were designed to house 22 million special-format collection items
• The Conservation Division Move Project team was charged with preparing especially challenging special format collections for off-site transport and storage
• The collections came from 8 Custodial divisions across the Library and included a variety of formats such as globes, rolled architectural drawings, ephemera, large works of art on paper, photographs, negatives, maps, manuscripts, newspapers, rare folios and a variety of three-dimensional objects

PLANNING

• Special collections requiring conservation attention were extensively assessed and surveyed so that every container sent to the new Fort Meade module could have a specific shelf location or footprint mapped on a “planograph” to make the most efficient use of every shelf
• New housings were designed to stabilize and support each collection appropriately during the move and for long term storage while making the best use of the available space
• Massive quantities of supplies were ordered requiring careful review of costs and benefits
• The materials used to rehouse or treat collections were required to meet the Library’s stringent material specifications

GLOBES

CHALLENGES
• Large variety of sizes and shapes
• Large variety of materials including wood, glass, plastic, cardboard and metal
• Globes were stored in metal cabinets, on open shelves or on display (no individual containers)
• Some globes were extremely heavy

SOLUTIONS
• Drop-front custom corrugated boxes made on the in-house box-maker were designed with a slide-out tray to support each globe base during retrieval
• 120 oversize globes exceeded the size limitations of the in-house machine and were extremely heavy, so similar boxes of 60 point board were made to LC specifications by an outside vendor
• All boxes were outfitted with fold-out flaps for additional protection on the drop-front edge
• Binder’s board was used to reinforce the tray for particularly heavy globes
• Each box was outfitted with Ethafoam® supports around the base, adhered to the tray with hot-melt glue
• Similar supports lined with Volara® foam (a softer polyethylene) were adhered to each box edge to support the globe while protecting the delicate surface
• Each box was labeled with a full-color photograph, detailed bibliographic information, and handling instructions to ensure proper retrieval

OBJECTS

CHALLENGES
• Objects included a large variety of formats and materials, many of which are not usually found in library collections (textiles, sealed food containers, etc.)
• Many collection items were incurring damage from original loose, acidic containers
• Most objects did not fit well in commercially available boxes and required custom supports to keep them safe during transport to and from the Modules

SOLUTIONS
• Large textiles (flags, banners) were rolled onto supportive tubes lined with unbleached cotton muslin and tied with cotton-twill tape
• Smaller textiles (t-shirts, bandanas) were housed individually in four-flap boxes with each item wrapped around cotton batting covered with unbuffered tissue
• Small objects (architectural figures, buttons) were placed in divided boxes padded with Volara® foam
• Especially fragile items were housed in boxes fitted with custom supports carved from Ethafoam® or made from folded corrugated board lined with Volara® foam or batting and muslin
• Flatter items (paper fans) were housed in custom sink mats made from Volara® foam cut to the object shape and adhered to a sheet of mat board or corrugated board fitted with a polyester overlay; smaller flat items (coins) were placed in sheets of polyester with custom pockets

ROLLED DRAWINGS

CHALLENGES
• Drawings in these unprocessed collections were tightly rolled in original acidic cardboard tubes, paper wrappers, or in open boxes with no support
• Many rolls incurred damage from adjacent rolls and poor-fitting containers
• Incompatible materials were often wrapped in the same roll (diazotypes with photostats and blueprints)

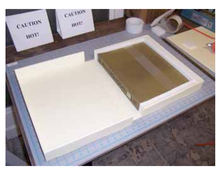
SOLUTIONS
<u>For high priority collections</u>:
• Each roll of materials was separated by type and divided into four rolls (staff were carefully trained before the project began to recognize original drawings, photo reproductions, and a range of media)
• Each roll was wrapped around a central roll of thick polyester, then wrapped with an outer polyester sheet larger than the drawings and tied with cotton tape at intervals
• Rolls were then housed in a large box that was separated into four sections to save space and retain the original context of the drawings
• Medium-density, closed-cell polyethylene foam squares were placed at each end of the box for additional protection
<u>For collections needing less customized housing</u>:
• Drawings were unrolled, straightened and then wrapped with an outer sheet of polyester, tied with cotton twill tape at intervals
• Rolls were then placed in standard size single-roll boxes outfitted with medium-density, closed-cell polyethylene foam with an incised circle for support
• Polyethylene foam squares were placed at each end of the box

WORKS OF ART

CHALLENGES
• Varied materials with different housing needs required careful identification of materials
• Wide range of large format sizes
• Some items had friable (or crumbling) media
• Many items had three-dimensional elements

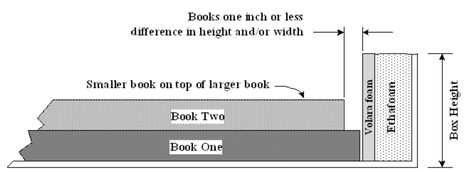
SOLUTIONS
• Staff were carefully trained in media identification and handling
• Works were housed in specially designed mats in standard sizes made from suitable materials (unbuffered mat board for diazotypes, textile swatches, etc.)
• Translucent paper was used instead of polyester for items with friable media (i.e. charcoal, flaking paint) to reduce static charge
• Sink mats were used to protect works with three-dimensional elements
• Minor stabilization treatments were employed to remove tape, humidify, flatten and surface clean the items before matting
• Portfolio-style mounts and double-sided mats were used to preserve original presentations where appropriate
• Matted materials are now stored collectively in standard oversized flat storage boxes

BOUND VOLUMES (FOLIOS)



CHALLENGES
• Large collection of 5,000 rare folios in many different sizes
• Rare and valuable bindings and volumes required extra protection during transport to and from the Modules
• Rare oversize volumes could not have labels affixed to the binding

SOLUTIONS
• 14 box sizes were chosen to standardize the collection
• Ethafoam® planks in standard sizes were lined with smooth Volara® foam and adhered to the box edges to form a tight custom fit around each volume
• Polyethylene straps were wrapped around each volume cover to allow labeling without adhesives, and polyester sleeves were adhered to each box exterior to store additional bibliographic information
• Thin folios of similar sizes could be stored in one box (see diagram below)



STANDARD ARCHIVAL / MANUSCRIPT COLLECTIONS

CHALLENGES
• Collections included acidic paper items, photographs, diazotypes, folded blueprints and other media that could damage adjacent materials or require special housing or environment
• Acidic materials, binders and corroded fasteners required special attention

SOLUTIONS
• Materials were housed in acid-free folders, while folded blueprints and diazotypes were housed in unbuffered folders or polyester sleeves
• Corroded fasteners were removed and replaced with paper strips and stainless steel paperclips
• Photographs and photostats were housed in polyester or polyethylene sleeves
• Vulnerable materials were separated out (e.g. color slides were pulled for cold storage)
• Folded oversize items were treated if necessary and rehoused in oversize flat storage boxes

The Library of Congress PRESERVATION

Poster by Ashley Greek and Jennifer Lewis. Includes photographs and designs by the LC Conservation Move/Stabilization Team: Lisa Adang, Ben Bahlmann, Julie Biggs, Sarah McGann Davis, Nancy Lev-Alexander, Julie McInnis, Lisa Moberg, Susan Peckham, Jamie Roberts, Jamie Schmeits, Jim Thurn, Simonette dela Torre and Tiffany Welch. Photos of Fort Meade by Beatriz Haspo.