

Preservation Essentials

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From Chaos to Order, Part II: Rehousing Paper-Based Collections Materials

By Sonya Barron, Collections Conservator, Iowa State University

This is a continuation of the article in the January 2019 issue regarding organizing and rehousing artifacts in archival collections. For this second installment, I will focus on paper-based collection materials. Paper is made

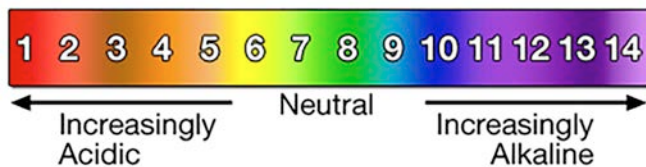
up of cellulose, a plant-based substance. Cellulose is the building block of materials like cotton, linen, and wood, as well as other less common plant-based fibers like kozo, flax, and bark.



Paper-based collection materials

The sad truth is that all paper items in your collection will eventually become acidic, but some will get there sooner than others. The rate of deterioration depends on the quality of the paper, whether it consists mostly of cotton/linen pulp or of wood pulp. Longevity of paper also depends on chemicals that have been added to the pulp, such as sizing or colorants. Acidic paper in your collections will exhibit some visual indicators of deterioration, which can include a brownish or yellowish discoloration and brittleness. Brittle paper is no longer flexible and breaks easily instead of bending.

So, how do we start evaluating and selecting archival supplies to house flat documents, artworks, photographs, and



pH scale

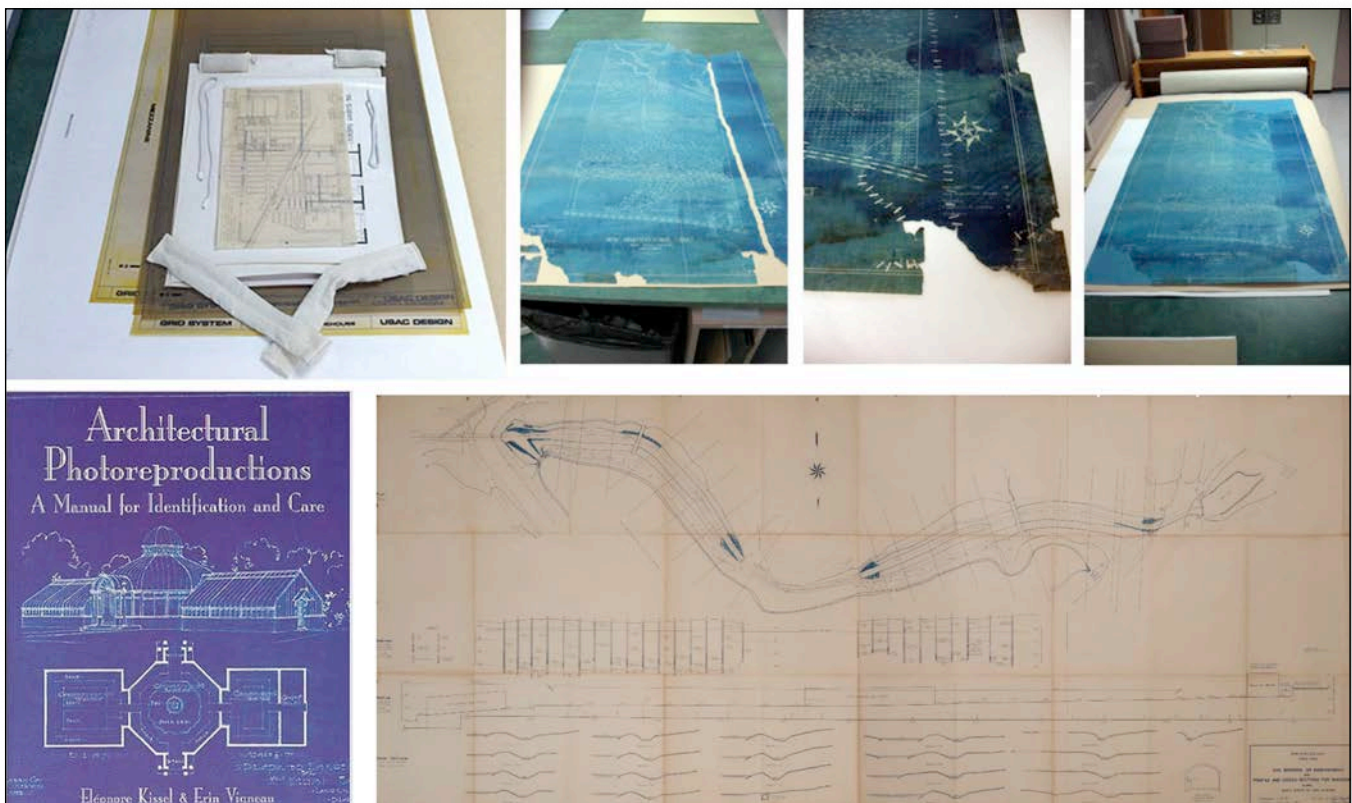
bound items? Let's review our archival product terminology and our pH scale: buffered = pH 8.5–9; unbuffered = pH 7–7.5; and acid free = pH 7 and up.

Flat Paper Materials

Archival storage materials are often buffered to counteract the acidity of the items to be stored inside them. These buffered enclosures will work for most collection items, except those that contain colored dyes, the chemistry of which may change when stored in an alkaline environment. Items containing colored dyes include color photographs, watercolor paintings, hand-tinted prints and photographs, blueprints, and diazotypes.

Blueprints and diazo prints are photo-reproductions. The image is made with color dyes using a photographic process.¹ Collages, books, and scrapbooks that contain proteinaceous materials like silk and wool are also sensitive to an alkaline storage environment. For all these items, it is best to use unbuffered paper folders or boxes. When in doubt, you can safely use unbuffered storage for all

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Architectural photo prints

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paper-based collections. This will not harm any materials.

A good indicator of a high-quality archival product is whether it has passed the PAT test, which stands for Photographic Activity Test. PAT is a series of comprehensive tests that rate paper quality for storing the most sensitive collection items such as photographs. The test is administered by the Image Permanence Institute in Rochester, New York.²

Interleaving paper and folder stock can be used in creative

and practical ways. If you have blueprints already housed in buffered folders, you can put a sheet of unbuffered interleaving between the blueprints and the buffered folder, creating a barrier. You may have a color-tinted photo mounted on acidic board. The acidic board benefits from a buffered folder, but the color photo needs unbuffered housing. To take care of the dual needs of such an object, place a sheet of unbuffered paper over the photo and place the mounted item in a buffered folder.

Mylar (or Melinex) is okay to use for storing all materials. The two names are interchangeable and refer to a chemically stable archival polyester film. Mylar L-sleeves are good for supporting brittle, torn, and fragile paper. However, polyester film is very staticky and should not be used for items with flaking ink, pigment, or coating. Items with fragile flaking surfaces should be stored with the “flaking surface up” in a shallow box with a lid.

The best way to store large format rolled items is to roll them on top of rigid tubes, rather than to stuff them inside the tubes. Taking fragile rolled items out of a tube can damage the edges. You can roll a sheet of 4ml or 5ml Mylar on top of the print or map and tie the entire package up with cotton twill tape. Boxes for rolled items are available in different sizes so that you can protect the outside of the roll if you wish.



Photographic Activity Test (PAT) logos



Archival housings for flat paper items: buffered and unbuffered paper folders; flat box for items with a flaking or powdering surface; Mylar/Melinex folders, tubes, and a tube box for rolled storage



Image courtesy of University Products

Image courtesy of Archival Methods

Image courtesy of Talas

Image courtesy of PZ Conservation C.I.C.

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Image courtesy of Van Der Hoorn Conservation Services

Archival housing options for photographic materials

Photographic Prints and Negatives

A great variety of photo processes may be present in your collections, especially if they date to the late 1800s and the early 1900s, when photography was still in its infancy.³ Several visual identification guides are available to help you figure out what types of photographs you may have.⁴

The chemistry of photographs is more complicated than that of simple paper objects. The emulsion layer is sensitive

to the oils in skin, so it's important to wear nitrile examination gloves when handling photographs. Cotton gloves tend to be too bulky and unwieldy to handle paper safely.

Photographic paper is almost always of high quality and low acidity. However, photographs were often adhered to backing boards most often made from low-quality acidic card stock. Usually, aging backing boards are brittle and

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Image courtesy Vancouver Archives

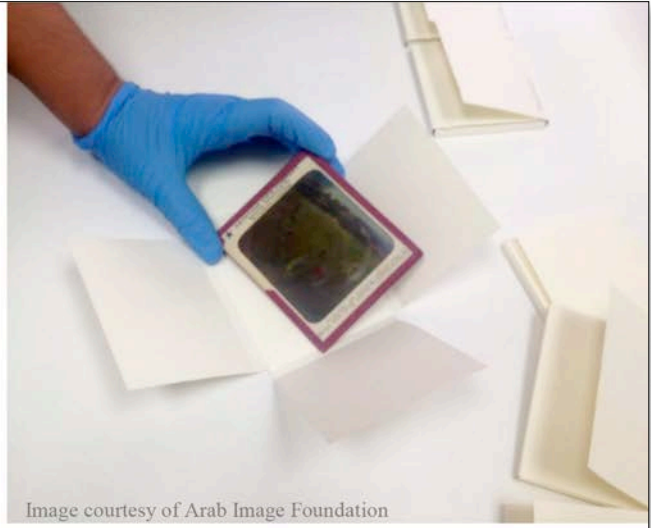


Image courtesy of Arab Image Foundation

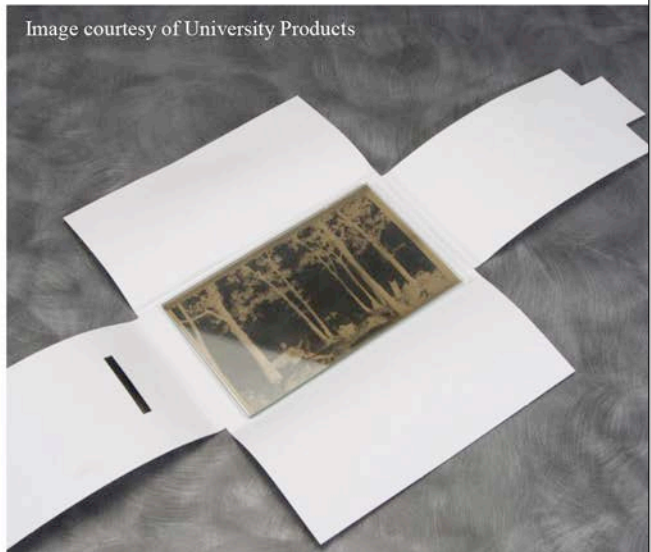
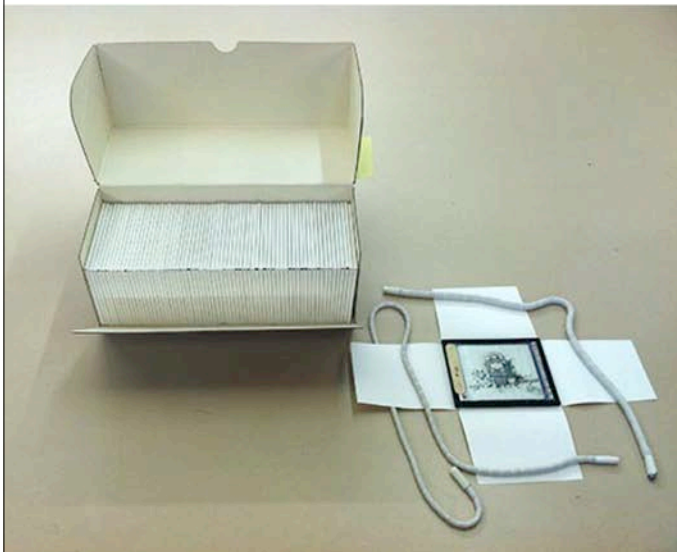


Image courtesy of University Products

Archival housing options for glass-plate negatives and lantern slides

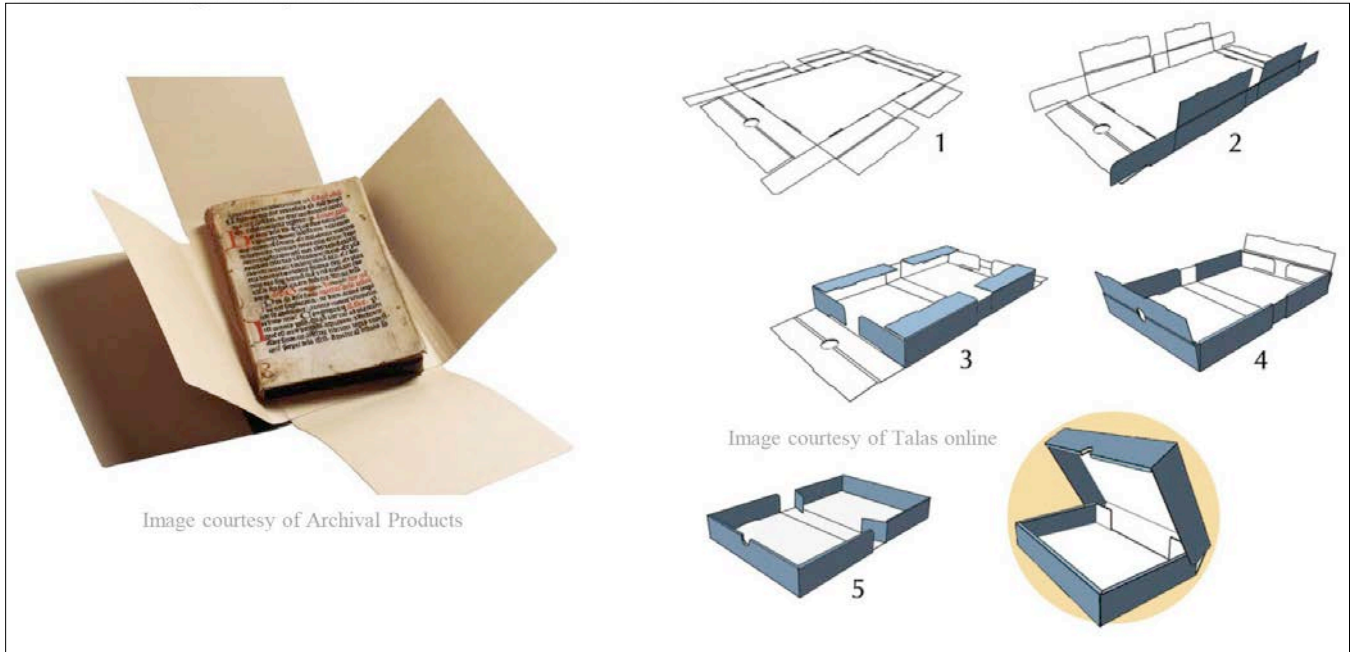
break easily. Photos on backing boards need to be supported carefully from below when you handle them to avoid damaging the photographic prints.

Mylar sleeves and polyethylene pockets are okay to use for storage of all photo materials. Unbuffered enclosures should be used for any items that contain color dyes. Buffered paper folders and sleeves can be used for black-and-white photos and negatives.

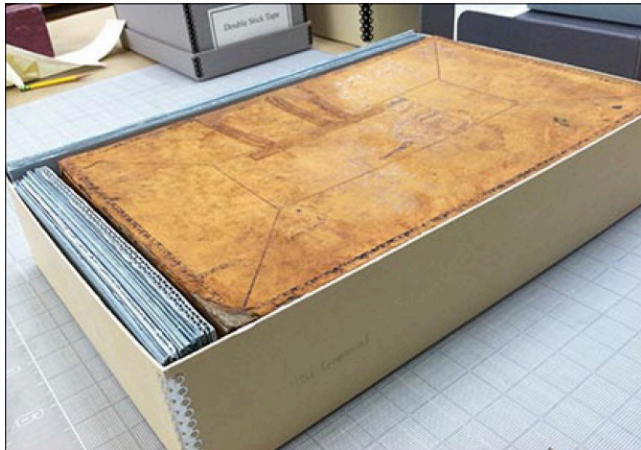
For large groups of smaller photos, you could opt for polyethylene photo pockets enclosed in a three-ring binder made from archival board. One of the advantages of using Mylar sleeves for housing photos is that they don't interfere during scanning, so photos do not need to be removed from Mylar (Melinex) sleeves when imaged on a flatbed

scanner. If your photo has a fragile surface with a cracked or flaking emulsion layer, a shallow box is better suited for storage.

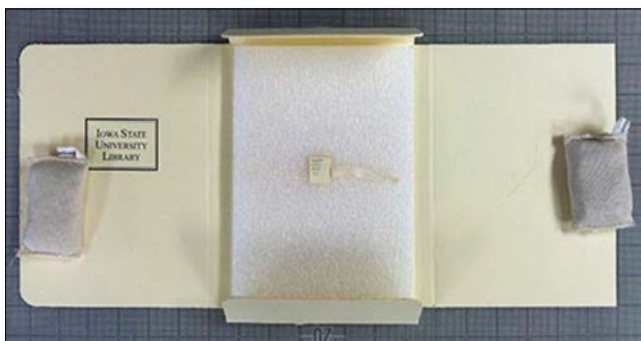
Before discussing glass-plate negatives and lantern slides, it is important to clear up some key differences between these two types of photographic objects. Glass-plate negatives contain a negative image and are made from a single piece of glass. One side of the glass has the matte emulsion layer, which is very fragile. The other side of the glass is shiny and uncoated. It is best to house glass-plate negatives in custom-fitted, four-flap folders. It's safer to handle the glass plate on a flat surface, so there is less risk of dropping it. Unlike a paper pocket, a four-flap folder is not likely to catch on the emulsion layer and snag it.



Archival housing options for bound materials



Spacers made from corrugated archival board



Spacers made from layered Ethafoam sheets

Lantern slides contain a positive image. They are made from two pieces of glass sandwiched together and adhered along the edges with strips of tape, which is usually black. The vulnerable surface of the image is not exposed—it is protected by a plate of glass. However, tape adhesive can fail and thus cause the glass plates to become detached from each other. As in the case of glass-plate negatives, four-flap folders are the best storage solution for lantern slides.

Bound Materials

Several options exist to choose from when ordering boxes for your bound collections. On some four-flap enclosures, you can adjust the thickness of the box by folding pre-scored lines. Inexpensive custom-sized boxes can be also be ordered by contacting the supplier and providing the measurements needed. The company cuts and ships the boxes to you flat, which you then assemble like pizza boxes.

When a box is too large for the item you are trying to house, one option is to create a spacer.

For more ideas about the construction of spacers, check out a brief article in the *Archival Products Newsletter*.⁵ To learn more about archival housings for your collection materials, refer to Sofia Barron and Hilary T. Seo's PowerPoint presented at the 2017 MAC Annual Meeting in Omaha, Nebraska.⁶

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PRESERVATION ESSENTIALS—Continued

William Modrow, Assistant Editor

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800-526-5640
<https://archival.com>

CMI Archival Boxes
93 Lake Street
Hammondsport, NY 14840

Carmen Waters Kramer
607-569-2738
<http://www.archivalboxes.com>

Hollinger Metal Edge
9401 Northeast Drive
Fredericksburg, VA 22408
800-634-0491
<http://www.hollingermetaledge.com>

Talas
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Brooklyn, NY 11211
212-219-0770
<https://www.talasonline.com>

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<https://www.gaylord.com>

University Products
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Holyoke, MA 01041-0101
800-628-1912
<https://www.universityproducts.com>

Archival Methods
655 Driving Park Avenue
Suite #5 / Dock #8
Rochester, NY 14613
866-877-7050
<https://www.archivalmethods.com>



A wedge-shaped spacer for a wedge-shaped book, constructed from 40pt board; spacers for a scrapbook and a half-full document box, both made from corrugated board

Notes

1. Eléonore Kissel, Erin Vigneau, and New York Botanical Garden, *Architectural Photoreproductions: A Manual for Identification and Care*, 2nd ed. (Bronx, NY: Oak Knoll Press, 2009).
2. Image Permanence Institute, “Photographic Activity Test (PAT),” 2018, <https://www.imagepermanenceinstitute.org/testing/pat>.
3. James M. Reilly, *Care and Identification of 19th-Century Photographic Prints* (Rochester, NY: Eastman Kodak Company, 1986), Image Permanence Institute, <https://www.imagepermanenceinstitute.org/store/publications/care-id-photographic-prints>.
4. Process ID Chart: Photomechanical Prints, Gawain Weaver Art Conservation, 2013, http://gawainweaver.com/images/uploads/Process_ID_Chart_Photomechanical.pdf.
5. Sofia Barron, “The Right Fit,” *Archival Products Newsletter*, April 4, 2017, <https://news.archival.com/?p=125>.
6. Sofia Barron and Hilary T. Seo, “From Chaos to Order: Making Artifact Storage Work for You,” PowerPoint presented at MAC Annual Meeting, 2017, http://lib.dr.iastate.edu/pres_conf/2.

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