



BISHOP MUSEUM

Art Conservation Handout

Having Your Works of Art on Paper Matted and Framed

Paper, an organic material often used as a support for works of art, is subject to degradation and damage from many sources. Many papers manufactured after the introduction of wood pulp in the mid-19th century degrade inherently, due to the presence of the acidic wood products. Even good quality rag papers can deteriorate due to external factors such as light, air pollution, mold and insects. In addition, paper can be affected by the migration of harmful components from unstable materials with which it is in prolonged contact-- wood, tapes, cardboard, and poor quality matboards.

Proper matting and framing in combination with appropriate environmental conditions do much to prevent damage to works of art on paper. The frame and mat have a dual purpose: first, to house and protect the object, and second, to aesthetically enhance it. How a paper object is matted, and what it is matted in can make a big difference in its preservation.

Conservators agree that the safest matboard presently available is manufactured from 100% rag stock. Framers often sell products called "Museum Board" or "Archival Paper", but the content of these should be examined. Some boards have only a rag paper facing over a poor quality board and are not acceptable. Matboard should be made from cotton fiber or alpha cellulose pulp, and be free of lignin, groundwood, metal particles, and coloring agents. The board should be of neutral or slightly alkaline ("buffered") pH.

A 4-ply matboard is preferred over two-ply because it allows for better air circulation within the frame, by creating more space between the art and the glazing of the frame. It is also more dimensionally stable, and not as likely to warp as two-ply. Museums prefer to use white or off-white board to avoid potential problems, such as bleeding or off-gassing of chemicals, associated with colored boards.

For paper objects with definite margins, a window mat and backboard are prepared to exactly fit the dimensions of the interior of the frame, with the window mat cut to cover the margins of the object. Usually, the window mat is secured to the backboard with gummed linen tape along one edge. The window mat should not be adhered to the backboard in any other way. The object is hinged to the backboard using small feathercut rectangles of Japanese mulberry tissue attached to the upper corners of the back of the object with wheat starch paste. When these have dried, the other half of the hinges are attached to the backboard. The object should never be pasted directly to the backboard, nor should it be attached in any way to the window mat. The tissue and paste are used because they will not harm the object-- tapes and other types of adhesives are not generally safe.

It is important that there be as much space as possible between the art and the glazing so that the art or its media have no chance of transferring to the glazing. Also, water from the air can condense on glass surfaces. We do not recommend the type of frame where the art is sandwiched between a piece of glass and a piece of board using clips around the edges. Besides putting the art in direct contact with the glass, this type of frame, with open edges, offers very little protection.

If for aesthetic reasons, the entire object needs to be displayed within the window, the object can be secured to the backboard with hidden hinges, usually at all four corners, and "floated" in a slightly larger window mat. If the window mat is to be dispensed with altogether, thin ragboard or plexiglas spacers can be inserted between the glass and the backboard, hidden by the frame rabbet, to keep the glass away from the object. At least 1/4" should be left around the margins of the object and the inside of the frame, to allow for expansion and contraction of the object itself. It is not a good idea to try to float thin sheets of paper which are likely to cockle, or works with loose pigment such as chalks-- these need the protection of a window mat.

For protection against airborne dirt and pollutants, picture glazing is essential. Non-glare glass (Denglas®) or regular glass are fine. If high light levels are a problem, ask for a plexiglas that contains filters for ultraviolet (UV) light; these are available under a variety of trade names such as UF-3 (glass which filters UV is not available). But, even though you are using a plexiglas that filters UV, don't assume that you can therefore expose the object to lots of light-- the UV is only a part of a wide light spectrum which damages organic materials. Drawbacks of plexiglas are that it scratches easily, and collects dust due to its static quality. The latter characteristic makes it completely unsuitable for loose-surfaced media such as charcoal or pastel-- these must be framed under glass, or separated from plexiglas by at least 8-ply matboard. For large works, plexiglas may bow, and so glass is preferred, but it will add weight and must be adequately supported by the frame. Remember to put a masking tape grid on glass if the framed work is to be transported; this is to prevent broken glass from damaging the object (it is not necessary to use tape on plexiglas, and in any case it is almost impossible to remove).

The frame should be deep enough to accommodate the glazing, matted object plus additional sheets of good quality board, such as ragboard or acid-free corrugated cardboard to serve as backboards; masonite, regular cardboard and other acidic products are not acceptable. The edges of corrugated board should be taped with an archival quality tape to prevent bugs from taking up residence. The boards should be single sheets cut (not pieced) to fit the inside frame dimension. The whole package should be secured in the frame by means of non-rusting brass nails or turn-buttons. The frame can then be dust sealed with a thick, good quality paper and gummed linen tape. It is a good idea to attach small "bumpers" to the lower corners of the back of the frame to hold it out from the wall, permitting some air circulation behind the frame.

Save any labels or inscriptions from previous framings if they provide information about the piece. These can be slipped between the window mat and backboard, or attached to the backboard in an envelope. You may wish to note on the backboard when the piece was framed, and what materials were used, especially whether the glazing is glass or plastic.

When cleaning framed objects, always spray your cleaning agent on a cloth and then wipe the glazing; if you spray the product directly on the glass or plexiglas, some may run down inside the glazing. Take the opportunity to remove the framed object from the wall and examine the backing for insect activity, and examine the object through the glazing to check for bugs, mold, water staining, etc. You may have to look closely for insects-- silverfish and booklice are small and not easy to spot. Insect droppings or shed wings, etc., and damage to the object itself are also evidence. If you do spot bugs or mold, resist the impulse to spray the object with an insecticide or something like Lysol®-- this could have disastrous side effects such as staining of the paper and chemical reactions. Instead, contact a conservator for the recommended remedy-- freezing is most commonly used at this time to kill insect infestations, but it must be carried out in the correct way. Be alert and deal with insect problems right away-- bugs can do a lot of damage in a short time.

Select the spot in your home where a framed item is to be hung very carefully. An inside wall is preferable to an outside wall because of rising or penetrating damp in the latter. Obviously, the bathroom is a poor choice for works of art on paper due to the extremes of humidity in this room. There should be some air circulation in the area, to discourage mold growth. The framed object should never receive direct sunlight, and strong artificial lights should be avoided. For this reason, the lights which are attached directly to frames are not recommended-- they are too bright and too hot. Museums show very vulnerable works of art on paper-- such as watercolors and Japanese prints-- for only short amounts of time; the works are rotated to extend their lifetimes.

Matting and framing a work of art on paper are critical because in doing so you are either providing a healthy or a detrimental environment for the object. The object will be more or less sealed into that environment. If poor quality products are used, they will certainly affect the object-- conservators are used to seeing the evidence of this: discolored, brittle paper. Good quality products and proper framing protect the object, but a safe external environment must also be provided-- low light, bug free. In a sense, the object is like a potted plant-- you are responsible for providing the right potting medium and the right growing conditions, otherwise you cannot expect the plant to flourish.

When having works on paper framed, recognize that the high standards outlined here are not routinely practiced by all commercial framers. However, there are many qualified framers on Oahu and the neighbor islands who are familiar with conservation matting and framing techniques. You, as the consumer, must specify that you want the framer to use the materials and techniques outlined here.

Bishop Museum Conservation Services department is happy to make this information available to the public. Other handouts in this series may also be of interest: The Care of Photographs; Hawaii's Environment: Friend or Foe to Preservation of Artifacts; Preserving Book Collections in Hawaii, etc. If you wish to do your own matting and hinging, please check our handout Hinging and Matting Works of Art on Paper.

Sources for archival quality materials:

University Products

P.O. Box 101
Holyoke, MA 01041
1.800.762.1165

Light Impressions

439 Monrow Avenue
Rochester, NY 14603-0940

Hawaiian Graphics (for boards and papers)

1925 Beretania Street
Honolulu, HI 96822
808.973.7171

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