



Storage and Display Guidelines for Paintings

Introduction

This Note discusses physical aspects of display and storage that affect the preventive conservation of paintings. The basic principle of storing and displaying paintings is to keep them in a secure environment. Equipment and devices should protect artwork against damage. First determine the size, type, design, and construction materials necessary for the required equipment, and then seek funding to cover your needs.

The recommendations in this Note refer primarily to framed paintings and to fabric-supported paintings on stretchers. Store unframed paintings on card in flat storage using suitable boxes or drawers (see CCI Notes 11/2, *Storing Works on Paper*). Recommendations for storing miniatures and paintings on unusual supports are given in CCI Notes 10/14, *Care of Paintings on Ivory, Metal, or Glass*. The environmental factors of light, relative humidity, temperature, pollution, and biological activity in storage and display are discussed in CCI Notes 10/4, *Environmental and Display Guidelines for Paintings*.

Storage

Before paintings enter storage, they should be fitted with protective backing boards (see CCI Notes 10/10, *Backing Boards for Paintings on Canvas*).

You may wish to consult other institutions and acquaint yourself with different options before designing a storage unit to meet your needs.

The main requirements of any storage system are physical security and accessibility. Avoid storage locations that are close to sources of heat, near duct outlets, or in attics or basements with no environmental controls. Ensure that paintings are not placed on the inside of external walls, which often experience temperature changes and excessive moisture.

Do not place storage units in areas of moderate or extreme vibration. Raise paintings at least 3 to 4 inches above the floor to protect them against dirt, dust, and possible water accumulation. If overhead pipes are present, storage units should be covered with polyethylene sheeting to protect them against potential leaks.

Temporary Storage Against a Wall

As a temporary measure, paintings may be placed on pads (see CCI Notes 10/2, *Making Padded Blocks*) and stacked vertically against a wall, using sheets of cardboard as separators. The cardboard separator should be bigger than the larger of two adjacent paintings. The pads must be skid proof, and the angle of stacking

must be secure. Place frames of similar size together. Place the painting on the outside of the stack face-inward to avoid accidental damage to the painting surface (Figure 1). Stack ornate frames face-outward to ensure that as little weight as possible rests on fragile ornamentation.

Some modern paintings are left unframed because the painted edges are considered to be an integral part of the artwork. These works should be protected with a "travel frame" that ensures that no painted surface is in contact with any material during

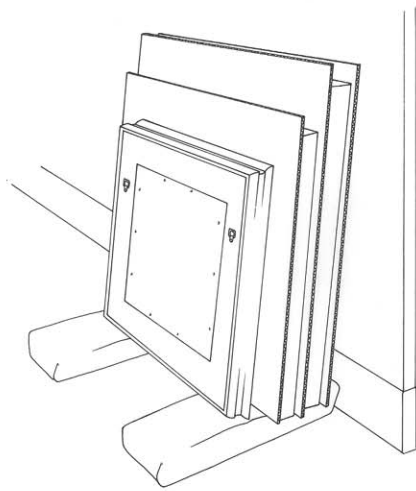


Figure 1. Temporary storage against a wall.

handling or while in storage. Contact the National Gallery of Canada for information about design and fabrication of a travel frame.

Slotted Multi-Purpose Storage Shelves

You might consider this type of storage for its versatility. Figure 2 shows two units that can be assembled easily. Unit I consists of adjustable vertical shelves that accommodate different sizes of framed paintings. Unit II shows horizontal pull-out shelves for storing fragile or damaged paintings (paint side up) or unframed artwork.

Both units can be made from plywood. Sand wood surfaces and seal them with two coats of high-quality exterior or interior grade acrylic latex paint. If a clear coating is desired, use acrylic latex varnish. Secure cushioning material (e.g., low pile carpet scraps, Cor-X, felt) to the bottoms of the shelves to prevent snagging of ornate frames or abrasions to the edges of frame mouldings.

Crezon plywood, a phenolic resin-coated plywood support, is another excellent shelving material. It comes in a variety of thicknesses, paints well, and is ideal for furnishing display pedestals, mounts, etc.

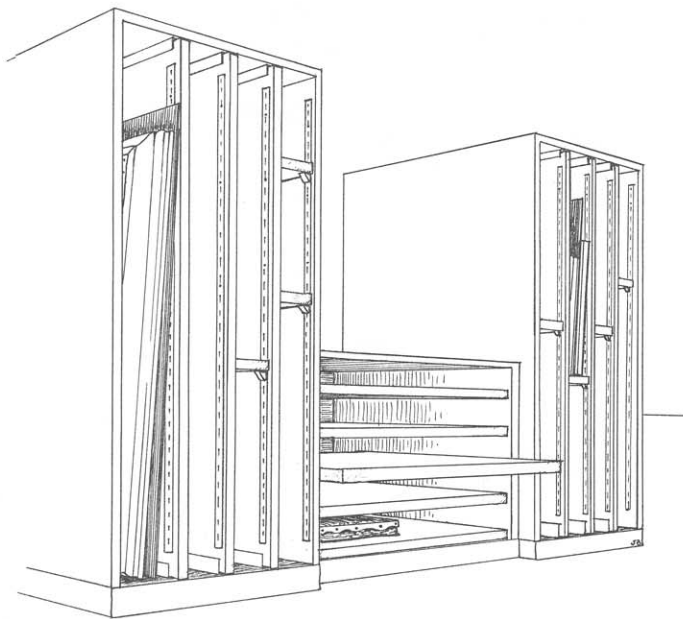


Figure 2. Multi-purpose storage.

Use sheets of cardboard to separate paintings grouped together in the same vertical storage slot. The cardboard sheets should be slightly larger than the paintings themselves. Do **not** overcrowd the shelves.

To protect against dust, drape storage units with curtains or with polyethylene sheeting. Be sure to allow for adequate air circulation. Number or label shelves clearly to minimize unnecessary handling of the artwork.

Sliding Screens

Sliding screens are a very common storage method for paintings. Paintings can be suspended from the screens by appropriate hooks or other hardware. Such systems use floor space economically, and are efficient for examination and retrieval purposes.

Screens are made of perforated metal or rigid wire mesh supported on a metal or wooden frame. Each screen is attached to an independent overhead and floor track that allows it to be pulled out, thus giving easy access to the paintings (Figure 3). Installing extra guides on the upper track will minimize swaying and jarring. The suspended racks can be operated easily, and the screens can be slowed and stopped manually. Two people are normally required to remove paintings from the rack.

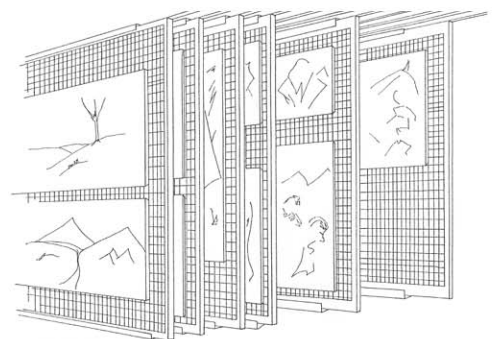


Figure 3. Storage system using sliding screens.

Implement a registration system to clearly record the contents of each rack or shelf (e.g., put labels on each screen listing its holdings or contents).

Paintings can be hung on both sides of the screen using one of the following attachment systems.

1. **A shortened "C"-shaped hanging hook with a bolt shank.** This system is preferred for areas large enough to allow for permanent storage space even while a painting is out on exhibition.

A "C"-shaped hook can be made by cutting both ends of a longer eye-bolt. Ensure that the hook is curved enough to prevent the painting from slipping off if jostled or moved (Figure 4). Shorten the threaded end so that it does not protrude excessively beyond the screen surface. Attach the hook with nuts and washers on either side of the screen.

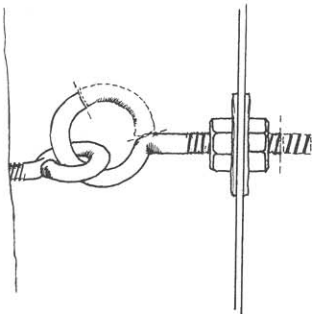


Figure 4. "C"-shaped hook.

2. **"L"-shaped hook.** Ensure that bolt ends are tightly secured to the screen to prevent the hook from turning (Figure 5).

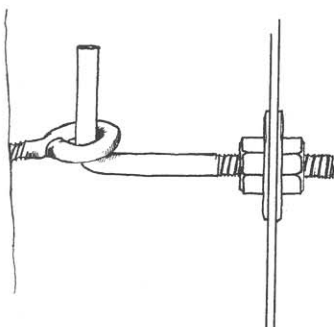


Figure 5. "L"-shaped hook.

3. **A combination of "S"-shaped hook and screw-eye.** This system is frequently used for temporary storage, for flexibility in storing paintings, or when space is limited (Figure 6). When a painting is removed for exhibition, the vacated screen can easily accommodate a different-size painting.

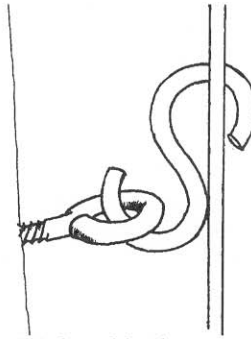


Figure 6. "S"-shaped hook.

An advantage of "S"-shaped hooks is that they can be installed from one side of the screen. When "S"-shaped hooks are used, two people may be required to hang or remove a painting from the screen. The other systems require two people to secure the bolts to the screen. Once the hanging bolts are secured, it is then often possible for one person to hang or remove a painting from the screen.

When replacing or removing paintings from the screen, ensure that the "S"-shaped hooks do not work loose, fall, and strike other paintings below.

Hazards from wire and hanging hardware that protrude too far from the back of a picture can usually be avoided by properly separating paintings. This hardware can also be removed or replaced with less hazardous hanging devices. Consult a professional installer.

Display Space

Do not hang paintings in areas where they might be brushed against or touched by passers-by (e.g., in narrow corridors or in stairwells). Use rope barriers, platforms, or floor markings where warranted to

discourage visitors from touching paintings. Signs can also be helpful in instructing visitors not to touch the artwork.

Do not hang paintings where they might come in contact with furniture, doors, curtains, blinds, or other objects. Cafeterias, kitchens, and areas where cooking fumes or foodstuffs are present are not appropriate for displaying paintings. Neither are drafty locations or areas near heat radiators, air vents, or fireplaces.

Do not hang paintings against inside surfaces of exterior walls, because these areas are prone to fluctuations in temperature and in relative humidity. If exterior walls must be used, ensure that there is adequate space between the back of the painting and the wall. Backing boards and hanging devices hold the painting away from the wall and ensure that an airspace exists between the reverse of the painting and the wall. Ultimately, fluctuations in temperature and relative humidity can be reduced by ensuring that exterior walls have adequate insulation and vapour barriers.

Exhibit walls may also be installed to create an insulating airspace between the exterior wall and the surface used for displaying artwork. Consult with environmental engineers, architects, and museum staff.

Theft can be discouraged by stationing staff in exhibition areas, by equipping alternative exits (fire exits) with alarm systems, and by using security hanging devices that make removing the works difficult. Avoid placing paintings in locations where they can be removed quickly and inconspicuously.

Cleaning staff should be instructed not to dust or "clean" paintings as part of their maintenance procedures. Ensure that cleaning and maintenance operations (e.g., washing or waxing floors, vacuum cleaning, painting interior walls or architectural features, misting or watering plants) do not endanger works of art.

Hanging Devices

Picture wire is not recommended as a hanging device for paintings. Picture wire may become rusty and weakened, paintings can easily move off centre, and excess picture wire can damage paintings by pressing against the reverse of the canvas.

A safer way to attach a framed painting to a wall is to use screw eyes on the back of the frame and corresponding picture hooks on the wall.

"D"-rings, also called "mirror hangers" or "ring hangers", may also be used (Figure 7). "D"-rings are metal rings on a two-holed shank. They protrude less from the back of the frame than a screw eye does. Therefore, this device allows the object to rest more flatly against the wall, and is less hazardous to other works in storage.

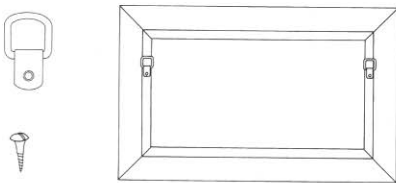


Figure 7. "D"-ring.

Each size of "D"-ring is designed to bear a certain maximum load. Exceeding the load may cause the "D"-ring to fail. Some "D"-rings have only one hole, which may be preferable for light, small works where two screws would increase the risk of a narrow frame splitting. Hang extremely heavy paintings with a metal chain suspended from a wall track, or with specially designed hanging hardware.

Test the safe limits of a hanging device if a weight rating is not supplied and if you are unsure about using it to hang an object. You may also support a painting from underneath as an additional precaution.

Ensure that the hanging system you choose is compatible with the wall system in your display space. An exhibition wall may be placed in front of an inappropriate wall. Otherwise,

you may have to modify the display wall by attaching a layer of suitable plywood covered with fabric or with a drywall layer.

If the wall can support nails, paintings may be hung from metal picture hooks secured with nails of adequate length. If the wall is made of plywood, picture hangers (Figure 8) or hanging hooks with screw-threaded ends will hold paintings without anchors or plugs. To safely attach hanging hardware to hollow-core walls, such as drywall and hollow block, pre-drill holes and line them with wall plugs or with expandable wall anchors (Figure 9). Walls made of brick, plaster, stone, or poured concrete will also require pre-drilled holes lined with wall plugs.



Figure 8. Hanging hook and nail.

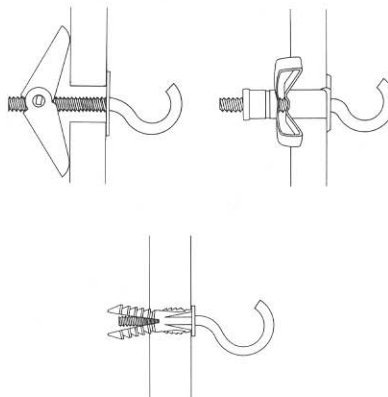


Figure 9. Wall plugs and anchors.

Suppliers

Special hanging hooks and security hardware:

Ziabicki Import Co.
Box 994
Racine, Wisconsin
U.S.A. 53406

Canadian supplier for diamond-shaped hooks:

Montel Inc.
6969 Trans Canada Highway
Montreal, Quebec
H4T 1V8
Tel.: (514) 332-9110

Nielsen Security Hanging System
Nielsen and BainBridge
160 McNabb
Markham, Ontario
L3R 4B8
Tel.: (416) 475-3344

Common hanging hardware:
local hardware stores.

The following are recommended.
for plywood walls: picture hangers
(nails plus hanging hooks)
for brick, plaster, stone, or poured
concrete walls: wall plugs, screws,
threaded hooks, bolts
for hollow-core walls: wall anchors,
threaded hooks, eyelets

*Crezon plywood (a medium-density
overlaid Douglas Fir plywood):*
Inquire at local lumber suppliers
or contact the manufacturer:
Crown Forest Industries Ltd.
Vancouver, B.C.
Tel.: (604) 521-1941
FAX: (604) 521-1953

Further Reading

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Copies are also available in French.

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