

## Conservation facts – Paintings and works on paper

### Why do paintings and works on paper deteriorate?

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Many factors influence the condition and permanence of paintings and works on paper. Sometimes there are inherent problems due to the quality of the paint, canvas or paper used. A combination of incompatible materials in the artwork may also promote instability. Careless handling, poor framing and inappropriate methods of display and storage cause the most damage to artworks.

It is important to consider the environment in which an artwork is kept. Our everyday climate has levels of light, heat, moisture and pollutants which can produce destructive chemical and physical reactions within works of art.

Although it is impossible to prevent deterioration completely, modifying an artwork's environment helps to slow down processes of decay. This is good conservation. By taking a few simple steps now, you can significantly aid the preservation of your artworks. Remember, not all damage is reversible – prevention is always better than cure.

Conservation Services at Auckland Art Gallery offer advice and practical treatment for paintings and works on paper. The qualified conservators are members of the New Zealand Conservators of Cultural Property.

### Caring for your paintings and works on paper

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Here are some of the ways artwork can be damaged, and advice on how to prevent this.

#### Light

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All light causes irreversible damage to artworks. The extent of the deterioration depends on the type of light source, its intensity and the length of exposure.

Natural light is an extremely intense source of energy and contains invisible ultra-violet (UV) radiation. Most artworks are composed of organic materials that are especially vulnerable to UV wavelengths, which cause them to become brittle and discoloured. However, the visible light spectrum is the main cause of fading to colours in artworks.

The effect of artificial light is less acute, although fluorescent tubes and energy-saving bulbs do emit substantial amounts of UV. Household incandescent bulbs are much less harmful, but the heat they generate can still, like sunlight, impair an artwork.

Light damage is not limited to 'old' artworks. Modern pigments, canvas, colour and black and white photographs can fade or change just as quickly.

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- Damaged caused:**
- Changes to colour.
  - Darkening of varnishes, which alters tonal values.
  - Fading of watercolour pigments in a very short period of time.
  - Discolouration and embrittlement of canvas or paper.

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- What to do:**
- Restrict the amount of light and the length of exposure time for any artwork.
  - Keep all artworks away from direct or strongly reflected light. If sunlight is falling on the picture, move it.
  - Reduce light levels by closing the curtains. Coat windows with a clear UV film.
  - Use low-wattage incandescent bulbs in preference to fluorescent fittings.
  - Never spot-light a picture with a bright light source.
  - Have a copy made to hang in place of the original if the picture is particularly vulnerable, especially in the case of photographs.

## Relative humidity and temperature

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Most organic materials used to make pictures will absorb or release moisture in response to changes in the environment.

Relative humidity is a measurement of the amount of moisture in the air. Changes in temperature affect the amount of moisture the air can hold. Extremes and fluctuations of temperature and humidity are the most damaging to artworks because they set up a cycle of rapid expansion and contraction, which places the artwork under stress. Both humidity and temperature need to be controlled.

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- Damaged caused:**
- Mould growth flourishes in high temperatures and humid environments. It disfigures, sometimes causing permanent stains, and attacks the surface of the work. Mould can digest paper, canvas and paint media.
  - Expansion and contraction of artworks in response to the amount of moisture in the air causes internal stresses. This can lead to flaking and cracking in paint layers and photographic emulsions, distortions, and even splitting and tearing of canvas and paper.
  - High levels of humidity and temperature can increase the rates of chemical reactions, speeding up an artwork's natural deterioration. Low levels of humidity cause desiccation of paint layers and support materials.
  - Insects and rodents flourish in a warm, damp climate and may chew their way through your valued watercolours and photographs.
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- What to do:**
- Avoid hanging pictures in damp rooms, on outside walls, or near water sources, such as bathrooms and kitchens.
  - Never display pictures above or near electrical equipment, heaters, radiators, fires and gas heaters.
  - Do not leave artworks in unventilated areas such as cupboards.
  - Check artworks regularly for any sign of mould growth.
  - Use dehumidifiers to stabilise/lower humidity levels.
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## Dust, dirt and insects

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New Zealand's mild, wet climate provides the perfect breeding ground for insects and mould.

Insects will attack artworks in a variety of ways, resulting in a range of damage. This may be visible as small holes restricted to a frame or stretcher, or spot stains on the surface of an artwork. In the case of artworks on paper or photographs, extensive losses to the image and support are quite common.

Dust is always present in the air. In direct contact with the surface of artworks, it is not only disfiguring, but also abrasive.

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- Damaged caused:**
- Silverfish eat paper and, in the case of photographs, the gelatine layer which comprises the image.
  - Borer attack the frames and stretchers on paintings internally. The damage is not often recognised until too late.
  - Flyspots, commonly seen on the surface of paintings, are small dark deposits. These can etch into paint and varnish layers, permanently disfiguring the image.
  - The brown spot stains on watercolours are known as 'foxing'. They are usually caused by metallic impurities in the support paper or backboard, and are often associated with surface mould growth.
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- What to do:**
- Keep the artwork in a clean environment. Handle as little as possible, always with clean hands.
  - Frame the artwork correctly.
  - Maintain a reasonable air circulation around the artwork – avoid hanging pictures on damp walls or storing in closed cupboards.
  - Inspect the front and back of an artwork regularly to check for any insect infestation or mould growth.

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### Correct framing and mounting

Framing reduces the possibility of damage from handling and provides protection against the environment. Artists often choose a frame to complement their artwork, so the aesthetic impact of alterations should be carefully considered.

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- Damaged caused:**
- Acids damage paper. Cheap boards, glues and tapes used in direct contact with paper can make it acidic, discoloured and unstable. These materials are often very difficult to remove, leaving the artwork severely damaged and permanently stained.
  - If paintings on canvas lack a backboard, they may suffer from impact damage and an accumulation of dirt on the reverse.
  - Glazing protects paintings and works of art on paper, but can adhere to artworks if in direct contact.

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- What to do:**
- Glaze the artwork with glass or Perspex. Low-reflective varieties are available.
  - Ensure that frames have a backboard.
  - Separate artwork from glazing by a window mount or spacer.
  - Never adhere anything to the front or back of the artwork.
  - Insist that the framer uses acid-free, conservation-standard materials.
  - Ensure the painting is secured firmly in the frame with brackets. Never use nails or staples.
  - Use strong hanging fixtures and hang the painting with thick nylon cord.
  - Never attempt to 'clean' or 'repair' a picture. There is nothing you can safely do – often the worst type of damage results from these actions.
  - Consult a conservator, registered with the New Zealand Conservators of Cultural Materials, who will provide a professional service. <http://www.nzccm.org.nz/>.
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