

Preventive conservation policy

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This document to be read in conjunction with associated Policies and museums' policy drafts	
Related Science Museum Documentation:	NMSI relative humidity and temperature standards for prevention of material deterioration (2010)
	Science Museum Collecting Policy, 10 July 2007
	Science Museum, Indemnity & Insurance Management, draft policy 2007 (M. Rollo)
	National Museum of Science & Industry, Corporate Plan: Annual
	Science Museum Human Remains Policy, draft August 2005 (L. O'Sullivan)
	Collections Management Policy, National Museum of Science & Industry, April 2005
	Conservation of objects in the care of the Science Museum, Policy statement, January 2005 (H. Newey)
	Increasing access to the Science Museum's collections through live interpretation, draft policy, 19 June 2003

Version	Date	Status	Comments
1	15 Dec 10		Supersedes Conservation of objects in the care of the Science Museum, Policy statement Jan 2005. Preventive section
2	26 July 11		Updated following PAS198 and PD5454 draft publications
3	19 Sept 11		Update following consultation

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Separate document

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1. Policy statement

The National Museum of Science and Industry, through its institutions the Science Museum, the National Media Museum, the National Railway Museum and Locomotion, holds one of the world's pre-eminent collections in science, technology, industry, transport and medicine.

Under the National Heritage Act 1983 the Science Museum is required to care for, preserve and add to the objects in their collection. Some deterioration will inevitably occur to museum objects while on display and in storage due to natural degradation processes. NMSI is committed to reducing this damage to as low a level as is reasonably practicable through preventive conservation practices.

The ICOM-CC definition of preventive conservation is all measures and actions aimed at avoiding and minimising future deterioration or loss. They are carried out within the context or on the surroundings of an item, but more often a group of items, whatever their age and condition. These measures and actions are indirect, they do not interfere with the materials and structures of the items. They do not modify their appearance.

These actions include appropriate measures and actions for storage, handling, packing and transportation, security, environmental management (light, humidity, pollution and pest control), emergency planning, education of staff, public awareness, documentation and legal compliance. As such preventive conservation actions are covered by a range of departments working together within the museum including Conservation & Collections Care, Curatorial, CCI, Estates and Security.

2. Agents of deterioration

The agents of deterioration of museum objects can be summarised as follows

2.1 Temperature and humidity

Prolonged periods of extremes in temperature or humidity, or fluctuations in these conditions will cause damage due to dimensional changes in organic materials as they absorb or lose moisture. Prolonged high humidity conditions will cause corrosion of metals and will increase the likelihood of insect pest infestations and mould growth.

2.2 Exposure to light

Exposure to light will cause fading and chemical breakdown of light sensitive materials e.g. organic dyes, silk, cellulose nitrate plastic. Light exposure can also cause yellowing or darkening of materials e.g. high lignin content paper. The ultra violet component of light is more damaging than visible light.

2.3 Contaminants

Exposure to air borne contaminants such as sulphur dioxide and nitrous oxides causes chemical damage to susceptible objects e.g. silver.

Some contaminants are emitted by materials used in showcase or storage cabinets e.g. unsealed medium density fibreboard emits acetic acid and formaldehyde which

can corrode metals or embrittle and discolour organic materials. Wool is a source of sulphur containing gases which will tarnish silver. These effects are worse if confined in a showcase or if an artefact is placed in direct contact with the material.

2.4 Pests

Pests such as mice cause damage by shredding material to build nests. Insect pests e.g. carpet beetle, common clothes moth, paper lice and wood worm cause damage when their larvae feed on museum objects made of fur, feathers, silk, wool, paper and wood.

2.5 Emergency preparedness: Fire

Damage is caused by the destruction of fire and from the water used to extinguish it. Water is a prime cause of damage after a fire and if material is left wet for prolonged periods without treatment more damage occurs due to mould growth.

2.6 Emergency preparedness: Flood

Water is the prime cause of damage and if material is left wet for prolonged periods without treatment more damage occurs due to mould growth

2.7 Physical care of the buildings housing the museum collections

Water leaks through ceilings and roofs, and leaks from water pipes and guttering will cause damage in the same way as floods.

2.8 Physical damage

Physical damage is caused by a number of factors including vandalism, concerted attack, poor handling and transport. Damage to objects on open display is also caused by inappropriate handling by the public. Our museum encourages visitors to touch objects because of the many interactive and 'hands on' exhibits so this is a challenge to prevent. The most obvious evidence of this type of damage is when the acid in fingerprints etches and tarnishes metal, painted and lacquered surfaces.

2.9 Security

The potential of theft of objects needs to be considered when displaying and storing objects.

3. Targets to reduce damage

Much of the damage due to agents of deterioration, excluding that of physical damage and theft, will be reduced to an acceptable level if the environment is kept as stable as possible. The environmental ranges detailed in the Appendices have been established through research by the conservation profession and advice through PAS198:2011 Specification for environmental conditions for cultural collections (draft) and PD5454 Guide for storage and exhibition of archival materials (draft). Science Museum policy is to adhere to these guidelines where practicable. Where this is not possible then each project should at least move nearer towards achieving the environmental targets.

Collections care training is available for all staff working with collections to reduce potential physical damage. Early inclusion of conservation advice within exhibitions and other projects will also reduce the potential for collections damage.