

Collections Care & Conservation Policy

REVISION	REVISION DATE	OWNER	REFERENCE	COMMENT
00	October 2013	Conservation Team	COL-POL-025	Format and content change to meet Accreditation requirements
01	September 2015	Registrar	COL-POL-025	To meet new collections management policy and PAS 197 standard.
02	November 2016	Conservation Team	COL-POL-025	Changes to phrasing to meet accreditation return

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1. Statement of Purpose

The National Heritage Act 1983 (as amended by the Museums & Galleries Act 1992) requires the Board of Trustees of the Royal Armouries to maintain and exhibit a national collection of arms, armour and associated objects, and to maintain a record relating to arms and armour and to the Tower of London. The Act requires Royal Armouries to care for, preserve and add objects to the collections, as well as to exhibit them to the public, make them available for study and research, and generally promote the public's enjoyment and understanding of arms and armour.

2. Introduction

Caring for the collection is a fundamental duty for all museums. All members of permanent, temporary and freelance staff working for Royal Armouries must be aware of and adhere to the Collections Care & Conservation Policy. This policy defines the principles and minimum standard which apply to the Care and Conservation of objects in both the permanent collection as well as on loan to Royal Armouries.

3. Preventive Conservation

This section covers the measures necessary to slow down or minimise deterioration of museum objects. This involves managing museum buildings, sites and environment to achieve optimum conditions, and includes environmental control and monitoring, integrated pest management and appropriate storage and display conditions.

Collections Condition Overview

To ensure that awareness of the condition and needs of all items contained within the collections is maintained, a reporting system is in place whereby collections staff can inform the Conservation Team of any objects that require attention. Appropriate remedial action will then be planned (see *Collections Care and Conservation Plan*).

The Conservation Team will carry out conservation assessments of individual objects in the following situations:

- when an object has been selected for display
- when an object has been acquired (including acquisitions, loans and deposits) and before it is placed in any location within the museum other than the appropriate quarantine store
- before and after an object is lent to another institution
- before and after an object undergoes significant use or handling

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- before and after remedial conservation
- when objects have travelled inter-site

All conservation assessments will be documented according to the standards laid down by SPECTRUM and in-line with Institute of Conservation (ICON) guidelines.

All members of Royal Armouries' collections staff are responsible for reporting issues relating to the collection, including signs of deterioration to particular objects, to the Conservation Team at the earliest opportunity. Similarly, front of house staff have a responsibility to report any changes they notice in objects on display or the surrounding environment.

The Conservation Team is responsible for the sections of the Royal Armouries disaster/salvage plans that relate to collection objects. The Conservation Team will work together with the Registrars Team to provide training to Royal Armouries staff in relation to collections care and salvage during and following a disaster, and to maintain the grab lists and disaster kits.

Environmental Control

The collection should be housed in a manner that protects it from potentially harmful environmental conditions. Where possible Control measures will be implemented to ensure that collections are not at risk of damage from unsuitable conditions. The term 'environmental conditions' includes relative humidity, temperature, light levels, pollution (both gaseous and particulate) and vibrations.

Royal Armouries seeks to achieve the following environmental conditions, which are suitable for a mixed collection, and which meet current nationally and internationally accepted best practice:

Temperature: 16-25°C

Relative Humidity: 40-60% with no more than a 5% change in one day

Ultra-violet Radiation: less than 75µW/lm (microwatts per lumen)

Luminance: in the region of 50-200 Lux, depending upon the sensitivity of the object (highly sensitive material should have a maximum annual exposure of 200,000 Lux hours)

Filtration: Particulate – filters to give 85% efficiency at 5 meters

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gaseous – all pollutant gases should be removed unless being released by the object itself

Vibrations: maximum velocity of no more than 4mm/sec within the museum building

More specific parameters may be implemented on an object by object basis, depending on the sensitivity of the materials present as well as the condition of the object in question. Specific environmental conditions relating to individual loans to Royal Armouries will be negotiated with the lenders prior to any loan taking place.

Fluctuations in relative humidity, which are particularly damaging to many objects, can be reduced by enclosing objects within well sealed or air tight showcases.

Where an object is known to be highly light sensitive it will not be put on display if light levels cannot be maintained at an appropriate level. Light sensitive objects should be grouped into display areas where there is little natural light and with a view to implementing a plan for regular rotation in the future. All case lighting must be easily controllable in order that Lux levels can be adjusted accordingly, and it should be possible to install UV filters. Light sensitive objects should only be illuminated when necessary for study or conservation. All windows in spaces housing objects should be fitted with UV filtration film

Whilst collection objects are in transit the appropriate ambient conditions should be maintained. The object should not be exposed to sudden changes of environment. Packing materials should provide a buffer to the objects from changes in environment during transit. The packing materials and techniques used should be robust enough to prevent undue vibrations of, or shock to, the object during transit. Vehicles with air ride suspension should be used to reduce exposing objects to undue vibrations and shock.

Royal Armouries will adhere to the environmental requirements set out in the Government Indemnity Scheme Guidelines for national institutions (Annex D General security conditions and environmental conditions that apply under the Government Indemnity Scheme and Annex E General transport conditions that apply under the Government Indemnity Scheme)

Environmental Monitoring

To alert staff to potentially damaging changes in environmental conditions within galleries and storage areas, integrated systems will be maintained to monitor relative humidity and temperature, with sensors to monitor light and UV radiation levels being installed as necessary in selected areas. Monitoring

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systems such as Hanwell, Tiny Tag or Meaco should be used to ensure continuous and accurate environmental data is collected and recorded.

Conservation staff will carry out regular monitoring of environmental conditions across Royal Armouries sites. Any change in stability will be investigated and the environmental conditions modified accordingly.

Air conditioning systems, which maintain the environmental conditions in galleries and storage areas, will have appropriate and regular maintenance schedules and back-up facilities. Similarly all monitoring systems and equipment will be regularly maintained with the annual calibration of monitors carried out by the manufacturer.

A permanent record will be kept of environmental conditions at Royal Armouries sites. Where necessary spot reading may be taken to supplement the existing environmental data.

Integrated Pest Management

The Conservation Team will carry out regular active monitoring programmes using both internal staff and external contractors, to provide information on activity levels and the locations of insects/pests across the Royal Armouries sites. Remedial action will be taken as and when activity levels pose a significant threat to either a single object or the collection as a whole.

The Facilities Team have implemented a gallery deep-clean programme to maintain cleanliness and to reduce the related problems of dust, dirt and insects/pests.

Any objects that may come into contact with the Collection, for whatever purpose, should be placed in the site specific Quarantine Store and the Conservation Team informed as soon as possible by the admitting member of staff.

Conservation staff will inspect all objects entering museum sites or moving between sites for evidence of insect/pest infestation, mould and/or other damage. If necessary Conservation staff will carry out an appropriate preventative treatment before the objects in question are admitted into the established collection.

Objects being brought into museum sites for use by for example; the Visitor Services, Visitor experience, RAI or Events Team should be subject to the same inspections and treatments as collection objects in order to prevent unwitting cross-contamination.

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Every care should also be taken to ensure there is no cross-contamination during events run by Royal Armouries International within the museum building.

All materials and fabrics used within museum buildings for decorative purposes should be chosen with care to ensure that they do not act as food sources for insects and pests. Consultation with the Conservation Manager is recommended prior to ordering any new material or fabric, to allow for any material testing or alterations that may be necessary.

All Royal Armouries staff are responsible for assisting with integrated pest management activities as and when required, and for maintaining a general level of cleanliness in their respective work areas.

Museum Buildings

The Royal Armouries collection in Leeds is exhibited and stored in a purpose-built museum building, which includes galleries, stores and the museum's main conservation laboratory.

The Royal Armouries collection in London is exhibited and stored in parts of the historic Tower of London, including displays in the White Tower and stores in the Lanthorn Tower, Middle Tower, Middle Flint Tower and Fusilier's Basement. The site's conservation laboratory is housed in the Fusilier's Basement.

The Royal Armouries collection in Portsmouth is exhibited and stored in the historic Fort Nelson, a former Victorian Fort. The site's conservation laboratory and large object work areas are located by the South West Store and Artillery Hall respectively.

Regular inspections of all museum buildings will be undertaken to ensure that any potential threats to the collections are identified, such as leaky roofs, poor wiring, internal pipe work, blocked guttering, and ill-fitting windows/doors. Any issues or problems relating to any of the museum buildings will be recorded and added to the museum's existing building maintenance programme. All plant and other relevant equipment will be regularly inspected in line with legal and Health and Safety regulations.

The existing floor loading of all galleries and storage spaces must be taken into consideration when considering the installation of new storage systems and/or display showcases.

Any new building, galleries or store extensions should include the provision for suitable environmental controls.

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4. Storage and Display

Conservation principles and standards will be the guiding considerations in all aspects of storage and display planning within the museums. Any storage or display systems should be chosen to provide appropriate protection to all the objects present.

Storage and display areas will be restricted to rooms or buildings that meet the following requirements: they are structurally sound; they meet the necessary security requirements as set down by the National Security Adviser; they are equipped with suitable storage and display systems; and suitable environmental conditions can be maintained for the objects in question.

All materials and fabrics used in the manufacture of storage systems, showcases and case fittings should be chemically inert. All materials and fabric to be used in close vicinity to museum objects, whatever the circumstances, must be tested and approved prior to use by the Royal Armouries Conservation Team or following consultation with the Conservation Manager or another national museum, such as the British Museum.

If MDF is to be used in conjunction with museum objects Zero Formaldehyde MDF should be used. Any other MDF products must be treated with a suitable sealant such as Dacrylate prior to use. Fireproof MDF must not be used under any circumstances as it has been shown to be extremely corrosive to a wide range of objects.

Any coating such as paint or varnish, once approved and applied to storage or display areas/cases, should be allowed to fully off-gas for a minimum of three to four weeks prior to objects being placed in close vicinity.

All sensitive objects in storage should be enclosed within drawers or custom boxes to help prevent damage or deterioration.

Case fittings must be securely fixed in place. All methods of securing objects whilst on display should prevent the objects from suffering excessive vibrations or wear. It should not be possible for any objects to fall from their mount or fixing.

Storage systems and showcases must provide adequate access for the placement of objects. The opening and closing of draws, racking or showcases must not place the objects at risk.

Showcases should not house any internal light source or conventional lights that may give off heat. The source of any illumination and/or lights should be housed in a separate compartment to the objects on display, in order to reduce any heat gain and to enable access for maintenance without putting the objects at risk.

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All showcases should be as airtight as possible and have 11.3mm (min.) laminated glass or 12mm acrylic or perspex as standard. Any new showcases acquired should have a built-in compartment or drawer to accommodate case conditioning materials such as silica gel. No points of leverage in the showcase should be exposed to view. The number of locks present will depend on the size and type of the showcase; however, there should be an absolute minimum of two locks per case. All showcase locks must be Abloy locks with a unique key system.

Royal Armouries will adhere to the security requirements set out in the Government Indemnity Scheme Guidelines for national institutions (Annex D General security conditions and environmental conditions that apply under the Government Indemnity Scheme and Annex E General transport conditions that apply under the Government Indemnity Scheme)

5. Remedial Conservation

This section covers the interventive techniques applied to objects within the care of Royal Armouries in order to achieve chemical and physical stabilisation, with the purpose of preserving all of the objects in the collections for future generations.

The Conservation Team is responsible for the technical investigation and the appropriate conservation treatment of all objects in the Royal Armouries collections.

The Conservation Team will safeguard as far as possible the material integrity and significance of each object.

Objects will be conserved and preserved according to national and internationally recognised standards using both preventive and remedial techniques.

No conservation work will be carried out unless authorised by the Conservation Team.

The Conservation Team will accept work from external clients subject to capacity and provided that a formal contract has been agreed between both parties prior to the commencement of said work. However, no conservation work or scientific analysis will be carried out on an object where there is reasonable cause to believe that the current holder is not legitimately entitled to retain the object or that the object has been stolen, illegally excavated, illegally exported or illegally imported. This also applies to loan objects and items within the permanent collection.

Conservation work on permanent collection objects will be carried out by suitably qualified and experienced conservators. All conservators within the

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Conservation Team should work in accordance with ICON guidelines and be aiming towards becoming accredited if not already.

Other Royal Armouries staff and volunteers/students may carry out basic cleaning and minor conservation work provided that they are approved by a member of the Conservation Team at all stages of the work.

Due to deadlines or where the necessary skills, experience or time are not available in-house, external conservators may be employed to carry out particular conservation projects.

The Conservation Team will be responsible for the approval of all external conservators and ensuring that the appropriate procurement procedures have been followed.

External conservators must either be accredited with ICON or work for a studio/company that is on the ICON Conservation Register, unless otherwise approved by the Conservation Team. All external conservators will be expected to provide a condition report and treatment proposal that must be approved by the Conservation Team prior to any work being undertaken. Method statements and risk assessments will also be required where large objects such as artillery are being moved/worked on. All paperwork must be approved by the Conservation Team and the Health and Safety Officer prior to such work being undertaken. Full documentation in line with the Team's in-house style will be expected from all external conservators.

Appropriate contracts will be put in place with all external conservators or conservation studios/companies prior to work being carried out on objects belonging to Royal Armouries.

All conservation treatments will be documented both photographically and in writing, in line with the standards laid down by SPECTRUM and ICON Guidelines.

The Conservation Team will not recommend a particular conservator or conservation studio/company to a third party, but rather recommend that they consult the ICON Conservation Register.

The Conservation Team will work closely with the National Firearms Centre's Technical Firearms Manager. The Technical Firearms Manager will in general only work on firearms for use under the NFC's Service Level Agreement (SLA) and for any live firing. Any other work the Technical Firearms Manager undertakes must be approved by the Conservation Team. The preservation and conservation of all other firearms is the responsibility of the Conservation Team. Any work carried out on museum objects by the Technical Firearms Manager will be recorded in-line with the standards laid down by SPECTRUM, ICON Guidelines and best practice.

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No accessioned object should be used in a manner which could cause it irreversible damage. This includes the live firing of firearms and/or artillery, unless they were acquired for this specific purpose. Exceptions may be made at the discretion of the Conservation Team where no alternative method of collecting the research data/information is available and the risk to the object is considered minimal. All efforts must be made to ensure that the maximum amount of data is collected from any such activity to reduce the likelihood of further exceptions being requested in the future.

6. Legislation, Standards and Ethics

Royal Armouries will adhere to legislation, standards and ethical guidelines relating to collections care and conservation, including (but not limited to):

- Code of Ethics for Museums (Museums Association)
- ICOM Code of Ethics for Museums (International Council of Museums)
- Accreditation Scheme for Museums and Galleries in the United Kingdom (Arts Council)
- SPECTRUM: The UK Museum Collections Management Standard (Collections Trust)
- Professional Guidelines (ICON)
- Benchmarks in Collections Care (Collections Trust)
- Government Indemnity Scheme Guidelines for national institutions (Arts Council)
- Health & Safety at Work Act 1974
- Control of Substances Hazardous to Health (COSHH)
- Ionising Radiations Regulations 1999 (IRR99)

Wherever possible, Royal Armouries seeks to minimise the unnecessary use of energy and to reduce the environmental impact of caring for the collection. Materials used in the storage, display and remedial care of objects should not pose a hazard to health or the environment now or in the future. Where possible they will be re-purposed or disposed of in a sustainable manner. Any object known or suspected to contain a hazardous material will be assessed and managed in line with legal regulations and best practice.

7. Other Policies and Guidelines

This policy should be read with reference to the following Royal Armouries documents:

- Collections Care and Conservation Plan
- Collections Development Policy
- Collections Information Policy

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- Collections Access Policy
- Emergency Plans (Leeds, Tower of London, Fort Nelson)
- Courier Procedure
- Loans In procedure
- Loans Out procedure
- Records Management and Information Policy
- Information Security Policy
- Health & Safety Policy
- Radiation Safety Policy
- Asbestos Policy, Procedure and Plan

8. Review

This document will be reviewed annually and updates in corporate policy and plan, legislation and international conventions will be amended or added where relevant.

This document will be reviewed by the Conservation Team and approved by the Director-General and Master of the Armouries.

9. Risk Management

The associated risk of non-compliance with this policy is:

Impact of non-compliance: High
Likelihood of non-compliance: Medium

10. Effective date

This policy is effective from the date of signing.

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Director General & Master of the Armouries

Date.....

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