

# Climate Declaration for heritage institutions

Januari 2024

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## Introduction

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Heritage organisations such as museums, archives and libraries care for our heritage and try to share the fragile objects in their collections, now and in the future, to a broad audience. To ensure the future use of collections, risks are limited to an acceptable minimum. Besides factors such as light, pollution, physical forces and safety, climate plays a role. A considerable amount of time and attention is spent by organisations on the creation of indoor climates where people and objects are comfortable. Controlling the indoor climate however, can require a high energy demand and can thus put a big strain on the budget. Which possibilities are available to save energy and still provide a safe environment for heritage collections?

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## Urgency

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In the context of climate change, heritage organisations are forced to follow international regulations to emit significantly less CO<sub>2</sub>. In addition, rising energy prices have further increased the need to reduce energy consumption.

Recent decades have brought new scientific insights about climate specifications in relation to collection needs and visitor comfort. These insights provide opportunities to use less energy while not increasing the risks to which objects are exposed. Well considered adjustments can even improve conservation.

With this climate statement, we want to propose some general principles for possible adjustments to your indoor climate, so your collections can be preserved and presented in an optimal way without unnecessary energy consumption.

In doing so, we are in line with the initiative taken in 2014 by the group of large international museums (Bizot) to, among other things, ease the requirements of loan traffic between major museums. [1] This initiative was subsequently widely adopted by ICOM in collaboration with IIC in the Environmental Guidelines ICOM-CC and IIC Declaration. [2]

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1 <https://www.cimam.org/sustainability-and-ecology-museum-practice/bizot-green-protocol/>

2 <https://www.icom-cc.org/en/environmental-guidelines-icom-cc-and-iic-declaration>

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## Who are we?

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The declaration is supported by various interest groups, heritage institutions and training courses:

[Allard Pierson](#), Amsterdam, Nederland

[Amsterdam Museum](#), Amsterdam, Nederland

[BELSPO](#) - Federaal Wetenschapsbeleid, Brussel, België

[Bonnefanten](#), Maastricht, Nederland

[Brabants Historisch Informatie Centrum](#), Den Bosch, Nederland

[Brussels Museums](#), Brussel, België

[CCNL](#) - Collectie Centrum Nederland, Amersfoort, Nederland

[Centraal Museum](#), Utrecht, Nederland

[Departement Cultuur, Jeugd en Media](#), Brussel, België

[Design Museum](#), Gent, België

[Diva](#), Antwerpen, België

[Erfgoed Vlaanderen](#), België

[FARO](#) - Vlaams steunpunt voor Erfgoed, Brussel, België

[FeliXart en Eco Museum](#), Drogenbos, België

[FOMU](#) - Fotomuseum, Antwerpen, België

[Gelders Archief](#), Arnhem, Nederland

[Gelders Landschap en Kastelen](#), Arnhem, Nederland

[Het Scheepvaartmuseum](#), Amsterdam, Nederland

[Het Utrechts Archief](#), Utrecht, Nederland

[Historisch Centrum Limburg](#), Maastricht, Nederland

[ICOM België en Vlaanderen](#), België

[ICOM Nederland](#), Nederland

[Joods Cultureel Kwartier](#), Amsterdam, Nederland

[KB Nationale Bibliotheek](#), Den Haag, Nederland

[KBR](#) - Koninklijke Bibliotheek van België, Brussel, België

[KIK-IRPA](#) - Koninklijk Instituut voor het Kunstpatrimonium, Brussel, België

[Koninklijk Belgisch Instituut voor Ruimte-Aeronomie](#), Brussel België

[KMI-IRM](#) - Koninklijk Meteorologisch Instituut, Ukkel, België

[KMSKA](#) - Koninklijk Museum voor Schone Kunsten Antwerpen, Antwerpen, België

[Koninklijk Museum voor Midden-Afrika](#), Tervuren, België

[Koninklijke Musea voor Kunst en Geschiedenis](#), Brussel, België

[Koninklijke Musea voor Schone Kunsten van België](#), België

[Koninklijke Nederlandse Akademie van Wetenschappen](#), Amsterdam, Nederland

[Koninklijke Sterrenwacht van België](#), Ukkel, België

[Koninklijke Stichting Defensiemusea](#), Soesterberg, Nederland

[KVAN](#) - Koninklijke Vereniging Archiefsector Nederland, Naarden, Nederland

[LCM](#) - Landelijk Contact van Museumconsulenten, Nederland

[M HKA](#) - Museum van Hedendaagse Kunst Antwerpen, Antwerpen, België

[Markiezenhof](#), Bergen op Zoom, Nederland

[MAS](#) - Museum aan de Stroom, Antwerpen, België

[Middelheim Museum](#), Antwerpen, België

[ModeMuseum Antwerpen](#), Antwerpen, België

[Monumentenwacht Vlaanderen](#), Antwerpen, België

[Museum Hof van Busleyden](#), Mechelen, België

[Museum Kranenburgh](#), Bergen, Nederland

[Museum Mayer van den Bergh](#), Antwerpen, België

[Museum Natuurwetenschappen](#), Brussel, België

[Museum Plantin Moretus](#), Antwerpen, België

[Museum Vleeshuis](#), Antwerpen, België

[Museumvereniging](#), Amsterdam, Nederland

[Muzee Scheveningen](#), Scheveningen, Nederland

[Nationaal Archief](#), Den Haag, Nederland

[Naturalis Biodiversity Center](#), Leiden, Nederland

[Paleis het Loo](#), Apeldoorn, Nederland

[RCE](#) - Rijksdienst voor het Cultureel Erfgoed, Amersfoort, Nederland

[Red Star Line Museum](#), Antwerpen, België

[Reinwardt Academie](#), Amsterdam, Nederland

[Rijksarchief](#), Brussel, België

[Rijksmuseum](#), Amsterdam, Nederland

[RKD](#) – Nederlands Instituut voor Kunstgeschiedenis, Den Haag, Nederland

[Rubenshuis](#), Antwerpen, België

[Singer Laren](#), Laren, Nederland

[Stadsarchief Amsterdam](#), Amsterdam, Nederland

[Stedelijk Museum Amsterdam](#), Amsterdam, Nederland

[Stedelijk Museum Breda](#), Breda, Nederland

[Technische Universiteit Eindhoven](#), Eindhoven, Nederland

[Teylers Museum](#), Haarlem, Nederland

[Universiteit Antwerpen](#), Antwerpen, België

[Van Gogh Museum](#), Amsterdam, Nederland

[Vlaams Depotnetwerk](#), België

[Wereldmuseum](#), Amsterdam, Leiden, Nijmegen, Rotterdam, Nederland

[Zeeuws Museum](#), Middelburg, Nederland

[Zuiderzeemuseum](#), Enkhuizen, Nederland

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## Sustainability and collection management

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- **Sustainability** is broader than the discussion on climate standards and should be an important underlying criterion for future heritage policy principles.
- Heritage organisations should **reduce** their **ecological footprint and environmental** impact to combat climate change by reducing their energy consumption and exploring and, if possible, applying alternative renewable energy sources.
- Conservation of collections should be designed to **prioritize passive methods and energy-efficient solutions**.
- Decision-making should be based **on risk management**.
- Sustainable **decisions** should be made by an **interdisciplinary team** including the owner of the building, the user of the building, the owner of the collection, the parties responsible for the building and climate system maintenance and the collection manager.
- The **climate requirements** for (inter)national **loans** should match the (actual) climate as it is in the collection rooms of the lender. This requires honesty and transparency.

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## Indoor climate principles

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Based on the goals for sustainable management, some starting points can be formulated for optimal indoor climate control, see also [3]:

- **Ageing of heritage objects is a constant natural process** that cannot be stopped. Nevertheless, many objects have stood the test of time. An appropriate climate is not the only factor that ensures optimal preservation, but one that requires a lot of time, budget and energy. More flexible climate management gives room to pay attention to other aspects of collection care as well.
- **Risk management** should become the new starting point for **decision-making**. It will help ensure organisational continuity in relation to collection preservation. This means that the acceptable indoor climate is estimated primarily on the basis of the real susceptibility of objects.
- The **target values** for indoor climate must be **achievable** for the organisation. The interplay between type of collection, building, accessibility, resources and knowledge present in the organisation determines which climate is realistically feasible.
- Using a (small) **seasonal fluctuation** will reduce the risk for loans borrowed from museums (or private residences) from a similar outdoor climate with limited climate control.
- Following the **seasonal changes** in temperature is recommended for all collections. Keeping indoor temperatures slightly lower during the heating season has three major advantages:
  - **Less energy** is used.
  - Objects **degrade less** quickly. Many materials undergo chemical reactions that cause the object to age, at a lower temperature these reactions occur significantly slower.
  - If the air is heated less, it will also become less dry. **Relative humidity remains higher** at lower temperature. This prevents dryness cracks in hygroscopic structures.

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3 Het binnenklimaat in het programma van eisen van erfgoedinstellingen | Publicatie | Rijksdienst voor het Cultureel Erfgoed

- Following the [seasonal changes](#) in relative humidity is recommended, provided the fluctuation is gradual. Maintaining a very strict fixed range for relative humidity throughout the year is energetically very unfavourable and unnecessary for the collection. The recommendation is to maintain a (slightly) lower relative humidity in winter and a (slightly) higher relative humidity in summer.
- [Controlling on a bandwidth](#) rather than a single setpoint is recommended, both for temperature and relative humidity. This means that the control of the air handling system will not continuously force the system to regulate back to one fixed setpoint. This has the great advantage that museums with air-conditioning systems will need to intervene less due to an under- or overshoot.
- For most objects, wider climate conditions than those used to date will cause no or minimal damage. A [relative humidity](#) (RH) between [40%](#) and [60%](#) with fluctuations of no more than 10% RH per 24 hours within this range, and a temperature between [12](#) and [26°C](#) are a good starting point.
- Steering to control fluctuations in relative humidity should be done based on the [historical climate](#). Objects that have been displayed in one location for a long time have already experienced many RH fluctuations as a result of this historical climate. As long as the fluctuations in the future do not exceed those in the past and the object has not undergone any structural interventions recently, the risk of mechanical damage is virtually zero.
- Objects that are highly climate-sensitive (depending on the object's materials, condition, construction and history) may require a [customised solution](#), such as a microclimate or specific and tighter RH control. <sup>[4]</sup> However, many such (highly) sensitive objects have already been damaged by climate fluctuations in the past. Be critical when assessing actual sensitivity.
- By far the majority of objects are stored in [storage](#). The climate in these rooms may be primarily aimed at preserving the collection. Collections do not require high temperatures or fresh outside air. There is therefore less need for heating and the emphasis can therefore be on recirculation with the smallest possible flow rate.
- During [extremely hot and cold periods](#) it is recommended to temporarily choose wider set points. This reduces the risk of air treatment failure significantly.

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## Concluding

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Managing the indoor climate is not easy. It requires knowledge and attention. Much time is spent on measurement, evaluation and interpretation to keep the climate within ranges that we think we know are safe. Practice tells us that these self-imposed limits are often chosen tighter than necessary. This is because the climate sensitivity of the collection is often overestimated. Of course, there are objects that are exceptionally vulnerable; these also deserve our full attention. However, they should not be at the basis of determining an overall institutional climate. We hope that this climate statement will be a first step towards that.

## Colofon

This document is a collaboration between the Cultural Heritage Agency of the Netherlands and the Royal Institute for Cultural Heritage (KIK-IRPA, Belgium).

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4 <https://www.canada.ca/en/conservation-institute/services/agents-deterioration/humidity.html>