

Det Nye Nasjonalmuseet

veien mot et grønt skifte



Klima



Miljø

GCC

Register for the International Climate Control Conference!

2 Nov 2022

Bærekraft

AGM 2023 Talk: the museum environment in an era of sustainability

Museum Climate

Date/Time: 24 Mar, 3:00 pm - 4:00 pm

Tutor(s): David Saunders

Price: £0.00

Platform: Zoom

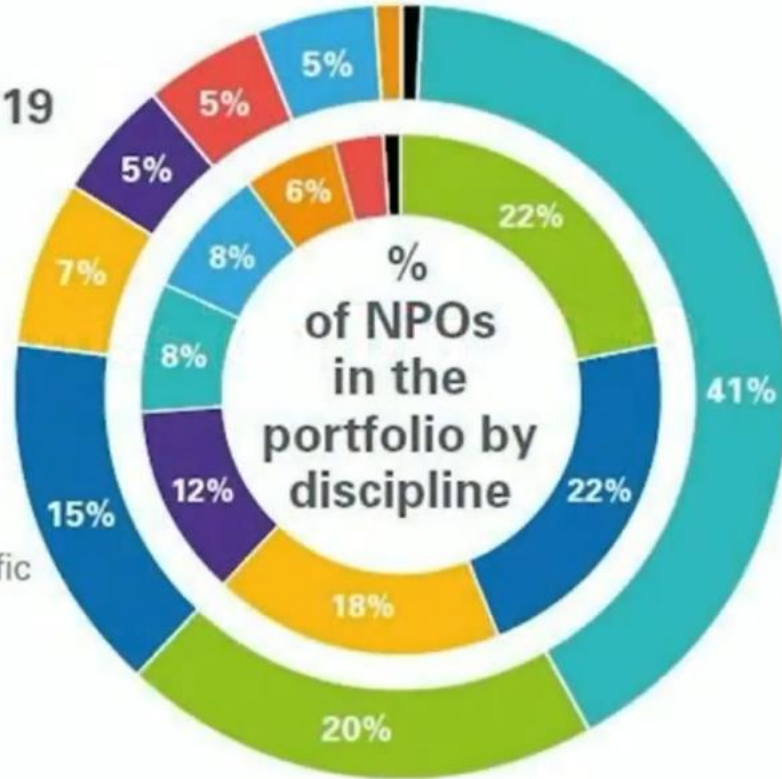
Places available: 80

Location: online

[Click here to enquire about this event](#)

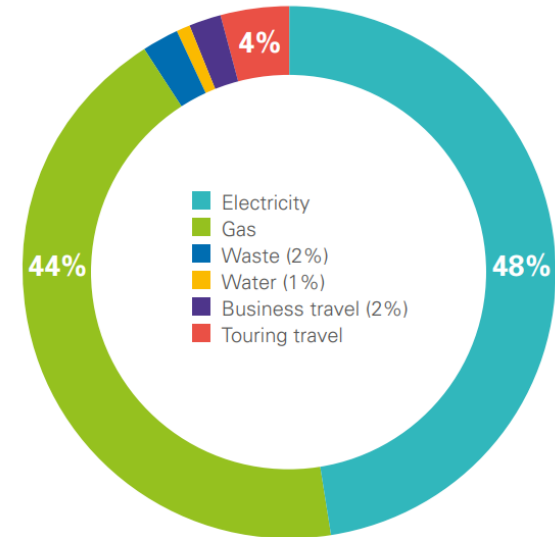
Total carbon footprint 2018/19 by discipline

- Museums
- Combined arts
- Theatre
- Visual arts
- Music
- not discipline specific
- Dance
- Literature
- Libraries



Kilde: [Sustaining Great Art and Future](#)

Total kg CO² per impact area 2021/22



Kilde: <https://www.artscouncil.org.uk/culture-climate-environmental-responsibility-report-202122-julies-bicycle>

- Julies's Bicycle. Green Creative Tools
- STiCH (Sustainability Tools in Cultural Heritage)

- The Green Producers Tool
- Ecocockpit
- Sweep. The Carbon Track

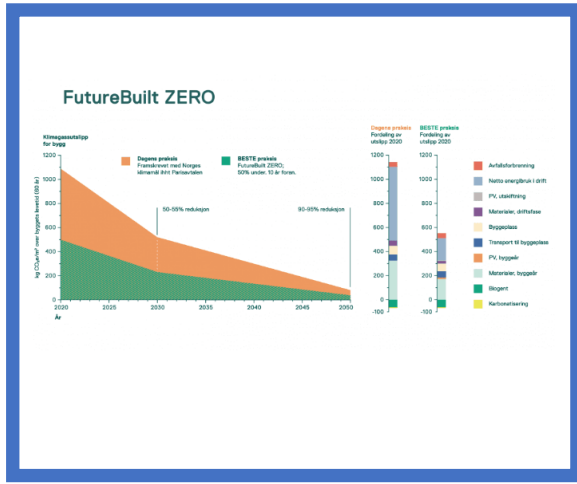
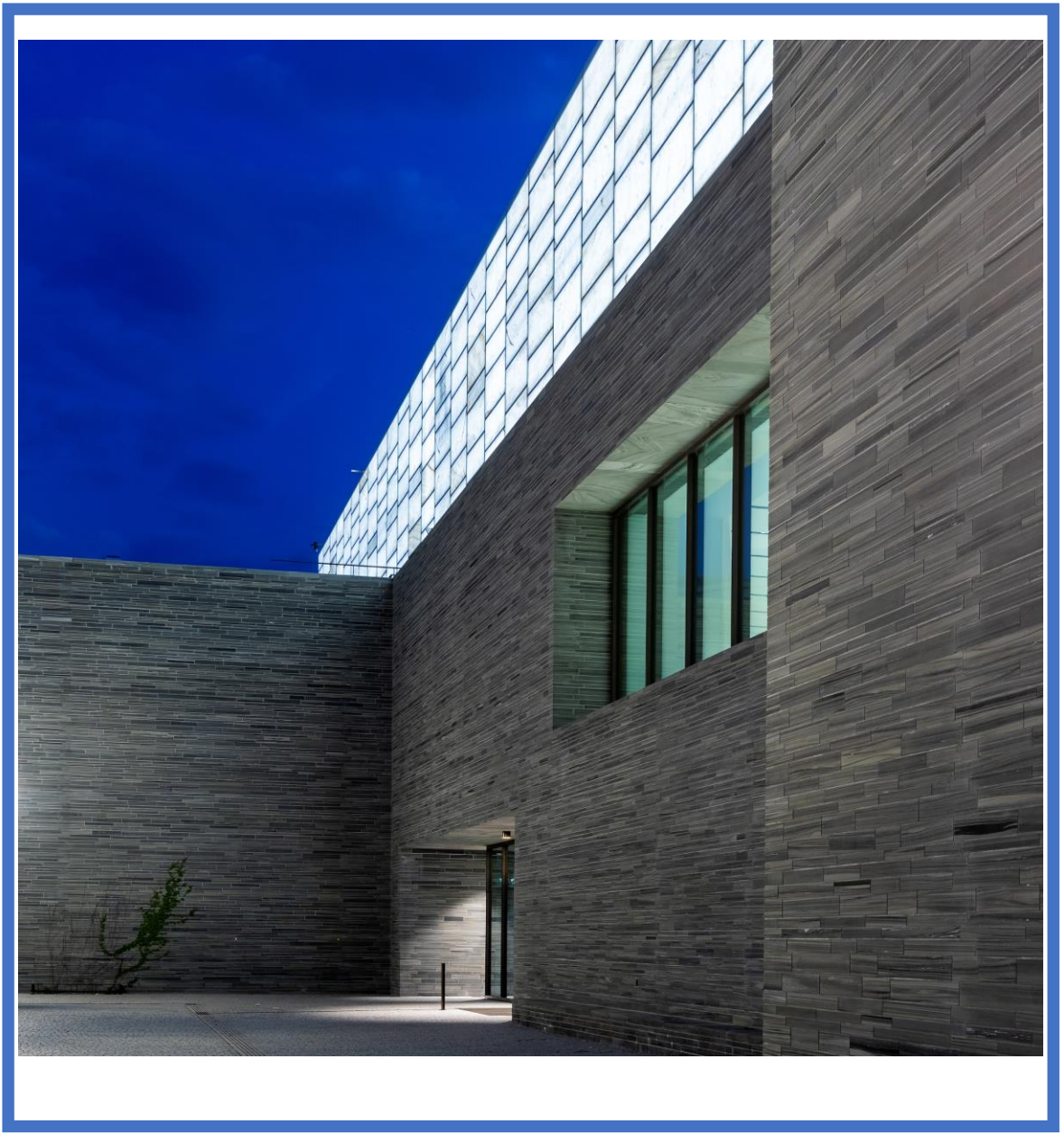
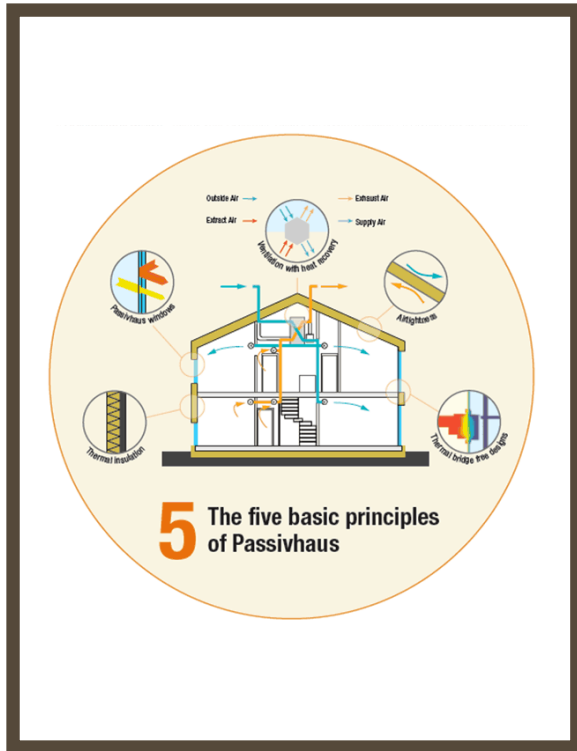
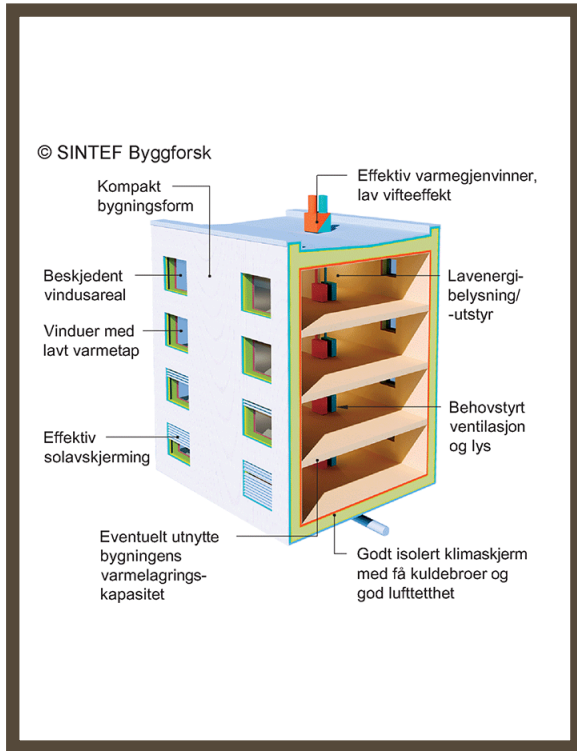
[CO₂-Rechner für die Kultur \(julianvogels.de\)](http://julianvogels.de)



De største klimagassutslippene er knyttet til

- Oppvarming
- Tjenestereiser
- Utstillinger
- Klimatisering av utstillings- og magasinarealer
- Belysning
- Transport





FUTURE BUILT

BYUTVIKLING
BÆREKRAFT
INNOVASJON

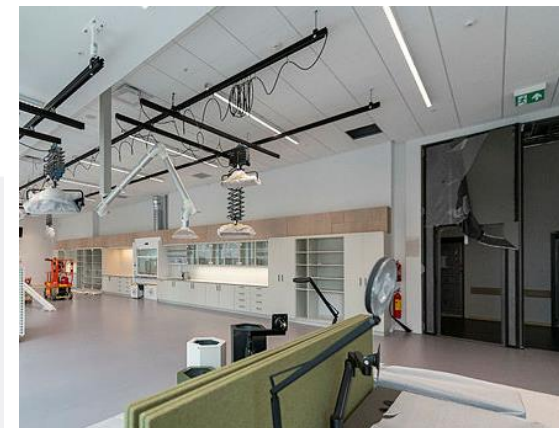
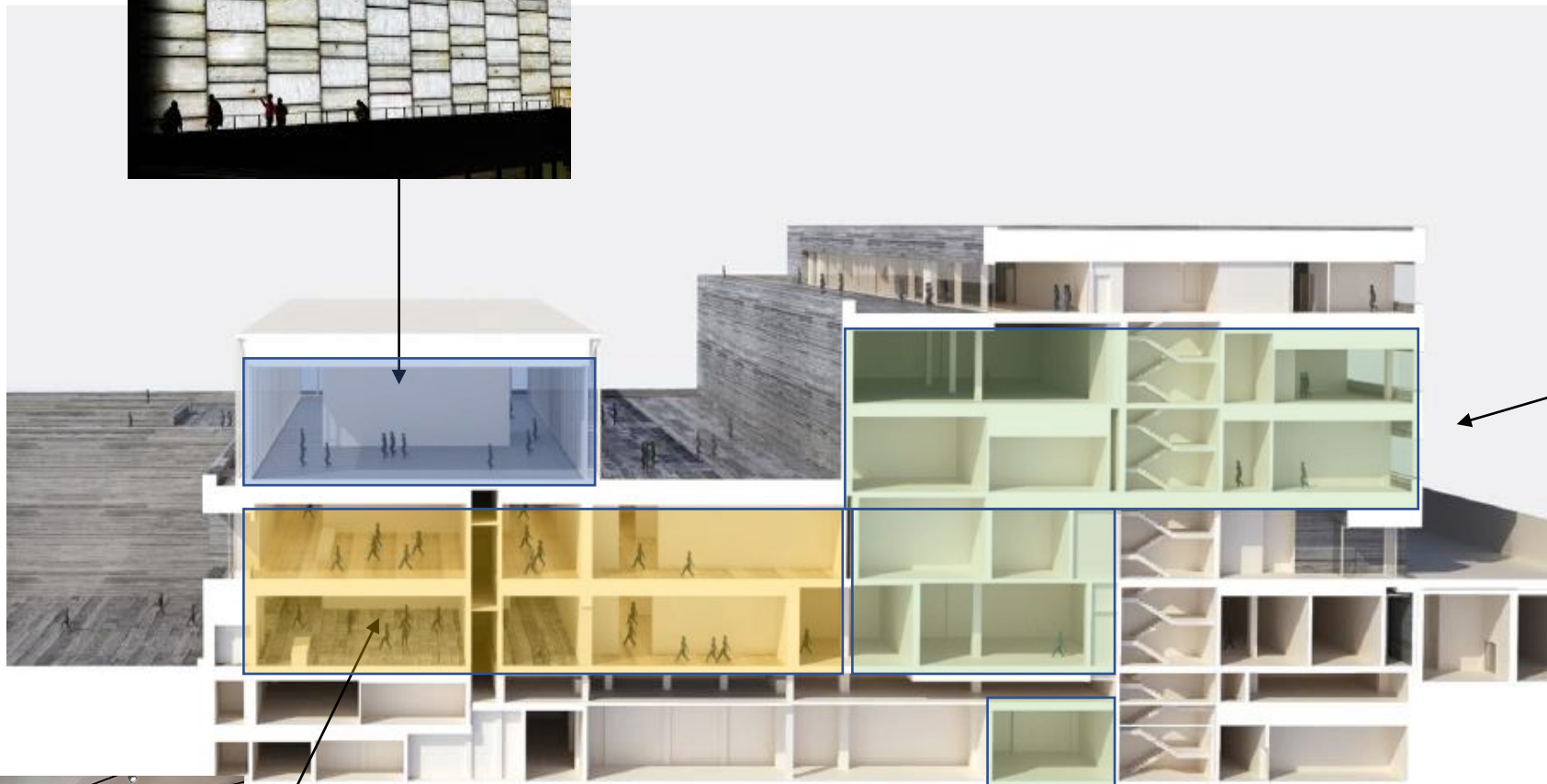


8 361 691 kWt



Kilde til Illustrasjon: Presentasjon fra Eline A. Hansen, Statsbygg; Frokostmøte «Et grønt museum»

Lyshallen til temporære utstillinger



Konserveringsatelier



Magasiner

Fotoatelier

Mellomlager

Tilhørende rom

Totalt 54.600 m²
Utstillingsareal 13 000 m²
Magasiner 8 000 m²
Verksteder og atelier 3 000 m²

Fast samlingspresentasjon



Environmental Guidelines ICOM-CC and IIC Declaration

[ICOM-CC](#)At the IIC congress in Hong Kong and the ICOM-CC conference in Melbourne in September 2014 the delegates discussed and agreed the following declaration:

The conservation profession has come together and agreed a position on environmental guidelines as follows:

Sustainability and management

- The issue of museum sustainability is much broader than the discussion on environmental standards, and needs to be a key underlying criterion of future principles.
- Museums and collecting institutions should seek to reduce their carbon footprint and environmental impact to mitigate climate change, by reducing their energy use and examining alternative renewable energy sources.
- Care of collections should be achieved in a way that does not assume air conditioning (HVAC). Passive methods, simple technology that is easy to maintain, air circulation and lower energy solutions should be considered.
- Risk management should be embedded in museum management processes.

Museum environment

- It is acknowledged that the issue of collection and material environmental requirements is complex, and conservators/conservation scientists should actively seek to explain and unpack these complexities.
- Guidelines for environmental conditions for permanent display and storage should be achievable for the local climate.

Loans

- There needs to be transparency about actual environmental conditions achieved in museums to ensure that realistic requirements are made for loan conditions.
- Noting that most museums in the world have no climate control systems in their exhibition and storage spaces, we acknowledge the need for a document that will influence decision makers that the environmental conditions for international loans may not be appropriate for the permanent display and storage of collections in all museums.
- There needs to be flexibility in the provision of environmental conditions for loans from museums which have climatic conditions different from the set points in the guidelines. This may be achieved with alternative strategies such as microclimates.

Existing guidelines

- The existing interim guidelines agreed by AIC, AICCM, the Bizot group etc (see Appendix) should be guidelines not interim guidelines. It is noted that these guidelines are intended for international loan exhibitions.

Appendix

Bizot Interim Guidelines for Hygroscopic Materials

For many classes of object[s] containing hygroscopic material (such as canvas paintings, textiles, ethnographic objects or animal glue) a stable relative humidity (RH) is required in the range of 40–60% and a stable temperature in the range 16–25°C with fluctuations of no more than ±10% RH per 24 hours within this range.

More sensitive objects will require specific and tighter RH control, depending on the materials, condition, and history of the work of art. A conservator's evaluation is essential in establishing the appropriate environmental conditions for works of art requested for loan.

The AICCM recommended Interim Temperature and Relative Humidity Guidelines for acceptable storage and display conditions of general collection material are:

Temperature – between 15–25°C with allowable fluctuations of +/-4°C per 24 hr

Relative Humidity – between 45-55% with an allowable fluctuation of +/- 5% per 24 hr

Where storage and display environments experience seasonal drift, RH change to be managed gradually across a wider range limited to 40% – 60%

Temperature and Relative Humidity parameters for preservation of cultural materials will differ according to their material, construction and condition, but stable conditions maintained within the parameters above are generally acceptable for most objects.

AIC Interim Guidelines endorsed by the Association of Art Museum Directors:

For the majority of cultural materials, a set point in the range of 45-55% relative humidity with an allowable drift of +/-5%, yielding a total annual range of 40% minimum to 60% maximum and a temperature range of 59-77°F (15-25°C), is acceptable.

- Fluctuations must be minimized.
- Some cultural materials require different environmental conditions for their preservation.
- Loan requirements for all objects should be determined in consultation with conservation professionals.

Nasjonalmuseets klimakrav

Ventilasjonsystemer betjener utstillingskrav med følgende maksverdier for klima

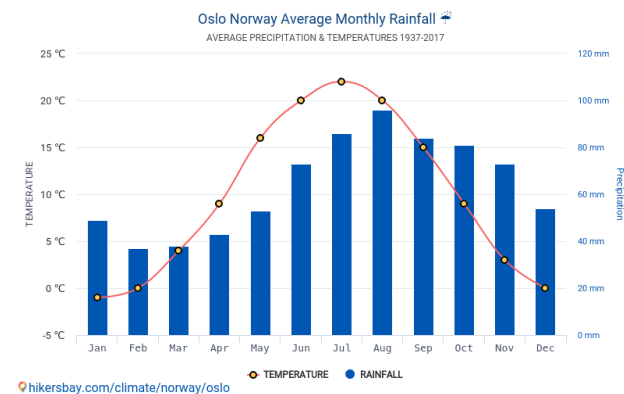
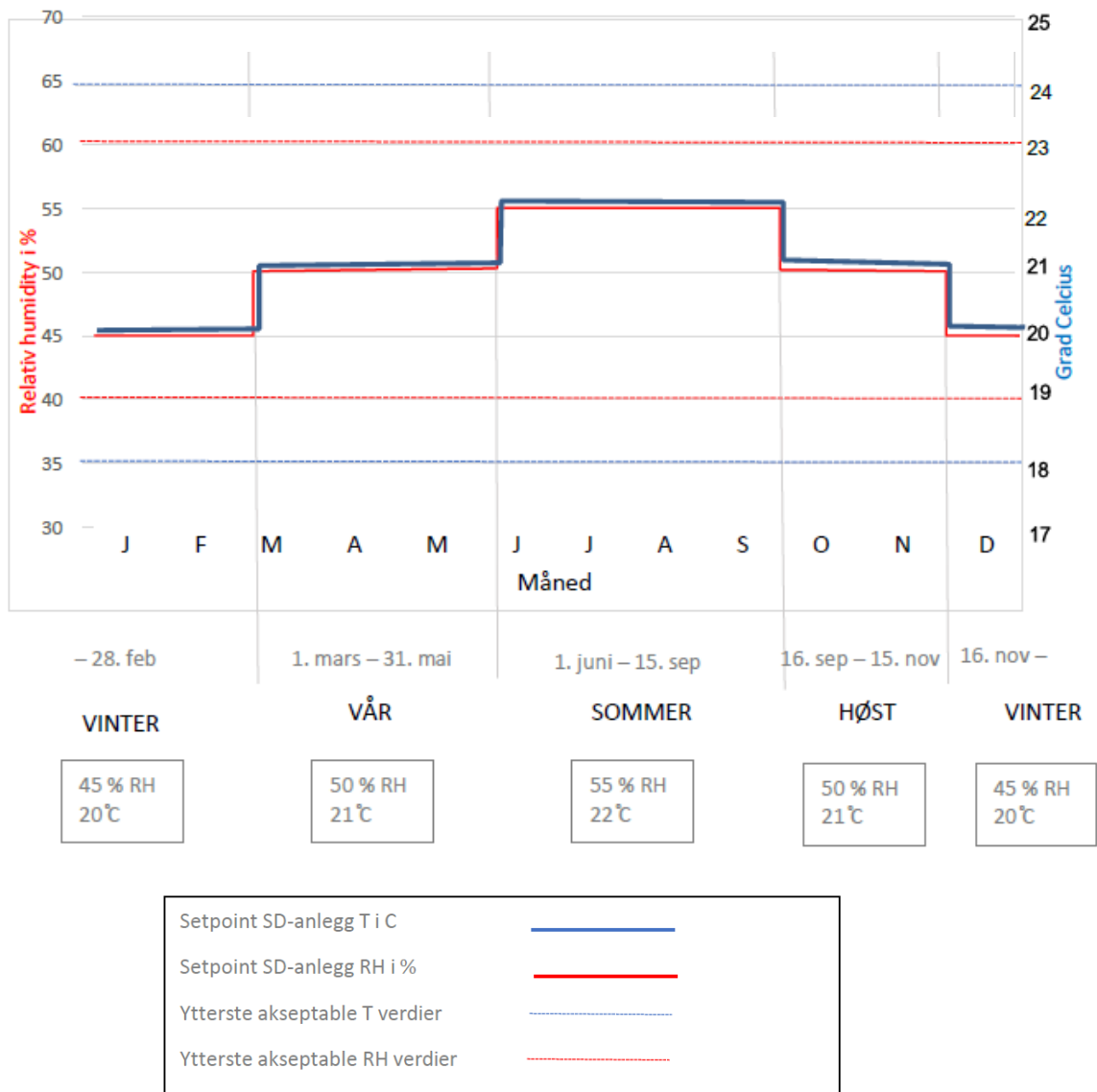
Relativ fuktighet	40 - 60 %
Temperatur	18 - 24 °C

Systemet skal sørge for at klimakravet i utstillingen tilfredstilles til enhver tid. For å minimere energiforbruket til befuktning i de kaldere årstider og avfuktning i de varmeste dagene etableres en reguleringsstrategi som utnytter de tillatte toleranser for temperatur og relative fuktighet avhengig av årstiden og delvis av belastning. Reguleringen skal sikre at endringer i inneklimate foregår "sakte":

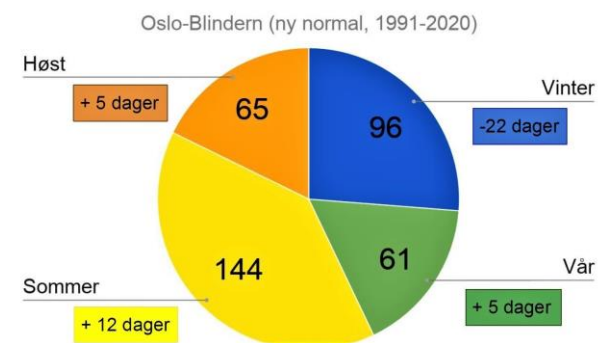
- Temperaturen i utstillingsrom kan variere $\pm 2^{\circ}\text{C}$ over ett døgn
- Relative fuktighet i utstillingsrom kan variere $\pm 5\%$ over ett døgn



Ny innregulering av ventilasjonsaggregatene fom Juni 2023

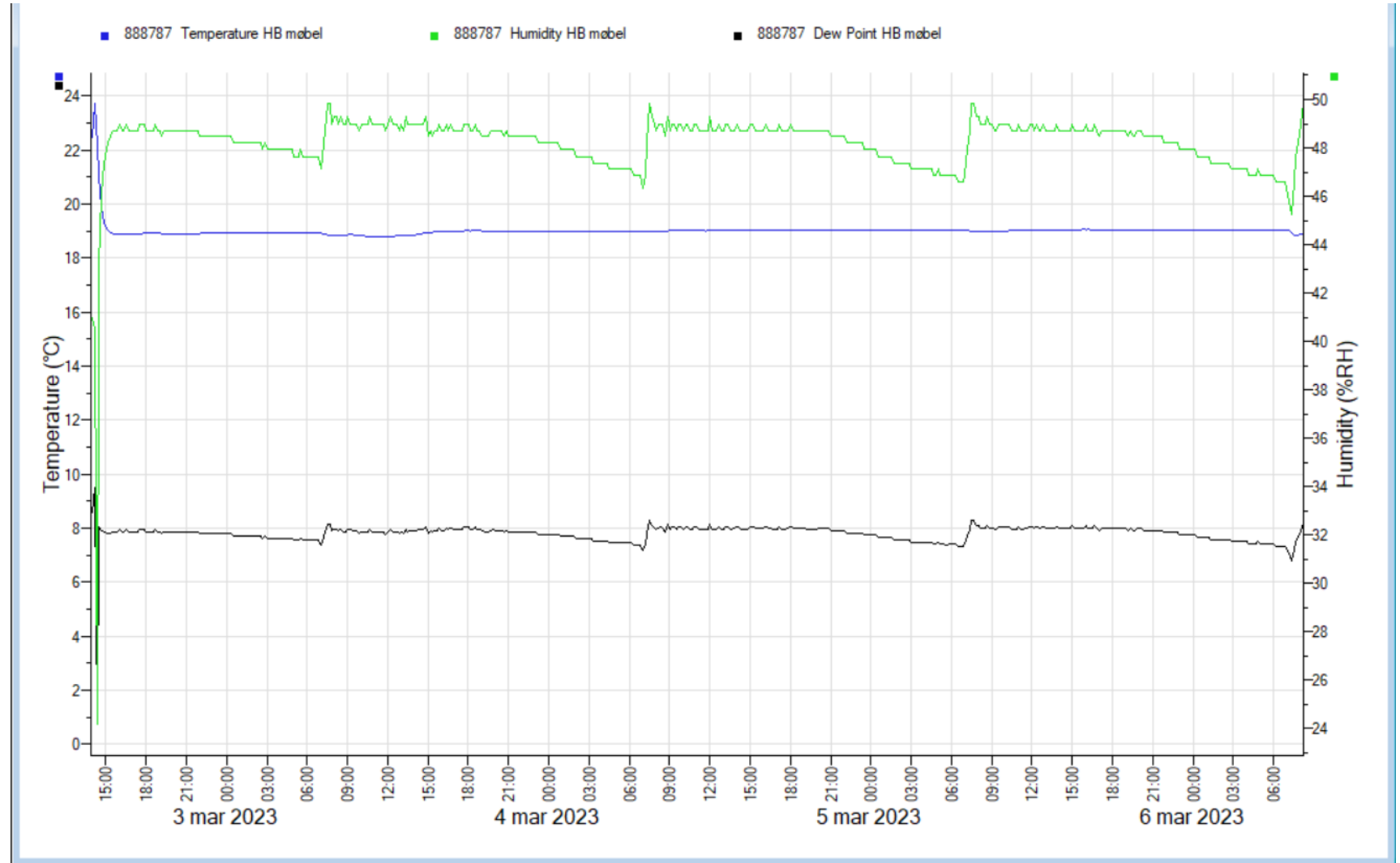


Kilde: <https://snl.no/Oslo - klima>

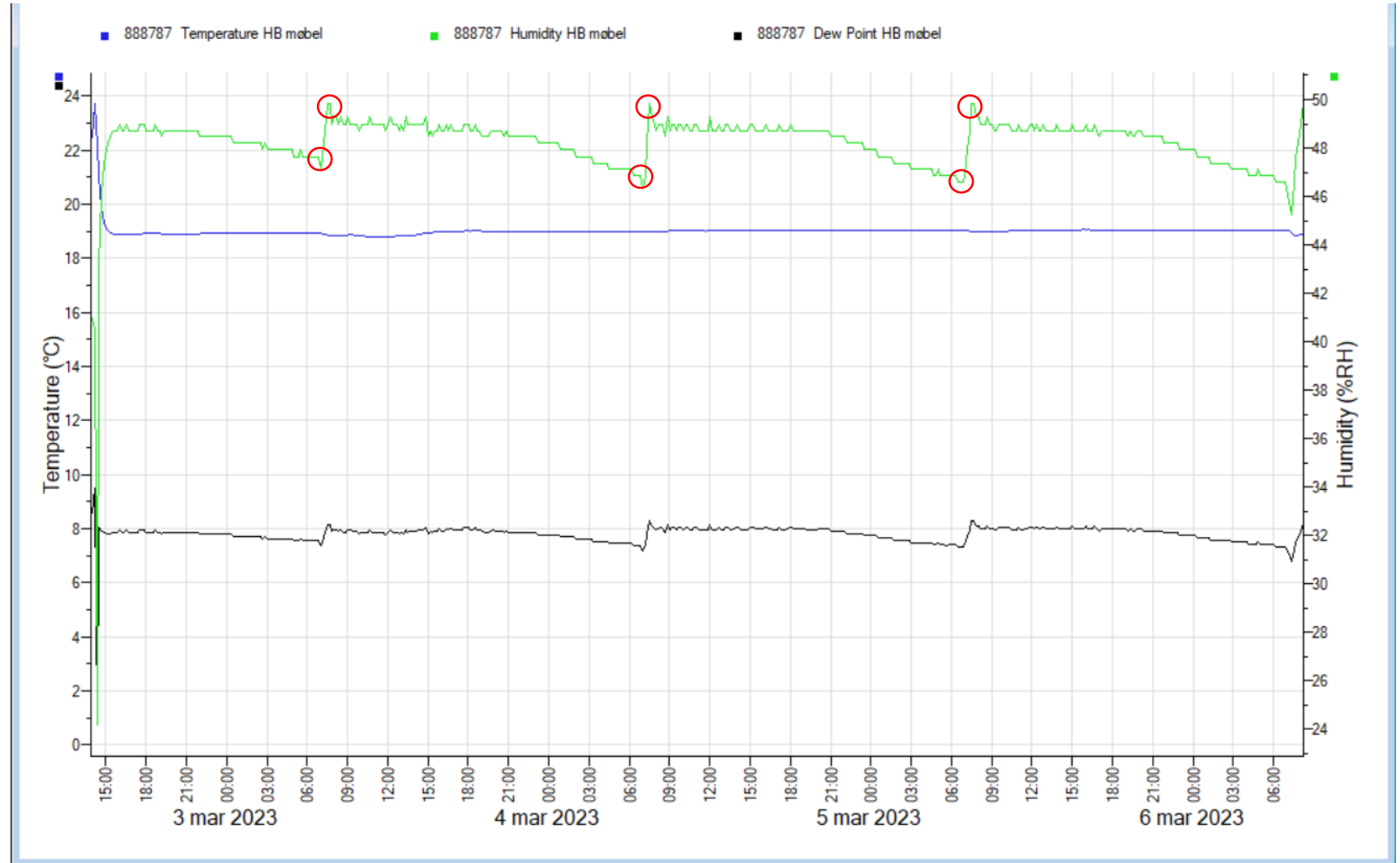


Kilde: <https://www.klimaoslo.no/2021/03/05/ny-klimanormal-reflekterer-klimaendringene/>

Klimadiagram ekstern magasin med avslått ventilasjon kl. 19-07



Klimadiagram ekstern magasin med avslått ventilasjon kl. 19-07





FACE CENTER

Nεm