



Cultural Heritage Agency  
Ministry of Education, Culture and Science

# Finding the optimum museum storage

*What can be learned from an evaluation  
in the Netherlands*

Bart Ankersmit

Klima og museumssamlinar i møte med økonomiske utfordringar  
Bergen, Norway  
24-25 april 2023



Rijksmuseum - 1905



Rijksmuseum - 1974



1950



1975

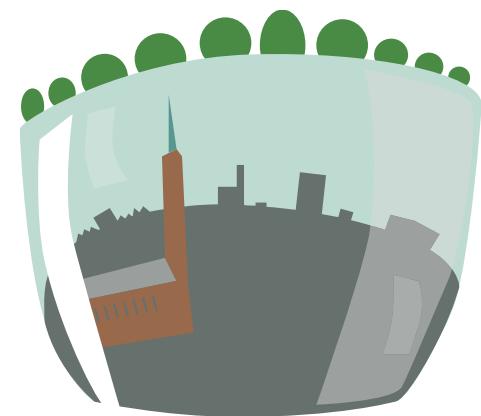
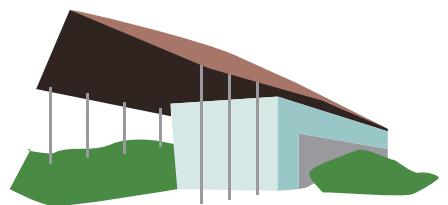
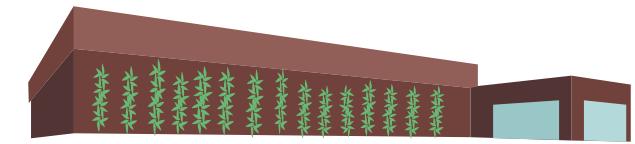
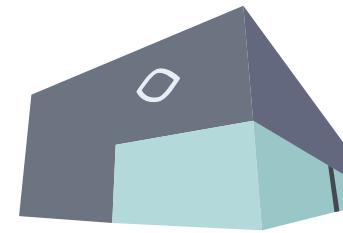
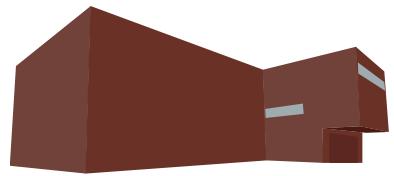
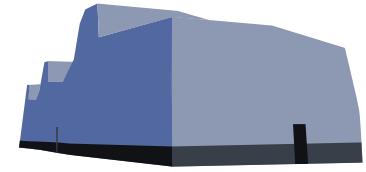
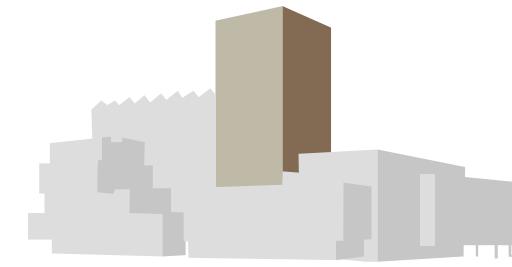
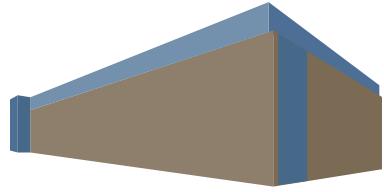
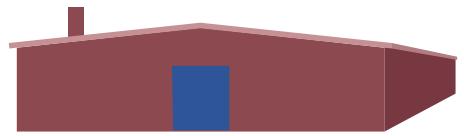


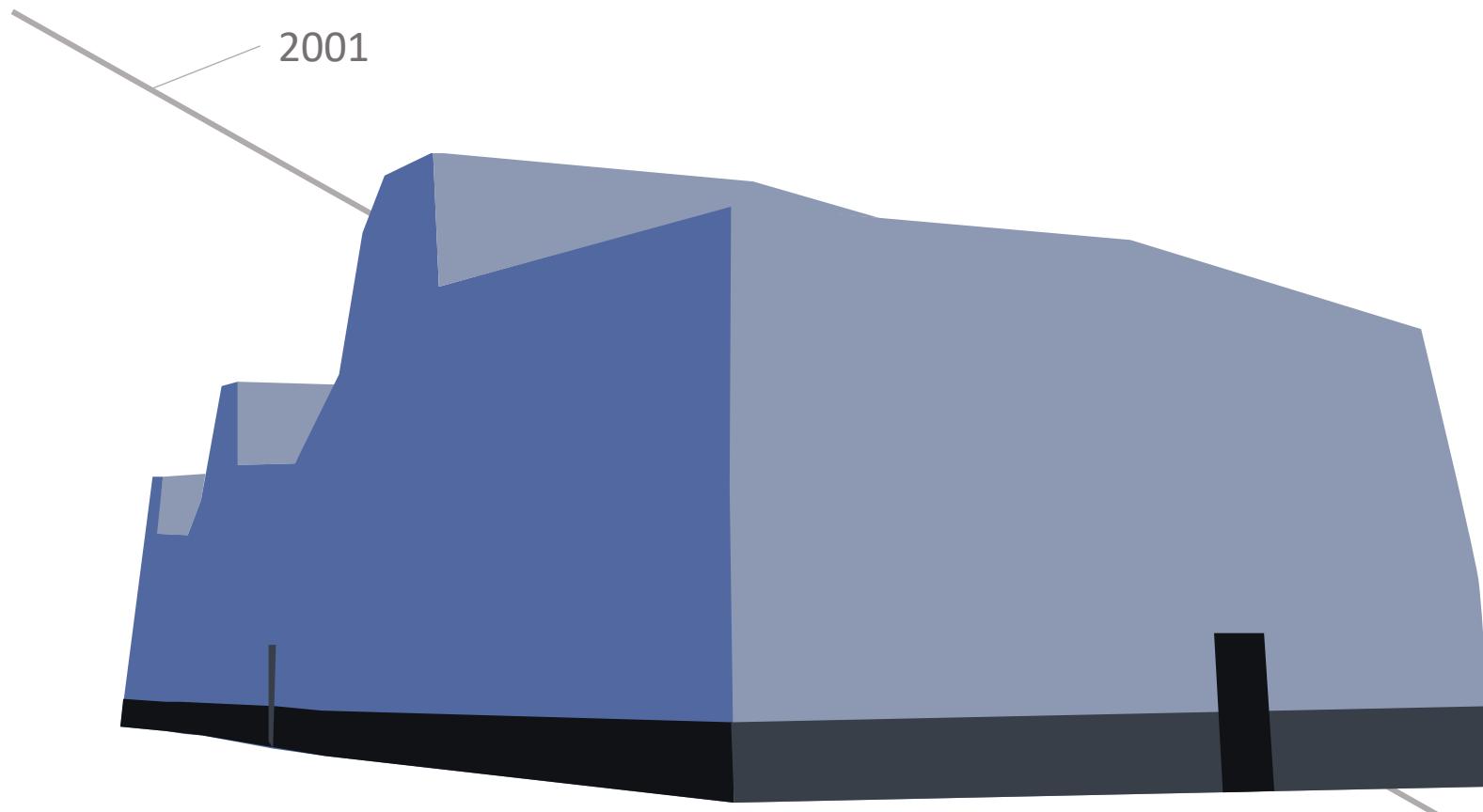
1996



Off site storage 2002

Purpose built storages in the Netherlands

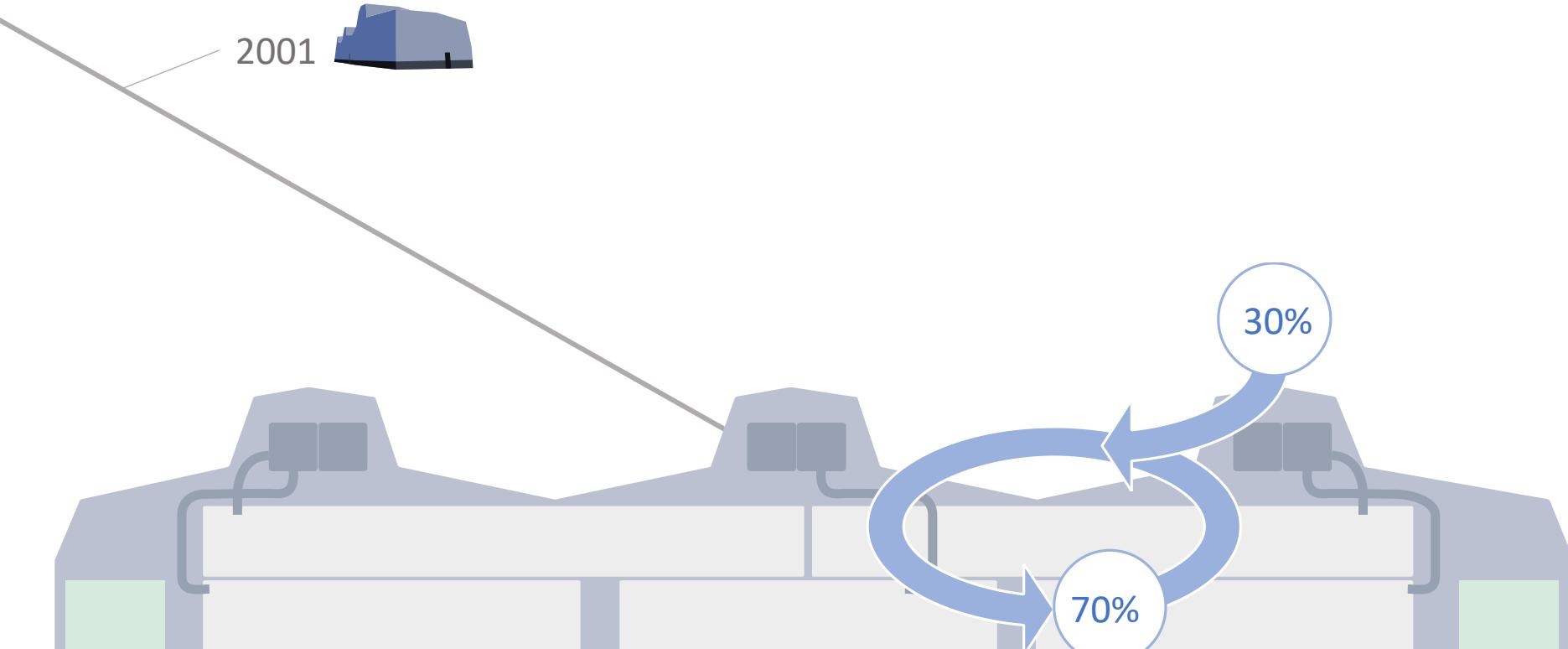




2001

Maritime Museum Amsterdam





$18^{\circ}\text{C} < \text{T} < 22^{\circ}\text{C}$  ( $\pm 2^{\circ}\text{C}$ )

RH= 50%  $\pm$ 5% ( $\rightarrow$  now 55%  $\pm$ 2%)



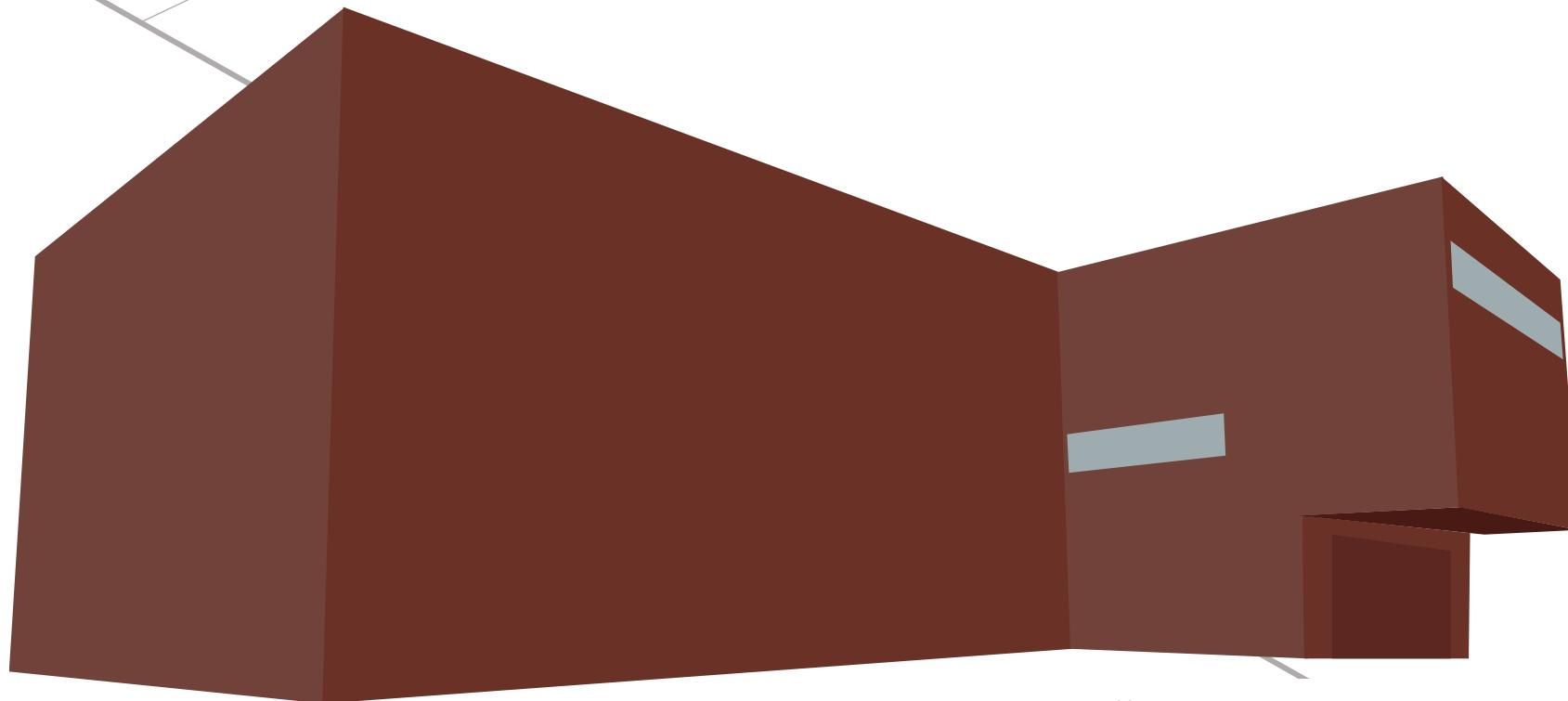
2001



2009

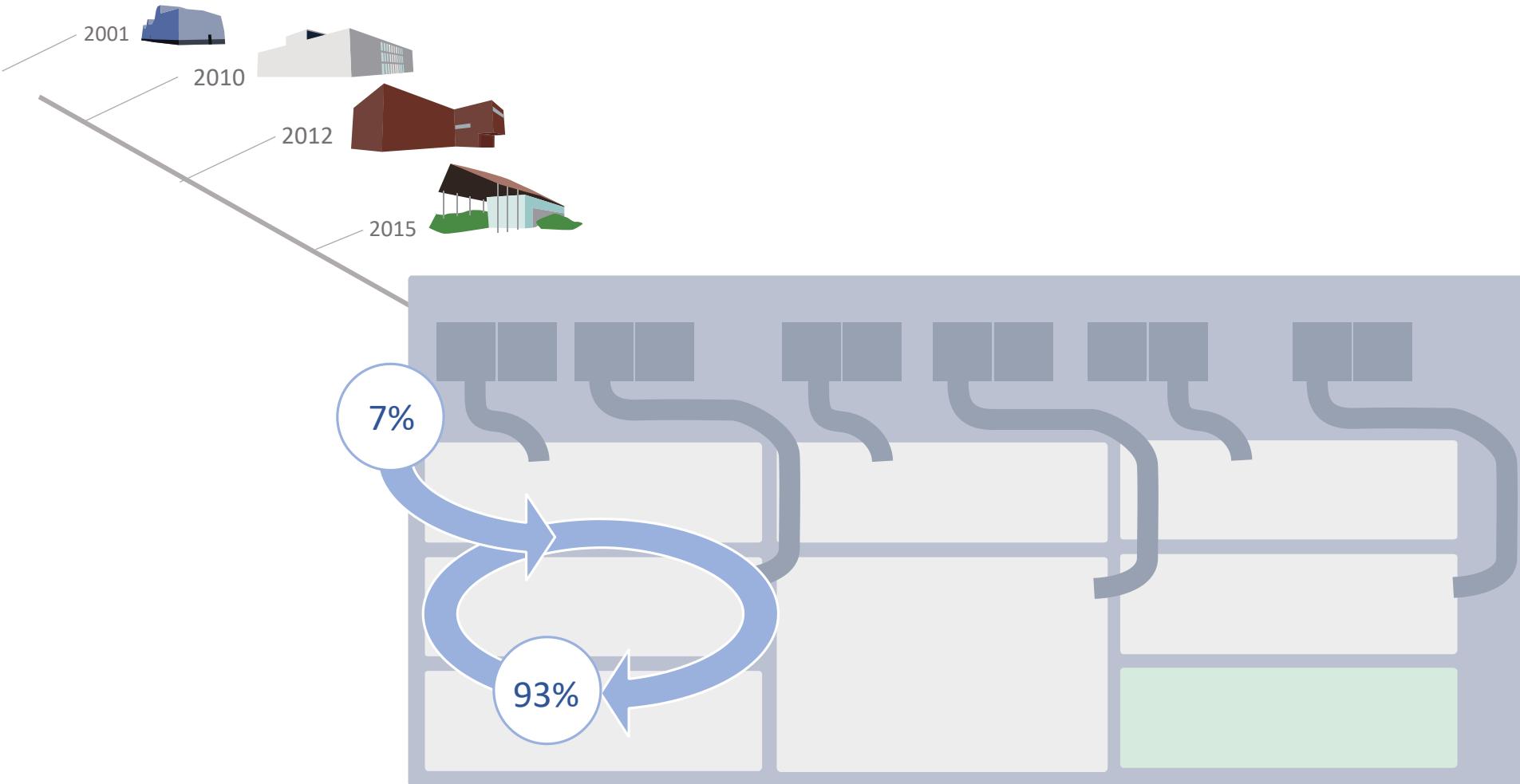


2010

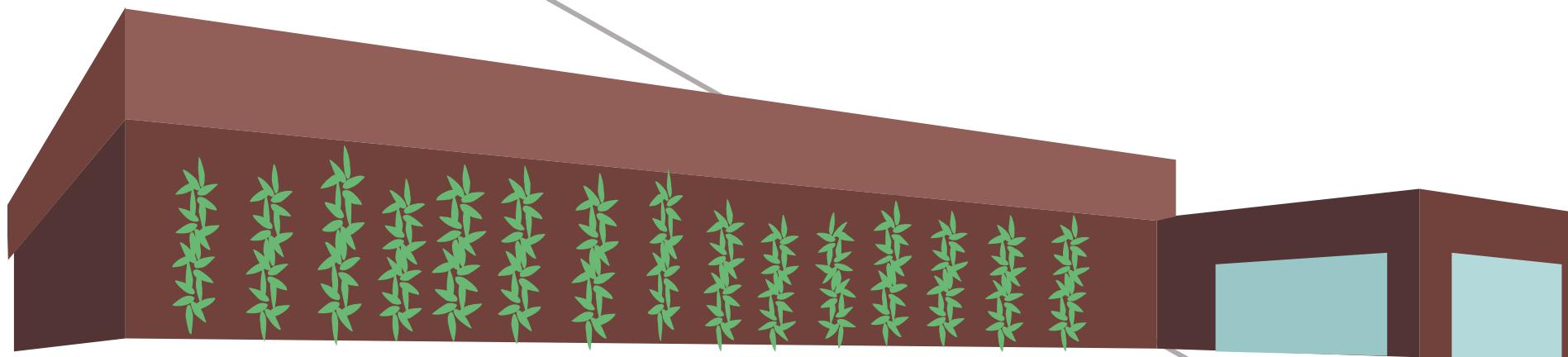


Collection Center Amsterdam





$18^{\circ}\text{C} \pm 1^{\circ}\text{C} < T < 22^{\circ}\text{C} \pm 1^{\circ}\text{C}$   
 $48\% \pm 3\% < \text{RH} < 52\% \pm 3\%$



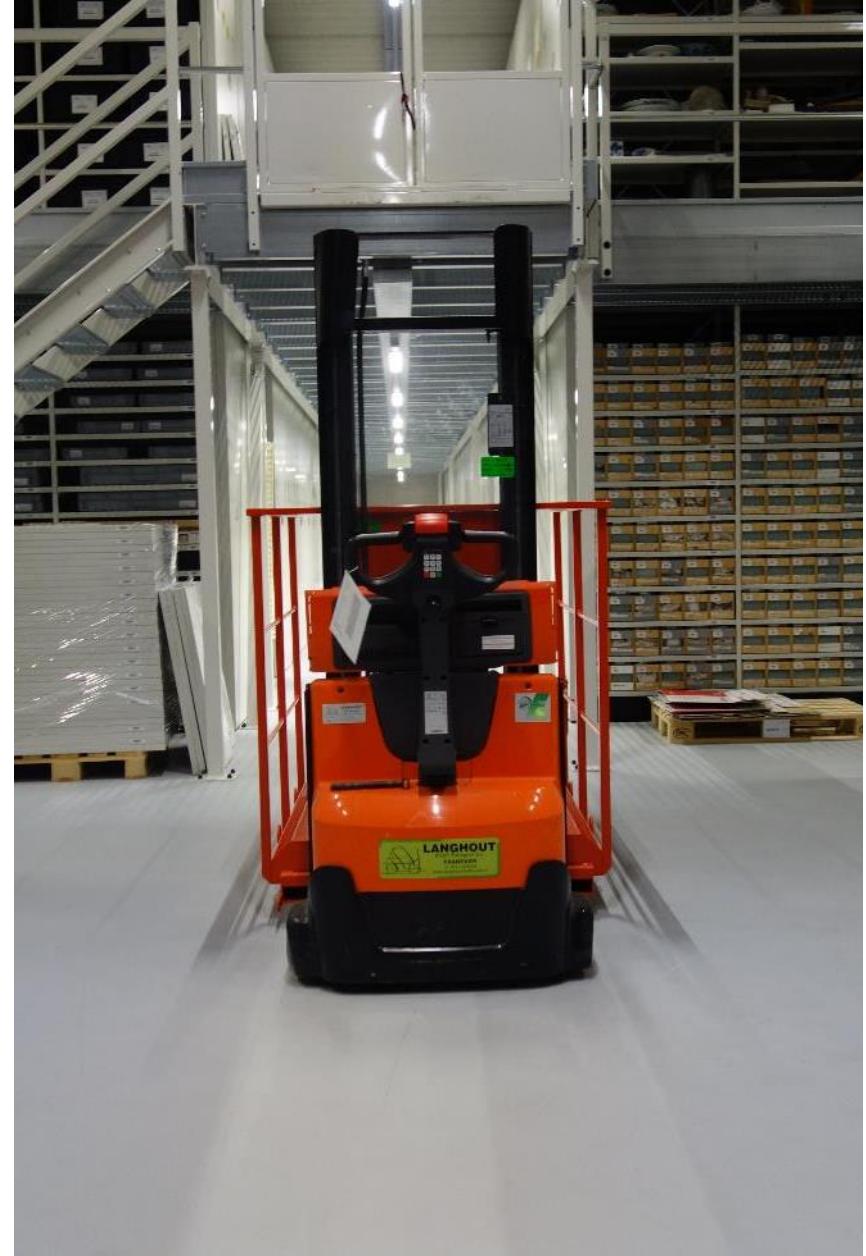
Collection Center Leeuwarden

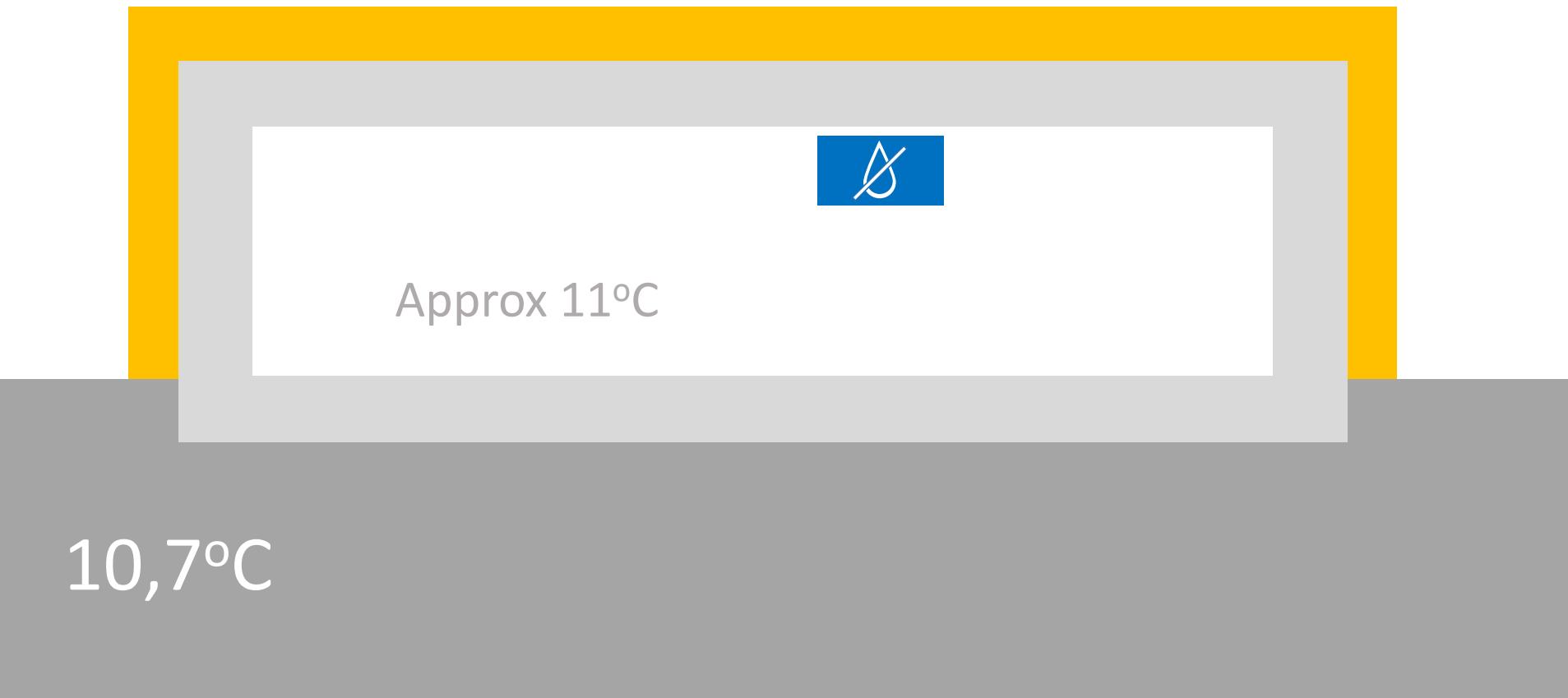
2001

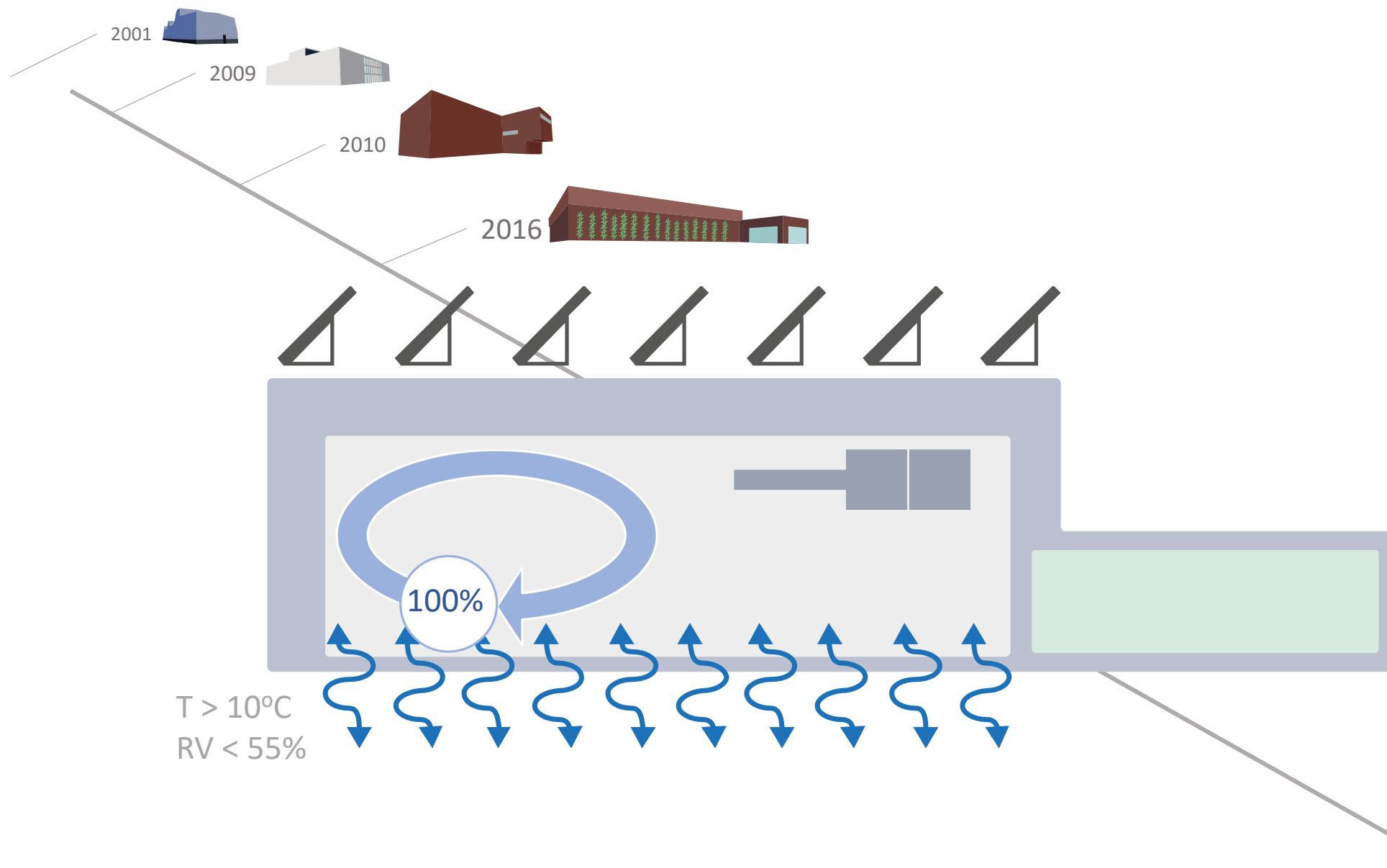
2009

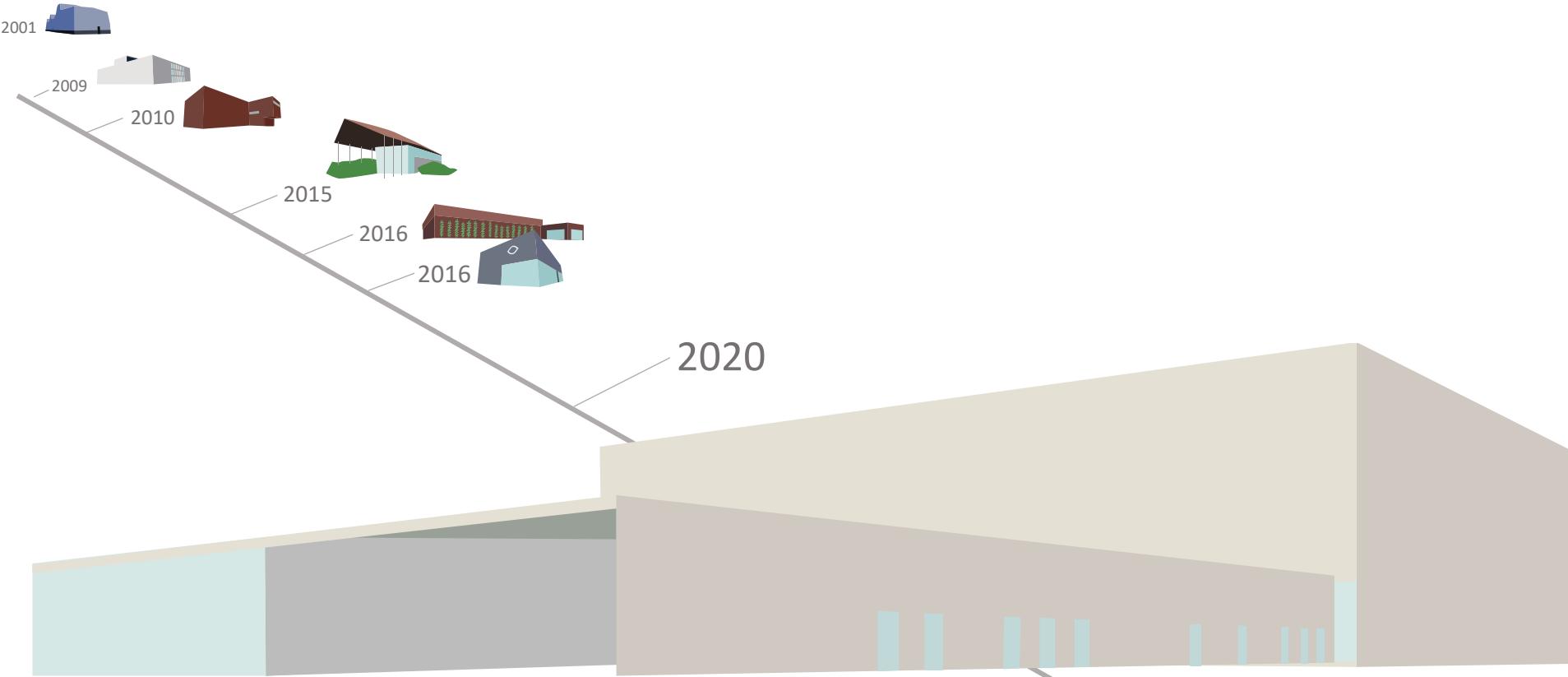
2010

2016

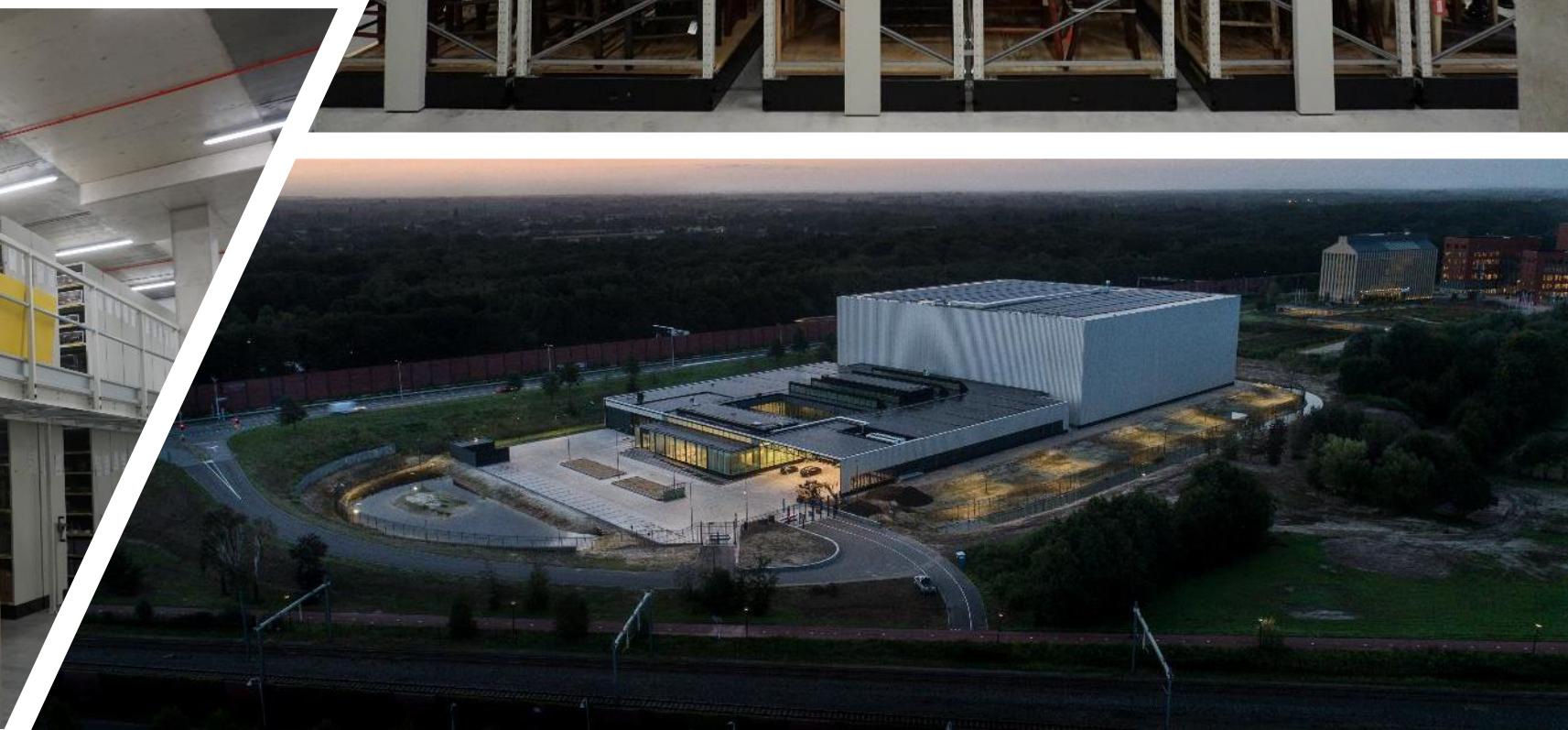


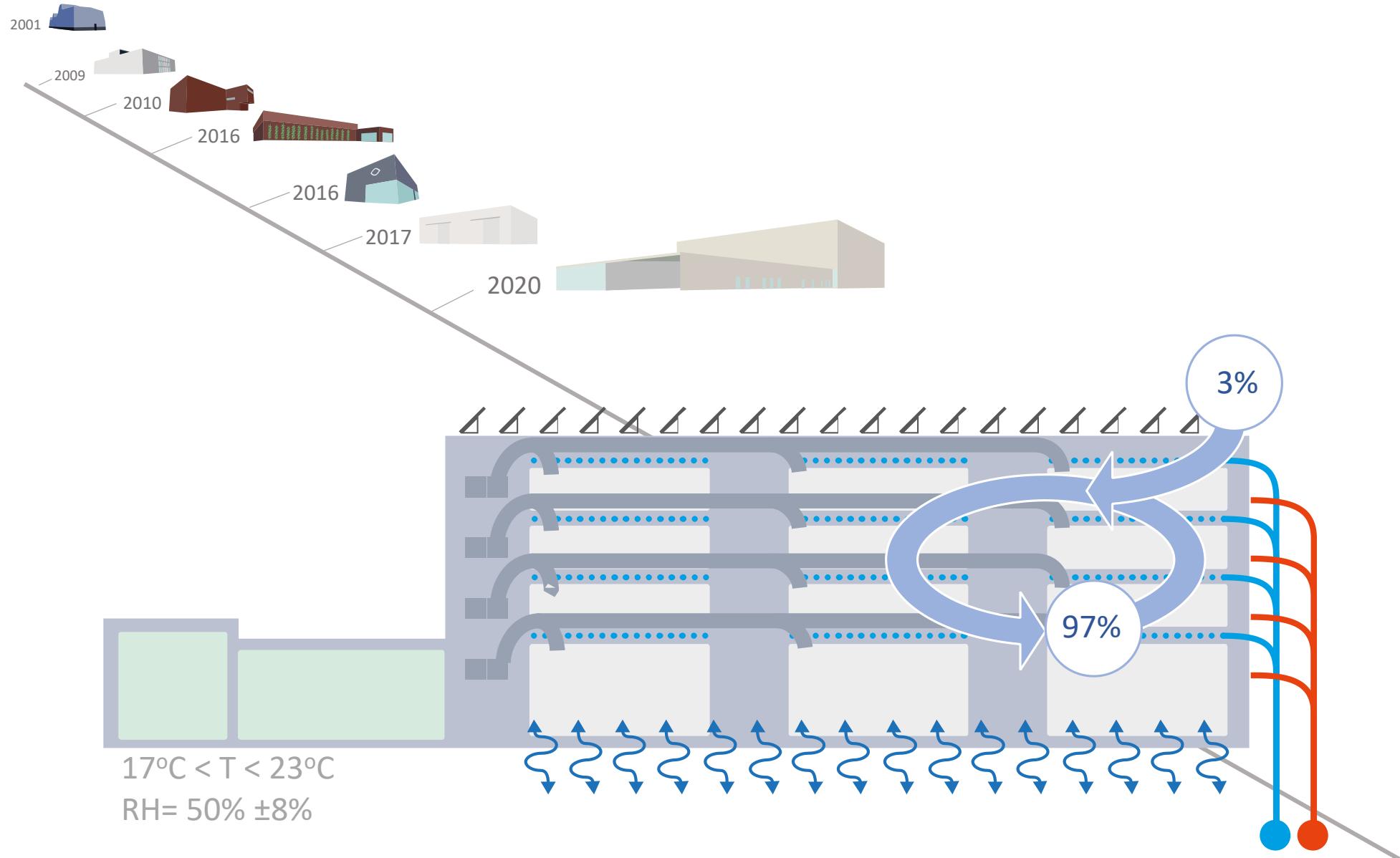


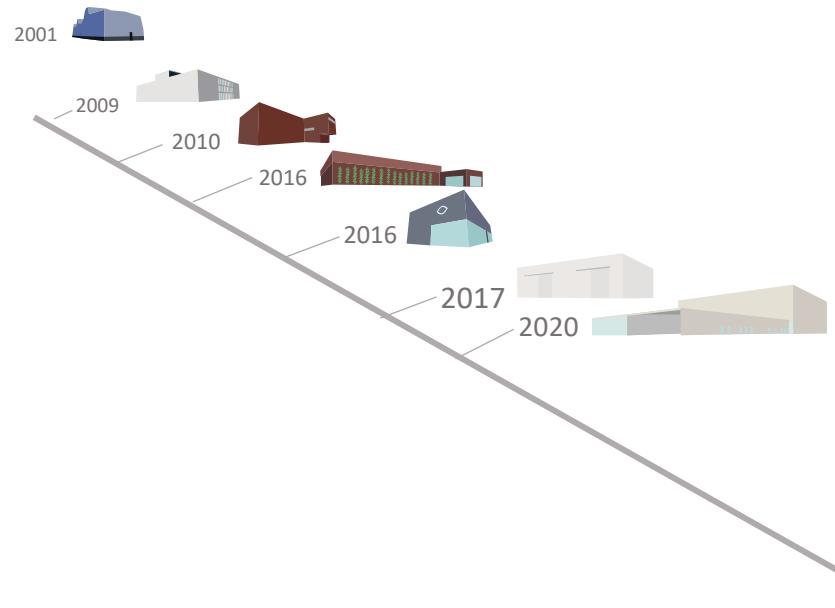




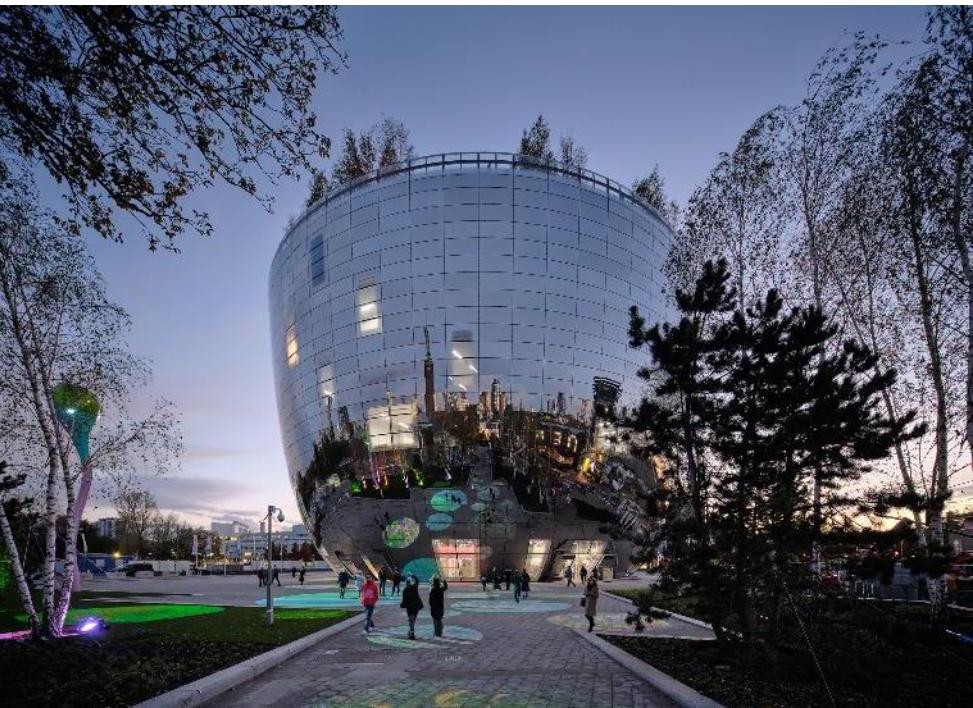
CC-NL Amersfoort

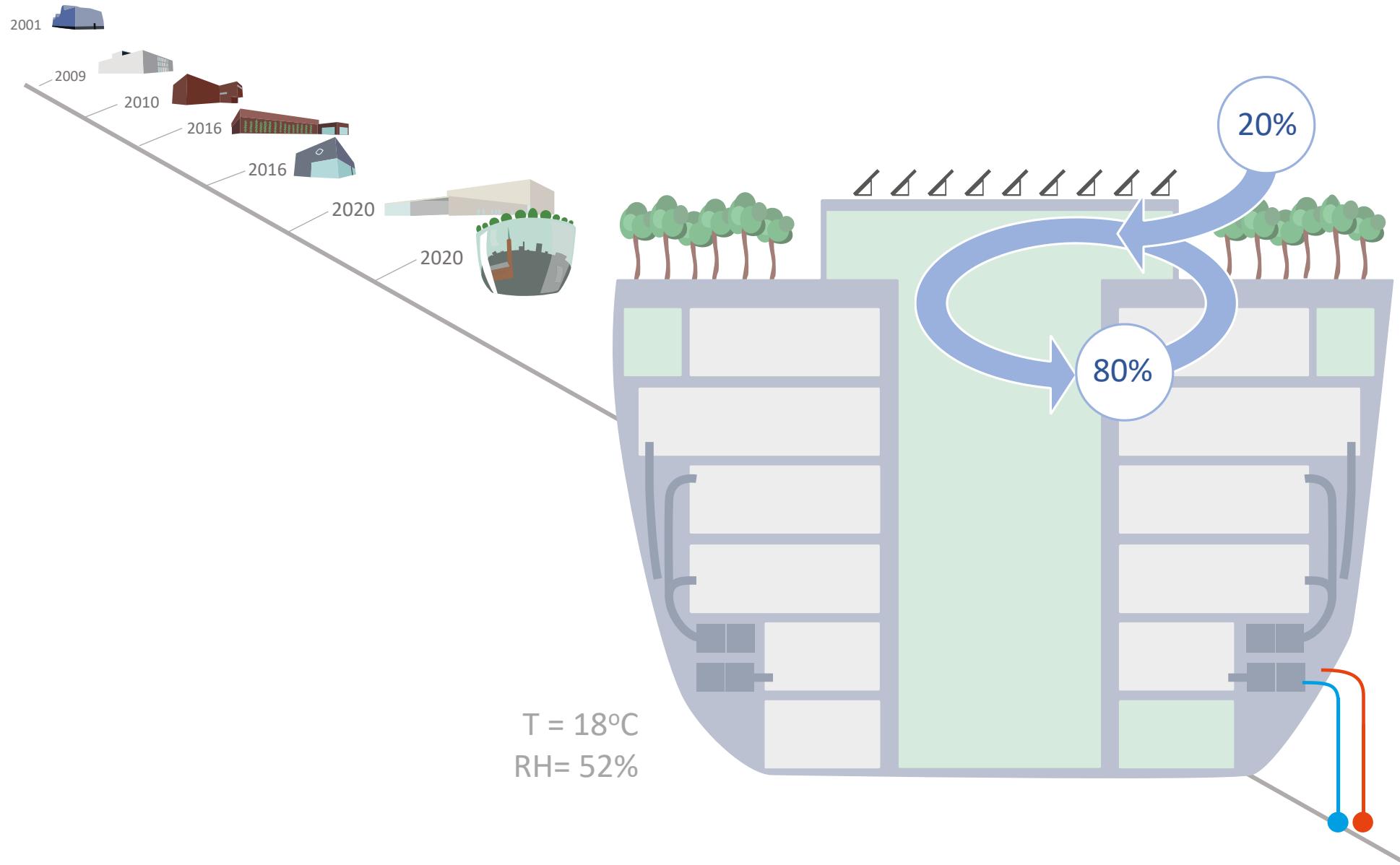




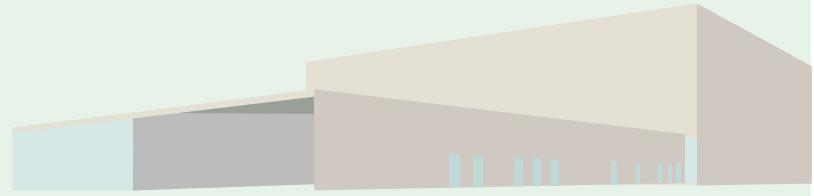


Storage Boijmans van Beuningen Rotterdam

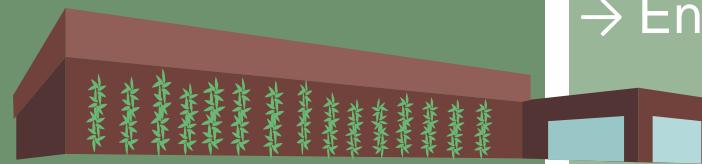
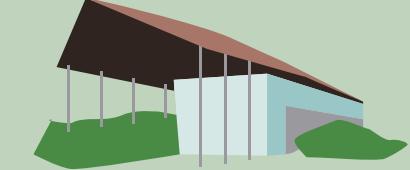




How can we evaluate these buildings?

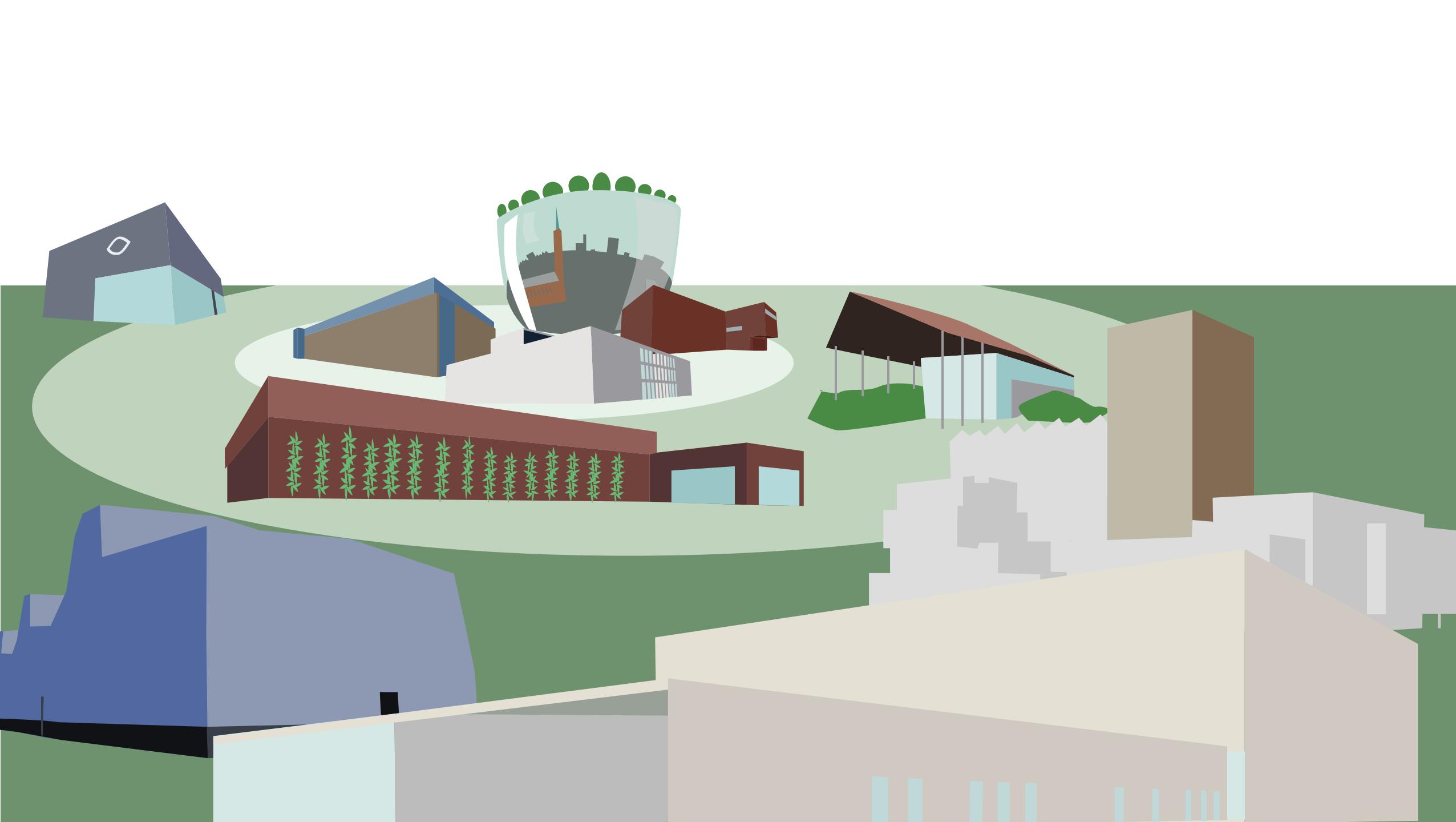


→ Access



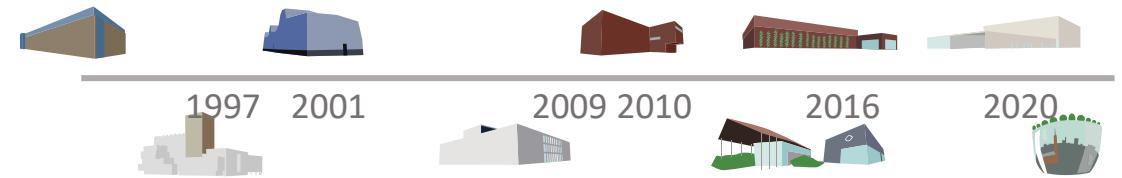
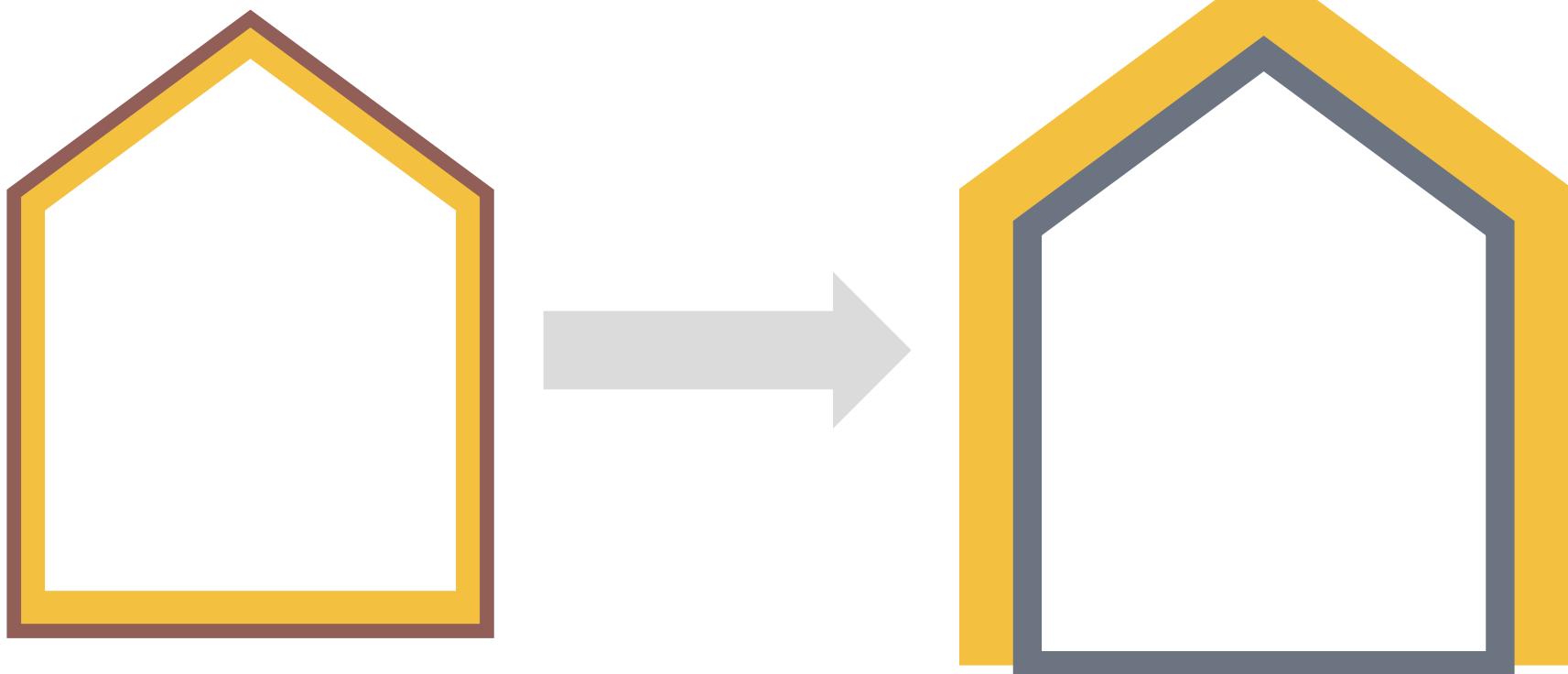
→ Energy





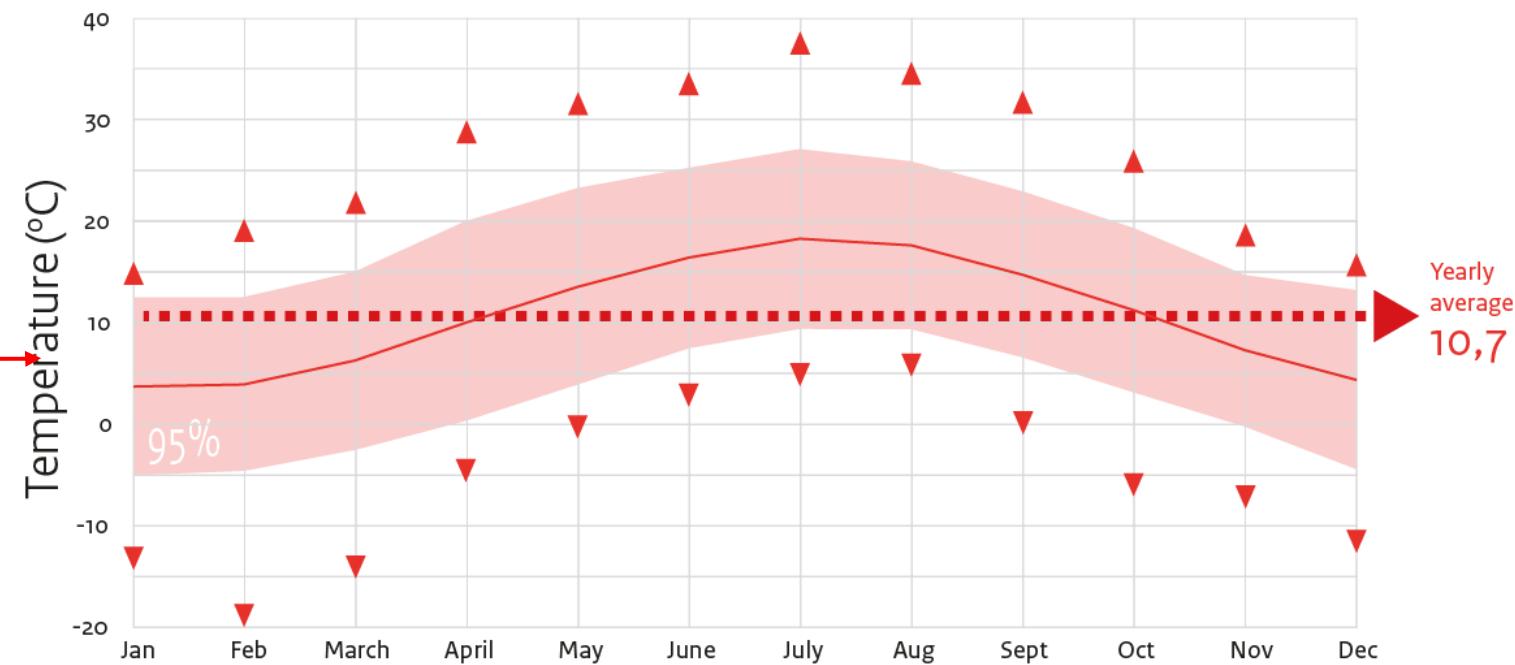
Are there any trends?

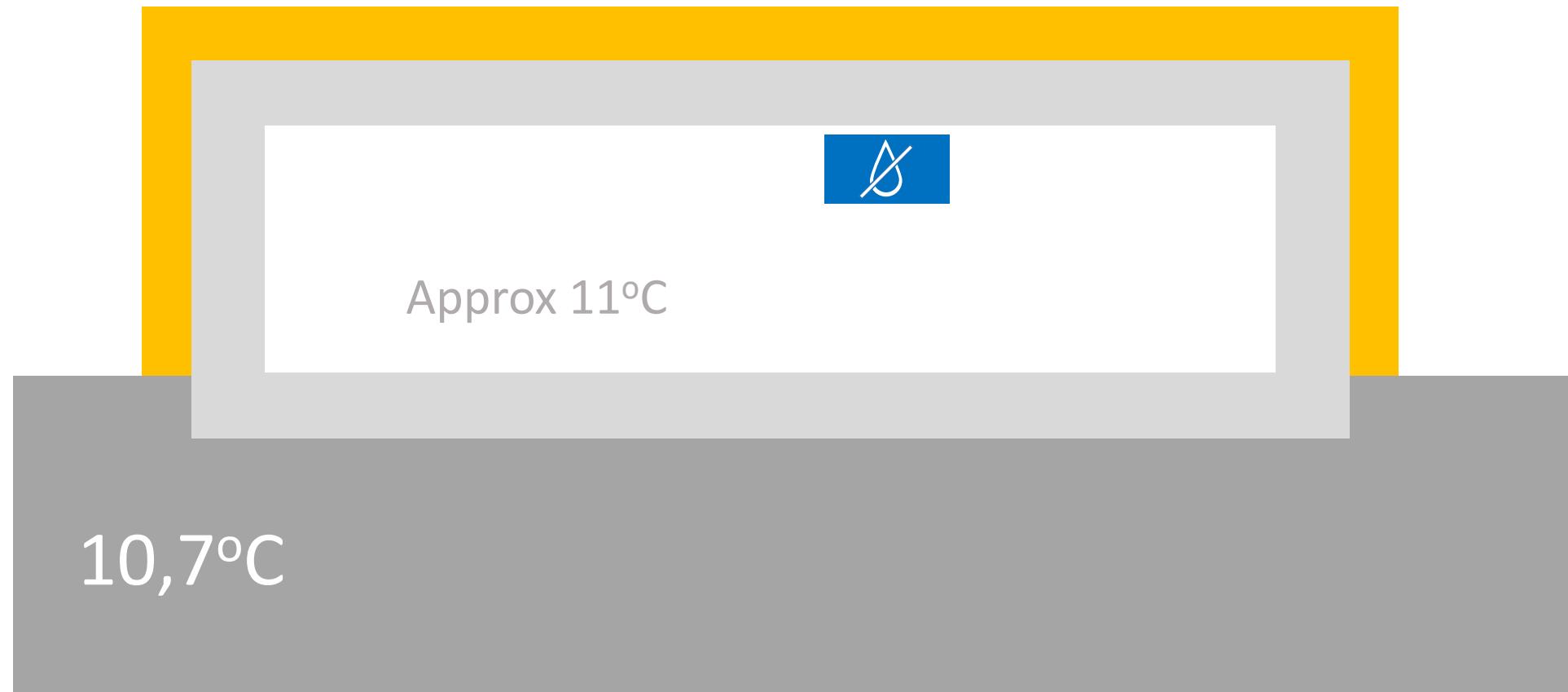
## Thermal insulation



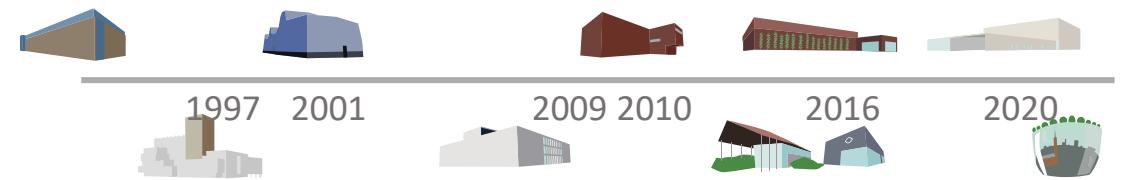
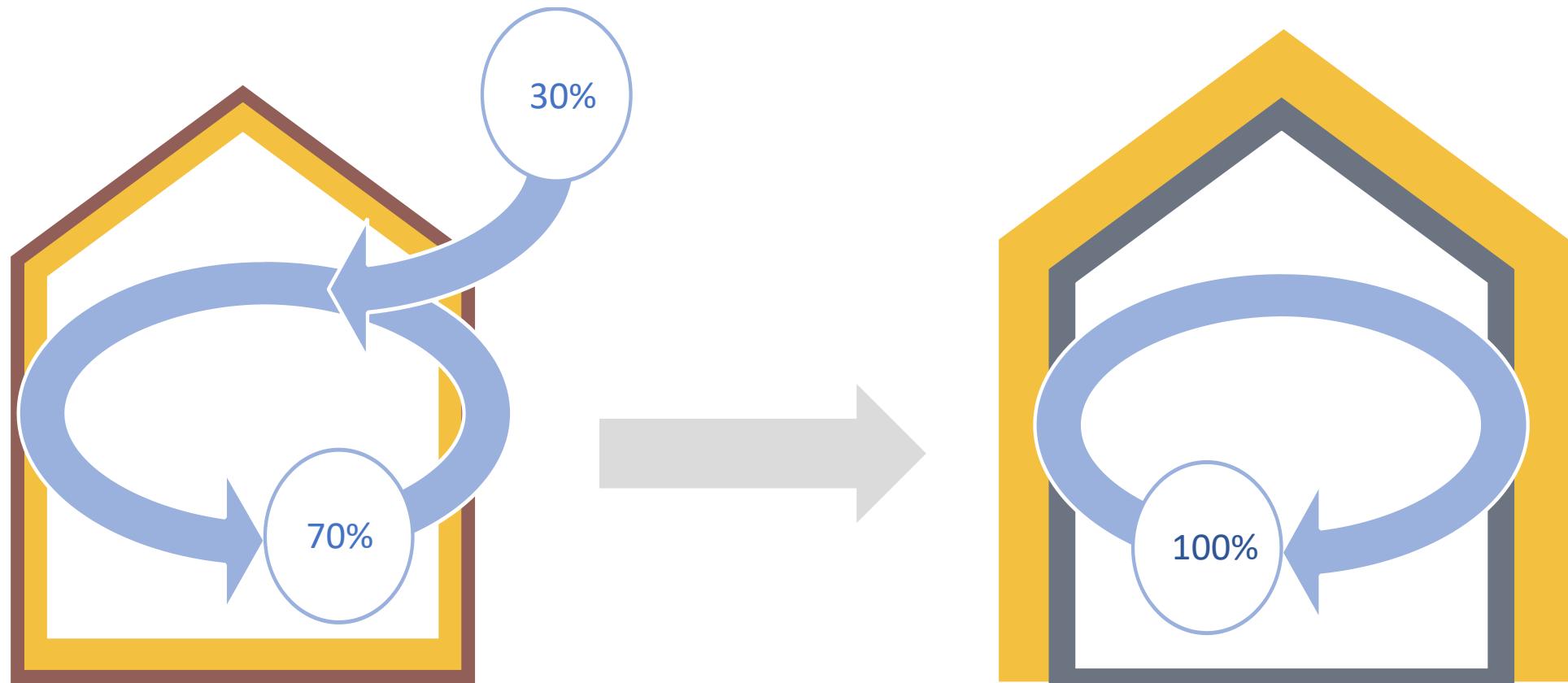


## Soil temperature in the Netherlands

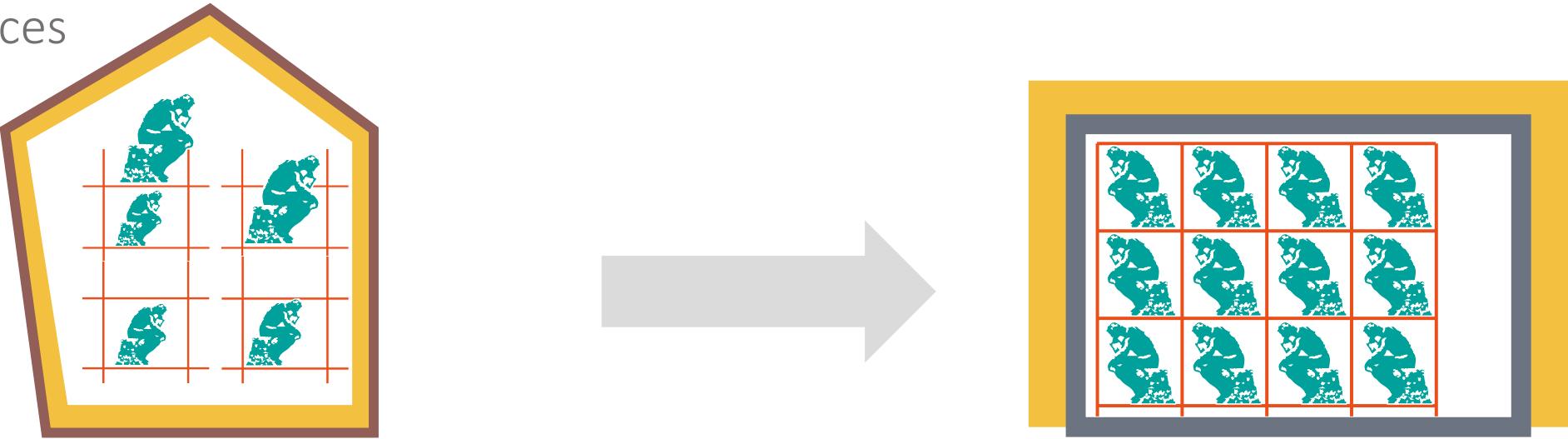




## Ventilation & recirculation

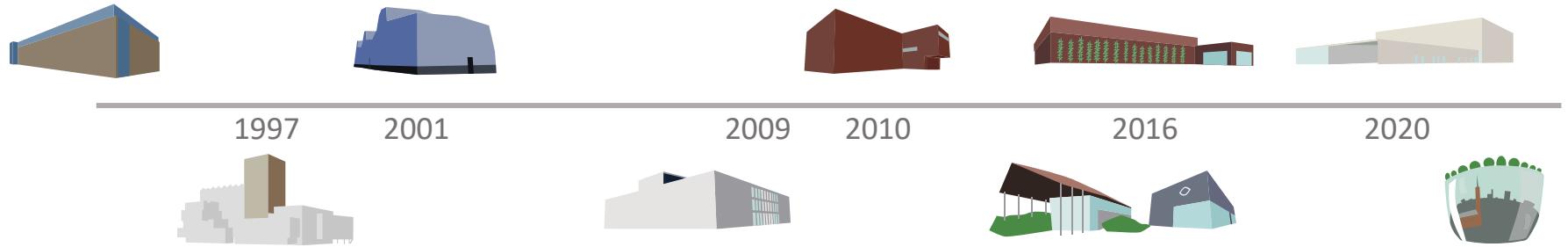


## Project process

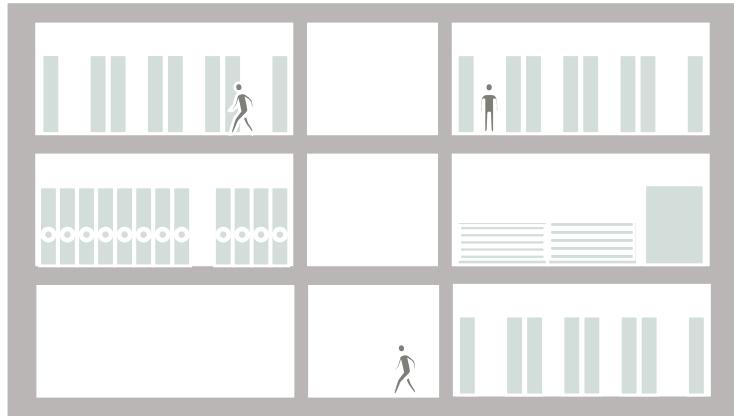


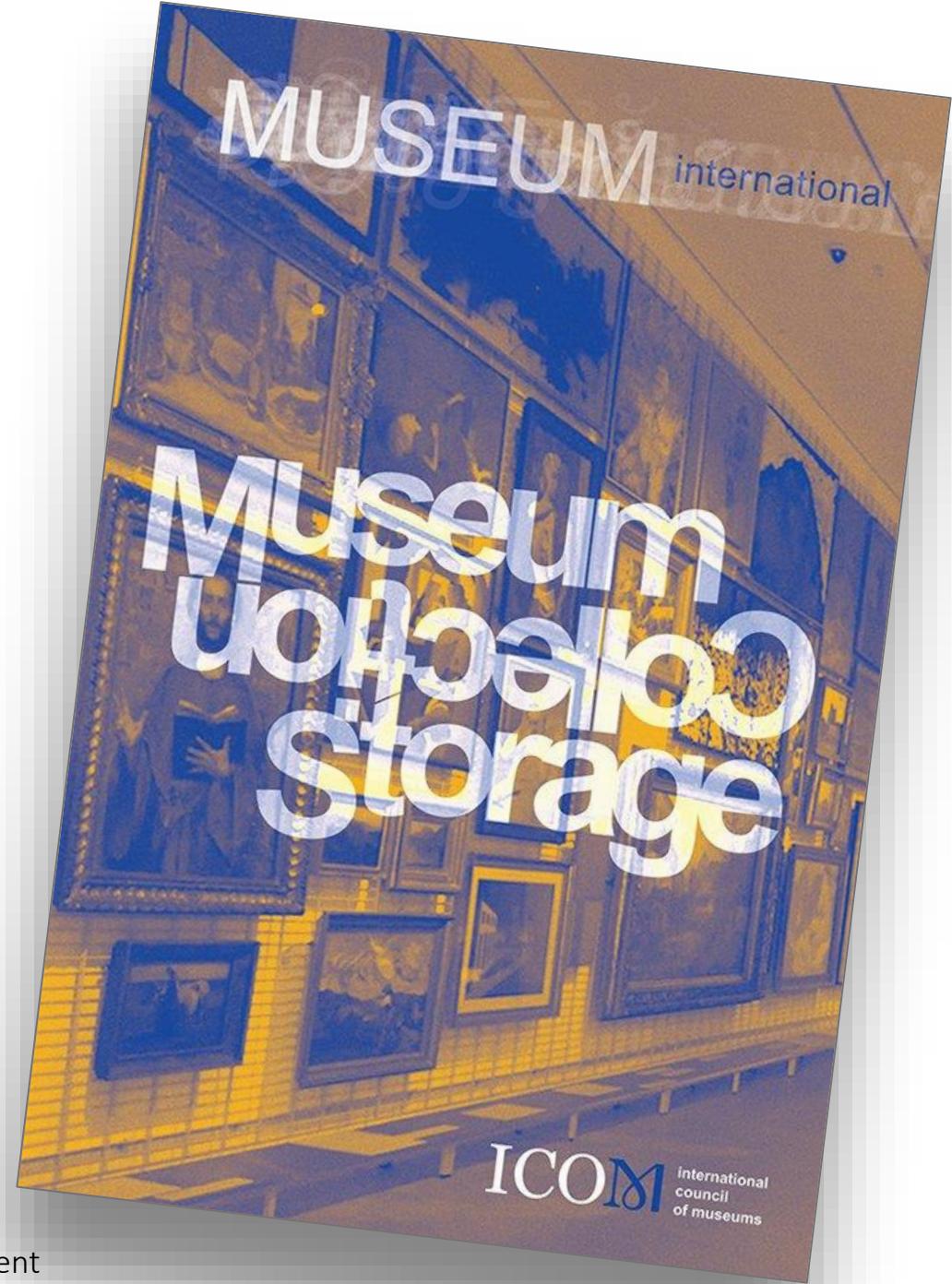
Building + Furniture + Collection

Collection + Furniture + Building



## Building layout



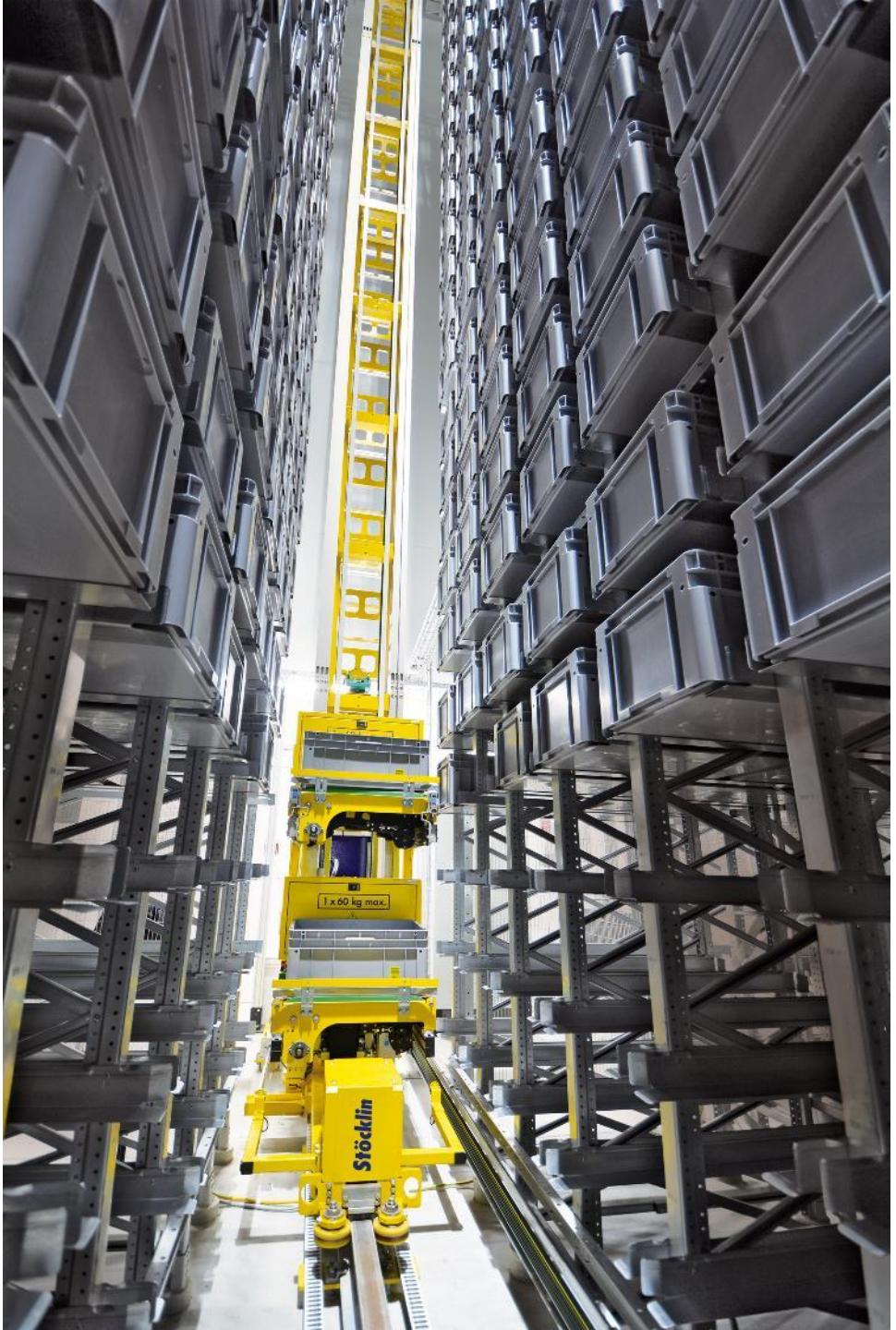
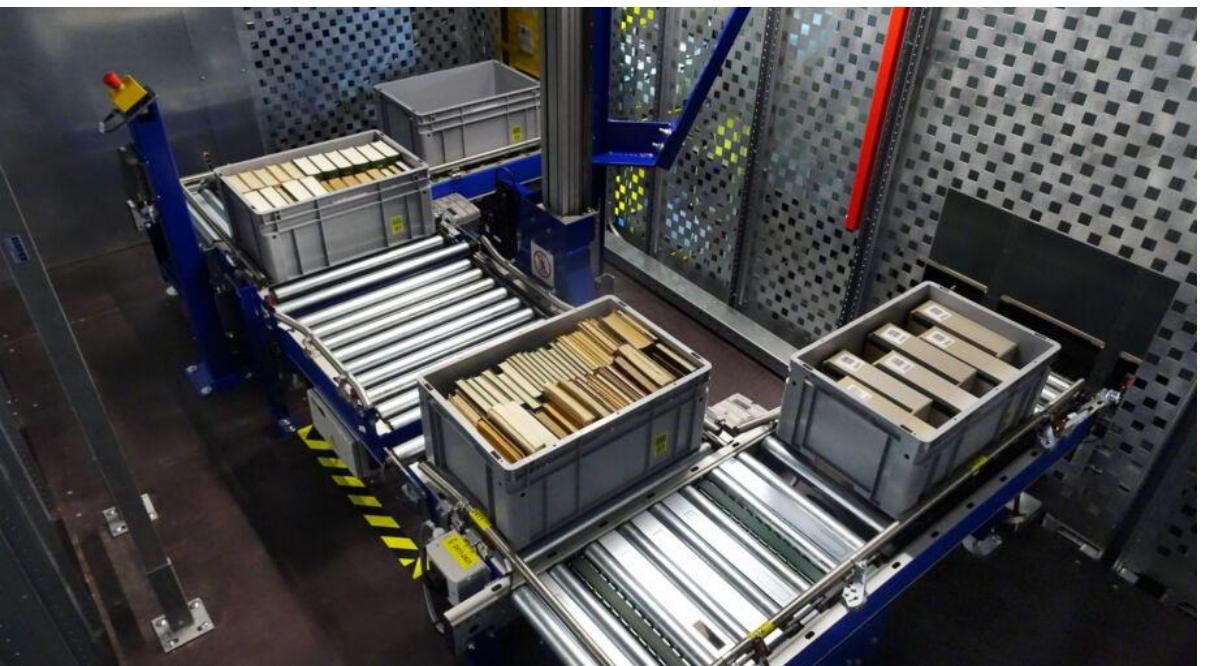


<https://www.tandfonline.com/toc/rmil20/current>



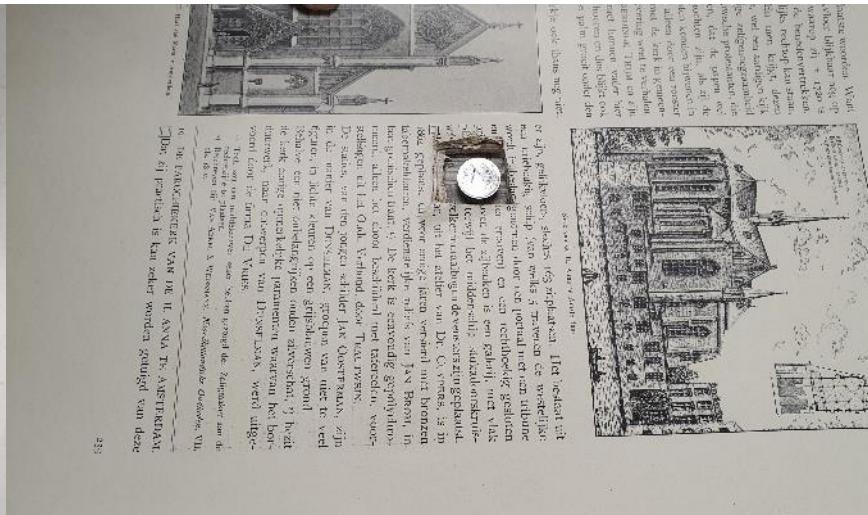
<https://www.cultureelerfgoed.nl/publicaties>

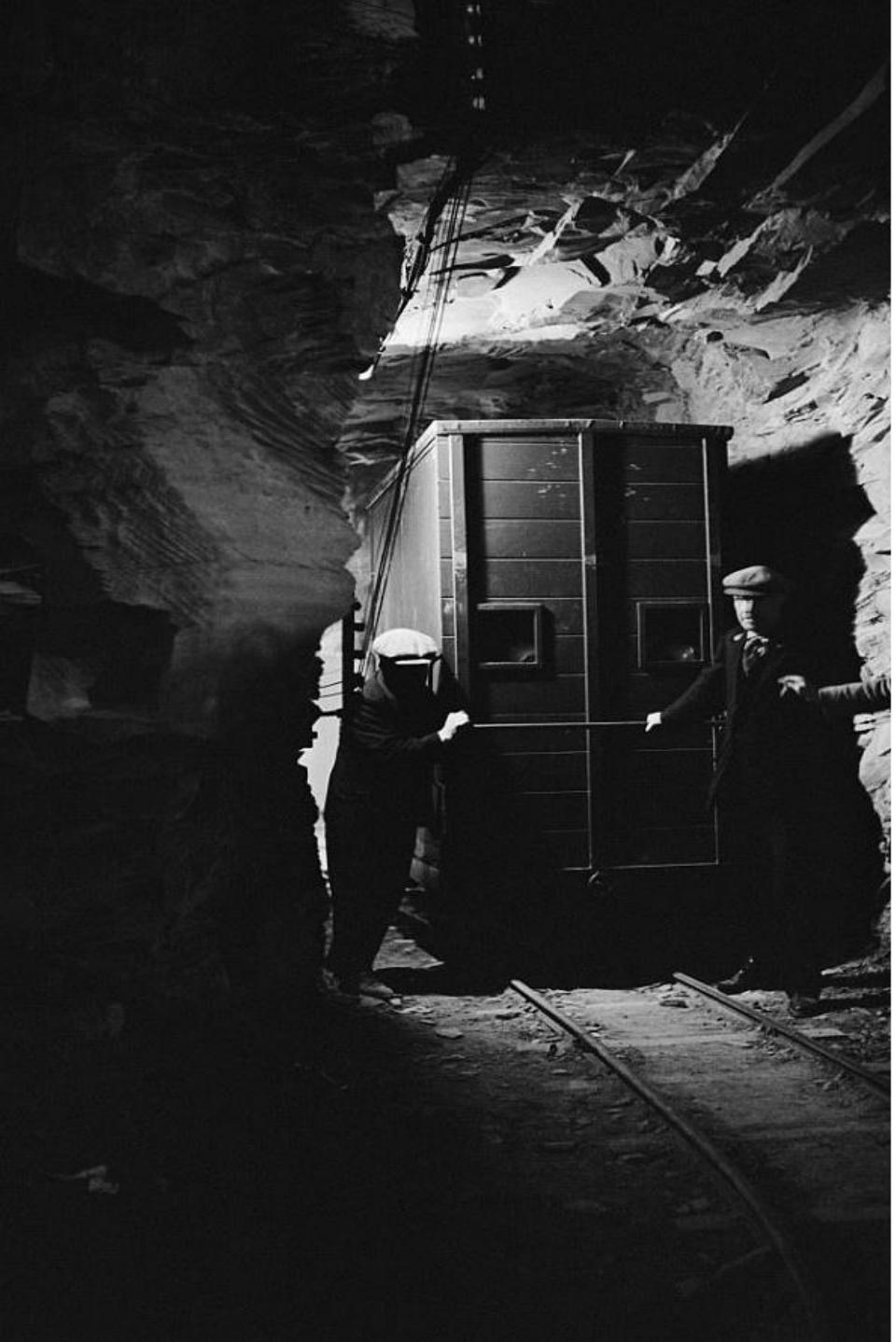
Most recent project





High density storage  
Hygric buffer provided by collection  
Dry nitrogen used for fire control / dehumidification / circulation





Rijkserfgoedlaboratorium  
Rijksdienst voor het Cultureel Erfgoed

Hobbemastraat 22  
1071 ZC Amsterdam

06 52 732 102  
[b.ankersmit@cultureelerfgoed.nl](mailto:b.ankersmit@cultureelerfgoed.nl)