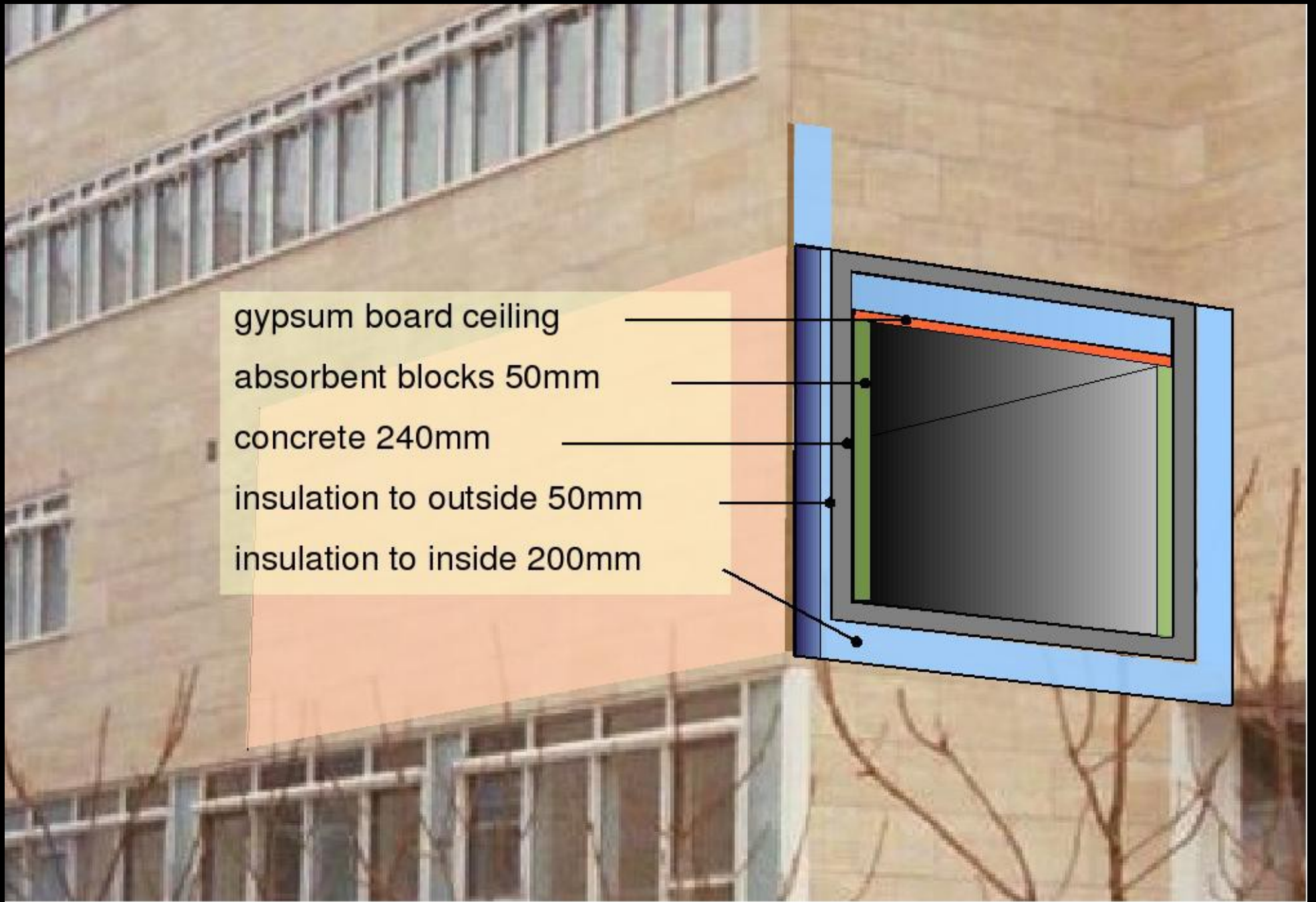




The Arnamagnaean Archive in Copenhagen University is behind the windowless stretch of wall



gypsum board ceiling

absorbent blocks 50mm

concrete 240mm

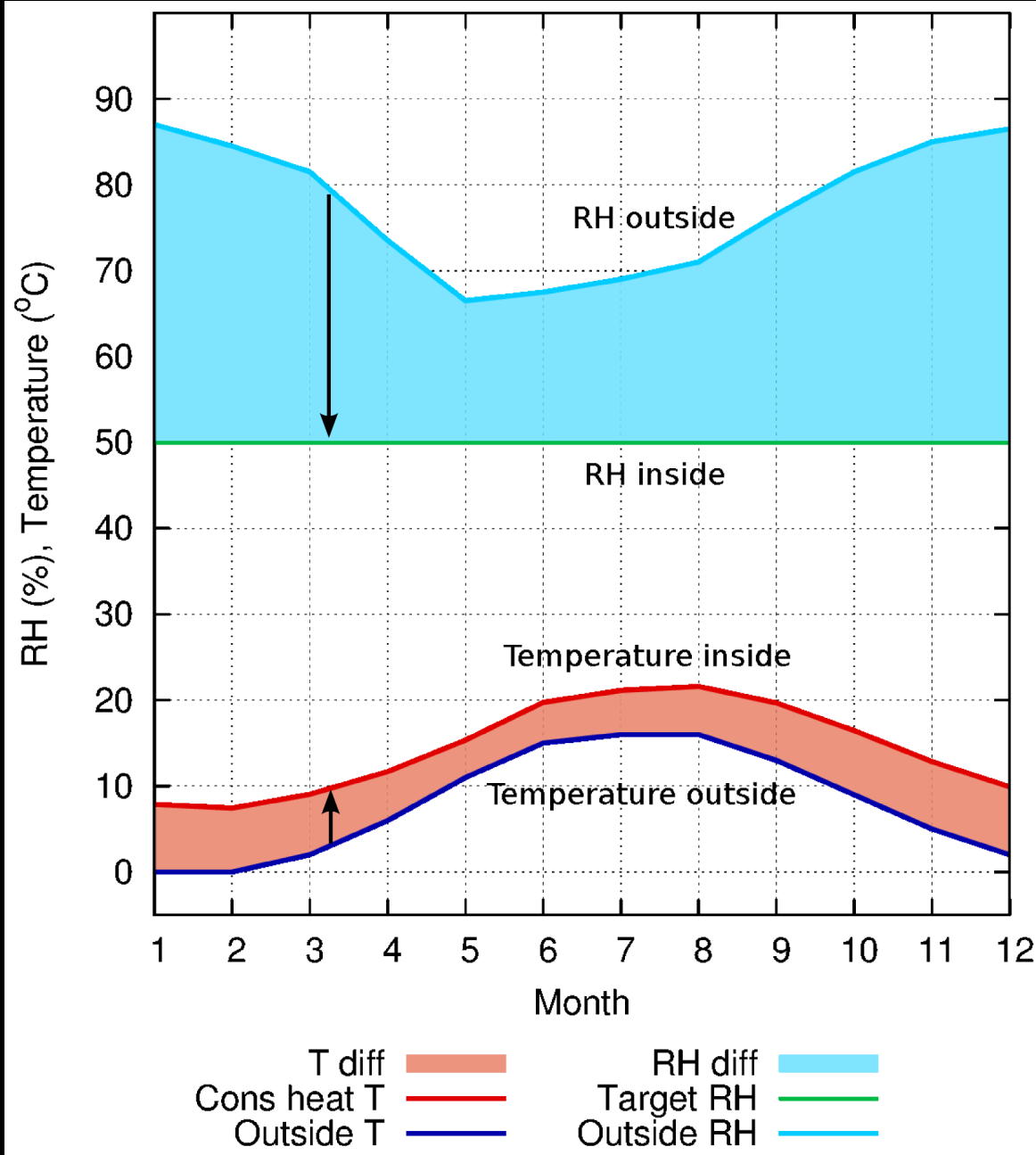
insulation to outside 50mm

insulation to inside 200mm

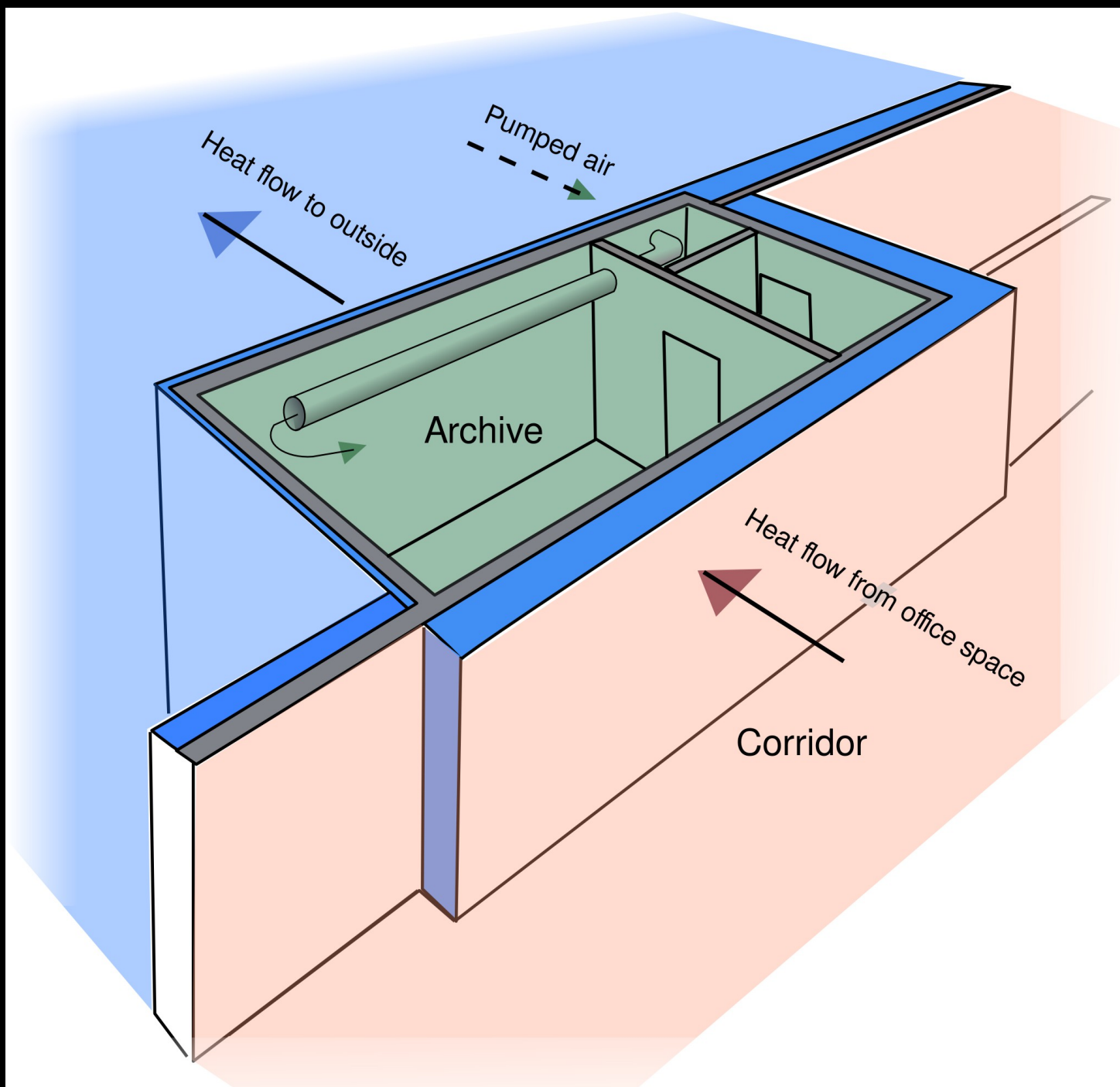
Cutaway showing the archive construction



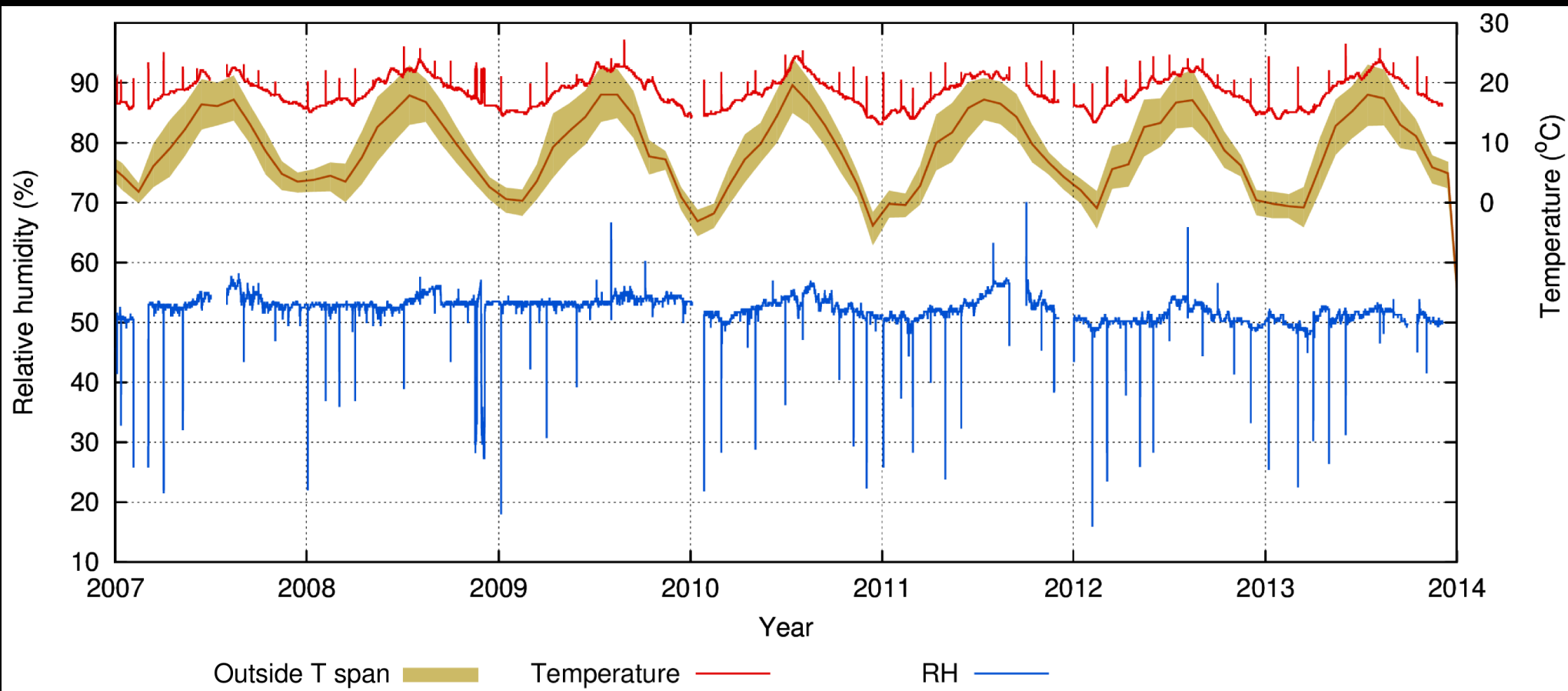
The interior is 10 x 4 x 3 m



The principle of conservation heating to a constant RH with varying temperature

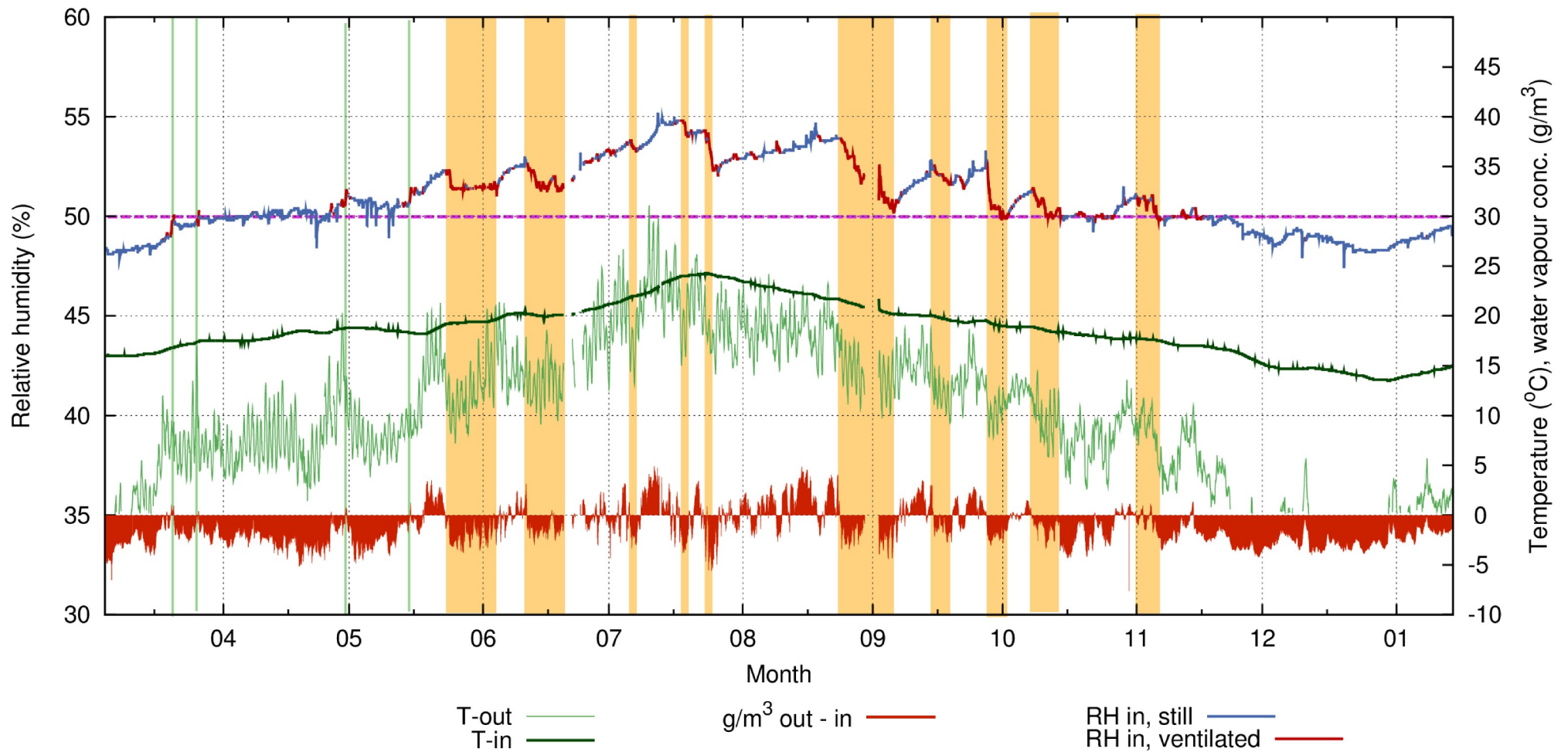


How the temperature is controlled

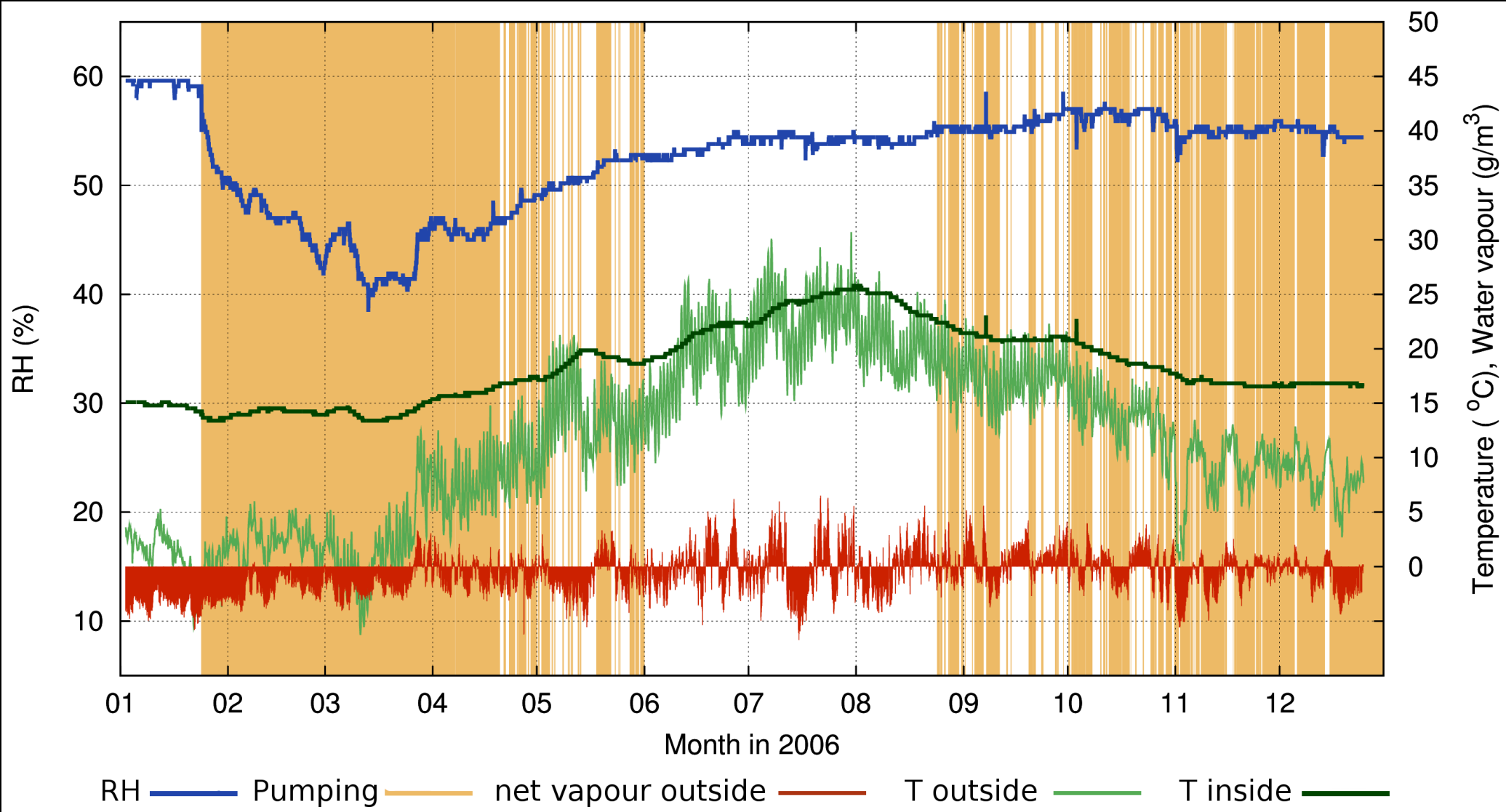


The archive weather over seven years

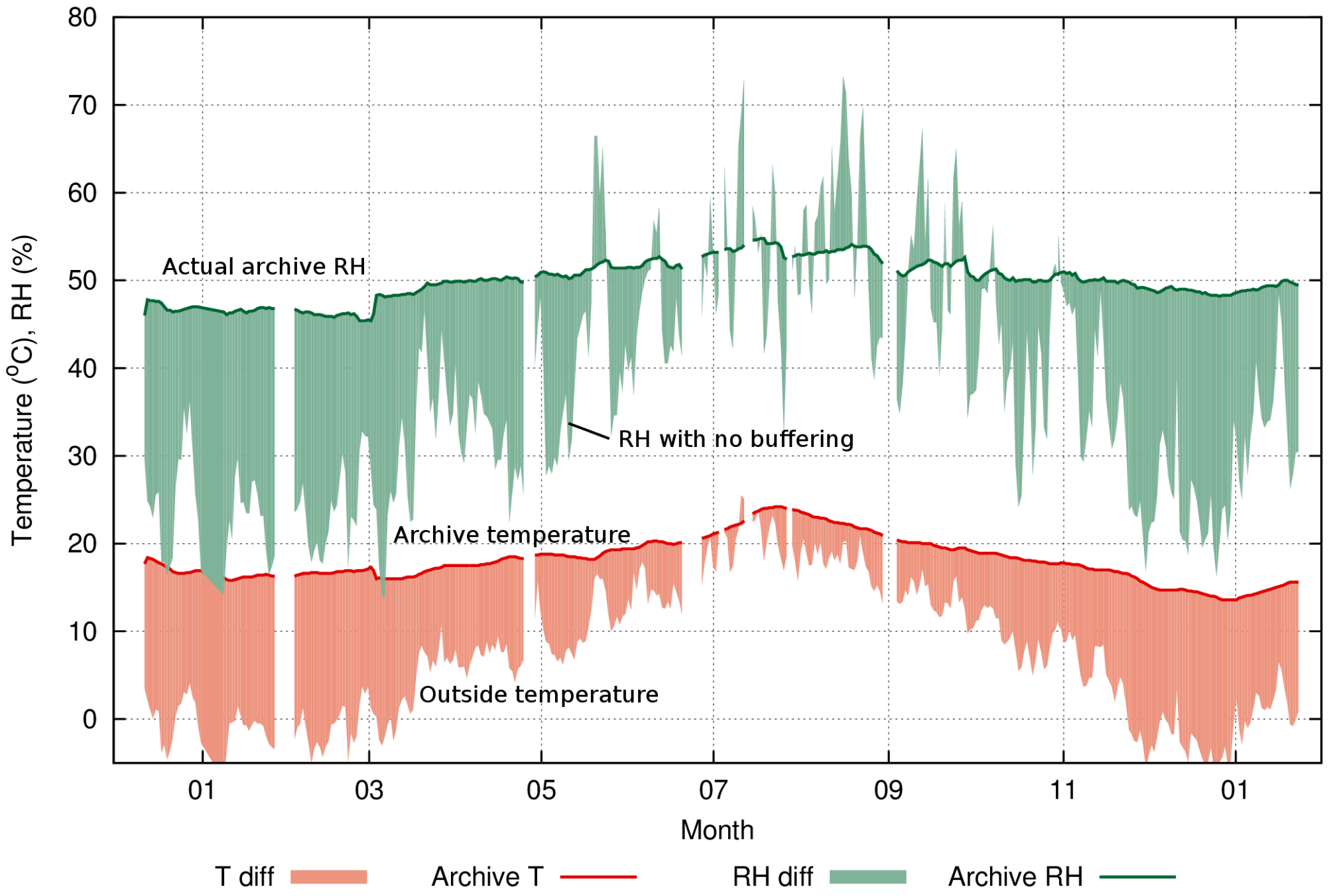
*The spikes show the office temperature and RH.
Outside temperature from the Danish Meteorological Institute.*



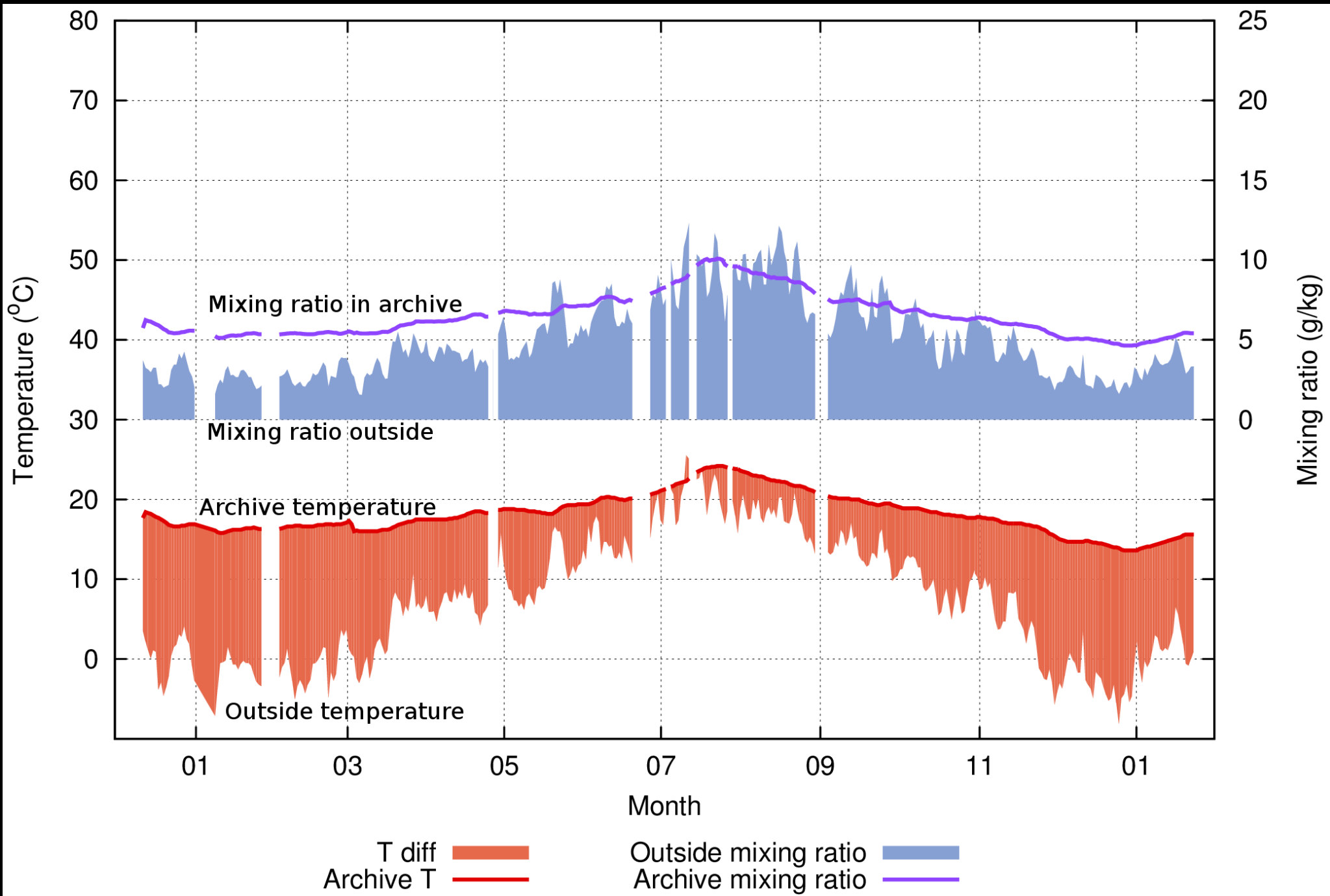
The powerful effect of ventilation when the outside air has a suitable water vapour content



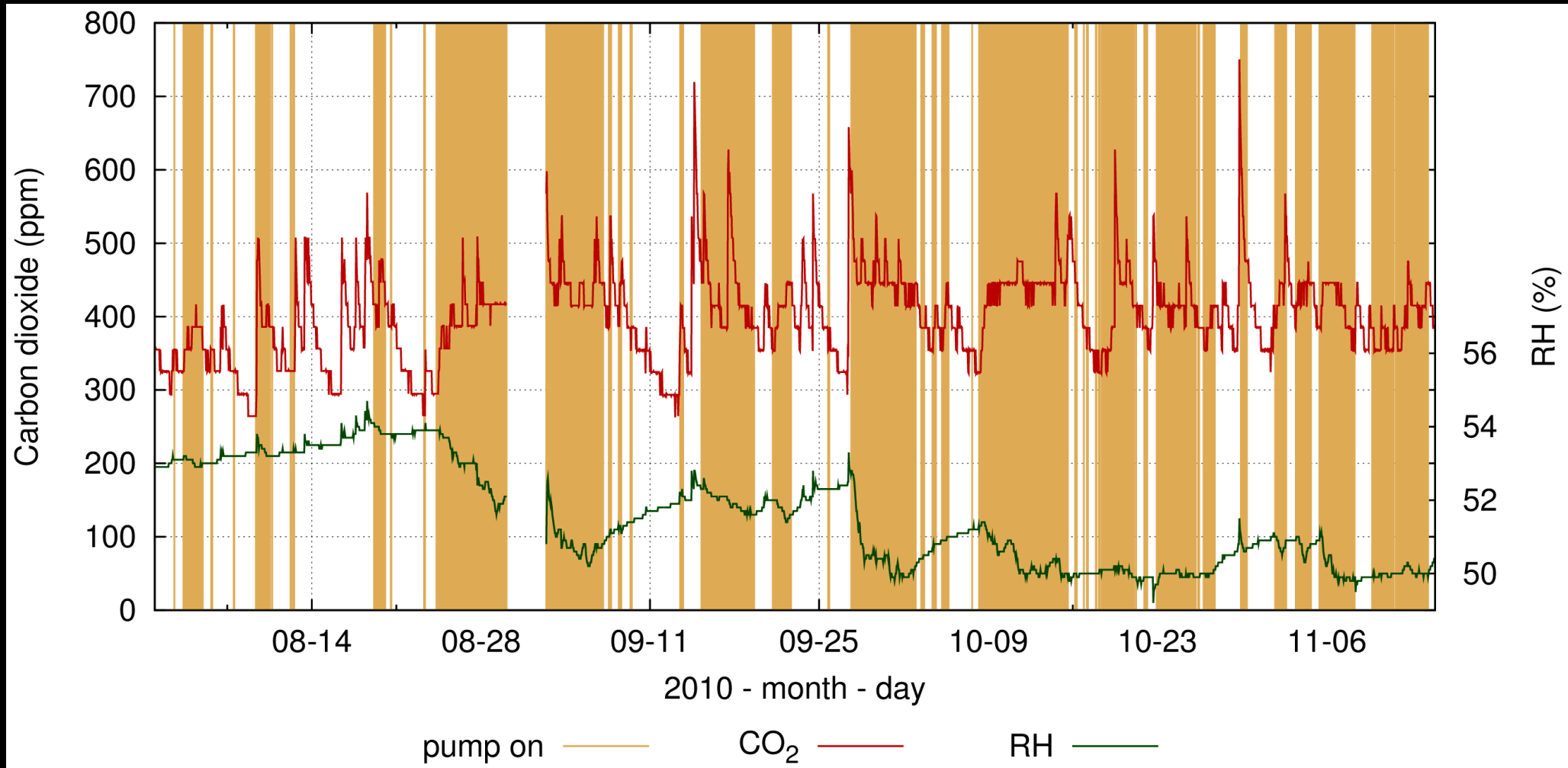
Stress testing the buffering by pumping continuously February to April then no pumping June to August.



The span between raw and buffered RH



The mixing ratio is used to describe the effect of air infiltration



The carbon dioxide concentration is raised both by visitors and by pumping outside air

Tim Padfield, Morten Ryhl-Svendsen,
Poul Klenz Larsen, Mette Jakobsen
and Lars Aasbjerg Jensen

www.conservaionphysics.org/arna/arnamag2014.pdf

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