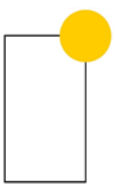




# Urban architecture vs sustainability

**Claudio Meisser** dipl.El.Ing.ETH/SIA

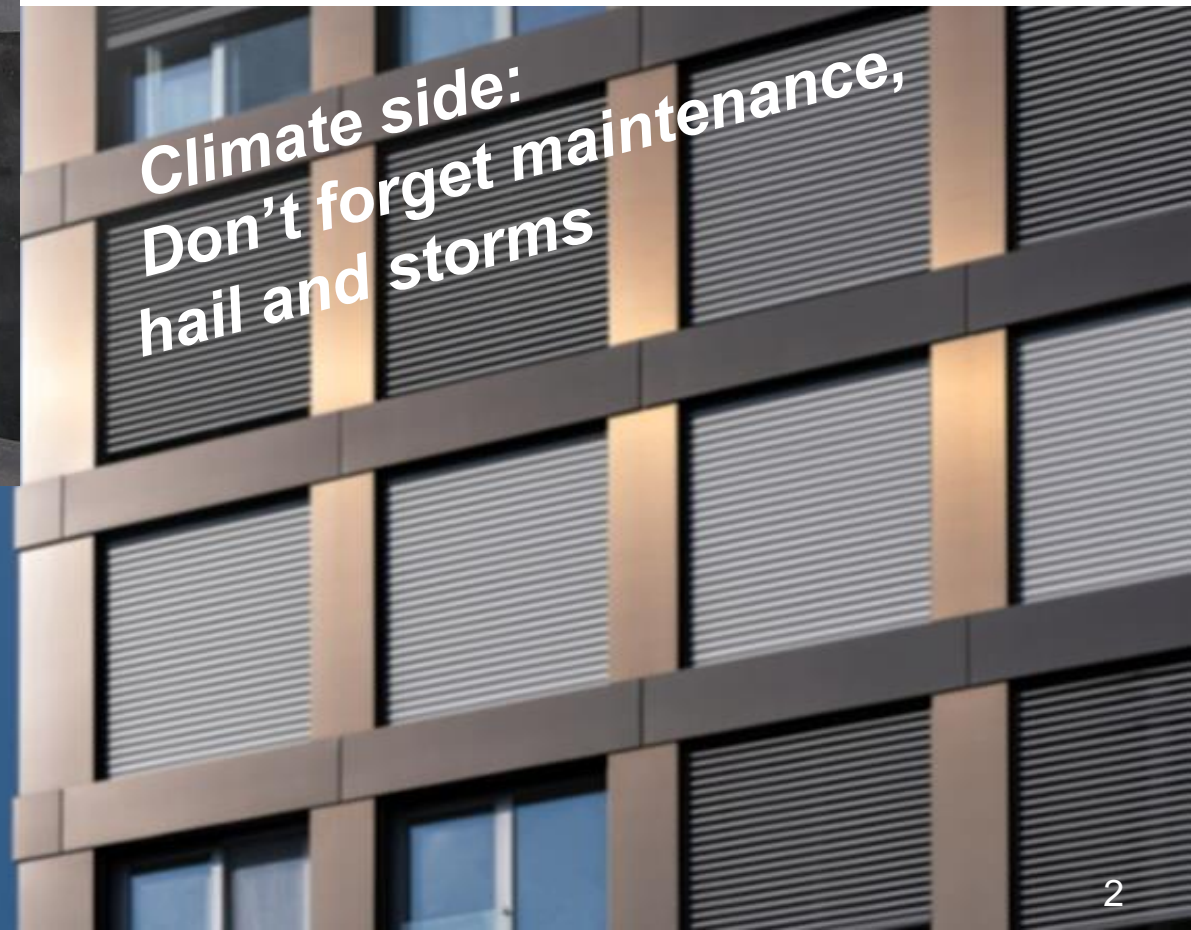
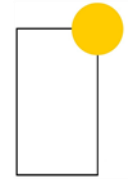
**HyWin GmbH**





**Room side**

**What is the best  
sunshield design?**



**Climate side:  
Don't forget maintenance,  
hail and storms**

**Answer for high rise buildings:  
None of these two.**



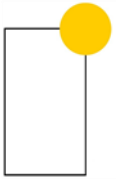
**Prime Tower  
Zurich**

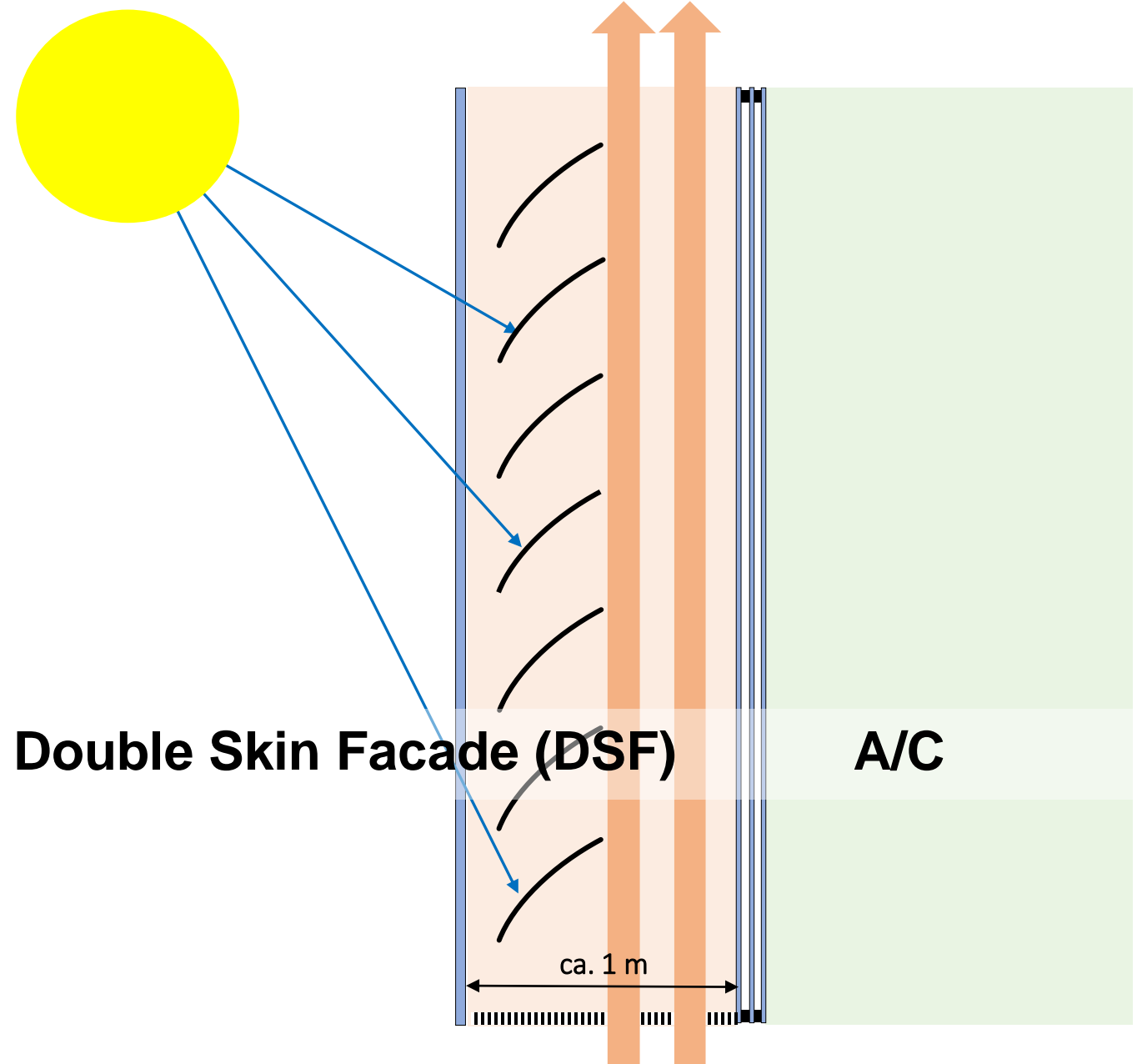


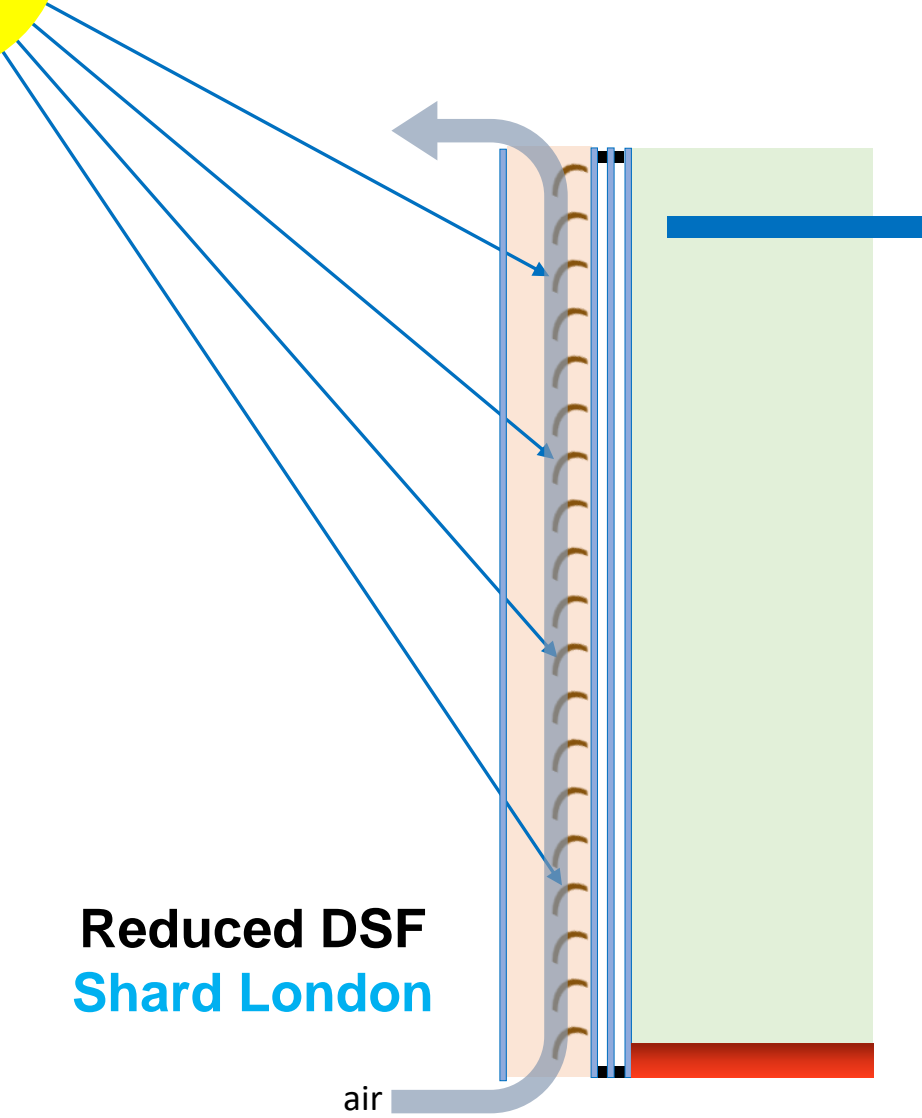
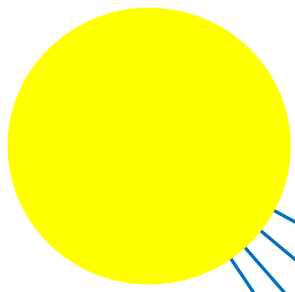
**Roche Tower  
Rotkreuz / Zug**



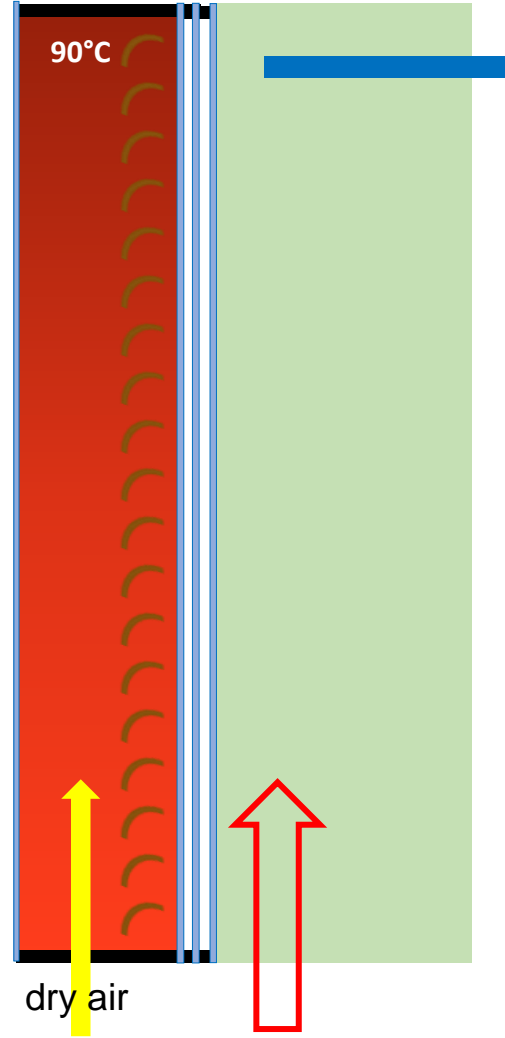
**Shard Tower  
London**







**Reduced DSF**  
**Shard London**



**Closed Cavity Facade (CCF)**  
**Roche Tower Rotkreuz**



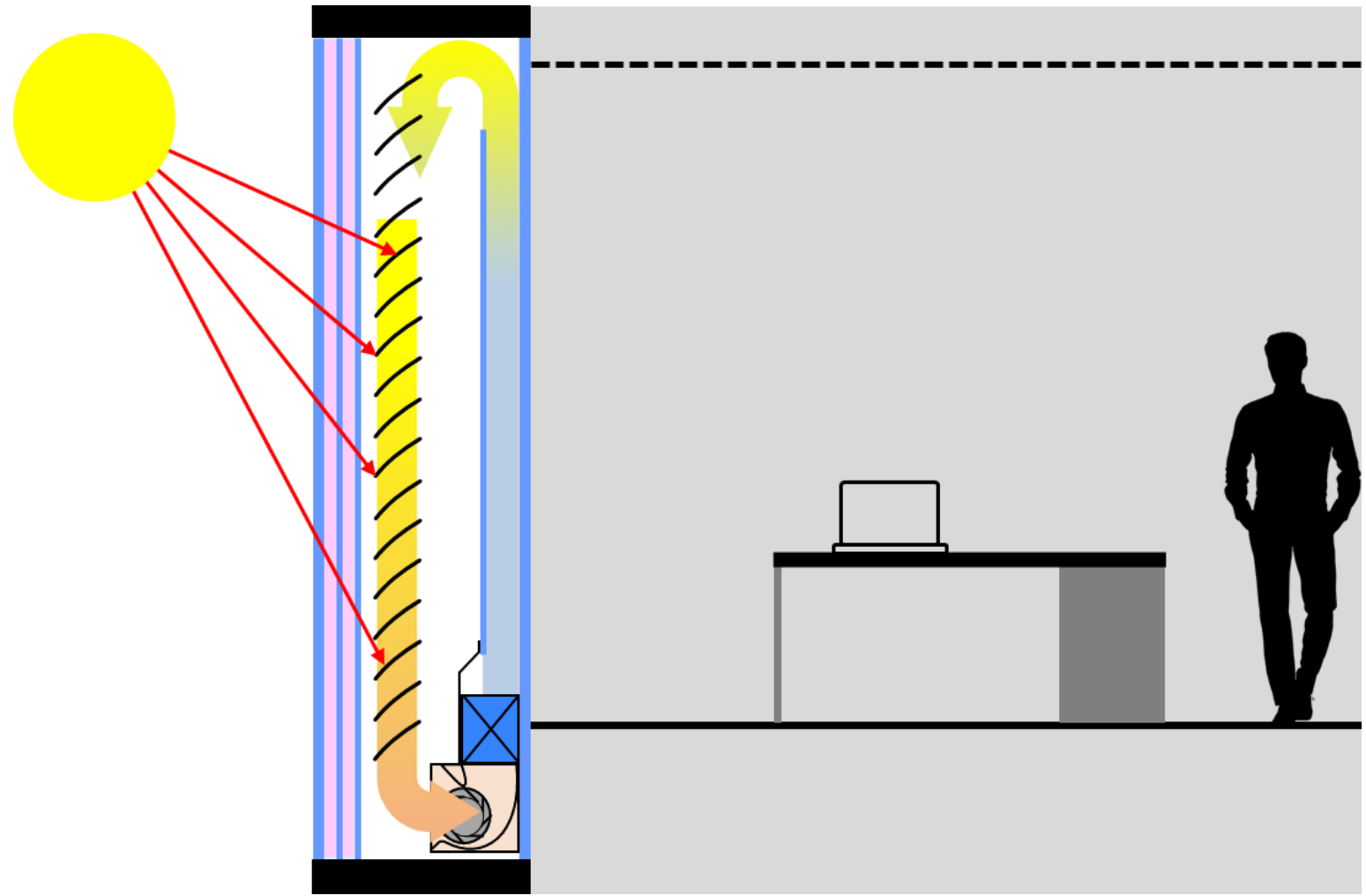
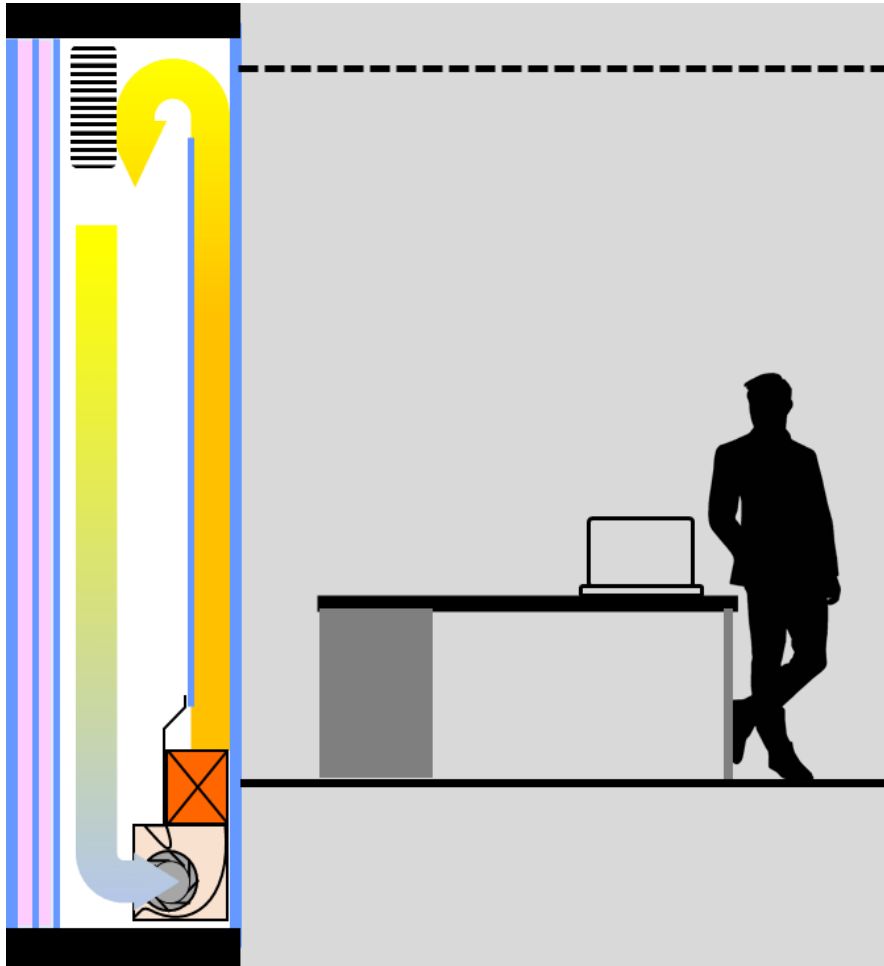
# HyWin

## Hybrid Window

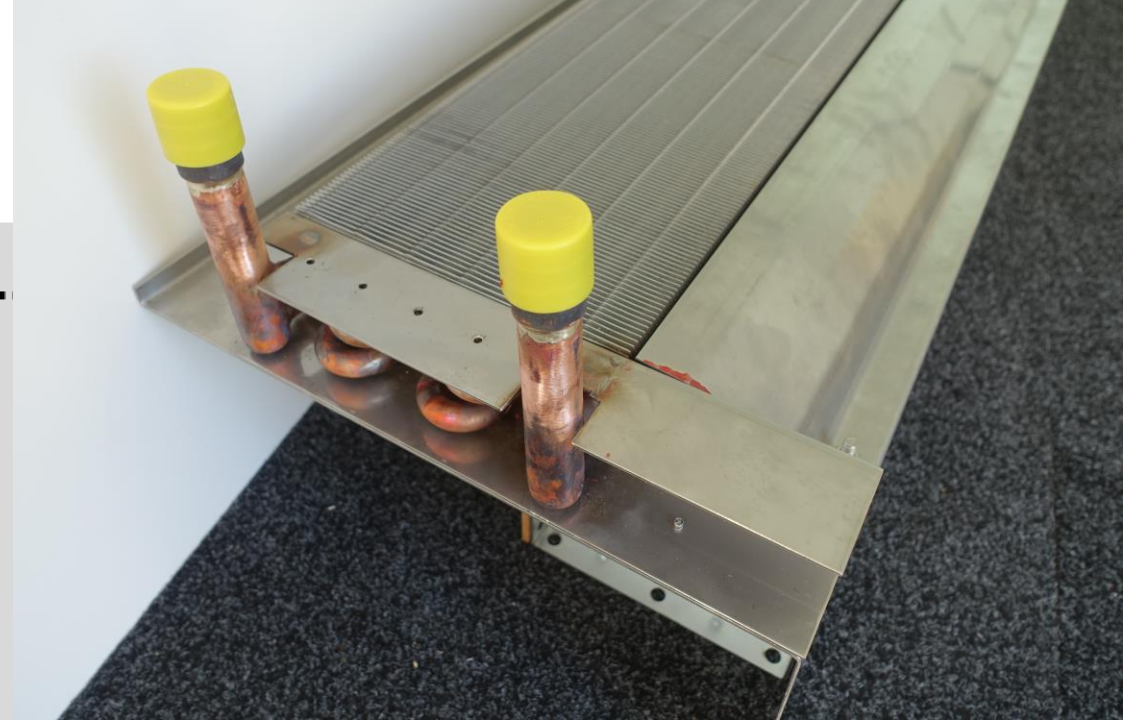
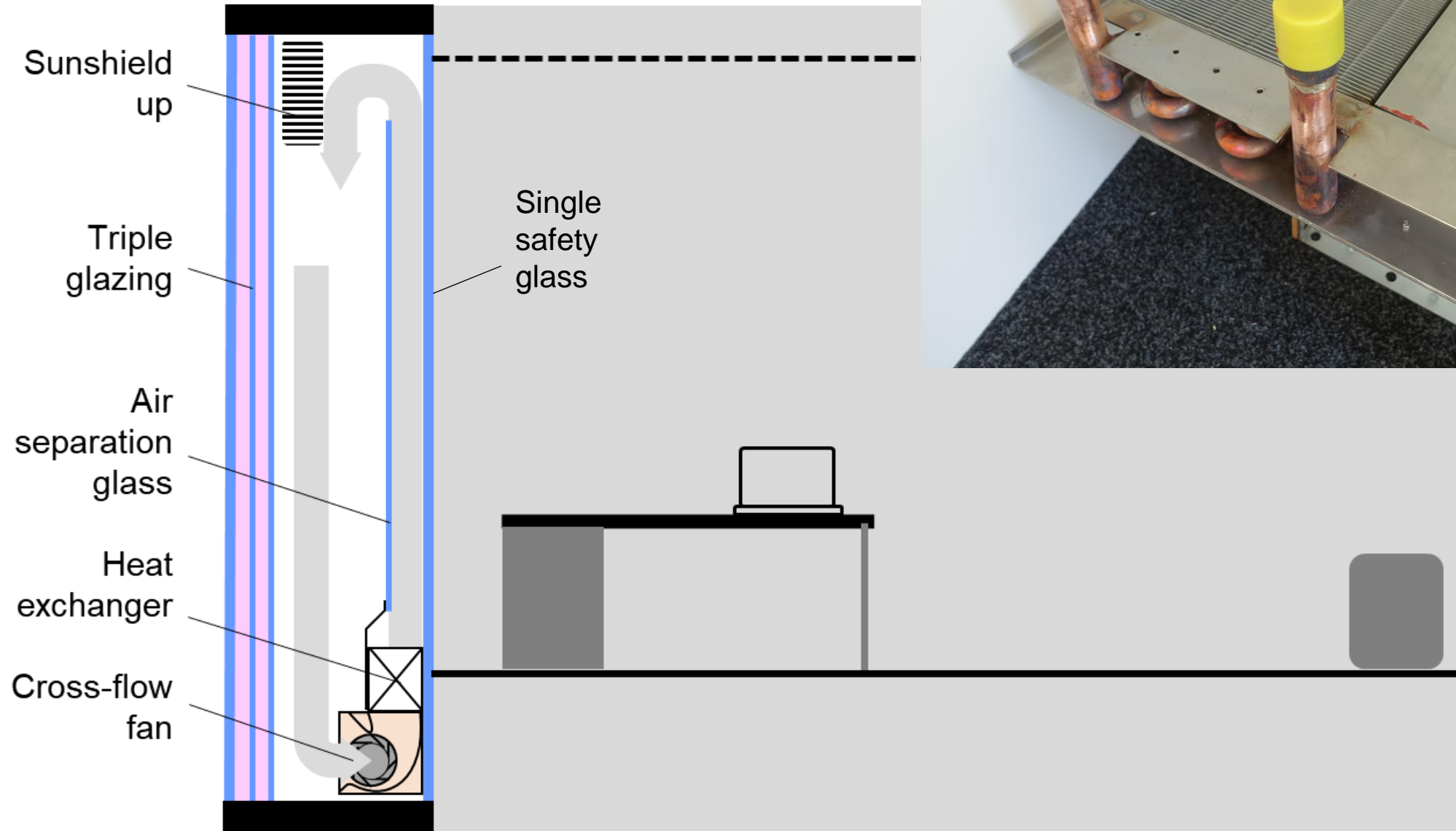


**Supported by Swiss Climate Foundation**

# Winter (left) and summer operation (right)



# Our solution is different

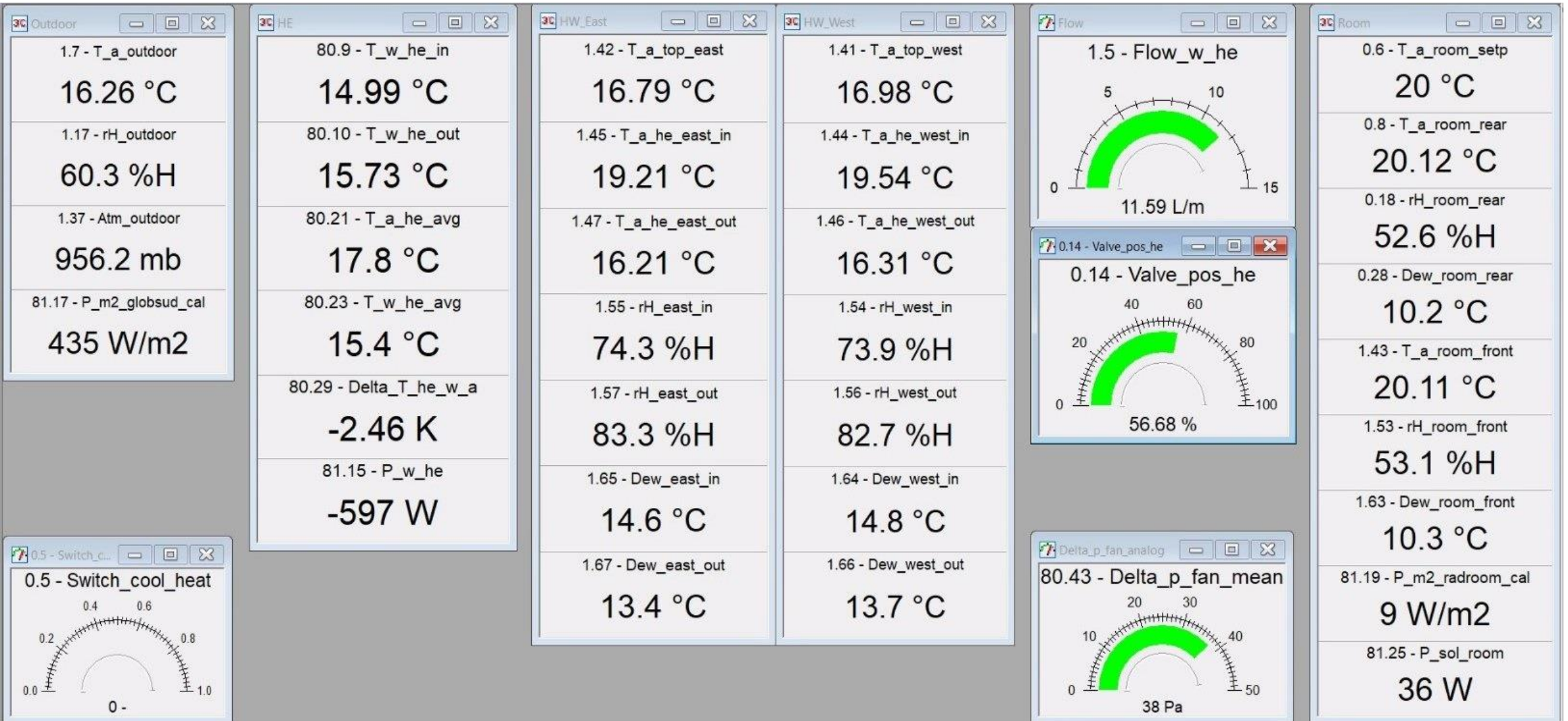




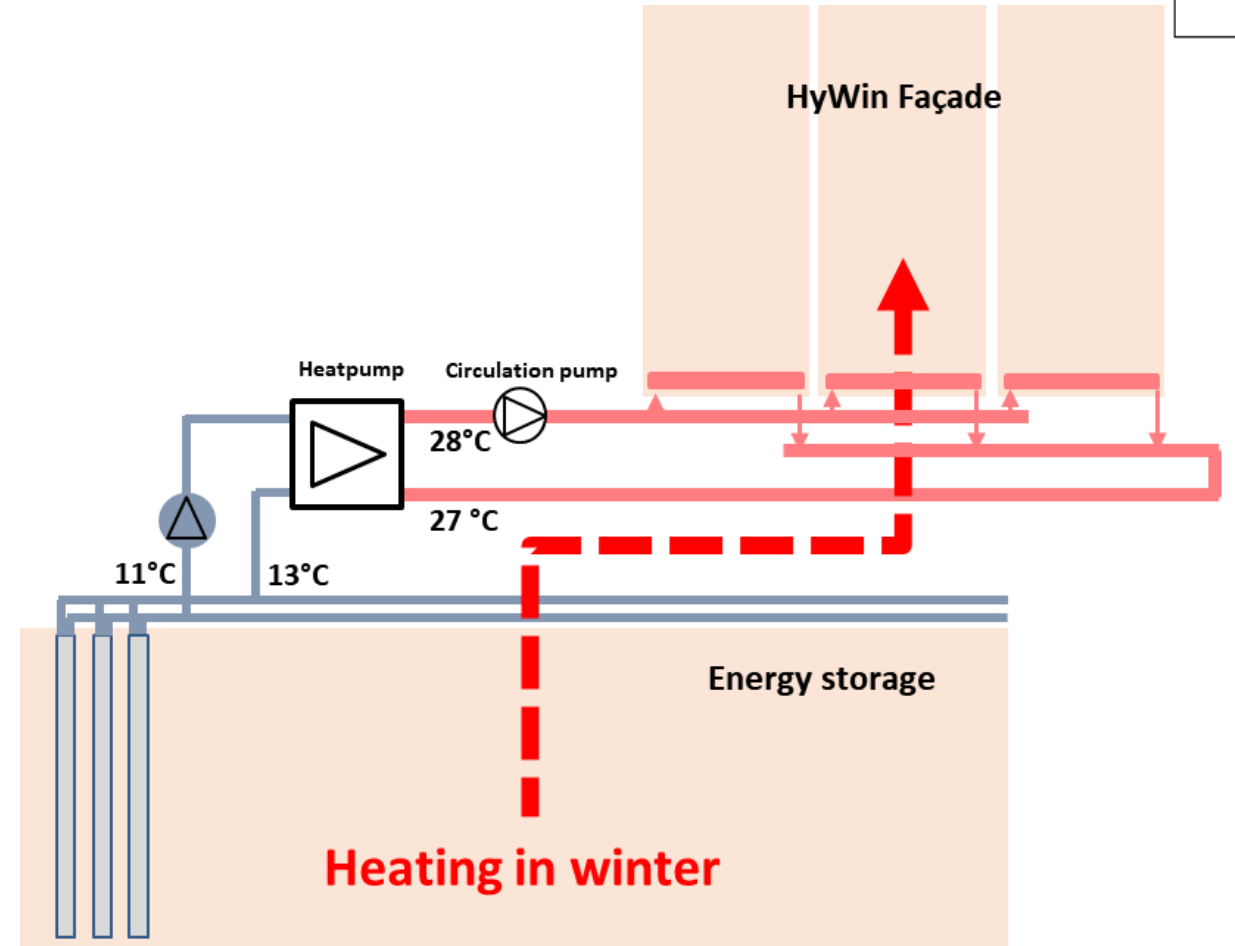
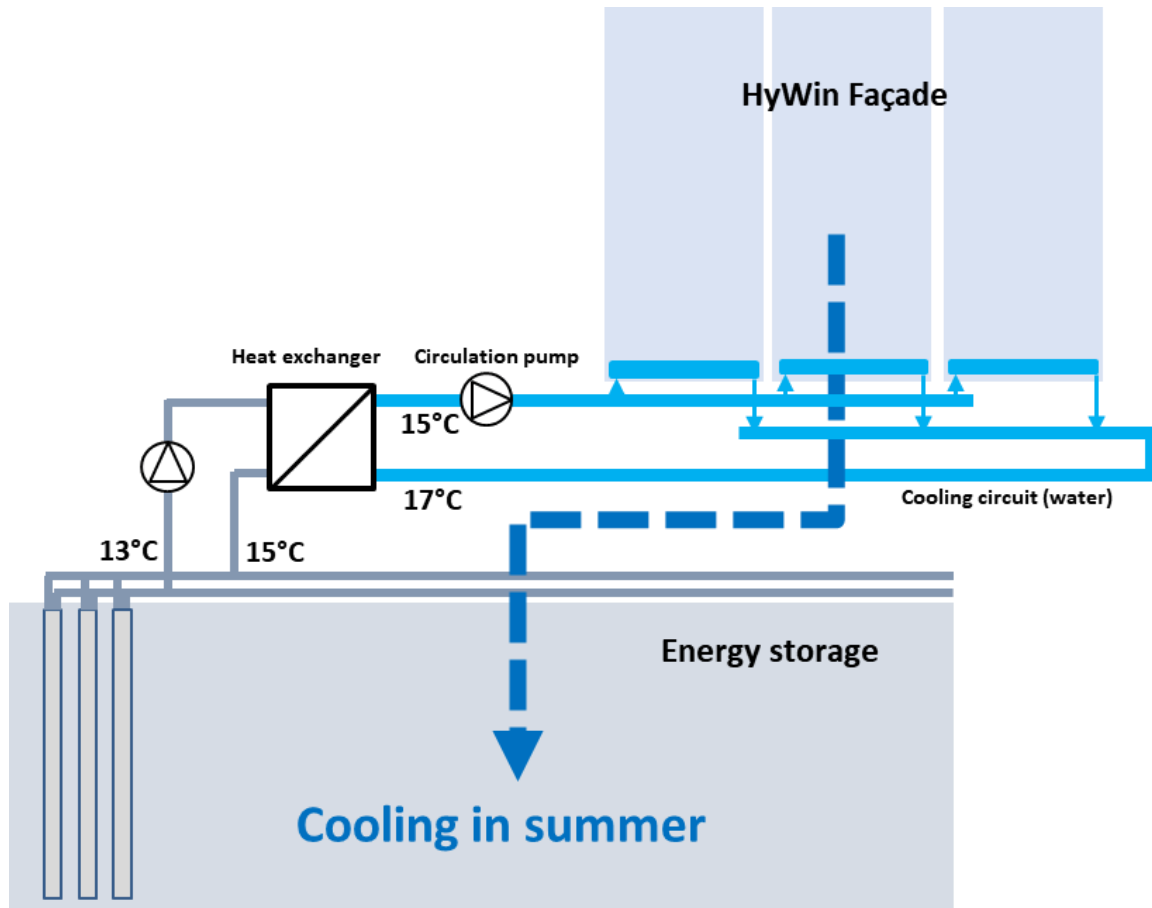
# HyWin Test Unit

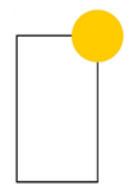
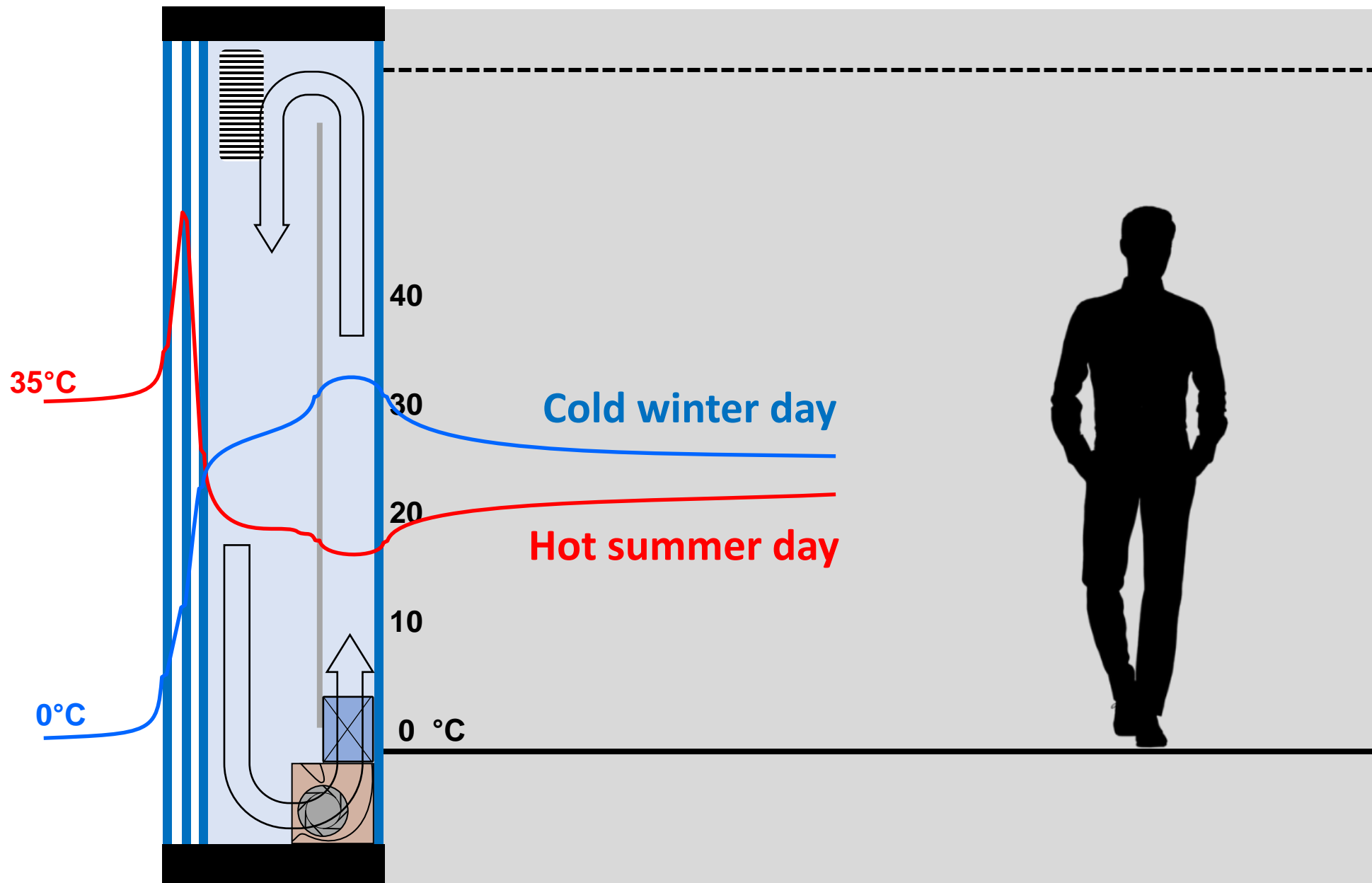


# Datalogger with more than 50 sensors



# Seasonal storage





# Conclusion



## HyWin

- + Improved comfort with less energy consumption
  - + Excellent room control: No direct heat transfer from outside to the room
  - + Regeneration of geothermal probes (seasonal storage) without additional cost
  - + Excellent lifetime of all components (and easy maintenance)
  - + No additional heating
  - + No additional cooling (if internal heat < 80 W/m<sup>2</sup> HyWin facade)
  - + Easy integration of PV in the facade (perfect correlation)
- 
- HyWin is new and different > looks like high tech
  - To keep the seasonal storage in balance > we need some additional consumers
  - HyWin combines two totally different technologies:  
facade building and room conditioning



Other solutions?

