

HSY Ilmastoveivi





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FOURDEG SMART HEATING®

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Viikki Environment House – Finland's most energy efficient office building



Construction year	2011	-
Number of floors	5	-
Construction cost	16.5	M€
Gross floor area	6,791	m ²
Gross volume	29,480	m ³
Mean occupant density	25	m ² /person (overall average)
Occupied hours	2,600	h
Target energy consumption	70	kWh/m ² /a
Measured energy consumption	92	Kwh/m ² /a

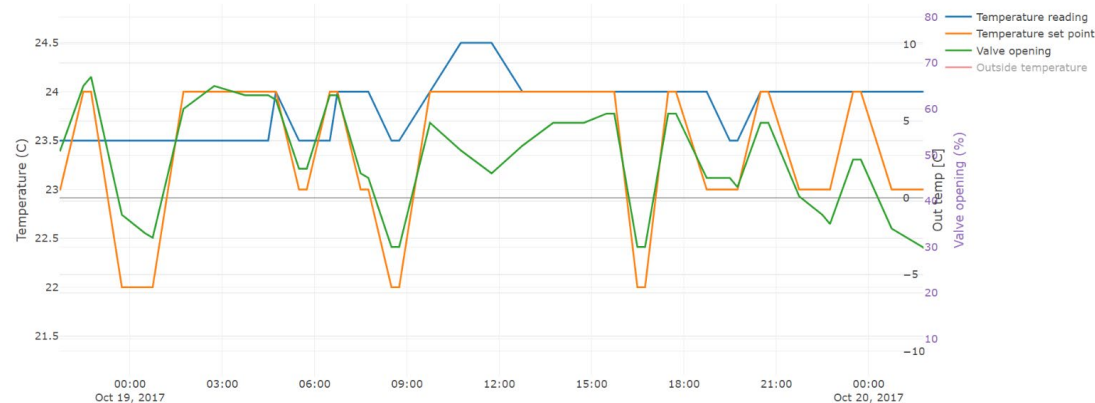


Main objectives

Piloting demand response of district heating networks on room-level accuracy and the Human Thermal Model

Key measurements in Viikki:

- Reduction in annual final energy consumption
- Peak load reduction
- Total greenhouse gas emissions of the building
- Internal air temperature
- Users' thermal sensation



Local weather forecast



FORECAST

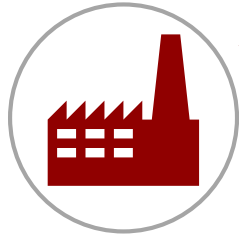
Cloud service



STEERING

LEARNING

WiFi



DEMAND RESPONSE

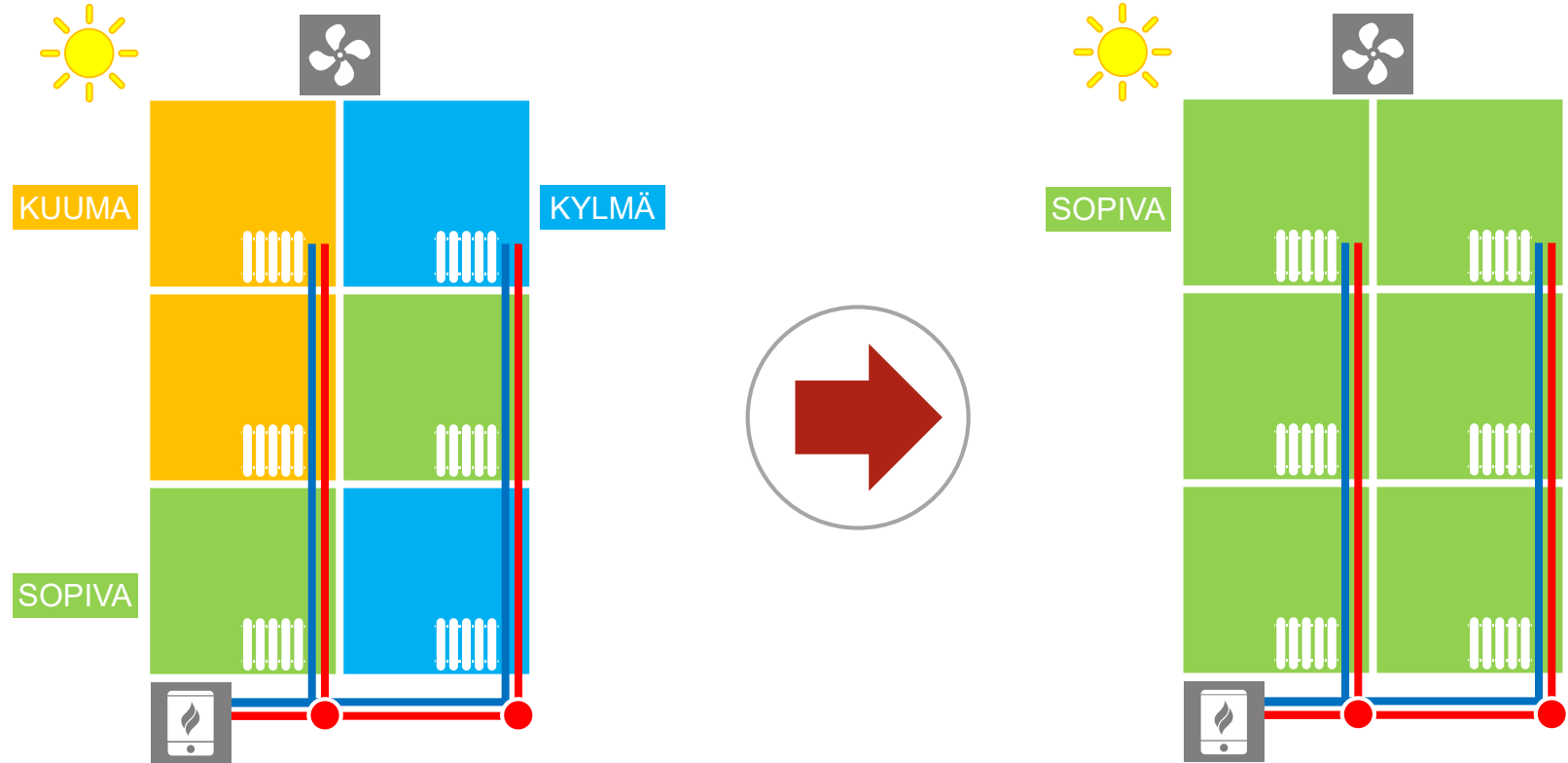
District Heating company



Water circulating radiators

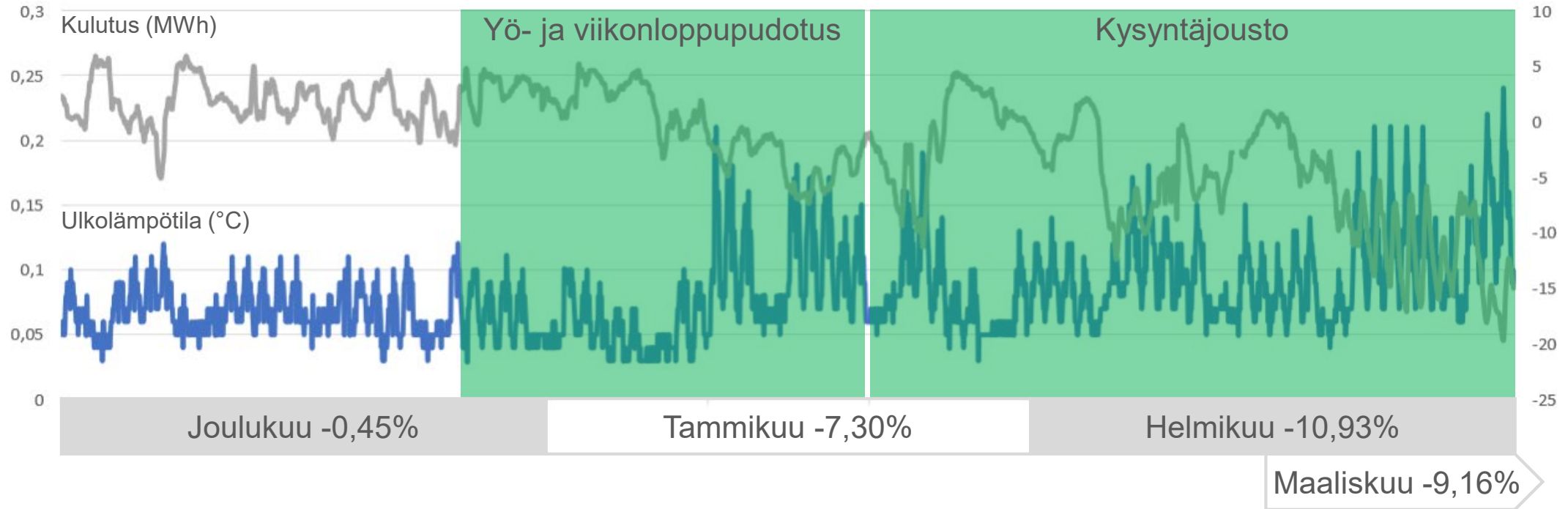


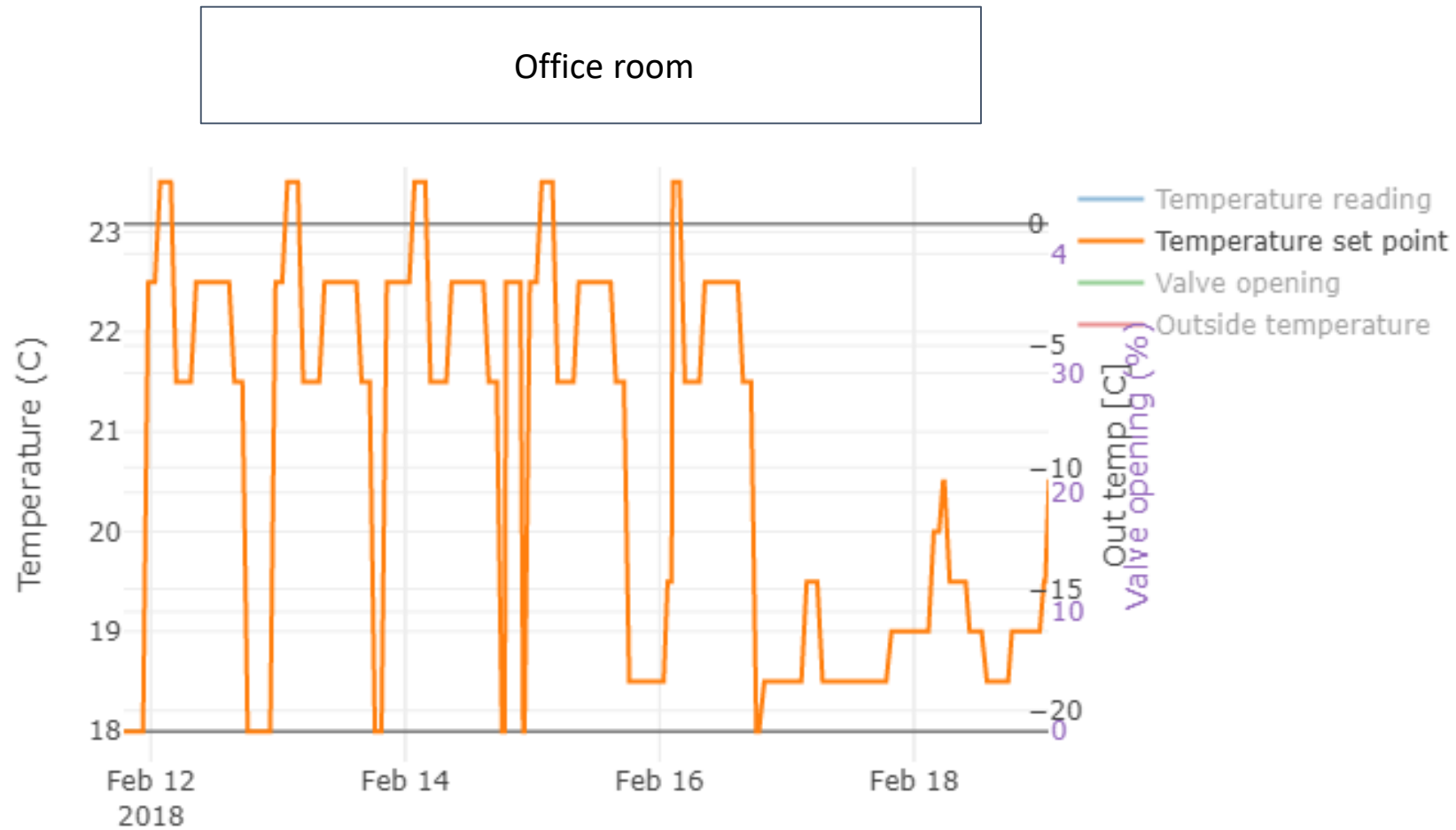
Better thermal comfort with room-level temperature control



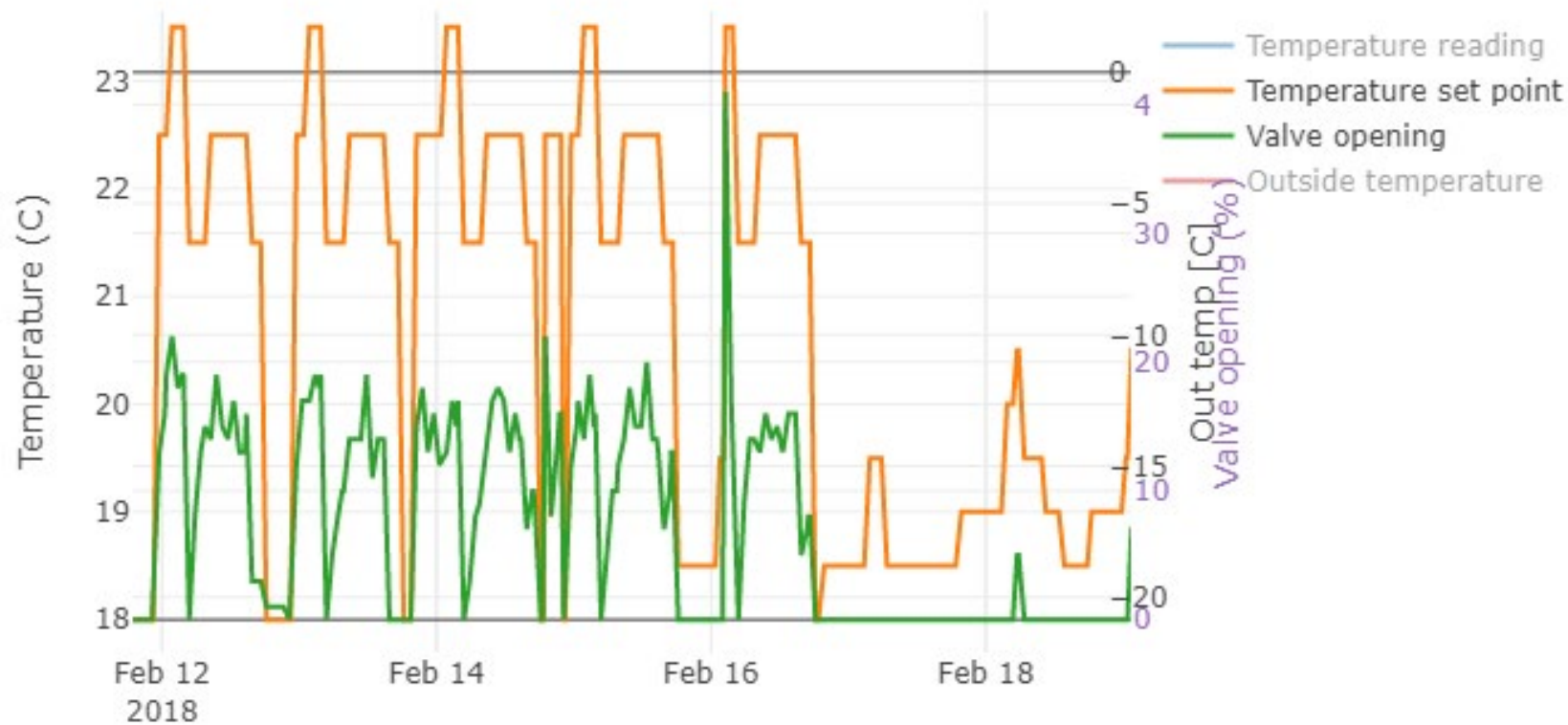
10% savings in an A+ office building

Demand response

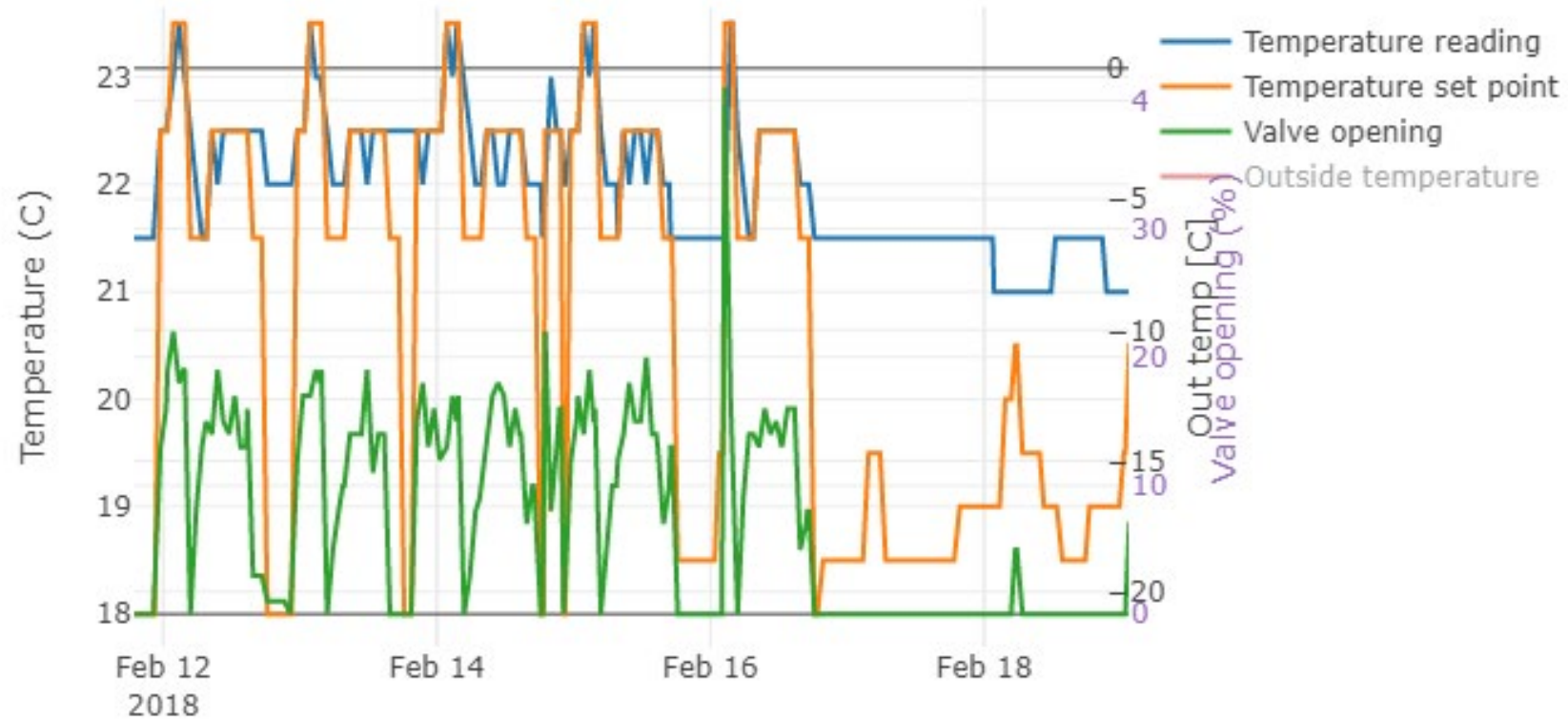




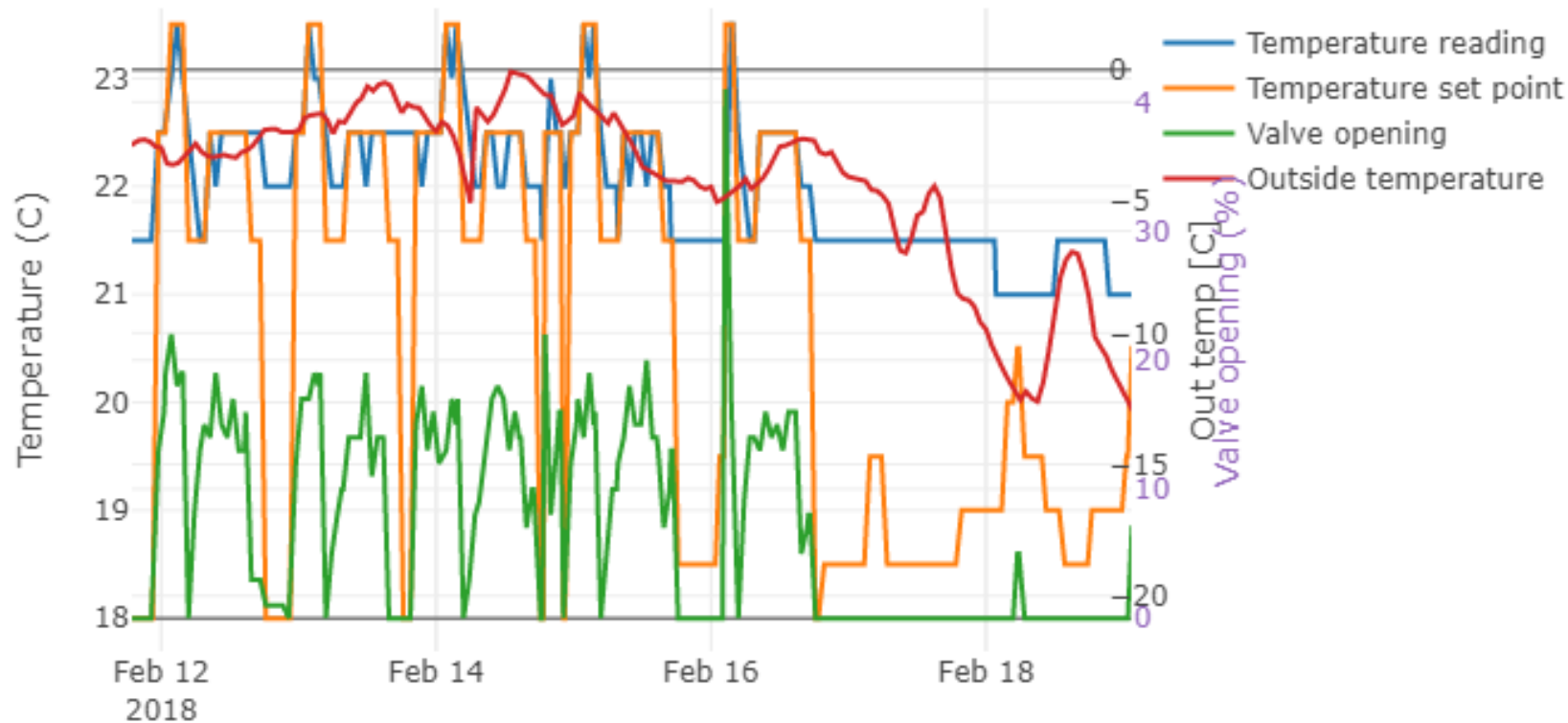
Office room



Office room



Office room



Questionnaire on thermal comfort

mySMARTLife



TEST

Aktiivisuus



Vaatetus



1.5

Lämpöaistimus

0



Lämpöaistimus on oma henkilökohtainen kokemus lämpötasapainosta kulloisessakin ympäristössä.

- +3 : Kuuma
- +2 : Lämmin
- +1 : Hieman lämmin
- 0 : Neutraali
- 1 : Hieman viileä
- 2 : Viileä
- 3 : Kylmä

Valitse oma tämänhetkinen lämpöaistimuksesi siirtämällä musta ympyrä haluamaasi kohtaan asteikkoa, ja näet samalla valintasi numeerisen arvon.

User feedback

Thermal sensation in two example rooms in Viikki Environment House 20.11.2017–3.4.2018



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