

# CATALYZING SCALE

## Scaling Healthy Renovation

10 OCTOBER 2019



**HEALTHY  
BUILDINGS  
DAY**

# Session Overview

Sergio Altamonte (U.C. Lovain, moderator)  
& Lara Anne Hale (Copenhagen Business School / VELUX, facilitator)

RenovActive Introduction, Sabine Pauquay, VELUX Belgium

## Part I: Behaviour

- RenovActive Team on Behaviour

Friedl Decock, Daidalos; Thorbjørn Færing Asmussen, VELUX; Petrus (Pim) te Braak, VUB; Moritz L. Fedkenheuer, TU Darmstadt

- Healthy Social Housing - Mette Mogensen, Domea.dk

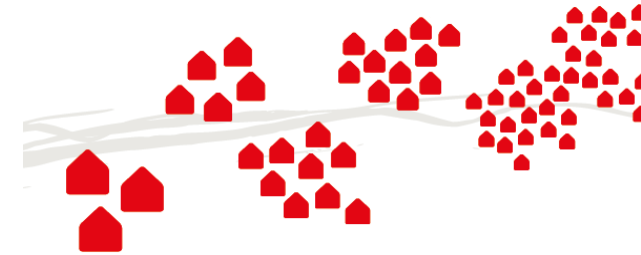
## Part II: Replicability

- RenovActive Team on Replicability
- RenovActive Replications in the Ben Huur Projects - Johan Lapere, Ben Huur & City of Kortrijk

## Panel Discussion



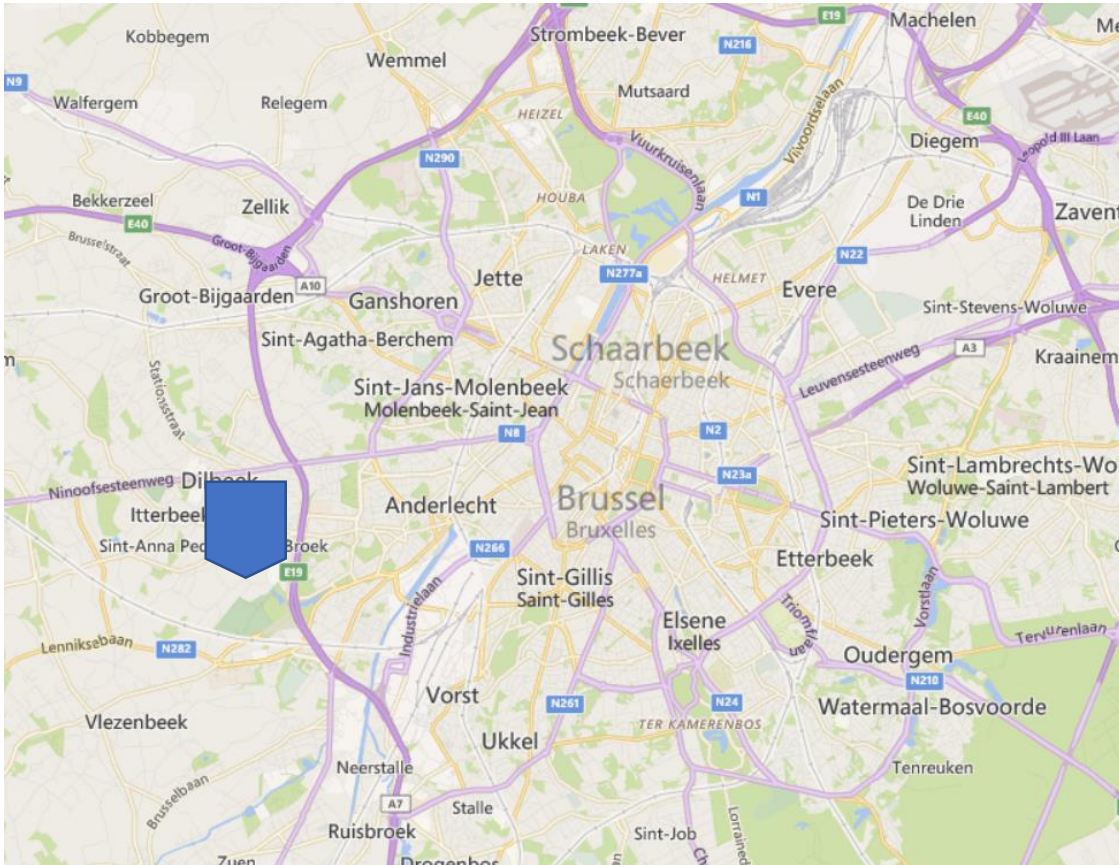
# RenovActive prototype : the briefing



In partnership with



# Location: Garden City Bon Air





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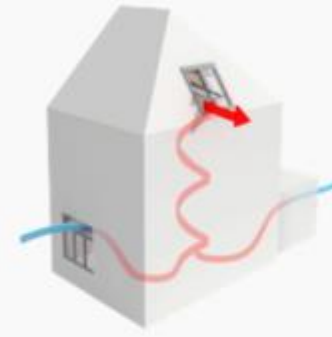
# RenovActive - the 7 elements



Attic conversion



Increased window area



Staircase shaft for daylight & ventilation



Dynamic sunscreening



Hybrid ventilation system



Improved thermal envelope



Building extension







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# Part I: Behaviour



# Thermal Comfort: Two-sided

- **Building System**

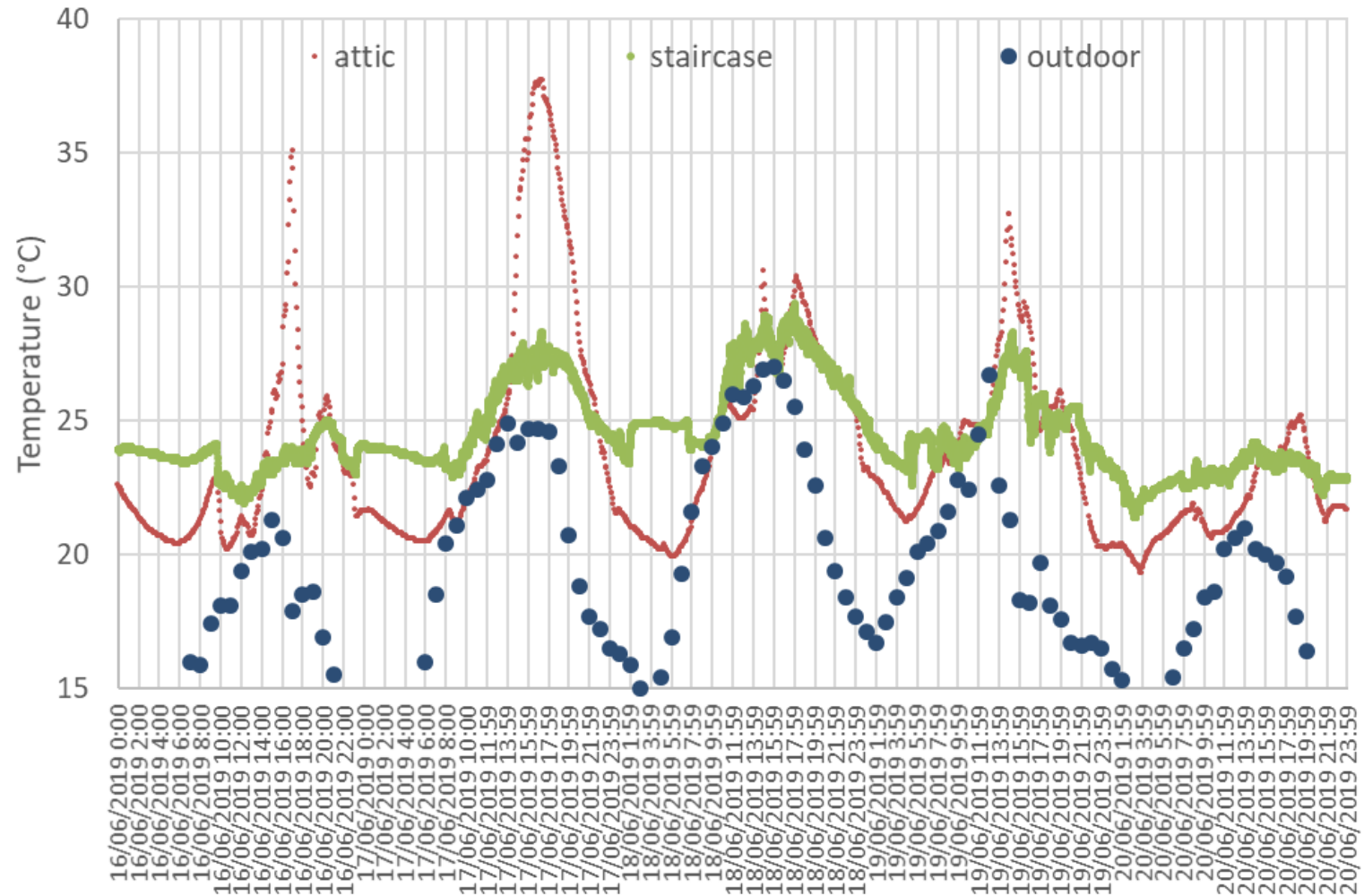
- Ventilation system : different systems (eg hybrid systems) tested over time
- Solar shading on attic windows
- Natural (night) ventilation (to function properly)

- **User behavior**

- Open windows to cool down / automatically control system
- Setpoints natural ventilation during night
- Solar shading control system
- Comfort is not their primary need (mosquito bites, prevention of burglary)



# Thermal Comfort: Attic



# Indoor Air Quality

- Very good indoor air quality (CO<sub>2</sub>, RH) by ventilation system designed by Belgian national standards
- Mechanical ventilation system made more robust by adding controlled natural ventilation via window opening
- Manually operable windows for other air pollution (cooking, cleaning)
- Natural ventilation meets thermal comfort
  - Demand-controlled ventilation
  - Temperature-dependent setpoints



# Drivers of User Behaviour

Reflections based on Max Weber's 'Social Action'

- Instrumentally-rational (knowledge)
- Value-rational (moral)
- Affectual (emotional)
- Traditional (out of habit)



# Automation & Behaviour

- Eases the mind of people
- Improves robustness
- Own priority setting
- Possibility to override
- Should return automatically to default settings after override



# Behaviour: Main Messages

- Expect 'instrumentally rational', but often habits & emotion
  - If primary needs are contradiction, then will disable system
  - Very important that can still open the windows
- ➔ learnings:
- Allow own priority setting in a system
  - Additional impact on the health of buildings

