

IEA Technology Collaboration Programme on Energy in Buildings and
Communities Webinar
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Reducing the Performance Gap between Design Intent and Real Operation

IEA EBC Annex 79 Significance for the Netherlands

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Reducing the Performance Gap between Design Intent and Real Operationa long history within IEA - EBC

ANNEX 53 2008 - 2013
Total Energy Use in Buildings:
Analysis & Evaluation Methods

Annex 53 has identified the strong influence of occupants on building performance



ANNEX 66 2013 - 2018
Definition and Simulation of
Occupant Behavior in Buildings

Annex 66 provides a framework for experimentally studying and modelling different behavioural actions, including implementation of these models into simulation platforms



ANNEX 79 2018 - 2023
Occupant-Centric Building
Design and Operation

Annex 79 provide new insights into comfort-related occupant behaviour in buildings and its impact on building energy performance. An open collaboration platform for data and software is being created to support the use of 'big data' methods and advanced occupant behaviour models.

2008 >

< 2023

...from making models and simulations more accurate towards understanding the factors that have an impact on the performance gap

as buildings do not use energy but occupants, occupancy behavior is key

determining the role of OB

understanding the role of OB

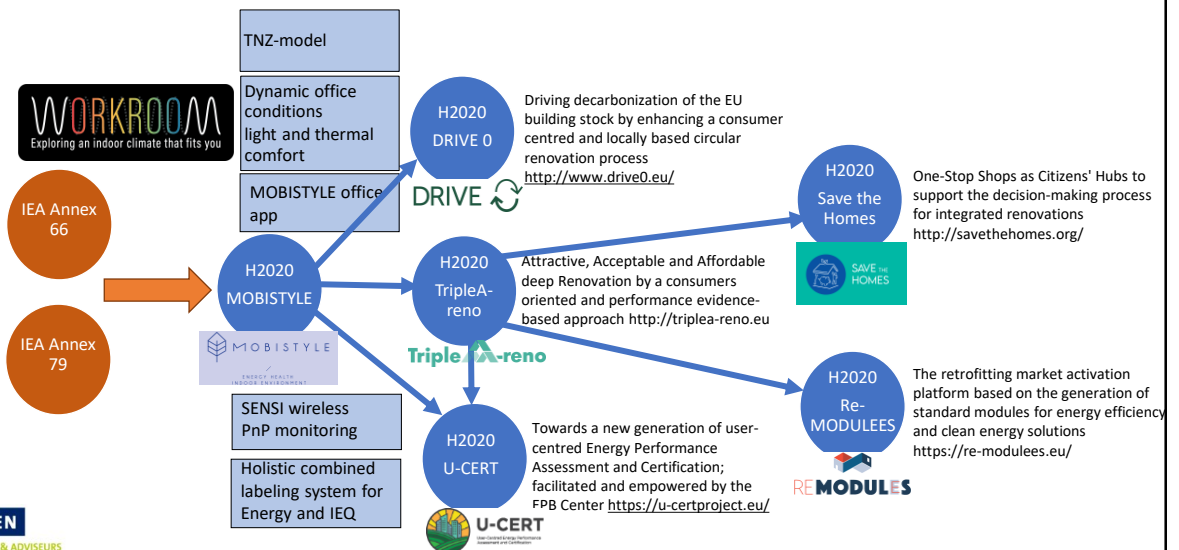
OB centered design and operation

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The significance of IEA Annex 79 (and 53 – 66) for the Netherlands: input for National and EU H2020 research projects



IEA Annex 66 and 79: The inspiration and start of several of our H2020 projects with anthropology-based people centered approach



The significance of IEA Annex 79: input for our consultancy (Huygen IA) - WorkRoom

- Users of a clients future building will come over to the Huygen office
- They will be educated on the four main topics of building physics & services:



Light



Acoustics



Thermal
comfort



Ventilation

- Every module will end with experiments to give insight in their personal preferences on those topics
- After a WorkRoom day the participants understand their choices within the program of requirements for the different functions of their new office building and can discuss these choices with the decision makers

The significance of IEA Annex 79 input for our consultancy (Huygen IA)

WHAT?

- One room in the Huygen office
- 8 working places
- Every module starts with 15-30 minutes of interactive background explanation/lecture on the building physics & services of that topic.



HOW?

After that, the room is technically altered to let the people experience:



Acoustics

- Different reverberation times for different functions.
- Different sound levels of installation noise.
- Different insulation levels of partition walls.



Ventilation

- Different levels of CO₂ concentration.
- Different ventilation rates.



Light

- Different light levels.
- Different color temperatures of light.



Temperature

- Different temperature setpoints.

THANK YOU FOR YOUR ATTENTION!