

Demonstrating an integrated renovation approach
for energy efficiency at the multi-building scale



Co-funded by the Horizon 2020
programme of the European Union

DREEAM – think big, save big!

DREEAM demonstrates that ambitious large scale renovations yield better energy efficiency gains and are more cost-effective.

Challenge

In Europe residential and commercial buildings are responsible for 40% of energy consumption and 36% of CO₂ emissions. Most of the residential buildings are more than 30 years old and need renovation, in order to improve their energy efficiency and comfort.

However, standard renovations result in only 10-40% of energy efficiency improvement and the payback time is too long for more renovations to be justifiable.

Thus, housing companies and cities look for solutions to:

- Enhance the energy efficiency gains from renovations.
- Maximize the returns on their investments (ROI).
- Increase the renovation rate of their building stock.

DREEAM approach

DREEAM's solution to the challenge faced by housing companies is to scale up renovations.

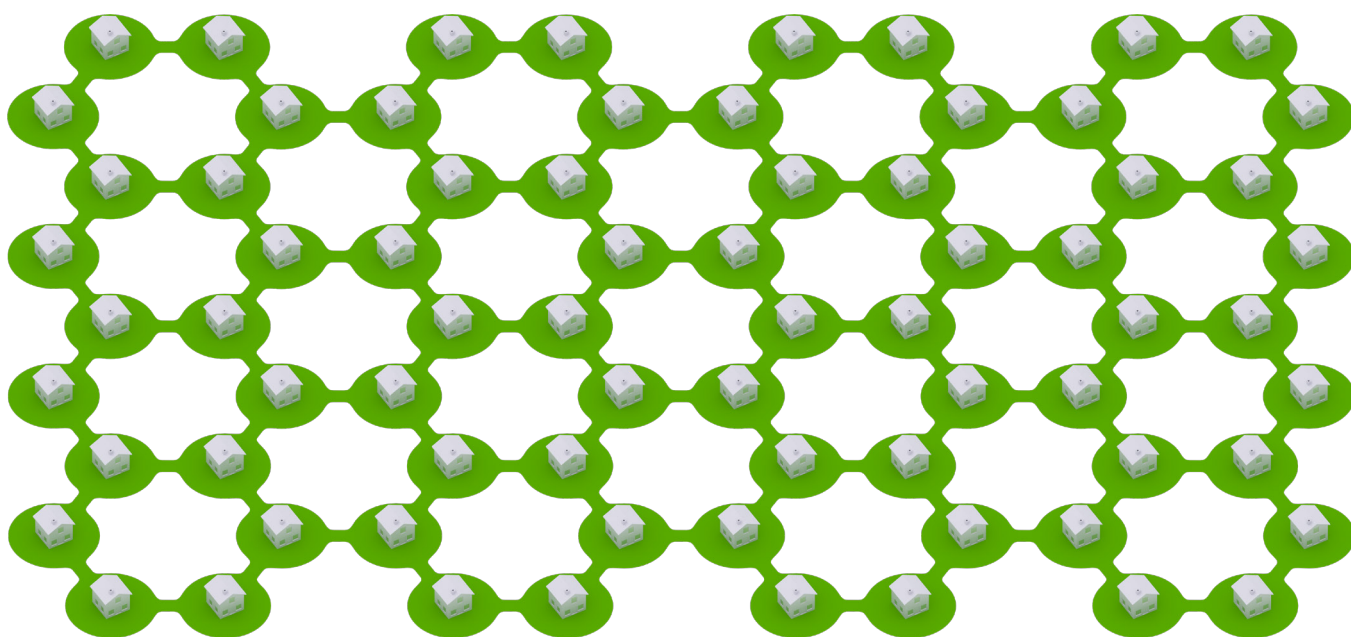
This means to:

- Increase the scale of renovation from the typical one building to multiple buildings at a time.
- Raise the renovation ambition to a nZEB (nearly Zero Energy Building) standard.

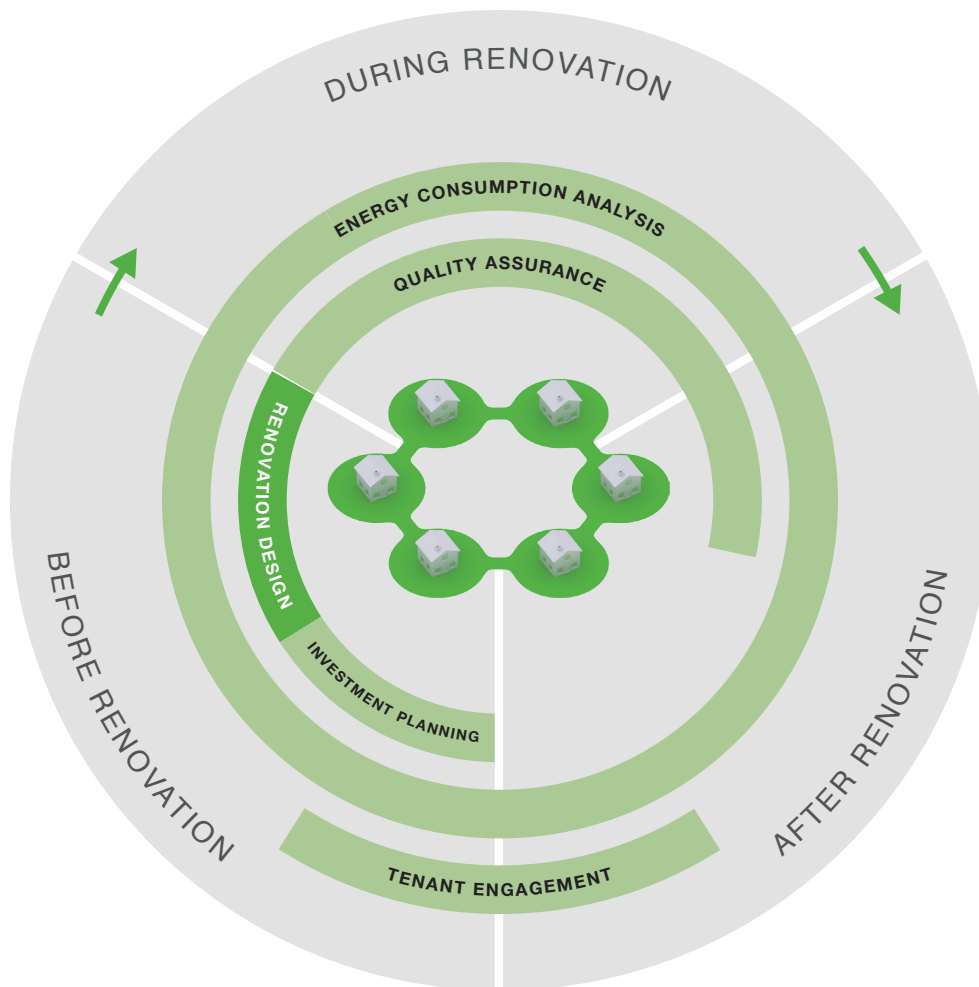
The project aims to demonstrate that ambitious large renovations:

- Allow for a better integration of renewables
- Result in higher energy efficiency gains
- Are more cost-effective

DREEAM helps to plan, design and implement ambitious multi-building renovations in accordance with individual targets and objectives of housing companies and cities.



Energy efficient renovation is key to reducing energy consumption in the housing sector. This is because around 80% of the forecasted global building stock of 2050 has already been constructed and a majority of these buildings have a very poor energy performance.



DREEAM supports housing companies and cities in scaling up their renovation ambitions through an integrated approach allowing informed decisions before, during and after renovation.



Investment planning

Strategic decision support for investment planning on building portfolio level – integration of sustainability goals into long-term financial strategies.



Renovation design

Key DREEAM innovation is a renovation design tool:

- online access designs for multi-building projects
- optimized nZEB renovation, incl. renewables.



Quality assurance

Technical quality supervision during renovation works:

- tailor made quality assurance plan
- 3 supervision visits during renovation.



Energy consumption analysis

Detailed energy consumption monitoring throughout the renovation process:

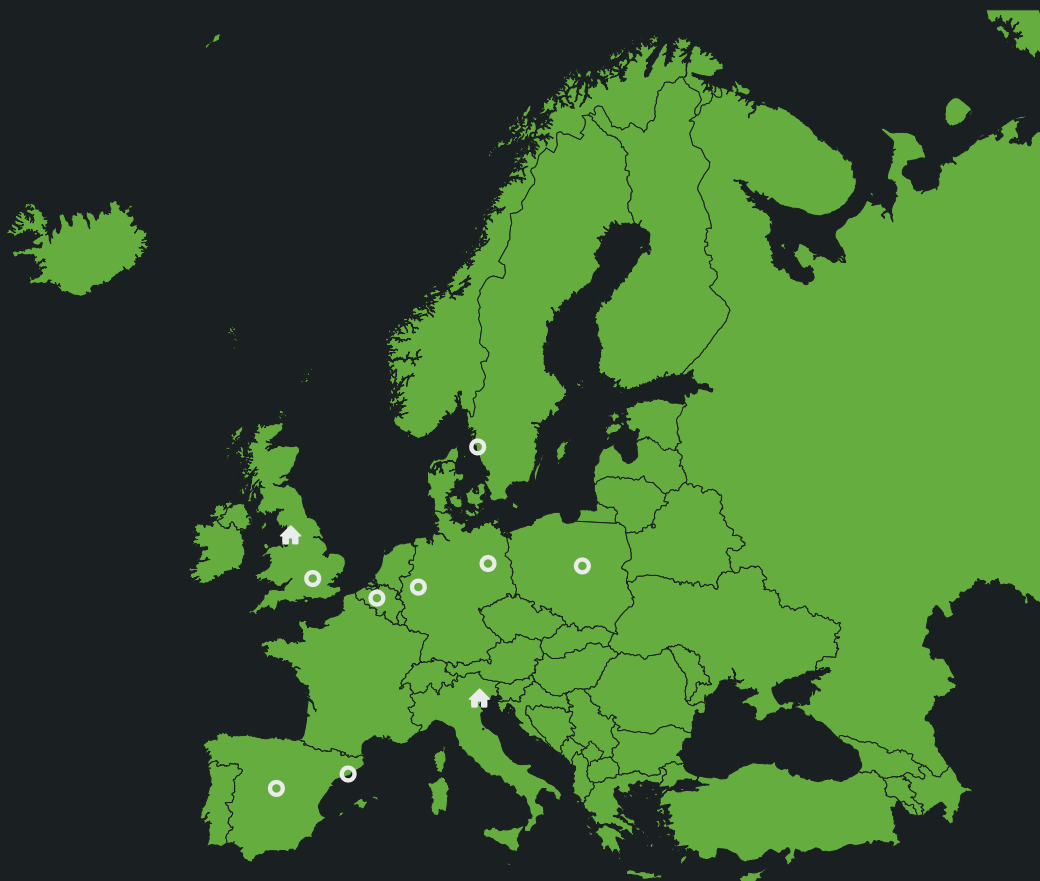
- historical energy data analysis
- real time consumption tracking on tailor-made monitoring platform.



Tenant engagement

Tenant engagement before and after renovation:

- user validation of planned renovation
- innovative social mapping & indicators
- trust building
- tenant coaching on energy saving.



Demonstration

DREEAM approach will be demonstrated and tested in 2 pilot sites in Europe:

- 🏠 Padiham, the UK
Housing company – Places for People Ltd.
- 🏠 Treviso, Italy
Housing company – ATER Treviso

DREEAM is a 4-year project (2015-2019). As part of DREEAM over 150 dwellings across the 2 pilot sites will be renovated to a nZEB standard. An ambitious 75% of energy demand reduction is targeted in all pilot buildings.

Expertise

DREEAM is a consortium of European organizations that bring the key expertise to help European housing companies and cities scale up their renovations:

Research

Chalmers University of Technology, RISE, Wuppertal Institute

Engineering

Exeleria

Consultancy & solution providers

Bax & Company, 3C-Precon, Energy Pro, SinGeo2, NAPE, OpenDomo

Real estate and housing companies

Savills, Places for People, Ater Treviso

Housing network

EURHONET

Replication

The aim of DREEAM is to develop standardized solutions and services that can be applied across Europe. As part of DREEAM, 15 housing companies and cities can apply for a DREEAM replication voucher that includes:

- multi-building renovation design study
- building stock investment strategy.

Candidates are housing companies and cities that manage large portfolios of residential buildings, have identified a group of buildings for renovation and have investment ambitions.

Contact

Izabela Kurkowska,
Dreeam project manager
izabela.kurkowska@chalmers.se
www.dreeam.eu