



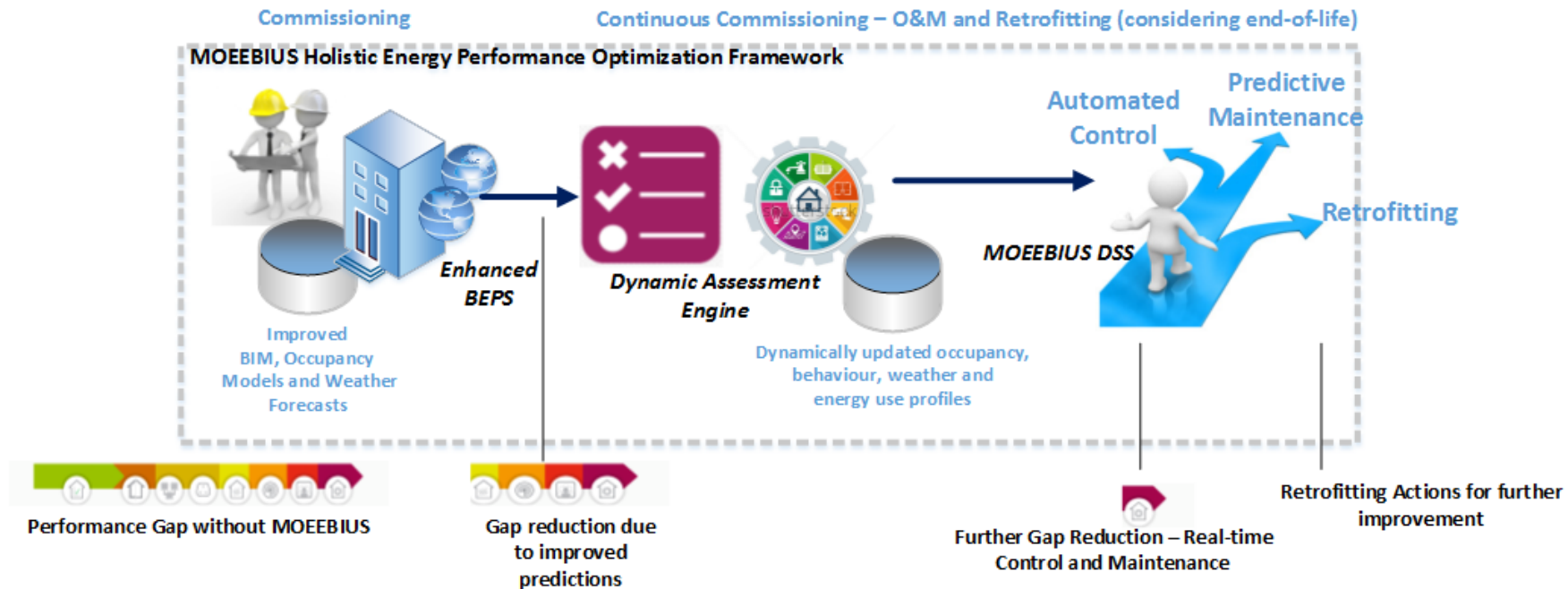
A replicable and easily transferable framework

Modelling Optimization of Energy Efficiency in Buildings for Urban Sustainability

Project duration: November 2015 – April 2019



The MOEEBIUS solution

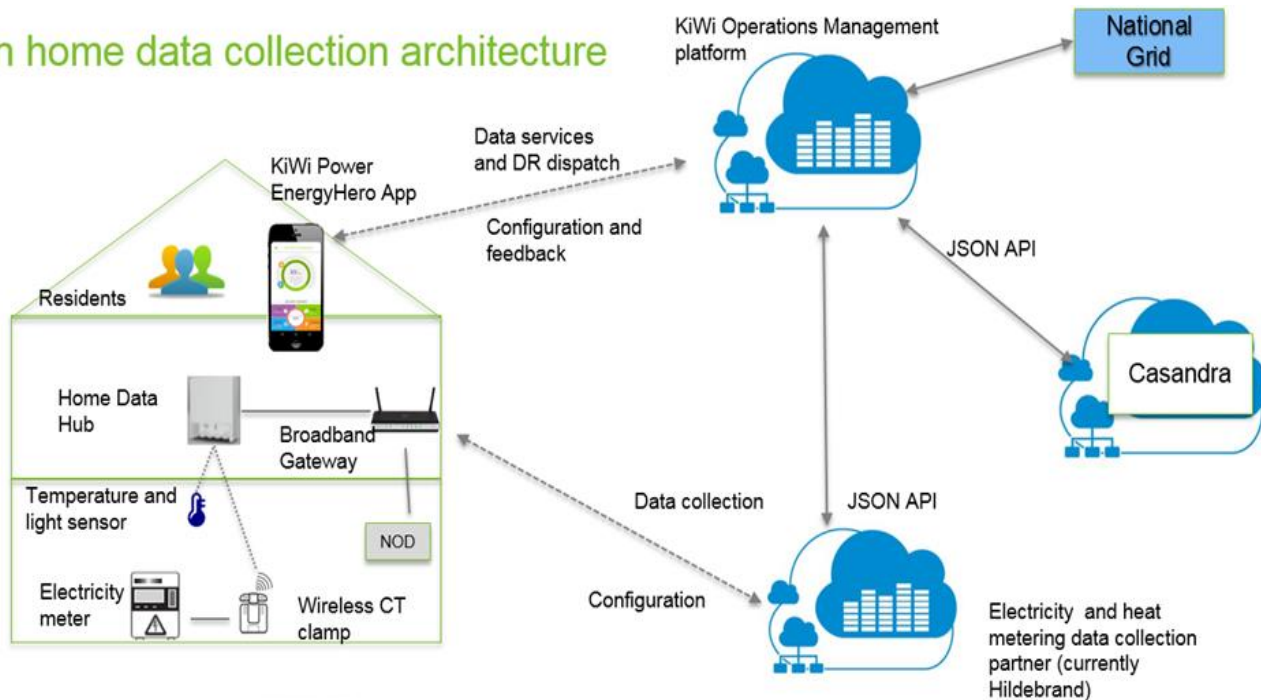


Design considerations

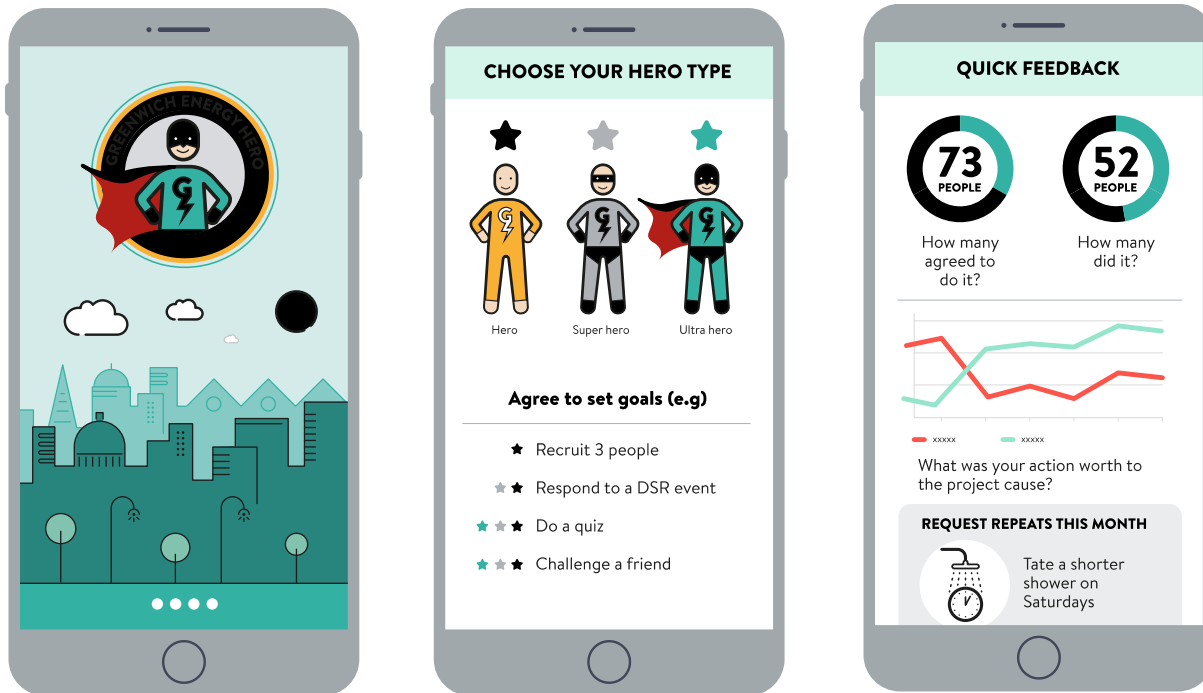
- The core elements of the platform – such as the middleware – have been designed to allow interactions with a wide range of BMS and EMS systems through standardised interfaces
- Inputs for various components are also standardised, eg. architectural plans and M&E plans inputs accepted in standard formats such as dwg
- Standardised outputs – either to other Moeebius layers eg. control strategies, or to end user via simple visual interfaces

UK residential pilot

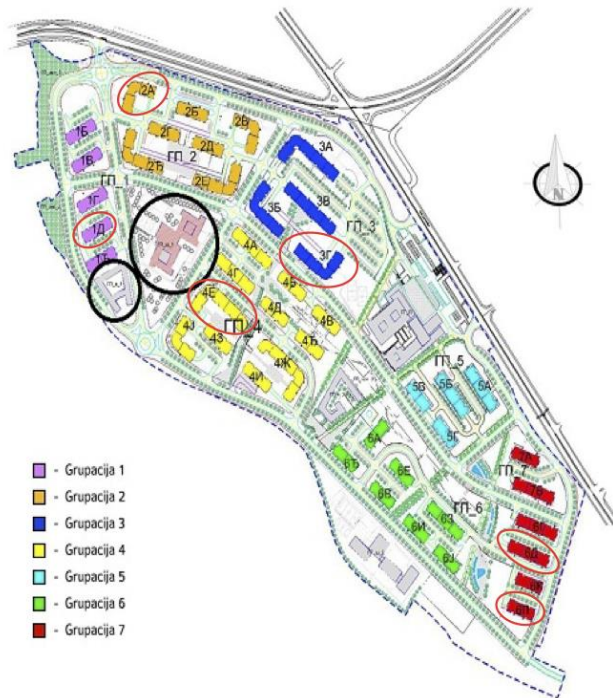
In home data collection architecture



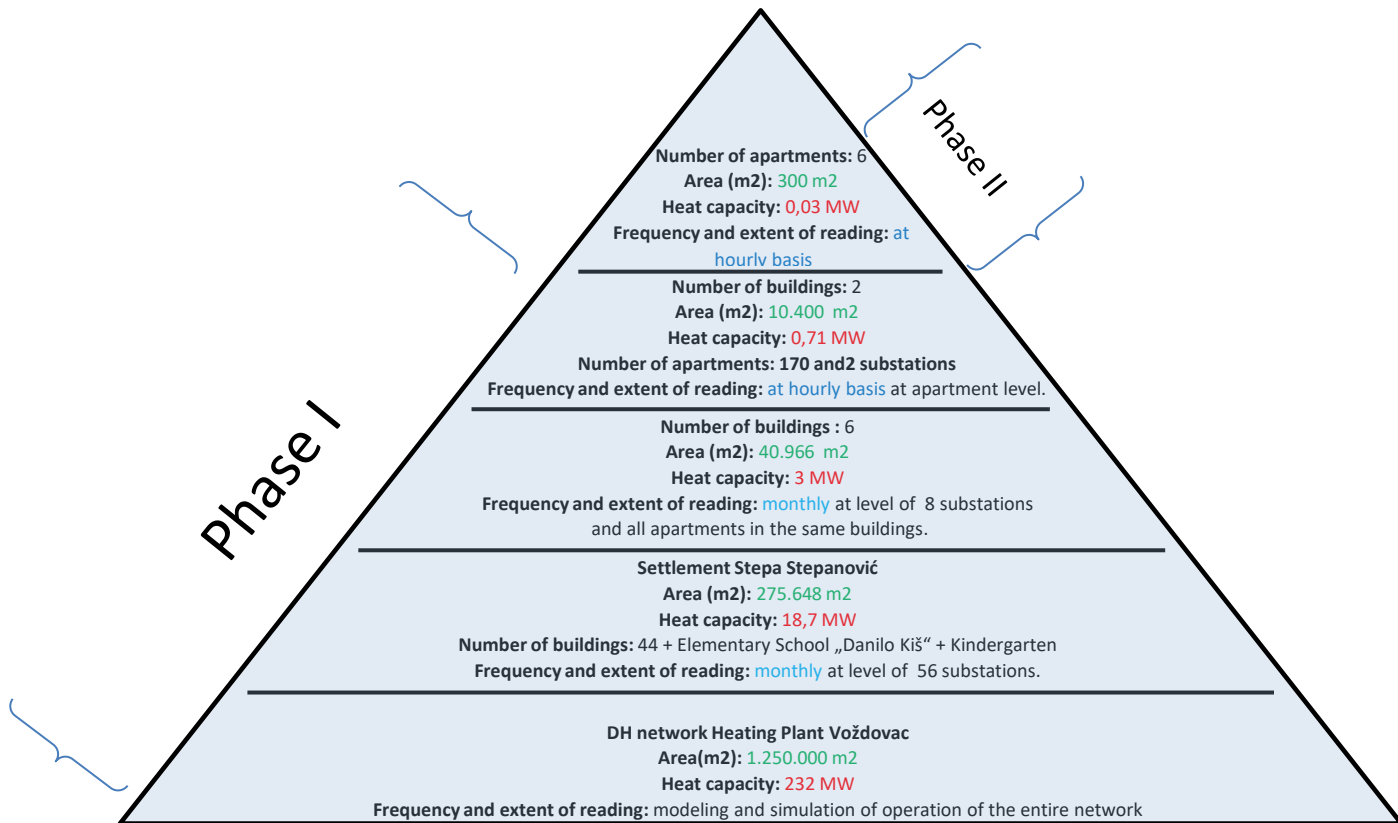
UK residential pilot - Greenwich



Pilot deployment - Belgrade



- Stepa Stepanovic Complex:
- 42 hectares of land
- 44 buildings with 4,616 apartments
- 434,000 m² of residential and business space
- 146 business premises
- Primary school and Kindergarten
- 1,430 garages
- 3,300 open parking places
- 9.5 km of roads
- parks and green areas
- Sport grounds and playgrounds
- Accompanying public facilities
- LOCATION: <http://stepa.rs/mapa/>



Frequency and extent of reading: at hourly basis with detailed data on parameters in apartments: Temperature, humidity, air quality, brightness.
Additional characteristics: Internet and mobile application for customers– information and control of installation

Portugal pilot - Municipality



Energy consumption:
Electricity 300 MWh/yr

350 occupants



Floor 0

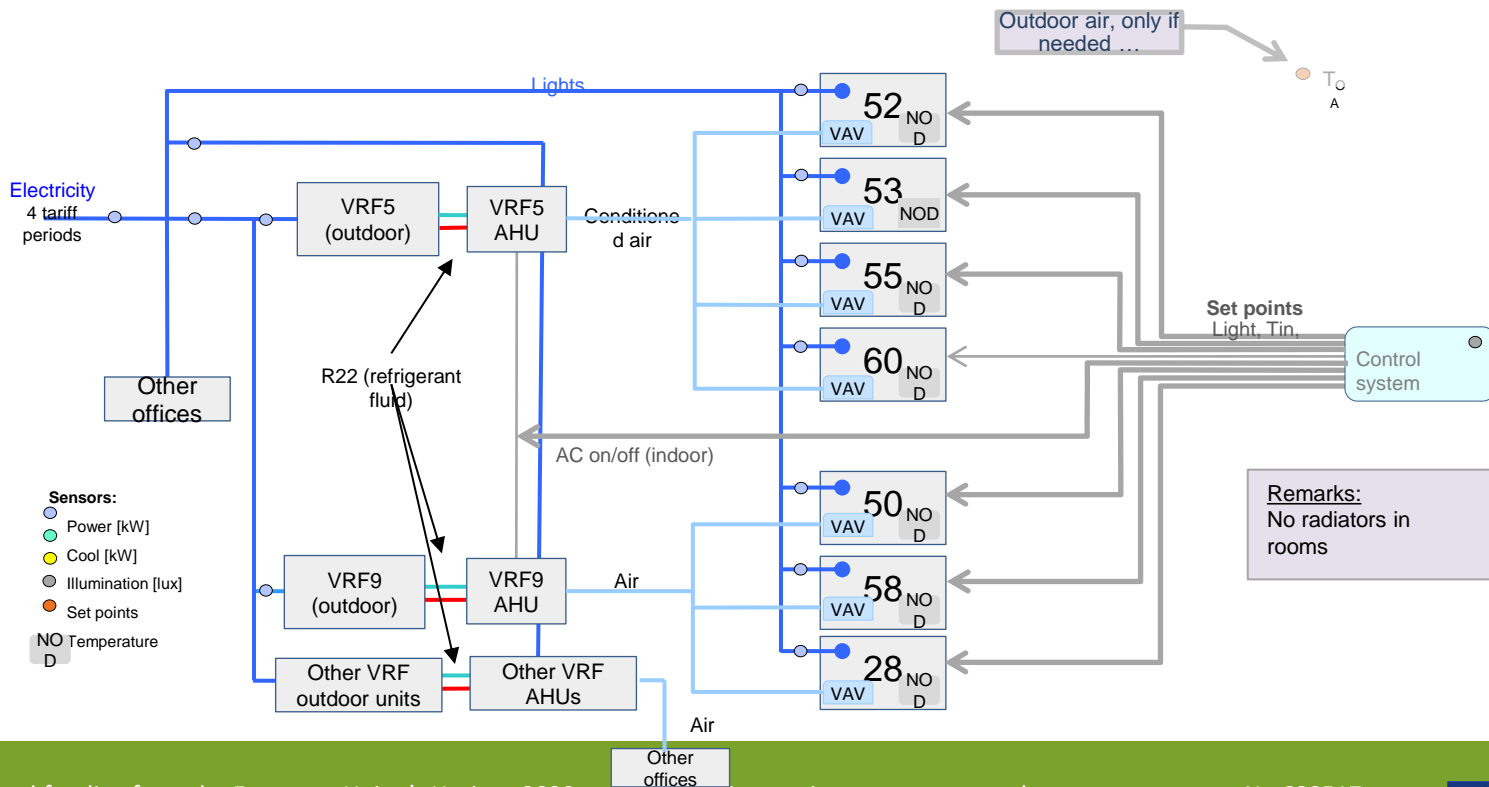
Floor 1

Controlled Offices:

- Rooms 50, 52, 53, 55, 58, 60, 28.

Rationale: Monitor, control and optimize (reduce cost) the energy efficiency of 7 office spaces, focusing on the lighting and HVAC systems, and taking into consideration the comfort and IAQ

Portugal pilot - Municipality



Conclusions

- Flexibility – MOEEBIUS components can be used together as a full energy efficiency solution but also independent to solve specific issues in the value chain.
- Easy to integrate – core elements of the solution such as the middleware can easily integrate with standard existing building and energy management systems
- Scalable – modules are designed to allow increase in the number of inputs and outputs they process without proportional increase in cost.

MOEEBIUS Partners



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