



FLEXharvester

by VITO/EnergyVille



CUSTOMER SUCCESS STORY

Kris van Daele
Program manager FLEXharvester



Heat networks



Electricity networks



Water networks



Car charging networks

FLEXIBILITY IS THE NEW NORMAL



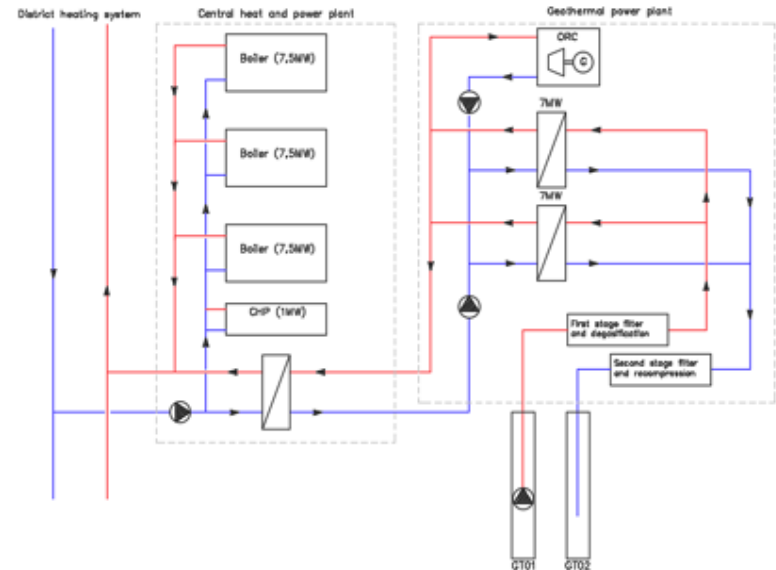
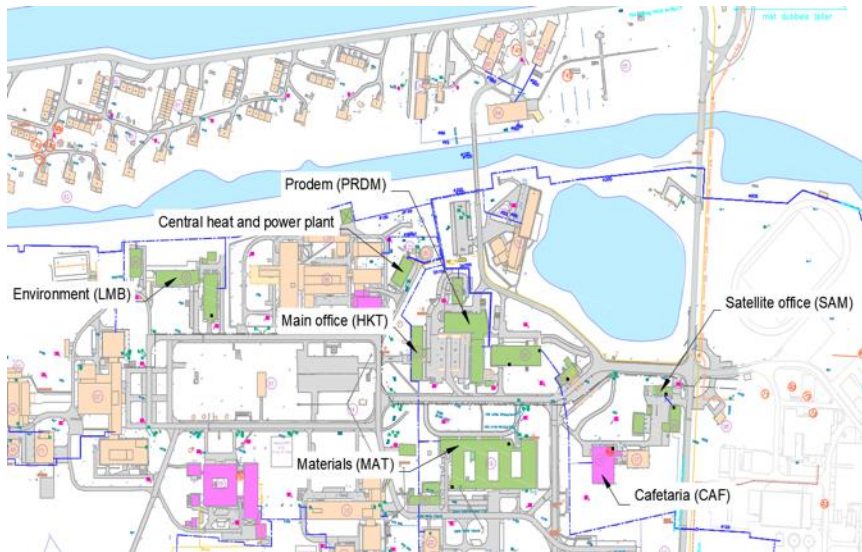
SIMPLICITY

EASY TO DEPLOY

PLUG & PLAY

FLEXIBILITY IS THE NEW NORMAL

DISTRICT HEAT NETWORK MOL AS FIRST PROJECT



PROJECT IMPLEMENTATION MOL

TIMELINE



Inventory, make systems compatible, hardware preparation

Response tests
 Winter 2019 - 2020

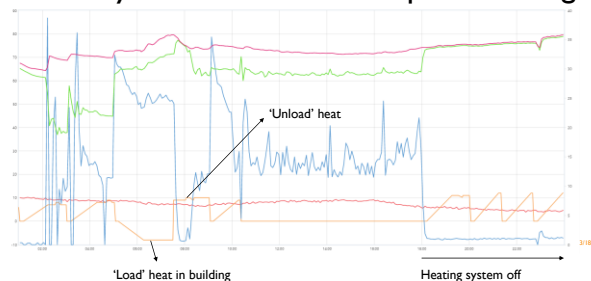
Peak shaving
 Winter 2020 - 2021



Project start
 May 2018

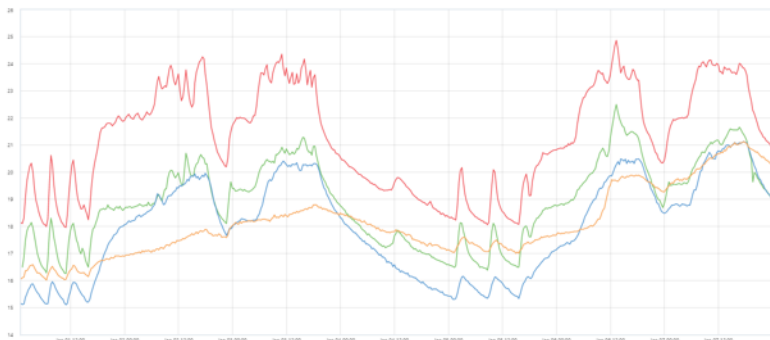
Hardware installed
 May 2019

System and hardware updates/changes

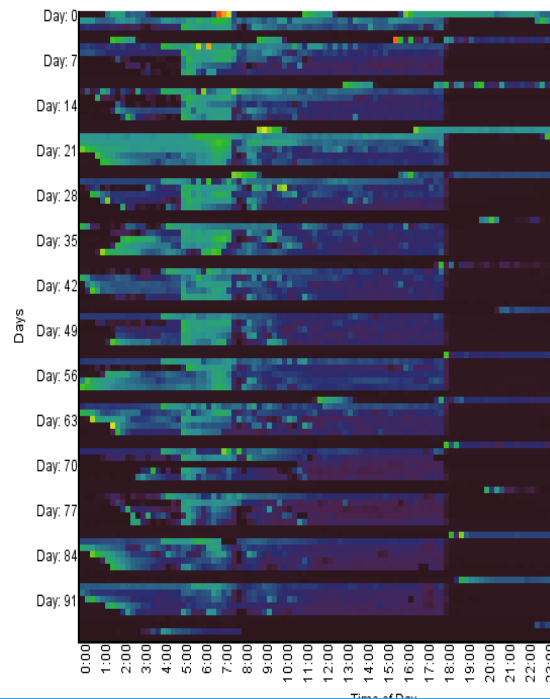


Building assessment

- Clock settings cause peak heat loads (5-7h AM)
- Heating system shuts off at 18h PM
- No heating during weekend: building mass cools down
- Start heating one day in advance to reach setpoint



Dark blue: min heat load (0kW)
Red: max. heat load (+/- 50kW)



CONCLUSION OFF THE FIRST PHASE

- FH solutions can result in significant cost savings and help in integration of renewable energy sources more efficiently
- FH solutions can exploit energy flexibility in an existing district heating system at relatively capital costs compared to other flexibility technologies
- AI and advanced control algorithms combined with IoT and cloud computing can help achieve FH in a scalable way.
- Energy savings potential for the DH network is 610 MWh annually
- This potential can be achieved by just controlling 5 largest loads (buildings) in the network

IOT CLOUD AS SOLUTION FOR SCALABILITY



AI



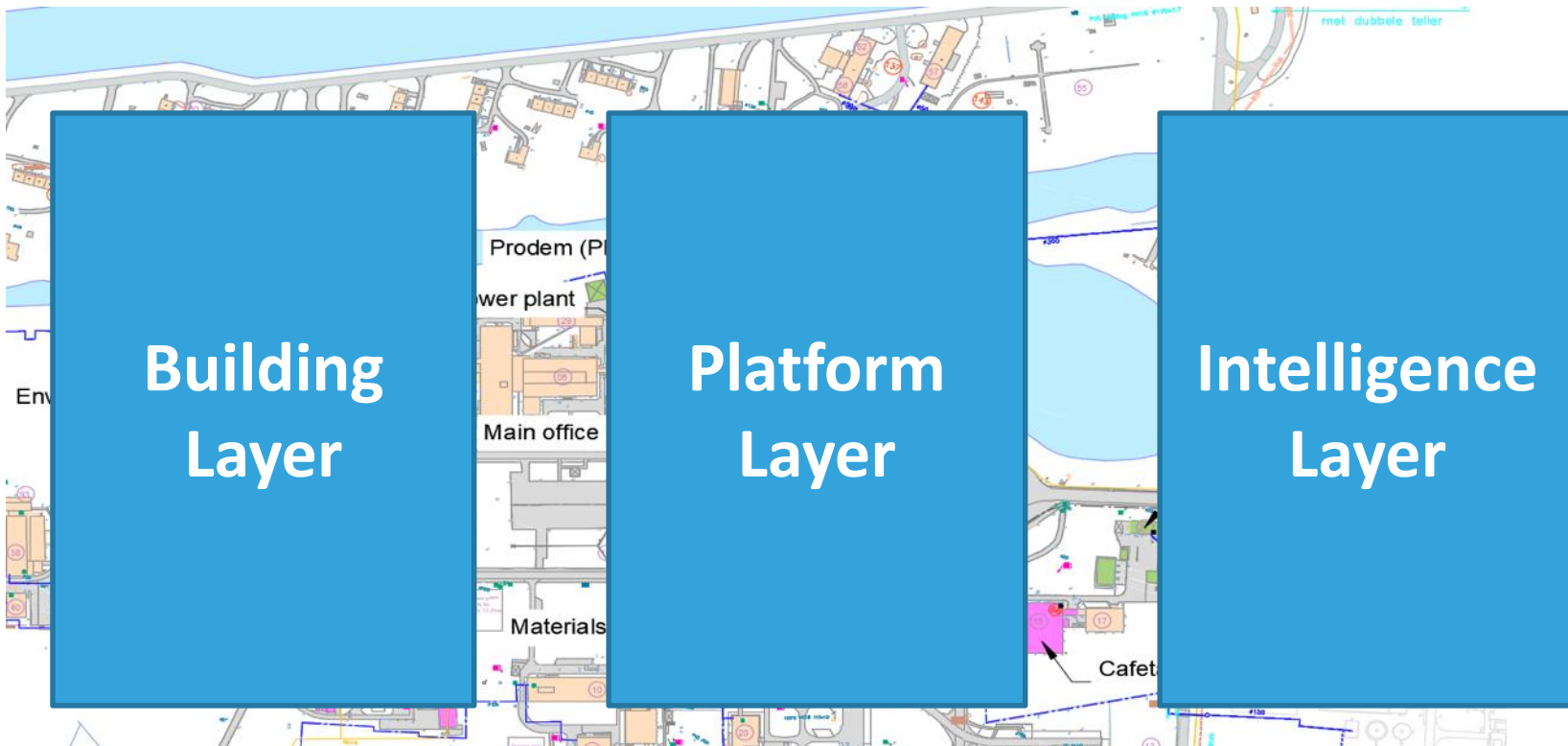
IOT CLOUD



Building



Production

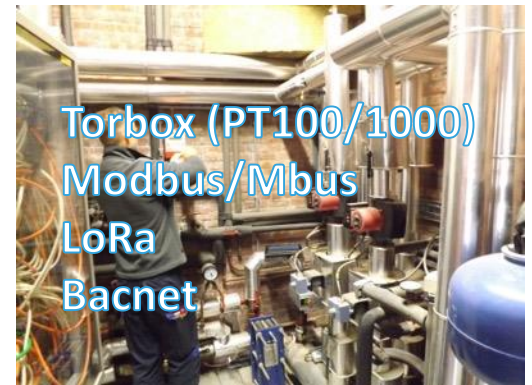
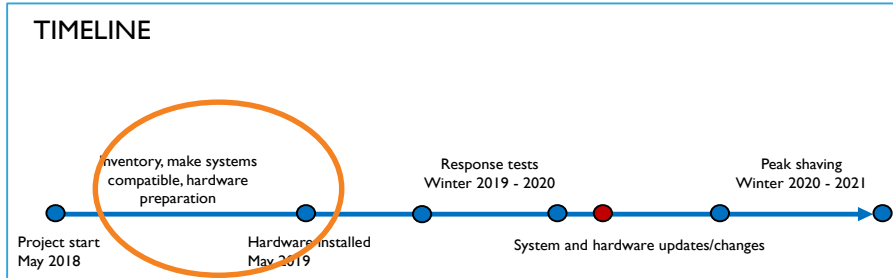


BUILDING LAYER

- TOR box
- Non-intrusive wireless heat meters
- Wireless sensors
- Dual port heat meters
- Bacnet integration
- FLEXharvester building configuration portal

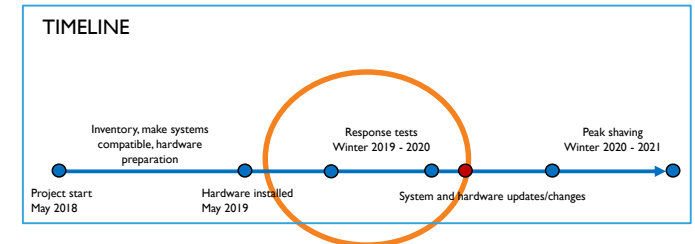
Installation per building
Total cost for deploy

< 8 hours
+/- 2.500 euro



PLATFORM LAYER

- ARM based design
- Microsoft ISV as partners
- Download centre (software , manuals , documentation)
- All software components ready to install incl. STORM District Energy Controller
- Configuration portal
- Data structure & api's pre-defined
- Alerting module
- Reporting portals based on Power BI
- Open for other services or EMS interaction



Installation of software

Configuration

Monthly Microsoft Azure cost

< 4 hours

+/- 16 hours per DH

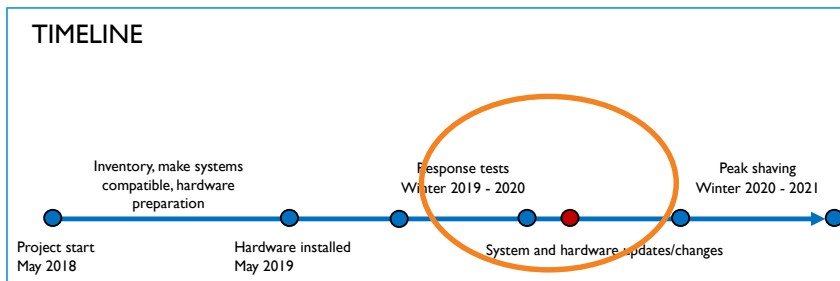
+/- 600 euro per month

INTELLIGENCE LAYER

- AI software containers (ADDM)
- Algorithm configuration portal per AI module (no coding)
- Data upload function for historical data
- Simulator



Data collection / Assessment / Simulation/ Configuration/ Response test
+/- 12 days of work



ROUNDUP

With FLEXharvester including STORM District Energy Controller every Microsoft partner can make of flexibility a success story and deploy and support peak shaving on any heat networks in less than 3 months time.

Shaving peaks and implementing flexibility is just normal