Katelien van den Berge

RUGGEDISED, City Coordinator, Rotterdam

Climate change is everyone's problem, but no-one’s task to solve it

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 731198.

IMPLEMENTING SMART CITY SOLUTIONS IN THE HEART OF SOUTH, ROTTERDAM

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PARTNERS

ROTTERDAM. MAKE IT HAPPEN.

RUGGEDISED Designing smart, resilient cities for all

ROTTERDAM AHOY

RET AARDIG ONDERWEG

Gemeente Rotterdam

Eneco

heijmans

Ballast Nedam

PATHÉ!

NPRZ

Sportbedrijf Rotterdam

No731198

Het zuider terras

UHRIG energie

VATTENFALL

DURA VERMEER

QPARK

kpn

BNG BANK

CONSULTANTS

KARRES BRANDS

KRAAIJVANGER

C Concept Design BV

adviseurs mobiliteit Goudappel Coffeng

DeZwarteHond.

Witteveen+Bos

PEUTZ

DCMR milieudienst Rijnmond

etp energie totaal projecten

buro loo

TNO innovation for life

FUTURE INSIGHT

NL GREENLABEL

ERASMUS UNIVERSITEIT ROTTERDAM

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Figures & facts HoS

- **PPP => 20 years Ballast Nedam / Heijmans & Municipality**
  - 500 million => 22 million Sustainability
  - Social program => creating jobs locally
  - 120.000 m^2 new & renovated buildings
  - 250 e-busses => 4000 bus movements
- **PV panels 2500 MWh => 1200 ton CO2 annual reduction**
  - 15.500 m2 are realized
  - 21.700 m2 PV panels in total, to be finished in Q4 2023
- **Smart Thermal Grid 1200 MWh decrease energy use => 300 CO2 reduction annually**
- **nZEB (BENG) => 2000 ton CO2 annual reduction**
- **Smart light poles & smart waste management**

RUGGEDISED GOAL:

GENERATE AND REUSE AS MUCH AS POSSIBLE ENERGY WITHIN THE PROJECT AREA

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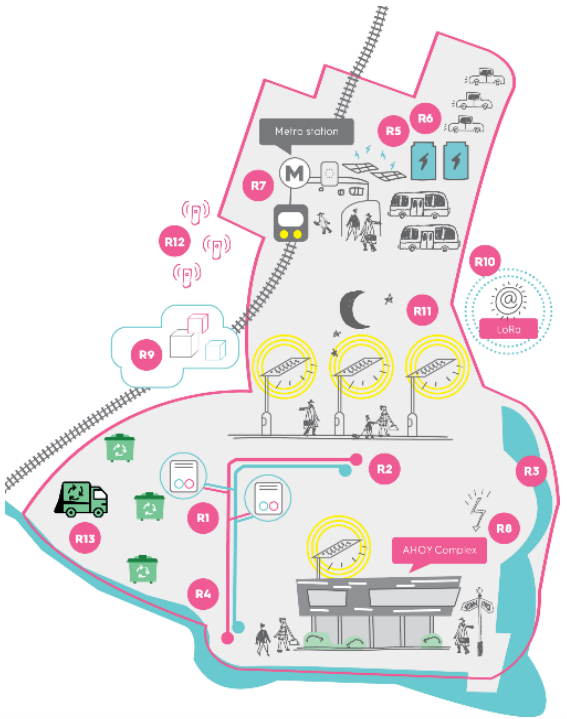
Smart Thermal Grid

Smart Electric Grid

ICT on City Level

		ICT	Energie	Mobiliteit
R1	Seasonal Aquifer		V	
R2	Thermal energy: wastewater		V	
R3	Thermal energy: surface water		V	
R4	Thermal energy: asphalt collector		V	
R5	DC grid: PV panels, storage & E-mobility	V	V	V
R6	Smart charging parking	V	V	V
R7	Optimalising E-bus fleet RET	V	V	V
R8	District energy management systeem	V	V	
R9	3-D city operations model	V		
R10	LoRa netwerk	V		
R11	Efficient & intelligent street lights	V	V	
R12	Nerdalize E-radiator	V	V	
R13	Smart Waste Management	V		V



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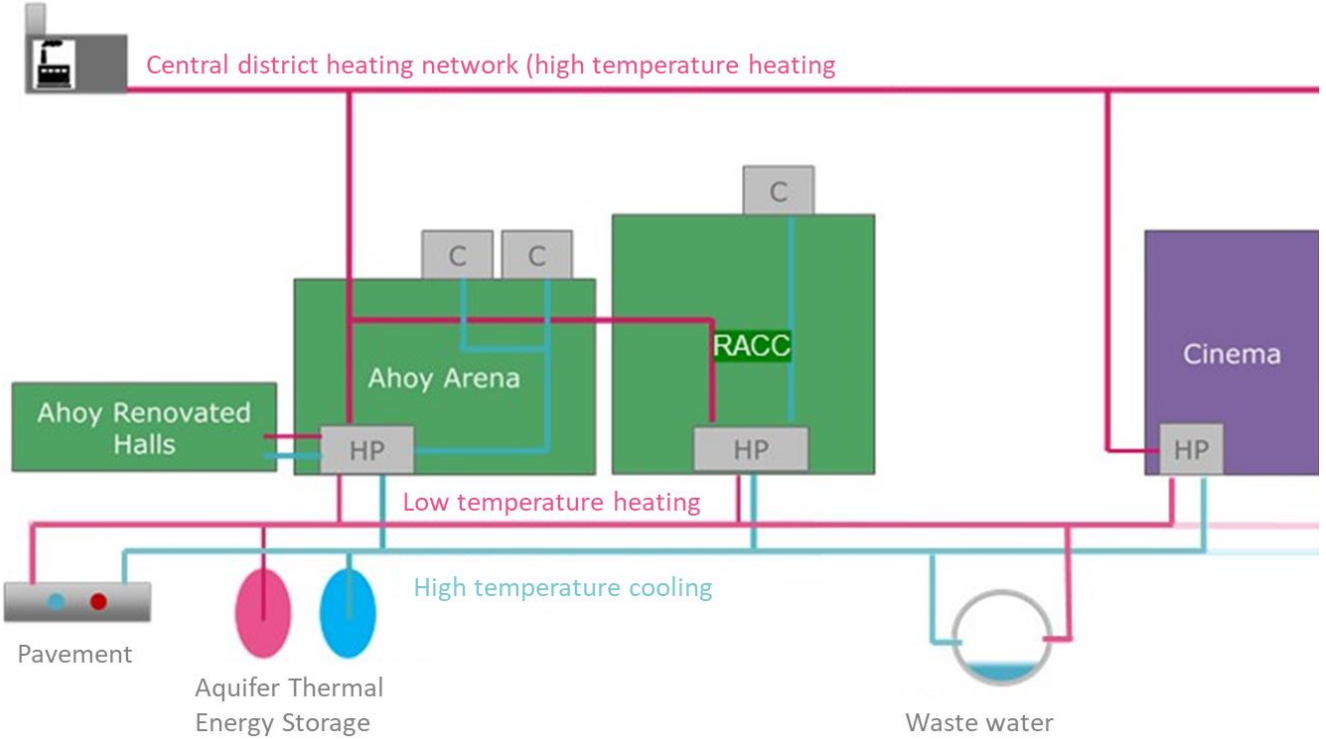
Smart Thermal Grid



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Smart Thermal Grid

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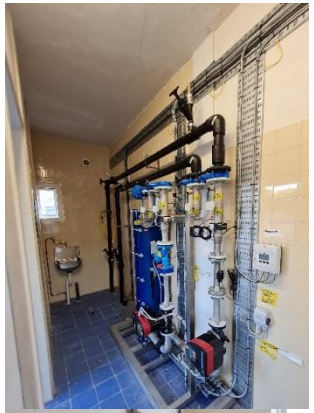

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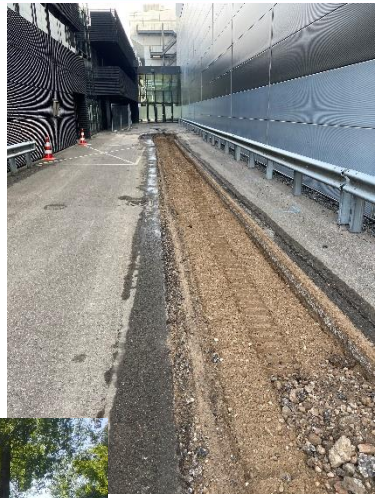

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Failure

- Contractual changes in the overarching area development, which were a big hazzle.

Turning point

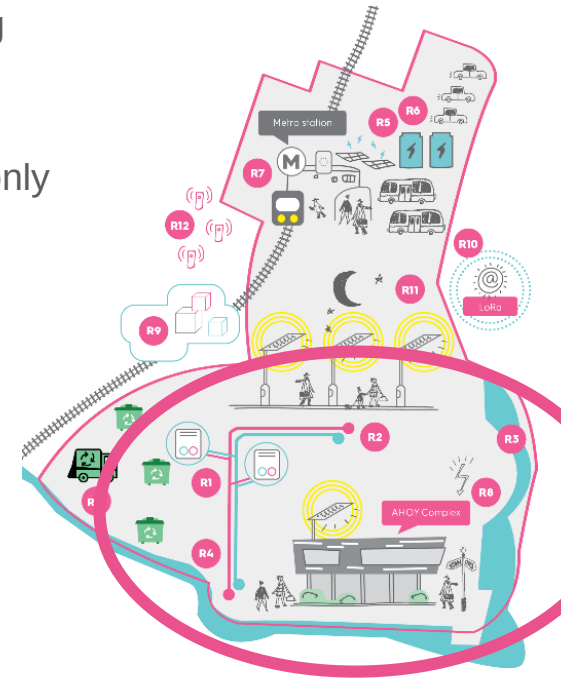
- Shared understanding that point of no return had been passed. There was only one way forward possible. Interdependence on ambassadorship.

Success

- RUGGEDISED really needed a planned urban development, otherwise the smart solutions couldn't have implemented.

Take away

- Put effort in getting to know each others interests
- Share expectations, be as open on each other's BuCa's and accept the different profit models



CLIMATE CHANGE IS EVERYONES PROBLEM,

BUT NO-ONE'S TASK TO SOLVE IT

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Smart Electric Grid

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Failure

- Local grid operator didn't want to give permission for experimental status. Needed for exchanging from A to B and vice versa.
- Charging points for buses are delayed at Zuidplein.

Turning point

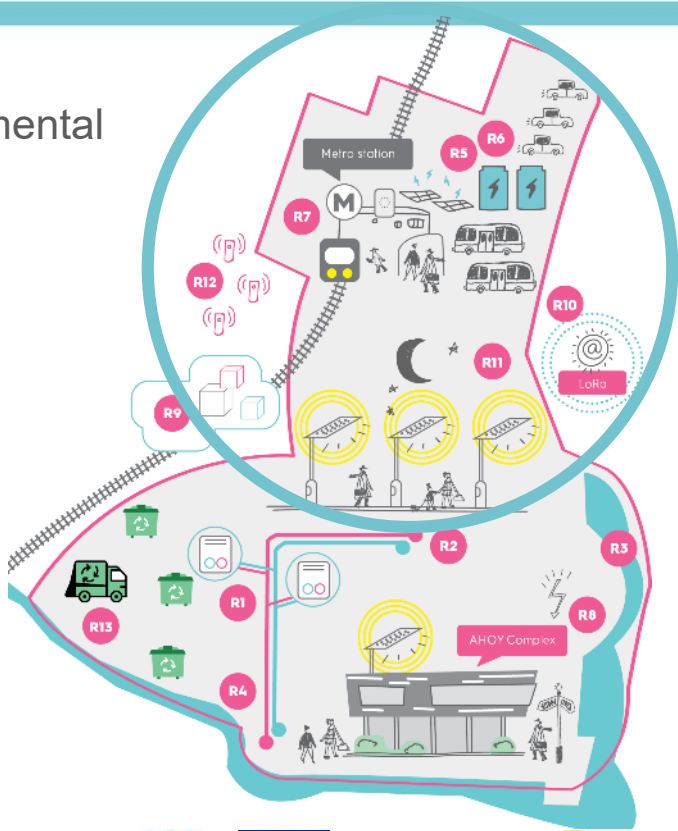
- Implementing solutions, not connect them

Success

- Erasmus University showed that a battery was not needed.
- The implementation of large amounts of PV panels.

Take away

- Organise the governance & legal boundaries at forehand



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ICT on City Level

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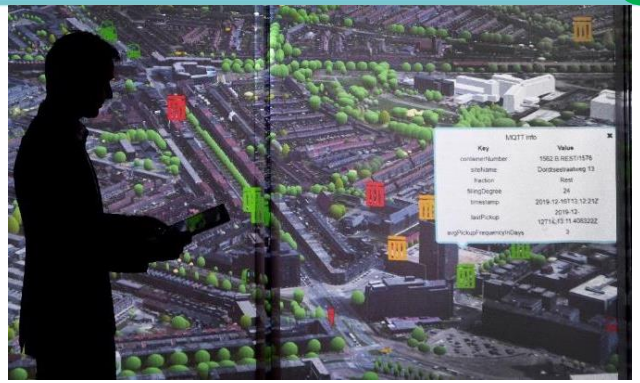

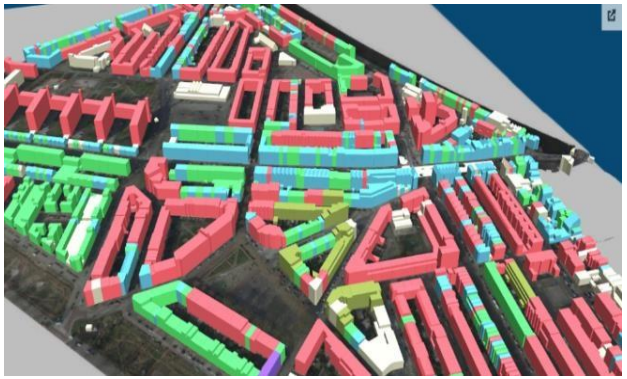

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ICT on City Level

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Failure:

- Analysing ‘energy’ flows in the digital twin, due to delay of implementation STG.

Success:

- Building of a working prototype of the Open Urban Platform (incl. Digital twin viewer)
- Development of the desired working prototype
- Development and testing open data standards => exchanging dynamic (real-time) sensor data between data source and platform.
- to make the next step in development of the Open Urban platform with Digital Twin

Take away:

- Data governance (and –management) within an organisation.
- ‘Learn by doing’, go experimenting (also as a government) to learn and to be a part of the network. Learn to develop in uncertain circumstances.

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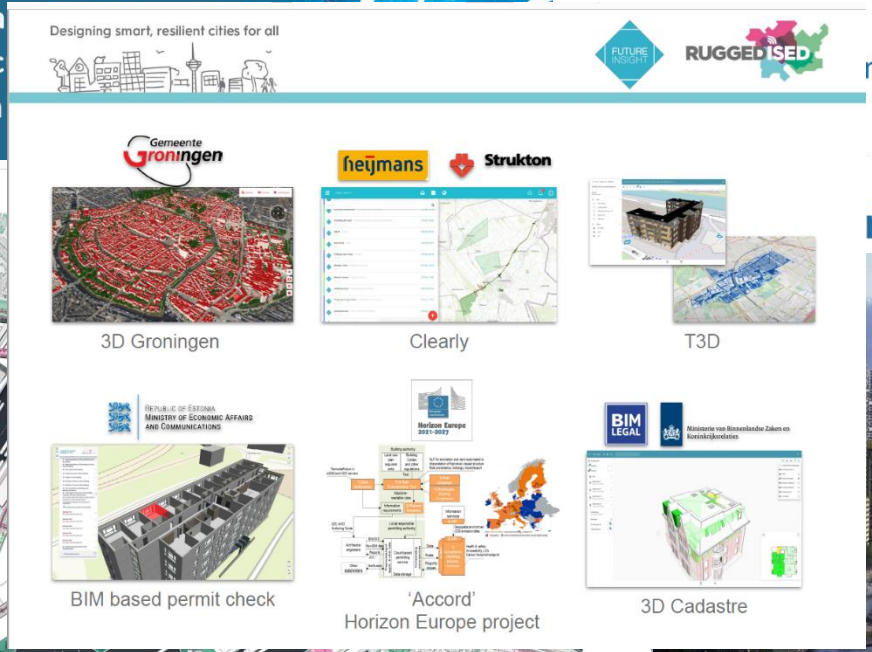
Spin-offs



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- Energy transition is essential to fight climate change
- The Climate goals are political and social goals, not necessarily business goals
- Overall in the project we notice that we are all aware of the climate change problem and we know we have to tackle it, but when it comes down to it, we wait for others to take action and ownership of the solutions we all know will help
- Ruggedised created awareness within the PPP and stimulated more additional sustainable projects
- New way of urban development => still unknown (unloved)

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www.allesisopzuid.nl

www.ruggedised.EU

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