

SMART KALASATAMA



Picture: Riku Pihlanto

Kerkko Vanhanen, Programme Director, Forum Virium Helsinki
10th Baltic Housing Conference, Tallinn 17 April 2019



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SMART KALASATAMA FROM A HARBOUR TO RESIDENTIAL DISTRICT



1863-2008



2018-2020

Smart and sustainable neighborhood

2015

Agile piloting programme starts

2015-2018

Smart Kalasatama: building an innovation platform

2014

Smart Kalasatama: vision

2013

Decision: Kalasatama to be smart city district

2020

2020

City environment house ready

2019

Kesko campus open

2018

Health and wellbeing center open
REDI shopping centre open

2016

School open
Bridge to recreation area Mustikkamaa

2015

2012

First residents

2009

Construction begins

2009-2011

Temporary uses for empty areas

2010

2007

Metro station

Helsinki

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HELSINKI CITY STRATEGY and CARBON NEUTRAL HELSINKI 2035 ACTION PLAN

The Most Functional City in the World

Helsinki City Strategy 2017–2021

A scheduled plan with
147 specific actions to
achieve emission goals
are defined by category.

“Helsinki aims to cut emissions by 60% from 1990 to 2030 and resets the city’s target year for carbon neutrality to 2035 from the previous target year of 2050.”



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SMART KALASATAMA

Helsinki Smart City Innovation District



Brownfield district

Construction
2011-2035

Target: 25 000 people,
10 000 jobs

Now ~3500 people

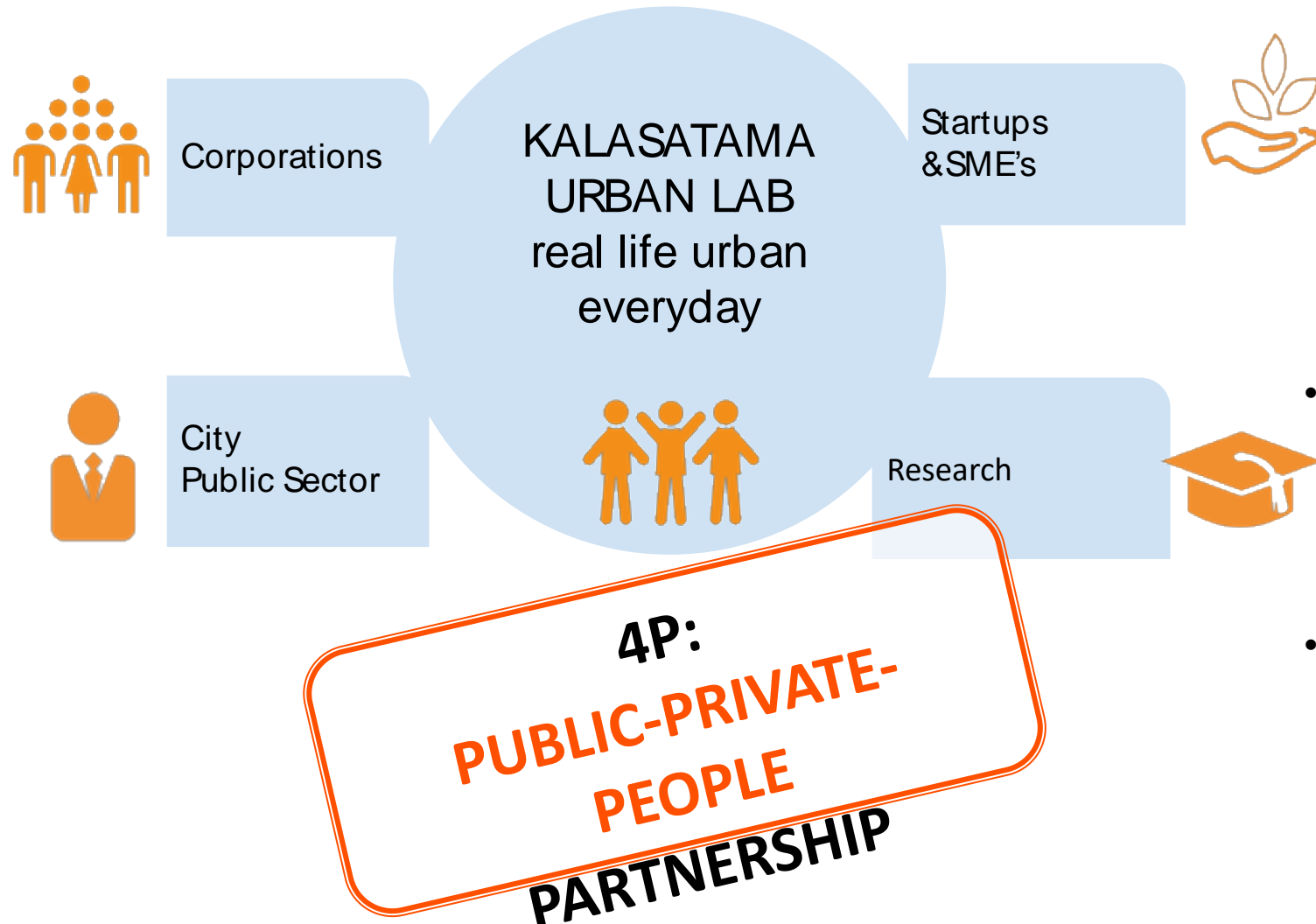
A group of people are sitting on a wooden pier in the foreground, looking out over a body of water. In the background, a long pier extends into the water, and a boat is visible. The water is shimmering with sunlight. The text "Vision: One more hour a day" is overlaid on the image.

Vision:

One more hour a day

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INNOVATION ECOSYSTEMS CO-CREATING VALUE



- Smart Kalasatama is developed flexibly and through piloting, in close co-operation with 200+ stakeholders: Already 1/3 of the residents (over 1100) in the district have participated the pilots and other co-creation activities as well as 140+ companies and many city officials and academic institutions.
- 1/3 of the residents involved
140+ companies, startups & SMEs
21 agile pilots completed**
- All city sectors are involved in developing the district:** urban planning, education, social and healthcare, culture & leisure as well as the economic sector.
- The collaboration is facilitated by Innovator's club, a network for developers and innovators.

KALASATAMA URBAN LAB



Co-creation space

- Showroom for smart & sustainable solutions
- Climate positive events
- Experimentation testbed for self-service use

For...

- Kalasatama innovation community
- Innovation tourists
- Citizens

In use since Nov 2018

- ~215 m²
- for ~60 people

A photograph of a forest floor with moss and mushrooms, with a blurred city skyline in the background. The foreground shows a hand reaching towards several red mushrooms growing on a bed of yellow-green moss. The background is a soft-focus view of a city at dusk or dawn, with lights from buildings and trees visible through the branches.

SOME **EXAMPLES** OF PROJECTS AND INVESTMENTS

Photo: Jussi Hellsten

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FLEXI SPACES – OPEN ALL SPACES IN THE DISTRICT



Pieces of the **ECOSYSTEM**:

- Mobile reservation
- Authentication
- Mobile Payment
- Smart Locking
- All in one system
- Real time - Open APIs

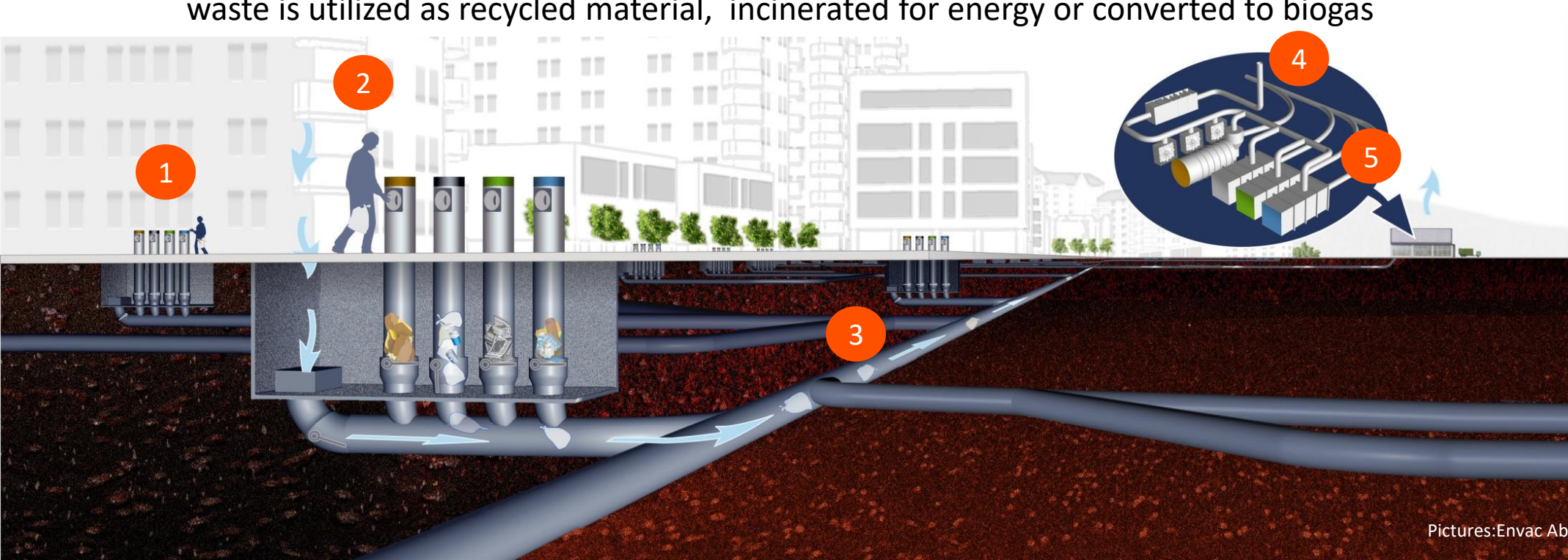


AUTOMATED WASTE COLLECTION SYSTEM IN KALASATAMA



AUTOMATED WASTE COLLECTION SYSTEM IN KALASATAMA

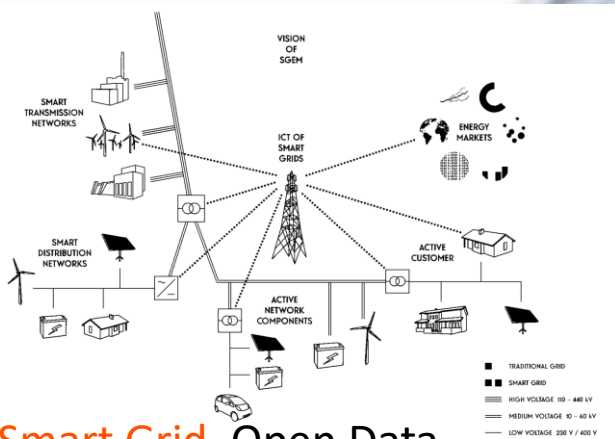
- 1 The waste collection points are located in connection to the exits in each block.
- 2 The residents sort out the waste – mixed waste, biowaste, paper, cardboard and plastic packaging.
- 3 Using an underground pipe network, waste travels from the inlet points in vacuum
- 4 to the waste collection station in the basement of the Redi Mall and in the designated waste containers.
- 5 Garbage trucks pick up full containers from the station and transport the waste onwards → The collected waste is utilized as recycled material, incinerated for energy or converted to biogas



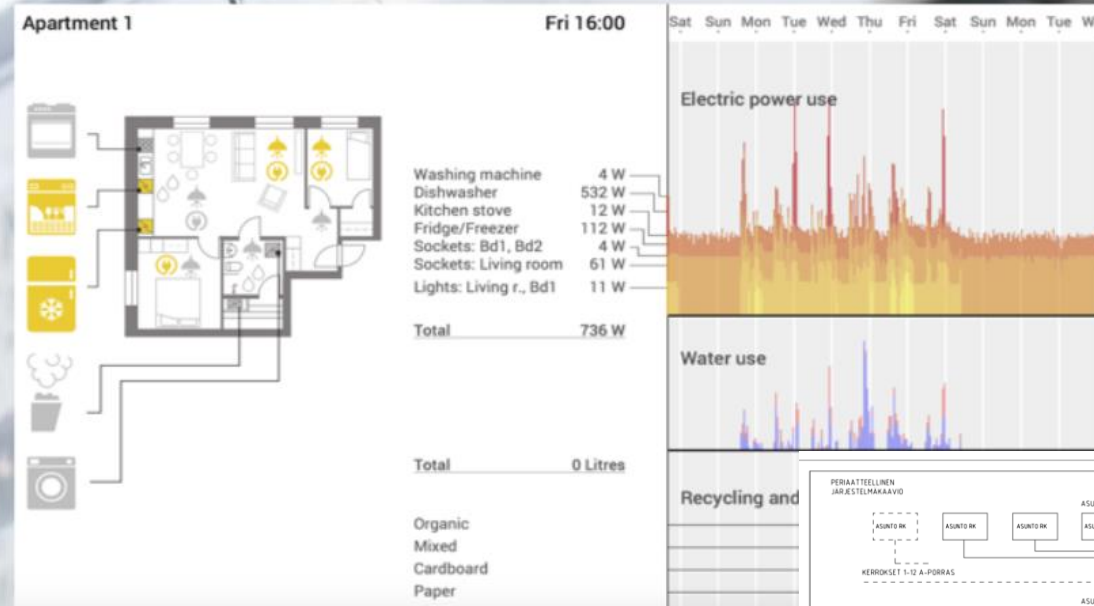
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Pictures: Envac Ab

EXAMPLE: SMART ENERGY IN KALASATAMA

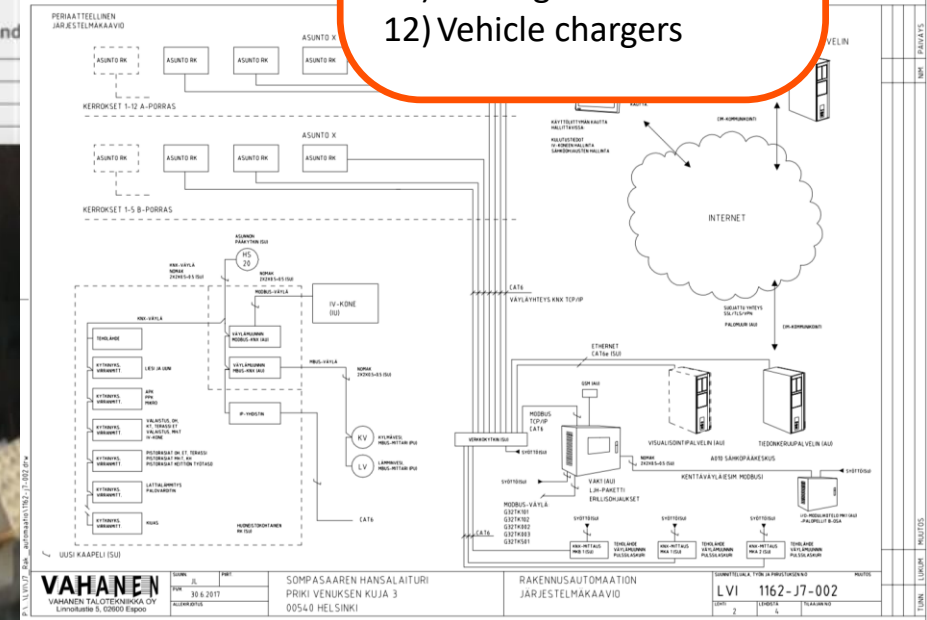


Smart Grid, Open Data



Metering subtypes:

- 1) Lighting
- 2) Wall and floor outlets
- 3) Kitchen countertop
- 4) Washer/dryer
- 5) Refrigeration
- 6) Sauna heater
- 7) Direct heating devices
- 8) Storage heating
- 9) Boilers
- 10) Air ventilation
- 11) Cooling devices
- 12) Vehicle chargers



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AI-BASED DEMAND RESPONSE OF HEAT USE AT HOME & OFFICES

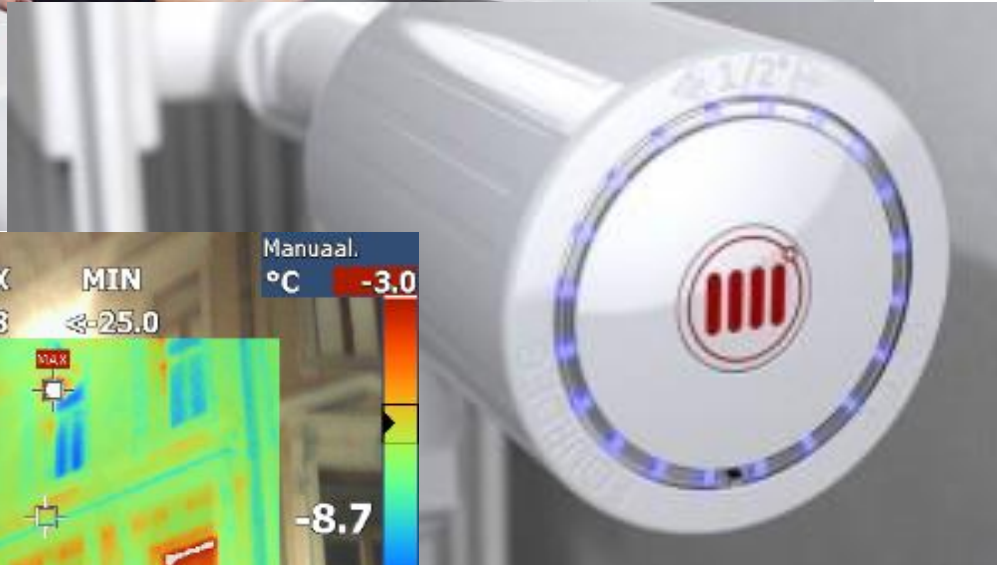
Genetic Algorithm optimizes smart thermostat:

- Home/Office temperature

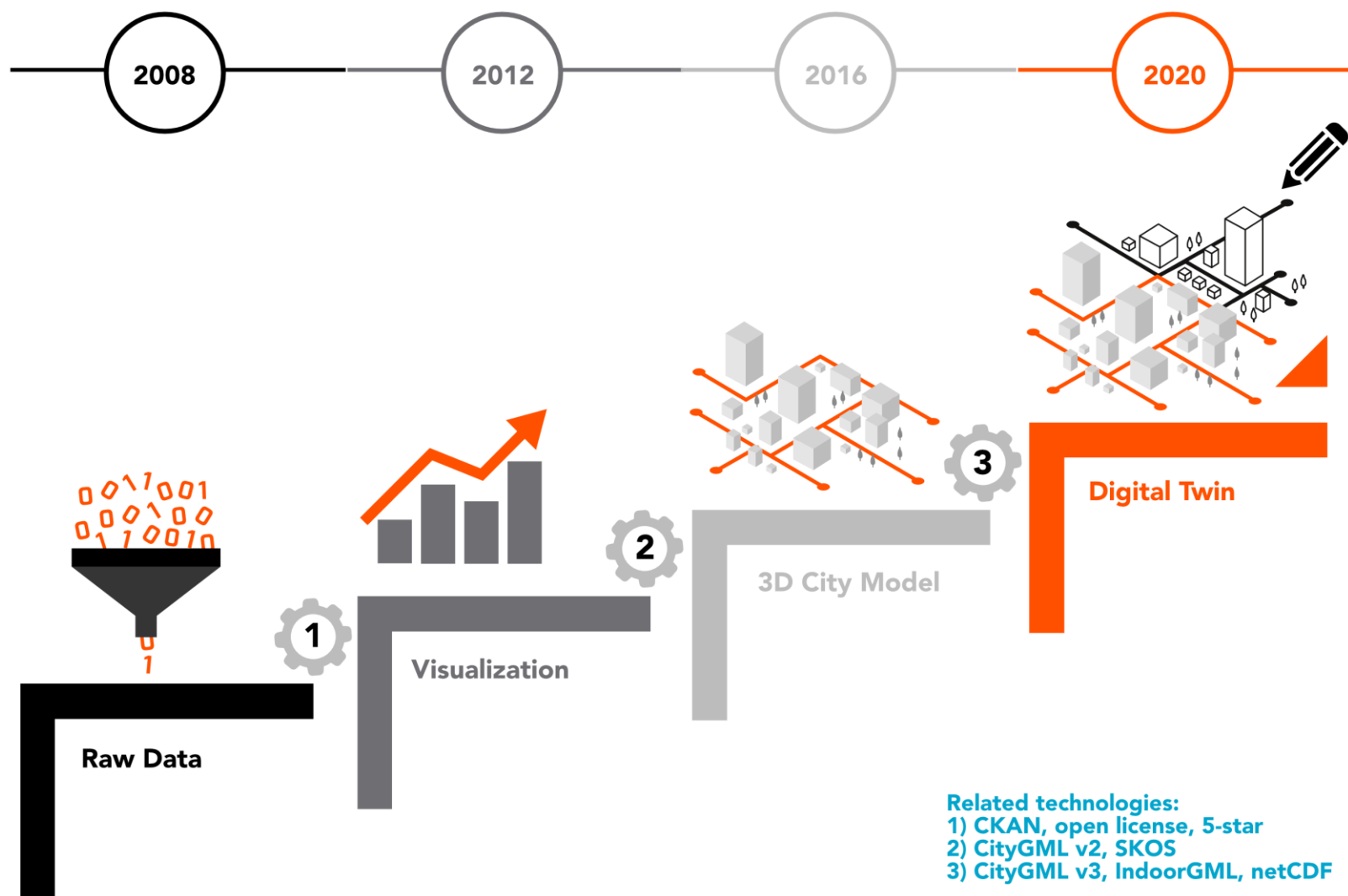
Combine data from:

- Grid demand response
- Weather forecast
- Personal preferences
- Energy use forecast

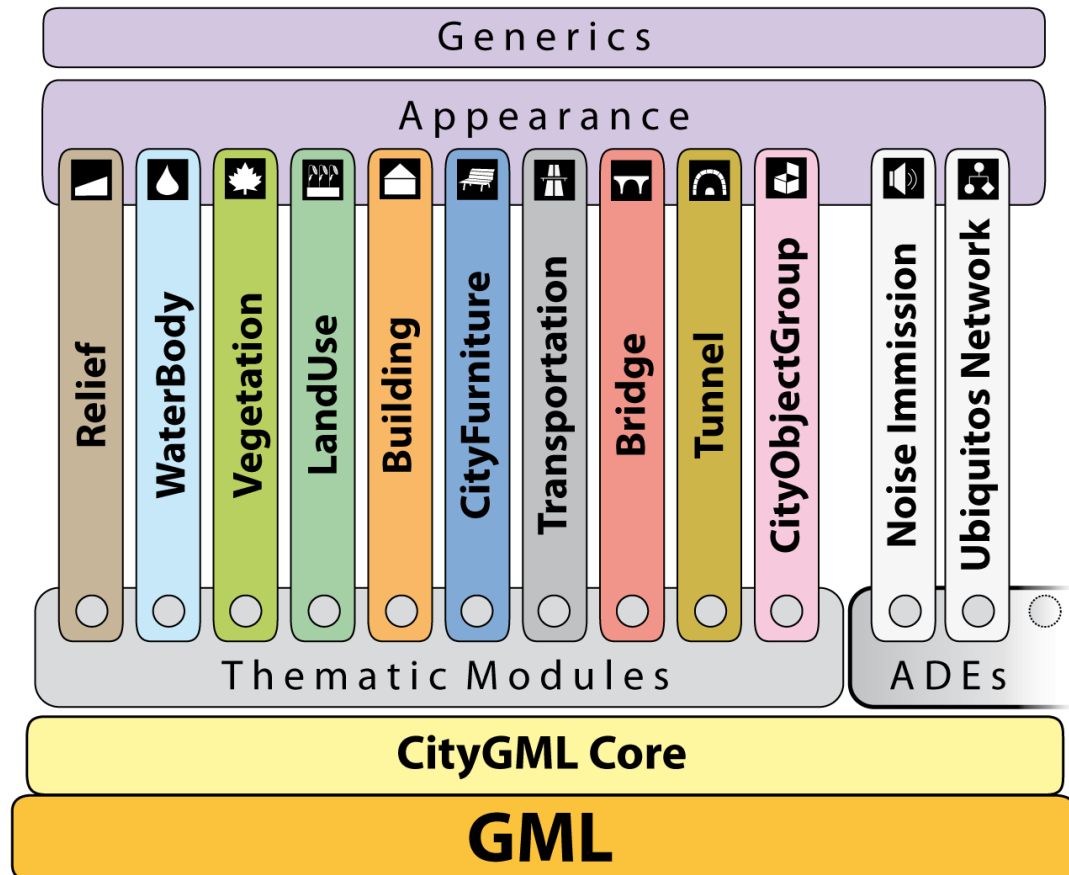
- **15% less energy use**
- **Avoid grid peak loads**



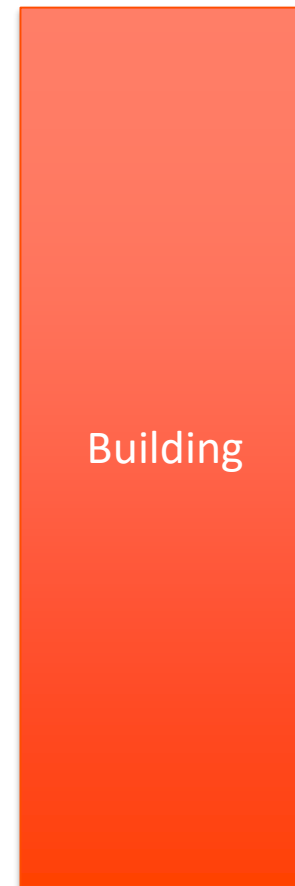
OPEN DATA SERVICES



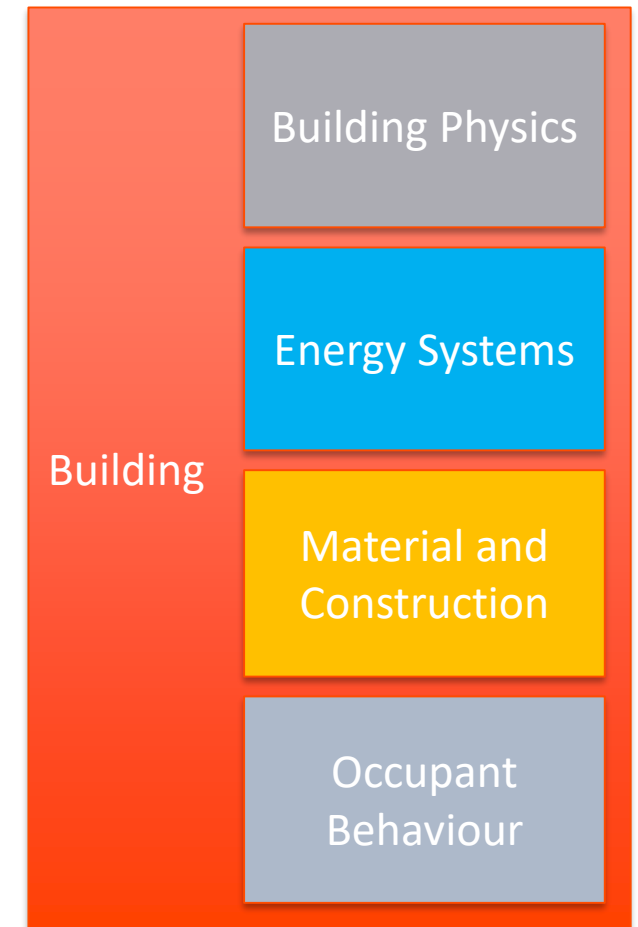
DATA MODELS AND STANDARDS: CITYGML



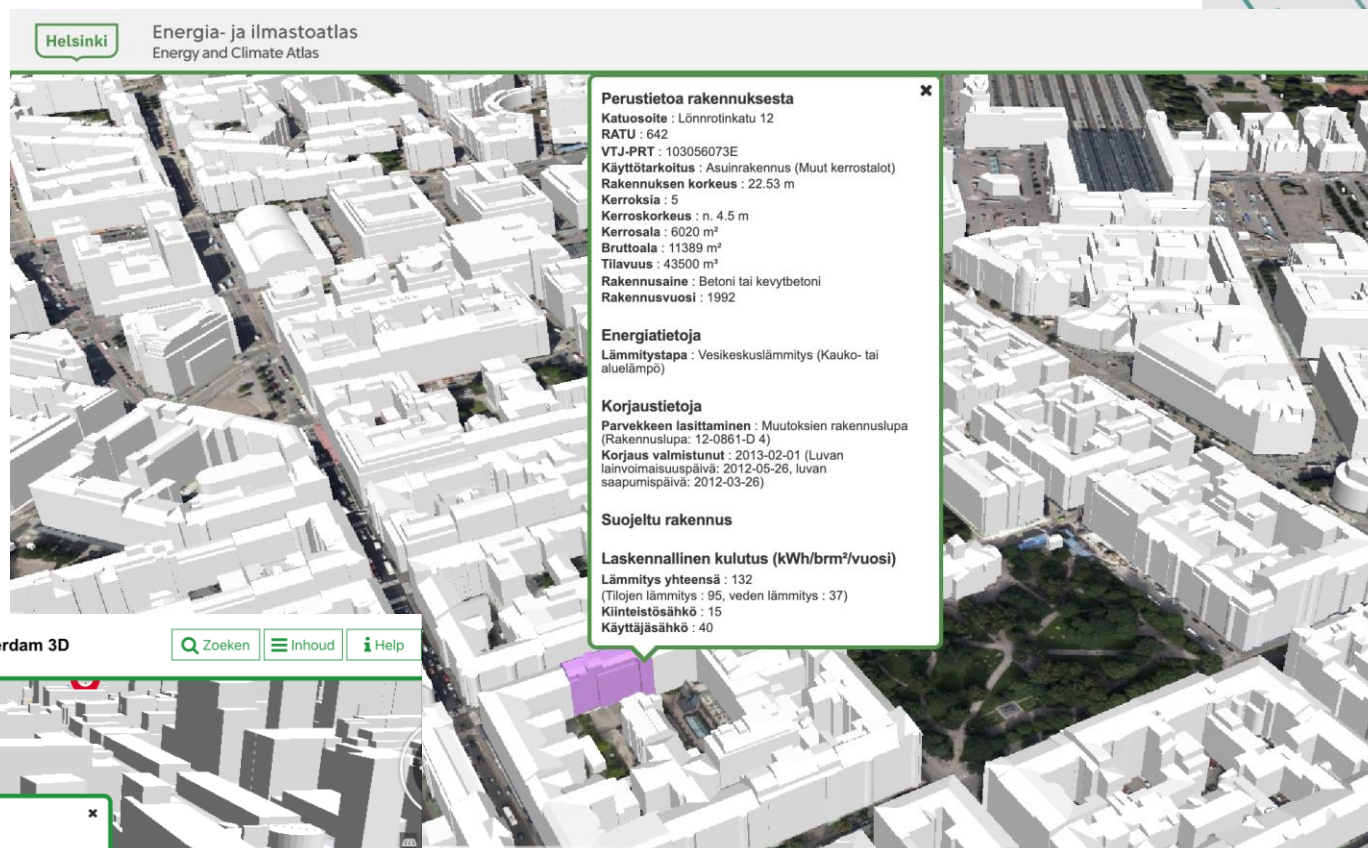
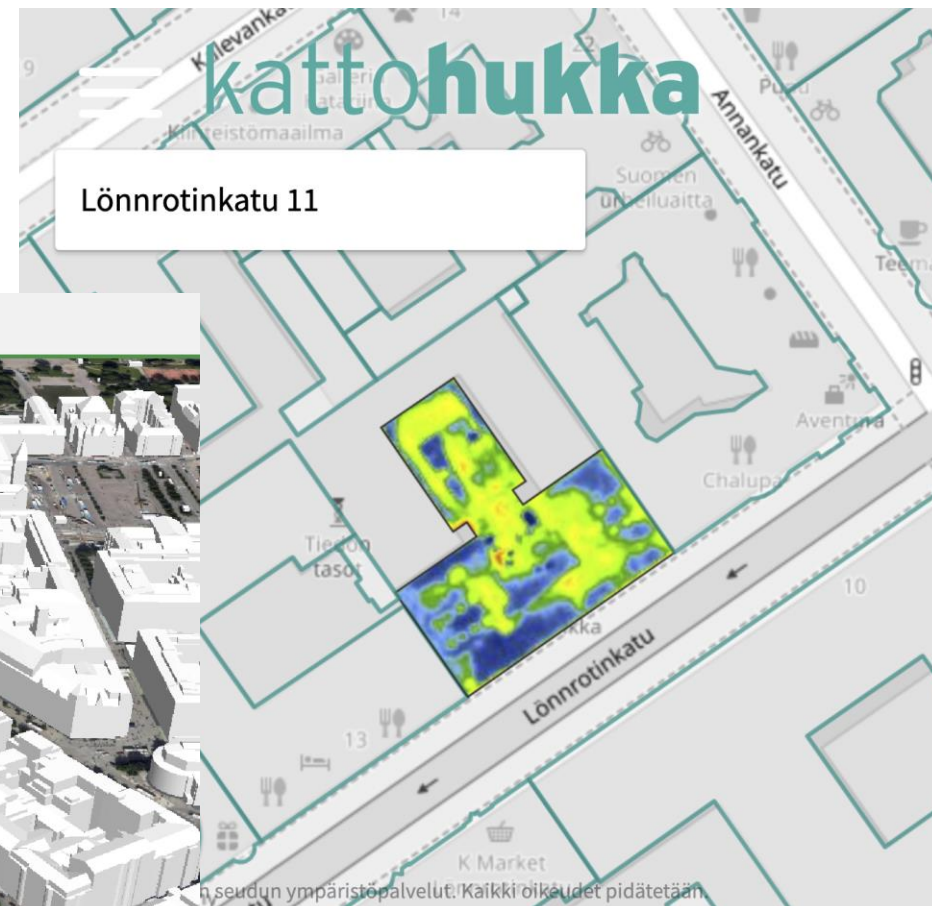
Standard model



Extended model



3D CITY MODEL



SMART KALASATAMA PUBLICATIONS

SMART
KALASATAMA

COOK BOOK

Recipes for agile pilots



Tilat avoimiksi

Tyhjät ja vajaakäyttöiset
tilat joustavasti
palveluksi



Helsinki

NÄIN TEET TILASTASI
JOUSTOTILAN

Ohjeistus viihtymään



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www.fiksukalasatama.fi

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www.myhelsinki.fi

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THANK YOU!

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Picture: Jussi Hellsten