



JYVÄSKYLÄN
KANGAS

Smart Kangas



17th May 2017

23.5.2017

Tanja Oksa, liaison manager, City of Jyväskylä

Central location



Kangas
An Extension of the City Center



Kangas Timeline

1874-2010

Paper mill

2010

City buys the area, development starts

2014

Development of the old paper mill building started

2015

Residential construction started

2016

Learning institutions moved to Kangas

2017

First new residents

2030

3000 residents, 2000 jobs

2040

5000 residents, 2101 jobs

Participating - *Sharing ideas and dreams*

- Pilot project for city planning in cooperation with Cliq-project and HUB-Jyväskylä
 - 17.2.-7.4.2011, before actual planning started
 - 600 people shared their thoughts of future cities
- Continuous process

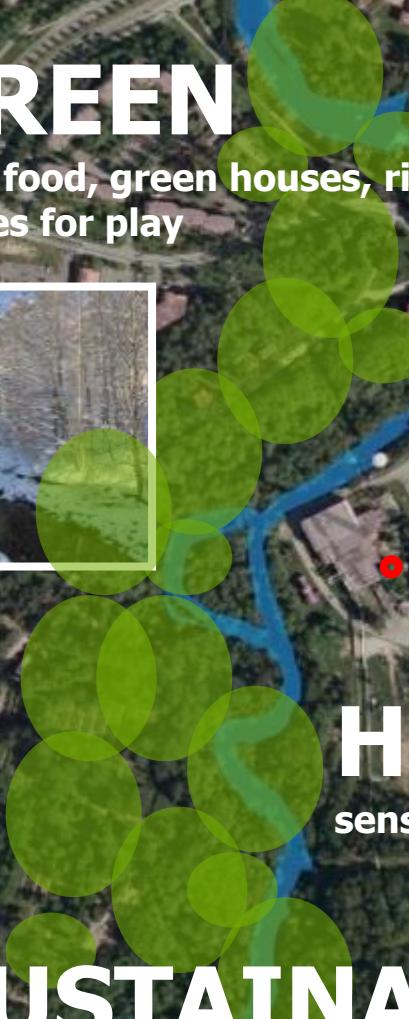
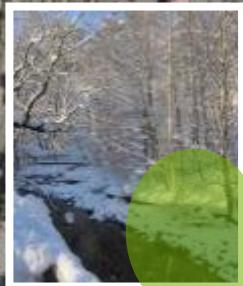


The screenshot shows the homepage of the Kaupungin Kangas website. The header features the text 'KAUPUNGIN KANGAS' in large, bold letters, followed by a row of stylized cartoon faces. Below the header are several navigation links: 'Projektiutiset', 'Osallistu ja vaikuta!', 'Projektikalenteri', 'Kankaan alue', and 'Yhteystiedot'. At the bottom of the page are three prominent buttons: 'AVOIN IDEAFOORUMI' (Orange button), 'OSALLISTU & VAIKUTA!' (Red button), and 'KANKAAN ALUE' (Black button). A small camera icon is located next to the 'KANKAAN ALUE' button.

Osallistuaan kaupunkilevottomien pilotti Jyväskylän kerii kaupunkilaisilta ideita, joissa rakentuu uusi kaupunginosa. Tuo kaikki pilottivat =

GREEN

local food, green houses, river shores for play



FEET

Attractive pedestrian and cycling environment. People first, parking underground



HEART

Experiences, vibrancy and sense of community



SUSTAINABLE and SMART

resource wisdom, local energy, carbon neutral area



Main Themes of Kangas



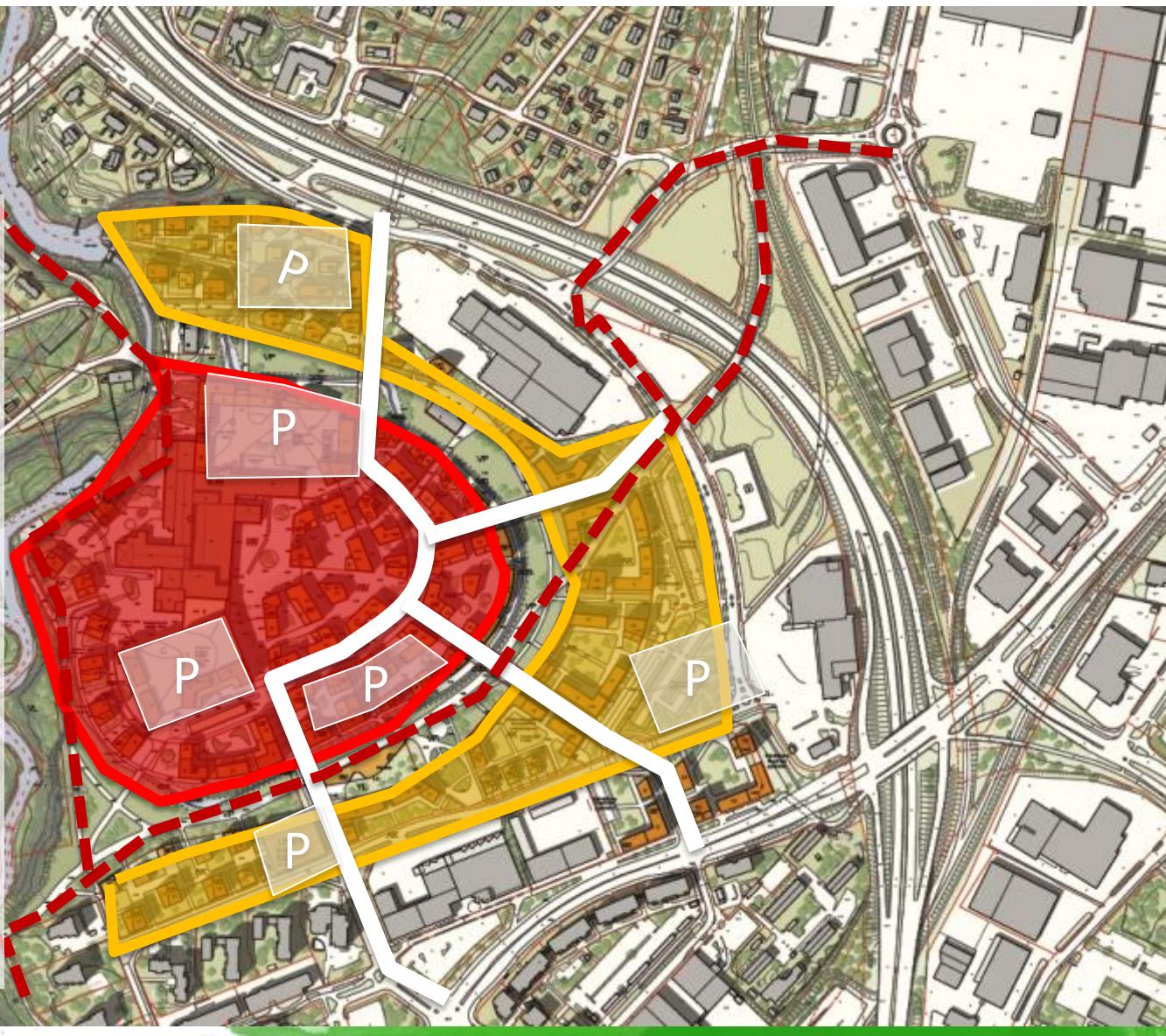


JYVÄSKYLÄN
KANGAS

2025

- **Heart:** working, living and services
- **Green belt:** recreation and a quality corridor for cyclists
- **Parking:** 2-4 public parking facilities, in the Heart, app. 1400 parking places.
Housing area shared parking 600 parking spaces

Basic structure



Path of Sustainability and Wiseness

People in Jyväskylä were asked about their dreams and ideas before the actual planning started

- Led to 600 individuals sharing their thoughts



Themes of development

Kytkin-project

- Smart area level solutions developed instead of house by house optimization

One Planet Living approach



Wise Kangas demands

- Electronic key and access management + Premises for connections and devices + Areal and telecommunicational networks + Smart metering and management + Area portal

Willingness of stakeholders to do things
more wisely & city strategy



JYVÄSKYLÄN
KANGAS



Integrated and intelligent waste management in the Kangas area

- Integrated waste management, 1 waste center for 4-6 residential buildings
 - Deep collection containers
 - Reduces the space and need for transportation
 - Integrated into the electric locking systems
- Circwaste, EU LIFE funding
 - Electric locking
 - Measuring the produced waste per household
 - Possible invoicing system to be developed according to produced waste amounts, gamification



Solar Energy in Kangas

- Solar energy town plan for the area
 - 2,7 x increase in solar potential by correct orientation and angle of rooftops
 - Idea of one solar operator for the area in the future
- Demand to enable solar structure installations later
 - In town plan
- 1 st building with solar panels in march 2016
 - Jyväskylä Energy company's 1st power purchase agreement
- Ideas for piloting virtual management of energy consumption and virtual metering of produced solar power
 - In co operation with Aalto University and other partners
- Possibility to battery installation under examination



Centralized electronic locking and access control

- Significant innovation enabler system
- Lower life-cycle costs
- Increased convenience
 - "One Kangas, multiple spaces, one key"
 - Single Kangas identity over all services
 - Easy deployment of new services



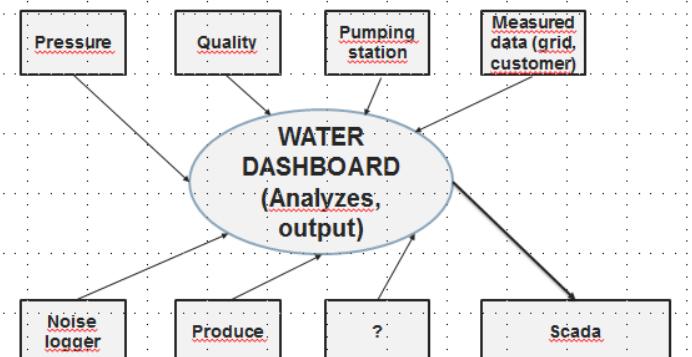
JYVÄSKYLÄN
ENERGIA
— YHTIÖT —

Jyväskylän Energia Ltd.

- Local electricity, water and district heat provider 100% owned by the city of Jyväskylä
- Excellent reliability – security of electricity, district heat and water supply is 99,99%
- In our energy production the share of domestic fuels is >90%. The share of renewables is >50%
- **Preliminary energy solutions at Kangas:**
 - Energy efficient district cooling
 - To enable solar energy production in large scale
 - To utilise return water from district heating to melt icy and snowy pavement
 - Smart metering – automatic meter reading from energy and water meters
 - E-mobility
 - Solar energy service models

Metering in Kangas

- Consumption of water, electricity, heat and cooling is measured on an hourly basis and reported electronically in all buildings.
- Extended metering environment for water grids
 - The quality of water and the conditions in the water grid
 - Water dashboard, (IoT), Collecting, analysing data and controlling systems in real time
- The measuring points collect data from:
 - the consumption, the quality and the pressure of water and the pressure of the sewage
- Monitoring the technical conditions of the grid noise level loggers



Kangas- Cyber security strategy

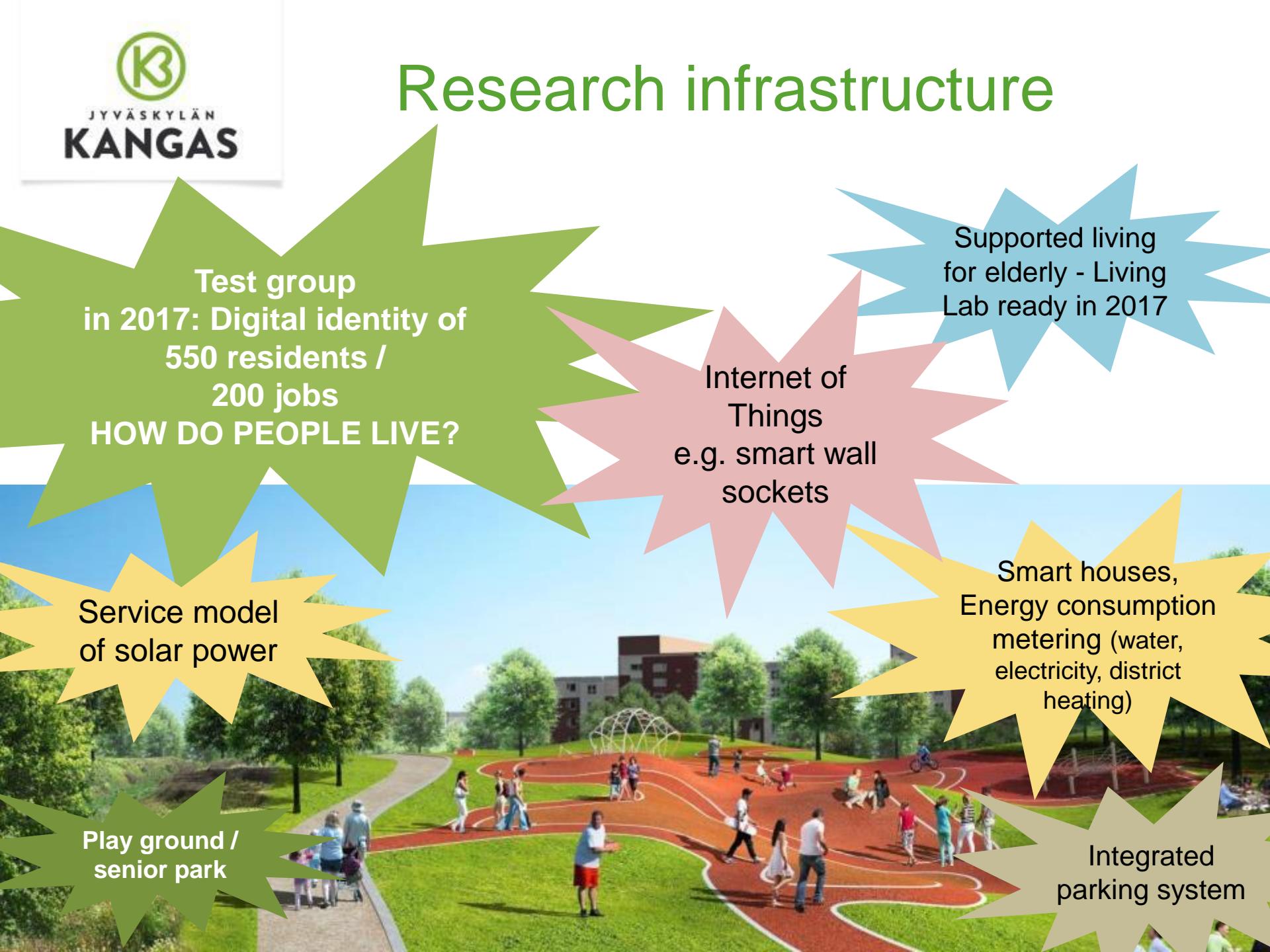
- Drafted in 2015, followed by cyber security action plan
Day-to-day existence in Kangas is agreeable, easy and secure in a pleasant environment
- Ensuring cyber security is constant work throughout the lifecycle of the city
- 3 corner stones: management model, contractual obligations and risk-based action plans

Local service company – Kankaan Palvelu Oy



- First owned by YIT, Skanska and the City of Jyväskylä, later on the ownership changes
- Runs
 - Waste management
 - Shared yards
 - %-culture
 - Area portal

Research infrastructure



Test group
in 2017: Digital identity of
550 residents /
200 jobs
HOW DO PEOPLE LIVE?

Internet of
Things
e.g. smart wall
sockets

Service model
of solar power

Play ground /
senior park

Supported living
for elderly - Living
Lab ready in 2017

Smart houses,
Energy consumption
metering (water,
electricity, district
heating)

Integrated
parking system

Smart housing for seniors

- City owned Jyväskylän Vuokra-asunnot Oy is the constructor
- Hybrid residential building
 - 60 person unit for assisted living 300sqm with common spaces, cafe and activities
 - Senior rental ja normal rental housing, 5000 sqm
- Development projects
 - User centered design ja participation
 - Living Lab for Elderly care
 - Smart care in the smart city
 - With local Universities
 - An other project going on
 - ARA is funding (The Housing Finance and Development Centre of Finland)
 - Aim is to have commos premises between student and senior housing together with kindergarden



Culture, Art & Events

- In Kangas 1% of building costs ringfenced to Culture and Arts –
 - %-culture principle
 - Total 5,5 M€ by 2030
- Pop-up culture and
- “Open to people” -philosophy



JYVÄSKYLÄ

Wise Kangas - Smart City

Solar energy pilots

Integrated, smart parking

Integrated smart waste management

Re-cycled building materials

Smart energy solutions, metering

District heating and cooling

De-frosting pavements – recycled water from the district heating

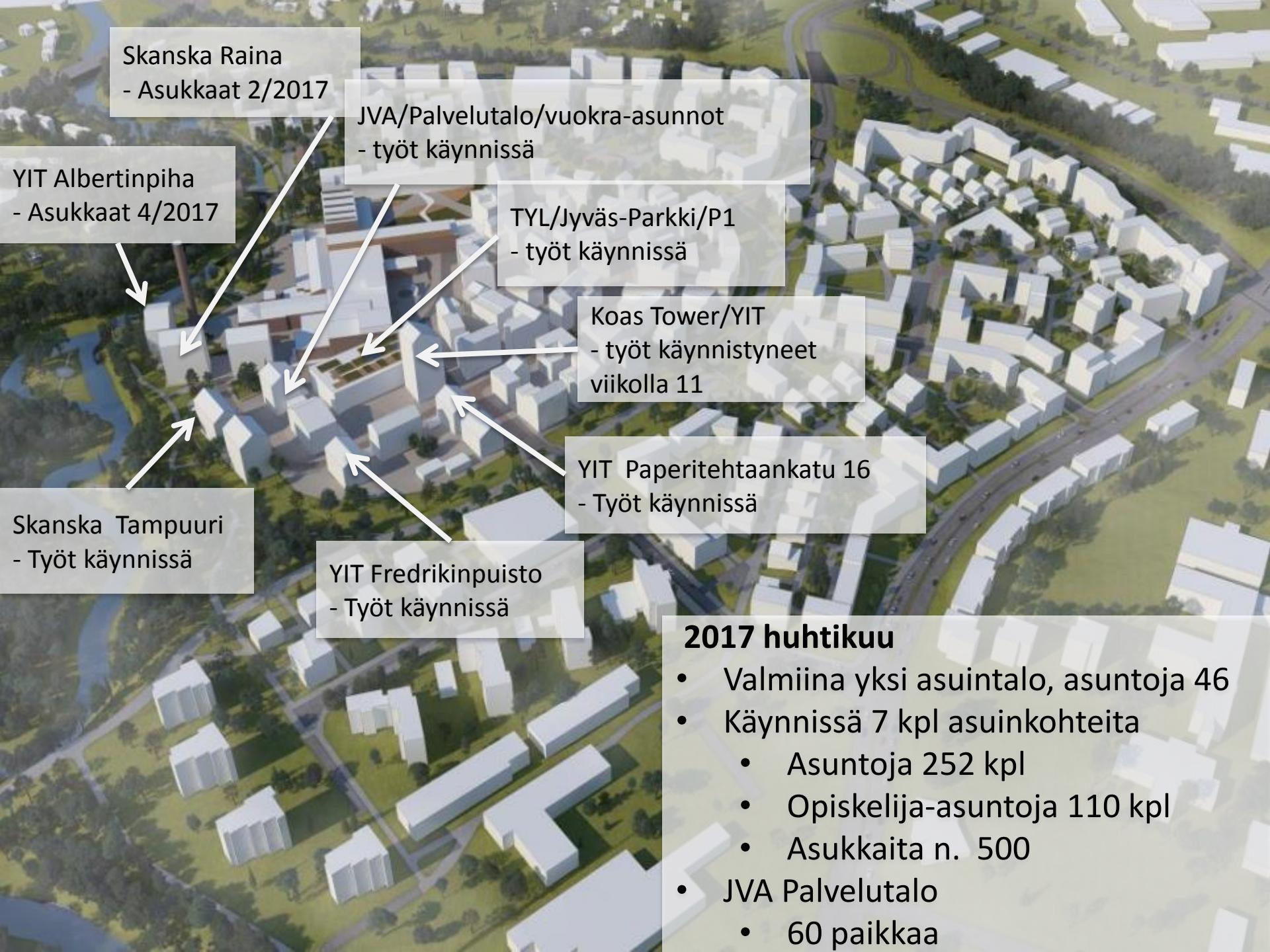
Smart services: Home delivery

Sensor infrastructure

Smart care and senior Housing

Digital accessibility - Digital identity

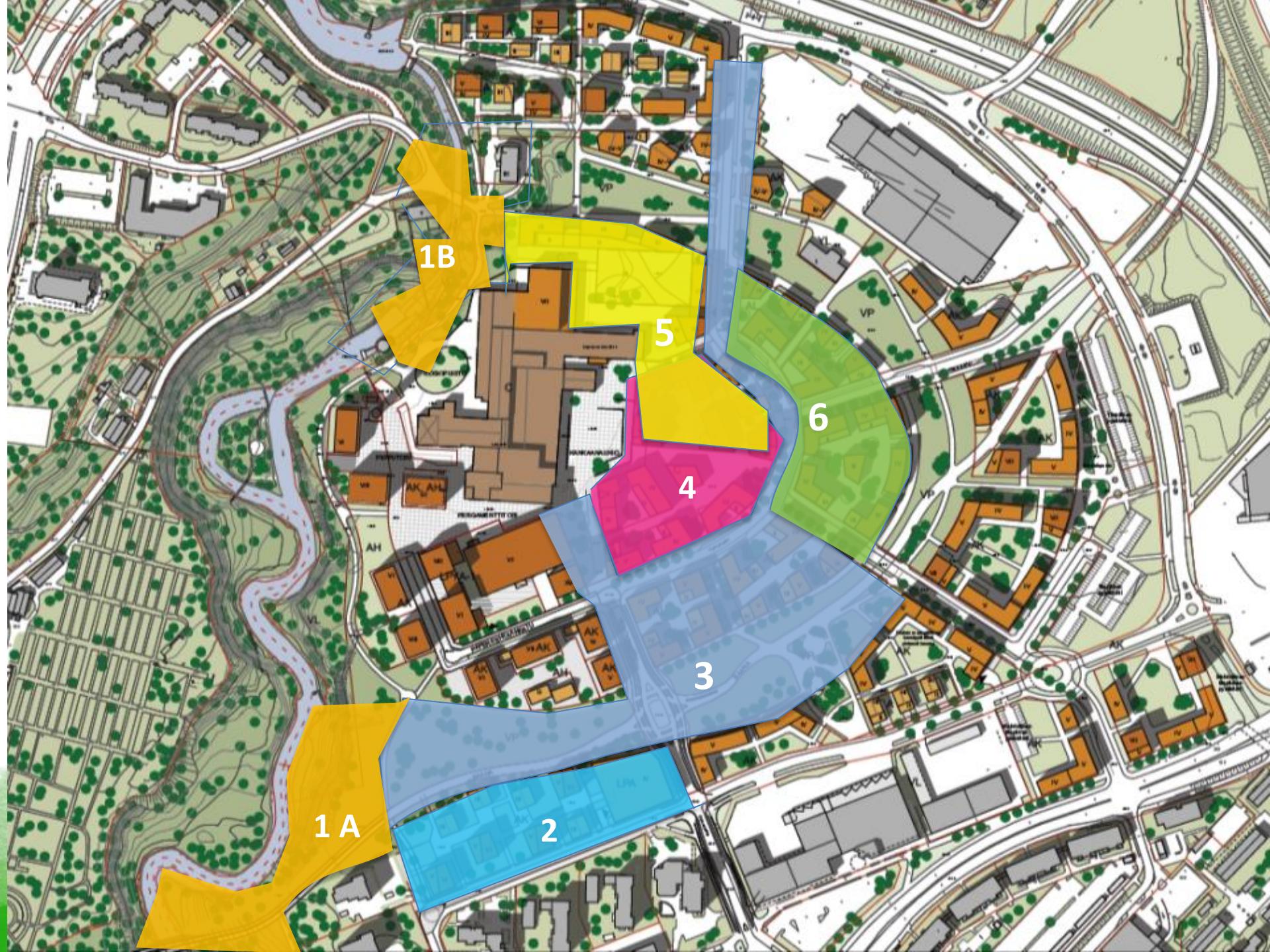
Cyber Security:
The most cyber secure area of the most stable country in the world



2017 huhtikuu

- Valmiina yksi asuintalo, asuntoja 46
- Käynnissä 7 kpl asuinkohteita
 - Asuntoja 252 kpl
 - Opiskelija-asuntoja 110 kpl
 - Asukkaita n. 500
- JVA Palvelutalo
 - 60 paikkaa





Next steps in Kangas



- Construction proceeds
 - 13 construction sites by the end of this year
- Planning continues
 - Zoning, infrastructure, houses...
- More residents will be moving during spring

- Solutions of Wise Kangas are taken further
- Models of cooperation for cocreation are surveys for Kangas and for other development platforms





We invite you to innovate

KANGAS

KESKUSTA

HIPPOS

KUKKULA

BUSINESS > JKL