



An European urban transition project towards more sustainable cities through innovative solutions, in the fields of mobility, energy and digital.

Smart City

Global project

Coordination: Cartif
European grant: 18 M€
30 partners, 6 countries

Period: Dec. 2016 - Sept. 2022
Demonstrators:
Hamburg, Helsinki, Nantes

@mysmartlife_EU
<https://mysmartlife.eu/>

Helsinki demonstrator site

Coordination:
The City of Helsinki
European grant: 5,6 M€
7 partners

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Strategy

Buildings

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ACTION OVERVIEW

Plot assignment stipulations to scale smart homes (A2)

This action was implemented by the City of Helsinki in collaboration with Forum Virium Helsinki. A report on building related actions (D 4.2), written in English in November 2017, is available at:

<https://mysmartlife.eu/publications-media/public-deliverables/>

► OBJECTIVES

- › To guide the construction of a new city district in a smart and sustainable way
- › To study how plot assignment stipulations can enable the adoption of smart energy features, renewable energy take up and the collection of energy data from new buildings

► IMPLEMENTATION



Kalasatama district in 2017. Photo by the City of Helsinki

CONTEXT

The City of Helsinki is projected to grow by approx. 6500 inhabitants per year from 2023 to 2036, and consequently, the target for new housing is to build 8000 apartments per year from 2023 onwards. Part of achieving this target is to establish new districts, such as Kalasatama. Kalasatama is being constructed between 2012 and late 2030s to provide housing and services to 30,000 residents on the location of an old port. These new districts should be built with the goal that the whole city with all its districts should be carbon neutral by 2030. Solutions include energy efficient housing, renewable energy, support for sustainable mobility, including electro-mobility, and smart waste collection. One major tool used by the city to guide energy efficiency and smart home features of the new buildings are plot assignment stipulations, i.e., the terms under which the city releases plots on city-owned land to be developed into real estate.

PROGRESS

Already before the start of the mySMARTLife project, the development of the Kalasatama district was directed by environmentally ambitious and smart plot assignment stipulations that came into force in 2014. These steered the take-up of underground vacuum waste pipelines, electric car charging for one third of the residential parking spaces, and smart home features among other things.

As part of the mySMARTLife project, the smart home and smart energy features were updated in 2017. To inform the update, a Living Lab workshop was held that year with a group of people planning to build a co-op apartment with renewable energy and advanced smart home systems. The 2017 plot assignment stipulations include demands for measurement and remote-control ability of apartments' energy loads. This was to enable the use of smart home and energy saving services for residents. In addition, the aim was to explore the use of the apartments as a part of the demand response service. In addition, these regulations aimed to enable the buildings to produce open data compatible with Helsinki Region Infoshare (HRI) open data platform to be used for research and new services, for example.

First buildings designed according to the 2017 plot assignment stipulations were constructed in November 2018. In 2020, the plot assignment stipulations were updated based on feedback. An important lesson learnt was that some of the stipulations seemed to be targeting activities beyond the construction phase. As plot assignment stipulations are best used in steering the construction and setting demands for the building automation systems, a different steering mechanism should be applied to the use of the real estate and the activities of the condominium housing associations, for example. Besides, the supply of smart energy services did not advance as expected. Consequently, a detailed regulation with respect to the measurement and controls was lax. In contrast, to make one third of the parking spaces available for electric cars proved its relevance and this demand was continued. The updated plot assignment stipulations still include the condition to enable the installation of an Application Programming Interface (API) to the building automation system, facilitating the uptake of future services.

► LESSONS LEARNT

- › When steering smart home service uptake through plot assignment stipulations, care should be taken to stipulate things that can be impacted during the construction.
- › It is difficult to predict the availability of services in a developing field.
- › Electric car charging capabilities have turned out to be a good and timely demand.
- › Plot assignment stipulations remain a good tool to steer construction in a smart and energy efficient direction for cities.



Kalasatama district in 2019. Photo by Jussi Hellsten, © City of Helsinki

FURTHER DEVELOPMENT

In the future, the City of Helsinki will continue to use plot assignment stipulations to steer new construction to be environmentally friendly and support the achievement of the 2030 carbon neutrality target. In addition, the city continues to encourage the use of energy data to improve the energy efficiency of buildings.



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