

The Active House

A Low Energy Districts Solution

SMART SOLUTION 1: SMART BUILDING SHELL REFURBISHMENT



Figure 1: the Active House system

- The state of the art graphical user interface provides real-time information on electricity, hot water, and apartment heating consumption patterns
- By using the combined price and environment function, tenants can choose to change energy consumption according to their environmental and financial needs
- This system aims to change tenant behaviour with regard to energy consumption



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What is the solution?

The Active House smart home solution is an intelligent system with a state of the art graphical user interface. This energy tool raises awareness among tenants on energy consumption from areas including electricity, hot water and apartment heating.

By using the combined price and environment function, the tenant can organise the household's energy consumption in an environmental and smart way.

This function is very useful when looking at the development of more locally produced renewable energy such as solar energy. This function will, in the long run, have an impact on how to use the hydro produced electricity in a more optimal way.

Other functionalities which the system offers include:

- 10.1 inch graphical tablet installed on the wall close to the kitchen
- Graphical state of the art interface
- Smart home gateway, a multifunctional communication gateway
- Remote Control of all lights in the apartment, room per room or individual lights
- Smart 230 V plugs used for switch off and on consumer products that consume energy in "standby"
- Remote control of radiator thermostats in every room
- Control of electric vehicle charging by using the input from the price and environment signal
- Clear visualisation of apartment temperature

How does it work?

The picture on the first page (Figure 1) shows the Active House system overview screen. By touching the individual meters on the display, users can explore more of the system's functionality.

Behind the meters are histograms allowing users to follow consumption per day (24 hours), week, month and year. The meter overview provides current consumption patterns to the nearest second. Daily consumption patterns can also be compared against other users (on the right hand side). On the left side of the device screen, the table shows the relation between the three energy types.

The small buttons on the screen allow users to control lights, thermostats and smart plugs. The device also provides the option to control the charge of a synchronised EV or Hybrid car and finally, to see how much solar energy the building has produced.

Expected Impact

The solution is expected to provide the following positive impacts:

- Gives tenants access to information about their own energy consumption
- Reduces environmental impact by changing energy consumption behaviour
- Promotes sustainable economic development
- Improves quality of life by empowering tenants to reduce costs and improve their environmental footprint

About GrowSmarter

GrowSmarter (www.grow-smarter.eu) brings together cities and industry to integrate, demonstrate and stimulate the uptake of '12 smart city solutions' in energy, infrastructure and transport, to provide other European cities with insights and create a ready market to support the transition to a smart, sustainable Europe.

GrowSmarter project partners



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