

Efficiency House Plus Standard: Model Project - Building Refurbishment

Good Practice example for ICT-Tools for energy efficiency

-  Different cities in Germany
-  German Federal Ministry of the Interior, Building and Community
-  2012 - 2018

Background

In 2012, the German Ministry of the Interior, Building and Community launched a new funding programme within the “Forschungsinitiative ZukunftBAU” (Research Initiative Future Constructions), called “Effizienzhaus Plus” (Energy Efficient House Plus). The funding programme aimed to support model projects, which promote the [Efficiency House Plus standard](#). The supported projects demonstrated new building construction methodologies, which change residential buildings from energy consumers into energy producers. Lessons learnt from the first model building established in Berlin have now been used for other renovation concepts.

Key Challenge

Transformation of the energy system requires improved energy management in the construction and building sectors. New technologies provide opportunities for buildings to optimize their energy consumption, to generate energy and to use renewables. While planned new constructions are in accordance with current energy requirements and often make use of new technologies, older buildings face difficulties in meeting higher energy standards. The question is how the lessons learnt from model projects in modern constructions can support energy renovation processes and achievement of the Efficiency House Plus standard in existing buildings.

Initiative

Experiences from the model projects in the “Effizienzhaus Plus” funding programme informed the refurbishment approach of outdated multi-unit family houses in Neu-Ulm, Germany. The building refurbishment process used tablets for tenants to provide real time feedback on their ideas for preferred building refurbishment. The building modernization aimed to promote surplus energy production, so that additional supplies redistribute to other building uses, such as energy for garden watering facilities. The tool monitored building energy consumption.



View of the refurbished building (left) and energy monitor (right).

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The collected data was analyzed and made it possible to understand the current energy consumption patterns of inhabitants, to promote behavioral change and to optimize the building's energy consumption.

Success Factors

The model projects were successful in the development and piloting of innovative ideas for energy-saving buildings. Specifically for the refurbishment project, the use of an online energy-monitoring tool during construction made it possible to actively engage inhabitants about their preferences on the energy management of their homes. This allowed for responsive planning, tailored to inhabitant needs, improved awareness of energy use habits, and the identification of redistribution locations for surplus energy.

Further Information

The [funding initiative](#) and the [refurbishment project](#).