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// Initiation of energy-efficient refurbishment in a HOA

Ludwigsburg | Germany

Short description of the measure

Development and implementation of a communication and participation model for the energy-efficient refurbishment of a HOA in Ludwigsburg as part of the Project “Drei Prozent”.

Period // Duration

Project period 2015 - 2018

Objective

The objective of this project was the focus-group-oriented design and communication approach for funding combined with the homeowners’ continuous and interactive involvement in the planning and implementation of energy-efficient refurbishment measures.

Baseline

- Building: built in 1972, 24 flats, 70% owner-occupied, 35 owners, many of them of older generation (i.e. over 70 years);
- Heating system (boiler, fuel oil) from 1991, replacement should take place by 2021 at the latest;
- According to EWärmeG Baden-Württemberg 2015, owners are obliged to use at least 15

percent renewable energies of various types when replacing a central heat generator;

- Reserves available, windows partially renewed, roof renovation completed, façade insulation to be done;
- Little experience and knowledge, great uncertainty among owners regarding suitable renovation options, concerning heating system replacement, their costs, possible subsidy programmes and the decision-making process.

Implementation & measures

Implementation of the participation process

The participation process, which was derived from a general communication model, was preceded by a focus group analysis and an inspection of the HOA with the administration, advisory board and owners. In 3 expert group preparatory meetings (representatives of the HFT Stuttgart, property management, advisory board), a project profile was drawn up as initial information and procedural guidelines for the owners.

The participation process was implemented in three steps, with each step pursuing several objectives in parallel regarding the owners’ participation (information and motivation, discussion and opinion-forming). This means that in

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each phase, the relevance of the respective sub-area of interest on the topic of "energy-efficient refurbishment" (e.g. technical refurbishment options) should be made clear to the owners (motivation). In addition, knowledge was to be built up on the respective sub-areas, i.e., information to be provided (e.g. on the savings potential of different refurbishment options) and the significance of potential measures for one's own HOA was to be discussed (discussion and opinion-forming). This process made it possible to reduce the number of necessary communication exchanges to an acceptable level for the owners and the administration and to keep the goal in view. This reduced the owners' uncertainty and enabled them to make an informed decision.

As previously stated, each phase had a distinct content focus. Phase 1 dealt with technically possible renovation options, phase 2 focused on financing and subsidy options, and phase 3 served to guide the decision-making process.

Events

Two dialogue-style events with the owners were held as part of the participation process. These events included information (e.g., in the form of presentations or posters) and facilitated discussions (with HFT experts and among the owners). In addition, at each event, the opinion was sought on the owners' preferences for the options presented (renovation measures, financing options). This feedback served as input for the conceptual design of the next steps.

In addition to the two dialogue events, which served to prepare for the decision-making process, there was an informal final event with the owners. At that point, the information and motivation process had already been completed. The owners received a summary of the project results and findings in the form of a renovation brochure. Once again, the owners were able to exchange ideas with experts from the HFT Stuttgart.

Surveys

Anonymous surveys (both online and offline) were conducted after the dialogue events to find out more about the needs and requirements of the focus group and to give all owners the opportunity to express themselves. In addition, this instrument offered the possibility to collect interesting findings on attitudes and possible changes in behaviour from a research perspective, which was important for the evaluation of the project. On

the other hand, the examination of the contents of the surveys also contributed to the formation of attitudes towards decision-making.

Documentation

The entire communication and participation process was documented and published on a project-specific website. This enabled the preparation of information in various formats, the continuous expansion and updating of content, and the linking to other sources. Furthermore, interactive functions (comment function, forum) allowed the owners to communicate with one another as well as with the experts at HFT Stuttgart.

Renovation options

The energy experts at HFT Stuttgart developed four different renovation options for the property:

- (1) Natural gas condensing boiler,
- (2) Condensing boiler in combination with a photovoltaic (PV) system,
- (3) Condensing boiler in combination with solar thermal system,
- (4) Combined heat and power (CHP) unit in combination with peak load boiler.

Financing // Subsidies

For all of the above-mentioned options the following aspects were evaluated:

- investment sum,
- economic efficiency analysis,
- CO₂ savings potential.

Economically, variant (1) "natural gas condensing boiler" won, while ecologically, variant (4) "CHP with peak load boiler" won. The funding and financing instruments were compiled as a "modular system" in line with the needs of focus groups and configured as a concept adapted to the needs of the homeowners.

The financial resources available to the HOA (e.g. reserves) were compared with the financing requirements. Financing should be covered as far as possible by grants and subsidies from the municipality, the state (in Baden-Württemberg, e.g. L-Bank) and the federal government (e.g. KfW, BAFA). In turn, the choice of subsidies affects the type of financing, and the subsidies used have an impact on the renovation measures.

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HFT economists analyzed the financing instruments in terms of their benefits and drawbacks, as well as their suitability for the various renovation measures, and prepared a table for the owners.

Results

Because of the exemplary nature of the HOA investigated in this project, the approaches developed here should serve as a model for many other HOAs in Germany, contributing to an increase in the rate of energy-related refurbishment.

Detailed information can be found in the [project's final brochure](#) (available in German). The project was a part of [the city of Ludwigsburg](#)'s 3% a year renovation drive.