Solar plant on the BWSG Hauffgasse © KELAG Energie und Wärme GmbH

Factsheet

Refurbishment of the BWSG Hauffgasse estate

Facts & Figures

485
residential units + 79 new attic flats

69 kWp
PV system

1
e-carsharing with 3 e-cars

SMARTER TOGETHER
gemeinsam g'scheiter

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Project partner:

- **BWSG**
- **KELAG Energie & Wärme**
- **wohnbund:consult**
- **Austrian Institute of Technology (AIT)**
- **DIE UMWELTBERATUNG**

A film on the refurbishment projects!

For more details see www.smartertogether.at

Project context

Within the framework of this pilot project, the large housing complex owned by non-profit housing developer BWSG was comprehensively renovated and extended. The refurbished building is a social/subsidised housing complex with a total of 485 residential units and around 1,000 residents. In the course of the refurbishment, 79 new residential units were created in the attic.

Smarter Together measures

- promotion of the use of renewable energy sources (construction of a 69-kWp PV system on the roof)
- creation of an on-site e-car sharing system with 3 e-cars in cooperation with the residents
- organisation of two series energy-saving cafés in co-operation with DIE UMWELTBERATUNG before and after completion of the refurbishment to raise awareness of energy measures as well as information boards on energy saving behaviour in the staircases.

Boosting the process

The planning process for the redevelopment of the housing complex started as early as 2011/2012, long before the launch of Smarter Together (2016).

Smarter Together was able to contribute to fostering a new and positive dynamic of the refurbishment process by the introduction of measures such as e-car sharing and PV-system.

Construction phases

Construction started in May 2017 and was completed in mid-2020. Over a total of three implementation phases, a step-by-step renovation of the residential complex, which is divided into three separate blocks, was carried out.

In addition to the necessary removal of the external wall panels as well as general thermal refurbishment measures (including fitting of thermal insulation on the outer façade and ceiling using mineral wool, new windows and doors) to reduce energy demand, maintenance work was carried out (e.g. renovation of balconies, installation of blinds, replacement of electrical systems, thermal insulation of pipes, installation of thermostats in the flats). General measures to improve comfort for the residents (e.g. creation of barrier-free access, relocation of the bicycle parking area to the ground floor, renovation of communal facilities) were also taken.

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Heating technology and local energy production

In addition to the renovation of the building envelope, measures were taken to improve the heating technology (renewal of the district heating and hot water transfer stations).

On the basis of several feasibility studies by the energy supplier, for structural reasons it was decided to install a PV system on the roofs of block 1 and block 3, covering approximately 275 m2 and 80 m2 respectively, and able to generate a total of 69 kWp. The electricity produced on site is now also used to heat water with electric boilers.

Tenant participation

Each construction phase started with an information meeting for the residents of the block earmarked for renovation. Thanks to an information point installed in the area, it was possible to provide the residents with continuous information.

In addition, a participatory e-car sharing scheme with 3 e-cars was introduced for the residents of the complex. A group of around 10-15 residents was formed to maintain and service the vehicles. In particular, the on-site presence of a 'caretaker' has turned out to be an essential success factor.

Monitoring

Measurement infrastructure has been set up. Data from the residential complex will be collected until 2021 and evaluated as part of the monitoring activities. This should result in recommendations for future actions.

Lessons Learned

Comprehensive renovations always contribute to an improvement in quality of life after the construction phase. In terms of energy savings, renovations is considered comprehensive if, in addition to the insulation of the building envelope and the integration of renewable energy sources, the heating technology is tackled.

Heating savings depend on numerous factors. In addition to structural façade and energy supply renovation, building services and tenant behaviour are also relevant. For this, it is essential to provide them with comprehensive information at an early stage.

Housing estate Hauffgasse © BWSG, AT Media Solutions

Replikation

The holistic approach of this project offers an innovation-oriented potential for replication. The process-oriented approach ensured that the experience gained from the renovation process was integrated into the organisational culture of those directly involved and is now already being implemented in other projects (housing estate Drischützgasse of the BWSG, funding scheme for e-car sharing). In addition, the collected knowledge was shared within the framework of the Austrian Association of Non-Profit Building Associations (GBV). Non-Profit Building Associations manage all together over 952,000 flats throughout Austria.

Holistic thinking about redevelopment

- Redevelopment on this scale offers a starting point for a transformation of the entire area into a low-energy district.
- Positive dialogue between all stakeholders contributes significantly to increasing acceptance of the measures.
- Although the renovation work is stressful for tenants, introducing new themes and future-oriented, innovative solutions help them to understand why refurbishment needs to be done.
- Full and continuous involvement of tenants in the refurbishment process from an early stage is essential.
- From an energy standpoint, successful refurbishment requires the complete renewal of the heating technology right down to the individual flats and the associated hydraulic balancing of the heating system.