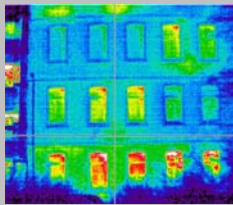




General information

Building owner	housing association WOGÉ Nordstadt eG
Address	Edwin Oppler Weg 5, 30167 Hannover
Total heated floor area	560.05 m ² before and 636.59 m ² after modernisation
Year of construction	ca. 1900
Year of refurbishment	2006

Initial situation



The 4-storey building 'Schneiderberg 17' was offered the housing association WOGÉ by the municipality of Hanover. When WOGÉ took over in the year 2005, 10 flats had been empty. The toilets were located halfway down the staircase and there was no bathroom inside the flats. Building components, installation and floor plans were outdated and needed to be adjusted to the state-of-the-art of technology. On this basis, comprehensive modernisation and repair measurements were carried out.

Innovative financing model

For the required modernisation and repair measurements, the architects delivered an expert opinion. The subsequent implementation was to be realised by means of urban development subsidies. As there was a gap in the financial scheme for this project, a loan was applied for at the region of Hanover in order to purchase the building. The loan was granted after an extensive concept presentation (social housing with integration of future tenants in planning and implementation, 10% muscle-mortgage) and in combination with an ordinary bank loan the building was finally purchased. After intense research and getting in touch with proKlima GbR, the regional climate protection fund, the architects developed a comparison of possible subsidies in relation to different technical solutions of a comprehensive energy saving modernisation. It was possible to realise the modernisation within the dena (German energy agency) modell project "Low energy house in the existing building stock".

The overall financing concept was presented to the building owner as well as representatives of the municipality and the region of Hanover. All partners could be convinced that with adding an additional KfW-loan (via the mentioned dena modell project), no extraordinary expenses would arise. The architects were responsible for the overall modernisation including project development, quality assurance, site supervision and accounting. After the building became officially part of the dena model project, modernisation measurements could be implemented under the following financial conditions:

- CO₂-loan KfW-Bankengruppe with 20 % partial debt reduction,
- CO₂-loan (model project) KfW-Förderbank, with 15 % partial debt reduction
- urban development subsidies granted by the federal republic of Germany (1/3), the state Lower Saxony (1/3) and the state capital Hanover (1/3)
- financial benefits from proKlima GbR
- capital resources from the housing association, plus 10% personal contribution of the tenants

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Good practice: financing example "Schneiderberg 17, Hannover"

Energy related activities building tightness 0,57h⁻¹, minimising thermal bridges, using LED-technology

- Building shape**
- thermal insulation of the cladding (20 cm mineral wool, 0.035)
 - thermal insulation of the cellar
 - thermal insulation of the roof (35 - 42 cm cellulose)
 - window replacement (Uw-Wert 0,83 W/m²K) and exterior doors

- Other activities**
- central heating/ radiators only in bathrooms/ distribution
 - high-efficiency pump, hydraulic balancing
 - heating and hot water storage with buffer storage
 - decentral heat recovery ventilation (HRV) systems in each flat

Solar system

Energy related indicators	initial situation	after modernisation	reduction
	447 kWh/m ² a (primary energy)	28 kWh/m ² a (primary energy)	ca. 94 %
Energy performance	148.85 kWh/m ² a (end energy)	71 kWh/m ² a (end energy)	ca. 52 %
Energy consumption	132 kWh/a (heating energy)	25 kWh/a (heating energy)	
CO2 - emission			101 kg/m ² a
Heating system	8 WE night-storage heater (ELT), 1 WE coal-burning stove	central wood pellet heating	
DHW - system	1 WE combined boiler(Gas), 9 WE Durchlauferhitzer (electricity)	central wood pellet heating	
	continuous-flow heater (Strom)		
Monitoring system	Quality assurance via data collection over a period of two years (proKlima)		

Financial indicators

Energy costs

Investment costs of the total refurbishment 1.27 Mio. €

Investment costs of the energy related refurbishment 540,00 €

Costs per saved kWh

- Report of the investment costs**
- After successful completion of the modernisation including requested verifications in compliance with promotion directives, the housing association was guaranteed a partial debt relief of 20% for one KfW-loan and 15% for the other one.
 - Furthermore, proKlima GbR provided financial benefits for implementing innovative building technology (thermal insulation of exterior building components and cellar ceiling, Passive House windows, pellet heating, HRV=heat recovery ventilation, etc)
 - 10 % of the overall costs were contributed as personal mortgage ("muschel mortgage") by the hands-on commitment of future tenants

Statement architect Friedhelm Birth (Bauart Architekten Hannover)



"In order to modernise the extensive existing building stock of social housing in an economical way, it will be necessary to keep up appropriate promotional mechanisms and subsidies. Such supportive measures are important and justified in two ways: For one, sponsoring energy saving modernisation helps to achieve the comprehensive aim of CO₂ reduction. For another, it ensures the national self-interest of reducing extra rental expenses for people receiving transfer payments."

The production of this good practice example is supported by

Intelligent Energy  Europe

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