



after refurbishment



before refurbishment



GENERAL INFORMATION	
Building owner	GGW (Gemeinnützige Grazer Wohnungsgenossenschaft) non-profit housing association
Address	Daungasse 4–8, Asperngasse 22–24, Wagner-Birostraße 23–25
Number of dwellings	150 before refurbishment 150 after refurbishment
Number of floors	6
Average size of the dwellings	50 m ² before refurbishment 50 m ² after refurbishment
Total heated floor area	7,485 m ² before refurbishment 7,485 m ² after refurbishment
Year of construction	1960
Year of refurbishment	2001
Has the refurbishment been carried out while the dwelling was occupied?	Yes
Has an independent quality assurance been carried out?	Quality assurance is a core element of Thermoprofit
Total building costs	2,180,000 €
Building costs concerning energy recovery	1,230,000 €



**INITIAL SITUATION
LOCAL CONDITION**

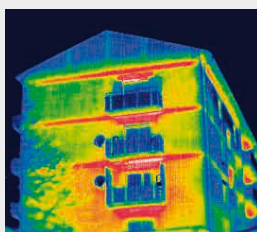


figure: thermography of the residential estate Daungasse before renovation

The housing association's targets are to improve and increase the value of the properties, to enhance the general comfort of living and utilisation and bring about positive ecological and social effects (increase of the property value and user structure). One major condition, requiring a very strict cost management, was that the complete renovation should not entail any additional costs (sum of investment costs/capital costs, operation costs, heating costs) for the inhabitants. The flats are inhabited predominantly by socially disadvantaged tenants, the City of Graz (Social Welfare Office) is responsible for the allocation of the flats. Before refurbishment the flats were heated with separate stove heating (oil or coal stoves, electric heating, single-storey gas heating).

The production of this good practice example is supported by

Intelligent Energy  Europe

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<p>TYPE OF REFURBISHMENT (MEASURES WHICH HAVE BEEN CARRIED OUT)</p>	<ul style="list-style-type: none"> • Installation of a central heating system (natural gas) • Installation of a central hot-water supply system with solar heating system (85 m² solar collector space) • Insulation of the exterior property walls • Insulation of the cellar ceilings, insulation of the top floor ceilings • Establishment of an energy management and controlling system • Maintenance and operation of all systems • Exchange of the windows • Installation of 7 lifts 																																
<p>WHY HAVE THE MENTIONED MEASURES BEEN CARRIED OUT?</p>	<p>The housing association's aims are to improve and increase the value of the properties, to enhance the general comfort of living and utilisation and bring about positive ecological and social effects (increase of the property value and user structure).</p>																																
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<p>SUBSIDIES</p>	<p>State loan with 0,5 % interest rate and a loan term of 22 years</p>																																
<p>STATEMENT</p>	<p>Ing. Giulio Insam (GGW) The Thermoprofit model has been an approach to improve the energetic quality of existing buildings. In the beginning we were unsure about Thermoprofit, but by now, we know about the advantages of integrated planning models. We intend to apply this model at an upcoming refurbishment project again. The cooperation with "Steirische Gas Wärme" has proven to be very successful.</p>																																
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