



El-Education
Best practice example No 5 from Austria



WARTBERG (Austria)

61 % energy saving

Anti-skidding coating of balconies

All tenants are satisfied with the renovation

Project data

Location, address:	Lamplgasse 8a/b, 4224 Wartberg ob der Aist
Region:	Upper Austria
Surroundings:	North of the country, low hilly landscape
Climate:	Continental climate
Heating degree days:	3906
Year of construction and renovation:	1979 (constructed); 2004 (renovated)
Typology:	Apartment building
No of dwellings:	18
Total floor area:	1,148 m²
Owner:	Heimstätte Linz (social housing association)
Architect and Builder:	Heimstätte Linz, Mr. Peter Anzinger
Costs of energy saving measures:	€ 267,150 (incl. VAT)
Renovation financed by:	Loan and reserves by Heimstätte Linz, subsidies from Regional Government

Objectives and Results

The sequence of the renovation project depends on the age of the object and on the necessity.

Picture will be added later!

The site engineer from the social housing association Heimstätte Linz and the caretaker of the building inspect a building to get a first impression of the necessary measures. On this occasion the wishes and proposals from the tenants are brought forward by the caretaker. Due to this procedure the tenants are included in the project from the beginning and the optimal course of the project is ensured.

To clarify and avoid a delay in the course of the project, each renovation step is presented at the tenants' meeting.

Renovation concept

Key renovation features

- Insulation of façade
- Insulation of top ceiling
- Insulation of ground floor
- Rain repellent, anti-skidding coating of the balcony-floors
- New balustrades at the balconies
- New entrance areas
- New boiler, which works more efficiently
- Installation of heat meters in each apartment

State-of-the-art

Before renovation

Constructions [U-values: W/m²K]

- Non-insulated top ceiling [0.57]
- Non-insulated ground floor [0.69]
- Non-insulated façades [1.33]

Installations

- Oil heating system

After renovation

Constructions [U-values: W/m²K]

- Insulation of top ceiling [0.17]
- Insulation of ground floor [0.34]
- Insulation of façades [0.27]

Installations

- Exchange of the boiler, which supplies now two buildings
- Each apartment has its own heat meter
- F 30 fire-retarding sealing of the ducts

Energy saving and monitoring

Energy consumption before renovation:

kWh 193954

Energy Performance Indicator 122 kWh/m²,a

Picture will be added later!

Energy consumption after renovation:

kWh 73077

Energy Performance Indicator 47 kWh/m²,a

Percentage saving 61 %

Additional information

- The progress of the renovation project was optimal, no bigger problems appeared.
- Immediately at the beginning of the renovation project, a meeting with the caretaker, the tenants, the site engineer and the representatives of the construction firms is held to clear up eventual questions and details.
- The feed-back from the tenants was very positive.

Lessons learned and conclusions

- Already in the first heating period, a time lag in switching on the radiators could be noticed.
- This is one proof that insulation works.
- Calculated costs are always met, if there remain reserves, they are used for additional measures, for example arrangement of the garden and the surroundings.

References

- [1] Heimstätte, Erste gemeinnützige Wohnungsgesellschaft Ges.m.b.H, Gärtnerstraße 9, 4020 Linz, T: +43 732 658341, E: office@egw-linz.at, I: www.egw-linz.at