

Renovation of the primary school in Reichenau

A tailor-made suit out of wood!



"The challenge was getting sustainability and cost requirements to coincide.
I think we did an excellent job!"

Mayor Hermann Reingruber,
Municipality of Reichenau im Mühlkreis

Built in the 1970s, the primary school in Reichenau im Mühlkreis was bursting at the seams. Originally planned as a primary school, the building was also being used as an after-school care service and nursery school. The challenge was retrofitting and expanding the building to achieve a modern teaching environment, a barrier-free access and bringing it up-to-date thermally and technically – and doing this in an environment-friendly manner while complying with the cost requirements of the region of Upper Austria! The project was awarded the Energiestar, the Upper Austrian prize for sustainable energy projects, by the regional government and the OÖ Energiesparverband (the regional energy agency).

The project at a glance

- Renovation, modernisation, and expansion of the primary school in the Municipality of Reichenau im Mühlkreis, Upper Austria
- Increase of the gross floor area from 878 to 1,399 m²
- Modern teaching environment
- Barrier-free access
- Heat demand reduced by half (from 131 to 62 kWh/m²a)
- Energy technologies: LED, PV (45 kW), local biomass district heating, energy monitoring
- Plastic materials avoided almost entirely (thermal insulation, windows, floors)
- Annual CO₂ savings: around 245 tonnes



Sustainability with limited public funds: it is possible!

A holistic approach that combined environmental, economic and social aspects of sustainable buildings was at the very core of the project. The existing concrete facade was kept in place and "wrapped" in a new, highly insulated building envelope consisting of a timber frame construction, cellulose insulation and a ventilated larch cladding. Adding this new layer reduced the refurbishment costs and increased the building's thermal storage mass, thus resulting in better indoor conditions. The new wood-aluminum windows are equipped with external, controllable solar shading systems.

A modern teaching environment and barrier-free access were made possible by rethinking and restructuring overall procedures combined with expanding the building.

High value was put on environmental aspects: Plastic materials were avoided almost entirely in the thermal insulation, windows and floors. A PV system with 45 kWp was installed. The lighting was switched to LED. The building is heated by the local biomass district heating plant.

The refurbishment reduced the school's heat demand by around 50 % despite a 60 % increase in floor area. The project is a shining example of sustainable construction and shows that ambitious projects can also be implemented with a limited budget.

**ENERGY
LEADERS**
UPPER AUSTRIA

Impressum: OÖ Energiesparverband, Landstraße 45, 4020 Linz, www.esv.or.at
ZVR: 171568947

