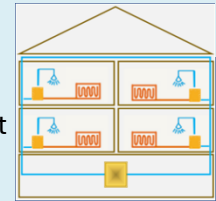


Fennerstraße Project, Austria

Renovation with mini heat pumps

In Summer of 2022, in 48 apartments, a switch was made from individual boilers to a heat pump-boiler combination for hot water and heating as part of the thermal refurbishment.



F2.3

Key facts

Buildings

Location	<i>Innsbruck Austria</i>
Construction	<i>2022</i>
Project type	<i>retrofit</i>
Heat distribution	<i>radiators and mix</i>
Number of Apartments	<i>48</i>

Heat pump and source

Number of	<i>48 individual + 1 central</i>
Operation mode	<i>Bivalent</i>
Heat source	<i>Air to central hp, central hp to individual hp + Boiler</i>

Heating system (hp)

Heat demand	<i>3kW per hp</i>
Heating temperature	<i>35°C</i>

Domestic hot water

Type of system	<i>mix</i>
Max. temperature	<i>55 °C</i>

Other information

Seasonal Coefficient Of Performance	<i>4</i>
Refrigerant	<i>R410A</i>
Sound Level	<i>38 db</i>

Lessons learned

- The Fennerstrasse project will show just how much potential there is in the technology, which could serve as an important blueprint for renovating old buildings in the future," said Josef Kurzmann, Vaillant sales manager.
- All those involved in the project agree that the mini-heat pump technology will provide valuable services in renovation projects in the future.



Picture: https://www.ehpa.org/wp-content/uploads/2023/05/Heat-pumps-in-high-rise-homes_case-studies-from-across-Europe_EHPA_May-2023.pdf

In summer of 2022, the general refurbishment of an apartment building in Innsbruck in the Austrian Alps began. The developers were Alpenländische Gemeinnütziger Wohnbau, who wanted to renovate 48 residential units on four floors.

The main aim was to achieve sustainability through energy efficiency in buildings. This was to reduce energy costs, but also to reduce climate impact. For the first time, geoTHERM 3kW "mini" heat pumps from Vaillant were used as a high-performance compact solution for the refurbishment of homes. This is a potential technological milestone in the retrofitting of old buildings in the future.

The Vaillant mini heat pump system is designed for maximum heat demand and can be installed directly in individual apartments - even if they are equipped with radiators. This makes the system ideal for a multi-apartment building with very low heating requirements and normal hot water needs. The wall-mounted unit hardly differs from a gas boiler in size and appearance and is particularly quiet, at only 38 decibels in heating mode.

Together with a space-saving hot water storage tank, the geoTHERM mini also ensures a high level of hot water comfort.

Fennerstraße Project



Picture: https://www.ehpa.org/wp-content/uploads/2023/05/Heat-pumps-in-high-rise-homes_case-studies-from-across-Europe_EHPA_May-2023.pdf

Description of the technical concept

A large heat pump on the roof runs the collected energy with a flow temperature of only 20°C Celsius through the stairwells in a circulation system. In this way, the geoTHERM mini heat pumps installed in each apartment only have to increase the heat by a few degrees. By comparison, if the Fennerstrasse building were to rely on district heating supplied via the basement, the supply temperature would be 80°C and there would be high circulation losses.

The Results:

The mini heat pumps meet all the criteria requested by the planners: a decentralised solution with high heat output and comparatively low energy requirements. This not only saves CO₂, but also keeps operating costs low in the future and makes their billing particularly simple.

The compact design of the mini heat pump also became an important factor in the renovation project. Each residential unit had different spatial requirements, and the installation of the new hot water and heating appliances was carried out individually.