

“Energy-Island Petershagen”, Germany

The new housing complex uses a ground-source heat pump in each of the six multi-family buildings for both room heating and domestic hot water.

Key facts**Building**

Location	<i>Petershagen, GER</i>
Construction	<i>2018 et seqq.</i>
Heat distribution	<i>underfloor heating</i>
Heated area	<i>unknown</i>
Level of insulation	<i>new building</i>

Heat pump and source

Number of	<i>7</i>
Installed th. power	<i>7 * 36 kW (Prated)</i>
Operation mode	<i>monoenergetic</i>
Heat source	<i>geothermal</i>

Heating system

Heating temperature	<i>unknown</i>
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Domestic hot water

Type of system	<i>fresh water station in each flat</i>
Max. temperature	<i>unknown</i>
Circulation system	<i>unknown</i>

Other information

- passive cooling with ground heat exchanger
- Photovoltaic system and battery storage device



Source: Bosch Thermotechnik GmbH

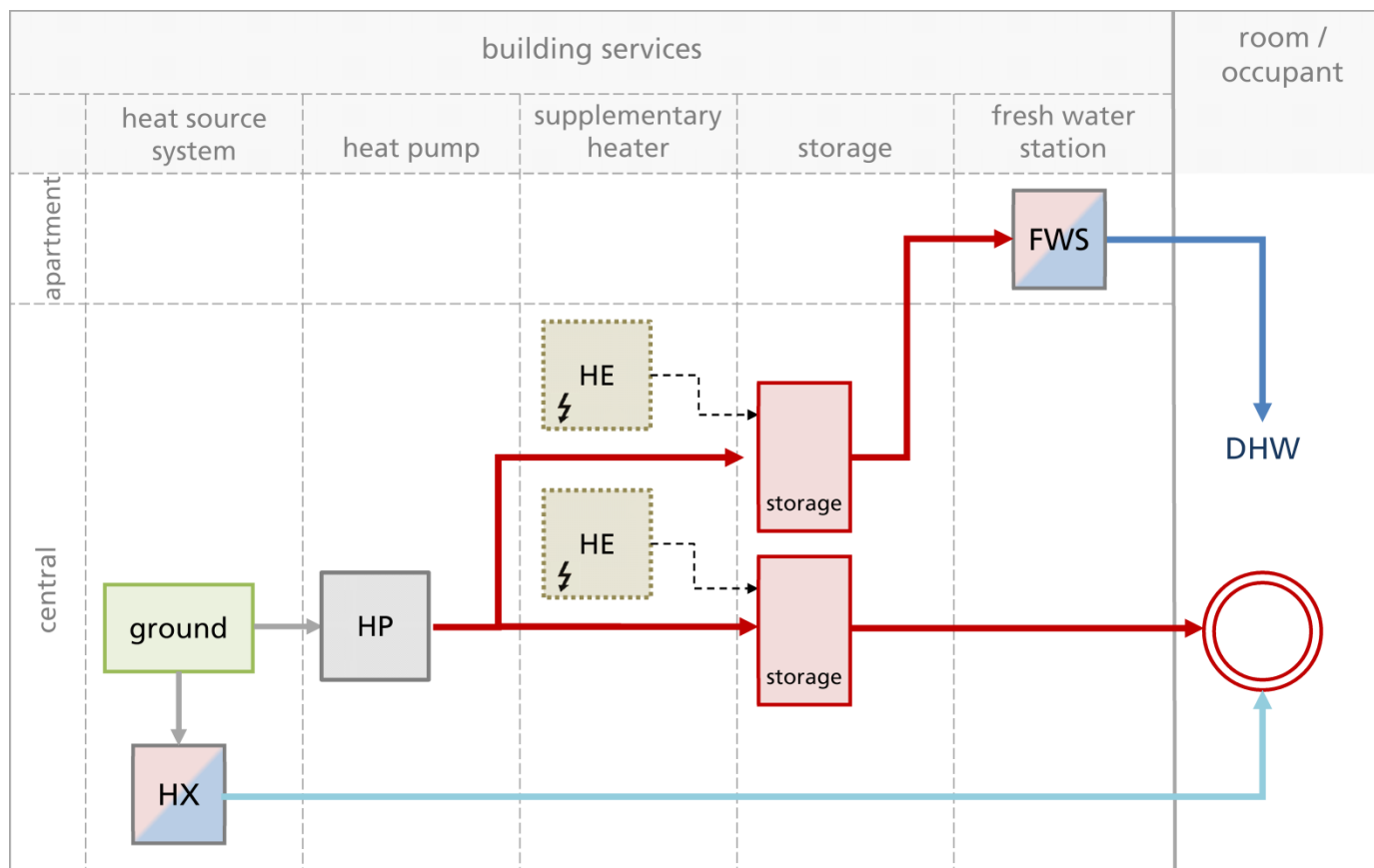
The new housing complex will comprise six multi-family buildings and one community building. The 80 flats are built to meet the requirements of older people.

In each building a ground source heat pump system is installed. The heat pump system provides the heat for both room heating and domestic hot water. In summer the ground heat exchangers (GHEx) are used for passive cooling of the buildings. Photovoltaic panels are installed on the roofs of each building. The energy production is primarily used on site by the households and the heat pump or stored in batteries.



Source: <https://www.city-haus.de/energieinsel/mietobjekte.htm>

“Energy-Island Petershagen”, Germany, Technical details



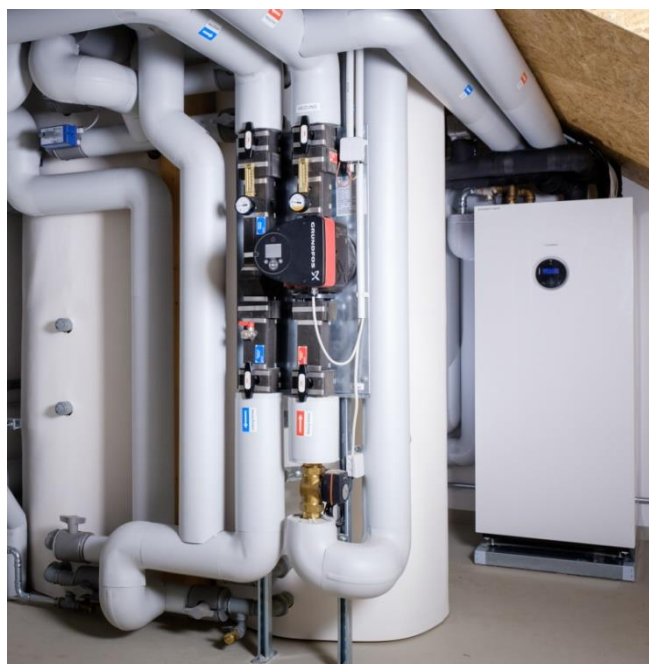
Description of the technical concept

In each building a heat pump system is installed. Each system consists of one ground-source heat pump (à 36 kW; ERP label), a GHEX, four buffer storages (à 950 L) and four heating rods installed in the storage tanks. Two buffer storages are used for room heating and two for domestic hot water. Due to the “2 step tandem compressor” with injection technology the maximum flowline temperature of the heat pump is 68°C.

In the residential buildings fresh water stations are installed in each flat. In the community house one fresh water station supplies the DHW for the building.

In summer the GHEX are used for passive cooling of the buildings.

Photovoltaic panels are installed on the roofs of each building. If the energy production exceeds the electric load (heat pump, households, etc.) the heat pump can heat up the buffer storages to temperatures higher than the actual set point. Additionally, the battery storage device is charged.



Source: Bosch Thermotechnik GmbH