

Albertslund, Denmark

In Albertslund, a municipality close to Copenhagen, about 2,200 social housing dwellings from the 1960s are being renovated between 2011 and 2015. About 25 % of the area consists of two-storey terraced houses, while the remaining part is one-storey one-family housing units. The houses are renovated to low-energy standard, with solar panels and PV supplying renewable heat and electricity. In order to supply the remaining heat needed for space heating and DHW, the existing district heating pipes are being replaced with a low-temperature district heating system.

Table 1. Key data for the Albertslund case study.

Parameter	Value
Year of construction	2011-2015
New development/renovation	Renovation
Type of houses	Single family houses and apartment blocks
Number of houses	2,200 dwellings
Supply temperature (design)	35-40 °C
Return temperature (design)	10-15 °C
DHW temperature (design)	55-60 °C

Supply-side technologies/System solution/Distribution technologies

- Pulse operation.

Demand-side technologies

- Individual domestic hot water tanks in each dwelling. Since the supply temperature is about 35-40 °C, the temperature is increased to 55-60 °C with a booster heat pump before entering the DHW tank. The heat pump takes heat from the return pipe, cooling it to 10-15 °C. Local solar heating systems are also coupled to the tank, which cover the heating demand for 6 months of the year.
- Direct connection of underfloor space heating systems (designed for supply temperature of 35-40°C and return temperature of 20 °C).