Soissons, France

Renovation of domestic hot water production in 12 social dwellings

Key facts

Building

Location	*Soissons, France*
Construction	*1975*
Heat distribution	*collective*
DHW production	collective heat pump
Heated area	*841 m² living*
Level of insulation	*average*

Heat pump and source

Number of	*1*
Installed power	*11kW*
Operation mode	*DHW only*
Heat source	*Outside air*

Domestic hot water

Type of system	*central*
Max. temperature	*60 °C*
Hot water storage	*1500 l*
distribution system	*with a thermodynamic loop heater*

Other information

Electric energy consumption 2013 for DHW	*29 $kWh_{ep}/m^2.yr$*
Investments costs	*unknown*
Renewables ratio	*50%*

Some figures

- Before renovating, the primary energy consumption due to DHW production was about 75 $kWh_{ep}/m^2.yr$.
- Final objective for ep consumption is 24 $kWh_{ep}/m^2.yr$.

In this social housing building, heating is supplied by a renovated district heating grid connected to a wood-fired heating plant.

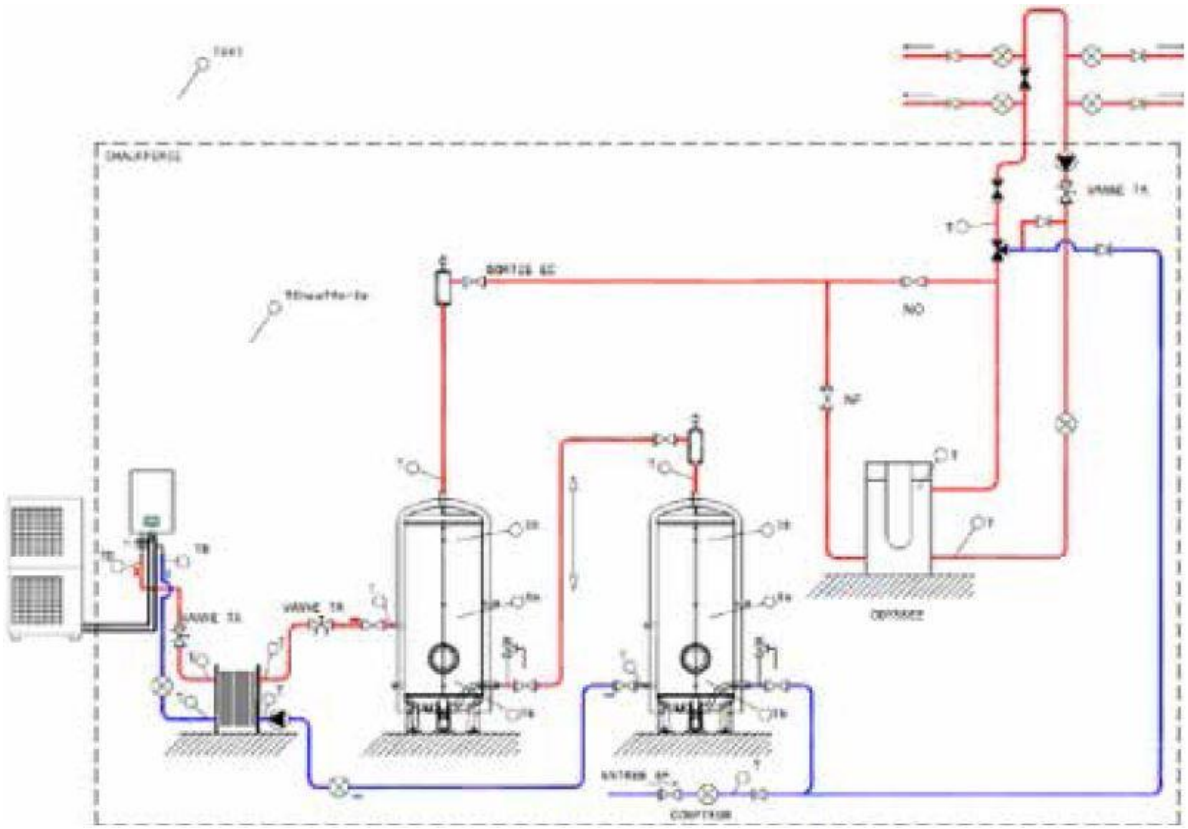
Until now, the Domestic Hot Water production was ensured by individual electrical water heaters. The replacement of these individual solutions (in 12 dwellings) by a collective heat pump induces in a 50% reduction on the electric bill due to domestic hot water production.

HP outside unit

Hydraulic Station

Thermodynamic Loop Heater

Soissons, France, Technical details

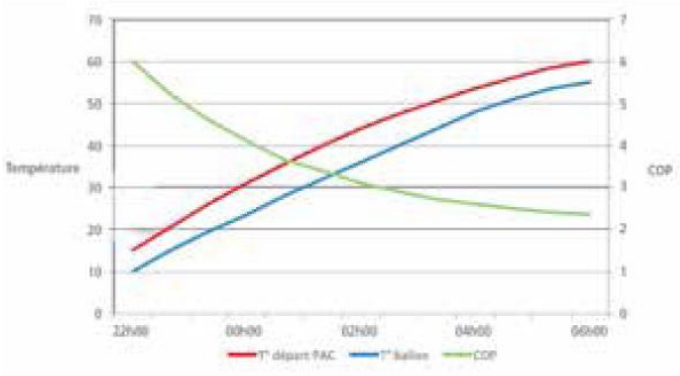


Description of the technical concept

The system consists of :

- A 11 kW Atlantic® air-to-water heat pump
- 2 storage tanks with a 750 liters capacity each
- An Atlantic® thermodynamic loop heater

The system functioning is based on an accumulated mode : the storage tanks allow to store the daily DHW needs. Then, the heat pump produces heat during the night, for 8 hours continuously.



Even if the outside air temperatures are lower during the night, this type of operation offers advantages in terms of performances :

- After a day of draw-offs, the volume of water in the tanks is completely cold ➔ optimized COP
- An operation during night allows to benefit from lower electricity tariffs