

Gas Absorption Water Source Heat Pump System

2 MegaWatt Project

Haarlem - The Netherlands



A few distinguishing features make a very unique project: first, there is a very rare combination of sustainable energy techniques; the large portion of each home has been renovated, which reduces the demand for energy.

The name of the project refers to the central heating plants: the maximum capacity of this installation is 2 MW (approximately 6.8 MBH) during the winter season. As the 382 apartments needed a new heating system, individual gas boilers would be replaced in each home and **the building associations decided**

to take a different, more efficient and environmentally friendly approach and invest into a sustainable heating system. The collaboration of ideas was brought together into a technical design.

Multiple energy saving measures have been taken: the removal of the old gas boiler, the self-regulation of apartment temperature, the energy bill for each occupant. **All of these changes resulted in a lower energy bill and a substantial improvement in living comfort: efficiency gets rewarded.**

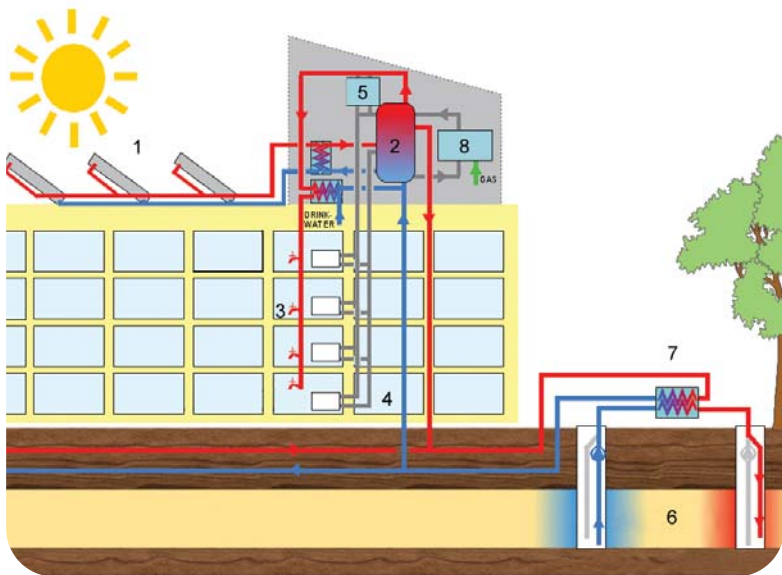


Heating



DHW

By the renovation in home envelope system and the use of high efficiency Robur heat pumps, the energy-use is reduced by 45% and the costs for the occupant are the same as high efficiency condensing gas boilers.



Usually the surplus heat produced in the summertime by solar collectors has nowhere to go, and will be lost. By storing this extra heat in the ground, it can be used during wintertime, when the demand for comfort heating and domestic hot water is greater.

The stored heat can be distributed directly to the buffer

tank and mixed with hot water being produced by Robur Gas Absorption Heat Pumps (GAHP-W).

The surplus of heat produced during summertime is transported into the ground and stored into a layer of sand and water at more than 328 feet below the surface.

Building type	Multi family house - 382 apartments
Energy distribution system	Hydronic
Unit number and type	16 GAHP-W Gas Absorption Water-water Heat Pump
Heating capacity	2,118,000 BTU/h
Cooling capacity	874,000 BTU/h