Sophiastaete in Hendrik ido Ambacht, Netherlands

The first booster project in a collective system to produce individual domestic hot water

Key facts

Building

Location *Hendrik ido Ambacht, Netherlands*
Construction *2016r*
Heat distribution *Central low temperature distibution*
Heated area 6200 *m² living*
Level of insulation *Excellent*

Heat pump and source

Number of heat pumps 72
Installed capacity *kW + 2 kW*
Operation mode *monoenrergetic*
Heat source ATES
Brand and type
Space heating: Alpha-Innotec - SWP Professional
Hot Water heating Alpha-Innotec - Booster WWB 20
Refrigerant – Booster – R134a
Sound level *dB*

Heating system

Heat demand
Heating temperature 40 *°C*

Domestic hot water

Type of system *see overview*
Max. Temperature *60°C*
Circulation system
Legionella measures
Storage size 120 - 200 *litres*
Number of storage tanks - 72
Storage losses
Temperature control

Other information

Electric energy
Consumption year *kWh*
Investments costs *unknown*
PV installation
Solar thermal

Lessons learned

The Sophiastaete project consists of various functions.

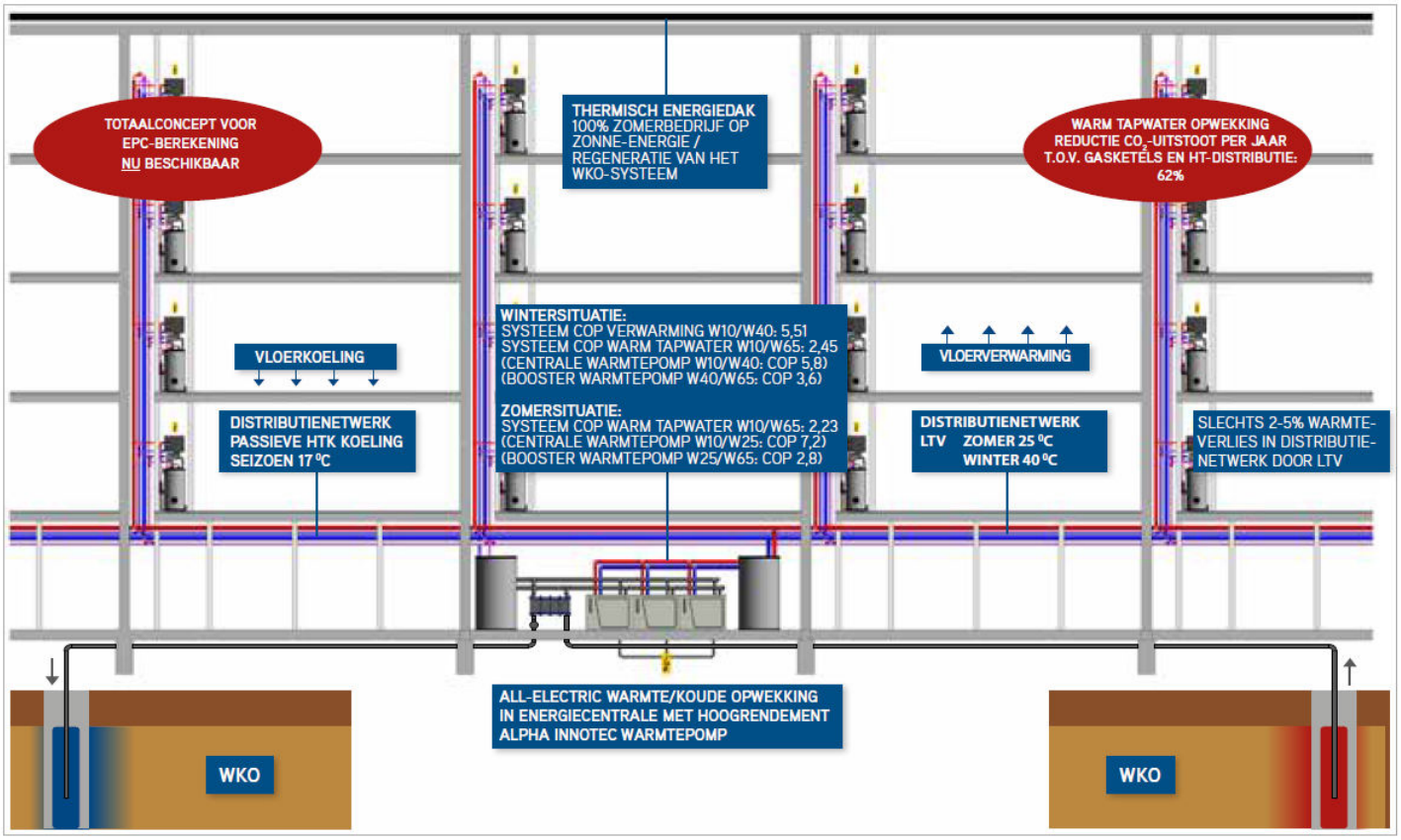
On the ground floor is the health center, pharmacy, childcare facilities and a well-being area. The well-being area is intended for the older residents of the complex, but also from the neighbourhood. It is a place to meet and to participate in all kinds of activities. The total surface area on the ground floor is approx. 2590 m².

On the first floor, four small-scale living groups will be realized for elderly people with dementia. The residential groups together have access to a roof garden of more than 310 m², directly adjacent to the gallery.

The majority of the complex consists of apartments, all with the label 'cared for living'. These are 49 apartments with a usable area of 88 m² and 13 apartments with a usable surface area ranging from 98 to 124 m².

During the development of the project much attention was paid to sustainability. An Ates installation (regenerated by a ‘solar roof) to feed the central heat pump for space heating in a low temperature distribution system. Booster heat pumps are installed in the individual segment to make domestic hot water. The hot water supply is also linked to this system. ‘Next to the thermal energy roof PV is installed to generate part of the electricity supply of the building.

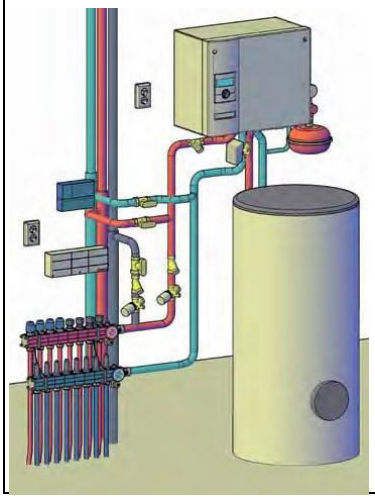
Sophiastaete, Netherlands, Technical details



alpha innotec booster concept

Description of the technical concept

A central Alpha-InnoTec SWP Professional heat pump, installed by NATHAN, delivers through a central building low temperature circulation system low temperature space heating for the well-insulated apartments and to the individual Booster heat pumps in every apartment. The Booster heat pump increases the centrally generated temperature from 20°C in summertime and 40 °C in wintertime to a safe storage tank temperature 60°C for sanitary hot water.



Every booster heat pump is prepared at the factory for connecting to AlphaWeb, making it possible to easily monitor and manage the installation online. As soon as ThermoDynamic logs on to the server, the heat pump can be logged and managed online directly. All heat pumps within the Alpha-InnoTec range have been made suitable for fitting into building automation systems with the BACnet IP data communication protocol. In the BACnet standard, in full Building Automation and Control Network, rules are laid down with which different systems can exchange data in a reliable way, ideal for the management of a large collective project such as the Sophiastaete.

Thanks to the standard BACnet functionality, it is possible to jointly monitor, measure and control the 72 individual Alpha-InnoTec Booster heat pumps and the two collective Alpha-InnoTec Professional heat pumps with a single connection via a building management system such as GBS Priva.