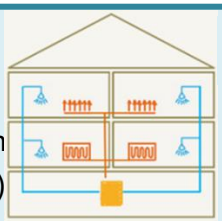
Sartrouville, France

F1.1

A specialised system with hidden heat pumps

This pilot project became a textbook solution which has been replicated with regard to French Building Codes RE2020 and RE2025 – M. Cilleros (Groupe intuis)



Key facts

Buildings

Location	*Sartrouville, France*
Construction	*2021/2022*
Project Type	*Newly built*
Heat distribution	*wall-mounted radiators*
Heated space	*8400 m2*
Structure	*block of 63 apartments*
Level of insultation	very good

Heat pump and source

Number of	*3*
Operation mode	*Monoenergetic*
Heat source	*air*
Type of system	*central*
Capacity	*80kW x 3*
Model	*intuis Heat Pump ZéPAC + HRC*

Space heating

Heating temperature	*55°C*

Domestic hot water

Max. temperature	*65 °C*
Tank	*3000l*

Other information

Coefficient of Performance	*3.5*
Refrigerant	*R290*
Noise level	*63 db(A)*

Lessons learned

- The system copes well with minus degree temperatures and offers the benefits of a high-temperature system, meaning that it can be used for new build and retrofit application, with a range of emitters.
- It also means it manages water temperature effectively to protect against water-dwelling bacteria

For a new block of 63 apartments in Sartrouville, just outside Paris, developer Nexity was looking for a heat pump alternative to gas.

It was important that the heat pump units, to be installed on the roof, were low enough so as not to be visible from outside the building. Another key requirement was that high-temperature hydraulic radiators could be used, to avoid the additional costs of a traditional gas installation.

Group intuis (part of Glen Dimplex) provided a solution which was able to meet all of these requirements: an air source and centralised heat pump system.

The size of the system was determined using specialised software. A central heat pump system, integrated into the building, was selected. This has three monobloc units on the roof and a controller in the basement. Once the technical details had been approved, installation of the outdoor units, which had been specially adapted to fit discreetly on the roof, started in September 2021. This was followed by the installation of the indoor unit in the basement in February 2022.

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Description of the technical concept

One of the main strengths of this system is the indoor control unit which can be used to manage the heating and hot water requirements together, and so avoids oversizing the installation. The domestic hot water and heating coupling is managed so that domestic hot water needs are prioritised before the system switches to space heating.

There is an equal distribution of effort between the outdoor units. Operation is 100% thermodynamic down to -20°C, meaning there is no need for gas or direct electric back up. The very low noise level – at around 63 dB(A) - was also a factor in the customer's decision-making process.

Pictures: ehpa - https://www.ehpa.org/news-and-resources/publications/heat-pumps-and-high-rise-homes-case-studies-from-across-europe/