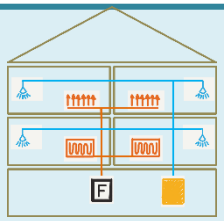
IT009 Via Baldissera, Italy

Heat pump, 2000 Litre Storage Tank and Thermal Panels

A combination of different heating and cooling methods significantly lowered the running costs for this 1960s Milanese building.



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Key facts

Buildings

Location	*Milan, Italy*
Construction	*1960*
Refurbishment	*2024*
Project type	*refurbishment*
Heat distribution	*radiators*
Heated space	*4500m²*
No. of apartments	*36*
Level of insulation insulation	medium thermal

Heat pump and source

Number of	*1*
Kind	*air-to-water*
Heat source	*ambient air*
Installed Power	*93 kW*
Model	*Sheen EVO 2.0 heat pumps*
Control Unit	*INTELLIPLANT management and monitoring system*

Additional Units

Boilers	*2 x 200 kW*
PV + storage	*2 Sinergy modules*

Domestic hot water

Storage	*2000l*
Solar Thermal	*Panels on roof*
Back-up	*200kW gas boiler*
Max. Temperature	*70 °C*

Other information

Refrigerant	*R32*

Lesson learned

- The heat pump system combined with storage tank and thermal solar panels has proved to be an excellent solution for improving the building's energy efficiency and cut down the costs for domestic hot water production.

Located in the centre of Milan, the 1960s building consists of 36 flats covering a total of 4500 m2. The air-conditioning system was based on two old boilers for heating and domestic hot water respectively, a chiller for cooling and distribution with radiators and fancoils.

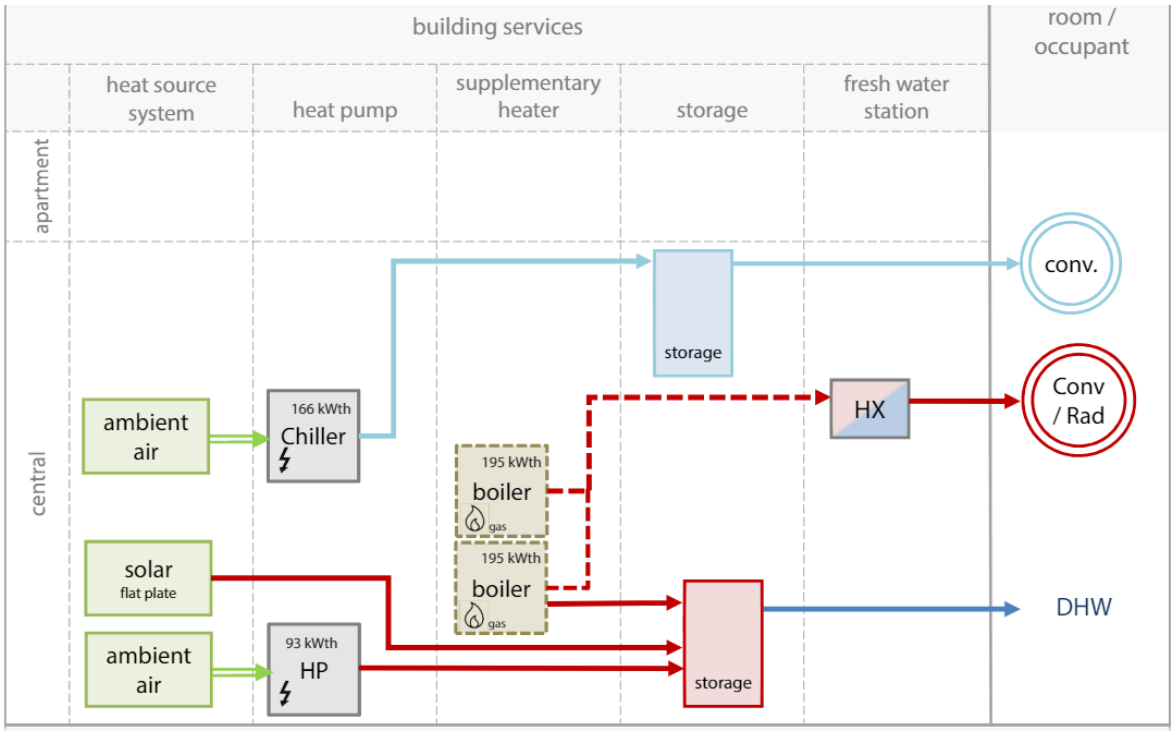
Challenge:

In 2023 the condominium assembly decides to proceed with the energy requalification in order to reduce running costs, by intervening on the existing air-conditioning system.

The most important cost item to work on is that for Domestic Hot Water (DHW) production.

The solution chosen to cut down the cost for domestic hot water production is a system based on 1 high-efficiency heat pump with inverter technology and ecological refrigerant R32 Sheen EVO 2.0 combined with a 2000 litre storage tank and thermal solar panels, plus a condensing boiler that acts as a back-up during peak demand.

Via Baldissera, Italy: Technical details



Description of the technical concept

The central heat pump is sourced by ambient air and is turn connected to a 2000l storage unit. This storage unit is also connected to solar panels on the roof and - as a back-up - can be fed by a gas boiler (200kW). It distributes DHW to the 36 apartments in the building. Space Heating is provided by another gas boiler via heat exchangers.

Cooling is also possible through means of ambient air, a chiller and a storage unit.