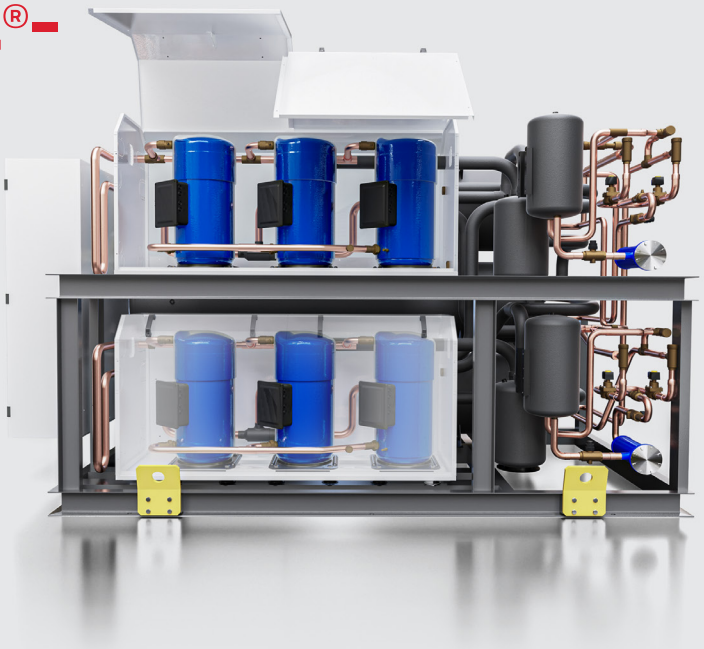
# HONEYWELL SOLSTICE®–POWERED COOLING SYSTEM CHOSEN BY ITALIAN BANK LOOKING TO IMPROVE EMPLOYEE COMFORT, SAFETY, EFFICIENCY AND SUSTAINABILITY



Case Study

**When a Milanese bank sought a new temperature control system to make its employees more comfortable, it brought in Italian heating and cooling specialist HiRef S.p.A. Tasked with meeting criteria in four key areas, the company reverted with a proposal for state-of-the-art heat pumps powered by highly efficient Honeywell Solstice® refrigerant.**

## BACKGROUND

To provide comfortable working conditions for employees across all four seasons, a project designer was tasked by a Milanese bank to procure a new cooling and heating system for the interior of the building and adjoining data center. The bank had four requirements for the system: acoustics, efficiency, safety and sustainability.

As the bank was based in the heart of the city, the system needed to feature quiet operation. Because of this, the designer's preference was for water-cooled heat pumps versus air-source heat pumps, which emit more noise.

The water-cooled option would also deliver the efficiency the bank was looking for without sacrificing heating and cooling performance – since it would not be subject to the fluctuating temperature of ambient air.

Safety was another priority since the control units would be installed indoors. In Italy, flammable systems require permission from the fire brigade, so a non-flammable system would not only be safer, but also save the bank the hassle and cost of multiple inspections.

The final imperative was very low direct and indirect carbon emissions. Because of this, a low-global-warming-potential (GWP), high efficiency heat pump made more sense than a fossil fuel-based boiler.

After compiling the project specifications, the designer briefed HiRef S.p.A, a Padua-based cooling system manufacturer serving the IT, industrial and services sectors, to revert with a proposal.


## SOLUTION

HiRef recommended a temperature control system driven by three PSW multi-purpose (6-pipe) heat pumps fitted with scroll compressor technology, fully optimised for Honeywell Solstice® N15 (R-515B) refrigerant.

Honeywell


The Honeywell hydrofluoroolefin (HFO) refrigerant was chosen because it offered high cooling and heating (supporting hot water generation up to 90°C) efficiency and a very low GWP of 293. Furthermore, its non-flammability met safety requirements while reducing installation, insurance and logistics costs for the bank's building contractor.

Significantly, the cooling and heating functions were packaged into a single unit with three operating modes: cooling only (chiller); heating only (heat pump); and simultaneous cooling and heating (up to full heat recovery). The integrated design offered multiple benefits, including reduced capex, the ability to capture and repurpose waste heat, and cleaner internal air thanks to the electric design.

## RESULTS

Following the system's installation, the bank's employees are enjoying unprecedented working comfort, with consistent cooling and heating regardless of the temperature outside.

Meanwhile, the system's efficiency has enabled the bank to reduce operating costs by 30% based on primary energy consumption for heating and cooling demand, compared to a standard chiller with free cooling and a separate gas boiler for heating.

Finally, as the heat pumps eliminate fossil fuel gas boilers and are powered by low-GWP HFO refrigerant, carbon emissions have been significantly reduced, ensuing regulatory compliance.

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