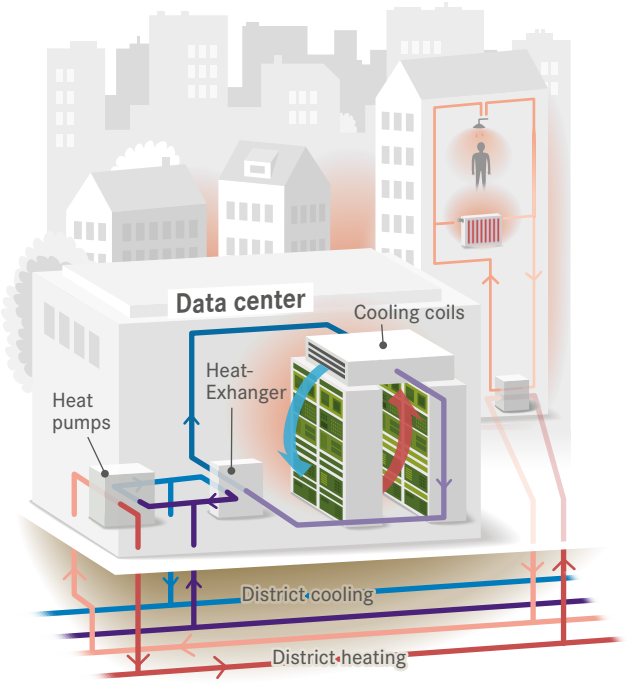
Customer Reference

Data center cooling with heat recovery

“The fact that we are based in Stockholm with its vast district heating and district cooling networks has opened for a new way of thinking about cooling, sustainability and solutions that are unbeatable financially, which translates to significant benefits for our data center customers.”

Gustaf Bergquist
CTO
Bahnhof



Being one of Sweden’s leading ISP and colocation operators, Bahnhof has deployed Fortum Värme’s data center cooling with heat recovery at multiple sites, implemented in different ways. In the solution applied at its data center Thule, Bahnhof has invested in Carrier heat pumps to generate the cooling for the data center and uses the district heating network to transfer excess heat for recovery.

Bahnhof’s cooling system has been designed with excess capacity and is also connected to Fortum Värme’s district cooling network. As a consequence, the heat pumps’ full capacity can be utilized from the start, since in addition to the data center excess heat, energy for heat production is also provided from the district cooling network return pipeline. This implies that Bahnhof on top of cooling its own data center contributes not only heat to the district heating network but also cool to the district cooling network.

The compensation for the energy supplied to the district heating network varies according to the outdoor temperature. Deliveries to the district heating network therefore primarily take place when the outdoor temperature is less than 7 degrees Celsius, which in Stockholm is the case for around half the year. Bahnhof is also compensated when it provides cooling to the district cooling network during summer months.

In terms of redundancy, the heat pump system provides the facility with full 2N production capacity.

DATA CENTER	**Bahnhof Thule**
COOLING CAPACITY	**1.2 MW**
COOLING WATER TEMPERATURE	**5.5 °C**
COOLING WITH HEAT RECOVERY	**4 300 h**
SUSTAINABILITY - MODERN APPARTMENTS HEATED	**1 050**
POWER GRID OPERATOR	**Ellevio**

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For more information about Fortum Värme’s Data Center Cooling Solutions, please contact datacenters@fortum.com