AALBORG UTILITY- IKEA

Aalborg utility has installed a district cooling plant at IKEA Aalborg

YEAR: 2022
MODEL: H-1200 (AW/WW - 4+4B)
APPLICATION: Air-to-water and water-to-water heat pump
CAPACITY (HEAT): 1200 kW (5°C evaporation, 72/40°C hot water)
CAPACITY (COOL): 8/13°C hot water
HEAT SOURCE: Air
COP: 3
DEFROST METHOD: Glycol

THE CASE

For a long time, the facility management of the warehouse had been dealing with an outdated chiller unit in need of replacement. To address this issue and replace the old HFC chiller unit, the team invested in a modern CO2 heat pump with integrated chiller application. The solution was implemented in collaboration with Aalborg Utility company, using heat pump units designed and manufactured by Fenagy A/S and installed by Krebs A/S.

The aim of the project was to establish a carbon-neutral cooling system for the warehouse. To achieve this, the waste heat generated from the chiller production is directed to the district heating network. The combined unit is designed to supply chilled water, heated water, or a combination of both.

THE HEAT PUMP

The heat pump is fully installed in a premium enclosure, equipped with Fenagy's latest ejector technology, FenEject, and controlled by a Fenagy PLC, with algorithms for capacity, chiller, evaporator and defrosting control. The installation is supported by four energy collectors, installed on 2-metre-high legs resting on a concrete foundation. Below these collectors, an aqua drain system has been established to collect condensate during defrosting. With a cooling capacity of 750 kW during the summer months, the heat pump not only meets the warehouse's cooling needs, but it also channels waste heat into the district heating network. By all means, a sustainable and efficient solution.

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