MITSUBISHI ELECTRIC

Case Study

BREEAM Excellent warehouses utilise advanced e-Series heat pumps

When leading European property development and management giant, CTP group was looking to build new warehouses west of Warsaw, they wanted facilities that allow for emission-free operation.

CTPark Warsaw West
Wiskitki, Poland

The company's ambition is to achieve climate neutrality by 2050, while also supporting its clients in achieving their climate goals.

The two new warehouses completed for the Raben Group in the CTPark Warsaw West in Wiskitki have been certified as BREEAM Excellent.

This has been achieved by placing sustainability at the heart of the development and includes 87 e-Series EAHV heat pump chillers delivering 12.4MW of heating and 13MW of cooling to the buildings.

"We implement solutions in our projects aimed at reducing emissions such as a highly insulated building envelope, automatic systems controlling lighting, ventilation and heating as well as the use of heat pumps as devices that allow for the non-use of fossil fuels during the operation of the facility," explained Marta Grondkowska from CTP Invest Poland.

"Combined with rooftop photovoltaics and the purchase of energy from renewable sources, we can already talk about climate neutrality".

The buildings were completed for the Raben Group, which offers complex logistics solutions in 16 countries across Europe and aims to run a business driven by sustainability.

The warehouses have seen the implementation of a range of innovative solutions rarely used in the warehouse market at such a large scale.

"The use of heat pumps combined with efficient underfloor heating technology ensures effective utilisation of electricity while minimising CO_2 emissions," as Jacek Luc from Raben Logistics Polska added. "This aligns seamlessly with the Raben Group's decarbonisation strategy."

CTPark Warsaw West
Wiskitki, Poland

The two giant halls have a total area of approximately 110,000m^2 and a total of **87 heat pumps** were installed outside the facilities to serve both halls.

The scale of power used in this project is unprecedented in warehousing with a total nominal heating capacity for both facilities of 12.4MW, and a total nominal cooling capacity of all installed units of 13MW.

The majority of the heating is delivered through approximately 180km of 25mm pipes buried under the warehouse floor. Other parts of the halls are heated and cooled via air distribution units installed under the roof.

"What distinguishes this installation on the warehouse and logistics market, is it's scale and innovation, making it the largest of its kind in Europe and the second largest globally," commented Piotr Gesla on behalf of heat pump supplier, Mitsubishi Electric.

The e-Series EAHV units perfectly meet the needs of the Raban group by offering flexibility in adjusting heating and cooling capacity and operational reliability even in extreme weather conditions.

The units utilise lower GWP R32 refrigerant and up to 6 individual units can be connected together to provide a system capacity from 150kW to 1,080kW. Using this modular approach reduces space requirements and simplifies lifting and installation.

The advanced heat pumps include highly efficient inverter scroll compressors and their Y-shaped heat exchangers allow for a greater surface area to maximise efficiency while keeping the units much narrower than conventional heat pumps.

Click here for more information about
e-Series EAHV Modular Air Source Heat Pumps

Case Study

CTPark Warsaw West
Wiskitki, Poland

Installation Summary

R32

- **87 x EAHV Commercial R32 Modular Air Source Heat Pump**

e-series

MELServe Service and Maintenance package
to optimise efficiency, extend equipment life and reduce carbon emissions.

MEL SERVE
By Mitsubishi Electric

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Note: The fuse rating is for guidance only and please refer to the relevant databook for detailed specification. It is the responsibility of a qualified electrician/electrical engineer to select the correct cable size and fuse rating based on current regulation and site specific conditions. Mitsubishi Electric's air conditioning equipment and heat pump systems contain a fluorinated greenhouse gas, R410A (GWP:2088), R32 (GWP:675), R407C (GWP:1774), R134a (GWP:1430), R513A (GWP:631), R454B (GWP:466), R515B (GWP:292), R454C (GWP:148), R1234ze (GWP:7) or R1234yf (GWP:4). *These GWP values are based on Regulation (EU) No 517/2014 from IPCC 4th edition. Mitsubishi Electric's air conditioning equipment and heat pump systems contain a hydrocarbon, R290 (GWP:0.02). *These GWP values are based on IPCC 6th edition.

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Green Gateway greengateway.mitsubishielectric.co.uk