

CASE STUDY: Logistics Specialist

PROJECT: Single Stage Pump Circulation

STAR CUTS ENERGY COSTS BY 40% AT DISTRIBUTION CENTRE

Customer:	Logistics Specialist
Equipment:	Single stage pumped circulation ammonia refrigeration plant
Refrigerant:	Ammonia
Capacity	450kW
Temperature	-22°C

Renowned for our expertise in the temperature controlled storage, Star has enabled another leading distribution firm to cut annual energy costs by 40% at its facility in Wales.

Working with the company's technical staff, Star designed and installed an environmentally conscious refrigeration plant for a cold storage facility at the site. The ammonia system replaced an existing plant that operated on R22 – an ozone-depleting refrigerant currently being phased out by EU legislation.

The global logistics specialist was looking for an energy efficient cooling system to serve a frozen food cold store. The facility has a throughput of over 600 frozen pallets each week, with products from the region's food manufacturers being distributed to retailers and food service outlets across the UK.

A world leader in cooling and heating system innovation, Star has vast experience of distribution centre cooling solutions spanning over 30 years. Star supplied a bespoke ammonia refrigeration plant for the cold store, which houses six insulated chambers with fully automated doors and has total volume of around 31,500 cubic metres.

Star designed, built, installed and commissioned a single stage pumped circulation ammonia refrigeration plant. With a total capacity of around 450kW, the plant delivers cooling via 10 evaporators to maintain cold store temperature at minus 22 degrees centigrade.



Star Refrigeration's Director of Sales – Food Market, James Ward, says: "As part of the R22 phase out and a drive to reduce energy consumption across the clients estate, our system is designed for optimum operating efficiency at an affordable running cost. As well as operating on natural refrigerant ammonia, the plant incorporates energy saving equipment and controls to provide significant electrical savings when compared to standard pumped circulation designs."

He adds: "We are confident that as well as having a refrigeration plant that complies with environmental legislation, the operator will save around 40% off its annual energy bill thanks to the design of the system."

Located in a new plant room adjacent to the cold store, the refrigeration plant features two screw compressors and one reciprocating compressor to give highly efficient part load operation. The ammonia system also includes surge drum, open flash intercooler and one common evaporative condenser. Star's Telstar PLC computerised control and management system ensures optimum performance and energy efficiency, with HMI touch screen interface.

Star's energy efficient plant design package includes defrost on demand, floating head suction pressure, an Aether condenser fan inverter controller and intelligent compressor controls. Star also improved the design of the existing cold store evaporators with graduated fin spacing to allow longer operation between defrosts.

When it comes to designing energy efficient cooling and heating systems, Star is a natural innovator.

Star works with strategic partners across the globe to deliver low carbon, cost saving solutions.

For more information, phone Star Refrigeration on 0141 638 7916, email star@star-ref.co.uk or visit www.star-ref.co.uk.

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