Refrigeration Installation for RDC

Middleton Distribution Centre

“EJM delivered an outstanding result from initial concept through to design and final delivery. The installation team were a pleasure to work with, and the project was completed on time and within budget. The result is something we can all be truly proud of.”

Stuart Parnham, JJL Design & Build

ejmrefrigeration.co.uk

PROJECT OVERVIEW

EJM Engineered Systems Ltd was appointed by JJL Design & Build to design and deliver the complete refrigeration package for a new temperature-controlled distribution centre in Middleton, supporting chilled, freezer, inbound and outbound operational areas. The installation forms part of our client's high-performance logistics network and utilises a fully integrated natural refrigerant CO_2 system to deliver efficient, resilient, and sustainable cold-chain performance.

KEY DELIVERABLES

- Full refrigeration system design, installation, and commissioning
- Transcritical CO_2 booster refrigeration system
- Adiabatic gas coolers with enhanced corrosion protection
- DX CO_2 evaporators serving freezer, chill, inbound and outbound areas
- Integrated glycol defrost, underfloor heater mat and warm glycol systems
- IceDry dehumidification systems integrated to controls
- Comprehensive CO_2 detection, plant room and roof void ventilation systems
- Extensive mechanical pipework, insulation, valve stations and secondary steelwork
- Full electrical installation including distribution, cabling, containment and controls
- RDM controls, monitoring, data management, and remote alarm integration

PERFORMANCE

- Freezer store temperature: –24 °C operating
- Chill / inbound / outbound temperature: +2 °C
- Freezer cooling duty: 6 × 66 kW air coolers
- Chill area duty: 8 × 48 kW air coolers
- Inbound chill duty: 2 × 42 kW air coolers
- Outbound chill duty: 2 × 55 kW air coolers
- EC fan technology throughout evaporators and gas coolers
- Variable speed driven compressors and pumps for high part load efficiency
- Integrated heat recovery providing warm glycol for defrost, underfloor heating and hot water generation
- Natural refrigerant CO_2 system with low environmental impact

PROJECT BENEFITS

- High efficiency, future proof natural refrigerant strategy
- Excellent temperature stability across all operational zones
- Reduced energy consumption via VSD and EC fan technologies
- Enhanced safety through full CO_2 detection, ventilation and alarm systems
- Robust redundancy and resilience suited to mission critical logistics operations
- Fully integrated RDM controls providing visibility, monitoring and diagnostics
- High quality mechanical and electrical installation delivered under full supervision

ABOUT EJM

EJM Engineered Systems Ltd specialises in the design, installation, commissioning, and maintenance of large-scale industrial refrigeration systems.

This project demonstrates EJM's capability to deliver complex transcritical CO_2 solutions, combining technical excellence, energy efficiency, and operational reliability for modern cold chain distribution environments.