



Alder Hey Childrens Hospital CO2 Refrigeration System

Application

As a world leader in healthcare and research, Alder Hey has built something amazing – a brand new children's hospital in a park, with a sustainable design inspired by children.

Alder Hey is one of Europe's busiest children's hospitals – caring for over 275,000 young people and their families every year and has created a brand new hospital.

A sustainable hospital built entirely in a park is something new in the treatment and care of children. It's not just a first for the UK, there's nothing like it anywhere in Europe.



It's rare to see a design that has so fully embraced the principles of wellbeing and the importance of outdoor space. The majority of patients (75%) will be in single rooms rather than wards, each with a window that can be opened out into the park. Each floor also has an outdoor balcony overlooking the park. **"It's one thing to look at something out the window, it's another to actually be able to experience it yourself,"** says David Powell, the trust's Project Director.

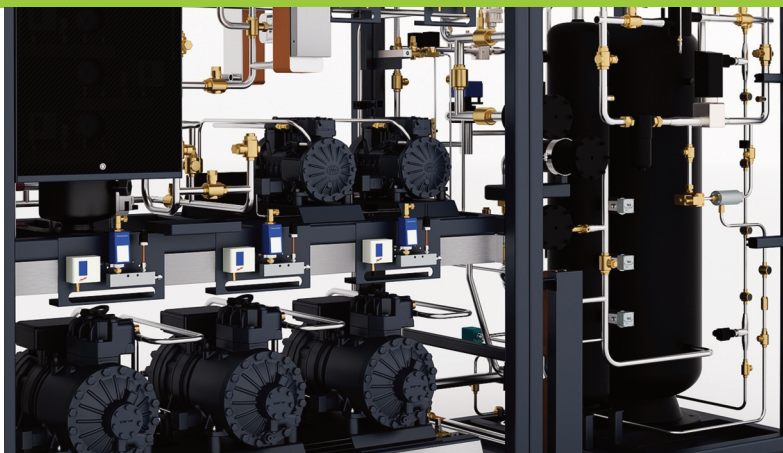
The grass of the park also continues, seamless, up over the curving roofs of the building itself; three main sections of the building reaching out like fingers into the park, creating valleys. The green roof is not just to enhance its green credentials – Alder Hey will be one of the most sustainable hospitals ever built with 60% of its energy-generated onsite, rain water-capture systems and a renewable heating plant.

This sustainable focus also reaches into the area of refrigeration with the latest CO2 refrigeration technology being designed and installed by Green Cooling for the main contractor Laing O'Rourke, working closely with Jackie Snaith of Chapel Foodservice consultants.

A high specification food service and pharmacy refrigeration system was required in order to match both the projects sustainability demands and also to meet the demands of the BREEAM environmental assessment.

Green Cooling provided a complete CO2 refrigeration system which included walk in refrigerated storage for the main kitchens, a centralised high efficiency CO2 refrigeration system along with refrigerated storage for pharmacy use.

Dave Blinkhorn Green Cooling's Technical Director commented, **"We have now designed and installed many CO2 refrigeration systems within UK Hospitals",** continuing, **"The sustainable credentials of the natural refrigerant CO2 rate very highly within a BREEAM assessment, plus the efficiency of a CO2 refrigeration system also fits extremely well within applications where achieving a high level of energy efficiency is a priority".**



Project Summary

Taking design and installation responsibility on this project Green Cooling provided a complete service from design through to handover and commissioning.

The refrigeration design was relatively complex and required a complete system based approach in terms of both cooling delivery and energy transfer via a central CO2 refrigeration plant and two individual CO2 packaged units.

A multi-compressor packaged system was configured to satisfy the main refrigeration load in order to provide both efficiency and contingency benefits within both chilled and freezer outputs.

In terms of installation, the project duration ran over a ten-month period, which included cold store construction, the installation of pipework, electrics/controls, refrigeration systems and the installation of the packaged refrigeration plant.

Green Cooling in their capacity as the exclusive UK distributor for Enx are able to provide a direct factory/manufacture support service with regard to the specification, design and manufacture of packaged CO2 plant.

Enx are one of Europe's leading CO2 refrigeration manufacturers and have a long relationship with the team at Green Cooling which means that the level of service delivered by Green Cooling in the UK is completely in line with the manufacturers design/specification quality and standards.

This project typifies how refrigeration is now quickly moving forward into a new era of sustainability and efficiency by utilising CO2, which is one of our oldest natural refrigerants to create cooling systems that meet the highest environmental standards that are demanded in 2015.

Equipment & Services

- Project specific design & specification service
- Project management & SHE controls
- 6 x GC Evopro cold rooms – food service
- 2 x GC Evopro cold rooms – pharmacy
- 1 x GC Enx centralised packaged CO2 refrigeration unit
- 2 x GC Enx individual packaged CO2 refrigeration units
- Complete installation and commissioning service

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