

A UK first - CO2 for a hospital catering facility



A CO2 refrigeration system has been installed and commissioned, through principal contractor Aggora on behalf of Compass Group, to provide the on-site catering refrigeration requirements for patients and hospital staff at the Homerton University Hospital in London.



This installation means that Homerton University Hospital now has the first hospital catering facility refrigeration system in the UK to operate with CO2 as the refrigerant.

The design of the system was led Green Cooling's senior technical and specification manager Dave Blinkhorn who worked alongside Aggora's project team.

This bespoke CO2 system utilised the most efficient method of application taking advantage of the existing 2 x 500kW ammonia chillers to supply the condenser cooling which negated the need for any additional remote coils.

The complete system now operates on natural refrigerants, with the ammonia system providing the condenser cooling and the CO2 system providing the critical cooling via the evaporators.

The client's main objective when selecting the new cold room system was to gain significant energy savings from both a medium- and long-term perspective.

In operation the energy savings when compared to a conventional refrigerant system have been calculated to be 16.7% over the course of one year.

Finally, by installing e-cubes to the air on probes a further 15% energy saving has been realised when compared to conventional air temperature probes.

Over a ten-year lifespan, some 628,000 kg of CO2 emissions will be saved thanks to the use of a CO2 system and compared to a standard HFC system.

The overall system features:

- Trans-critical CO2 unit with a 100% back up twin compressor system
- Water-cooled plate heat exchanger
- CO2 control system, with user-friendly touchscreen
- Danfoss AKVH pulse valves
- Searle kecx-70L evaporators
- Leak detectors within each coldroom
- ECOBOX coldroom controls
- LED tube lighting
- E-cubes to the air on probes

