

# A UK first - CO<sub>2</sub> for a hospital catering facility

A CO<sub>2</sub> refrigeration system has been installed and commissioned, through principle 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> emissions will be saved thanks to the use of a CO<sub>2</sub> system and compared to a standard HFC system.

## The overall system features:

- Trans-critical CO<sub>2</sub> unit with a 100% back up twin compressor system
- Water-cooled plate heat exchanger
- CO<sub>2</sub> control system, with user-friendly touch screen
- 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

