

Case story | Optyma™ Plus

Lower-GWP enhanced range of condensing units provides cooling for hospital cold rooms



When a busy hospital needed to relocate its cold room condensing units, Consultant Neil Garnett knew it was time to upgrade to F-Gas compliant refrigerants. He chose Optyma™ Plus units, running with R134a and – crucially – R452A.

When a hospital in the East of England decided to create a new service building, it meant relocating seven roof mounted condensing units cooling the hospital's mortuary.

The hospital turned to its framework consultant, Johns Slater and Haward (JSH) and as Senior Mechanical Engineer Neil Garnett points out, it was no easy task.

"The hospital can't just stop working and you can't predict a quiet period," Neil explains. "I needed to come up with a design that would let the contractors work fast and at relatively short notice when the opportunity arose."

Transition to lower-GWP refrigerants now

A recent survey revealed the condensing units were due for replacement, but this presented Neil with a further challenge: convincing a cost-conscious hospital to move away from the ozone-depleting refrigerant R22 to a lower-GWP (Global Warming Potential) alternative, complying with F-Gas regulation.

He says: "I wanted to provide a solution which fully complied with F-Gas regulation and the 2020 phase down of higher GWP refrigerants whilst at the same time, ensuring the new installation met all the operational requirements."

"Capital expenditure and life cycle costs, are a priority at any hospital, but they could see it was in their interest to have a unit they could rely on in the future – without having to replace it again. We worked with the maintenance contractor on the specification, and everyone agreed we're getting what's best for the hospital."

R452A: A like-for-like replacement

Knowing that Danfoss offers a range of lower-GWP cooling solutions, Neil discussed his options with the company's Commercial Consultant, Mark Fiddy.

Neil recalls: "I knew Danfoss and the Optyma™ range very well. I met with Mark and when I heard about his experience, I felt reassured. I didn't realise Danfoss had R452A Optyma™ units and I liked the sound of it."

With Mark's support, Neil specified seven New Generation Optyma™ Plus condensing units, five MBP units running R134a plus two LBP versions using R452A allowing the mortuary staff the ability to rapidly drop the temperature in two smaller cold rooms

to -18 °C. Both R134a & R452A have a GWP level below 2500 and are therefore fully compliant with the F-Gas regulation.

“With its lower-GWP refrigerants strategy, Danfoss was clearly the way forward,” says Neil. “The backup support has been good, and the fact that Optyma™ is a packaged unit makes it so much easier for the contractors to work quickly.”

“It’s plug and play and that reduces downtime.”

Another fan of the Optyma™ Plus condensing units is Les Mitchell, Branch Manager at Pitkin & Ruddock Ltd, Bury St Edmunds branch, who installed the new system.

“We need to make sure the design is right,” he remarks. “When we see Optyma™ outdoor units specified, it’s always a relief.”

“We use Optyma™ ranges wherever possible, anywhere from small cold rooms to large freezer rooms. Everything’s in there – filter drier and sight glass – and it’s already housed and easy to install. It’s plug and play - and that reduces downtime.”

“The units are very quiet so you can use them without disruption or complaints.”

Les was also impressed by the timing of the decision to switch to lower-GWP – echoing Neil’s view that it’s in his customers’ best interests.

He says: “Given the short lifespan of R404A, the number of those units still being sold seems strange. We’ve been trying to phase out R404A for the last twelve months so it’s helpful that Danfoss are providing clear advice on a compliant replacement.”

The longevity of the product appealed the most

Despite unseasonable weather interrupting installation, the easy-to-use nature of the Optyma™ units meant Les and his team could meet the challenging schedule.

He says: “The hospital are really pleased. We didn’t cause too much disruption, and were able to decide on a day-to-day basis whether we could go ahead. Even with those gaps, we were still able to complete the job on time.”

Eight months since the first units were commissioned, there have been no reported issues, and the condensing units are performing well.

“Danfoss condensing units are really efficient,” says Neil. “But it was the longevity of the product that appealed the most. You can’t put in something that’s only going to last for two or three years.”

Very straightforward

Importantly, the choice of R452A – and the support from Mark at Danfoss – meant switching to lower-GWP refrigerant was no more difficult than any other job.

Les says: “R452A was a new refrigerant for us, but it was really easy. Its wide temperature scale made it a good like-for-like replacement for R404A. As far as possible, everything we install now will be either R452A or R449A.”

Neil agrees: “The Danfoss technology is ready and available now, making selection simple and straightforward.”

Neil selected this Danfoss equipment:

- 5 x Optyma™ Plus condensing units with R134a for MBP application
- 2 x Optyma™ Plus condensing units with R452A for LBP application
- 7 x T2 thermostatic expansion valves
- 7 x EVR solenoid valves

The Danfoss Optyma™ outdoor condensing unit ranges provide high energy efficiency, reliability and low noise operation. Easy to install, service and maintain, they all use lower-GWP refrigerants and are Ecodesign and F-Gas compliant.



For an efficient system control and reliability, Danfoss has a wide range of components, such as thermostatic and electronic expansion valves, and a brand new enhanced range of solenoid valves - EVR. All these components are qualified for use with lower-GWP refrigerants.



Where to purchase Danfoss solutions in the UK:

<http://refrigerationandairconditioning.danfoss.co.uk/contact/distributors/#/>

Discover our solutions for cold rooms at www.coldroom.danfoss.co.uk

