Air Conditioning

Case Study

Kooltech Ltd

Making a World of Difference

Cool new HQ showcases both Hybrid and VRF systems

One of the largest independently owned wholesalers of refrigeration and air conditioning products is using its new state-of-the-art headquarters in Scotland to showcase traditional VRF (Variable Refrigerant Flow) air conditioning, alongside the innovative, award-winning Hybrid VRF system.

Kooltech Ltd has been a major wholesaler of Mitsubishi Electric's complete range of air conditioning products for over 20 years, so Kooltech staff are very familiar with the innovation that the company is renowned for.

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The City Multi Hybrid VRF system offers simultaneous heating and cooling just like VRF air conditioning but uses water in occupied spaces rather than refrigerant.

When it came to selecting air conditioning in the new Glasgow headquarters, the choice was made to use the facilities to highlight the benefits of both traditional VRF and the new Hybrid version.

The headquarters is designed to act as a distribution and warehouse hub for Kooltech's network of branches and has its own dedicated trade counter for customers in the north.

On top of this, the new facility has a fully functional product showroom and training facility for the Mitsubishi Electric range, and a manufacturing site for Kooltech's bespoke range of K-Con products.

Construction on the two-storey facility began back in September 2015 with specialist installer T&D Temperature Services Ltd employed to carry out the entire air conditioning installation.

"Our customers trust us to deliver the best solutions for them and we therefore took the decision to use each floor to showcase the two different solutions in the City Multi portfolio," commented Kooltech National Technical Manager John Hammond.

Hybrid VRF is the latest addition to the City Multi line-up and whilst offering all of the flexibility in design and operation of traditional VRF, it uses water as the main heating and cooling distributor within the majority of a building instead of refrigerant.

This delivers much more stable off-coil temperatures and cuts out any potential for draughts within the office space. It also makes Hybrid VRF highly suitable for areas such as hotels, where the use of refrigerants is restricted, without the addition of costly leak detection equipment.

"In terms of the setup, Hybrid behaves pretty much like VRF. The main difference is that the majority of pipework is for water," explained Gary Tedeschi, Director at T&D Environmental Services.

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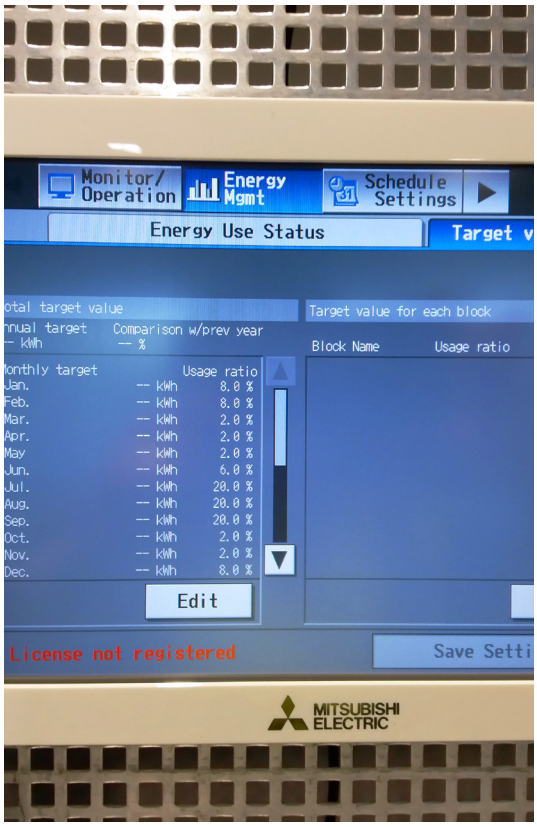

An advanced MelcoRemote control system has been installed to monitor the energy use of both the VRF and Hybrid VRF systems, along with the Ecodan heating units, lighting and extract fans within the building.

"However, it still provides all of the flexibility of design and this is part of the reason City Multi systems have been chosen as the headquarters give Kooltech room to expand and grow."

Mitsubishi Electric's Hybrid VRF solution is the world's first simultaneous heating and cooling two pipe system using water in this way and offers a multitude of benefits to the end user.

Using advanced refrigerant technology between the outdoor unit and a Hybrid Branch Control box (HBC), the system transfers energy around the building, offering simultaneous heating and cooling, milder off-coil temperatures, faster defrosts, and no critical refrigeration concerns.

"We also have full energy monitoring taking place between the two newly installed systems, so will be keeping a close eye on the energy usage to highlight the differences between the two solutions to customers," added John Hammond.

The advanced MelcoRemote control system has also been installed and this is being used to monitor the energy usage of many products on site – including City Multi units, the Ecodan heating range, lighting, extract fans and more.

The installation of the Hybrid VRF system began in April 2016 and with a proposed commissioning date of mid-June 2016, T&D Temperature Services didn't have long to fit out the site.

"We have a long relationship with Kooltech and they wanted an installation that reflected the high quality of this new building," explained Gary Tedeschi. "Using water pipes as well as refrigerant pipes meant we could highlight just how flexible this hybrid system can be."

The indoor units are designed to be concealed within the ceiling space to allow unobtrusive air conditioning and the flexibility of the duct layout allows airflow patterns to be arranged to suit the application.

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Installation Summary

One PURY-EP350 Hybrid VRF outdoor heat recovery unit

14 PEFY-WP-VMA-E indoor units in a range of different sizes

With an incredibly low height of just 250mm, the units come with a wide range of external static pressure settings (35-150Pa) and very low noise levels due to the use of a centrifugal fan.

With the multi-million pound project complete, Kooltech has officially opened the doors to its new headquarters and is already reaping the benefits of the Mitsubishi Electric solution.

John Hammond concluded: “We are delighted with the new building and the Mitsubishi Electric systems are working as we expected them to. We now have an energy efficient base for our operations and can demonstrate both the Hybrid and VRF solutions to our customers with our own K-Con bespoke solutions in a live working environment.”

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