



New airport hotel uses Hybrid VRF air conditioning

A hotel on the doorstep of North Lincolnshire's major transport hub will open its doors this winter complete with Mitsubishi Electric's innovative Hybrid VRF air conditioning system.

The Hampton by Hilton next to Humberside Airport is under modular room construction with each floor section built in a factory and transported to the site. This progressive approach is also mirrored in the use of the Hybrid VRF system, which is being installed by modular build specialists, N & P Climate Control.

Dean Gibson of N & P explains: "We first looked at the Hybrid VRF system because of the tightening F-Gas regulations but also because we felt it would be a great innovative solution to offer in conjunction with Mitsubishi Electric."



Air Conditioning

Case Study

Making a
World of
Difference

Hampton by Hilton Humberside



Hybrid VRF serves all bedrooms on the first, second and third floors of the hotel

The appeal to the hospitality sector of Hybrid VRF is in its use of water, rather than refrigerant, which eliminates the need for provision of leak detection systems in compliance with standard EN378. From a commercial standpoint, this is a major financial incentive, as Gibson explains.

“There are different levels of leak detection that could be offered, but even at the very basic level of compliance you would be looking at £15,000–£20,000 capital outlay. That’s a significant cost before our client even considers the additional regular maintenance requirements. Equipment wise, the Hybrid VRF system is close to the same cost of traditional VRF, so we can conclude that just by using it and avoiding leak detection, we have saved. Also, considering the wider environmental impact, limiting refrigerants inside the building and using water instead is another bonus.”

The Hybrid VRF system will serve all bedrooms on the first, second and third floors of the hotel, delivering simultaneous heating and cooling throughout the building. Five City Multi outdoor heat recovery units serve 100 ultra-thin ceiling-concealed ducted indoor units. Simplified remote controllers in each room allow occupants to adjust air temperature individually.

The Hybrid Branch Controller (HBC) is the heart of the Hybrid VRF system and links the R2 VRF outdoor unit to the indoor units. It features two plate heat exchangers, where the temperature exchange between the refrigerant and water occurs. Refrigerant is only used in pipework between the outdoor unit and the HBC.

Energy-saving inverter-driven pumps are built in and pump the water to all of the indoor units which can be up to 60 metres away. Excellent energy efficiency, ease of installation, low maintenance and reliable operation of the 2-pipe system is a class-leading alternative compared to a chilled water system with four pipes.

As well as the elimination of the need for leak detection, the Hybrid VRF system allows for the use of plastic pipe instead of copper, making the installation easier and faster, as there is no brazing required.



Air Conditioning

Case Study

Making a
World of
Difference

Hampton by Hilton Humberside

Installation Summary:

Hybrid VRF

Outdoor unit: PURY-P model (350 x 5) Hybrid VRF Heat Recovery Outdoor unit PURY-P350YLM-A1

Indoor unit : PEFY-WP- VMS (94 x Size20, 3 x Size25, 3 x Size 32) Ultra Thin Ceiling Concealed Ducted Indoor Unit

Remote Control : PAC-YT52CRA, controller in each room

A Melcotel centralised controller allows hotel staff to manage the entire system, ensuring maximum guest comfort for minimum energy use

As specialists in Modular build, N & P were also able to do a first phase of the system installation in the factory on the individual 12m x 3m modules.

“We get as much done as possible in the factory environment where you can control all the tolerances and the quality in a much more organised fashion,” Gibson explains. “On site, you’re working around other trades, and you’re weather-dependent. From an install standpoint, it’s been relatively straightforward, if not more straightforward, than a standard VRF.”

The hotel is also being fitted with Melcotel, Mitsubishi Electric’s unique controller that allows up to 200 indoor units to be more accurately controlled remotely.

The controller works both with and without the integration of a keycard system and offers night setback facility, day/night on/off function, temperature adjustment based on outside temperatures and window open control that forces the air conditioning to be switched off when a window is opened. All of these functions provide a higher level of control, greater energy savings and lower running costs.

Gibson concludes: “This build brings together four elements: hospitality, modular construction, Mitsubishi Electric’s Hybrid VRF system and our expertise. This is something we want to show developers and hoteliers as a solution they should be looking at.

For little or no extra cost the client is getting the latest technology as part of a faster construction process – and it works well with this type of a system.”



Telephone: 01707 282880
email: air.conditioning@meuk.mee.com
web: airconditioning.mitsubishielectric.co.uk

UNITED KINGDOM Mitsubishi Electric Europe Living Environmental Systems Division
Travellers Lane, Hatfield, Hertfordshire, AL10 8XB, England General Enquiries Telephone: 01707 282880
IRELAND Mitsubishi Electric Europe Westgate Business Park, Ballymount, Dublin 24 Ireland
Telephone: Dublin (01) 419 8800 Fax: Dublin (01) 419 8890 International code: (003531)

Country of origin: United Kingdom – Japan – Malaysia. ©Mitsubishi Electric Europe 2016. Mitsubishi and Mitsubishi Electric are trademarks of Mitsubishi Electric Europe B.V. The company reserves the right to make any variation in technical specification to the equipment described, or to withdraw or replace products without prior notification or public announcement. Mitsubishi Electric is constantly developing and improving products. All descriptions, illustration, drawings and specifications in this publication present only general particulars and shall not form part of any contract. All goods are supplied subject to the Company's General Conditions of Sale, a copy of which is available on request. Third-party product and brand names may be trademarks or registered trademarks of their respective owners.



Mitsubishi Electric UK's commitment
to the environment

Follow us @meuk_les
Follow us @green_gateway

Mitsubishi Electric
Living Environmental Systems UK

[mitsubishielectric2](https://www.youtube.com/mitsubishielectric2)