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HEAVY INDUSTRIES**

AIR CONDITIONING
& WATER HEATING

MITSUBISHI HEAVY INDUSTRIES

Case Study:

MHI VRF & Q-TON SUPPORT COUNCIL'S GREEN AMBITIONS



CASE STUDY:

ROWAN HOUSE FOR COLCHESTER COUNCIL

Energy-efficient heating, cooling, and hot water generation systems from Mitsubishi Heavy Industries (MHI) are helping Colchester City Council to achieve its sustainability goals.

In line with its stated target of a net zero carbon footprint by 2030, the council secured £572,000 of funding from the Public Sector Decarbonisation Scheme towards a major refurbishment of its Rowan House HQ.

The works were carried out by developer M3 Developments and M&E contractor Rossair, supported by MHI's Specification team and supplied by HRP. The council's existing gas boilers and water heaters were replaced by **MHI VRF** heat recovery air conditioning and a **Q-ton** air-to-water heat pump for hot water generation.

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James Morrison, Project Manager for Rossair, said: "The biggest challenge was getting all the kit into the designated areas, as we only had small spaces to work with. Sizing and positioning the condensers and placing the indoor units in the existing ceiling tiles were key to the client's demands."



**FDTC-VH
COMPACT CASSETTE**



**KXZR
R410A 3-PIPE HEAT RECOVERY OUTDOOR**



A total of 13 3-pipe **VRF** heat recovery systems from the second generation KXZ range, with capacities from 28kW-67kW, were connected to 105 indoor standard and compact cassettes and wall mounts.

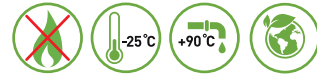
The **KXZ range** offers cooling capacities from 22.4kW-67.0kW. The modular outdoor units can also be "twinned" or "tripled" providing up to 168.0kW on a single system. The range has a total piping length of 1000m, and the furthest indoor unit can be connected up to 220m from the outdoor unit. The units offer high levels of design flexibility, which helped to simplify the installation process.



Kevin Pocock, MHI Specification Manager, said: "A project like this shows how renewable technologies work together to reduce a building's carbon footprint. Generating high-temperature hot water at good efficiencies all year round has always been a challenge, but Q-ton achieves this in a reliable manner using proven technology."



Q-TON
AIR TO WATER HEAT PUMP



MHI's 30kW Q-ton heat pump is distributed in the UK and Ireland under a joint venture with Beijer Ref. Installed at Rowan House with a 1000-litre storage cylinder, it operates using CO₂ - a natural refrigerant with a global warming potential of less than 1 - and produces hot water between 60°C and 90° C. The Q-ton operates at -25°C ambient temperature, with no loss in capacity to -7°C. It is WRAS approved and achieves two BREEAM design points (three when fitted with leak detection) as standard.



It is supported by a **Q-ton Remote Monitoring System (QRMS)**, which checks operation and provides weekly and quarterly reports comparing energy usage and efficiencies against gas and electric equivalents and self-analyses to highlight any potential operational or maintenance requirements.

New LED lighting is helping to reduce electricity consumption and extra roof insulation has been added to reduce heat loss. The replacement heating system is expected to save an estimated 108.7 tonnes of CO₂e and the LED lighting 30.9 tonnes of CO₂e, per annum.

The project will also make significant contributions to other key elements of the council's Strategic Vision, including leading on sustainability, improving air quality, encouraging green technologies and innovative solutions to climate emergency, and ensuring the council's assets continue to contribute to economic growth and opportunity.

Pam Donnelly, the council's Chief Executive, said:

"Rowan House is a testament to the council's vision and commitment to environmental sustainability.

Our aim was to create a workplace that not only reduces our carbon footprint

but also inspires our staff and the wider community to embrace sustainable practices.

We believe leading by example, we can encourage positive change and make a lasting impact on our environment."

Quote from council press release: <https://www.colchester.gov.uk/info/cbc-article?id=KA-04451>

For more details about our full product range, please contact:

MHI DIRECT

Or your local Beijer Ref branch.

