

How to prioritise employee comfort and wellbeing, whilst reducing your carbon footprint

Air Conditioning



Nursing and care home supplier Acticare, has ensured employee comfort and environmental standards are met with the installation of new cooling, heating and ventilation systems at its new-build facility in Hereford.

Case Study

Like many office workers, Acticare employees are sat at their desks for most of the day. A fresh, temperate working environment can go a long way to help maximise workplace productivity and was key when considering which systems to install in their new two-floor building.

Acticare Head Office, Hereford

The office areas, which were completed in December 2018, include open plan spaces, satellite offices and meeting rooms, all of which required a solution that would keep employees comfortable and productive at work.

The company chose the **R32 Hybrid VRF system** from Mitsubishi Electric to help provide energy efficient air conditioning and meet the buildings high environmental standards. The R32 units are designed to deliver high operational efficiency whilst minimising the global warming potential (GWP) of the system.

By delivering a lower GWP than current refrigerants, the R32 solution can meet both BREEAM building standards for sustainability performance and government environmental regulations - plus future proof against ongoing environmental legislation.

Mitsubishi Electric's Hybrid VRF system is fundamentally different from traditional VRF systems as it uses water throughout the majority of its pipework to transfer simultaneous heating and cooling to different rooms. However, it still maintains full flexibility in its design, lower annual maintenance costs and advanced controllability.

With both a central controller (AE-200E) and individual remote controls, employees have the power to adjust the level of heating or cooling in individual spaces, which is particularly useful for the satellite offices at the new site, which are not attached to the main building.



“ Maintaining a high level of indoor air quality is extremely important for us, as employees spend the majority of their day inside the building. EMS made the case for the R32 Hybrid, working with the Lossnay ventilation system, and we are looking forward to the benefits it will bring ”

Phil Boyman
Acticare

The system was designed and installed by Business Solutions Partner EMS Ltd. Alan Meredith, Director at EMS said “We like what the R32 Hybrid VRF achieves, in particular the enhanced occupier comfort of using water instead of refrigerant in the conditioned space, plus also the environmental benefits of using the low GWP R32 refrigerant. The system proved easy to install and we’re looking forward to measuring the benefits for use on future projects”.

The use of R32 was also an important factor for Phil Boyman, Director at Acticare, who said “One of the main considerations when choosing an air conditioning system was how well it would future-proof the building against changing environmental standards. The Hybrid VRF units were able to do so by meeting current F-Gas regulations.”

The unique Hybrid VRF uses R32 refrigerant between the outdoor compressor and an indoor Hybrid branch controller box. From here, water is used to transfer heating or cooling to the individual indoor units throughout the building. This removes the need for leak detection equipment within occupied spaces and also means that Acticare can benefit from reduced maintenance costs because there is no requirement for annual leak-detection checks.

Mitsubishi Electric’s Lossnay heat recovery ventilation units were also chosen to work alongside the R32 Hybrid VRF systems, with the role of improving indoor air quality. The Lossnay units supply clean, fresh air into the building, while simultaneously extracting stale air, and recovering valuable heat energy for maximum efficiency.



Installation Summary



R32 Outdoor Units

- x 2 PURY-EM300YNW-A Outdoor Unit
- x 1 PUZ-ZM35VKA Outdoor Unit

Master HBC Controllers R410A (HVRF)

- x 2 CMB-WP1016V-AA

Indoor Units

- x 5 PLFY-WP-VFM-E 600x600 4-Way Blow Ceiling Cassette Indoor Units (x 1 WP15 / x 2 WP20 / x 1 WP25 / x 1 WP32)
- x 10 PLFY-WP-VBM-E 4-Way Blow Ceiling Cassette Indoor Units (x 3 WP32 / x 2 WP40 / x 5 WP50)
- x 4 PLFY-WP-VMA-E Ceiling Concealed Ducted Indoor Units (x1 WP32 / x 3 WP50)
- x 1 PKA-M35HA Wall Mounted Indoor Unit

Lossnay Mechanical Ventilation Heat Recovery (MVHR) Units

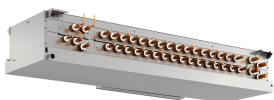
- x 2 LGH-RVXT-E-1 Lossnay heat exchanger (x1 LGH-150RVXT-E-1 / x 1 LGH-250RVXT-E-1)

Controls

- x1 AE200 Centralised Controller
- x 20 PAR-33MAA-J Remote Controllers
- x1 PZ-61DR-E Remote Controller



PURY-EM300YNW-A



CMB-WM1016V-AA



PLFY-WP-VFM-E



PLFY-WP-VBM-E



PLFY-WP-VMA-E



PUZ-ZM35VKA



PKA-M35HA



LGH-RVXT-E-1



AE-200E



PAR-33MAA-J



PZ-61DR-E

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Note: The fuse rating is for guidance only. Please refer to the relevant databook for detailed specification. It is the responsibility of a qualified electrician/electrical engineer to select the correct cable size and fuse rating based on current regulation and site specific conditions. Mitsubishi Electric's air-conditioning equipment and heat pump systems contain a fluorinated greenhouse gas, R410A (GWP:2088), R32 (GWP:675), R407C (GWP:1774) or R134a (GWP:1430). *These GWP values are based on Regulation (EU) No 517/2014 from IPCC 4th edition. In case of Regulation (EU) No 626/2011 from IPCC 3rd edition, these are as follows. R410A (GWP:1975), R32 (GWP: 55), R407C (GWP:1650) or R134a (GWP: 1300).



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