



CARBON REDUCTION

HYBRID SYSTEMS REDUCING THE CARBON FOOTPRINT OF YOUR BUSINESS

EMS AND HYBRID SYSTEMS

Did you know that EMS were responsible for the design and installation of the first ever Hybrid VRF, or HVRF system in England. This article discusses what a Hybrid system is and whether it is worth considering for your building.

WHAT IS A HYBRID AC SYSTEM?

Typically, when we talk about Hybrid systems we are talking about switching out refrigerant pipework for pipework which carries water instead. A hybrid system involves the combination of refrigerant and chilled water working together. Usually the outdoor condensing unit will hold refrigerant and this will be connected to a branch box which will convert the energy from the refrigerant into water to serve the indoor units.

WHAT ARE THE ADVANTAGES OF A HYBRID AC SYSTEM?

- When we switch out parts of the refrigerant system for water, this means the system needs to hold far less refrigerant to operate efficiently. Lower quantities of refrigerant gas in the system minimises the environmental impact of the system.
- There is no refrigerant pipework inside the building therefore the risk of leakage causing a hazard to health is reduced.
- Hybrid systems are available in a modular design so the replacement of existing equipment for hybrid systems can be phased They are also well suited to retrofit settings.

WHAT ARE THE DRAWBACKS OF A HYBRID AC SYSTEM?

- Hybrid systems are viable alternatives to existing multi-split VRF systems. These lend themselves to being larger systems with greater amounts of refrigerant, often in commercial or industrial buildings; a hybrid solution is unlikely to be the most cost-effective solution for a smaller application, such as a single unit in a single office where a single split -

system may be more appropriate.

WHAT ARE THE APPLICATIONS FOR A HYBRID AC SYSTEM?

We recommend the use of a hybrid system is the following situations:

- Where you have existing cooling provided by a Chiller and a separate Boiler to provide heating and you are looking to replace the two technologies with one solution which can offer both.
- Where you have a large amount of refrigerant in your systems on site and you are looking to change this, whether it be to comply with the latest F-Gas Regulations or because you are looking for more environmentally friendly and sustainable alternatives to traditional air conditioning.

WHAT ARE THE SIMILARITIES AND DIFFERENCES BETWEEN A HYBRID AC SYSTEM AND A CONVENTIONAL AC SYSTEM PROJECT DELIVERY

The controls for the units are the same for each technology so end-users will already be familiar with their operation. The only difference is the method by which the heating and cooling is delivered.

The key difference with hybrid solutions is that they use far less refrigerant therefore are a good option to meet any green credentials or sustainability goals your business may have.





CONTINUED...

Hybrid VRF – The facts

2 TWO PIPE SYSTEM
HEAT RECOVERY

MITSUBISHI ELECTRIC
Air Conditioning | Heating
Ventilation | Controls

AVERAGE SEASONAL ENERGY EFFICIENCIES ABOVE **7**

20% Energy Saving Potential With HEAT RECOVERY

ONE BOX WITH ALL WATER COMPONENTS INCLUDED

ZERO LEAK DETECTION REQUIREMENTS

8 & 16 PORT HBCs AVAILABLE

100% WATER IN OCCUPIED SPACES

UP TO **FIFTY** INDOOR UNITS CONNECTABLE

PROVEN MULTIPLE APPLICATIONS HEAT RECOVERY

10% HIGHER SENSIBLE COOLING CAPACITY | **30% LESS REFRIGERANT VOLUME** | **30% LOWER ANNUAL MAINTENANCE COSTS**

HOTELS / OFFICES / RETAIL / ACCOMMODATION

LOWER RUNNING COSTS

NO REFRIGERANT IN OCCUPIED SPACES | **GIVING TOTAL FLEXIBILITY OF DESIGN**

PERFECT FOR NEW BUILDS REFURBISHMENTS &

SIMULTANEOUS HEATING & COOLING

OPTIMUM TEMPERATURE CONTROL | **EASY TO INSTALL**

AWARDS IN JUST ONE YEAR

- Air Conditioning Product of the year at the RAC Cooling Industry Awards 2016
- Runner up in the CIBSE Yorkshire Region - Manufacturers Award 2016
- Finalist in the H&V News Awards 2017
- Commercial Air Conditioning Product of the Year, at the HVR Awards 2016
- Highly Commended ACR Product of the Year - National ACR & Heat Pump Awards 2017

For further information, please visit hybridvrf.co.uk

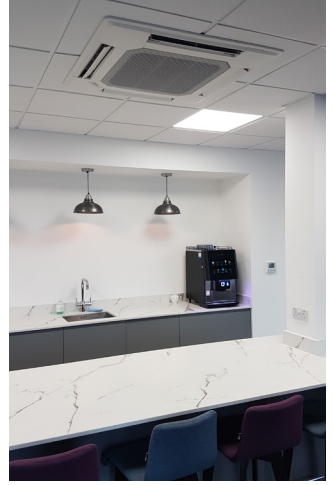
CASE STUDY

EMS were approached by a nursing and care home supplier in Hereford who wanted to create an ambient atmosphere in their brand new offices. The new build offices would include open plan spaces, satellite offices and meeting rooms.

The company were particularly keen to future proof the system against changing legislation and meet environmental standards including BREEAM whilst still providing a productive and comfortable working temperature for employees.

With this in mind, EMS specified a Mitsubishi R32 Hybrid VRF system. As well as being the latest technology, the Hybrid System uses low GWP refrigerant and less of it due to the use of water.

The system was easy to install. Coupled with no refrigerant pipework internally, there is also no need for annual leak detection checks, reducing their ongoing maintenance costs. A win win solution.



I AM INTERESTED. WHERE CAN I FIND OUT MORE?

At EMS, we are experts in the design, installation and maintenance of all types of HVAC system including HVRF. Call us today to find out more.

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