

Large-scale Hybrid VRF installation provides the perfect temperature for guests at London's Strand Palace Hotel

Air Conditioning



London's renowned Strand Palace Hotel sits in the heart of London and has been welcoming guests since 1909. Situated within walking distance of some of the most famous music theatres in London, combined with its quirky contemporary décor, the hotel guests expect a high level of comfort and experience during their stay.

“ There were a number of key factors that led the Strand Palace to choose the Hybrid VRF system.

The cost saving potential from increased control of heating and cooling, lower maintenance requirements and minimal disruption to the hotel were all very important, as was the ability to reduce energy consumption. ”

David Abercrombie
Chief Engineer of
Strand Palace

The hotel chose Mitsubishi Electric’s innovative Hybrid VRF air conditioning system to provide cooling and comfort throughout its site, with plans to install over 700 units by April 2020.

Nearly 488 of the 785 rooms have been refurbished so far, with many available to the public since early September 2018. The project, which is the largest installation of its kind in Europe, began in November 2017.

After a period of incredibly hot weather this summer, the Strand Palace knew that modernising its heating and cooling systems was fundamental to maintaining a quality experience for guests. Ensuring high levels of energy efficiency, was also a factor considered during this process.

The Hybrid VRF system was a perfect solution, with its unique 2-pipe system allowing for simultaneous heating and cooling with heat recovery, and the combination of R410a refrigerant and water providing a lower Global Warming Potential (GWP) than traditional VRF systems.

Increased efficiency was possible through use of a central controller, which allows heating and cooling to be switched off in individual rooms, while keeping other rooms at the optimum temperature. This saves energy as there is less work to do when occupants turn the systems back on. Overall, the systems save around 30-40% in refrigerant use when compared to traditional VRF systems. Individual controllers, based on the iPhone layout for intuitive use, were also installed in each room. These can be connected to the Mitsubishi Electric MELCloud app, used to control and monitor Mitsubishi Electric products remotely, and smartphones via Bluetooth.

Live reports can also be obtained to help set usage targets for the future. Although it has not been implemented yet, the Hybrid VRF system has an additional feature allowing it to be synced to a hotel’s booking and check-in system to monitor usage during each customer’s visit.



With an occupancy of 87% every day of the year, it was crucial that the hotel remained fully operational during installation to minimise loss of revenue and disruption to guests.

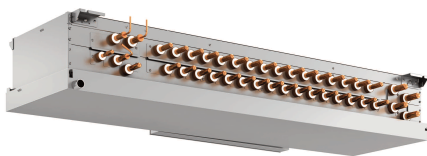
One major cost-saving benefit is that there is no need for leak detection. As water is used as the heat transfer vehicle, refrigerant only enters the Hybrid Branch Controller (HBC) boxes, of which there are six or seven per floor, rather than any of the hundreds of guest rooms. As a result, no monitoring or detection system is needed to be set-up or maintained, and costs were kept low.

As the Hybrid VRF could be installed floor by floor, it provided the perfect solution for the hotel. Ted Connell, specifier and designer at Elementa, said “many different systems were assessed, but the modular installation of the Hybrid VRF made it stand out as the right option for The Strand. With this system, it was possible to complete the installation floor by floor, even half a floor at a time where necessary, allowing the hotel to remain open during the process. This phased approach also solved the problem of limited roof space for a chiller system, making the Hybrid VRF the natural choice all round.”

Ease and flexibility of installation was another important factor, and the Hybrid VRF’s slimline vents, which work within the hotel’s existing ceiling voids, were of huge benefit during the process.

Mark Harry, installer at Working Environments said “The system was incredibly easy to fit as it was familiar to the installers, having been designed to mirror the set-up of a traditional VRF. We were also able to work around dormers, supporting beams and different layouts that often come with a building of this age.”

The installation of the Hybrid VRF systems has minimised environmental impact, avoided disruption to the hotel’s business and averted the need for high maintenance bills, while allowing for close control and monitoring.



Hybrid Branch Controller



Installation Summary

CITYMULTI CONTROLS

R410A Outdoor Units

- x 34 PURY-EP-YNW-A1 Outdoor Unit (x 5 EP250 / x 11 EP300 / x 3 EP350 / x 15 EP500)

Master HBC Controllers R410A (HVRF)

- x 7 CMB-WP108V-GA1
- x 50 CMB-WP1016V-GA1

Indoor Units

- x 688 PEFY-WP-VMS1-E Ultra Thin Ceiling Concealed Ducted Indoor Units (x 309 WP15 / x 308 WP20 / x 59 WP25 / x 11 WP32 / x 1 WP40)
- x 102 PFFY-WP-VLRMM-E Floor Standing Concealed Indoor Units (x 98 WP20 / x 2 WP25 / x 2 WP32)

Controls

- x 9 AE200 Centralised Controller
- x 15 EW-50E Web Interface and AE-200E Expansion Controller
- x 8 Procon MELCOTEL Hotel Interface
- x 790 PAC-YT52CRAS-J Remote Controllers
- x 13 PAC-SF46EPA M-NET Transmission Booster



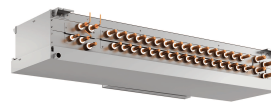
PURY-EP250YNW-A1



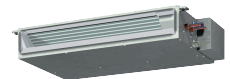
PURY-EP300/350YNW-A1



PURY-EP500YNW-A1



CMB-WP108V-GA1 / CMB-WP1016V-GA1



PEFY-WP-VMS1-E



PFFY-WP-VLRMM-E



AE-200E



EW-50E



MELCOTEL



PAC-YT52CRAS-J



PAC-SF46EPA

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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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