

Project Showcase: Holiday Inn Express and Suites Queenstown



The Holiday Inn Express and Suites is a new hotel located in the centre of Queenstown on the shores of Lake Wakatipu.

The hotel amenities include the Great Room function venue, approximately 227 guest rooms with ensuites, an undercover carpark, public dining as well as recreation and meeting spaces. Additionally, there are also staff back-of-house areas such as offices, storage and commercial kitchen facilities.

QUEENSTOWN



EQUIPMENT BREAKDOWN

- Ducted Units
- Cassette Units
- Zubadan Heat Pump
- Lossnay Heat Recovery Ventilation

The Challenge

The client's specification called for a VRF heating and cooling system for the hotel. The outdoor plant locations meant that long pipe runs were required. Furthermore, the majority of the suites were only around 24m². As such, the small occupied areas where people would be sleeping meant compliance with AS/NZS 5149.(1-4): 2016 around refrigerant concentration was going to be a key factor of the design.



Photo Credit: IHG Hotels & Resorts





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The Mitsubishi Electric Solution

With the limited footprint of each lodging and long pipe runs, a traditional VRF system with refrigerant containing parts located in the rooms would exceed the refrigerant charge limit as dictated by AS/NZS 5149.(1-4): 2016. This meant that costly monitors would have been required in each area to alert occupants to any refrigerant leak while also raising an alarm to the hotel employees.

Hybrid – the ideal solution for energy-efficient, safe heating and cooling for hotels

Mitsubishi Electric's Hybrid Technology was a natural choice. This removed the refrigeration-containing parts from the occupied spaces by transferring heating or cooling to each indoor unit via water while still retaining all the other benefits of the VRF technology.

The cost of a refrigerant monitoring system was well over the additional cost of changing from traditional VRF to Hybrid. This not only offered cost-saving advantages to the building's

construction but also removed the need for expensive ongoing calibration of the sensors and an action plan if a leak was detected.

The Hybrid Technology also reduced the amount of costly refrigerant while providing additional benefits of a water-based design such as higher sensible cooling and no refrigerant noise at the indoor units.

Zubadan Technology guarantees lowtemperature performance with heat recovery

Mitsubishi Electric's Zubadan Heat Pump outdoor units were used in conjunction with a refrigerant coil mounted in the kitchen air handler unit to provide tempering of the makeup air. This solution can pre-heat or pre-cool the air prior to entering the facility to maintain a year-round comfortable and safe temperature. The unique Mitsubishi Electric Zubadan Compressor in the outdoor unit ensures that full heating capacity can be provided even on the coldest winters day.



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Full Equipment Breakdown

Total Capacity:

Heating Capacity: 775.5 kW Cooling Capacity: 694.2 kW

Outdoor Units

1x PUHY-HP250YHM-A Zubadan Heat Pump Unit 3x PURY-P200YNW-A Heat Recovery Units 1x PURY-P250YNW-A Heat Recovery Unit 17x PURY-P300YNW-A Heat Recovery Units

Indoor Units

24x PEFY-P2OVMSi-ER2 Ducted Units 18x PEFY-P2SVMSi-ER2 Ducted Units 1x PEFY-P4OVMA-E.TH Ducted Units 4x PEFY-P12SVMA-E.TH Ducted Units 1x PEFY-WP2OVMA-E Ducted Units 1x PEFY-WP2OVMSi-E Ducted Units 50x PEFY-WP2OVMSi-E Ducted Units 1x PEFY-WP4OVMSi-E Ducted Units 1x PEFY-WP40VMSi-E Ducted Units 1x PEFY-WP40VMSi-E Ducted Units 2x PLFY-P20VFM-E.TH Cassette Units 1x PLFY-WP32VFM-E.TH Cassette Units

Branch Controllers

1x CMB-P108V-J VRF Branch Controller 1x CMB-P108V-JA VRF Branch Controller 2x CMB-P1012V-J VRF Branch Controllers 2x CMB-P1016V-J VRF Branch Controllers 14x CMB-WP1016V-GA1 Hybrid Branch Controllers

Wall Controllers

3x PAC-31MAA Wall Controllers 259x PAR-CT01MAA Wall Controllers

Central Controllers

2x AE200-E Central Controller with BACnet License 5x EW50E Expansion Controllers with BACnet License

Contractor:



Consultant:

