CITY MULTI heat Recovery VRF providing simultaneous heating and cooling, with guest control of their own comfort, back by a system with advanced environmental monitoring and control.

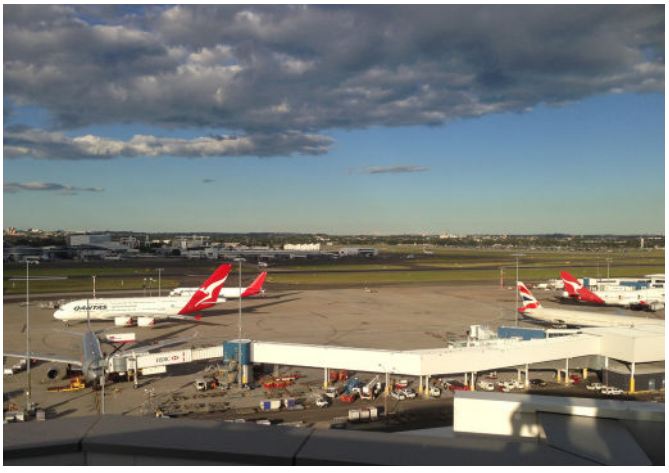
Project Info

Application
Rydges Sydney Airport Hotel

Location
Sydney International Airport, NSW

The Challenge

The location of the building presented some unique challenges mainly centred on the strict building height restrictions that the mechanical engineers had to overcome. The developers wanted to maximise room numbers given the footprint and building height. They also insisted on having an air conditioning system with a high COP which allowed individual rooms to heat or cool as required and have an integrated head end which would allow all rooms and common areas to be monitored and controlled from a central location. The control system had to also control fresh air fans, exhaust fans, kitchen exhaust fans, monitor C02 levels and control an outside air pre conditioner's mode based on ambient temperatures.



The Team

Client
Rydges Hotels Ltd

HVAC Contractor
Equilibrium Air Conditioning (NSW)

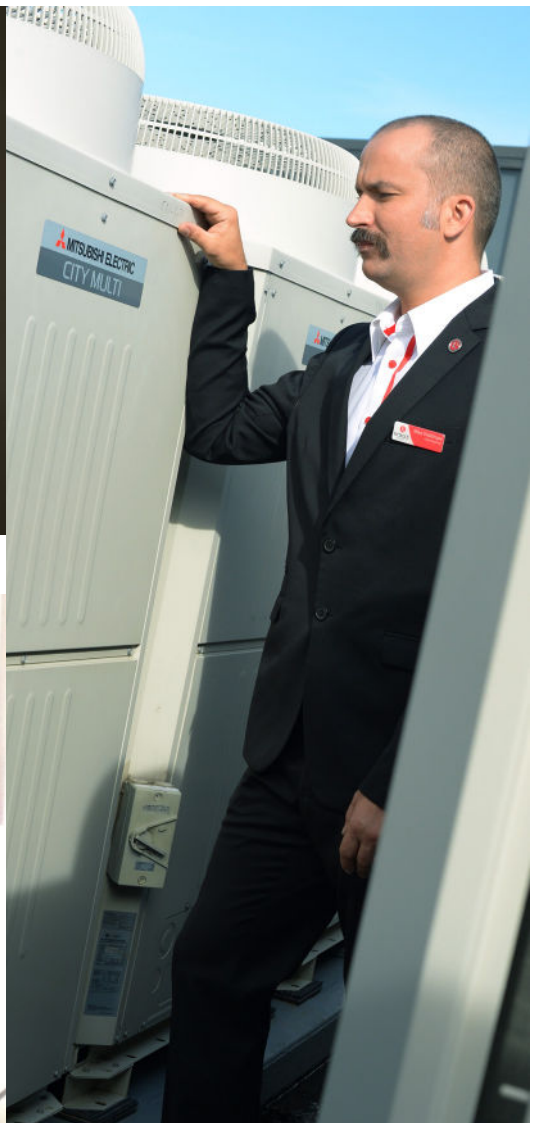
HVAC Consultant
Reid Campbell (NSW)

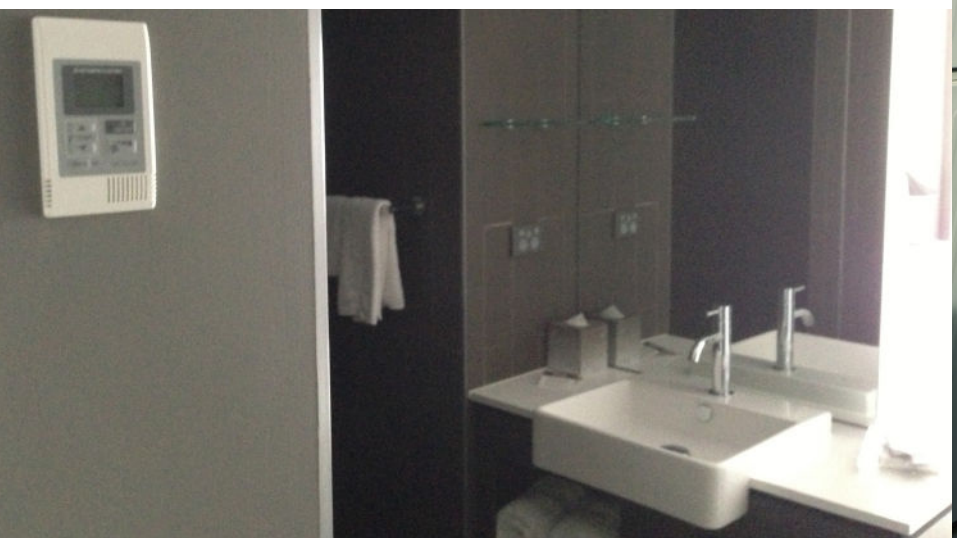
The Solution

Mitsubishi Electric's City Multi Heat Recovery VRF system was selected as it met and surpassed the requirements specified by the mechanical engineers. The original design based on a chilled water system meant that the required ceiling space for installation restricted the building to seven levels. The City Multi patented two-pipe heat recovery system with low profile indoor units allowed the designer to decrease the ceiling space which in turn allowed for an eighth level.

Individual room temperature control for hotelsThe Mitsubishi Electric TG2000 centralised controller which allows up to 2000 indoor units and devices to be monitored and controlled was installed. Digital input and output interfaces were installed to control fans and similar equipment. Analogue Input controllers were used to monitor ambient conditions and C02 levels allowing for the control requirements to be met.

The City Multi VRF system also allows for staged installation which assisted in meeting the hand over dead line as each floor was commissioned independently as soon as the floor was completed. Level one through to three were fully operational and occupied while the rest of the building was still being completed.

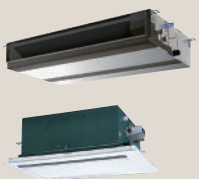




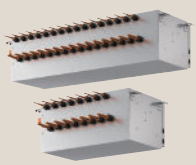
UNIT INFORMATION

Outdoor Units
PURY-P250YJM x 29
PURY-P300YJM x 2
PURY-P450YJM x 1
PURY-P500YJM x 2

PURY-P750YJM x 1
PURY-P900YJM x 2



Indoor Units
PEFY x 356
PLFY x 8



BNC
CMB-P108V-GA1 x 6
CMB-P104V-G1 x 2
CMB-P1016V-GA1 x 10
CMB-P1013V-G1 x 12

Controllers
PAC-YT51CRB x 324
PAR 21MAA x 44
TG-2000A
AG-150A x 4

Expansion Controllers x 8
DIDO Controller x 7
AI controller x 3

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