

CITY MULTI air cooled 2-pipe heat recovery VRF system providing simultaneous heating and cooling for a unique luxury hotel from a redeveloped former grain silo site.



Project Info

Application

Peppers Silo Hotel

Location

Launceston, Tas

The Team

HVAC Contractor

Degree C

HVAC Consultant

Engineering Solutions Tasmania

The challenge:

Originally erected in 1960, the Kings Wharf grain silos were left unused for decades until two years ago when construction began to transform the silo barrels into a state-of-the-art contemporary new hotel.

The redeveloped site is now a ten-level hotel featuring 108 guest rooms, including 52 inside the barrels of the former silos, a restaurant and bar, undercover car parking, conference facilities, and an integrated lobby and reception space.

The original HVAC system design was based on central plant heat pump/chiller systems with water based fan coil units in each room.

The client was seeking an alternative solution that could provide comfortable conditions with increased efficiency at a lower cost.

The solution:

Mitsubishi Electric air cooled 2-pipe heat recovery Variable Refrigerant

Flow (VRF) was considered to be the most suitable & cost effective alternative for this project. The condensers are located on the roof platform with branch controllers located in the ceiling voids.

Each floor was divided into two VRF systems to limit the refrigerant charge in each system to comply with AS/NZS 5149.

Central controller AE-200E provides full control & monitoring of all the VRF units with a built-in high level BMS interface. A simple controller PAC-YT52CRA was provided in each hotel room along with key card interlock.

Refrigerant pipework was installed secured on cable trays above the corridors with the main risers located in dedicated shafts. Mitsubishi Electric Engineers supported both contractors and consultants providing up-to-date information including piping & wiring schematics, additional refrigerant charges, controls set up & BMS integration.

UNIT INFORMATION



Outdoor Units

PURY-P750YSLM-A x 1
PURY-P450YSLM-A x 1
PURY-P400YSLM-A x 1
PURY-P400YSLM-A x 1
PURY-P350YSLM-A x 1

PURY-P300YLM-A x 12
PURY-P250YLM-A x 2
PURY-P200YLM-A x 3
MUZ-GE25VAD-A1 x 1



Indoor Units

PEFY-P63VMA-E x 7
PEFY-P50VMA-E x 17
PEFY-P32VMA-E x 1
PEFY-P40VMA-E x 89
MSZ-GE25VAD-A1 x 1



BNC

CMB-P1010V-GA1 x 1
CMB-P1016V-HA1 x 1
CMB-P108V-G1 x 10
CMB-P106V-G1 x 2



Controllers

AE-200E x 1
PAR-32MAA-J x 19
PAC-YT52CRA-K x 108
EW-50E x 3

