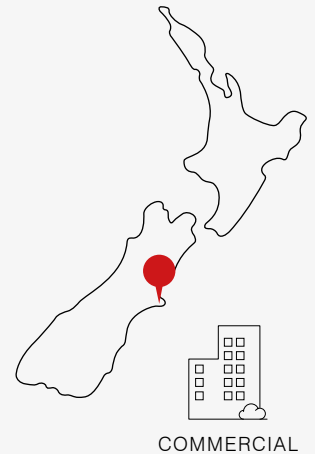


Project Showcase:

Akaroa Health Hub



AKAROA



Akaroa Health Hub is a Medical Facility located in Akaroa on the Banks Peninsular. This 780m² state-of-the-art building includes a residential aged care wing, a palliative care and inpatients wing and a community medical centre.

The Challenge

The client was looking for a water-based system to run the underfloor heating, fan coil units for heating and cooling as well as AHU's for fresh air tempering. The small building footprint would have made a traditional 4-pipe hydronic system very expensive. Therefore, there was no economy of scale to justify the heat pump/chiller that also required additional pipework to accommodate positioning further away from the main building.



EQUIPMENT BREAKDOWN

- R410A Hybrid
- Ducted Units
- Lossnay Heat Recovery Ventilation

HYBRID

Lossnay

Project Showcase: Akaroa Health Hub

The Mitsubishi Electric Solution

The final system chosen was designed incorporating three key technologies.

A Mitsubishi Electric City Multi Hybrid Hydronic Heat Recovery System connected to Ducted PEFY units was chosen to cover the heating and cooling needs of specific rooms. Because water instead of refrigerant connected the branch box to each fan coil unit, the client was able to retain the requirement for a hydronic system. As a result, the overall solution was able to be kept within the budget.

A separate hot water heat pump was used for the underfloor heating using a Y-Series Outdoor unit and PWFY Water Module that was able to be mounted within the building's thermal envelope. As such, because water in the system no longer needs to run outside, frost risk which can impact efficient performance is minimised.

Due to the coastal location of Akaroa, Mitsubishi Electric BS units were used to provide additional sea salt corrosion protection, ensuring a longer lifespan of the outdoor units.

Four Mitsubishi Electric Lossnay Fresh Air Energy Recovery Ventilation units were incorporated to efficiently meet the fresh air requirements of the medical facility to ensure optimum comfort for all occupants.

Full Equipment Breakdown

Total Capacity:

Heating Capacity: 40 kW

Cooling Capacity: 45 kW

Outdoor Units

1x PURY-P400YNW-A-BS Heat Recovery Unit

1x PUHY-P200YNW-A-BS Heat Pump Unit

Indoor Units

1x PEFY-WP20VMA-E Ducted Unit

5x PEFY-WP32VMA-E Ducted Units

1x PEFY-WP40VMA-E Ducted Unit

1x PEFY-WP50VMA-E Ducted Unit

1x PEFY-WP125VMA-E Ducted Unit

1x PWFY-P200VM-E1-AU Hot Water Module

2x LGH-80RVX-E Lossnay Energy Recovery Units

1x LGH-100RVX-E Lossnay Energy Recovery Unit

1x LGH-150RVX-E Lossnay Energy Recovery Unit

Wall Controllers

9x PAR-31MAA Wall Controllers

1x PAR-W21MAA Wall Controller

Central Controllers

1x AE-200E Wall Controller

Branch Controllers

3x CMB-WP108V-GA1 Hybrid Branch Controllers

Contractor:



Consultant:

