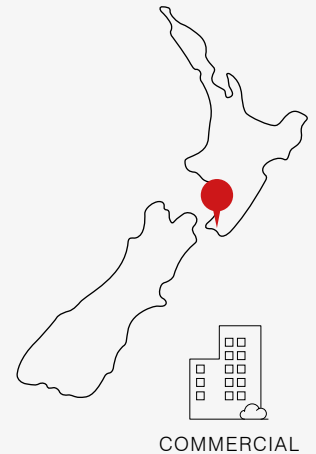


Project Showcase:

Te Herenga Waka - Victoria University Maru Building



WELLINGTON

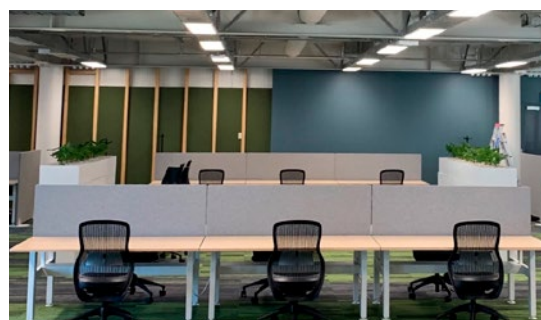


Te Herenga Waka - Victoria University of Wellington Maru Building is a purpose-built facility for post-graduate students to collaborate and work located within the Kelburn Campus. It required an effective heating, cooling and ventilation solution with minimal environmental impact.

The Challenge

The architectural and structural design of the building was an aesthetic feature that dictated the construction of the complex. In addition to this, the brief stipulated that the mechanical services providing heating, cooling and ventilation had to not only fit with the surroundings, but also achieve a low-carbon footprint.

The building also has a high ceiling stud. Therefore, careful design consideration was required to ensure the accessibility and safety of staff undertaking routine maintenance. Furthermore, given the nature of work by the students, acoustic implications of the system needed to be consciously considered.



EQUIPMENT BREAKDOWN

- R410A Hybrid
- Compact Cassettes
- Lossnay Heat Recovery Ventilation

HYBRID

Lossnay

Project Showcase: Te Herenga Waka - Victoria University Maru Building

The Mitsubishi Electric Solution

The final system was approved consisting of three key Mitsubishi Electric technologies.

Water-based Hybrid features a lower environmental impact whilst maximising room comfort levels

The heating and air conditioning of the building selected was Mitsubishi Electric's City Multi Hybrid System with a mix of cassette units and medium static pressure ducted units. Hybrid was an effective solution for this project due to the lower overall refrigerant volume compared to traditional, satisfying the design brief of a low-carbon footprint.

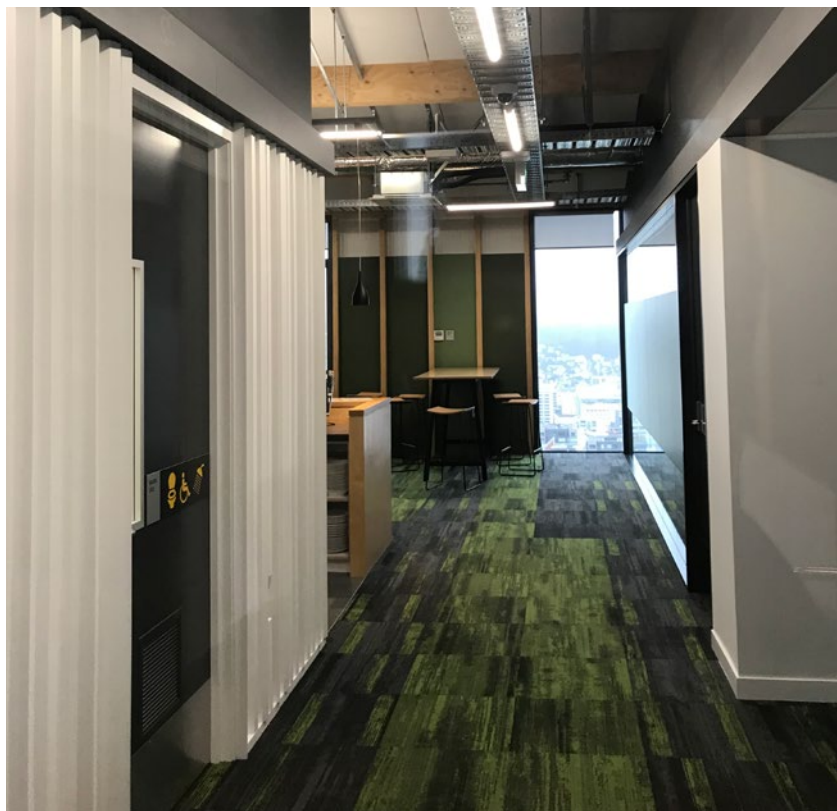
Furthermore, Hybrid offered milder off-coil temperatures to aid occupant comfort.

The factory-applied marine corrosion protection and extended warranty with health checks also gave the client further assurance of the longevity and efficiency of the plant.

Lossnay combines fresh air ventilation with efficient energy recovery

A Mitsubishi Electric Lossnay Energy Recovery Ventilation System was selected to look after the fresh air requirements of the building. This solution offers an industry-proven, efficient way of transferring the energy from stale exhaust air to the fresh air being delivered to the facility to satisfy the building code, in an acoustically satisfactory manner. Furthermore, the Lossnay System is configured so that the facility maintains a positive pressure environment.

The design of the building meant that there was no roof plant area to accommodate an energy recovery ventilation system. A key advantage of installing a Lossnay solution was that it could be installed within the ceiling voids itself. As a result, it means the system can now also be effectively maintained within the building.



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Advanced BMS controls ensures superior system management

The AE-200 Centralised Touch Screen Controller with a BACnet Ethernet Licence was installed to enable local, high-level building management system control. This has been an important aspect of this project especially in terms of mitigating any stratification issues caused by the high ceiling stud.

The BMS monitors the operational state of the ducted units, to ensure that the airflow in Heating and Cooling Modes are effectively distributed within the building. The controller regulates the airflow by signalling to the changeover dampers that are located within the fabric ducts used throughout the project.

Full Equipment Breakdown

Total Capacity:

Heating Capacity: 95 kW

Cooling Capacity: 85 kW

Outdoor Units

1x PURY-P350YNW-A-BS Heat Recovery Unit

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

Indoor Units

2x PLFY-WP15VFM-E.TH Hybrid Compact Cassettes

1x PLFY-WP20VFM-E.TH Hybrid Compact Cassette

4x PLFY-WP32VFM-E.TH Hybrid Compact Cassettes

2x PEFY-WP71VMA-E Hybrid Ducted Units

4x PEFY-WP100VMA-E Hybrid Ducted Units

4x LGH-100RVX-E Heat Recovery Ventilation Units

Branch Controllers

3x CMB-WP108V-GA1 Hybrid Branch Controllers

Controllers

5x PAR-31MAA Wall Controllers

4x PZ-61DR-E Lossnay Controllers

18x PAC-SE41TS-E Remote Temperature Sensors

1x AE200 Central Controller with BACnet Licence

Contractor:



Consultant:

