

# Case Study

## Robotics Plus Technology Facility

**Building Type:** Commercial Development at Tauriko Business Estate

**Project Type:** Innovation hub with office spaces for R&D and agricultural robotics

**Builder:** iLine Construction Ltd

**HVAC Specialists:** All Seasons Air Conditioning Limited

**Engineering Consultant:** Services Engineering Group (SEG)

## Objectives

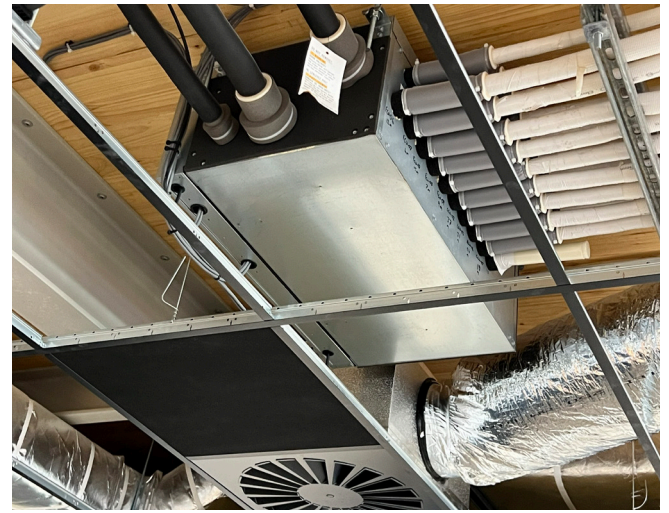
1. To propose an energy efficient air conditioning system with its own dedicated central controller, and the ability to integrate third party equipment through digital and analogue input/output systems.
2. To achieve controlled tempered fresh air supply for all the office spaces with scheduled operating hours.
3. To install VRV condenser units and AHU using a compact, efficient layout on the raised HVAC plant platform that ensures proper airflow, easy maintenance, and system performance.

## Solution

Following an evaluation of multiple HVAC options and vendors, Daikin proposed a turnkey solution: VRV 6R Heat Recovery air conditioning systems, a tempered fresh air supply system via DX air handling unit (AHU), VRV-4S heat pump and single split systems for smaller spaces, local and centralized control framework. This approach streamlined project execution, including installation, commissioning, and maintenance by involving a single air conditioning supplier.

## The Building

The Robotics Plus Facility is a new development for EI Properties (Landlord) and Robotics Plus (Tenant) at Gargan Road/Taurikura Drive, Tauriko Business Estate. From open space office and lunchroom with amazing views of Tauranga to a large-scale workshop and fabrication room, the intention was to create a comfortable collaborative space for the 'Robotics' team.



A fresh air AHU paired with a VRV heat pump condenser was determined as the optimal option to deliver tempered outdoor air into the building based on the operating hours while providing high External Static Pressure (ESP) to support the extensive ductwork layout. The ductwork itself became a great feature in the common areas with exposed ceilings. It was customized and fabricated to suit the design layout by All Seasons Air Conditioning Limited, a Daikin Dealer and HVAC contractor for this site.

## The Project

Daikin REYQ-BYM9 Heat Recovery systems were chosen as the primary solution based on their proven performance, especially at part load conditions, and simultaneous cooling and heating operation capability. The wide variety of VRV indoor units ensured the right unit selection for optimal air distribution and aesthetics in every area: from hidden away mid-high static ducted FXSQ-PAVE/FXMQ-PAVE units in the office/café spaces with floor-to-ceiling windows to FXZQ-BVM compact cassettes in the 'Projects' areas. As a local wall mounted controller, BRC1E63 model was installed in most of the spaces. These controllers are user-friendly, versatile and have in built-in temperature sensor.



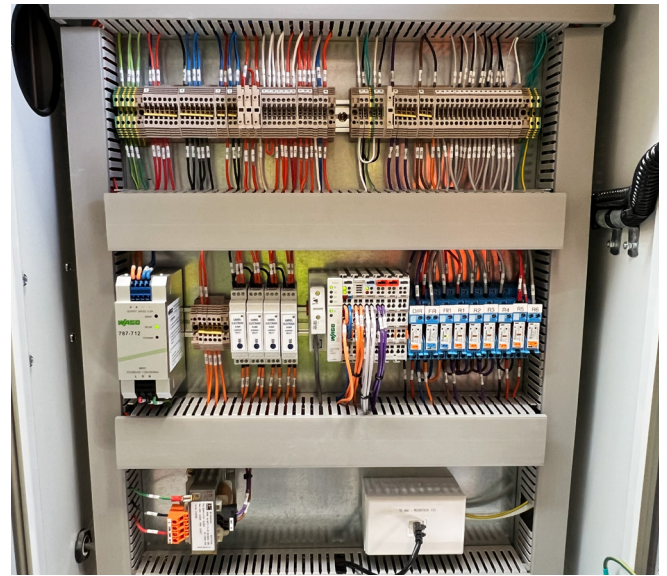
The VRV outdoor units' compact footprint facilitated easy installation on the elevated roof platform as even 24HP is a single module condenser. The DX AHU was strategically positioned on the same platform to simplify future maintenance access and minimize refrigerant pipework to the dedicated VRV condenser.



Intelligent Touch Manager (iTM), Daikin's advanced central controller was installed on the main switchboard to allow for efficient control over all the air conditioning systems in the building including DX AHU via its dedicated Microtech III controller.

WAGO I/O system was also introduced and connected to ITM to perform an AHU's fan control and a variety of automation tasks for 3rd party equipment. Its

modular design enabled a project specific set up and integration into the allocated spacing in the switch board reducing the overall cost of the control equipment.



## Conclusion

The Robotics Plus Technology Facility showcases how leveraging Daikin's comprehensive product range and control systems can deliver a holistic solution to commercial spaces.

All Seasons Air Conditioning's close collaboration with the mechanical services consultant - SEG, the builder - iLine Construction, and other contractors on site, as well as, precise installation of all systems brought the building's climate systems to life and ensured successful project completion.



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