



The Bond achieves wellness and productivity with Mitsubishi Electric VRF Heat Recovery and BMS Integration, redefining office design through sustainable, nature-inspired comfort.



Project Info

Application

The Bond

Location

Norwest, NSW

Introduction

The Bond, located in Sydney's vibrant Norwest precinct, stands tall as Mulpha Australia's ground breaking \$53 million commercial building. This 7-storey architectural marvel is adjacent to the historically significant Bella Vista Farm, making it a harmonious blend of contemporary and heritage elements. Designed to be a next-generation workplace, The Bond embraces world-leading wellness initiatives, redefining the conventional notions of what an office can be. From its stunning natural aesthetics to its robust engineered timber structure, The Bond is a symbol of innovation and sustainability.

The Challenge:

As a revolutionary workplace, The Bond sought to accommodate modern work trends and provide an environment that resonates with people's desires for the 21st century. The challenge was to design a building that catered to various needs, including ground floor retail, co-working spaces, private offices, and medical suites. It also needed to incorporate a childcare facility, making it a holistic destination for work, wellness, and childcare.

The vision was to embrace biophilic design, connecting occupants to nature and promoting their physical and mental well-being. Achieving optimal comfort with simultaneous heating and cooling throughout the building, along with efficient energy and water usage monitoring, were additional challenges that required a holistic solution.

The Solution:

City Multi VRF heat recovery units were recommended by the HVAC consultant to address the diverse heating and cooling requirements

The Team

HVAC Dealer

Crest Air Conditioning

Client

Mulpha Australia

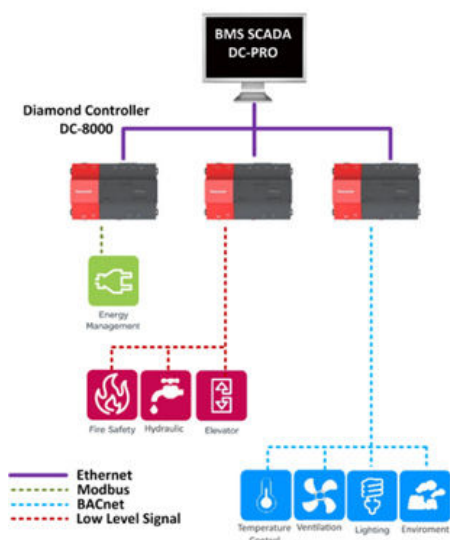
while ensuring individual temperature control for tenants. These tried and tested state-of-the-art units were connected to medium and high static 200 Pa ESP ducted units, delivering personalized comfort to occupants.

The Mitsubishi Electric City Multi VRF heat recovery units not only catered to the diverse comfort requirements of The Bond's occupants but also offered the unique advantage of heat recovery. The system efficiently captured waste heat from cooling operations and repurposed it for heating, achieving simultaneous heating and cooling for individual clients. This innovative approach significantly contributes to reduced energy consumption and enhances the building's sustainability credentials.

The AE-200E central controller with power apportioning feature played a pivotal role in accurately charging each tenant for their air conditioning usage. This intelligent system broke down the total power consumption of the condensing unit, distributing it equitably among each connected indoor unit. This feature ensured transparency in energy usage and empowered occupants to be billed fairly for the energy they consumed.

The key to the success of this solution was the implementation of a Building Management System (BMS) provided by Mitsubishi Electric. The BMS was equipped with DC-8000 Diamond Controllers, which utilised the Niagara4 technology from Tridium's Niagara Framework®. This integration streamlined Internet of Things (IoT) connectivity and brought forth advanced visualization, enhanced search capabilities, robust security, and efficient navigation tools.

The system enabled comprehensive control and monitoring of various building systems. This included managing 28 ventilation fans, car park ventilation, 86 electrical meters, and 60 water meters. The BMS also



interfaced with essential services like fire safety, hydraulic systems, and elevators.

Notably, the BMS played a crucial role in The Bond's commitment to resource management. By accurately measuring energy and water usage, the property owner could monitor the building's environmental performance over time. This data-driven approach allowed the facility manager to take prompt corrective actions to optimise energy and water usage, ensuring sustainability was at the forefront of The Bond's operational practices.

Outcome:

The successful integration of the Mitsubishi Electric City Multi VRF heat recovery system and BMS at The Bond resulted in numerous benefits:

- **Enhanced Comfort:** Occupants enjoyed personalized temperature control, making their work environment more comfortable and conducive to productivity.

- **Energy Efficiency:** The heat recovery system and power apportioning feature improve energy efficiency, promoting sustainability.
- **Transparency of Energy Billing:** Tenants were billed accurately for their air conditioning usage, encouraging responsible energy consumption.
- **Resource monitoring:** The BMS facilitated ongoing monitoring and reporting, enabling continuous improvements in energy and water efficiency.

The Bond became a shining example of a future-proofed workplace, where innovation, sustainability, and well-being converge, shaping a new standard for office design and setting the stage for a thriving and inspiring work environment.

UNIT INFORMATION



Outdoor Units

PURY-P800YSNW-A1 x 4
PURY-P650YSNW-A1 x 3
PURY-P600YSNW-A1 x 1
PURY-P550YSNW-A1 x
PURY-P500YSNW-A1 x 3

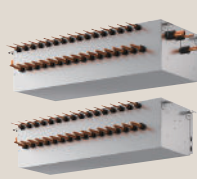


PURY-P300YNW-A1 x 1
PURY-P250YNW-A1 x 1
PUMY-SP140VKMD-AR1 x 2



Indoor Units

PKFY-P50VLM-E x 2
PKFY-P100VKM-ER1 x 2
PEFY-P-VMHS-E.TH x 118
PEFY-P-VMA-ER1 x 68



BNC

CMB-M108V-KB1 x 8
CMB-M108V-JA1 x 3
CMB-M104V-J1 x 2
CMB-M1016V-JA1 x 4
CMB-M1012V-JA1 x 5



Controllers

PAR-40MAA x 190
PAC-YG60MCA-J x 3
EW-50E x 4
AE-200E x 1

