

# Project Showcase:

## Victoria Lane Apartments - Redefining Apartment Living in Wellington



### WELLINGTON



Victoria Lane Apartments is a new Wellington development featuring 123 premium apartments in the heart of the capital's CBD. Mitsubishi Electric Lossnay Fresh Air Sensible Heat Recovery Ventilation, EcoCore AP Plus Series High Walls and OmniCore Multi Room Heat Pump Systems offered energy efficient solutions to ensure occupant comfort and assisted in achieving the Homestar 7 Design rating.

### EQUIPMENT BREAKDOWN

- Lossnay Ventilation Systems
- AP Series High Walls
- OmniCore Multi Room Systems

## The Goal

As Wellington's first base-isolated apartment development, a new standard in inner city living was set – with generous spaces, ample natural light, and high-quality appliances and finishes.

With energy efficiency and sustainability in mind, this project sought to achieve a Homestar 7 rating. HVAC choices needed to offer superior comfort for occupants, with reliability and efficiency at the forefront.



## OmniCORE



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## The Challenge

### Introducing Fresh Air to an Airtight Build

As the new apartment building was constructed to exceed several aspects of the New Zealand Building Code, each unit had a high level of air-tightness. As is common in high-rise apartments, there are limited opening windows in each unit so a fresh air ventilation system would be required as an alternative way to introduce fresh air and create a healthy living environment.

### Gaining Homestar Points without Compromising on Noise Levels

For a Homestar rating, a building can earn up to 4 points towards the rating for installing a balanced pressure mechanical ventilation system with heat recovery (MVHR) and an additional point for commissioning the system (HC3: Ventilation). This is to encourage ventilation measures that control indoor moisture levels, improve indoor environment for occupants, reduce respiratory illnesses and the risk of mould, and increase the durability of the dwelling.

Furthermore, effective, quiet removal of moisture from the bathroom and laundry without shared, centralised ducting was a project requirement to reduce noise nuisance for neighbours. This was achieved by avoiding shared inter-unit ducting and choosing a system with an impressive dB(A).

### Heating and Cooling Upgrades

As the developer wished to offer an optional upgrade for heating and cooling, super-efficient high wall units for living spaces and bedrooms were required. However, for mid-level apartments that opted to add high walls and required a condensing unit on the balcony, safety regulations as outlined in the F4/AS1 needed to be met.



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### The Mitsubishi Electric Solution – Lossnay Sensible Heat Recovery Ventilation (LGH-RVS)

The LGH-RVS was the ideal ventilation solution for an insulated apartment that is built to the highest building standards and has limited opening windows.

The all-in-one ventilation solution offered stale air removal from high-moisture areas such as bathrooms and the laundry cupboard due to its Non-permeable Plastic Counter-flow Lossnay Core alongside extremely efficient sensible heat recovery by exchanging stale, moisture-laden air with fresh outdoor air to supply to living spaces

### Decentralising Ventilation for Minimal Noise Disruption

To overcome the challenge of decentralising extraction ducting, 121 LGH-50RVS provided up to 139L/s of air in every apartment and 2 LGH-80RVS units supplied up to 222L/s of air in each of the larger penthouse apartments.

This innovative ventilation solution with sensible heat exchange efficiently exchanges stale indoor air with fresh outdoor air while effectively extracting moisture from bathrooms and laundry areas. By incorporating the RVS Lossnay system, the developer was able to meet ventilation requirements and prevent issues like

mould and dampness, while significantly reducing possible noise disturbances in the living spaces as each unit operates from a quiet 18dB(A).

### Impressive Temperature Exchange Efficiency

By using residual heat from the outgoing stale air, the LGH-RVS system can recover up to 93%\*<sup>1</sup> sensible heat energy to pre-warm or pre-cool the incoming fresh air. As a result, any heating or cooling appliance does not have to work as hard to bring the room to the desired set temperature, maximising energy efficiency.

Furthermore, in summer Lossnay can enter Automatic Free Cooling\*<sup>2</sup> Mode when outdoor air is cooler than indoor air. This heat exchange bypass function can intelligently bypass the heat exchanger and bring in colder fresh, filtered air without recovering heat energy. This is a key benefit for highly insulated, inter-tenancy apartments to cool down if they overheat during the day.

\*<sup>1</sup> LGH-RVS50 on lowest fan speed.

\*<sup>2</sup> In comparison to using a dedicated cooling device. The unit will continue to use a small amount of power to bring colder fresh air from outside.



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### The Mitsubishi Electric Solution – Heating and Cooling

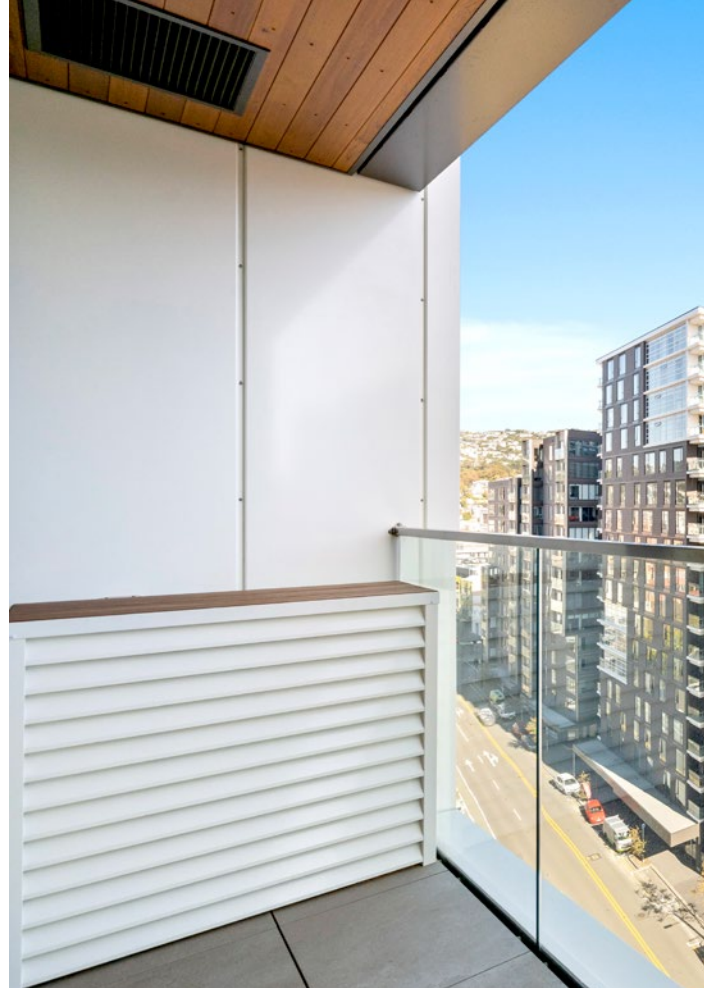
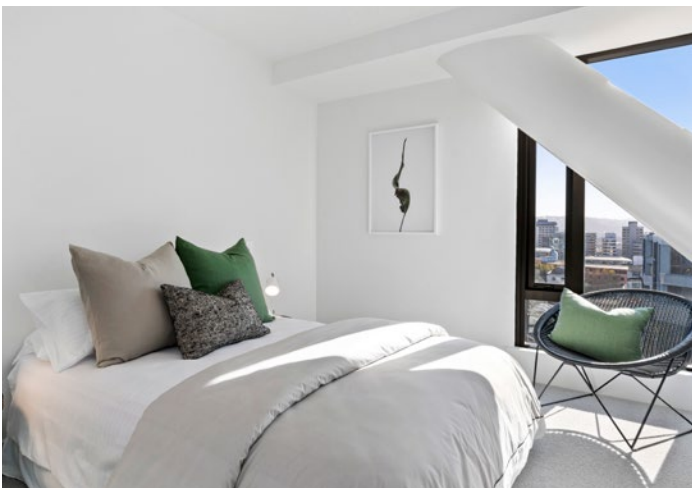
For home owners seeking to add further value to their apartments, the option to upgrade was made available with the addition of EcoCore AP Plus Series High Wall Heat Pumps for year-round heating and cooling.

When heating and cooling was requested in multiple rooms, such as in the open plan living area and a bedroom, an OmniCore Multi Room Heat Pump system was the perfect solution, requiring just one outdoor unit for multiple indoor units – avoiding outdoor clutter. This was ideal as balconies were the only available space for outdoor units.

However, balcony placement presented its own challenge – meeting the requirements of section F4 in the New Zealand Building Code. For apartments with outdoor units on the balcony, stylish Heat Pump Covers were chosen to ensure safety regulations were met and building aesthetics were maintained.

### Remote Heat Pump Control with Mitsubishi Electric Wi-Fi Control

Each AP Plus Series High Wall comes equipped with Built-in Wi-Fi Control, offering occupants centralised control no matter where they are; in another room, away from home or looking to manage timers and rules to ensure the indoor climate is always to their preference.



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## The Result

All 123 apartments enjoy whisper quiet Sensible Heat Recovery Fresh Air Ventilation, extracting moisture-laden air from the laundry and bathrooms and introducing pre-warmed (or pre-cooled) air to bedrooms and living spaces with exceptional temperature exchange efficiencies.

36 apartments have energy efficient heating and cooling with AP Plus Series High Wall Heat Pumps and enjoy Wi-Fi Control to always return home to total comfort. 17 of which enjoy individual room temperature control thanks to OmniCore Multi Room Heat Pump Systems with a stylish Premium Heat Pump Cover on their balcony.

The apartment building achieved its goal of a Homestar 7 rating, truly setting a new standard in inner city living and ultimate comfort for occupants.



## Full Equipment Breakdown

### Lossnay Ventilation Systems:

121x LGH-50RVS-E (HRU-02 & HRU-03)  
 2x LGH-80RVS-E (HRU-04)  
 123x PZ-62DR-E Controller

### OmniCore Outdoor Units:

10x MXZ-2F52VF-A1  
 7x MXZ-3F54VGD-A1

### Indoor High Wall Units:

17x MSZ-AP25VGKD-A2  
 17x MSZ-AP35VGKD-A2

A Willis Bond project.

**Contractor:**



**Services Consultant:**



**Builder:**



**Architect:**

Athfield Architects