

Case Study

Aorangi House

Building Rating

★★★★★



A revived 1970s commercial building is an energy-smart star.

Aorangi House was once tired and outdated but a green-principled refurbishment led to a 5 star NABERSNZ rating in 2016. Now with even more fine-tuning this has led to a top notch 5.5 star NABERSNZ rating. The 5.5 stars base building rating means a 20% improvement of energy saving compared with 2016. The increase was down to the utilisation of Beca's in-house advanced building tuning and continuous monitoring service called B-Tune.

Situated at 85 Molesworth Street in downtown Wellington, 12-storey Aorangi House is a stylish, contemporary office block - its vibrant checkerboard exterior providing a strong visual statement in its commercial neighbourhood.

Built in 1970 the property had a strong presence for many years but over time its building fabric and internal systems became outmoded.

A multi-million dollar overhaul in 2008 earned a 5 Green Star Design rating and positioned Aorangi House as a success story of rejuvenation, smart energy performance and low greenhouse gas emissions.

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New Zealand Government



Building profile



Aorangi House
85 Molesworth Street,
Wellington



Owner: Anaro Group
Tenant: Two tenants
(300 to 350 employees
on site on a typical day)



5 Green Star Design
(Achieved 2010)



Attained one of the
highest scores in
New Zealand in a
Victoria University post-
occupancy evaluation
– demonstrating
increased occupancy
comfort and
productivity

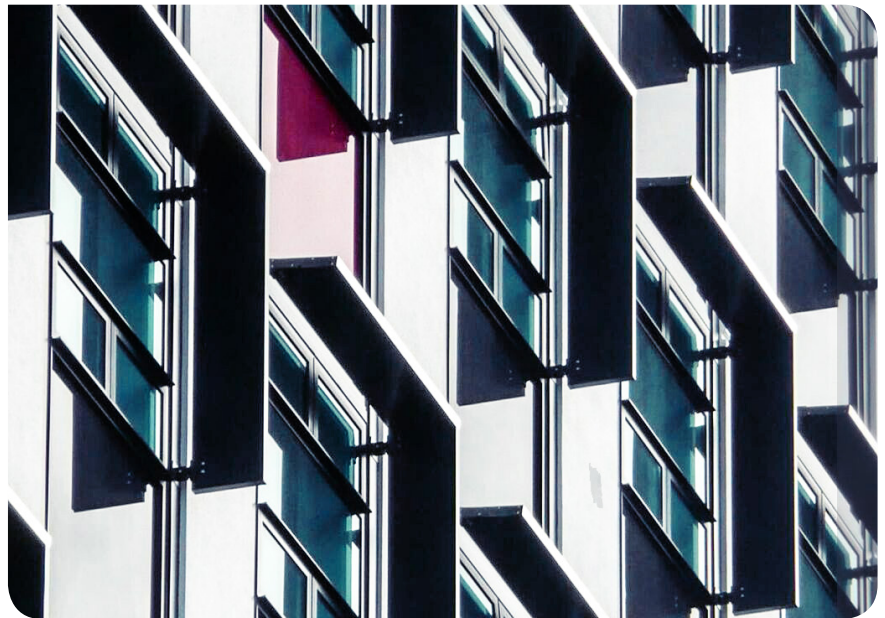
As part of the refurbishment the building's robust 1970s framework was reutilised in order to promote exposed thermal mass and natural ventilation.

Ceilings were stripped back to bare concrete allowing the exposed beams and slab to act as heat sinks - aiding the delivery of a stable internal temperature and reducing the need for air conditioning.

An innovative rigid polystyrene insulation and plastering system was added to the building's exterior and new double glazed windows were installed.

Today its key green characteristics include:

- Solar louvres – optimised for each orientation – providing shade while allowing daylight and panoramic views.
- A series of perimeter opening windows – manually operated to aid natural ventilation and suit individual needs. Selected high



level windows opening automatically to maintain temperature and air quality.

- A VRF system (variable refrigerant flow) operating only in high tenant-load areas.
- Smart heating system controls and energy efficient VRF heat pump heating system.
- Low flow cisterns, taps and pans.
- Well utilised cycle parking, shower and changing rooms and lockers.

Why NABERSNZ?

When commercial property investment company Anaro Group purchased Aorangi House in 2011 it brought with it an attitude of environmental responsibility and a desire to maximise and measure the impact of the building's energy smart features.

Embarking on a NABERSNZ base building rating was a natural fit with its ethos.



NABERSNZ is a comprehensive tool which brings very clear benefits for both owners and occupiers.

It benchmarks a building's energy performance, provides transparency for tenants and propels constant reviewing and improvement in energy use.

– Anaro Group general manager Toby Scott



NABERSNZ in Action

Engineering consultancy Beca, the anchor tenant at Aorangi House since its refurbishment, spearheaded the sustainable design interventions applied during the building's overhaul.

Measuring and refining energy usage has been a key premise from the outset.

When Beca undertook the green-principled modernisation in 2008 existing energy metering was ramped up in order to measure energy performance across the core services of space heating, air conditioning, lifts, common area lighting and power, and tenant lighting and power.

Beca spokesman and NABERSNZ assessor Ben Masters says three factors have been instrumental in the achievement of a 'market leading'

NABERSNZ 5.5 star base building rating at Aorangi House:

- The building's passive solar design principles (including enhanced thermal insulation, natural ventilation and low levels of mechanical air handling).
- Consistent fine-tuning of services to ensure the building is achieving its design performance targets.
- The replacement of an older boiler network with an energy efficient heating system.

The shared sustainable values of building owner and anchor tenant have also fuelled the accolade.

The value of NABERSNZ

"A NABERSNZ rating is increasingly relevant in New Zealand's commercial property marketplace," says Toby Scott, general manager of Anaro Group, owner of Aorangi House.

He says energy bills and operational costs are vital issues for commercial tenants and a NABERSNZ rating provides the straight answers.

From an owner's perspective "there is growing evidence to support the view that an efficient energy performance improves the value of a building."

Beca spokesman and NABERSNZ assessor Ben Masters says the rating is particularly significant because Aorangi House is essentially a recycled building.



The 5.5 stars show that sustainable refurbishment is a viable option to the carbon hungry alternative of demolition and replacement of older buildings.



Mr Scott says Anaro Group is delighted with the 5.5 star rating for such an iconic and mature building.

He says the energy performance at Aorangi House is over 64 percent better than an average New Zealand office block. "NABERSNZ encourages ongoing monitoring and tuning of existing systems which is essential to achieving low energy usage."

Key Facts

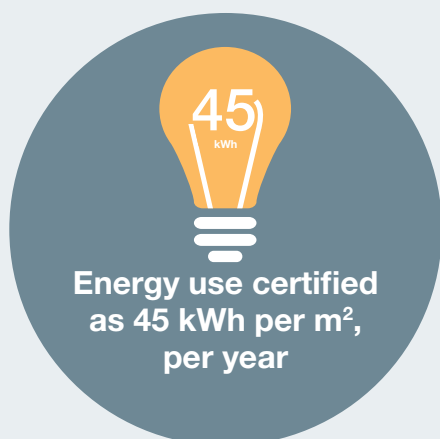
20%

IMPROVEMENT



NABERSNZ
rating up from
5 stars to 5.5
(20% improvement)

5.5 star 'market leading' NABERSNZ base building rating



To find out more about getting a NABERSNZ rating, or to use the online self-assessment tool, visit the NABERSNZ website: nabersnz.govt.nz, email: nabersnz@nzgbc.org.nz or phone: (09) 379 3996 (ask for the NABERSNZ team).

The owner and building manager

Anaro Group is a commercial property investment and asset management company which administers 44 entities across New Zealand including bulk retail, industrial, warehousing and logistics, hotels and accommodation. The company has embarked on a portfolio-wide review to ensure sustainability is a core value in its code of corporate social responsibility.

The consultants

Engineering and related services consultancy Beca is an employee-owned company with an Asian Pacific focus in the key hubs of New Zealand, Australia and Singapore. Beca uses the power of partnerships with its clients to think, design and develop creative solutions together. It encourages clients to aim high with sustainability aspirations and in response aims to deliver exemplar green outcomes.

In 2016 Beca achieved a 4.5 star NABERSNZ 'excellent' tenancy rating at Aorangi House – gauging the energy use of office equipment and lighting over the nine floors it occupies.

Big numbers

- 2010 – Aorangi House achieves 5 Green Star Design rating.
- 2016 – achieves a 5 star NABERSNZ base building rating.
- 2016 – anchor tenant Beca achieves a 4.5 star NABERSNZ tenancy rating.
- 2017 – achieves a 5.5 star NABERSNZ base building rating.
- Total energy consumption 203,174 kWh/year.
- Energy performance is over 64 percent better than an average New Zealand office block.



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