

Energy Performance

Waatarua

Ascot Avenue, Remuera, Tāmaki Makaurau

33 kWh/m²

better than the New Zealand average,
every year

\$11.0m

kept in residents' pockets over 50 years

3,580 t

of CO₂e avoided through fabric
performance

If we're talking about fifty years, why aren't we talking about energy?

A building consumes power every single day it stands. Over fifty years that adds up to more carbon than the concrete ever did — and it lands on someone's power bill every month in between.

Energy efficiency means two things at once.

They are not a trade-off. The same building fabric delivers both.

01

Affordability

A well-performing home costs less to heat. That is money that stays with the tenant, every week, for as long as they live there.

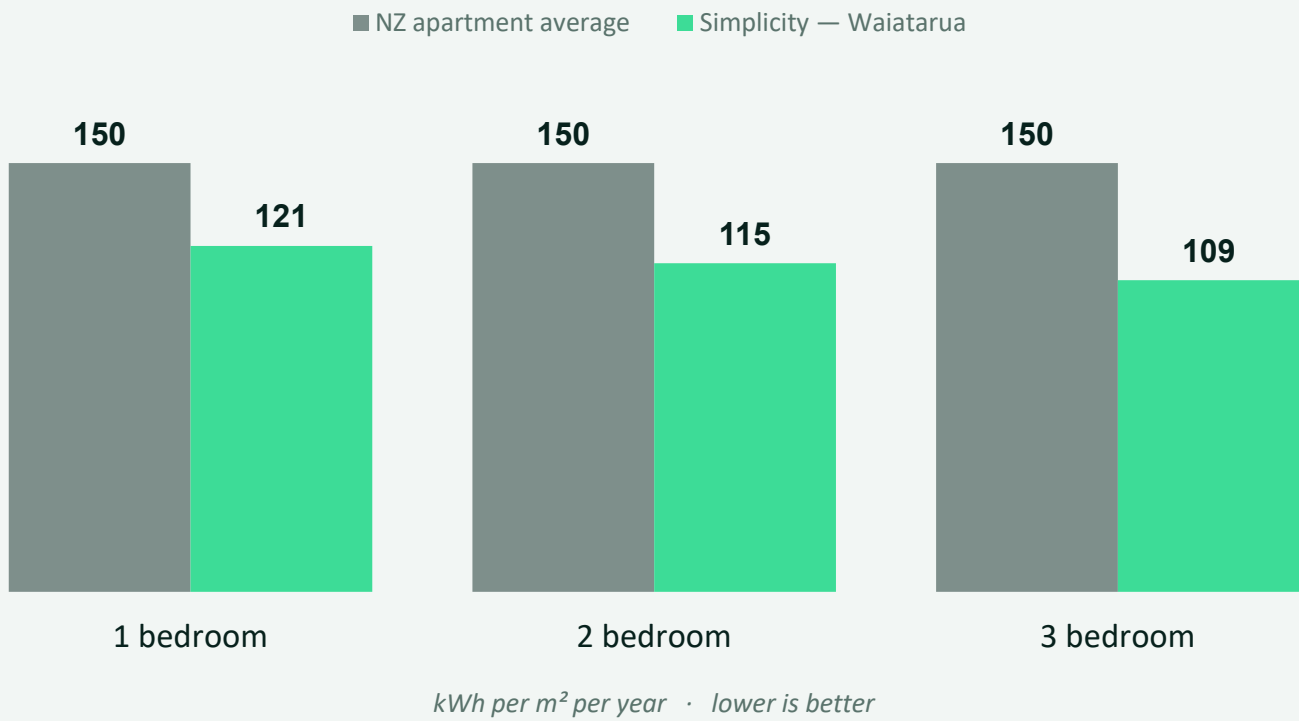
02

Emissions

Less energy drawn means less carbon emitted — and unlike embodied carbon, this one compounds year after year.

What our homes actually use

Modelled energy use intensity by unit type, against the New Zealand apartment average.



PER HOME, EVERY YEAR

1 bedroom · 50 m²

\$435

1,450 kWh less than the NZ average

142 kg CO₂e saved

2 bedroom · 70 m²

\$735

2,450 kWh less than the NZ average

240 kg CO₂e saved

3 bedroom · 95 m²

\$1,169

3,895 kWh less than the NZ average

382 kg CO₂e saved

33 kWh/m² better than average,
across the whole development

Savings at \$0.30/kWh all-in residential tariff and 0.098 kgCO₂e/kWh (MfE electricity consumption factor). Indicative modelled values pending confirmed simulation output.

Where the energy actually goes

A single Northcote N12 apartment of about 65 m², modelled end use by end use.

Equipment

5,460 kWh · 75%

Heating

1,200 kWh · 17%

7,240 kWh and 710 kgCO₂e per apartment per year

EQUIPMENT

Hot water, cooking, appliances, electronics. The dominant end use — and the one the building fabric cannot touch.

HEATING

Heat pump in heating mode. Low already, thanks to Auckland's mild climate — and the load thermal mass acts on.

LIGHTING

All interior and common-area lighting. LED assumed throughout.

COOLING

Heat pump in cooling mode. Concrete mass shaves the summer peak.

Only 19% of the load is heating and cooling. That 1,400 kWh is the only part the building fabric can touch — hot water, cooking and appliances are the tenant's, not the structure's. It is the honest scope of the thermal-mass claim, and the reason the fabric comparison is built on heating and cooling rather than on the total bill.

What we're comparing against

BRANZ measured what New Zealand homes actually do. It is not a flattering picture — and it is the bar our numbers sit against.

IN WINTER, TOO COLD

80.6%

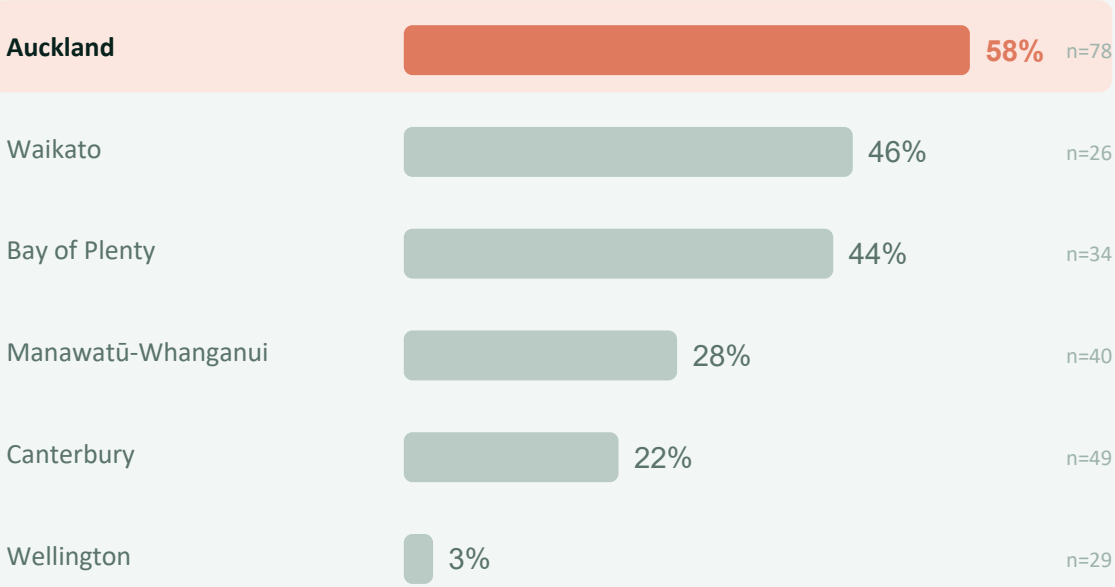
of morning observations in occupied bedrooms sat below the WHO healthy minimum of 18°C. The median bedroom overnight was 16.4°C, and a quarter of readings fell below 14.5°C.

IN SUMMER, TOO HOT

58%

of monitored Auckland bedrooms were classed as overheating under the CIBSE 1b standard — the worst rate of any region in the country, against a national average of 36%.

SUMMER OVERHEATING RATE BY REGION (CIBSE 1b, bedrooms)



The same home, too cold in winter and too hot in summer. That swing is precisely what thermal mass flattens — absorbing heat through the day and giving it back overnight. Auckland is the worst region in the country for summer overheating, which is exactly where we build.

BRANZ HEEP2: SR495 winter comfort (Annex Tables 16 & 18, winter 2023 sample) and SR502 summer comfort (Table 4, summer 2023/24 sample). Preliminary analyses.

Why the wall build-up matters

Same insulation intent, very different thermal behaviour.

In-situ concrete

SIMPLICITY SYSTEM

INTERIOR 22°C

200 mm concrete

60 mm PIR

EXTERIOR 5°C

R 3.4 m²K/W Thermal mass: **HIGH**

CLT timber

COMPARISON CASE

INTERIOR 22°C

140 mm CLT

90 mm batts

EXTERIOR 5°C

R 2.9 m²K/W Thermal mass: **LOW**

What Therm adds next

R-values describe a flat piece of wall. Real buildings lose heat fastest where surfaces meet — corners, slab edges, window reveals.

Therm isothermal analysis quantifies each junction as a linear thermal-bridge (ψ) value, which corrects the EnergyPlus construction definitions. That work is in progress and will sharpen these numbers rather than replace them.

Higher R-value and higher mass. The concrete build-up wins on both counts — but it is the mass, not the R-value, that flattens the daily swing HEEP2 measured.

Now multiply it by 330 homes and fifty years.

36.6 GWh

of electricity never drawn from the grid

\$11.0m

left in residents' pockets, not paid to a retailer

3,580 tonnes

of CO₂e avoided through fabric performance alone

Waatarua alone. 330 homes over one 50-year design life, compared with the same homes performing at the New Zealand average.

IN SUMMARY

Lower bills and lower emissions are the same building decision.

01

The benchmark is measured, not assumed

BRANZ HEEP2 found 80.6% of winter bedroom readings below the WHO 18°C minimum, and 58% of Auckland bedrooms overheating in summer.

02

We claim only what fabric can deliver

Heating and cooling is 19% of an apartment's load. That is the only portion thermal mass acts on, and it is the only portion we claim.

03

The mechanism is physical

A 200 mm concrete wall with 60 mm PIR carries both a higher R-value and far more mass than the CLT comparison, flattening the daily temperature swing.

04

It compounds

Across 330 homes and 50 years: 36.6 GWh never drawn, \$11.0m never billed, 3,580 tonnes never emitted.

Still to substantiate: Confirmed OpenStudio simulation output by unit type, and the reconciliation between the whole-building EUI figure and the heating-and-cooling-only scope of the fabric claim.

Methodology, sources and status

Source data

- V-Quest whole-building and structural models, Waiatarua Blocks A–D (VQ-026)
- Ascot Embodied Carbon Report §1.02–1.4 — upfront carbon, cost and mass comparison
- BRANZ LCAQuick v3.6, Ascot A Rev04 — GFA 6,700 m², 50-year design life
- NZGBC Green Star Embodied Carbon Calculator v1.01 r02

Methodology

- Life-cycle stages per EN 15978 and MBIE Whole-of-Life Embodied Carbon technical methodology
- Reference building per NZGBC Embodied Carbon Methodology v2.0
- Operational energy on EnergyPlus / OpenStudio, heat-pump system held constant
- Grid factor 0.074 kgCO₂e/kWh (MfE); tariff \$0.30/kWh all-in residential

Status — to substantiate

- Green Star LCA results for Blocks B, C and D (Block A modelled; B–D in progress)
- Confirmed energy simulation output by unit type
- Final schedule of accommodation to fix the unit mix
- Simplicity site-data record for the A5 calculator inputs
- Simplicity Living's ranking among NZ residential builders

Figures marked indicative in the deck are modelled placeholders pending the confirmed inputs listed in the third column.