

Baillie Eco Home 28 Kenyon Ave Mt Eden

OPEN 11am-4pm
Sunday 30th, September 2018

BY RTA STUDIO & ECO CONSTRUCT
Section Size: 513m²
Floor Area: 246m²



Key Features

- Passively self-heating
- Designed for the sun
- Exposed and indirect thermal mass
- High performance glazing
- High levels of insulation
- Zehnder heat recovery ventilation system
- Net-zero energy (excluding electric car charging)
- 5kW Photovoltaic array
- Tesla battery storage
- EV charging
- Water efficient taps & appliances

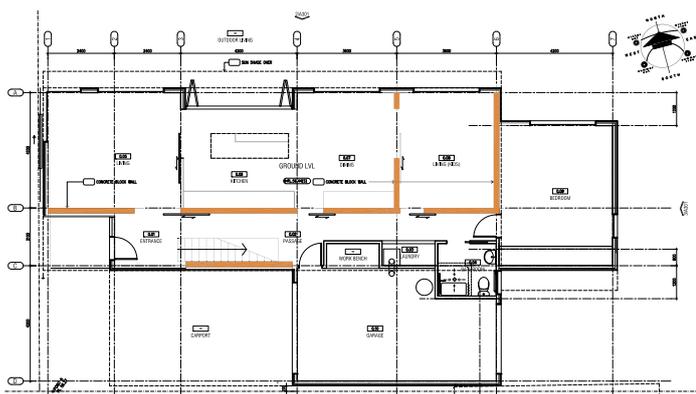
The Baillie EcoHome has had a long gestation period. It started nearly a decade ago with the owners' ambition to build an extremely energy efficient family home using the principles that Russell had been preaching for over a decade in his various day jobs. Finding the right site

to build on took a while as a location that minimised the need for car use and a site orientation that allowed for all normally occupied rooms to face north were deemed critical. By then a large number of other sustainable building principles had wound their way into the project, including materials selection, air quality, water minimisation, resilience during utility infrastructure outages, etc.

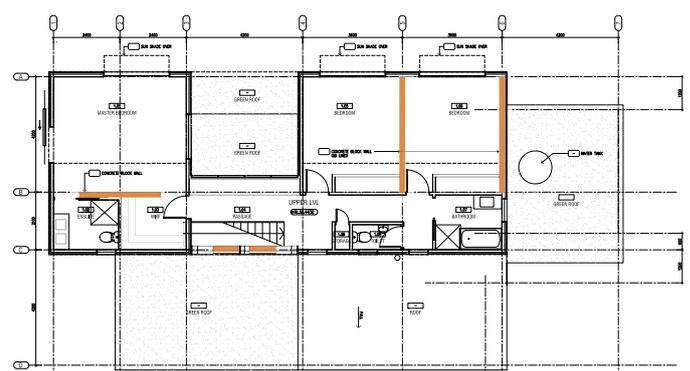
The design concept follows passive solar principles of capturing and storing the sun's energy, whilst providing appropriate levels of shading and passive ventilation to minimise over-heating in the summer. During the cold snap this July we had frost on the lawn and an outside temperature of 0.2 degC, whilst inside the large open plan living area dipped to 17.5 degC. And over the last three winters, we've never needed any supplementary heating.

Electricity is mainly provided via solar panels, with excess daytime electricity stored in a Tesla Powerwall battery for use in the evening. The system is grid connected

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GROUND FLOOR



FIRST FLOOR



and over a twelve month period exports more electricity than it imports (excluding car charging). This system is now programmed to ensure that the battery carries sufficient charge, by importing at the right time if needed, to ensure that we do not draw electricity off the grid during peak periods – benefiting both local distribution and national transmission systems.

Rainwater is collected, filtered and reused via three 5,000 litre tanks (it's a tight city site) that have a mains connection to ensure there is always at least three to five days water supply in them in case of mains outage during a dry spell.

Planting is nearly all natives or edibles, including a native grass lawn that is endemic to this area. The green roof is designed, but not yet constructed.

Although the owners have now been living in it for two and a half years, this very comfortable family home is still a work in progress with a few things still on the 'to do' list and a few tweaks underway.



What is the SUPERHOME movement?

SUPERHOME MOVEMENT is creating awareness for homeowners, builders and designers, triggering behavioural change in decision making on designing and building superior homes. The current building code describes the lowest possible building standards that are legally permitted across New Zealand. BRANZ research shows that building code is universally mistakenly used as the target quality standard rather than a legal minimum. Code minimum does not present satisfactory levels of comfort, health and wellbeing, nor efficiency in regulating heat and energy consumption.

SUPERHOME MOVEMENT provides open source sharing of new design ideas, technologies and building techniques; connecting leading experts in the industry with each other and the wider community. Collaborating to provide better value for money, superior designed and resiliently built, environmentally sound homes that are more energy efficient, healthier, warmer & dryer.

We can easily build low energy or energy positive buildings that are much more sustainable by changing from mainstream building methods and techniques. We will be financially better off, healthier and happier living in a **SUPERHOME**. It is a myth that it is too expensive.

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