

FUTURE SYSTEMS

A yet-to-be-built, carbon-neutral house near Wanaka is already attracting international attention.



INTERVIEW / *Jeremy Hansen*
ILLUSTRATIONS / *RTA Studio*

HOME The C3 house is one of the finalists in the 'Future Projects' section of the World Architecture Festival being held in Singapore this month. How did this house design come about?

JOHN MAY, DEVELOPER The philosophy behind the site is to enable ecological restoration and enhancement through sensible and sustainable development. This house was designed as an example of what can be achieved through ambitious sustainable design. It was designed to be not only carbon zero for embodied energy, carbon zero in use and 100 percent recyclable, but also to meet the design covenant conditions required of all houses at the Emerald Bluffs development. These include conditions to minimise the visual impact of the house, provide for sustainable design and to respect existing landforms and vegetation.

Did designing a carbon-neutral house make you rethink how you work?

RICHARD NAISH, ARCHITECT Our achieving carbon neutrality means the sum total of all of the materials used to build the house have zero carbon associated with manufacturing them. Suddenly the materials you can work with are reduced significantly; we used mostly timber, glass and local stone. The process was hugely educational in our pursuit to understand materials with low embodied carbon and the constraints of designing buildings with low or neutral embodied energy.

JOHN MAY We confirmed that solutions are available for carbon-zero building in New Zealand. It was also satisfying to learn through initial cost analyses that the carbon neutral and sustainable alternatives generally cost no more than 25 percent above traditional solutions.

Does aiming for carbon neutrality effect how big a building can be?

RICHARD NAISH In theory, the best way to

Below left The C3 house will be one of seven sustainable homes located on the 85 hectare Emerald Bluffs site in Wanaka, where four years of environmental restoration and revegetation have already been completed.

Below right Sympathetic to the site in every respect, C3 will be constructed using mainly timber, glass and locally sourced stone.



halve the carbon output of a building is to halve the size of the building – but half of zero is still zero, so if you achieve the zero target, theoretically size doesn't matter. However, we imposed a realistic size to the building related to the brief and the budget.

When will it be built?

RICHARD NAISH The house has been designed firstly to test the site, planning restrictions and the carbon neutrality agenda set for the project by the land developer. The land is still awaiting resource consent for subdivision, and then the site will be marketed to find the interest and passion required to build a project like this. 

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 rtastudio.co.nz

Emerald Bluffs
 emeraldbluffs.co.nz