

# HOUSING



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# A bird's eye view

The winner of the 2006 HIA-Colorbond Steel Australian Most Innovative Use of Steel award is inspirational in its simplicity. Gabrielle Chariton reports.

**B**uilt on steel stilts and clad entirely in glass, this award-winning home is the complete opposite of bricks and mortar. And it works – brilliantly. Despite its undeniably industrial aesthetic, the house looms gracefully into a dense canopy of native gums, and barely grazes the bushland of the block on which it's built.

The house was designed by Sydney-based architect Malcolm Carver of Scott Carver Architects as a weekend for two families. Malcolm's vision was for a "transparent treehouse" which would take full advantage of the magnificent location – an uncleared, sloping block just 200

metres from the surf at MacMasters Beach on the NSW Central Coast.

It turned out to be one of those jobs that no builder wants to take on. After unsuccessfully putting it out for tender for the third time, Malcolm contacted Ward Phillips, whose building company NexGen Constructions specialises in high-end housing and renovations projects around Sydney and on the Central Coast.

Ward agreed to take on the job, but not without a little caution. "I had never done a project like this before," he says. "I do remember looking at the plans, wondering how it was all going to come together."

The structure itself was relatively simple. A steel-and-glass box capped with a Colorbond roof, it sits over two storeys, with four bedrooms and two small bathrooms on the lower level, and the kitchen, living and dining rooms on the top. A deck extends out from each level, and a small enclosed utility area occupies the void area under the house.



Above: Ward Phillips (at left) accepts the 2006 HIA-Colorbond Steel Australian Most Innovative Use of Steel award from David Bare of BlueScope Steel.

Steel, Ward says, was the most logical choice for framing. "Structural steel made perfect sense for the project. Large spans could be achieved and it's strong enough to support the glass panels and the concrete slabs for thermal mass." Building up on steel columns also eliminated the need for excavation – and the accompanying site damage – allowing the house to perch on the sloping site with minimal disturbance to the immediate environment. (In fact, only one tree needed to go in order to make way for the house.)

Although the steel framing enabled speedy construction, the exhaustive planning required meant the entire process actually took about 12 months from start to finish. Before any building began, Ward worked with the engineers on a 3-D digital model of the steel framing. "It was an exact replica, right down to every nut and bolt hole that had to be drilled. It was like a meccano set. There was no room for error. Everything had to be 100 per cent correct."

After much checking and re-checking, the framing components were fabricated





by Edcon Steel in Sydney, then taken to Newcastle to be galvanised, and finally delivered to the building site.

“The whole thing arrived on one truck. And it all went together perfectly. No onsite welding or cutting was required and every bolt and hole aligned perfectly.” This was vital so as not to compromise the protective galvanised coating. Once the frames were up and the concrete floors were installed, the glass was craned onto each floor and carried in, piece by piece – no mean feat considering each panel was commercial glazed and weighed 70–80kg.

Apart from its fantastically light interiors, which give a true bird’s eye view of the world and an airy treehouse feel, this

is a holiday house in the truest sense: it’s been designed to be almost totally maintenance-free.

Rather than using regular glass, the designer chose to install self-cleaning glass – Pilkington ActivClean. This new-technology product has a special coating which uses the UV rays in sunlight to break down organic dirt such as tree sap and debris, and the coating is hydrophilic, which means that water sheets off the surface rather than beading, leaving it streak-free. The house is crystal clear all the time, says Ward. “Not even salt spray builds up.”

The streamlined, box-like design and absence of eaves and guttering means there’s nowhere for leaves to gather on the


roofline, and the internal walls and flooring are pre-finished. The gentle patina that the steel structures will acquire with age will add to the home’s bushland charm – no paint required.

Best of all though, there are no lawns to mow. Rather than landscaping around the house, the natural vegetation has been rehabilitated, and already the native bracken undergrowth is regenerating.

### The steel framing contributed to the home’s dramatic aesthetic

Although primarily structural, the steel framing also contributed to the home’s dramatic aesthetic. “The bold look of the big sections – it’s an architectural feature which gives the house a really industrial look.”

But, in a curious juxtaposition which is undoubtedly the result of Malcolm’s architectural intent and Ward’s skill as a builder, the house doesn’t seem out of place. The reflective nature of the glass, and the home’s orientation and elevation, causes it to almost disappear – in true treehouse fashion – into the dense canopy of native ghost and angophora gums.

“It achieved what the architect wanted,” says Ward. “He had a smile on his face, which was good!” 

### Green living

A house clad entirely in glass may sound like an energy-efficiency nightmare, but according to builder Ward Phillips, the MacMasters Beach house is in fact remarkably thermally efficient, and well suited to the temperate central coast climate.

- The glass walls are essentially huge openable windows, allowing maximum natural air flow. “The air comes in on the bottom level and circulates out at the top,” says Ward.
- The floors are concrete slab, which has high thermal mass.
- The Pilkington ActivClean glass is laminated for better insulation.
- The surrounding trees protect the interiors from excessive sunlight.