

# Sanctuary

MODERN GREEN HOMES

Renovation Special

INSIDE ISSUE 41 Summer shading ideas; tiny site big plans; focus on furnishings; 8.4 Star retrofit; SIPs tips; cool basement benefits; go up in style; purr-fect design; modular mountain magic + more

## RENOVATIONS & ADDITIONS

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Although hemmed in – with five neighbours and three others who share a right-of-way access across the north of the block – architect Kurt Crisp loved the neighbourhood and could see potential for the tiny brick beach shack. A blackbutt weather screen, which appears to be cladding, shades the fibre cement cladding and allows the building to breathe. External shading helps prevent the upper floor from overheating and a garden above the carport allows for extra greenery.

# Bucking the trend

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Undeterred by the obvious shortcomings of this small house on a tiny block, architect Kurt Crisp has created a light-filled, sustainable and much-loved home for his family.

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PHOTOGRAPHY Simon Whitbread

For architect Kurt Crisp and his wife Alice, a physiotherapist, gaining a foothold on Sydney's property ladder seemed like an impossible dream. Kurt grew up in South West Rocks and Alice has fond memories of her childhood holidays on the Northern Beaches; they both longed to provide a similarly carefree and outdoorsy lifestyle for their children, three girls and a boy who range in age from six months to seven years old.

As an architect and co-founder of Buck&Simple, Kurt had a slight advantage over other potential buyers when a small house hit the market in a suburb they liked in early 2015. He could see a way to add a second storey to the tiny dwelling, even within the constraints of the local planning

code, where others could see only trouble and disaster.

The 260 m<sup>2</sup> block is an anomaly in an area where the minimum lot size is 550 m<sup>2</sup>, Kurt says. "The size was tiny but the location was great, and I knew we'd get it for a reasonable price," he explains. "There is a bus stop two minutes from our door, and I can ride my bike to work, so everything lined up.

"Even the real estate agent was saying it would be a difficult process to add a second storey, but I relished the challenge."

As well as having to work within a building envelope prescribed by council, Kurt had to forge strong working relationships with his neighbours before and during construction. These include



## KEY FEATURES

- The house design makes the best of a small and unusually shaped site, which includes a permanent access easement to the north
- Designed to use 'stack' ventilation and screening, there are no active heating or cooling systems installed
- The original 71 m<sup>2</sup> brick beach shack is retained, but its size doubled with a second storey to cater for a family of six.





The naturally lit kitchen has benchtops of timber and brass around the sink and stove; tiles for the wall and floor were chosen to match the glass in the original bathroom door.



The retained masonry walls are a reminder of the original single-level beach shack, which is transformed with an upper storey to make enough space for the family of six. The strategic placement of windows ensures that the living space is bathed in sunlight through winter; a sliding service window connects the kitchen to the decked north-facing courtyard.





The stairwell serves multiple functions: it provides access to upstairs, additional daylighting into the living room and helps move warm air from downstairs to upstairs where, in summer, it can be vented outside.



With neighbours on all sides, privacy is achieved through strategic glazing; the landing on the second floor has shutters to the west that can be closed to create an additional, semi-enclosed living space.



three nearby houses that share the right-of-way driveway, and five additional homes that border their battle-axe block, which is hemmed in on all sides.

Kurt's first plan – which kept the original ground floor home virtually intact to save costs – involved adding a second floor with three bedrooms and a bathroom, but it generated some objections about overshadowing from neighbours. "I had to amend that design to further consider solar access," he says. "Then I built a plywood model and took it to all the neighbours to show them, before we submitted the plans to council again. I had redesigned the girls' bedroom to make it a compliant building, and following that round of discussion, we got approval."

Making those changes led to complications at the build stage: the three-metre-high wall tilts inwards to create the roof at a 45-degree angle, resulting in some complicated geometry, Kurt says. "I had to

do a detail drawing of every wall to build the studs, which was particularly difficult at the point over the stairs – the lowest point of the rake – but making those changes allowed us to comply and still meet our environmental goals too, so we achieved everything we wanted to."

Those goals revolved around cross ventilation – which relies on high-level skylights and openings that help to expel warm air in summer – and solar access and thermal mass, which is achieved by the northern aspect, carefully placed windows, including in the clerestory roofline, and concrete floors, which trap and release warmth from winter sun.

Upper-level windows are screened with adjustable blinds and shutters that enhance privacy and mediate changes in light and weather; the house was designed without mechanical heating or cooling. "Sydney's climate is pretty forgiving, but you need to be flexible. In winter it does sometimes

get cold, so we put more clothes on, and in summer, we dress appropriately when it gets hot," Kurt says.

The new addition was constructed using a lightweight timber frame with a conventional fibre cement lining. Layered over this is a breathable blackbutt weather screen with gaps that allow hot air to vent away, which essentially puts the entire house in the shade. The use of timber as a screen rather than cladding reduces maintenance. Timber was also used extensively throughout the internal fitout for the same reasons.

It may have a small footprint but this home offers plenty of options for the family to come together or seek retreat. The original bedrooms downstairs were converted to a living space and home office, while a multi-purpose zone upstairs provides a third common area. "The landing is like a bonus space: the kids can do their homework there, and there is a

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The house is designed to be comfortable without the need for mechanical heating or cooling; instead 'stack' ventilation is used to channel warm air from downstairs to triangle vents and high-level operable windows in the bedrooms and above the stairs.







④ Lining boards used for the ceiling are an attractive break from plasterboard; louvre windows in the main bathroom channel seabreezes from the east.

daybed; it's one of the few quiet spots in the house," Kurt says.

Most of the action happens outdoors, anyway, he says, with two existing decks and the surrounding garden offering Kurt and Alice's version of an idyllic place for their children to run and play. "The two decks are great in different seasons," Kurt says. "There is a three-metre retractable awning over the angled deck, so when it's hot in summer, we have shade out there and it becomes another room.

"The kids tend to play ball games along the driveway, and there is a cubbyhouse in the garden which is always full of toys. My wife loves gardening, and at the moment, most of the games involve jumping off the deck, so I've built a balance beam that reaches from the deck to the cubbyhouse," he continues. "I can see the outdoor spaces continuing to adapt as the kids get older and their needs change."

The family lived with Alice's mother during the build, and Kurt operated his architecture practice from site during construction, which was a blessing and curse, he recalls. "It meant I was able to project manage all the trades, and I was

on hand for deliveries, which were often difficult because of the site access," he says. "One day I was downstairs when I heard someone yelling out 'Help', and I raced upstairs to find the painter had dropped a tin of paint on the newly finished oak floor, so I whipped off my shirt and started mopping it up. We call that the whitewashed floor, now.

"Working on site was both good and bad for me and the builder, because I was perhaps a little too hands on, but we both got through it in the end," he laughs.

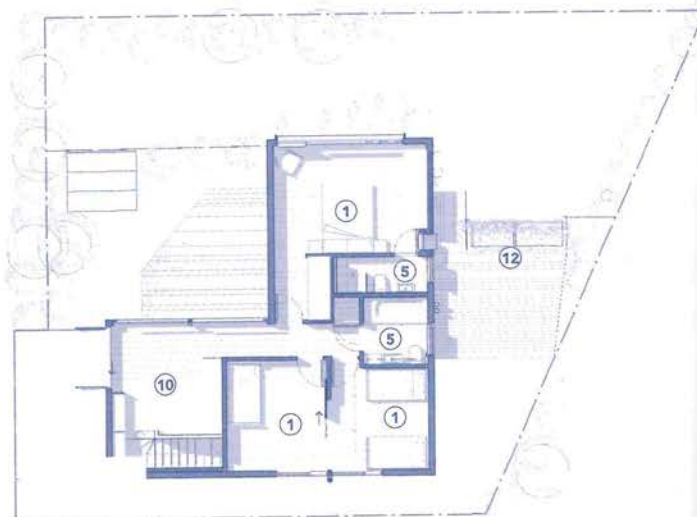
The family moved into their delightful new home in January 2016, and while there are a few small details to complete, Kurt couldn't be happier with the outcome of his labours. "We've created a little oasis in here that is reserved for only a few houses," he says. "It's safe for the kids to play in the driveway. We recently built a gokart out of the leftover timber.

"It works really well for us, which of course relies on our preferences as the clients," he says. "Even though I'm sure it would not suit all families, it's perfect for us." ⑤

GROUND FLOOR PLAN



FIRST FLOOR PLAN



## LEGEND

- ① Bedroom
- ② Living
- ③ Kitchen
- ④ Dining
- ⑤ Bathroom

- ⑥ Office
- ⑦ Entry
- ⑧ Deck
- ⑨ Carport
- ⑩ Landing

- ⑪ Cubby
- ⑫ Carport/roof garden



# Casa Crisp

## —Specifications

### Credits

#### OWNER-DESIGNER

Kurt Crisp, Buck&Simple

#### BUILDER

DC Shield Constructions

#### PROJECT TYPE

Renovation and addition

#### PROJECT LOCATION

Warriewood, NSW

### Sustainable Features

#### ACTIVE HEATING & COOLING

- None currently required, although they're currently investigating efficient heating options for the coldest days.

#### LIGHTING

- Brightgreen LEDs for all downlights
- Pendants and bedside lamps from Urban Lighting Willoughby with LED fittings.

#### PASSIVE DESIGN / HEATING & COOLING

- All upstairs bedrooms have high-level, operable ventilation
- A 'stack system' approach to ventilation allows high-level venting via all upstairs habitable rooms.
- All rooms (except bathroom) have cross ventilation directed towards the prevailing summer north-easterly breeze; one awning window above the stairs creates a stack effect, drawing away heat from the downstairs living room in summer
- External operable blinds and louvres: Large hand-operated eco folding arm awning controls the amount of solar penetration onto the concrete floor, from Creative Canvas; adjustable external louver blind, from Vental Australia
- Carpet and slate tiles were removed to expose the thermal mass of the existing concrete floor.

#### BUILDING MATERIALS

- Structural: LVL (laminated veneer lumber) engineered

timber and radiata pine

- Blackbutt weather screen: appears as cladding, but in fact is structural blackbutt laid as vertical decking to allow airflow
- Oak joinery and stairs; engineered oak for upstairs floors
- Radiata pine lining boards for bedroom ceilings
- Spotted gum ceiling and structure over dining table
- Kitchen and children's bathroom encaustic floor tiles from 'Onsite'
- Ensuite floor and wall are porcelain tiles in random size and format; children's bathroom walls and splashback are hand-glazed from Terranova Willoughby
- Solid brass and oak kitchen benchtops from Mr and Mrs White joinery
- Roof: Top Deck 700 Roof Sheeting.

#### HOT WATER

- Retained existing instantaneous gas system.

#### RENEWABLE ENERGY

- Roof oriented correctly for future PV.

#### PAINTS, FINISHES & FLOOR COVERINGS

- Interior: Dulux Lexicon quarter; Porters grey fox; Porters clear coat on American oak for all joinery and stairs
- Exterior: Dulux Weathershield Lexicon half; Intergrain UltraClear exterior finish for timber.

#### WINDOWS & GLAZING

- Blackbutt windows downstairs, only windows that required replacing or needed upgrading were removed, from Evolution Windows
- White-framed aluminium windows upstairs where maintenance is difficult, from Vision 3 Window Systems; white chosen for heat reflectivity
- Electronic actuators are used to operate awning windows that are out of reach, supplied by Vision 3 Window Systems
- Breezeway louvres, clear glass.

#### OTHER ESD FEATURES

- Retained as much of the existing building as possible: all existing external walls including structure and plasterboard retained; as were existing doors, bath and ceiling fans; existing windows retained where no adjustment required
- DIY green roof over carport provides additional greenery
- No heating and cooling apart from shading and natural ventilation
- One-car family of 6. Owners commute by bus, or bicycle when the weather is good.