

Sanctuary

MODERN GREEN HOMES

ISSUE
64

Prefab & modular supplier guide; reclaimed timber treasure trove;
joey sanctuary bushfire rebuild; sweet syrups from foraged flora

**PREFAB
POWER**

**OFFSITE
CONSTRUCTION
GATHERS PACE**

PUBLISHED BY **renew.**
SPRING 2023 • AU/NZ \$13.95
SANCTUARY.RENEW.ORG.AU

ISSN 1833-1416



9 771833 141017



**One of two e-scooters from Voltrium,
with a total prize value of \$6,500**

Offer open to Australian residents. Details page 81

Committed to the cause

LOCATION Narrabeen, NSW • WORDS Rebecca Gross • PHOTOGRAPHY Julie Crespel



At a glance

- Small-footprint, relocatable all-electric home on a modest budget
- Prefabricated and delivered in two modules
- Extensive use of reclaimed, secondhand and locally sourced materials

On Sydney's Northern Beaches, Julie and her architect took up the challenge of a sustainable relocatable home on a budget.

A prefabricated house that's both sustainable and affordable can be a difficult find. Traditionally, prefab offerings have tended to be high-end and expensive with good sustainability credentials, or low-end and cheaper but with not much consideration for sustainability. Julie's prefabricated home sits right in the sweet spot, though. It's modest in size, designed and built to a budget, and every aspect has been carefully considered for its impact on the planet.

A former librarian, Julie did in-depth research into each element and detail of her new home to ensure it would be eco-friendly while still being affordable on her budget. "I knew what I wanted, but I didn't know if it was possible," she says. The result is a prefabricated, modular house custom designed by a local architect and constructed by a local builder, that meets the constraints and requirements of quite a unique site.

Julie lives in a holiday park on Sydney's Northern Beaches, where she has leased a site for 25 years. The houses there must be single-storey, prefabricated and relocatable, and transported into the park on a maximum of two delivery trucks. Julie's old home was manufactured in 1986 and had seen better days. She engaged Northern Beaches architecture firm Buck & Simple to design her new house, and Mahony Group for the build – its workshop is just a kilometre from the site, making the transport of the finished modules relatively simple.

Both Julie and architect Kurt Crisp were 100 per cent committed to creating a sustainable home. "Julie was really interested in what was going to make her home healthier for living. During the learning and thinking process, we kept coming back to the concept that the less fabricated something is, the healthier it is," Kurt explains.

The 59-square-metre house sits on the same footprint as the house that was removed. It was delivered in two pieces and craned into place. One half, located along the south-east side of the block, contains two bedrooms and a bathroom with laundry. The other half, to the north-



↑
The 59-square-metre home was prefabricated nearby and delivered to site on two trucks. A generous deck wraps around the east and north, extending the living space.



→
“I love the curved timber ceiling, and the light and openness,” homeowner Julie says of her compact and yet surprisingly spacious-feeling living space.



↑ Floors are FSC-certified engineered spotted gum boards. The kitchen benchtop is also of spotted gum, reclaimed from another of the builder's projects.

west, contains the kitchen, dining and living area. Julie's bedroom and the living area have sliding glass doors that open to the north-eastern deck and garden, and planting along the north-western edge of the site provides privacy from the neighbour.

While the house is just one storey, it features a beautiful timber-lined, double-height ceiling that curves over the kitchen and living area, creating a voluminous, light-filled space. High windows offer views of the sky and treetops, and large openings and glazing throughout the house bring in sunlight and promote cross ventilation. Eaves protect the glazing and the curved ceiling also helps vent hot air. Designed for energy efficiency and thermal comfort, the house has no active heating or cooling. Adamantly opposed to using gas for environmental reasons, Julie has all-electric appliances including an induction cooktop, and hopes to install solar panels soon and a battery when they are more affordable.

Julie was determined for her new house to be built with materials that were sourced as locally as possible, including FSC-certified timber, Australian-made products and recycled and secondhand elements. In a stroke of good timing, both Kurt and the builder were doing renovation work on their own homes and were able to put some of the materials they'd removed to good use in Julie's build.

Cedar-framed double-glazed windows and doors from the builder's house became available partway through the process, so Kurt adjusted the openings in the structure to fit them. The spotted gum kitchen benchtop is also from the builder. Metal sheet cladding stripped from Kurt's roof is now on Julie's roof, and is also used as an extra weatherproof layer over the timber stud external walls, where it is covered with spotted gum boards battened to provide a ventilated air gap that reduces heat gain.

The walls also have sheep wool insulation, which was a priority for Julie; she found one Australian supplier after much investigation. Her research interrogated products such as glues and paint in fine detail to fully understand where they came from and what went into them. "Finding the best products and trying to find Australian made is not easy, and of course they are often more expensive than imported options. I ended up having a couple of things imported, but I did well overall," Julie says.

The research certainly paid off, as this custom-designed, prefabricated house hits the mark for quality, sustainability and affordability, and looks and feels great to boot. "The real beauty of this project is how strongly Julie held on to her core values. Some clients let go of them as the reality gets too hard, but not Julie," says Kurt. 🌱

FLOOR PLAN



LEGEND

- ① Entry
- ② Bedroom
- ③ Living
- ④ Kitchen
- ⑤ Dining
- ⑥ Bathroom
- ⑦ Laundry
- ⑧ Walk-in robe
- ⑨ Deck

HOUSE SPECIFICATIONS

HOT WATER

- Rinnai Hotflo Plus 50L electric storage hot water system

RENEWABLE ENERGY

- Wiring in place for future solar PV system

WATER SAVING

- 1,300L GN Series rainwater bladder tank from Aquip Supplies under house for garden watering
- Australian-made tapware from Sussex Taps and Par Taps

PASSIVE DESIGN, HEATING & COOLING

- Extensive glazing facing north-east and north-west for passive solar gain
- Large openings for cross ventilation and operable windows at the high point of curved ceiling to vent hot air
- Large eaves to shade glazing in summer
- Ventilated timber weather screen to all external walls

BUILDING MATERIALS

- Timber frame walls with reclaimed metal sheet skin, plus FSC-certified spotted gum weather screen battened to provide a ventilated air gap
- Metal sheet roofing reclaimed from the architect's own renovation project
- Interior wall lining: FSC-certified pine VJ boards
- Living room ceiling: FSC-certified pine battens

- Engineered spotted gum floorboards (FSC-certified)
- Insulation: Mountain Made Australian sheep wool batts to ceiling (R5) and walls (R2.7), from A Southerly Change Trading
- Spotted gum benchtop reclaimed from builder's other project
- FSC-certified spotted gum decking

WINDOWS & GLAZING

- Cedar-framed double-glazed doors and windows reused from builder's other project (plus one new window)

LIGHTING

- Brightgreen LED lighting throughout

COOKING

- Westinghouse 60cm induction cooktop

PAINTS, FINISHES & FLOOR COVERINGS

- Dulux enviro₂ interior paints (low-VOC)

OTHER ESD FEATURES

- All-electric house
- House prefabricated locally to reduce construction waste and transport-related carbon emissions
- Australian made, non-toxic, sustainable and locally sourced materials used wherever possible, including reclaimed and secondhand

DESIGNER

Buck & Simple

BUILDER

Mahony Group

PROJECT TYPE

New build

LOCATION

Narrabeen, NSW
(Gai-mariagal Country)

COST

Approx \$320,000

SIZE

House 58.7m²
Land 221m²



← Long timber handles to open and close the high windows are a design feature.