

MODERN GREEN HOMES Sanctuary

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Top tips for an eco home; Home sustainability assessments; Blinds & shading

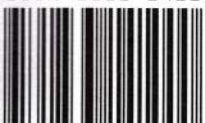
10 STAR HOMES

NO HEATING,
NO COOLING

Sustainable
**HOUSE
DAY** SPECIAL

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WIN A solar hot water system
from Apricus Australia

*Offer open to Australian residents only.

PLUS: SA Sustainable
Designer & Expert Directory

The simple life

The pared back design of this modular home promotes sustainability, simplicity and liveability.

WORDS Jacinta Cleary
PHOTOGRAPHY Brendan Finn



“The house was so lovely to live in last summer; it just stays quite comfy in the heat. We’ll add some drop blinds on the east for more shade though.”

Designer and homeowner Robyn



This modular 7.8 Star home sits on an east–west axis with large north-facing double-glazed windows that let sunlight flood into the home for passive solar design.

DESIGNERS ROBYN GIBSON AND PAUL


Hassall had an ambitious plan: create a small, energy efficient home for people who don't want to go through an extensive design process. The couple had created numerous one-off homes as the team behind Castlemaine's Lifehouse Design, but saw a gap for a streamlined and adaptable modular home.

Over four years they developed a concept and refined its design to produce a space-efficient home based on versatile 3 by 5.4 metre modules. It's not delivered in sections like a prefabricated home, but is built entirely on-site.

Once their concept was honed it was time to build a prototype. It was also a chance for the couple to create their own peaceful home, to downsize and step back from their busy lives. They found a block at Campbells Creek near Castlemaine in central Victoria, a semi-suburban area with the quiet of the forest a five-minute walk away. The 710-square-metre lot is on an east-west axis providing a generous northern side for passive solar design. "We wanted to prove you could build something environmentally sustainable on a small site," says Robyn.

The concept's simplicity is evident in the linear layout of the new Campbells Creek home. The house is only as big as it needs to be, providing the shell for an uncluttered life. Their personalised rectangular plan comprises six design modules in a row, creating a compact 90 square metre home. Side by side are the bedroom, study, bathroom and an open plan living, dining and kitchen area. No more, no less.

With such a pared back design, there are no excess materials or unnecessary details to increase costs. The exterior is modern and light with timber walls and an unobtrusive flat roof. Paints and varnishes have barely been used. The house is constructed from materials that look beautiful in their natural state, such as the trowel-finished concrete slab and the silvertop ash walls simply finished with natural oil. The rear south wall is designed around entire compressed fibre cement sheet panels to reduce waste and labour costs. The full-sized sheets can be unscrewed and reused if the house is ever dismantled. →



The southern wall is made of CSR Cemintel Barestone compressed fibre cement sheet with a natural finish. Silvertop ash cladding is finished with a natural oil.



Inside, the home's long, narrow form allows air to flow easily from one end to the other. "We've designed it as one long pavilion to really maximise the northern aspect and to get good ventilation," says Robyn. Casement windows throughout the home help catch the breeze on warm nights. "The house was so lovely to live in last summer; it just stays quite comfy in the heat. We'll add some drop blinds on the east for more shade though."

The home runs the block's southern length and as a result the concrete slab is flooded with the sun's natural warmth on clear winter days. Sun also hits a blockwork feature wall in the living area, which stores additional heat from a strategically placed wood-fired stove in front. These passive design features of mass and northern orientation help to naturally warm the home, and a small floor plan ensures it happens quickly. Winter days in Castlemaine can be clear and crisp, with Robyn arriving home one sunny afternoon to a balmy 22 degrees Celsius inside thanks to a good dose of sunshine hitting the slab. "We just don't need much heating. We find when we do light the fire it just heats the whole house."

The home retains heat in the cool months due to high levels of insulation in the roof, walls and double-glazed windows throughout. Its house energy rating was boosted to 7.8 Stars with the choice of a waffle slab; the concrete was poured over a layer of pods that help insulate the slab from the ground's temperature changes. The 2.2 kilowatt solar photovoltaic system covers the home's low electricity needs. →



Structural plywood was used to line the ceilings throughout the home. It was also used for shelving in the hallway, the living area and for the bathroom unit and robe doors.



A 600mm-deep spine running along the southern side of the house (to the right in the image) fulfils different purposes in each room, including a window seat in the living room, wardrobes, cupboards and a desk in other parts of the house.

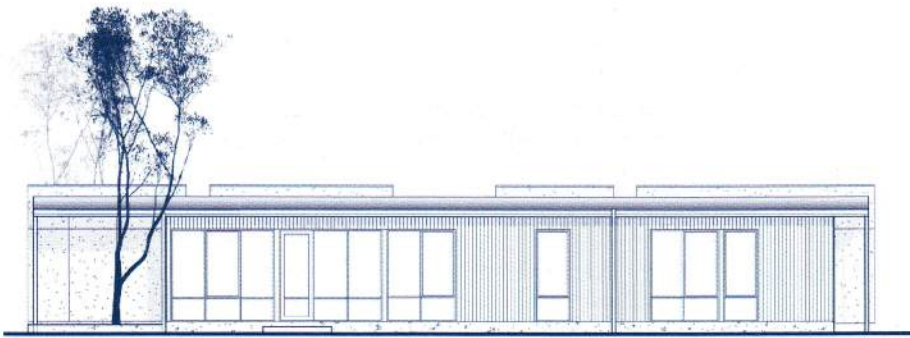


The home's passive design, including thermal mass and double-glazed windows along its northern side, helps to naturally warm it in winter. The small floor plan ensures it happens quickly. A wood-fired slow-combustion heater adds additional warmth.

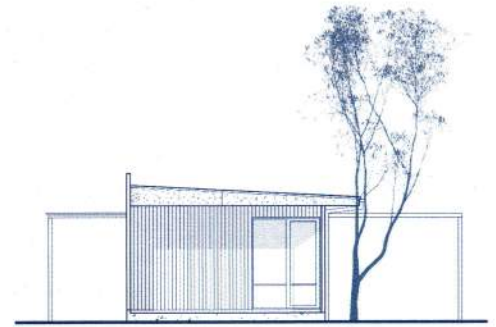


One of the challenges of designing a small dwelling is creating storage space while maintaining a clean layout. A clever design feature is a 600mm-deep 'spine' that runs along the south of the house, fulfilling different purposes in each room such as a wardrobe, cupboards, desk and window seat. "Architect Glenn Murcutt and others have been designing houses in this way for many years, but the way it applies to our very small house is very effective and a lovely design feature."

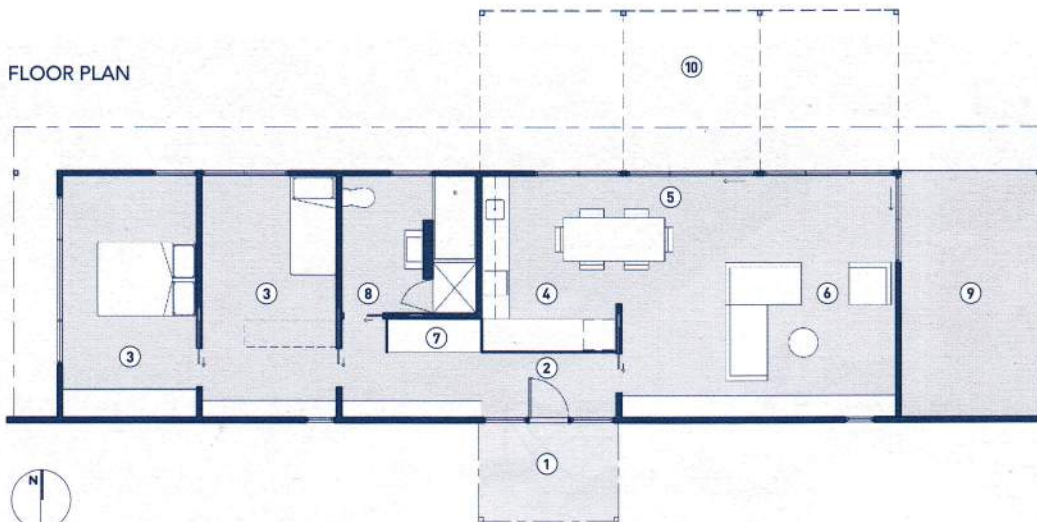
"There's a simplicity with living here, it's just quite beautiful," says Robyn of her new home. "I love its warmth and lightness on winter mornings, the flow of spaces, and the textural interest created by the mix of finishes and materials." It seems this building designer has created her ultimate place, an elegant, uncomplicated abode, and one that's intended for others to replicate and enjoy. 5



NORTH ELEVATION



EAST ELEVATION



LEGEND

- ① Porch
- ② Entry
- ③ Bedroom
- ④ Kitchen
- ⑤ Dining
- ⑥ Living
- ⑦ Laundry
- ⑧ Bathroom
- ⑨ Verandah
- ⑩ Pergola

Campbells Creek house

—Specifications

Credits

DESIGN

Robyn Gibson & Paul
Hassall, Lifehouse Design

BUILDER

Vic Restorations Building
Services, Castlemaine

JOINER

AG Kitchens, Harcourt

PROJECT TYPE

New build

PROJECT LOCATION

Campbells Creek, VIC

SIZE

90 sqm
+ 30 sqm shed/studio

BUILDING STAR RATING

7.8 Stars

Sustainable Features

HOT WATER

– Rinnai Infinity 26 Enviro (26L/
min) continuous flow gas boost
unit.

WATER SAVING

– 16,500L corrugated steel rainwater
tanks.

PASSIVE DESIGN

– Small overall footprint
– Modular home built on an
east-west axis with north-facing
glazing to maximise northern
sunlight into the home
– Concrete slab and internal
blockwork wall as thermal mass
– Narrow floor plan, casement-style
windows and ceiling fans to
maximise cross ventilation
– 1.2m eave on north for summer
shading of windows
– High insulation levels throughout.

ACTIVE HEATING & COOLING

– Metro Wee Rad wood-fired slow
combustion heater in living area
– Electric panel heaters added as
supplementary heating in study/
living areas.

BUILDING MATERIALS

– Waffle concrete slab on ground,
high trowel-finished and sealed
with a natural oil
– Lightweight timber stud walls
– Timber truss roof structure
– Zinalume traydeck roof sheeting
– Radial Timbers' silvertop ash
shiplap timber cladding
– South wall (and shed/studio
building) of CSR Cemintel
Barestone compressed fibre
cement sheet with a natural finish
– Laminex laminate used for
kitchen and hallway cupboards
over E0 emissions rated board
– Structural hoop pine plywood
used for bathroom unit, robe
doors, hallway shelving, and all
living area joinery
– Painted plasterboard walls
internally generally
– Structural plywood ceilings
throughout (including eaves and
verandah).

INSULATION

– Stud walls insulated with R2.7
Knauf Earthwool batts & Air-Cell
Permishield insulated blanket
– Roof insulated with R6.0 Knauf
Earthwool batts & Air-Cell
Glareshield insulated blanket.

WINDOWS & GLAZING

– Valley Windows hardwood frames
– Double-glazed glazing units
throughout.

LIGHTING

– LED lighting from About Space,
Fitzroy
– 3 watt LED exterior wall lights
– 5 watt LED strip lights to
kitchen overhead shelves.

PAINTS, FINISHES & FLOOR COVERINGS

– Livos Kunos Natural Oil sealer
applied to slab and plywood
ceilings; Alis Decking Oil applied
to silvertop ash cladding and
hardwood windows and doors
– Haymes low VOC paint
throughout the interior
– Granite Rustic Sisal carpet on
9mm recycled cotton carpet
underlay by Floorspace,
Camberwell.

OTHER ESD FEATURES

– Modular design to produce less
waste during the construction
process
– Materials and finishes require
little or no finishing
– Built on-site to promote local/
regional social sustainability.



The modular home was constructed on-site to promote social sustainability by involving local builders and tradespeople.

