

Pitched perfect

Builder-designer Sally Wills specialises in compact housing, and her new home is an exemplar of affordable 7 Star construction.

WORDS Sasha Shtargot
PHOTOGRAPHY Sean Fennessy

IT WOULD COME AS NO SURPRISE TO people who know her that Sally Wills should build a tiny house of just 57 square metres for herself in Norlane, a suburb of Geelong.

A builder-designer who advocates for small-footprint environmental living, Sally runs an annual design competition, Small Home Big Life, to encourage architecture and building design students to think about compact homes.

Her own company, Small Change Design and Construction, has developed a number of standard designs for small homes, the Norlane house being an example of her 'XS Quark' model, modified to suit the block. She has built another one next door to her own home.

Walking into the house, an entry space opens into a bright kitchen/living room area. There's a study nook at the extension of the entry, facing the bedroom which has a built-in robe. A bathroom and laundry are tucked into the south-west corner of the house. To create room for storage, the house has a loft perched above the kitchen, accessed by a ladder.

The tiny size of the dwelling is belied by the generous feeling of space created by the high vaulted ceilings of a steep, gabled roof clad in corrugated steel, and it is the combination of clever design and size (and

consequently low embodied energy) that makes the home most appealing from a sustainability point of view.

A north-facing orientation, polished concrete waffle pod slab and double-glazed windows with thermally improved aluminium frames provide the passive solar credentials. Two ceiling fans are used to move air around and a split-system air conditioner is in position to heat and cool as needed. "The house is very stable temperature-wise," Sally says.

Other sustainability measures include a 1000-litre rainwater tank, a gas-boosted solar hot water system, LED downlights, low-VOC paints, low-e glass in a corner window in the living area and 3-star WELS water-saving shower head and 4-star WELS toilet suite. There is room on the roof for a small solar photovoltaic system which may be installed in the future.

But it is the home's tiny size that remains its *raison d'être* and most outstanding feature. "There is a very welcoming feel inside," Sally says. She has seen a growing interest in tiny houses in Victoria in recent years, largely due to the unaffordability of larger, more standard housing, and granny flats are starting to be more common in major cities in Australia. Tiny houses recommend themselves



↑ The large storage attic is easily accessed using a library ladder.



The site is just 183m² but it still has ample garden space due to the built footprint being capped at 57m².



The considered use of glazing is most evident from the inside; a small corner window is designed to allow morning sunlight into the living space year-round.



strongly on sustainability, she says, reducing both energy bills for homeowners and greenhouse gas emissions through less embodied energy.

“Larger houses have lots of embodied energy, which is the energy we use to mine, manufacture and transport materials, and it is actually embodied energy that is the big-ticket item where we can make big inroads into reducing greenhouse gas emissions,” she says. “More than any other feature, a small footprint is the biggest contribution to sustainable design.”

⬇️
A shelf for plants could also be used for storage or artwork.



Sally realises homes of 57 square metres are not for everyone, but she is adamant that Australia’s houses (at an average of 231 square metres according to 2016 figures) must shrink over time if we are to be serious in any way about environmental sustainability.

“I’d like to see the average house size drop substantially over the next few years and try to encourage as many people as I can to consider downsizing,” she says. “I know I can’t build all the small houses we need so I speak to other builders and

designers to encourage them also to take up the ‘small is better’ mantra.”

As far as her own house is concerned, she believes it is the kind of example of comfortable and practical sustainable living that can appeal to many. It represents the meeting of canny, green design and affordability. “With the very high vaulted ceilings it feels surprisingly grand,” Sally says. “It actually feels huge, like the Tardis.”

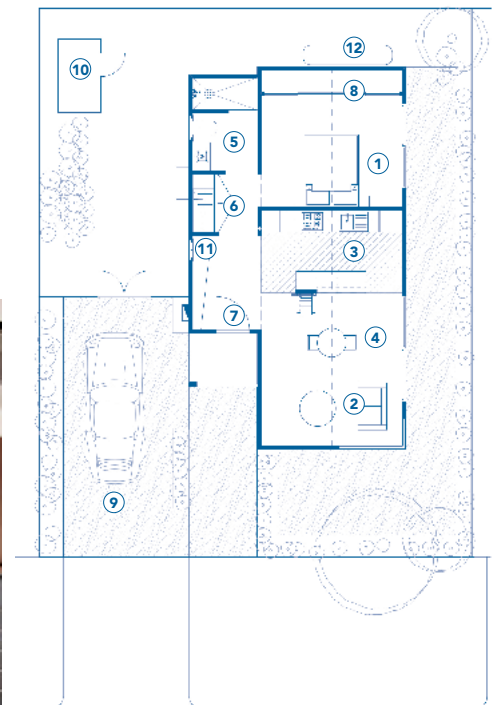


⬇️
Builder Sally Wills is dedicated to designing for affordability, which includes building small and efficiently to save on materials and ongoing energy use.



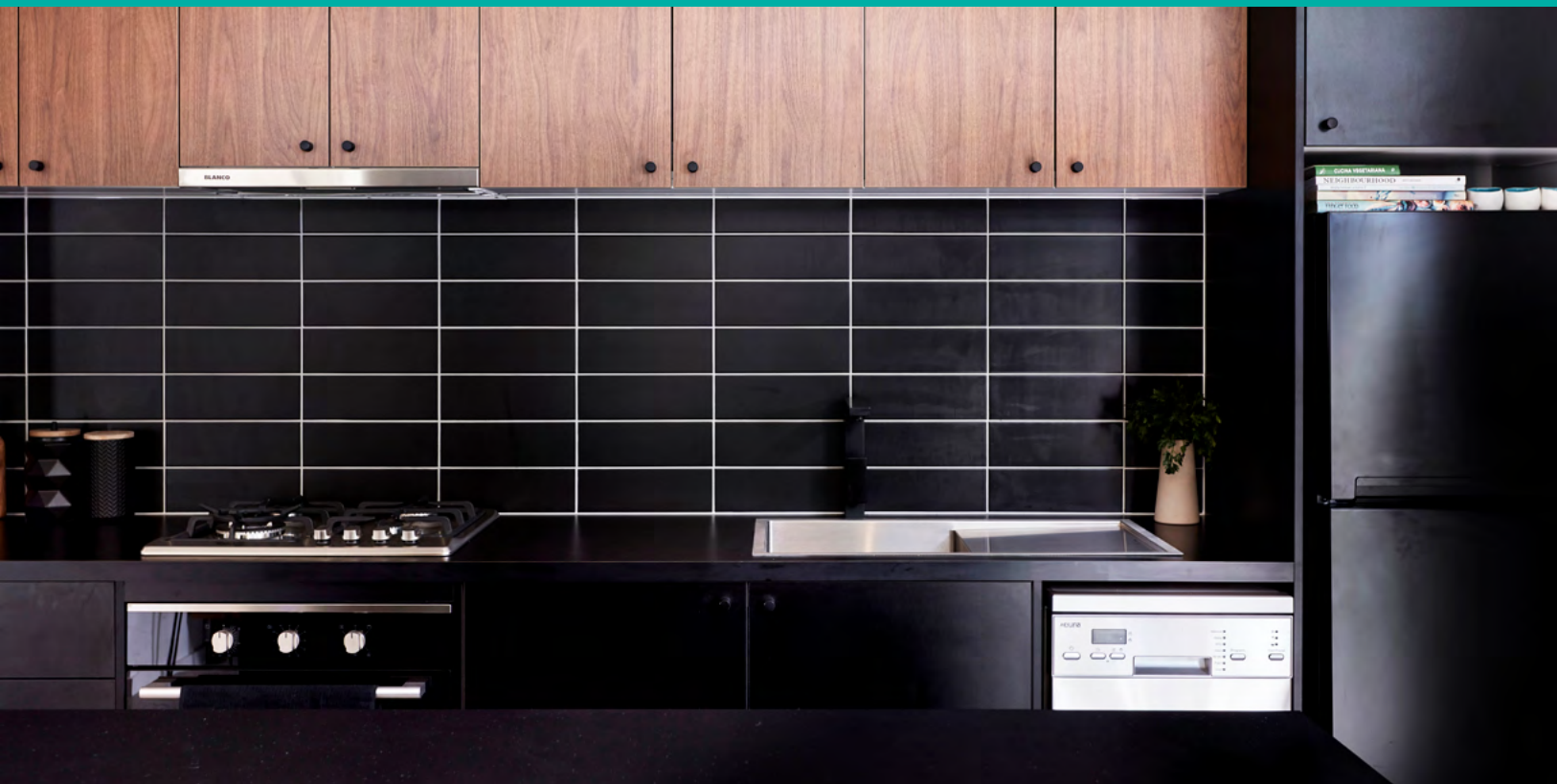
⬅️
Plants with low water requirements reduce water use; 1000 litres of rainwater storage available for the garden reduces use of mains water.

FLOOR PLAN



LEGEND

- ① Bedroom
- ② Living
- ③ Kitchen (storage loft over)
- ④ Dining
- ⑤ Bathroom
- ⑥ Laundry
- ⑦ Entry
- ⑧ Robe
- ⑨ Carport
- ⑩ Shed
- ⑪ Study nook
- ⑫ Water tank



XS Quark

—Specifications

Credits

DESIGNER/BUILDER

Small Change Design and Construction

PROJECT TYPE

New build

COST

\$180,000

SIZE

House 57 m²
Land 183 m²

BUILDING STAR RATING

7 Star

Sustainable Features

HOT WATER

– Rinnai Sunmaster 175L solar hot water system.

WATER SAVING

– 3- and 4-star WELS ratings for fittings and toilet
– 1000L rainwater tank for garden use.

PASSIVE DESIGN / HEATING & COOLING

– Optimised northern glazing
– Insulated concrete slab (waffle pod) for thermal mass
– Roof form maximises future solar harvesting potential and solar hot water collector
– Natural cross ventilation paths designed for effective night purging of heat in summer.

ACTIVE HEATING & COOLING

– Hunter Pacific Eco 2 ceiling fans in bedrooms and living

area to assist air movement in summer and winter
– Mitsubishi Electric split-system air conditioner.

BUILDING MATERIALS

– Walls: timber framed with James Hardie Scyon Axon cladding (painted ‘surfmist’) and custom orb steel (Colorbond finish ‘night sky’); plasterboard internally
– Roof: timber framed with custom orb steel (Colorbond finish ‘surfmist’)
– Insulation: Sisalation blanket R1.3 plus Earthwool insulation R4.0 in raked roof space; walls R2.5 Earthwool
– Timber ladder, made to order by Little Jumbo Ladders
– Joinery: Laminex black doors and benches with Polytec Florentine Walnut overheads.

WINDOWS & GLAZING

– Double-glazed, thermally improved, aluminium windows from Rylock; corner window is low-e glass.

LIGHTING

– LED throughout.

PAINTS, FINISHES & FLOOR COVERINGS

– Haymes low-VOC paints.

OTHER ESD FEATURES

– One-bedroom house designed to minimise material wastage and promote compact living
– Exposed aggregate concrete to hardstand areas with 38 per cent of the site covered with Dromana Toppings (permeable); Lilly Pilly hedge planted to north and east fence line and native grasses and low water plants to front yard.