

Sanctuary

MODERN GREEN HOMES

ISSUE
56

SUSTAINABLE HOUSE
DAY SPECIAL

DEEP DIVES: Building & design | Retrofitting
Building materials | Climate resilient design

Best and fairest
Australia's eco homes on show



PUBLISHED BY **renew.**
SPRING 2021 • AU/NZ \$12.95
SANCTUARY.RENEW.ORG.AU

ISSN 1833-1416



9 771833 141000

PLUS

Flood-resilient design genius
Tiles from recycled glass and fabric
Targeted retrofits for comfort
Urban homesteading trailblazers



**An Earthworker-Reclaim heat pump
hot water system worth \$5,000
from the Earthworker Energy
Manufacturing Cooperative**

Offer open to Australian residents. Details page 80



Basking in sunlight

LOCATION Cape Paterson, VIC • WORDS Jacinta Cleary • PHOTOGRAPHY Susan Carmody



Opening for Sustainable House Day 2021. For more:

sustainablehouseday.com/the-cape-passive-house

Part of the community at The Cape, this Passive House is simple, elegant and fit for ageing in place.

Not far from the Keechs is Joe and Joanne Spano's house, another Passive House designed for its site at The Cape. "We were drawn to The Cape for the promise of like-minded neighbours and the community garden, as well as the natural environment and selection of beaches," says Joanne. "The people around us are building to a minimum rating of 7.5 Stars and supporting local builders. That appeals to us."

Unlike Richard and Kate, the Spanos knew they were striving for the Passive House standard from the very beginning, with Passive House Plus certification

↕

Clad in a combination of spotted gum and Colorbond panels, Joanne and Joe's house at The Cape is a simple rectangular shape with a gable roof, designed for comfort, low bills and ease of living as the couple age. Plants feature inside and out, including vegetables grown in Biofilta wicking beds.



eventually achieved. “Our building designer Derek Ashby ensured The Cape’s design guidelines were met at the same time,” says Joanne.

They engaged specialist Passive House builders North South Homes for the build, with the project winning the Master Builders Victoria award for Best Sustainable Home in 2020. North South Homes director Wade Bashaw says that building to the Passive House standard has enhanced the liveability of the house for health and comfort. “By following the Passive House guidelines we have built a home that designed out thermal bridges and condensation, ensuring no chance of mould growth for the occupants. The overall comfort is felt as soon as you enter.”

The design is based on a simple rectangle in order to function as efficiently as possible, but it doesn’t look like a “box plonked on a block”, says Joe. “Derek did a great job of making it look interesting, with a gable roof, a cutaway on the roofline and a pergola at the south entrance.” Another pergola adjoins a

north-facing living area, and windows are placed so that coastal breezes can cool the house naturally in summer. “Every time the sun shines in it warms the house to a very comfortable temperature and just lights up the house,” says Joe.

The house is also designed so that the couple can age in place, with wider doorways and large shower areas. “We wanted to consider all the changes we might need as we get older, including low maintenance, so we thought about keeping the land size small, the house size modest and the layout of the house accessible,” says Joanne.

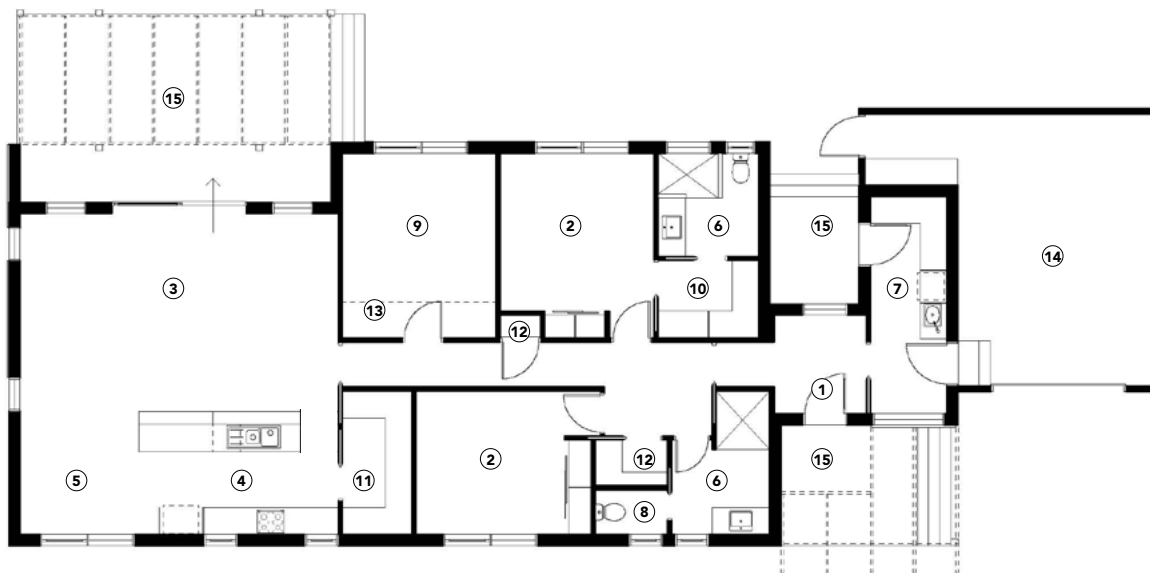
The Spanos wanted their home to be able to withstand weather extremes and climate change, and that goal was put to the test early this past winter with 100-kilometre-per-hour winds during a storm that damaged large parts of Victoria. The home remained draught-free and quiet thanks to a building envelope that includes interior and exterior wall wrap, the taping of all seams, joints and air gaps, and the use of triple-glazed windows. “We barely felt any vibrations

in those winds,” says Joe, “not one breeze coming through the doors or windows or anywhere. It certainly passed that test and the temperature inside was relatively mild compared to outside.”

“The storm was a challenge because we’re an all-electric community and the local power went out,” says Joanne. “But everyone rallied and some households have battery systems so we all supported each other.” [Ed note: Grid-connected solar PV systems will shut down during a power outage, while solar households with a battery system will maintain electricity supply if the system is designed with backup functionality.]

The Spanos say there have been more benefits to living in an eco development than they expected, such as the interaction between neighbours, the active lifestyle afforded by being close to the beach, and the connection to nature, with animals returning to the site and birdlife becoming more abundant. “It’s not just about building houses; there’s a more holistic view of it all,” says Joanne. ❸

FLOOR PLAN



LEGEND

- | | | |
|-----------|----------------|-------------|
| ① Entry | ⑥ Bathroom | ⑪ Pantry |
| ② Bedroom | ⑦ Laundry | ⑫ Store |
| ③ Living | ⑧ Toilet | ⑬ Loft over |
| ④ Kitchen | ⑨ Study | ⑭ Garage |
| ⑤ Dining | ⑩ Walk-in robe | ⑮ Deck |

HOUSE SPECIFICATIONS

HOT WATER

- Sanden Eco Plus 300L heat pump hot water system

RENEWABLE ENERGY

- 6.4kW solar PV system
- Electric vehicle charging point

WATER SAVING

- 20,000L Colorbond rainwater tank from Waterline Tanks, plumbed to whole house
- High WELS-rated bathroom, kitchen and laundry tapware
- Waterwise native garden and Biofilta wicking beds for kitchen garden

PASSIVE DESIGN, HEATING & COOLING

- Certified Passive House
- Excellent airtightness (0.46 ACH50) and insulation
- Thermal bridge-free construction
- North-facing glazing for passive solar gain
- External blinds from Logikhaus and Sunex aluminium awnings for summer shading

ACTIVE HEATING & COOLING

- Zehnder ComfoAir 350Q mechanical ventilation with heat recovery (MVHR)
- Daikin 3.5kW reverse-cycle air conditioner
- Ceiling fan in living room

BUILDING MATERIALS

- Timber frame construction
- Cladding: FSC-certified spotted gum, Colorbond interlocking panels and Cemintel Barestone External panels
- Colorbond roof
- Charcoal-coloured concrete filled blockwork for garage walls
- Insulation: Bradford Gold batts to walls (R4), ceiling (R6) and underfloor (R6)
- Pro Clima Solitex Extasana vapour-permeable external and Intello internal wall wraps
- FSC-certified blackbutt flooring
- Paperock recycled paper kitchen benchtops
- FSC-certified cypress pine pergolas

WINDOWS & GLAZING

- Logikhaus Passive House-certified triple-glazed windows and doors, with frames of FSC-certified pine clad externally with aluminium

LIGHTING

- Energy-efficient LED lighting
- House designed for abundant natural light

PAINTS, FINISHES & FLOOR COVERINGS

- Dulux low-VOC paints throughout

OTHER ESD FEATURES

- Owners use electric vehicle

DESIGNER

Environmental Homes and Landscapes

BUILDER

North South Homes

PROJECT TYPE

New build

LOCATION

Cape Paterson, VIC

COST

\$632,500

SIZE

House 189m²
Land 464m²

ENERGY RATING

8 Stars; Passive House

ENERGY ASSESSOR

EcoClimate

BUSHFIRE ATTACK LEVEL

BAL-12.5



←

When mature, espaliered fruit trees will help shade the north-facing deck in summer.