

# Sanctuary

MODERN GREEN HOMES

ISSUE  
62

SUSTAINABLE HOUSE  
DAY SPECIAL

KEEN ON GREEN

Australia's loveliest  
eco homes on show



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

ISSN 1833-1416



9 771833 141017

**PLUS**

Tackling termites  
New 7-Star building standard explained  
Wild gardening in the suburbs

**WIN**

A Benzina Zero City electric  
scooter valued at \$5,500!

Offer open to Australian residents. Details page 75

# Sparkling joy

LOCATION Ascot Vale, VIC • WORDS Jacinta Cleary • PHOTOGRAPHY Marnie Hawson



## At a glance

- Period home upgraded and gas supply removed
- Uninspired 1990s extension transformed for light and park views
- Energy rating raised from 2.2 to 5.8 Stars

**Clever spatial planning, high levels of insulation and a switch to all-electric make this stately Melbourne period home more liveable and efficient.**

Over the back fence from Sherrin and George's inner suburban Melbourne home sits a quiet park with a gentle slope down to the train station. However, the 1990s extension by previous owners had the couple and their two children disconnected from the park, the backyard, and the benefits of the northern sun such as natural heating in winter. "The layout was all wrong, with the bathroom and laundry enclosing the back of the home. It was dark and depressing, with no light," says Sherrin.

A northern outlook wasn't the only thing on their minds when planning the renovation of the period home. They wanted to lift its energy efficiency from a lowly 2.2 Stars and switch to all-electric appliances, while keeping the hydronic heating, minus the gas. The shift to electric appliances was "bleedingly obvious", says Sherrin, not only because she is aware of the efficiency of all-electric

systems as a renewable energy engineer, but also through the couple's experience of heating a poorly insulated house with gas. "The house had only R1.5 insulation in the ceiling and in winter the gas heating was on all the time – it was expensive," says George.

Building designer Logan Shield from Geometrica and interior and retrofit expert Megan Norgate from Brave New Eco collaborated on the renovation. "I focused on the shell and Megan the interior, but our philosophies worked together," says Logan. "We could have done a substantial extension, but instead decided to stay small and be a bit smart with how we laid the house out – the better environmental choice." The footprint of the updated home pushes just two metres beyond where the closed-in laundry and bathroom used to sit – now replaced with a sunlit living area – and the existing spaces were reconfigured.

→

George and Sherrin's renovation and small extension prioritised better energy efficiency and improved connection to the backyard.





“We looked at what inherent qualities the house had and how to use these to add to the amenity of the house,” says Megan, including taking advantage of the generous room sizes and reconfiguring the design to add an enclosed laundry to the dining room. The false ceiling from the 1990s extension has been removed to create greater airflow and continuity throughout the home, with the team settling for a height in between the original and false ceiling. The full-height ceiling has been reinstated in the laundry, though, with a new storage loft in the 3.6-metre-high space as well as drying racks up where the warm air settles.

The design team wanted the borrowed landscape of the park to be glimpsed from the front door, and for light from the rear north of the house to brighten the darker front area. A glazed pivot door was devised mid-build to replace a solid door at the end of the wide corridor, to allow the front and rear of the house to be

zoned thermally and acoustically without blocking light and views. Clerestory windows above the rear glass doors further capture treetop glimpses and natural light, and the open plan dining and living space has been delineated with a double-sided ethanol fireplace and joinery unit designed to allow views from the dining area to the rear garden. “We’ve been able to turn it from a poorly planned, awkward extension into something that beautifully opens to the back with northern light,” says Logan.

The decision to replace the floorboards throughout gave an opportunity for underfloor insulation to be installed, and George and Sherrin decided to do blow-in insulation in the original part of the house too. “The blow-in insulation made a massive difference to the Star rating and energy efficiency,” says Logan; the rating is now 5.8 Stars overall, and considerably higher in the north-facing section when it is zoned, according to the owners.

↖↑

The new part of the house includes extensive north-facing glazing for increased light and for the borrowed view of the adjacent park. Inside, the laundry takes advantage of the home’s original high ceilings for storage space and clothes drying. “The heat collecting up high was the perfect place for drying racks,” says designer Megan.

→

“We furnished the house with furniture made from sustainable materials and custom made by local manufacturers. The only thing not local is the Fair Trade rug,” says Megan.

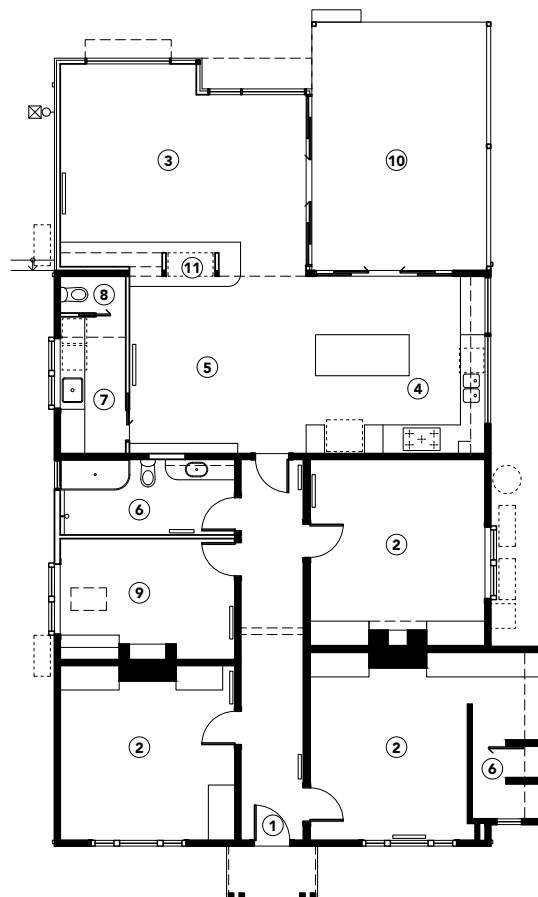


The double-glazed north-facing windows and doors in the kitchen and living areas are protected from the summer sun by wide eaves, and in one case a deep shroud. The window frames are a feature, with powder-coated aluminium outside for greater durability and FSC-certified hardwood inside. Logan explains that the adjustable louvre roof on the updated pergola off the kitchen gives more flexibility to shade the windows over the shoulder months. “The deck is like a cool microclimate when the misting fan is on and the louvres are closed,” says Sherrin.

The recently installed solar PV system is the final piece in the electrification of the home, sized to be able to run most appliances year-round, even during winter cold snaps. Converting the gas hydronic heating to electric was not straightforward: there was a limited range of electric heat pump boilers available, and the existing radiator panels had to be replaced due to the lower running temperature, but Sherrin and George are happy with the result. A three-phase electricity supply was installed during the upgrade, with plans for an electric car down the track that will also act as a home battery via bi-directional charging.

Megan gives credit to the couple's persistence in getting better design and energy efficiency outcomes. “It's really nice when the client doesn't run out of steam, and Sherrin and George's commitment has meant it is a well-resolved and comfortable home,” she says.

#### FLOOR PLAN



#### LEGEND

- ① Entry
- ② Bedroom
- ③ Living
- ④ Kitchen
- ⑤ Dining
- ⑥ Bathroom
- ⑦ Laundry
- ⑧ Toilet
- ⑨ Study
- ⑩ Verandah with louvre roof
- ⑪ Ethanol fire

# HOUSE SPECIFICATIONS

## HOT WATER

- Stiebel Eltron WWK 302 heat pump hot water system

## RENEWABLE ENERGY

- 11.6kW solar PV system with Jinko panels and 10kW Solar Edge hybrid inverter, installed by Advanced Energy Management

## WATER SAVING

- Low-flow tapware
- Waterwise native garden

## PASSIVE DESIGN, HEATING & COOLING

- Passive solar design with rear north-facing glazing shaded in summer
- Louvre House louvred verandah roof provides adjustable shading to north- and east-facing glazing
- Highlight windows for natural light and treetop views
- Cool breezes captured via front door and funnelled to larger rear openings in living areas.
- Glazed hallway door allows for effective zoning between sleeping and living areas while maintaining visual connection

## ACTIVE HEATING & COOLING

- Stiebel Eltron heat pump hydronic heating via radiators
- Panasonic reverse-cycle air conditioners to living and bedrooms
- Ceiling fans: Airfusion Akmani DC to living, Roto to bedrooms and study
- Icon Fires ethanol fireplace to living room

## BUILDING MATERIALS

- Timber frame construction to new walls
- Roofing: Zinalume to addition; existing slate roof recapped with Colorbond ridge capping
- Cladding to new section: weatherboards, Weathertex Weathergroove 75 Smooth boards and blackbutt shiplap boards
- New messmate floorboards throughout

- Insulation: Autex GreenStuf to ceiling (R5) and underfloor (R2.5), Envirowall Supafil Carbon Plus blow-in insulation to external walls of original house (R2.3)
- Kitchen, bathroom and laundry cabinetry: Laminex EO MR carcasses and Formica and Laminex EO MR laminate fronts
- Blackbutt decking

## WINDOWS & GLAZING

- New glazing: Miglas timber-aluminium composite framed double-glazed windows and doors
- Laundry window relocated from old living room

## LIGHTING

- LED lighting throughout
- Pendants from Muuto and Hay Design
- Daylighting solutions to introduce natural light into previously dark areas, including a new skylight to study

## PAINTS, FINISHES & FLOOR COVERINGS

- Cavalier Bremworth Levante wool carpet to bedrooms
- Dulux EnvirO2, Aquanamel and Weathershield low-VOC paints
- Osmo Polyx oil (low-VOC) to interior timber
- Quantum Microclear oil (low-VOC) to exterior timber
- Quantum Timbre Plus low odour, non-toxic, bio-based decking oil to deck

## OTHER ESD FEATURES

- No gas to the property (gas connection removed as part of the project)
- Previous small renovation retained and new addition designed to tie in
- Locally made furnishings and artwork
- Clothes drying racks and loft storage installed to make the most of the original 3.6-metre ceilings

## DESIGNER

Brave New Eco & Geometrica

## BUILDER

Stan Elder, Elder Constructions

## PROJECT TYPE

Renovation & addition

## LOCATION

Ascot Vale, VIC (Wurundjeri Country)

## COST

\$580,000

## SIZE

House 186m<sup>2</sup>  
Verandah 34m<sup>2</sup>  
Land 418m<sup>2</sup>

## ENERGY RATING

5.8 Stars

## ENERGY ASSESSOR

Tamar Boyd, Blue Lotus Energy Rating