

# Sanctuary

MODERN GREEN HOMES

ISSUE  
68

Inner-city Passive House retrofit; simple farmhouse style in Tassie; engineered stone off the table; gardening for backyard birdlife

## Say goodbye to gas

One-stop shops for  
easy home electrification

PUBLISHED BY **renew.**  
SPRING 2024 • AU/NZ \$15.95  
SANCTUARY.RENEW.ORG.AU

ISSN 1833-1416



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**WIN**

**A Reclaim hot water heat pump valued at \$6,000, provided by Earthworker Energy Manufacturing Cooperative**

Offer open to Australian residents. Details page 85



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#### **AT A GLANCE**

- *Internal renovation to a modest postwar home, conserving period details*
- *No change to house size*
- *Gas connection removed*
- *New kitchen overlooks garden and brings in natural light*



**HOUSE PROFILE**  
*Murrumbeena, VIC*

**WORDS**  
*Rebecca Krispin*

**PHOTOGRAPHY**  
*Ben Moynihan*

# **Like a** --- **charm** ---

**A smart renovation vastly improved functionality and sustainability in this small Melbourne home, keeping within the original footprint and retaining the cute period character.**



A man with a beard, wearing a dark t-shirt and dark pants, is sitting in a yellow wicker chair. He is looking towards the right. The setting is a greenhouse with a brick wall on the left and a glass roof. The floor is made of red bricks. There are many plants, including ferns, orchids, and hanging plants. A large green fern is in the foreground. A yellow wicker chair is next to him. The background shows more plants and the glass structure of the greenhouse.

### AT A GLANCE

- *Passive House Plus-certified high-performing home with net-zero energy use*
- *Flexible layout for more bedrooms when needed*
- *Integrated greenhouse oasis*





# Greenhouse spectacular

This Passive House is comfortable throughout Canberra's often extreme seasons, and has a greenhouse attached for year-round gardening.

**Below left** High windows in the back bedrooms admit northern sun. **Below right** The house is designed for rabbit inhabitants as well as human.



the space useful,” says Ande.

The decision to site the rear section of the house against the northern boundary maximises a second garden space, this time in the backyard. High windows bring northern light into the two rear bedrooms. The central kitchen has a connection to both gardens, allowing Lizzie and Andrew to see their children playing almost anywhere on the block. “The kitchen is usually the hub of the house, and a kitchen with a direct connection to outside always feels better,” says Ande.

The couple opted for reverse block veneer construction to enhance the thermal efficiency of their home. The concrete block walls and slab floor provide thermal mass indoors, with an outer layer of insulation and cladding to minimise unwanted heat loss and gain. Acoustic panels on the ceiling help soften reverberation from the high levels of thermal mass. “Everyone finds it fatiguing

if it’s hard to listen,” says Lizzie. The reverse-cycle heating and cooling is used infrequently. Even when temperatures near 40 degrees Celsius outside, the indoor temperature remains comfortably in the mid-twenties. During winter, Andrew and Lizzie use heated blankets rather than space heating if they feel cold when sitting.

Natural light is part of Ande’s design approach, with lighting systems only where necessary in the home, and a preference for pendant lighting. “Compared to recessed lighting, pendants bring the light closer, so it’s stronger where you need it, and you’re not using as much energy.”

Andrew and Lizzie say that the light is the loveliest aspect of the house. “It feels bright and airy all year round, even when it’s dark and miserable outside,” says Lizzie. “You feel that you’re living in the world rather than in a box.” **S**



## LEGEND

- ① Entry/bike storage
- ② Bedroom
- ③ Living
- ④ Kitchen
- ⑤ Dining
- ⑥ Bathroom
- ⑦ Laundry/rabbit home
- ⑧ Toilet
- ⑨ Study
- ⑩ Music/craft/guest room
- ⑪ Deck
- ⑫ Rainwater tanks

## SPECIFICATIONS

### DESIGNER

Ande Bunbury Architects

### BUILDER

S.T.A.R. Kolektiv

### ENGINEER

Jonicha Engineering

### PROJECT TYPE

New build

### LOCATION

Preston, VIC  
(Wurundjeri Country)

### SIZE

House 162m<sup>2</sup>  
Land 556m<sup>2</sup>

### ENERGY RATING

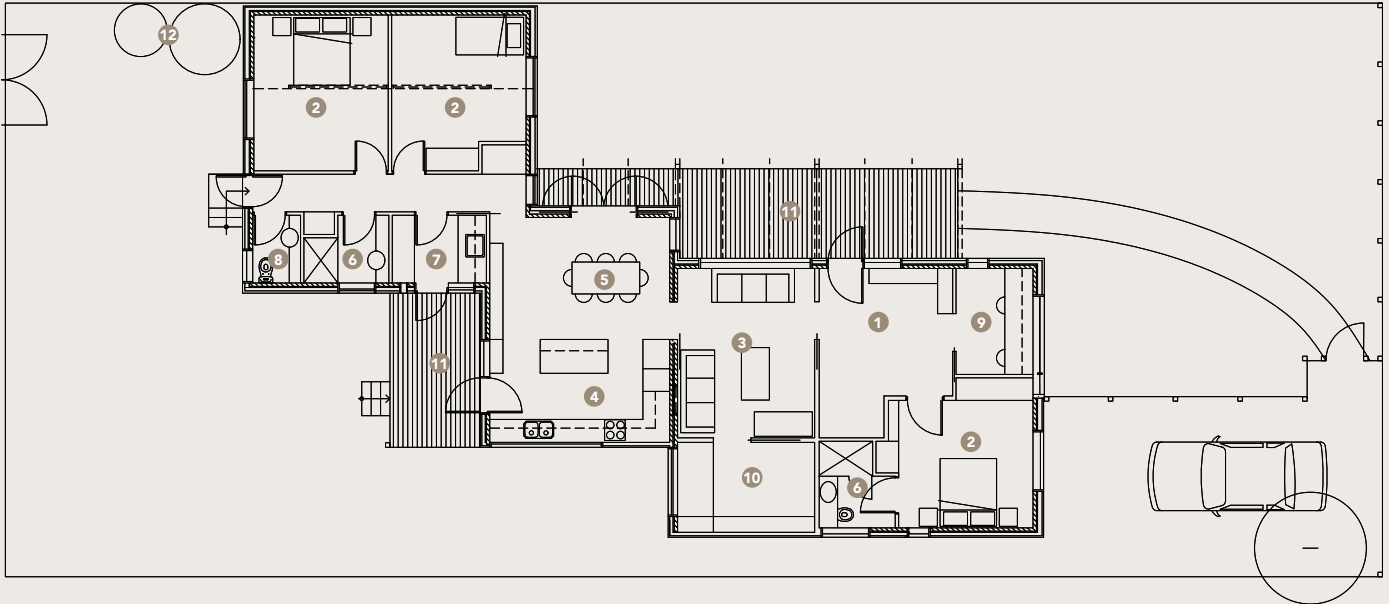
8 Stars

### ENERGY ASSESSOR

Blue Banded Bee



## FLOOR PLAN



### HOT WATER

- Sanden Eco Plus 315L heat pump

### RENEWABLE ENERGY

- 5.28kW solar PV system by Elcon Solar
- Fronius Smartmeter

### WATER SAVING

- 2 x 8,000L rainwater tanks connected to toilets, laundry and garden taps
- Aqua-2-Use underground greywater diversion system for garden watering
- WELS 4-star rated taps and Methven water-saving showerheads

### PASSIVE DESIGN, HEATING & COOLING

- House orientated to maximise north solar access and garden area
- North-facing windows in habitable rooms with shading for summer
- High level north-facing windows in back bedrooms
- Reverse block veneer and polished concrete slab for thermal mass
- Casement windows open to prevailing breezes for natural ventilation
- Automated windows for cross ventilation when not home

### COOKING

- Bosch induction cooktop

### ACTIVE HEATING & COOLING

- SolarVenti SV7 solar air heater to rear bathroom and laundry
- Daikin reverse-cycle air conditioner in living room, sparingly used
- Artemis ceiling fans to all bedrooms, living and dining area
- Electric heated blankets to heat the person rather than the room

### BUILDING MATERIALS

- Reverse concrete block veneer construction
- Cladding: Colorbond, and cypress macrocarpa from CERES Fairwood
- Concrete slab: 30% slag/flyash to reduce cement content and 20% recycled aggregate
- Insulation: Knauf Earthwool batts to ceiling (R4) and walls (R2.5), Knauf ClimaFoam extruded polystyrene board under slab (R2.7), DOW Styrofoam RTM-X to slab edges (R1.1)
- Autex QuietSpace panels on most ceilings to reduce echoing
- Reclaimed messmate joinery
- Low-VOC, low-formaldehyde MDF board for joinery
- Repurposed terracotta chimney pot as a rabbit tunnel

### WINDOWS & GLAZING

- Double-glazed windows and doors with FSC-certified western red cedar frames, from Pickering Windows
- Roman and honeycomb blinds

### LIGHTING

- Archilux LED ceiling-mounted fittings
- LED pendant lights and hand-printed lampshades from previous home

### PAINTS, FINISHES & FLOOR COVERINGS

- Resene low- and zero-VOC paints
- Resene Lumbersider to timber windows and doors
- Prestige Carpets Natural Loop undyed wool carpet in kids' bedrooms
- Comcork rubber and recycled cork flooring to wet areas

### OTHER ESD FEATURES

- All-electric home
- Active transport prioritised with bespoke bike storage in hallway, including for e-bikes
- Stepless entry and wider doorways for accessibility
- Main garden extends to the street with a low permeable fence for community connection





**Above** Marnie and Ryan's home in Central Victoria is now almost entirely gas-free.

## 130-year-old cottage goes modern electric

**Not sure where to start on the electrification journey? Working with a one-stop shop can help streamline the conversion from a gas to an electric home, as Marnie and Ryan discovered.**



Preoccupied by the slow-moving search for a bushland block for biodiversity conservation and for a future high-performing Passive House, Marnie Hawson was frozen when it came to the decision on whether and how to electrify the existing 1890s cottage she shares with husband Ryan.

An environmental scientist turned sustainable architectural photographer, Marnie was keen to switch the draughty weatherboard cottage to all-electric for energy use and abolish the gas connection. As a Certified B Corp business owner who runs initiatives such as a Business of Biodiversity program, she had been aware for several years that switching from gas to all-electric appliances helps to reduce household greenhouse gas emissions. But the project seemed big, and difficult.

It wasn't just gas that Marnie was looking to replace. The main heater in the house was a wood stove, which used lots of firewood each winter and impacted indoor air quality and health. Running this along with the instantaneous gas water heater, standard gas cooktop and the separate gas AGA stove (with oven and hotplates) they received as a wedding present over a decade ago, Marnie estimates they've been spending around \$6,000 per year on energy and fuel, with around half that expense on firewood alone.

With little time to research the best appliances for their home, the couple enlisted Goodbye Gas, a 'one-stop shop' that manages home electrification for property owners, removing



**Above** Ben Russell from Goodbye Gas with the old gas cooktop, destined for metal recycling. **Left** An induction cooktop is installed to replace the old gas one.





**Birds**  
**in the**  
**'burbs**



## Australia's backyard birdlife is incredibly diverse and vibrant. Gardener and designer Jacqui Hagen shares tips on how to make your garden into a bird paradise.



**Facing page** Splendid fairy wrens (*Malurus splendens*) like dense bushes such as callistemon and hakea, that offer food as well as protection from predators.

**Above** Crimson rosellas (*Platycercus elegans*) love wattles, callistemons, banksias, grevilleas and melaleucas. They nest in tree hollows, so provide nesting boxes if you don't have mature trees in your garden.

We are lucky to share this continent with over 850 different bird species, and at least 47 threatened species can be found in the backyards of Australian cities and towns. In any size of garden, adding elements like food sources, water, shelter, and nesting sites can help create a vibrant birdlife habitat right outside your door.

### GARDENING FOR BIRDLIFE

Regardless of whether you have access to a spacious suburban yard, a narrow nature strip, or just a small courtyard or balcony, it's not difficult to make your garden more attractive to native birds. With the addition of even a few of the right plants you'll notice more colour and life in no time, and with a little effort, your space

can play a key part in supporting your local ecosystem. Here are a few tips to get you inspired.

### Understand the needs of native birds

Before getting started, it's important to understand what native birds need. Birds are attracted to gardens that offer these elements:

- **Food:** Plants that provide nectar, seeds and fruit, or attract insects.
- **Water:** A consistent and clean water source for drinking and bathing.
- **Shelter:** Dense vegetation or trees for protection and nesting.
- **Nesting sites:** Plants or structures that cater to breeding needs.



## ON THE DRAWING BOARD

**Above** Owner Karine's upstairs flat has been rejuvenated and its energy efficiency improved. **Facing page** Removing and replacing the old asbestos roof allowed for the installation of the building's first solar PV system, plus the creation of a loft level and roof garden.

## Evolution of a live-work pioneer

**Dempsey Warehouse is a living experiment in alternative forms of housing that has been going for over 45 years. Architects Carol Marra and Ken Yeh have lived and worked here since 2006, and recently completed a judicious renovation to usher the beloved compound into its next phase.**



Dempsey Warehouse is located in the inner-Sydney suburb of Darlington, which sits on Gadigal land in close proximity to Victoria Park, an area that was known as a rich source of foods for the Gadigal prior to colonisation.

The suburb was named after the Darling nursery established by Thomas Shepherd in the 1820s. Shepherd's nursery provided fruit trees to the early colony's landowners, and his active involvement in botanical and horticultural circles influenced the establishment of the Sydney Botanic Gardens. Many of the streets in Darlington bear witness to this early history, with names such as Rose Lane and Ivy Street.

The nearby Carriageworks, now an arts and cultural precinct, once employed several thousand railway workers who lived in modest accommodation in and around Darlington. Factories were built in the area, producing an array of commodities including biscuits and lollies, but by the mid-twentieth century many were in a state of decay as industry started to move out of the city.

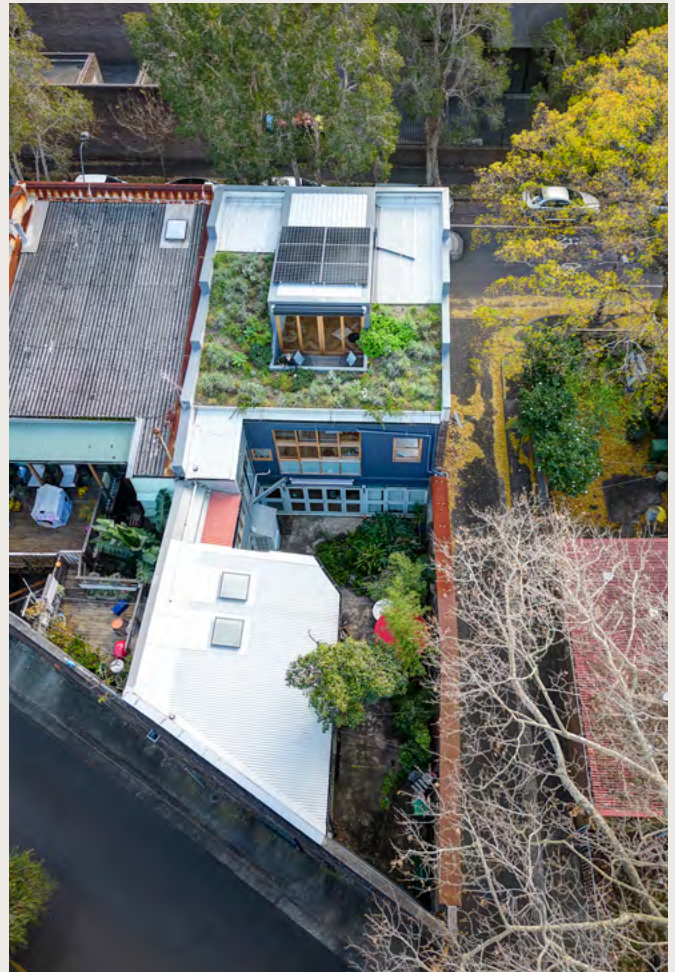
#### EARLY DAYS

It was in this context that Dempsey Warehouse was purchased by the late Col James – architect, academic and activist – and his mates in the late 1970s. Thwarted by the local council in their efforts to convert Dempsey to residential accommodation, they formed the 'Dempsey family' and won a landmark case at the New South Wales Supreme Court (prior to the establishment of the Land & Environment Court), paving the way for the conversion of redundant industrial buildings into residential accommodation, thereby safeguarding them from demolition and helping retain the character of inner-city areas.

In those early days Dempsey housed an eclectic mix of academics, activists and artists, and provided space for a variety of activities, including silk printing in the rear courtyard for the iconic Australian brand Mambo. The setup pioneered the 'live-work' movement, long before working from home became the norm.

My partner Ken and I met Col after taking up the ground floor tenancy at Dempsey in 2006, attracted by the possibility of a live-work setup in a quasi-industrial space, and also by the decent-sized courtyard – we're both garden fanatics.

We became well acquainted with Col and his partner Karine, who lived in the upstairs unit, sharing meals and discussions on architecture, art, society and politics, as well as more mundane



matters such as how to accommodate a family of possums roaming in the courtyard. Col invited us to teach with him at the University of Sydney, and together we pursued socially relevant projects with various student cohorts. Throughout all the years that we knew Col, Dempsey was always a physical manifestation of his beliefs and principles, particularly his saying that housing is a verb – Dempsey embodies this ideal, changing and morphing over time to accommodate an expanding range of activities and residential arrangements.



## OFF THE TABLE

# Understanding the ban on engineered stone

**A recent ban on the manufacture, supply, processing and installation of engineered stone benchtops, panels and slabs marks a significant step forward for worker health and safety. What does it mean for homeowners?**

When selecting materials for your home, the health and safety of those who manufacture and install them is all part of a sustainable and responsible approach. Recent evidence of the dangers of silica dust (technically, respirable crystalline silica), a major component of many engineered stone products, for the tradespeople who work with it has led Safe Work Australia to recommend a ban on the use, supply and manufacture of such products.

The ban came into effect on 1 July this year, though some jurisdictions have transitional arrangements until December. It has been welcomed by the industry, including the Australian Council of Trade Unions (ACTU). “Engineered stone is a fashion product that is killing the workers who make it. With alternatives readily available, why are we risking the lives of tradies for a fashionable finish in our kitchens?” said ACTU Assistant Secretary Liam O’Brien when the ban was announced.

**Above** Engineered stone, also known as agglomerated quartz or compound stone, is the subject of a new ban due to its very high crystalline silica content. Interior design: He He Design; image: Marnie Hawson **Facing page** Natural stone is one alternative, though choose carefully as silica levels vary depending on the type of stone. Interior design: He He Design; image: Marnie Hawson



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