

Sanctuary

MODERN GREEN HOMES

ISSUE
64

Prefab & modular supplier guide; reclaimed timber treasure trove;
joey sanctuary bushfire rebuild; sweet syrups from foraged flora

**PREFAB
POWER**

**OFFSITE
CONSTRUCTION
GATHERS PACE**

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

ISSN 1833-1416



9 771833 141017



**One of two e-scooters from Voltrium,
with a total prize value of \$6,500**

Offer open to Australian residents. Details page 81



Inside issue 64

HOUSE PROFILES

16 So simple

In West Hobart, a minimal renovation and tiny but targeted extension delivers a homely, grounded result.

22 Treechange win

Covid gave this Perth couple a nudge to fast-track their Yallingup treechange dreams.

28 Studio portrait

An unloved brick garage in inner Melbourne becomes a seriously useful home office and guest room.

PREFAB & MODULAR PROFILES



32 Prefab perfection

Squeezed onto a tight inner-Melbourne site, a high-performing prefabricated extension gives a Victorian cottage a new life.

38 Among the dunes

This holiday home in coastal SA now accommodates extended family and friends in a cluster of prefabricated pods that sit lightly on the sand dunes.

42 Top of the range

On a boulder-strewn slope with divine views in central Victoria, an architect's prefab Passive House is a prototype for future client projects.

48 Committed to the cause

On Sydney's Northern Beaches, Julie and her architect took up the challenge of a sustainable relocatable home on a budget.

52 Built back better

Undaunted by losing her house to bushfire, Rae chose a modular solution for her custom-designed kangaroo sanctuary and new home on the New South Wales South Coast.



IDEAS & ADVICE

57 Prefab power

Offsite construction is gathering pace. We look at what's new in the industry, and profile a range of local prefab and modular suppliers.

66 Treasure trove

We talk to five specialist reclaimed timber suppliers giving this precious resource another life.

72 Toolkit for electric homes

Renew's recently launched Getting Off Gas Toolkit can help households make the switch away from gas.

76 A tale of two retrofits

In *On the drawing board*, architect Jeremy Wells describes the targeted, cost-effective retrofits made to his own and a client's Melbourne homes, and the lessons learned.

82 Design Workshop

A sentimentally precious family home on a steep block is set to be added to and upgraded for shared extended-family living.

88 Sweet and wild

In time for spring, Mara Ripani introduces three of her favourite sumptuous syrups made from foraged flora.

REGULARS

8 Subscribe

10 Products

14 Reviews

87 Renew update

94 Marketplace

96 Designers in profile

PRODUCTS

These products are independently selected by our editorial team. If you have recommendations for products you think would be of interest we'd love to hear from you. Email: sanctuary@renew.org.au



Hire quality

Need furniture for an event, a short-term lease or for styling a house? Furniture hire and styling company Valiant is working to combat 'fast furniture' trends by turning waste plastic into tables, chairs and sofas, in a sector where furniture is often cheaply made and seen as disposable. Valiant's new range includes durable ReforaStone, crafted from 100 per cent post-consumer recycled plastics and used for indoor and outdoor furniture like tables. The upholstery on Valiant's new range of lounges and dining chairs is also made from recycled plastics, with around 720 plastic bottles used for each Selena two-seater sofa. The sustainable materials range is available for hire in Queensland, New South Wales and Victoria.

www.valiant.com.au

Wall charm

Sconce lights were originally designed to hold candles, and with a handmade touch, can offer the same charm today. Wall-mounted light fixtures by Robert Gordon Interiors are available in bowl and oyster designs and are fired in an electric kiln at the company's solar-powered workshop in Melbourne. The family-owned business values a slower, more sustainable approach to production, with each piece said to pass through the hands of nine different people during its manufacture. Each sconce is made from recycled scrap clay that's non-toxic and lead-free, and frames an LED ball light. Prices start at \$425. Image: Jarrod Barnes

www.robertgordoninteriors.com



Best of both worlds

Timber window frames offer more thermal insulation than aluminium frames, but aluminium is more durable against the elements. Logikhaus combines the two materials in their Aluclad double- and triple-glazed window range: aluminium on the exterior, and wood inside. Homeowners can choose different finishes and colours for the aluminium, as well as various timber species and finishes. The windows are Passive House-certified for warmer climate zone, with a BAL-40 bushfire rating. Prices range from \$1,200 to \$1,500 per square metre for double glazing, and only 10 per cent more for triple glazing.

www.logikhaus.com.au

BOOKS



Architecture at Home: Houses for New Zealanders to live, work and play

Debra Millar
Point Publishing, 2022
NZD \$80

Architecture at Home presents a carefully curated selection of 22 architect-designed, contemporary New Zealand homes. From permanent residences to holiday retreats, new builds to renovations, and tight city sites to sweeping rural landscapes, the featured projects collectively demonstrate the importance of good residential design. Author Debra Millar states that “these homes feature qualities we have all come to value during the disruption to our lives in recent years”. This is certainly true, and the book highlights just how capable New Zealand architects are at creating elegant and unique homes that thoughtfully respond to their context as well as to the needs and aspirations of their clients. The book features beautiful images by New Zealand’s leading architectural photographers, together with plans, elevations and cross sections, and an accessible narrative that provides further insight into the rationale of each building.

This book will appeal to anyone who loves architecture, but for readers specifically interested in sustainable design, the focus is limited. Though the introduction notes that “potentially the greatest contribution architects can make to the climate calamity may be to design environmentally responsive houses that are enduring”, this is not explored in any meaningful way throughout the book. One home that appears to offer good sustainability cred is the Kahutara House, which unlike many other homes in the collection, has a modest size of just 128 square metres. The floor plan offers flexibility to suit the spatial needs of a couple, while also accommodating larger family gatherings through the use of a massive sliding door embellished with a pattern evocative of tukutuku panels that references the Maori heritage of one of the owners. Designed to form its own windbreak, the house provides a place of retreat from the prevailing nor’westers and shelter from searing summer sun, yet remains connected to nature via panoramic views of the surrounding farmland.

Overall, this coffee table book is a visual treat and offers a great way to discover and explore the rich architectural talent of our Kiwi neighbours across the ditch.

Review by Fiona Gray



Adventures in Climate Science

Edited by Wendy Bruere
Woodslane Press, 2023
\$25

The study of climate is not new, and scientists have been warning about the effects of climate change for decades in academic reports, journals and the media. Subtitled *Scientists’ tales from the frontiers of climate change*, this very readable book portrays these experts as intrepid adventurers and storytellers, ready with tales to share about their escapades in the name of science, and the repercussions of global warming.

The anthology includes 15 captivating stories from Australian and international scientists who have fallen into crevasses, faced sharks, and been rescued from treacherous sea ice in Greenland. The tales reflect the diverse ways the world is transforming due to climate change.

One of the contributors is Olivia Johnson, a Tasmanian marine scientist and Rolex Scholar who was motivated by a family tragedy to continue her work to protect the oceans. Her stories provide a glimpse into the consequences of climate change on marine ecosystems; for example, she writes of her 2016 exploration of dead coral reefs in the Maldives following a catastrophic coral bleaching event.

Another expert, Dr Linda Broome, shares anecdotes from her time living at Bywong, north of Canberra, where she worked with colleagues to set up feeding stations for animals after the devastating Black Summer bushfires. She describes how global warming has taken a toll on the area’s wildlife: for example, drying streams that reduce habitat for the mountain pygmy possum, and the scarcity of bogong moths, whose absence disrupts the food chain for birds, mammals and lizards.

This absorbing book is a reminder that we are already witnessing significant impacts of climate change and need decisive action to address this global crisis.

Review by Jacinta Cleary

Image: Urban Angles/Prebuilt



Prefab

power

OFFSITE
CONSTRUCTION
GATHERS PACE

WORDS Jacinta Cleary

The housing affordability crisis, inflation and a desire for an energy-efficient home in the face of rising energy bills have many people considering prefabricated and modular construction as a reliable solution. We look at what's new in the industry, and profile a range of local suppliers in our modular and prefab guide.

Just like another advanced technology, electric vehicles, prefabrication for residential buildings hasn't been fully adopted in Australia – yet. The tipping point might already be here though. Sky-high building costs and pressures in the housing market are forcing many people to look at alternatives to traditional ways to build a home, meaning heightened interest in prefabricated and modular construction methods for Australia's small but growing industry.

“The prefab and modular sector offers greater certainty than conventional construction,” says senior associate architect Andrew Fotia from ARKit, adding that the industry is now sufficiently “well primed” with completed projects to be seen as a safe and reliable option. “People are spooked, worried that



↑

With a prefabricated approach, most of the construction work is done before transportation, minimising time spent onsite. Here, a module by Prebuilt is craned into position in Byron Bay, New South Wales. Image: Media Drive



↑

More and more prefab companies are offering panelised systems that are easy to transport and assemble, and make for a fully insulated building envelope that significantly reduces heating and cooling needs. Image: Zen Haus Group

builders will go under in the current climate,” he says, pointing to the collapse of prominent building companies this year. “They want to know how they can be sure they’ll get a finished home, and with prefab’s shorter construction time, there’s less risk of things going off track.”

Others say that a shift away from traditional ‘stick-build’ methods to more efficient prefabricated and modular systems is unavoidable. “The broader industry recognises that prefabrication is the best way to deliver the homes of the future,” says CEO Burkhard Hansen of CarbonLite, makers of Panellite, a wall, floor and roof panel system that can be used to assemble Passive House homes to lockup stage in a matter of hours. “Everything is working against the building sector in an era when demand for houses is increasing. Builders are under immense pressure, with soaring building costs and the constant battle to achieve a margin.” He mentions one volume builder that recently moved their catalogue of homes to the Panellite system, for reliable building costs and energy efficiency measures that meet the incoming 7 Star minimum standard. “Prefab offers a chance to build a house and be part of the energy solution at the same time.”

Prefab’s emphasis on sustainable processes and energy efficiency is an exciting prospect for homeowners. The suppliers in our modular and prefab guide (see p60-65) use sustainably sourced materials and innovative construction processes that

Prefab perfection

LOCATION Richmond, VIC • WORDS Kellie Flanagan • PHOTOGRAPHY Aaron Pocock Photography



At a glance

- Prefabricated, panelised extension designed to Passive House Low Energy Building standard
- Quiet, cosy and calm oasis for family living in a noisy neighbourhood
- All-electric with solar PV and induction cooking

Squeezed onto a tight inner-Melbourne site, a high-performing prefabricated extension gives a Victorian cottage a new life.

When David and Sally Ritter wanted to buy into the busy inner-urban Melbourne suburb of Richmond, real estate pickings were slim for a family without a huge budget. They eventually found a tiny semi-detached Victorian cottage on a very small site near a busy main road. It was “cramped, damp and dark,” says Sally, with a lean-to kitchen and bathroom and a small yard backing onto a laneway. But it had great heritage value, and the double-brick construction of the front section was solid and worth saving.

The family embarked on a project to improve the home with a modern extension. Their brief included an open-plan living space adaptable to a variety of uses, “connectivity to sky” and views, better access to daylight, and a place that would be a quiet haven in their bustling inner-city neighbourhood. Finally, design and construction of the extension to meet the Passive House standard was a must-

have for David, a certified Passive House consultant and director at sustainable design consultancy Atelier Ten.

The concept design was devised by noted architect Kerstin Thompson, who was inspired by the couple’s plans for a Passive House extension to a Victorian cottage – a challenging mission. “She’s very generous,” David says. “It was a very nice experience working with a great architect to identify a strong design concept.”

Kerstin’s design integrates a steel-clad, angular double-storey extension into the small site, respecting the built forms and character of the heritage neighbourhood while adding light and spacious new living areas. At ground level, a kitchen and dining area with a kitchen along one side takes up almost all of the footprint; a bathroom, separate toilet and laundry are tucked away at the far end. Upstairs, a mezzanine houses a bedroom with ensuite. A courtyard garden (designed

→

The extension is a comfortable, quiet oasis in a busy inner-city neighbourhood.

“Taking a great concept design to delivery by a prefabrication company can be a really good way to go for a high-performance home.”



Top of the range

LOCATION Kelvin View, VIC • WORDS Anna Cumming • PHOTOGRAPHY Jaime Diaz-Berrio



At a glance

- Off-grid family getaway and future permanent home
- Prefabricated panelised pavilions built to Passive House Plus standard
- Simple shapes and compact floor plans test out ideas for modular home offerings

On a boulder-strewn slope with divine views in central Victoria, an architect’s prefabricated Passive House is a prototype for future client projects.

When architect John Tallis set out to build his modest two-pavilion house perched among granite boulders at Kelvin View, a couple of hours’ drive north of Melbourne, his aims were threefold. Along with creating a weekend getaway for his family and an eventual permanent home for himself and his wife Bettina, the project was a prototype for his new ‘Fabhaus’ offering: prefabricated, modular Passive Houses. “I wanted to get the design details right and get the delivery right before taking the plunge with clients,” John says.

Thirdly, and importantly, the finished house provides an opportunity for friends, family and prospective clients (and the occasional magazine editor) to visit and experience the quality of the spaces for themselves. “Most people, even those who design and build Passive Houses, haven’t had the chance to stay in one,” says John. He adds that the first thing most people notice when they walk into the main

pavilion’s compact open-plan kitchen and living space is the level of calm and quiet that comes with the highly insulated, meticulously airtight building envelope.

On the sunny winter day I visit, there’s a brisk wind blowing up the valley – but unless I step outside, I only know this because it’s tousling the tall grasses in the paddock to the north. Inside, all is still, warm and quiet. Four large, uniform-sized triple-glazed windows along the northern facade of the living pavilion (which also houses the main bedroom and a bathroom) provide plenty of passive solar gain. John says that the tiny reverse-cycle air conditioner is rarely needed to boost the interior temperature, even in the depths of winter. Motorised external blinds can be adjusted for the perfect level of shade in summer.

The main pavilion is perfectly sized for John and Bettina’s use when they are here alone, yet the flexible, open layout and adjoining large deck can comfortably accommodate a couple of dozen guests for dinner. A second, separate pavilion comes into its own when the whole family is here, with two more double bedrooms and a bunkroom, plus a second living space, bathroom, laundry and a study nook in

→
The pavilion design means the house can comfortably and efficiently accommodate John and Bettina alone, or the entire family plus friends.



←
In the living pavilion, a silvertop ash batten ceiling adds warmth and visual interest to the interior.

Studio portrait

LOCATION Northcote, VIC • WORDS Rebecca Krispin • PHOTOGRAPHY Luke Ray



At a glance

- Underutilised garage converted into a multifunction workspace, guest room and more
- Existing structure and materials retained where possible
- Building envelope upgraded

In Melbourne's inner suburbs, Tom and Rachel turned their unloved brick garage into a seriously useful home office and guest room.

When the couple were choosing a home to buy, they were lucky to have Tom's long-time friend, architect Cameron Greiner, helping them out with the search. By the time they purchased their Californian bungalow in Melbourne's Northcote in late 2020, Cameron knew the property well.

The house needed some love before the new owners moved in. Cameron planned a staged renovation to the main house, the first part of which involved replacing the kitchen and bathroom as well as adding skylights to increase natural light. This greatly improved the amenity of the house without requiring lengthy and costly permit applications, and allowed Rachel and Tom to move in just a few months after the birth of their second child in early 2021.

As Covid lockdowns dragged on, however, it quickly became apparent that Tom needed a quiet and private home

office where he could work without the kids underfoot. Cameron immediately suggested the old brick garage in the backyard. It was occupying valuable space on their block, and couldn't easily be used for parking due to the narrow driveway access.

Repurposing an existing structure fitted well with Tom and Rachel's philosophy and budget. It also suited Cameron's approach to sustainability. "In our office, we have a pretty strong ethos about reusing buildings. The most sustainable building is the one that already exists," he says.

The garage itself was dark, dingy and damp, with a small window and a roller door. Cameron's design response was simple and practical, maximising the use of existing materials. He doubled the size of the old window and replaced the roller door with a sliding door, using high-performance timber-framed double glazing. The old concrete floor was ground and polished, the brick walls were painted externally, and new insulation was added to the walls and ceiling. "These relatively minor changes completely transformed the space," he says.

The revamped room now enjoys a



←↶↑

“Once we ripped out the garage door, put in the window and cleaned it out a bit, it was actually a pretty cool space,” says designer Cameron of the modest garage conversion. A Murphy bed plus built-in desk and storage make the small studio as versatile as possible.

high level of thermal comfort year-round. There is no need for cooling, and the only heating is a small electric panel heater. The window has a western aspect, and in winter the afternoon sun heats up the thermal mass in the concrete floor; the warmth is then released slowly at night. “It’s quite extraordinary: when I come in at 6am in winter and the heater has been off, it’s still warm in here,” Tom says. The window is shaded in summer by a steel awning, and the internal blinds have a white backing to reflect the sun when it’s not wanted.

Cameron paid plenty of attention to

the details, and thanks to the reuse of existing materials, more of the budget was available for a high-quality fitout. The beautiful internal joinery includes a plywood desk, shelving and over a dozen hidden storage cupboards, including discreet lockable sections for confidential work documents. A bookshelf sits adjacent to the door, and there is a fold-down Murphy bed for guests. The large sliding window features an enticing box seat inside as well as a bench outside, which facilitates a connection between the studio and garden. There is additional storage space inside the roof cavity, and

a small bike store and garden shed at the rear.

“The builder we engaged, Richie from Buena Vista Homes, was excellent,” says Cameron. “We’ve worked together on a few projects now and his attention to detail, communication and flexibility was impressive, especially given he was navigating Covid lockdowns during the build and the family was still occupying the main house.”

The studio was carefully designed for multipurpose use, which is handy now that Tom is working more in his company’s offices. The family regularly



Treasure trove

WORDS Rebecca Gross

GIVING PRECIOUS TIMBER ANOTHER LIFE

Reclaimed timber is hands-down the most sustainable option when it comes to using wood in your new build or renovation project. Reusing timber rescued from the demolition of old houses, factories, warehouses and other structures, and salvaged from wind-fallen trees and similar sources, reduces landfill. Even more importantly, it reduces the demand for newly harvested timber, avoiding the environmental impact of forestry. Often milled long ago and air-dried over decades, reclaimed wood is denser, harder and more stable than new timber, and

brings its own unique character acquired through weathering and its years of service as a floor, a roof beam or a bridge support.

We spoke to five specialist reclaimed timber suppliers around Australia, to learn about their operations and why they are committed to working with lovely old wood. When these businesses started recycling timber, they were going against the grain. Today, there is a much stronger demand for reclaimed timber in building and design; these companies are leading the way.



Thor's Hammer

LOCATION Canberra, ACT • WEBSITE www.thors.com.au • PHOTOGRAPHY Rohan Thomson

As a young woodworker making furniture and kitchens, Thor Diesendorf observed how much high-quality Australian hardwood from house demolitions was being dumped in landfill. With connections to local demolition companies, he decided to start his own business: Thor's Hammer was launched in Canberra in 1994. "My mission was to keep demolition timber out of landfill by growing the interest in and demand for recycled timber," he says.

Thor's Hammer sources hardwoods from the demolition of old houses, commercial buildings, factories, bridges and wharfs around the country. "Recycled Australian hardwoods are an amazing resource – dense and durable and with a huge range of colours and grain," says Thor, who counts blackbutt, spotted gum and brushbox among his favourites. "As a carpenter, I also

love working with reclaimed Oregon pine because it is light and strong, and I enjoy the resinous smell of native cypress pine."

There are often between five and fifteen different timber species salvaged from a single demolition. The Thor's Hammer team transforms this timber into flooring, cladding, decking, posts and beams for building and renovations, as well as doors, benchtops and joinery. They also sell slabs and dressed timbers, and craft custom furniture.

As Thor's Hammer nears its 30th birthday, Thor says the industry has completely changed since he started the business. "We've succeeded in driving demand for the product, which has transformed the way people view recycled timber. Our designs and products are attracting more interest every year."

OUTDOORS

Sweet and wild

Sumptuous syrups from
foraged flora

WORDS & PHOTOGRAPHY Mara Ripani

You are probably familiar with fruit cordials; perhaps you even have a family recipe that comes out in time for summer. But did you know that delicious drinks can be made using wild floral infusions? Mara Ripani introduces three of her favourites.

There exists enormous potential to create unusual floral syrups from a broad range of plants. These syrups are sweet infusions made with flowers or buds from shrubs and trees, akin to berry and herbal syrups.

My passion for creating them began when I was living in Melbourne and cycling everywhere; for me, foraging became synonymous with cycling. When you are out in the elements, seasonal changes wrap you in a blanket of fragrance as you ride, and pulling over to harvest fruit and flowers for making jams and syrups is an attractive adventure.

Three of my favourite floral syrups are callistemon-melaleuca, mugolio (made from pine buds or cones) and lilac. Each has a distinctive flavour and colour and can be used to flavour many things, from summer drinks to roasts and salads.

THREE FLORAL SYRUPS

All these recipes require sterilised jars or bottles. In addition, to make syrups shelf stable (able to be stored at room temperature for weeks or months), you will need to process them in a hot water bath; otherwise, they must be stored in the fridge. There are plenty of online resources to help you learn how to sterilise jars and run your syrups through a hot water bath.



CALLISTEMON-MELALEUCA SYRUP

Callistemon-melaleuca syrup is made from the flowers of these common native plants, combined with either honey or sugar.

How to identify callistemon and melaleuca

Melaleuca trees are often referred to as paperbarks due to the texture of their bark, and callistemon varieties are often called bottlebrushes; they can be either shrubs or tree-sized. The flowers of both are brush-shaped and arranged in spikes on heads at the end of branches. They are filled with fragrant pollen-rich stamens and come in white, red, lemon, yellow and pink.



Callistemon flowers, commonly known as bottlebrush, make a sweet syrup that's ideal for spicing up smoothies and cocktails, or enjoying as a cordial.



When to harvest

Harvest flowers in spring and right through to autumn. Use secateurs to harvest around 40 flowerheads for a batch of syrup, leaving plenty behind for wildlife.

How to make callistemon-melaleuca syrup

Use a one-litre capacity sterilised jar. Add 1.5 cups of raw sugar or honey to the jar. Boil one litre of water for 10 minutes and allow it to cool. Once cooled, add just enough water to the jar to dissolve the sugar or honey, and stir well. Now remove the stamen clusters from the flower 'cores' and pack the clusters very tightly into the jar, leaving a two-centimetre gap between the top of the jar and the lid. Top up with the boiled, cooled water until all the flowers are submerged and the water level reaches the very top of the jar. Weigh down flowers with a ceramic dish.

Place in a warm place, lid firmly on, with a dish underneath to catch any spills caused by fermentation. Bubbles should appear after a week if kept in a warm place (20 to 25 degrees Celsius).

When fermentation has occurred, strain and collect the syrup in sterilised bottles. Place syrup in the fridge or process in a hot water bath.

ON THE DRAWING BOARD:

A tale of two retrofits

WORDS Jeremy Wells



↑
With a few small design tweaks and judicious retrofits, a poor-performing old house like Jeremy's can beat 8 Stars, even in Melbourne's challenging climate. Image: Monica Styles

Architect Jeremy Wells of Tochi Workshop made targeted, cost-effective retrofits to his own and a client's very similar Melbourne homes to improve their energy efficiency and liveability. He explains the lessons learned.

In early 2021, the team at Tochi Workshop carried out thermal performance assessments on two very similar two-bedroom units in Melbourne's inner north. One home is my own place, located in Westgarth. The other, located in Northcote, belongs to a client, Rob. Both homes were built in the late 1960s or early 1970s using brick veneer construction and both suffered from dismal thermal performance – they were hot in summer, freezing cold in winter, and mould would form on the windowsills where condensation could be seen collecting every winter's morning.

WIN

one of two e-scooters
from Voltrium, with a
total prize value of \$6500



Subscribe or re-subscribe to *Sanctuary* or join *Renew* by 5pm AEDT on Monday 30 October 2023 and go in the draw to win one of two e-scooters from Voltrium, with a total prize value of \$6500

For full details visit

renew.org.au/prize

Two winners will each receive a prize of a Voltrium e-scooter, including delivery. Total prize value of \$6500. Open to Australian residents. Terms and conditions apply.



renew.

Sanctuary
MODERN GREEN HOMES