

Sanctuary

MODERN GREEN HOMES

ISSUE
63

HEMP BUILDING
SPECIAL

PLUS: Renovating heritage homes for sustainability;
National Biophilic Design Awards; swap your lawn for habitat

Hemp Sensation

Seven gorgeous hempcrete homes inside



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

ISSN 1833-1416

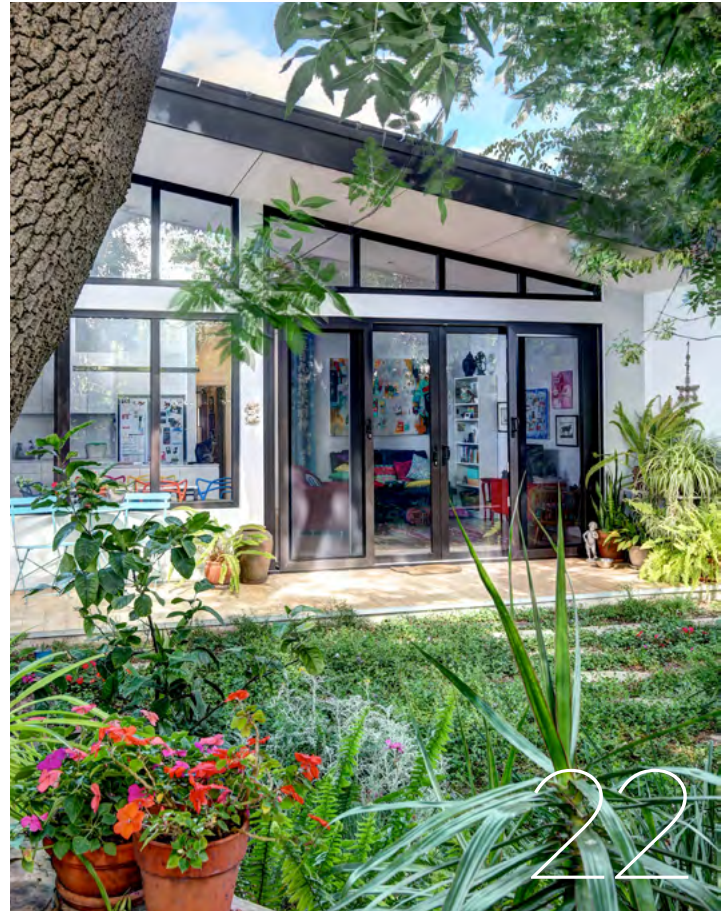


9 771833 141017

WIN

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 63

HOUSE PROFILES

16 An alternative vision

A new house in Perth's inner suburbs puts forward a fresh model of integrated sustainable living for a young family.

22 Heritage haven

Mark and Trish's renovated heritage cottage in Adelaide is now the most comfortable home they have ever lived in.

28 All decked out

A mid-century gem on a steep Melbourne site becomes even cooler with a geometric deck and pergola.

34 Mid-century modernised

This renovation of a historic Canberra home resulted in a smaller footprint plus vastly improved natural light and thermal performance.

HEMP HOUSE PROFILES

40 Quiet achiever

Thick hempcrete walls contribute to the peace and warmth inside this lovely central Victorian home.

46 A new approach

Mark and Megan's off-grid family home on the Sunshine Coast was a test case for the spray application of hempcrete.

50 Small wonder

Hemp was a help for meeting the bushfire building requirements on Kamil and Vercha's Blue Mountains block.



IDEAS & ADVICE

56 Heard about hurd?

Building designer Kirstie Wulf explains what's to love about building with hempcrete, and the latest developments in the local industry.

60 Hemp home case studies

We look at four lovely homes that used a range of hemp construction techniques, and speak to their owners for their top tips on building with hempcrete.

66 Handling history

Our expert team explores the challenges and opportunities for upgrading heritage homes for a sustainable future.

70 Champions of connection

The inaugural National Biophilic Design Awards aim to help us reconnect with the natural world. We take a look at the winners.

76 A place to live, work & share

In *On the drawing board*, an architect couple introduce their LiveWorkShare House, designed for a multitude of living and working arrangements.

82 Design Workshop

Tomas O'Malley helps with a design for a light, airy and secure beachside home near Bundaberg in subtropical Queensland.

86 Less lawn, more life?

Ditching or reducing lawn areas in favour of native gardens can be hugely beneficial for local biodiversity.

REGULARS

8 Subscribe

10 Products

14 Reviews

91 Renew update

92 Campaign update

94 Marketplace

96 Designers in profile

PRODUCTS



Cosy honeycomb blinds

Trapped air is the greatest insulator of windows; double or triple-glazing is terrific, of course, and well-designed interior window furnishings can trap a further layer of air when they are closed. With their integrated air pockets, honeycomb blinds are probably the best choice for reducing unwanted heat loss and gain. Styles vary from brand to brand, with the Cosiflor range from Germany including top-down, bottom-up types; free-hanging; sliders that move sideways on a fixed upper rail; and blinds for roof windows and skylights. The design is streamlined with strings hidden within the double wall of the fabric, and motorised controls can be fitted. The range includes bright modern colours, blackout and translucent fabrics. Cosiflor honeycomb blinds are available from Nordic Blinds. Contact them directly for a measure and quote.

www.nordicblinds.com.au

Lovely lights

Mud Australia's porcelain pendant lights are a popular choice for *Sanctuary* homeowners, and for good reason – they are delicate, beautiful and proudly Australian made. Ceramic work can be a very energy intensive process though. Mud Australia has been addressing this; it has cut greenhouse gas emissions at its Sydney studio and is now carbon neutral in its operations, largely due to the electricity generated by a 100-kilowatt solar PV system. Excess heat from the kilns is directed into a production space to dry moulds, and broken pieces are upcycled into terrazzo, with the sale of a specialty recycled ceramic range further helping to reduce waste. Mud's pendant lights are coated on the inside with a non-toxic glass layer and come in six different sizes across three silhouettes (dome, hat and flared), and they also offer a wall-mounted sconce. Prices start at \$350 for the smallest pendant light.

www.mudaustralia.com



Worms on the job

If you're building on a block with no sewer connection, instead of a traditional septic tank, consider a natural wastewater treatment system such as WormWorx by Zen Plumb. WormWorx is a passive septic system that uses – you guessed it – worms to transform effluent into a nutrient-rich compost. The system is simple, with no internal moving parts; the worms process up to 97 per cent of suspended solids and aerobic bacteria do the rest. The system can also include a sand filter for secondary treatment. Models include gravity-feed and pumped, and tanks range in size from 3,000L to 5,000L. WormWorx is approved for use in Victoria, New South Wales, Queensland, South Australia and Tasmania. Contact Zen Plumb for a quote.

www.zenplumb.com

BOOKS



**Pretty small:
Grand living with
limited space**

Gestalten, 2022
\$95

Pretty Small highlights the work of designers responding to urban densification and a global trend: people moving away from suburban-scale housing to live closer to the inner-urban action and with a smaller footprint. The book showcases design innovations and space optimisation strategies that are both sleek and eco-conscious, in the form of student accommodation, demonstration huts, micro apartments, multifunctional studios and (small) family homes.

The book presents a range of case studies drawn largely from Europe and Asia, with some local examples in inner Sydney and Melbourne. The smallest project featured – the ‘studette’ in Paris – measures a tiny 13 square metres, and the largest is a relaxed 227-square-metre former printshop turned family apartment in Madrid.

While it leans more towards a glossy celebration of clever design than an attempt to present examples of small living that are widely financially attainable – though the general fact remains that small homes are cheaper to build and maintain than larger ones – *Pretty Small* encourages thoughtful multifunctional spaces and making the most of often limited light. With scaled drawings and 3D renderings, there is value here for students of design and architecture, developers looking for a new type of project, and those looking for inspiration for their own downsizing move.

A standout project for me was the transformation of a 55-square-metre 1947 modernist housing-project apartment in Mexico City, in which much of the brutalist concrete was softened with timber panelling as storage and room dividers. Though as with all such ‘eye candy’ pieces that present clean-lined, decluttered spaces, I do wonder whether these homes are the realms of efficient Marie Kondo disciples – or have they simply moved their stuff to the neighbours’ for the photoshoot?

Review by Rachel Goldlust



**The 15 Minute City:
Global change
through local living**

Natalie Whittle
Luath Press, 2021
\$24

This insightful work by former Financial Times journalist, Natalie Whittle, looks at the urban planning movement of the ‘15-minute city’. This model is based on research that has found that 20 minutes is about the maximum length of time people are willing to walk in order to complete a daily task or chore. It therefore proposes that people should be able to access housing, offices, schools, healthcare, and cultural venues within a 15- to 20-minute walk radius. It suggests creating pathways for walking and cycling, as well as locating homes within existing city limits and on abandoned brownfield sites, as opposed to undeveloped greenfield land. To create cycling and walking cities, the model requires that we consider every aspect of contemporary life, from the food we eat to the way we shop.

Natalie delves into the concept, contemplating its benefits and drawbacks. She draws on models from ancient Athens to modern Paris to demonstrate how this concept could redesign the way we live, with far-reaching impacts.

The author also investigates the capacity of the 15-minute city to enhance the health and wellbeing of citizens and the planet. She looks at cities such as Paris, Glasgow, Shanghai and Melbourne to gain insights on how the principles have been applied, noting that the 15-minute city is a porous concept, able to incorporate a multiplicity of ideas including issues such as inequality, climate change, and local commerce.

Natalie applies a healthy sprinkle of scepticism to the idea that all our needs can be met within a single neighbourhood, while also clearly articulating the many benefits that this approach has to offer. This book will be of interest to people who are environmentally conscious and interested in ways that urban planning can improve the quality of life for all urban dwellers.

Review by Fiona Gray

Heritage haven

LOCATION Adelaide, SA • WORDS Rebecca Gross • PHOTOGRAPHY Shane Harris, Arch Imagery



At a glance

- 150-year-old stone cottage upgraded and a sympathetic extension added
- 7.3-Star all-electric home with EV
- Lush inner-city garden with shade tree

This renovated heritage cottage in Adelaide is now the most comfortable home Mark and Trish have ever lived in.

There are always compromises and tradeoffs in architecture, especially when working with a heritage house and a small site. But as this home in Adelaide's city centre demonstrates, there needn't be compromises on comfort or sustainability. Designer Paul Hendy of TS4 Living transformed the sandstone cottage into the most comfortable house the owners have ever lived in, all while preserving its historical character and extending its life. "It looks like a heritage cottage at the front, but it performs so much better than the standard," Paul says.

Trish and Mark bought the 1870s cottage in 2015 and engaged Paul to design a new modern addition in place of the old lean-to at the rear, and to improve the liveability and comfort of the house as a whole. They hadn't lived in it before renovating, but knew it was draughty

and could get extremely cold. Their brief to Paul was for a high-performing, low-energy and low-cost alteration and addition that maintained the small footprint and the outlook to the garden.

The heritage overlay dictated that the first three metres of the home be retained essentially unchanged, but changes could be made beyond that point. The new extension positions a bathroom and laundry directly behind the original cottage's three bedrooms, with the open kitchen, dining and living room at the back opening to the verandah and garden. The form and materials of the addition are distinct from, yet sympathetic to, the original house, and the closely matched footprints (49 square metres for the cottage and 55 for the addition) balance the old and new.

Clad with dark Maxline steel, the addition's south wall is set in a little from the cottage wall, receding into the garden from the point of view of passers-by glancing down the driveway. Similarly, the low-profile new roof isn't visible from the street, nor does it impact on

↓

Behind the restored heritage cottage, a small steel-clad extension nestles into the verdant garden.



All decked out

LOCATION Pascoe Vale, VIC • WORDS Jacinta Cleary • PHOTOGRAPHY Emma Cross Photographer



At a glance

- Existing house retained with small interventions for better flow, light and ventilation
- Just 4m² added to footprint
- Deck and pergola to support shading greenery and improve indoor-outdoor connection
- Collaboration with landscape designer to maximise potential of entire site

A mid-century gem on a steep Melbourne site becomes even cooler with a geometric deck and pergola and inspired garden design.

Gina and David's house, nestled into a steep slope in Melbourne's northern suburbs, is an anomaly in the relatively flat city. "I know, Melbourne only has about two proper hills, right?" laughs Gina, who says that taking out the washing involved five sets of stairs before the renovation to the 1950s house.

While full of potential with its modern design and amazing views from its elevated position, the cream brick veneer house was disjointed and uncomfortable to live in. Used as a rooming house before it last sold, it had an awkward circulation path that made it difficult to get to the main kitchen, and misplaced features like a kitchenette in a downstairs passageway – perhaps added by the original Greek owners for preserving garden produce. The entry leads straight into the upper level due to the slope of the site, with west-facing living spaces that would overheat in summer. "We were always fighting the sun," says Gina.

Having done their early parenting in the house (and surviving initial shocks such as the discovery of garden hose gas piping), the couple were keen to retain as much as possible of the structure, fix it up and celebrate the home's style and history in the renovation. "We worked entirely within the constraints of the existing building," says architect Shae Parker McCashen of Green Sheep Collective, whose design enabled the mid-century gem to reach its full potential.

Shae describes the changes to the house as deliberately small "to create a large cumulative impact", and each change has been exploited for multiple benefits, including thermal efficiency and liveability. The small existing deck to the upper level has been extended to the west and north and doubles as a carport, with the striking polygonal steel structure designed to grow vines for shade and "bring the garden to the first floor," as

→ Minor layout changes opened up the living spaces, making for a more connected home with better flexibility.

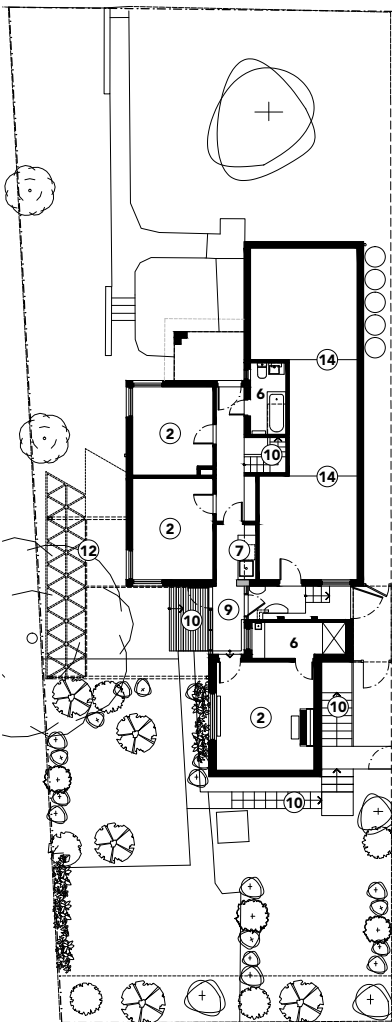


↑
The new kitchen is in the same location as the old one, but a larger bench has made it much more useable for the family.

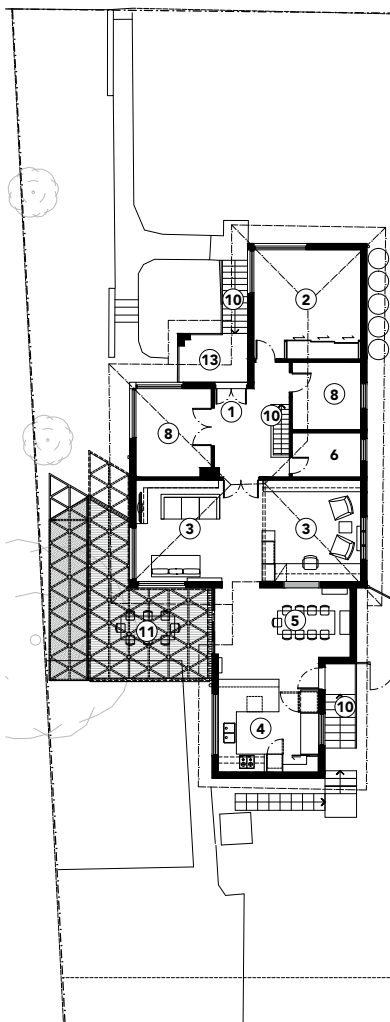
be accessed from outside and that were too cold for comfort. By adding just four square metres to the overall footprint and bringing the bedroom into the building envelope via a linking corridor, the design reused what was already there and made it more comfortable. The hallway kitchenette provided the ideal spot for a new laundry, with a rainwater connection to reduce mains water use.

“The project involved paring back and resisting the temptation to do more,” says Shae, going on to explain that simple measures like removing the different heights and steps downstairs can seem unexciting and yet improve daily life by making a clear path to the garden. Such small interventions have given this old home a second, more modern life. 🌱

LOWER FLOOR PLAN



UPPER FLOOR PLAN



LEGEND

- ① Entry
- ② Bedroom
- ③ Living
- ④ Kitchen
- ⑤ Dining
- ⑥ Bathroom
- ⑦ Laundry
- ⑧ Study
- ⑨ Glazed link
- ⑩ Stairs
- ⑪ Deck with pergola
- ⑫ Carport
- ⑬ Porch
- ⑭ Storage



Quiet achiever

LOCATION Lyonville, VIC • WORDS Anna Cumming • PHOTOGRAPHY Jade Cantwell

Thick hempcrete walls contribute to the peace and warmth inside this lovely central Victorian home.

It's so refreshing to visit homes that are exactly enough for their occupants and no bigger – especially when they are built on expansive rural blocks where space is not an issue. Perched on a rise in the middle of a former potato field in Lyonville, central Victoria, Sarah Corbet and David Bruce's new house appears even smaller from the road than it actually is, perhaps because of its neat, compact shape: it's essentially a cube with a slice out of it to angle the roof.

The 75-square-metre footprint houses an airlock entry, bathroom, living, dining and full-sized kitchen with butler's pantry. A mezzanine level over the kitchen and dining area is around 30 square metres and provides a spacious bedroom for the couple, with a long messmate trestle desk under the north-facing windows for working from home.

It's not large, but the layout, high ceiling over the living space and generous windows all contribute to a sense of spaciousness. It's also delightfully peaceful

and cosy inside, even on the windy day when I visited. This is no accident, Sarah explains. "From the outset, we wanted to build something amazing to showcase good design: something adequately sized, affordable and appropriate for the climate.

"To be honest, we had no idea how cold it was here! We're at 740 metres elevation: we get frosts from April to December and it snows several times a year. Initially we started out camping before graduating to a leaky caravan, then stayed in the shed that we built first, and finally moved into our finished home."

The couple bought the three-hectare block in 2018 to build a home for their future retirement and for a change of pace: they plan to create a beautiful and productive permaculture farm. "We were looking for good soil and water security," says Sarah. "We love it here and already feel very much part of the local community. It's a bonus that we have acreage in a town full of amazing gardeners and cooks, so we feel we are in the right place."

Already interested in hempcrete as a building material, David and Sarah clicked with Joe D'Alo of the Hempcrete Building Company when they met him at Bendigo's



At a glance

- Small-footprint home for budget-conscious treechangers
- Owner-built using hempcrete and recycled timber
- 7.6-Star energy-efficient design with no gas use

HEARD ABOUT HURD?

The latest on hemp building in Australia

WORDS Kirstie Wulf



↑

Andi Lucas, founder of startup hemp processing operation X-Hemp in northern Tasmania, with a hempcrete demonstration wall. Image: Moon Cheese Studio

With its insulative and thermal mass properties plus its breathability, carbon-negative hempcrete is something of a dream building material. Happily, it's also becoming more widely available in Australia. Building designer Kirstie Wulf explains what's to love about building with hemp, and the latest developments in the local industry.

In the past ten years, hempcrete has risen from a newcomer in the Australian construction industry to become a popular natural building material choice, and with all its benefits, it's easy to see why.

Hempcrete is a lightweight, vapour-permeable and insulating material that is resistant to both fire and pests. It is made from a mixture of hemp hurd or shiv (the woody inner part of the hemp stalk) and a lime-based binder. Typically, the hempcrete mix is tipped from tubs into formwork surrounding a timber frame and lightly tamped down. Once it's set, the formwork is removed and the walls are finished with a lime or



Beautiful beach house

PHOTOGRAPHY Hepacan

For her own extended family's beach house on the New South Wales south coast, designer Dominique Hage explored sustainable construction through the use of hempcrete as the key building material, greywater and rainwater harvesting, solar power, and passive solar design. "The resulting house is well-insulated and remains light and cool despite the extremes of the Australian summer," she says. "As a family holiday house, priority was given to the social spaces, including numerous protected outdoor spaces. Despite the small footprint, this house allows many people to congregate but also to find solitude."

Hemp was chosen as it's easy to integrate into timber frame construction, and also for its thermal and acoustic insulating properties, its bushfire resistance, and its longevity and ongoing positive impact. "In Europe, there are examples of hempcrete houses which are hundreds of years old and still sequestering carbon," Dominique explains.

There were some issues with the non-mainstream building material. "It was tricky to get it correctly assessed for the energy rating, and our insurance company took some convincing to insure the house too," says Dominique. The hemp was cast in situ, which she says was very labour-intensive. "There were not many contractors in the area willing to quote for the hempcrete construction, and the labour cost was high." Dominique and family members helped, and she says they enjoyed exploring the creative opportunities afforded by hempcrete, such as bevelled edges to some corners inside.

The finished home is a triumph. Blending harmoniously with the rendered hemp walls, polished eco-concrete, raw brass tapware, recycled timber and cork floors round out the palette. "Our favourite thing about it is the quality of the space," Dominique says. "It is quiet, the interior air quality is lovely and fresh due to the breathability of the walls, and it's extremely cool in summer despite a large number of windows. It also looks gorgeous."

HANDLING HISTORY:

Opportunities and challenges for upgrading heritage homes

WORDS Leo Martin, Ruth Redden and Ian Travers



↑

Retaining and restoring homes covered by heritage listings or overlays, such as this house in Northcote, Victoria, renovated by Altereco Design, preserves the history and character of our built environment – and heritage requirements need not get in the way of significant sustainability upgrades. Image: Jade Cantwell

A heritage listing on your home prevents modern upgrades, including sustainability measures – right? Not always, writes this expert team.

The heritage listing process, through which places – in practice, mostly buildings – are included on statutory registers to protect their heritage values, is often seen as a barrier to progressive development, including to achieving greater sustainability for these places. But we are keen to assert that this is not the case. In fact, the two goals of heritage preservation and sustainability

ON THE DRAWING BOARD:

A place to live, work and share

WORDS Chris Bligh and Sonia Graham • PHOTOGRAPHY Christopher Frederick Jones



↑

Designed as a collection of pavilions around a series of courtyard gardens, LiveWorkShare House features excellent passive solar design as well as nuanced arrangements for both privacy and flexibility of use.

Why build a house that's just a house, when you can build one that can be two? Or three? And with a studio for your business too? Architect couple Chris Bligh and Sonia Graham did just that when they dreamed up their LiveWorkShare House on a standard suburban block in Brisbane.

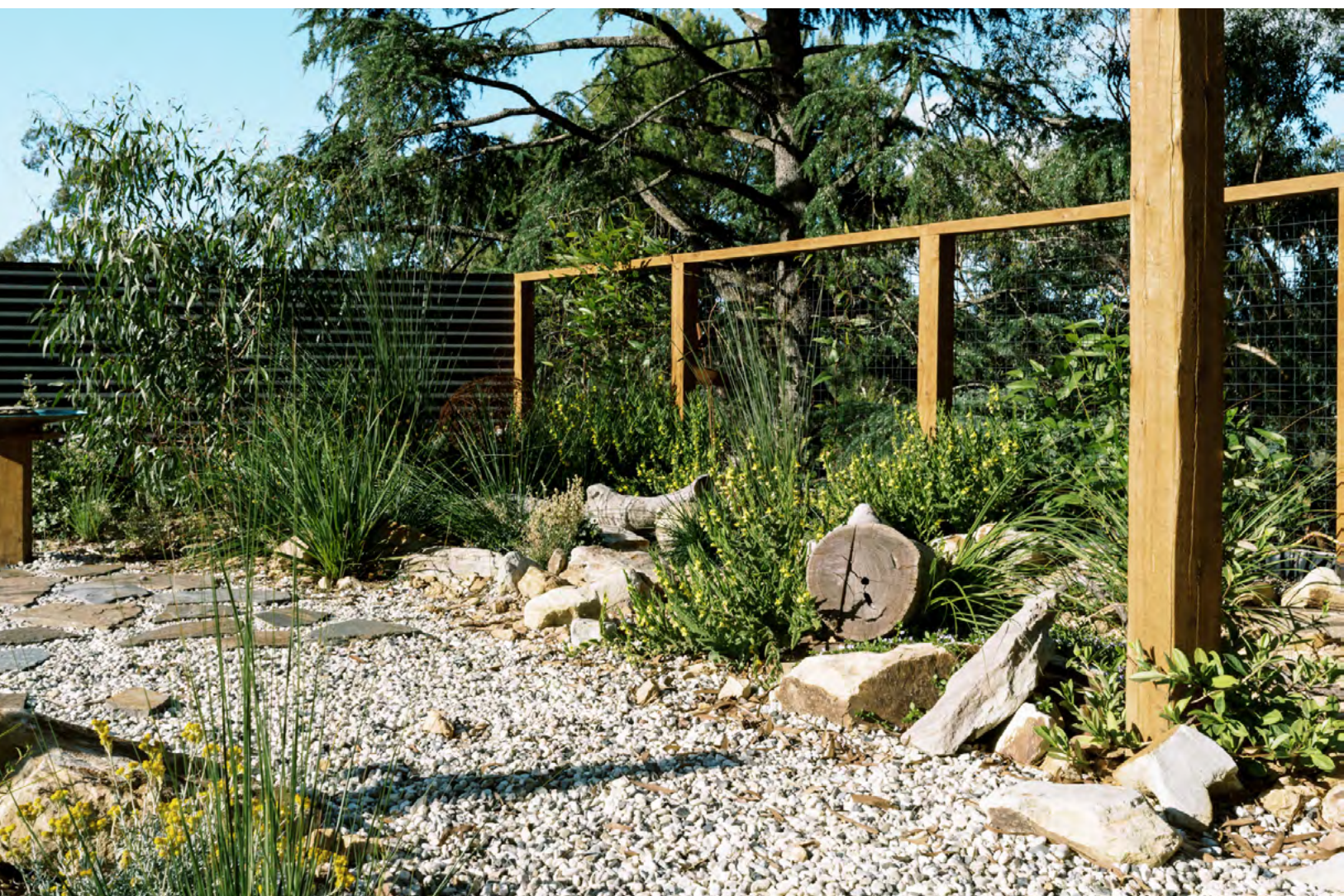
The inception for what has become the LiveWorkShare House was, like many major family decisions, kids. More specifically, our teenage kids. Having been fortunate to live for 15 years in the first house we designed for ourselves set in a rainforest valley on the outskirts of Brisbane, we decided to look for an opportunity to move into the nearby Samford Village to support the kids' independence. After securing a 612-square-metre vacant block in the heart of the Village, the visioning began.

The project was a great opportunity to test ideas that we had explored over many years of practice, including recent projects and competitions that specifically addressed what has

Less lawn, more life?

WORDS Steve Dedrick • PHOTOGRAPHY Jarrod Priestly

It's well known that we Aussies love our grassy backyards, but ditching or reducing lawn areas in favour of native gardens can be hugely beneficial for local biodiversity. Landscape designer and native garden proponent Steve Dedrick goes in to bat for habitat.



↓
A dry creek bed or rain garden with logs and assorted rocks is a fantastic habitat for small lizards and frogs, and reduces stormwater runoff.



→
Bird baths like this elegant copper one are a great way to attract bird species to a garden, and can be extremely important for hydration during summer months.



↑
Native grasses like this windmill grass (*Chloris truncata*) are great at providing protection for small animals like lizards and wrens. Grasses reproduce quickly, self-seeding and expanding their protective habitat.

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

The future is in our hands.

We rely on donations from generous people like you to do our vital work.



Please donate to the Renew End of Financial Year Appeal.
Scan the QR code or visit renew.org.au/donate

Our mission to create a more sustainable future for all Australians is more crucial than ever. Your donation will help us continue standing up for Australian households:

- **Inspiring, educating and helping** individuals and communities to live sustainably.
- **Advocating with government and industry.**

- **Researching and empowering Australians** to utilise sustainable technologies.
- **Providing quality, independent advice.**
- **Publishing trusted journalism** and research in our magazines.

Donations over \$2 are tax deductible. Please, give today.

Major sponsor - Supporting Australian households.



renew.