MODERN GREEN HOMES

Sanctuary

ISSUE 71

Flexible floor plans, student studios, shared projects and multigenerational living; knockdown-rebuild timber salvage and reuse; ideas for permeable paving and more

OFF *the* PLAN

Creatively different approaches to housing

WIN

A furniture and interior design package from Moss Furniture, valued at $6,000

Offer open to Australian residents. Details page 79

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PRODUCTS

These featured 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

1 Painted protection

Developed by the University of New South Wales, FSA Firecoat is a high-performance fire-retardant paint that helps protect homes in bushfire-prone areas. Applied as an undercoat, it forms an insulating char layer when exposed to heat, slowing flames and reducing toxic smoke. After a fire, the carbon layer can be scraped off, leaving a clean surface for repainting. Water-based and low in VOCs, it's safe for indoor use and suitable for brick, timber, aluminium, steel, concrete and plasterboard. Firecoat comes in grey and white for use under any topcoat colour. Available from Bunnings and Fire Defender, the paint starts at $135 for four litres.

firecoat.au

2 Hemp power

The applications of hemp fibre in construction are expanding. Made from the strong, renewable material, Hexcore's HexBoard is a lightweight yet durable option for wall linings and ceilings. The panels provide some thermal and acoustic insulation for energy efficiency and indoor comfort. They are easy to transport, handle and install, are moisture-resistant for both indoor and outdoor use, and are fully biodegradable at end of life. A smart alternative to timber, HexBoard can even be used to make furniture.

hexcore.com.au

If you have recommendations for films, books, smartphone apps, podcasts, websites or anything else, email: sanctuary@renew.org.au

DOWNLOAD

Free PDF download

marrayeh.com/marra-and-yeh-architects-design-for-climate

Design for climate, design for change

Marra + Yeh Architects, 2023

Design for climate, design for change is the distillation of authors Carol Marra and Ken Yeh's years of research, observation and design experience. It's a succinct, readable guide addressing what they consider to be the key challenges currently facing our built environment: heat, wind, floods, bushfires, density and flexibility.

"The climate has changed but what has also changed is the number of people, the density of cities and suburbs, the patterns of working and living, the composition of families and communities," they write. "Architecture is a means of ignoring or acknowledging the changes, of responding with sensitivity, overreacting or not reacting at all. At its best, architecture must offer countermeasures for adaptation, embracing the opportunities of nature and adapting to its challenges."

The guide is divided into six parts: Heat/Heatwaves, Wind/Storms, Fire/Bushfire, Water/Floods, Flexibility + Adaptability, and Community + Privacy. Each section considers design precedents, mostly drawing on the traditional architecture of Japan, China, the Philippines and Spain; presents a simple set of principles for designing to mitigate the challenge in question; and offers a case study or two. These are mainly Marra + Yeh Architects' own projects around Australia and in Malaysia, several of which have featured in past issues of *Sanctuary.*

While the design principles for climate extremes may not be novel to regular *Sanctuary* readers, the inclusion of urban density, flexibility, community and privacy under the umbrella of designing for climate is interesting and important. There are takeaways here for homeowners and renovators as well as developers, architects and design professionals, local councils, and educators. Best of all, the publication is available as a free PDF download.

Review by Anna Cumming

A home for generations

With a modest extension and smart upgrades, this Canberra home is now far more comfortable and ready to evolve with the family's needs.

HOUSE PROFILE
Weston, ACT

WORDS
Jacinta Cleary

PHOTOGRAPHY
Ben King

AT A GLANCE

- *Inefficient family home renovated for flow, function and future-proofing*
- *Two tiny extensions for increased liveability*
- *Flexible floor plan allows multigenerational living*
- *Gas connection removed*

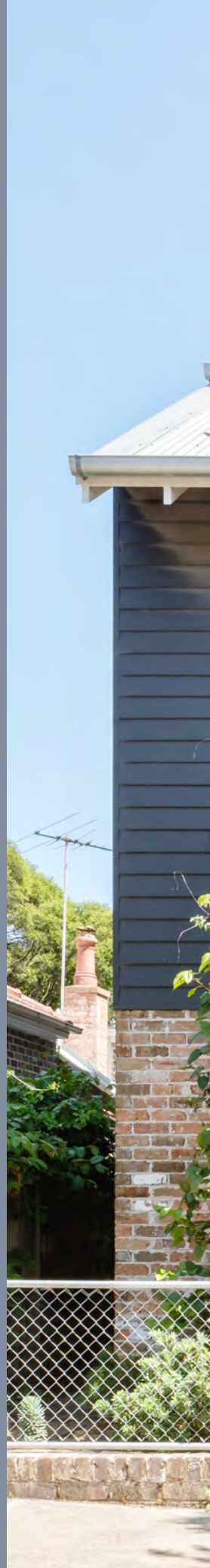
HOUSE PROFILE
St Peters, NSW

WORDS
Rachael Bernstone

PHOTOGRAPHY
Katherine Lu

Doing things differently

Grappling with housing unaffordability, two Sydney friends pooled their resources – and tapped into family connections – to realise their home ownership goals.



AT A GLANCE

- *A pair of semi-detached homes built together by good friends*
- *Each designed for family life and flexibility*
- *Recycled and low-maintenance materials*

Linking lives

DESIGNER
Open Studio Architecture

BUILDER
MRC Constructions

PROJECT TYPE
Alterations and addition

LOCATION
Flemington, VIC
(Wurundjeri Country)

SIZE
14m² addition

WORDS
Jacinta Cleary

PHOTOGRAPHY
Open Studio Architecture

In inner-suburban Melbourne, a small but clever addition connects two Edwardian homes – one occupied by a couple with young children, the other by one of their parents – to enable a shared multigenerational living arrangement.

Rather than extending the smaller house and carving off garden space, Open Studio Architecture proposed a minor layout rejig and the addition of a 14-square-metre 'bridge room' between the two homes. The bridge is a shared space with immediate benefits, allowing the family to access underused rooms in the larger home next door and providing a study and music area. A room in the larger house is now a bedroom for the teenaged granddaughter, and the oversized laundry has been transformed into a spacious, barrier-free bathroom ready for ageing in place.

"It was about using what was already there," says architect Britta Klingspohn. "The family appreciated their garden and didn't want to lose it, and the budget wasn't massive. This solution allowed us to do something with a quarter of the budget we otherwise would have spent extending the smaller home."

The new space links the homes physically but preserves their independence: it's been designed to make it easy to divide in future if needed. Footings along the boundary line allow for a wall to be built, returning the homes to separate dwellings.

The rejigged layout resists conventional design, with no 'parents' retreat' or large open-plan area. Instead, the series of small, connected rooms can evolve in use over time. "It's not a share house by any means," says Britta. "The

Facing page The two homes are connected by a new 'bridge room', allowing for more flexible multigenerational family life. **Above** What was a bedroom in the young family's house now leads to the linking section; together they provide music and study spaces and allow one of the rooms in the larger house to be pressed into service as a teenager's bedroom.

older and younger generations each have their own house and everyone has privacy, but there's a space to come together, too."

North-facing glazing and a bank of louvres in the bridge room provide natural light and ventilation, and a productive garden is shared by all. With its quietly radical approach to space and family, the project shows how small interventions and creative thinking can support multigenerational living. S

FLOOR PLAN

LEGEND

1. Parent's house
2. Young family's house
3. Bridge room/study
4. Music/multipurpose room
5. Granddaughter's room
6. Accessible bathroom

IDEAS & ADVICE
Gentle density

WORDS
Michi Moses

PHOTOGRAPHY
Ben Wrigley

DOUBLE DUTY: PATHWAYS TO TWO DWELLINGS ON ONE BLOCK

Architect Michi Moses looks beyond nifty design ideas, shedding light on what else you need to consider if you're keen to share your block with others.

Above Behind the red brick wall, a section of this Canberra family home has been designed to function as a separate small dwelling if needed in the future. For more, see our case study on p72.

SHACK VIBES

Eventually to be her full-time home, Holley's little shack in Bicheno is right on the water with glorious views, but needs rejuvenation. It's the kind of project building designer Jane Hilliard of Designful loves to get her teeth into.

THE BRIEF

- *Create a modest, comfortable home for retirement on a small budget*
- *Replace dilapidated original part of house with an energy-efficient addition*
- *Make the most of the northern orientation and sea views*
- *Minimise maintenance and running costs*

PROJECT TYPE
Renovation & extension

LOCATION
Bicheno, TAS
(paredarerme Country)

EXISTING HOUSE SIZE
90m²

PROPOSED HOUSE SIZE
150m² maximum

LAND SIZE
805m²

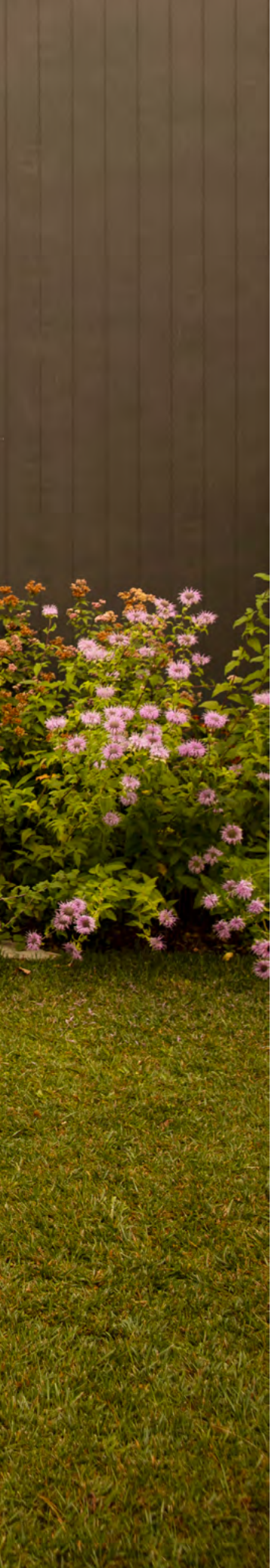
BUDGET
$300,000–400,000

"When I bought the place in 2010 it wasn't really habitable," Holley says of her modest weatherboard house. "My dad helped me with a basic renovation and an extension on an extremely tight budget, to get it to a state where it could be used as a weekender and holiday rental." At the time, she was working at sea and didn't need a permanent home, but is now looking to the future when she and her partner Luc will retire and live there. "To plan for future retirement and eventual ageing in place in this house, it makes sense to do the upgrade work now while I still have an income," she says. "It would also be great to be able to provide an accessible accommodation option for visitors to the area."

Holley loves the "relaxed shacky vibe" of the house, with its robust and unfussy materials that don't mind getting sandy and salty. She also likes the little sun trap away from the sea breeze on the western side, the outside shower, the connection with the outdoors and of course the amazing sea views. However, the kitchen is tiny, the lounge poky, and the structure of the original house is reaching the end of its life.

Holley and Luc are outdoorsy people, into surfing, freediving, fishing and walking their dog Pepper on the beach. Holley is also a self-described "mad gardener" and is dreaming of a giant garden and a kitchen where she can learn to preserve garden produce. She would

Saving stormwater



You can do a lot around your house to prevent stormwater runoff, simply by opting for permeable surfaces when landscaping.

Traditionally, city flood reduction strategies involved ensuring rainfall was channelled quickly away from city streets and into stormwater drains using impermeable surfaces like paved roads, footpaths and carparks. More recently, we've come to appreciate the value of retaining this water in the urban environment, to keep our street trees and public and private gardens alive and cities' ecological assets thriving.

These days, a higher proportion of water-permeable paving or no paving at all is the desired approach, and we can all help with this wider-scale stormwater management by avoiding or dramatically reducing impermeable (hard) surfaces around our homes.

WHAT ARE IMPERMEABLE SURFACES?

As much as 90 per cent of our urban environment is covered in impermeable surfaces that don't allow water through: materials such as concrete, stone paving, asphalt, compacted gravel, and highly compacted soil.

On the other hand, surfaces that are permeable to water include non-compacted soil, vegetable and ornamental gardens, mulched paths and garden beds, and lawns – and outside cities, grasslands, forest floors and riparian zones.

Left Water-permeable surfaces include lawns and garden beds. Where hard surfaces are needed, interspersing paving materials with permeable areas is a great approach – as in this garden design by Andy Murray Landscape Design. Image: Martina Gemmola

TRACY GRAHAM

Building Designer

Connected Design

connecteddesign.com.au

Works in Sydney and NSW South Coast

What kind of house did you grow up in?
I grew up in Johannesburg, South Africa, in a solid brick house. It had a concrete floor with lino in the kitchen and carpet everywhere else. The windows and doors were single-glazed with steel frames, and no flyscreens or shading. My dad was always up on the flat metal roof fixing the leaks. The house was orientated to the east, and the north wall was solid brick. It was really hot in summer and freezing in winter – we heated with paraffin and oil heaters. Temperatures would drop down to minus two degrees overnight and I remember the taps would freeze. My best memories of that house are of time spent in the swimming pool.

What was the first design project you were really proud of?
I designed a strawbale community centre called Nalawala, in Fairfield, New South Wales, when I was working with Envirotecture. It was challenging, but super exciting to see forklifts move huge 900 x 600 x 1500-millimetre strawbales around the site. The project included rainwater tanks, a recycled concrete slab and a worm farm wastewater system. The site incorporated a bike share scheme and council nursery. My highlight was working on the building site, helping with the strawbale walls and then rendering them.

What is your favourite sustainable building and why?
As a backpacker in my 20s I fell in love with Arcosanti, an experimental town in Arizona in the United States: a blend of architecture, art and ecology. The architecture was beautiful and had a real connection to the land. The bell that hangs in my kitchen was made there and reminds me of that special place.

What's on your drawing board right now?
We have a variety of projects both small and large, including our second EnerPHit project (the Passive House standard for retrofits). My goal is always to try and make each project as comfortable and healthy as possible. If we manage to also convert the house to all-electric operation, it's a pretty big win.

If you weren't a building designer, what would you be?
I wanted to be an air hostess when I was a kid, but I was told I was too short. I really love the garden, so possibly I'd be a landscape designer, but my garden is my respite and I would want to keep it that way. I tried graphic design, set design and at one stage I was going to be an environmental educator. I realised that I could blend architecture and my passion for sustainability into a career. I think this is what I have always meant to do.

What are you excited about for the future?
Over the years we have been encouraging clients to get off gas and move towards all-electric homes. It's getting easier as more clients are understanding the benefits and asking for it. The future is looking bright!

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a furniture and prize package from Moss Furniture, valued at $6,000.

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See **renew.org.au/prize** for full details.