

Designer demountable

LOCATION Walkerville, VIC • WORDS Fiona Negrin • PHOTOGRAPHY Tatjana Plitt



At a glance

- Salvaged prefab office buildings creatively repurposed and given a new life
- Energy-efficient holiday house achieved on a low budget
- Open living space with minimal partitions allows for flexibility in use
- Multi-function furniture can be moved around and used as sofas or beds

A canny reuse project diverted two prefab office pods from landfill to create a light-filled holiday house on a low budget.

While many of us would seize the chance to own a country holiday house, the idea didn't sit comfortably with Donna Coutts. "It seemed wasteful," she says. "It's not the most environmentally sustainable thing to run two households." Then an unexpected opportunity gave her pause.

"Two modular commercial buildings were being decommissioned," she recounts. "They were extremely robust and designed to be used as offices all over Australia, including as far north as Townsville, where there are stringent building regulations for cyclones. So they were very strong and far too good to be scrapped." Reflecting on the low embodied energy of reused buildings, Donna concluded that it "seemed wasteful not to use them."

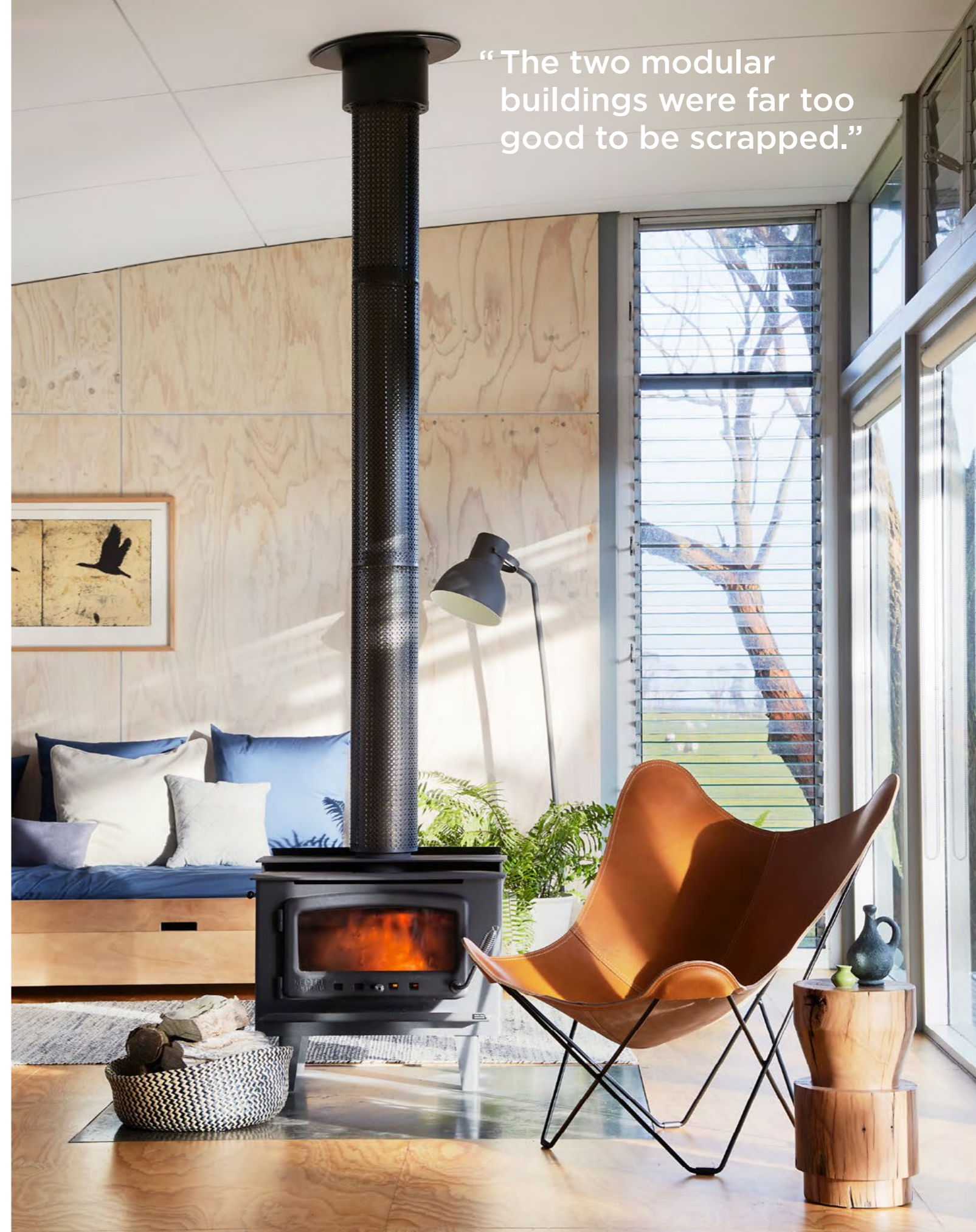
The small town of Walkerville, with a bucolic mix of farmland and small residential blocks, sits overlooking Bass Strait in south-east Victoria. Donna

owned a 720m² vacant block in the town and, after buying the two office pods, she commissioned NRN Architects in Melbourne to transform them into a holiday house on the site.

Donna had unusual ideas about the design of her holiday house: she wasn't interested in having multiple bedrooms or a distinct living area, or even much storage. She wanted to make maximum use of the prefab buildings and, where additional materials were needed, they were to be "as sustainable as possible and made to last for many generations." The space had to accommodate her large family and guests, and adapt to use over time. Because her budget was tight, expenditure had to be smart. Finally, the site had to meet BAL 29 construction standards.

→ The larger of the two salvaged prefabricated pods was oriented with its extensive glazing facing north for passive solar performance, and functions as a flexible living, dining and sleeping space. Cleverly designed furniture can be configured as sofas or beds.

"The two modular buildings were far too good to be scrapped."





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The smaller pod was placed at right angles to the main one, creating privacy from the road. It contains the bathroom and laundry and a bedroom. Each pod came with a fold-down deck.

Natasha Nassour from NRN began by considering the two different-sized pods. The smaller 20m² one had a disabled-access toilet and sink, so that part was designated as the wet area (bathroom and laundry). The office space was earmarked as the sole dedicated bedroom – being a clearly defined space, that was the logical choice. But those were the only fixed elements in the new design. The layout of the larger pod and how it would combine with the smaller one were up for grabs.

The bigger 67m² pod was oriented with its windows facing north to maximise the solar aspect, with the smaller pod placed at right angles between it and the street. This arrangement has the benefit of turning the view to the garden and nearby farmland, instead of outwards towards the street and neighbours. “When you’re inside the space you forget that you’re right on the street,” says Natasha.

When a brief calls for a flexible living space without partitions, the challenge is where to put the fixtures that need to be locked down, and how to mark out zones – even if they’re going to be mutable. For inspiration, Natasha looked to rural buildings like country halls that had a “loose way of inhabiting a space”. By placing the fireplace in the centre of the room and the kitchen on the southern wall, Natasha gained freedom to play with the rest of the large pod. She used custom joinery to make lounges that work as both beds and sofas. Mounting these on wheels was a smart way to keep the living space



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Extra sleeping space can easily be created in the main room using the moveable furniture. A reading nook is tucked in between the living space and the smaller pod beyond.

open and adaptable, and to signify zones like sleeping or living areas without the need for walls or partitions.

Colorbond steel was chosen for external cladding; it’s an ever-reliable option because of its cost-effectiveness, low maintenance and bushfire protection. Inside the house, whitewashed plywood cladding and flooring dramatically contrasts with the darkened steel and timber lining of the entry porch and hallway (with reading nook) that links the two pods. Rounding out the ESD

features, the all-electric house is powered by rooftop solar, and two rainwater tanks (a third is reserved for fire-fighting) provide potable and flushing water. With limited western and eastern exposure, and shading to the north, the house is protected from summer sun, and the fireplace and retained existing air conditioner lend extra cosiness in winter.

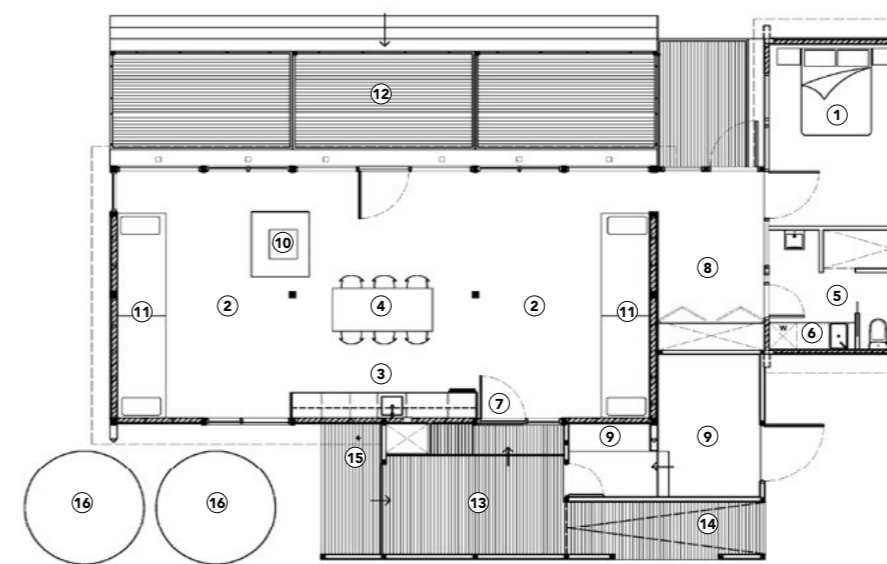
The house is notable for creatively repurposing a pair of existing buildings, almost beyond recognition. But it’s also inspiring for another, quite

practical reason. The entire cost – including purchase of the two pods and interim storage, transport and craning, professional fees, materials, appliances and custom furniture – came to less than \$200,000. It’s rare to see an environmentally sustainable design that’s essentially a new build come in at less than the cost of many home renovations, and Donna’s approach can be replicated by others looking to build a low-cost home of their own.

In avoiding the temptation to build just another “regular house”, Donna’s holiday retreat offers an opportunity for family and friends to come together and reset. She’s delighted with the result. “The spaces work beautifully. Sometimes eight or so kids all camp on the floor in the big room; other times they’re camping in tents in the backyard. The kitchen is terrific: we line up the two big tables and seat 12 or more people around them and everyone pitches in to get the food ready. Because nothing is hidden away everyone feels they can jump in and help because it’s clear where everything goes. It’s been a great success!”



FLOOR PLAN



LEGEND

- ① Bedroom
- ② Living
- ③ Kitchen
- ④ Dining
- ⑤ Bathroom
- ⑥ Laundry
- ⑦ Entry
- ⑧ Reading room
- ⑨ Storage
- ⑩ Fireplace
- ⑪ Flexible furniture (sofas/beds)
- ⑫ Deck
- ⑬ Porch
- ⑭ Ramp
- ⑮ Outdoor shower
- ⑯ Rainwater tank

HOUSE SPECIFICATIONS

RENEWABLE ENERGY

- 3kW solar PV system

WATER SAVING

- Corrugated steel rainwater tanks: 2 x 10,000L (potable water supply and toilet flushing); 1 x 10,000L for fire-fighting

PASSIVE DESIGN, HEATING & COOLING

- The design maximises solar gain with the orientation of glazing to the north, along with shading for summer
- The design has limited west and east facing wall lengths, with only one window facing west
- Tree planting is provided to the south-west orientation for shade late on summer afternoons
- Natural cross ventilation paths designed for effective night purging of heat in summer

ACTIVE HEATING & COOLING

- Woodburning fireplace
- Split-system heating and cooling (pre-existing in pods) retained and used only for supplementary heating and cooling as required

BUILDING MATERIALS

- The building uses lightweight, low-maintenance materials
- Colorbond steel wall cladding

- Colorbond Custom Orb roof sheeting for new roofs; existing Colorbond roof on pods
- R3.3 bulk insulation to ceiling + foil to roof; R2.4 under floor; R3.3 to external walls (and internal walls adjoining bath/storage)

WINDOWS & GLAZING

- Existing single glazing and floor-to-ceiling louvres retained in the pods. The specifications of the existing glazing resulted in a low (3.5 Star) energy rating for the structure, although its impact on thermal performance was mitigated by orienting the glazed wall of the larger pod to the north to maximise passive solar gain in winter, and shading it for summer

LIGHTING

- LED lights throughout

PAINTS, FINISHES & FLOOR COVERINGS

- Plywood interior wall lining and floors
- Low-VOC interior paints

OTHER ESD FEATURES

- The home has low embodied energy as it incorporates salvaged and reused buildings
- Custom joinery functions as beds at night and couches during the day, facilitating the flexible use of the building
- Portable electric induction cooktop to allow for best use of kitchen benchtop space

DESIGNER

NRN Architects

BUILDER

SJ Vuillermin Builders

PROJECT TYPE

New build using salvaged buildings

LOCATION

Walkerville, VIC

COST

Under \$200,000 including purchase, transport and craning of pods

SIZE

House: 120m² (excluding decks and porch)
Land: 720m²

ENERGY RATING

3.5 Stars; see note in Windows & Glazing. The project was approved via an alternative solution assessment which took into account its low embodied energy due to the use of recycled buildings, its small footprint, plus other ESD measures.

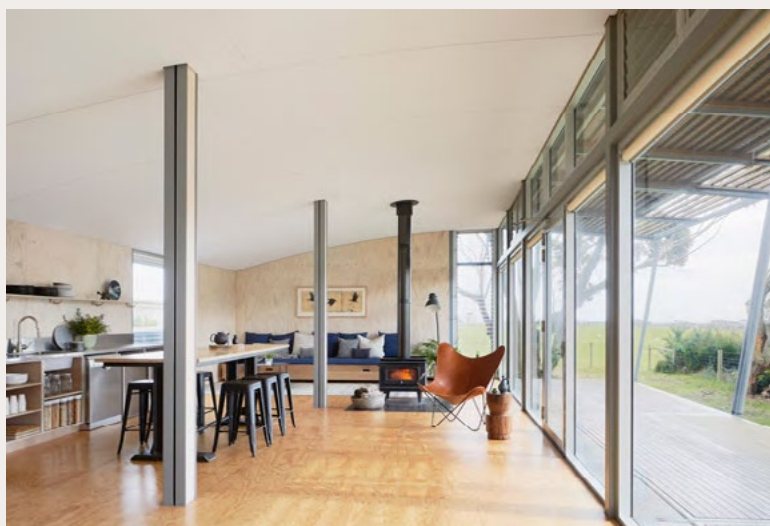
ENERGY RATER

Green Rate Sustainable Building Consultant

INSIGHTS

“Colorbond steel is cost-effective, low maintenance and offers bushfire protection.”

Natasha Nassour
NRN Architects



← As part of the build, the tired internal plasterboard and floors were replaced with whitewashed and sealed plywood.