HOUSE PROFILE
Brunswick, VIC

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AT A GLANCE

- *Small-footprint owner-built home in a suburban backyard*
- *Cleverly designed, high-performing urban infill project*
- *All-electric with 3.5kW solar PV system*
- *Private courtyard garden and green roof*



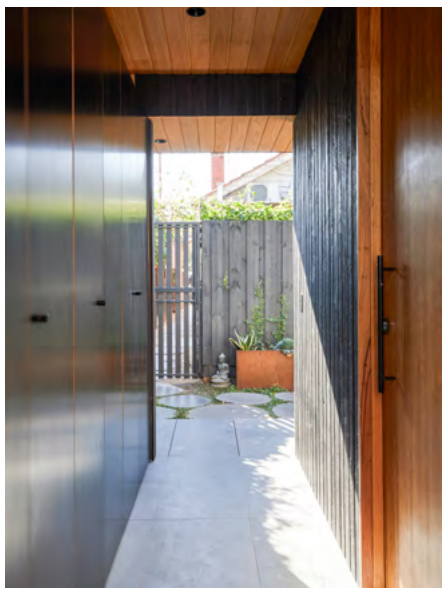
Rear vision

This innovative inner-Melbourne home not only addresses the growing need for compact yet comfortable living spaces, but also demonstrates the potential for creative solutions to urban housing challenges.





"I love a good puzzle, and the challenge of building an entire house at the back of an inner-urban block intrigued me." – Jos Tan, architect





Above An example of well-designed urban infill, the house is accessed via a rear lane, and has a private north-facing courtyard garden. **Left** The entry walkway has storage for bins and a hidden workbench. Upstairs, the bathroom window opens onto an alcove designed to let in fresh air and natural light without overlooking the neighbours. **Facing page** Terrazzo flooring in the living area provides thermal mass to capture the sun's warmth.



Michael and Claire, like many suburban property owners, wondered whether they could fit a small house in their Brunswick backyard. Claire's parents were renting nearby, having moved to Melbourne to be closer to their grandchildren. The idea of having them even closer as their kids were growing up, while maintaining privacy and independence, appealed to the couple.

It would be a tight fit on their 300-square-metre block. They floated the idea at lunch with friend and architect Jos Tan. "I love a good puzzle, and the challenge of building an entire house at the back of an inner-urban block intrigued me," says Jos, who grew up in Malaysia and Singapore where residents routinely live closer together. "I saw the project as an opportunity to add something good to the city – something that would contribute to the densification of a well-serviced suburb, and even provide a model for increasing density and housing diversity," he says.

Cycling is the fastest route into the city from Claire and Michael's house, which is also just minutes from three tram routes. Merri-bek Council, supportive of increasing urban density, gave the green light, waiving onsite car parking requirements due to proximity to public transport and bike paths. "Without that, it would've been very difficult to fit a second house on the block. We'd have had to use up a significant chunk of the footprint with a car park off the rear laneway," says Michael.

The new house sits snugly on the subdivided block, with the footprint occupying around 40 square metres of the 69-square-metre site. Its back wall is on the southern rear boundary – along the laneway – maximising outdoor space and sunlight on the north. "The design allows the living area to borrow space from the garden," says Jos.

It was important that the new house not be too visually imposing, as it faced the rear of the existing Californian bungalow at the front of the block. The new house's roof starts low and gradually slopes up towards the rear, to minimise its visual impact. Jos says this design provides enough rise in ceiling height for the upper floor to feel spacious, and optimises the roof pitch for solar electricity generation.

The kitchen, dining and living areas have been combined into a single open space to make the best use of the ground level. Upstairs, the floor area has been extended by creating a cantilever over the living space below. "This also acts as an eave to control solar heat gain in summer, and to protect the sliding door from rain," says Jos.

Balancing issues such as overshadowing neighbours while creating liveable spaces with clear views and windows for cross ventilation is all part of the job, says Jos, "as is throwing in some joy and beauty along the way." For example, the bath with its window opening onto a private nook upstairs, and the small bedroom window that looks out onto the roof garden, not only provide extra light and breezes, but "make the spaces feel special," he says.



The house has “a huge amount of storage for its small size”, with more built-in cupboards than the original house at the front of the block, says Michael. A concealed workbench and bin storage next to the entry walkway adds functionality to that space, while the built-in outdoor seats are also cabinets. The owner-builder team built deep floor-to-ceiling cabinetry through the kitchen and under the stairs, floor-to-ceiling wardrobes in both bedrooms, and a linen cabinet in the laundry space.

The construction was managed by the family, including Claire’s dad Rick, a retired builder. “We had some trades come through and they commented that owner-builder houses are always the best insulated,” says Michael. “I quite meticulously filled every tiny nook and cranny with insulation.”

Claire’s parents did move into the new home, dubbed the Back House, and the family was able to enjoy the design and build quality. “We were just really impressed by how well insulated it was, and it was also very quiet compared to the front house where we’d hear the traffic all the time,” says Michael. “It is much smaller than the older house at the front of the block, but we quickly realised that it was the nicer house out of the two.”

However, not long afterwards the family made the decision to move all together to a warmer climate. “The Back House was our trial of intergenerational living, and it cemented the arrangement as a great approach for us. We’ll probably continue to do it for quite some time,” Michael says. He and Claire sold the original house but still own the Back House, which now serves a different purpose: a much-needed rental home close to Melbourne’s CBD.

Charlotte lives there with her husband Anton, and says the design gives a sense of spaciousness to the house, which is just 58 square metres over two levels. “There’s a lot of light coming through. You feel like the patio and small garden is part of the living room, which feels amazing just to hang out in during the day,” she says.

Charlotte, from Belgium, says most rental houses they looked at when they arrived in Melbourne last winter felt cold. “Coming from Europe, in our minds Australia is warm all the time, but we soon realised that it was not, of course. The first thing we noticed is that a lot of the houses have single-glazed windows, which is not the case back home.

“When we moved in it was still winter, but I think we only used the heater once or twice, because it stays warm downstairs due to the thermal mass in the floor,” she goes on. “There’s a large window that the sun comes through, and then upstairs it just feels warm thanks to the carpet. It wasn’t easy finding a place that was good and where we could imagine ourselves living, but we’re so happy to have found this one.” S

LEGEND

1. Entry
2. Bedroom
3. Living
4. Kitchen
5. Dining
6. Bathroom
7. Laundry
8. Stairs
9. Workbench
10. Courtyard garden
11. Green roof
12. Water tank

SPECIFICATIONS

DESIGNER
Jos Tan, Tan Architecture

BUILDER
Owner-builder

PROJECT TYPE
New build

LOCATION
Brunswick, VIC
(Wurundjeri Country)

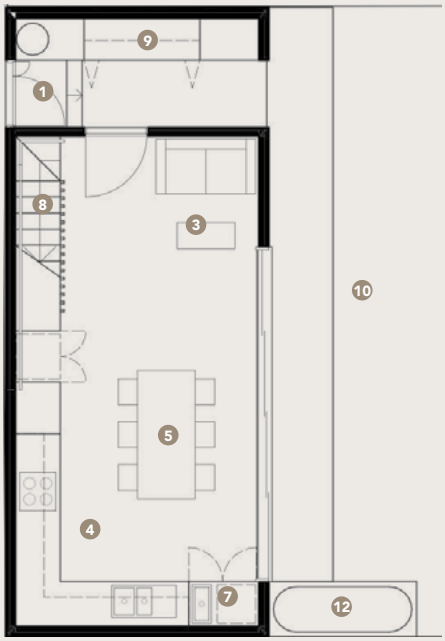
COST
$500,000
Completed 2023

SIZE
House 58m^2
Land 69m^2

ENERGY RATING
6.7 Stars

ENERGY ASSESSOR
Caleb Young, Green Rate

GROUND FLOOR PLAN



FIRST FLOOR PLAN



HOT WATER
- Rheem Stellar resistive electric system with 160L stainless steel tank

RENEWABLE ENERGY
- 3.5kW solar PV system

PASSIVE DESIGN, HEATING & COOLING
- House oriented north for maximum passive solar gain
- Upper floor cantilevered over ground floor to function as an eave shading living area in summer and protecting north-facing stacking door
- Eave admits winter sun and terrazzo flooring in the living area provides thermal mass to capture this heat and re-radiate it inside the house
- North-facing bedroom window inset for summer shading
- Alcove outside bathroom window minimises solar heat gain in summer while providing privacy and preventing overlooking into neighbouring properties, without the use of screening or obscure glass
- Well-sealed, insulated building envelope, including green roof above entry for extra insulation
- Design for effective cross ventilation

ACTIVE HEATING & COOLING
- Daikin Super Multi NX 8kW reverse-cycle air conditioner with indoor units in living area and both bedrooms

BUILDING MATERIALS
- Timber frame construction
- Reclaimed white cypress sawn-face exterior cladding from Timberzoo
- Corrugated Colorbond roof
- Concrete slab floor
- Bradford Enviroseal ProctorWrap RW vapour-permeable membrane
- Insulation: Knauf Earthwool batts (R5) to ceiling plus Knauf Space Blanket (R1.8) to roof (R6.8 total), Knauf Earthwool batts to walls (R2.7)
- Bord blackbutt veneer (FSC-certified) interior cabinetry; black formply exterior cabinetry
- Handmade cupboard door pulls, stair battens and bathroom vanity in reclaimed blackbutt

WINDOWS & GLAZING
- Double-glazed windows and stacking doors with natural anodised aluminium frames, from Finadri Windows

LIGHTING
- LED lighting throughout

WATER SAVING
- 2,500L slimline stainless steel rainwater tank plumbed to toilet

COOKING
- Westinghouse 60cm 3-zone induction cooktop
- Westinghouse 60cm dark stainless steel pyrolytic oven

PAINTS, FINISHES & FLOOR COVERINGS
- Dulux low-VOC interior paints
- Porters Palm Beach Black stain (low-VOC) to timber cladding
- Terrazzo tiles to kitchen/living area and bathroom floors from Fibonacci
- Feltex Hunter Ridge wool carpet to bedrooms

OTHER ESD FEATURES
- All-electric house with induction cooking
- Green roof above entry maximises garden area and green outlook for both Back House and existing front house
- No car parking; space for bike storage provided instead