

Pigeon pair

Two similar yet different Melbourne extensions demonstrate how clever design thinking can make the most of any orientation.

WORDS Anna Cumming
PHOTOGRAPHY Tatjana Plitt

SUSTAINABILITY MINDED HOME

buyers are generally switched on to the value of a house ‘on the right side of the street’ – that is, a house with a north-facing backyard, offering easy scope for passive solar designed living spaces at the back of the house with good connection to the garden. But for a variety of reasons, buying the ideal block isn’t an option for everyone. The good news is that with a bit of lateral thinking, great results can be achieved even if your home’s orientation isn’t optimal.

Melbourne architect Ben Callery is no stranger to the challenges of designing effective passive solar renovations on tricky sites (see ‘Beyond brilliant’ in issue 36). In the past year, two more of his designs have been completed. They make an interesting pair, demonstrating clearly how appropriately tailored design, material and systems decisions can achieve remarkably similar and liveable results on sites facing in opposite directions.

THE HOUSES

In the inner Melbourne suburbs of Northcote and Flemington, the two houses have much in common, but one significant difference: their orientation.

The home of James and Joanna and their teenage son, ‘Curvy House’ is a single-fronted Victorian terrace on a very narrow Northcote block, attached on one side and with north at the front of the house, which is protected by a heritage overlay.

‘Glide House’ in Flemington, home to Christina and Mark, is a double-fronted detached Edwardian house built on the boundary on one side and with north to the back.

THE BRIEFS

Ben explains that the briefs for the two renovation projects were very similar. “Both sets of clients wanted to keep the front half of the house and add a new single storey extension that would open them up to natural light, warming sun in winter, cool breezes and shading in summer.” They were also both looking for a solution that was more than merely pragmatic, a space that was creative and with a bit of ‘wow factor’, and flexible enough to enjoy while being

professionally productive during work hours as they work partly from home.

At Curvy House, James says that the existing lean-to kitchen was small and separated from the living room: “It was disjointed and anti-social, so we definitely wanted a more useable, coherent space. Natural light was also a really big one for us as the house was quite dark and cold, even in summer.”

Glide House featured a 1980s extension with a kitchen, bathroom and laundry on the north when Mark and Christina bought it in 2014. “We knew we could just chop it off where the original house ended and build something awesome that was better connected to the north-facing backyard,” explains Mark. Having done a lot of travelling and lived overseas, part of the decision for the couple to return home to Melbourne involved having a home that was “a bit special, exciting to come home to each night,” adds Christina.

THE DESIGN SOLUTIONS

Again, the new spaces Ben designed for the two homes are at once very similar and yet have distinct differences that respond to the site specifics. →



More than just a solution to the challenge of admitting northern light into the southern extension, the curved, ‘floating’ roof at Curvy House gives the sense of playful creativity that the clients were looking for. And although there is a study in the original part of the house, the study nook in the new living room is where James chooses to be when he works from home: “I love looking out at the sky, watching the clouds move, watching the light.”



At first glance, the roofline of Glide House’s extension is very similar to Curvy House’s, reaching up to the north to admit an abundance of natural light, and sheltering windows with sky views on all sides. But instead of a curve, here the roof form comprises two planes that twist around the central ridgeline.



Curvy House

In Northcote, the original home’s three front rooms were retained as bedrooms and a study/spare room. The fourth room, which had been the lounge, was converted into a generous bathroom with laundry, plus a separate toilet. “Putting the bathroom in the middle of the house where it’s easily accessible from both living area and bedrooms eliminates the need to spend space on a full ensuite,” Ben explains.

Beyond the bathroom, the lean-tos were removed and the hallway now leads into a light, bright extension featuring a new kitchen, dining and living space, with a study nook to the side and floor-to-ceiling glazing looking onto the small back courtyard. A dramatically curved roof seems to float above the space, as there is glazing all around, allowing north light to pour in from over the front half of the house and providing pleasing sky and cloudscape views. The light-coloured ceiling and the clients’ specification of slender black steel window frames enhance the sense that the roof is detached and floating, and the convex curve also serves to bounce daylight down into the room.

Ben says that the basic design for Curvy House’s extension was decided early. “There were a lot of constraints, which limits the possibilities. We opted to build the room to the full width of the narrow block, and made it as long as it needed to be but no more, in order to keep the backyard as big as possible. Then the only question was how to bring light in.”

The solution – the curved roof sheltering clerestory windows – appealed to James and Joanna from the start. “We could have made it a simple angled roof instead, and it would have been cheaper to build,” says Ben, “but it wouldn’t have been as poetic, uplifting. Architecture really can be about more than just pragmatics.”

Ben explains how the site’s



characteristics also determined the choice of floor structure and heating method. “The block slopes down to the rear, meaning the extension’s floor level is quite high above the ground, so a traditional timber floor on stumps was the simplest and most cost effective option. In addition, the extension’s orientation means the floor wouldn’t receive much passive solar gain, which a concrete slab floor needs to function effectively as thermal mass.” The flooring decision led to the choice of hydronic heating via wall panels.

→

1 2

At Curvy House they were very keen on the aesthetics of steel frames for their windows. Ben admits that he was cautious about using them because of a lack of information about their U values, meaning an assessment of their thermal performance was difficult. “In the end we took the view that as they are very slender and have so little surface area exposed to the outside, the thermal bridging would be minimal,” he says. The windows themselves are all double-glazed.

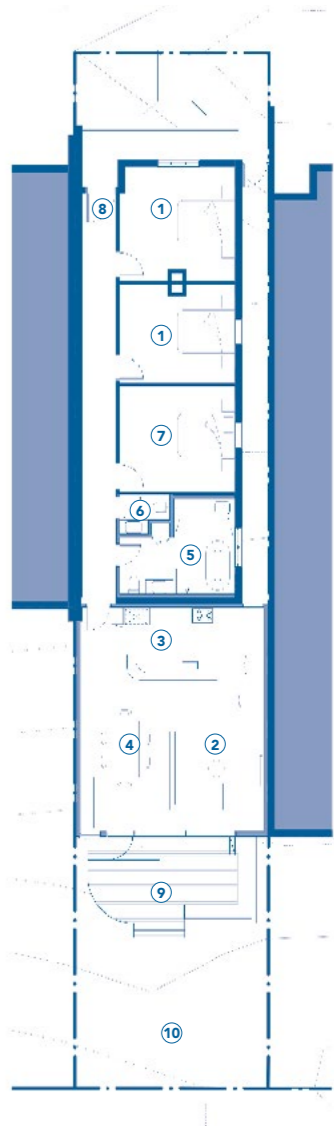


3

The existing lounge was converted into a generous bathroom and laundry, and the render on the original brick wall was stripped back to make a feature of the brickwork.



CURVY HOUSE FLOOR PLAN



LEGEND

- 1 Bedroom
- 2 Living
- 3 Kitchen
- 4 Dining
- 5 Bathroom/laundry
- 6 Toilet
- 7 Bedroom/study
- 8 Entry
- 9 Deck
- 10 Backyard



Curvy House

—Specifications

Credits	Sustainable Features		
DESIGNER Ben Callery Architects	HOT WATER <ul style="list-style-type: none">– Re-used existing instantaneous gas hot water system.	ACTIVE HEATING & COOLING <ul style="list-style-type: none">– Hydronic heating– Ceiling fans in living room 2 x Haiku 52”, 3-blade fans from Big Ass Fans.	WINDOWS & GLAZING <ul style="list-style-type: none">– Steel-framed windows with low-e coated, argon filled, double glazing, from Steel Window Design, Heidelberg West, Melbourne– LED lighting throughout.
BUILDER Keenan Built (James Glover) and Cabinetry by Moda Kitchens	WATER SAVING <ul style="list-style-type: none">– Water saving fittings throughout, including 3 star Satinjet escape shower; 4 star Porcher cygnet toilet, 3.3 litre average flush.	BUILDING MATERIALS <ul style="list-style-type: none">– Timber-framed walls with two layers of insulation– Insulation: walls R2.5 batts and 20mm Foilboard; ceiling R5.0 batts and Air-cell laminated foil; floor R2.0 rigid foam boards to old and new floors– Cladding: side walls Colorbond; rear Cypress shiplap cladding from Frencham Cypress finished with black acrylic paint.	
PROJECT TYPE Addition	PASSIVE DESIGN / HEATING & COOLING <ul style="list-style-type: none">– North-facing highlight windows to get sun into the south-facing living rooms; smaller east and west highlight windows for daylighting– Built to both boundaries and against neighbouring buildings to gain the benefit of less surface area being exposed.		
PROJECT LOCATION Northcote, VIC			
COST \$360,000			
SIZE House 146 m² Land 250 m²			
BUILDING ENERGY RATING 4.8 Star (whole house)			

Glide House

In Flemington, the wider block and north-to-back orientation afforded Ben more scope to experiment with different ideas, and the design went through more iterations. In the end, he and Christina and Mark settled on a design that retained the three bedrooms and lounge of the original house almost untouched except for a lick of paint, wall insulation, and a new east-facing window in the lounge. “The clients didn’t require an ensuite or a walk-in robe,” says Ben, “which meant we didn’t have to sacrifice a bedroom, and we could also avoid doing any plumbing in the existing part of the house – we kept just about all the budget for the new part.”

The extension, up a couple of steps from the lounge, replaces the 1980s one and

contains new wet areas – a bathroom, and a laundry with extra toilet and shower, lit by a skylight – placed in the middle of the house as at Curvy House. Beyond is a light-filled new living space with kitchen, dining area and large pantry. Stacking sliding doors open to a generous back garden. As in Northcote, the new space occupies the full width of the block, and the wider site means plenty of north-facing glass and minimal encroachment into the valuable backyard space.

Here too, the roofline soars above high-level windows (timber-framed this time) on all sides of the extension, and the overall effect is strikingly similar to Curvy House. But this roof has been designed differently, to respond to the orientation and the constraints of the side setback

requirements. It consists of two planes that meet at a central ridge, each one twisting from the front of the extension to the back. At the south, the roof planes are low, framing a small triangular window that allows for cross ventilation and views of the treetops in the park opposite the house. Here, “the roof is angled down at the corners to help block the hot afternoon sun coming from the south-west,” explains Ben. The planes rake upwards towards the north, making room for larger windows to admit natural light and winter sun, and cantilevering out over them to an appropriate distance to block unwanted summer sun. North-east and north-west corners reach upwards, “lifting the eyes of the occupant up and out to the backyard and sky beyond.” →

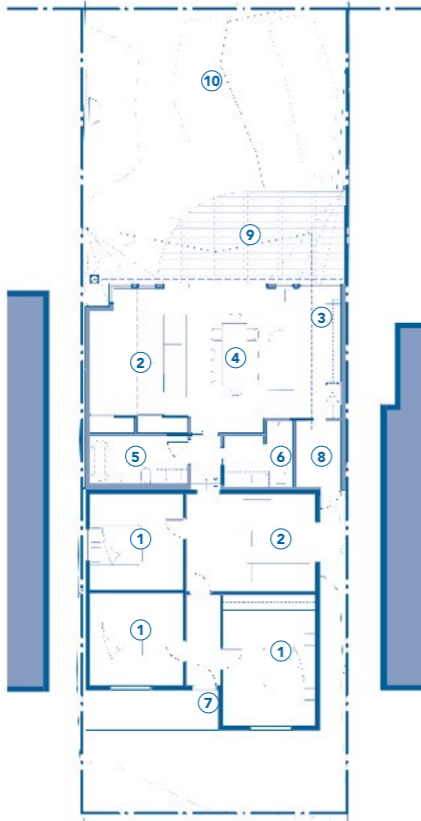


At Glide House, the roof dips down at the southeast and southwest corners and forms a triangle to the south, allowing for cross ventilation and glimpses of the treetops in the park across the road.

“The roof design really grabbed us when we first saw it,” says Mark – and they are still enthusiastic now that it’s built. “It’s a space you just want to spend all your time in,” Christina says. “It’s light, it’s warm, it has a great view of the garden. I love the view of the sky, and the treetops.”

As the orientation affords plenty of solar gain to make the most of the thermal mass potential of a concrete slab, Ben chose a slab-on-ground floor for the extension in Flemington. The choice also made sense as the site slopes upwards towards the back, meaning a timber floor on stumps would not have had enough underfloor clearance to be properly ventilated. The hydronic heating is in-slab this time, “a lovely gentle form of heating,” according to Ben. “The only criticism is that it is a bit slow to react – it can take a while to cool down if you get a warm day after a cold one, which can happen in Melbourne! But good cross ventilation can quickly balance that.”

GLIDE HOUSE FLOOR PLAN



➡ The upper windows are deliberately set at the point where the roof planes are horizontal, simplifying the window shape and making it easier to install blinds if needed.



LEGEND

- ① Bedroom
- ② Living
- ③ Kitchen
- ④ Dining
- ⑤ Bathroom
- ⑥ Bathroom/laundry
- ⑦ Entry
- ⑧ Pantry
- ⑨ Terrace
- ⑩ Backyard



① The homeowners opted for timber-framed, double-glazed windows, and a concrete slab floor for thermal mass made sense given the abundant solar gain available through the northern glazing.

PIGEON PAIR

Although they are not neighbours (in fact, the only thing that links them is their designer), these two houses form a fascinating pair. Walking from the dim older part of each house out into the new extension – one long and narrow, to the south; one short and wide, to the north – is a very similar experience. Both spaces are expansive, welcoming, light and warm on the blustery day that I visited, with a strong sense of connection to the outdoors and particularly to the sky. They obviously provide comfortable, multi-purpose living for their occupants, and there’s no doubt that Ben has delivered ‘more than just a box’ for both clients. The subtly different ways that this was achieved is a fascinating demonstration of the potential of careful design, whatever the orientation. ➡



Glide House

—Specifications

Credits	Sustainable Features		
DESIGNER Ben Callery Architects	HOT WATER – Reused existing instantaneous gas hot water system.	ACTIVE HEATING & COOLING – Hydronic heating in new concrete floor slab Boral Envirocrete, machine polished concrete with a penetrating natural sealer – Roto 3-blade ceiling fans – Reverse-cycle air conditioner in living rooms.	roof R5.0 batts; floor R1.0 rigid foam insulation under slab – Feature timber cabinetry doors and cupboard fronts and island bench in recycled messmate timber floorboards.
BUILDER Truewood Constructions, Cabinetry by Chris Cabinets	RENEWABLE ENERGY – Solar PV system planned.		WINDOWS & GLAZING – Victorian ash hardwood frames with low-e coated, argon-filled, double glazing, from Saxon Windows & Joinery, South Oakleigh, Melbourne – Strategically located louvre windows for ventilation, low-e coatings.
PROJECT TYPE Addition	WATER SAVING – Water efficient fittings, including 3 star Methven showers; 4 star Porcher cygnet toilet, 3.3L average flush.	BUILDING MATERIALS – Timber-framed walls with two layers of insulation – Cladding: rear wall Charred Blackbutt shiplap cladding from Eco Timber Group; side walls Colorbond – Insulation: original stud walls R2.5 batts and 20mm Foilboard; new walls R4.1 batts and Air-cell laminated foil insulation;	
PROJECT LOCATION Flemington, VIC			LIGHTING – LED lighting throughout.
COST \$360,000	PASSIVE DESIGN / HEATING & COOLING – North-facing highlight windows to get sun into the north-facing living rooms; smaller south, east and west highlight windows for daylighting.		
SIZE House 155 m ² Land 315 m ²			
BUILDING ENERGY RATING 5.3 Star (whole house)			