

A void between the garage and the master bedroom houses a pond to cool breezes heading for the kitchen and dining area. Custom-built, the pond is approximately five square metres and 30cm deep, complete with water plants and fish.



DIVIDE & PROSPER

Lateral thinking and design flair fit an airy and roomy house in the backyard of an inner-city Brisbane block.

WORDS FRANCENE RIDLEY **PHOTOGRAPHY** CHRISTOPHER FREDERICK JONES

SEEN FROM THE ROOFTOP TERRACE OF MICHAEL'S house on its small inner-city Brisbane block, the immediate neighbourhood is an eclectic mix of housing styles. Further afield are the jagged skyscrapers of the CBD, and in the far distance to the north there's a backdrop of mountains. Michael likes to take in the big picture from up here, and he's proud of the way his sustainably built house fits into its urban environment.

"For me, one of the major qualities of the house in terms of sustainability is how much has been achieved in a tight space, while keeping the footprint of the building to a minimum," he says. "There are three bedrooms and two bathrooms – this is quite rare on such a small block."

It's also a classic and yet relatively uncommon tale of urban infill – something that's going to need to happen a lot more often in the future to increase urban density. Michael bought the land as part of a larger block with an old Queenslander on it. He subdivided, renovated the original house, and enlisted Shawn Godwin of Base Architecture to design a new home for the remaining 229 square metres.

Shawn arrived at the final design by prioritising the passive design performance of the home instead of building to the boundary. "I thought about how best to orientate the house to get breezes and light, which meant not using every inch of land," Shawn says. "The house proves that creative compliance with Brisbane City Council's Small Lot Code can provide liveable spaces while contributing to the goal of higher urban density in our sprawling cities."

Shawn admits the orientation of the house posed some challenges: Michael's brief called for maximising the views, but the best outlook from the block was to the west. The solution was to pay a little more for solar control glass on west-facing windows and doors, coupled with battens and plantings for screening from the harsh western sun.

The shading benefits of the site's existing vegetation were also harnessed. An unusually large lemon tree sits in the western corner of the block, its leafy branches reaching high enough to shade the living room on the middle level of the house.

"The lemon tree helps to block the house from the western sun. It's also a lovely visual feature – especially from the living room at night," says Michael.

A moment of forethought when the block was subdivided led Michael to plant a row of trees along the dividing boundary between the original home and the back block instead of opting for a fence. "The trees are quite tall now and they lend a feeling of serenity to the home," Michael says. A fence, of course, would have impeded the breezes that cool the downstairs bedrooms when the hopper windows and louvres are opened.

Surveying the outlook from the living room, Michael says he can't wait to see the effect created by 12 evergreen Cissus climbers, when they eventually cover the batten screening of the balcony on the western side.

"I'll prune the vines in certain spots so you still get the view. But essentially you'll be sitting inside the living room looking at a cooling wall of green," he says. "I was going to install blinds, but instead the vines will provide natural shade."

Also on this level is the kitchen with a delightful surprise feature, a fishpond. Separated from the kitchen by a wall of louvres, the pond sits on top of the garage in a void roofed by the floor of the main bedroom upstairs. When the louvres are opened, breezes cooled by passing over the water enter the kitchen and dining rooms. With a small pump and a biofilter that needs changing only every three months, the pond's maintenance is minimal, Michael says.

It was Shawn's suggestion to put a pond in this spot and from this Michael has learnt the benefit of combining an aesthetically appealing feature with something that can provide practical benefits.

"There's nothing about this house I would change; in fact, the more I live in it, the more I understand how it works."

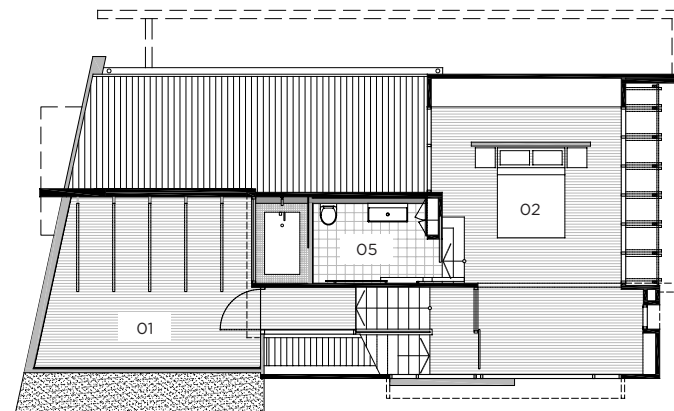
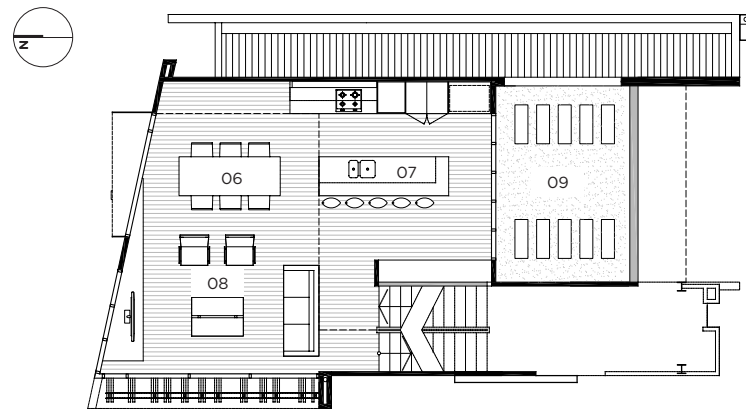
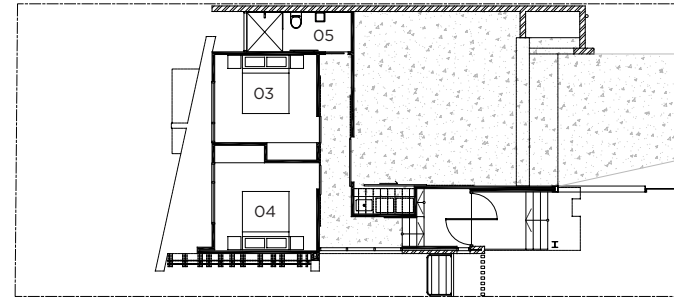


↑ Pilkington Eclipse Advantage "EverGreen" glass helps to reduce glare and keep the west-facing living room cool.



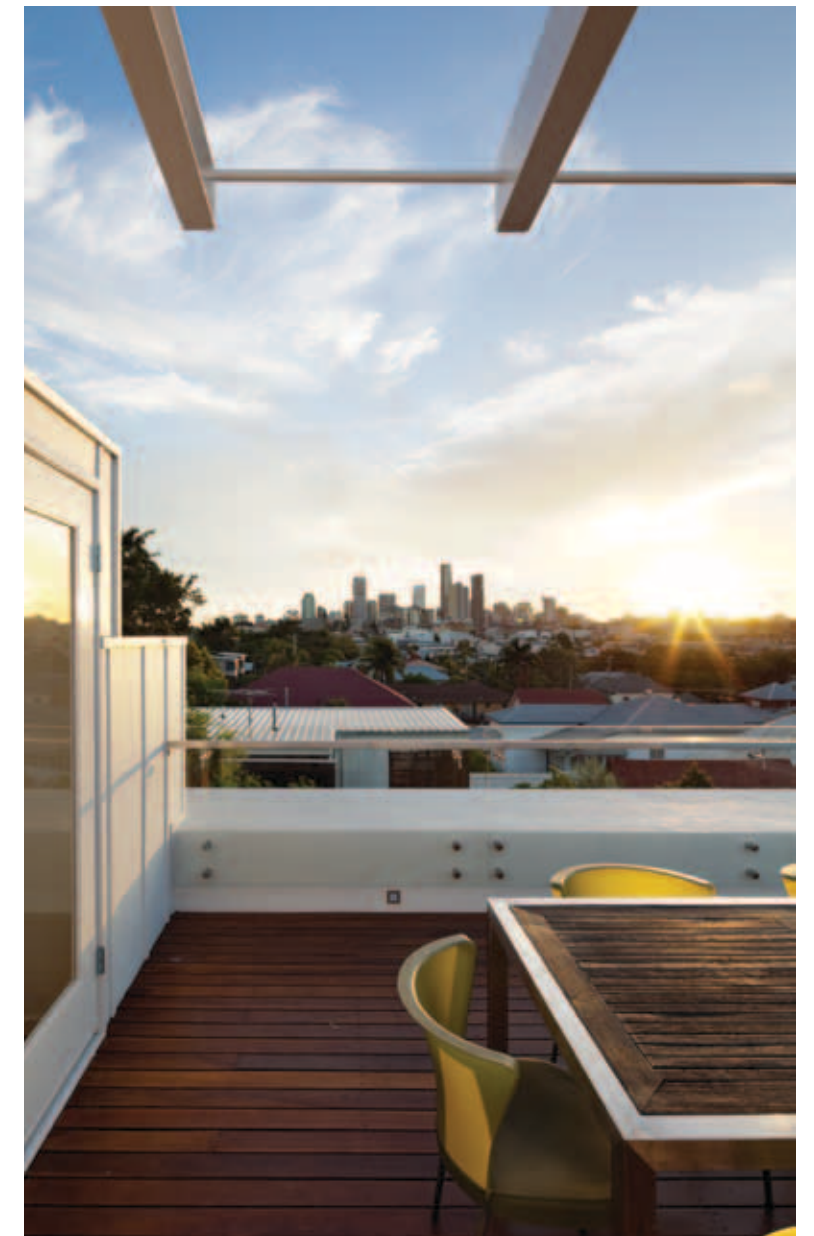
→ Adjustable Breezway louvres on each floor are the mainstay of the cross ventilation strategy.

- 01 Rooftop Terrace
- 02 Main Bedroom
- 03 Bedroom 2
- 04 Bedroom 3
- 05 Bathroom
- 06 Dining
- 07 Kitchen
- 08 Living Room
- 09 Fish Pond



↑ Evergreen Cissus climbing vines will one day cover the west-facing balcony with a natural curtain of green.

↓ A rooftop terrace is a great way to maximise living space on a small block. Michael's makes the most of the Brisbane city views. Vines will be grown over the painted steel frame overhead for shading and privacy.





Open stairwells and an open layout without hallways allow maximum airflow through the house. The stair treads are supported by steel mono-stringers with steel brackets.



“I thought about how best to orientate the house to get breezes and light, which meant not using every inch of land.”

The entire north wall is angled to preserve the neighbours’ view, and also acts as an eave to protect the downstairs bedrooms from the summer sun. An angled surround gives privacy to the low living room window. The grey CSR Cemintel ExpressWall cladding is lightweight and quick to install.



Newstead Residence

Designer

Base Architecture

—

Website

www.basearchitecture.com.au

—

Builder

McIvor Constructions

—

Project type

Urban Infill; New Build

—

Project location

Newstead, QLD

—

Cost

\$710,000

SUSTAINABLE FEATURES

Hot water

Rinnai Infinity 26+ instantaneous gas system

www.rinnai.com.au

Water saving

5000L tank plumbed into toilets, laundry and all garden taps, by PolyWorld

www.polyworld.com.au

Passive heating & cooling

- Painted timber and aluminium batten screens for shading on west windows
- Diagonal north wall provides an eave to shade the windows of the two bedrooms on the lower floor

Active heating & cooling

- Breezway louvres for cross ventilation, chosen for their ergonomic handles and robust mechanism
- Custom-built ornamental pond on middle level cools air drawn over it and into the house
- Provision for Vanguard UV guard concealed external blinds between batten screens and glass on west windows, for privacy and heat protection; not yet installed as EverGreen solar glass is performing even better than expected

www.vanguardblinds.com.au

Windows & glazing

- Pilkington Eclipse Advantage “EverGreen” low-e glass to west facing windows
- Capral aluminium frames for longevity, recyclability and low maintenance – good for upper storey windows in particular

www.capral.com.au

Insulation

Rockwool R3.0 insulation in external walls and roof

Building materials

- Plantation-sourced Queensland spotted gum for all flooring, stair treads, handrails and feature shelving. Chosen as it’s hard-wearing, handles temperature shifts well and is locally grown.
 - External cladding is a mixture of stained ECOply – resistant to termites and easy to install – and CSR Cemintel ExpressWall, an 8mm compressed fibre cement sheet that is lightweight and easy to handle
- www.cemintel.com.au

Paints, finishes & floor coverings

- Dulux low VOC paints on interior walls and ceilings
- Feast Watson tung oil based satin finish on flooring and other internal woodwork

www.feastwatson.com.au

SUSTAINABLE PRODUCTS

LOW-E GLASS

Low-emissivity (low-e) glass has a coating that reduces the amount of solar heat gain in a room, without sacrificing too much visible light transmission. According to *Your Home Technical Manual*, low-e glass can enable a dramatic improvement in both U-value (a measure of heat conductivity) and solar heat gain coefficient (SHGC). The SHGC is the proportion of solar energy that passes through a window, both directly as transmitted heat and indirectly as radiated heat. Uncoated glass has a SHGC of 0.84, but low-e glass is available with a coefficient as low as 0.03. This building used Pilkington Eclipse Advantage solar control glass in EverGreen colour, in which the coating is applied during the manufacturing process while the glass is still hot. This improves the durability of the product over coatings applied to finished glass, and allows a pane to be toughened or bent without affecting its properties. Eclipse Advantage is also available in five other colours.

www.pilkington.com