

Small, smart & detailed

Firm ideas and a collaborative effort by homeowners and architects made this small passively designed home bright and roomy.

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PHOTOGRAPHY Rory Gardiner

THIS SINGLE FRONTED TERRACE in Clifton Hill, inner Melbourne, is a classic Victorian. Built over a century ago when the fashion was for introspective homes, the home was dark, enclosed (for privacy) and small (for intimacy and reduced construction costs). Aside from the kitchen-bathroom extension added during the 1970s, little had changed since the home was first built. In 2005, Natalie and Andy bought the house with a view to transforming it into an archetypal 21st century green home: one that is bright, roomy, airy and smart – saving on utility bills year upon year.

To realise their vision, Natalie and Andy enlisted the support of Gardiner Architects in North Fitzroy, architects well versed in the design challenges posed by cramped inner-urban blocks.

Gardiner's solution was to replace the back of the house with a generous living, dining and kitchen space, and to include an upstairs bedroom and library. A glazed lightwell brings light into the original rooms of the home. High operable windows let light in and vent hot air via a 'thermal chimney' effect. Built-in shades stop heat admission in summer. →





The kitchen divides the downstairs living area in two, with a lounge on one side and a dining space on the other. Large double-glazed bifold doors and a Solatube bring natural light into the kitchen, dining and lounge.



"The most challenging aspect of this home was its lack of natural light," says principal architect Paul Gardiner. "We needed to reconfigure the spaces to make them work well, while ensuring we introduced light and air flow into the home."





The home also features a simple earth tube system, designed to push hot air away from the refrigerator. A pipe embedded into the concrete slab draws cool air from under the original house through to the void around the fridge. Warmed air exits through a tube above.

The home has been designed to passive design principles, what Amelda Cox, project architect at Gardiner, calls the “free stuff”. “The way we approach design is to make the most of orientation, light, microclimate (for cross-ventilation). We get these principles of good design right first then guide our clients through the decision-making process for design features such as solar, glazing and cabinetry – based on budget and need.”

“We know that many of our clients want sustainable design features,” adds Paul. “One of the ways our practice has changed over the years is that we now work to integrate sustainable features into the home from the get-go. They’re not plonked on the top as an afterthought.”

Natalie and Andy agree with the importance of thrashing out what you want early in the process. Andy advises would-be renovators to consider which spaces they’ll spend the most time in, and think about how to heat them. “Invest in the focal point,” Natalie adds. “We invested in the cabinetry. Our bamboo benchtops have amazing detailing. The joinery part of the budget was probably higher than would be typical for a similar-sized project but

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Sustainable design principles and features were incorporated from the beginning of the design and build process to transform this century-old terrace into an archetypal 21st century green home – one that is bright, roomy, airy and smart.



① Double-glazed skylights bring natural light into the upstairs bedroom and library. The skylights are electronically openable by remote control, have a rain sensor and an internal blackout blind. A David Trubridge Coral pendant with a compact fluorescent bulb hangs over the bed.

② A small upstairs deck is a quiet space for retreat. Recycled spotted gum decking has been finished with a Livos natural oil.



③ Throughout the build, materials were chosen for their long life cycle. A tallwood timber feature stair complements bamboo floorboards.



it was crucial to the project's success. It's amazing how many people comment on the cabinetry."

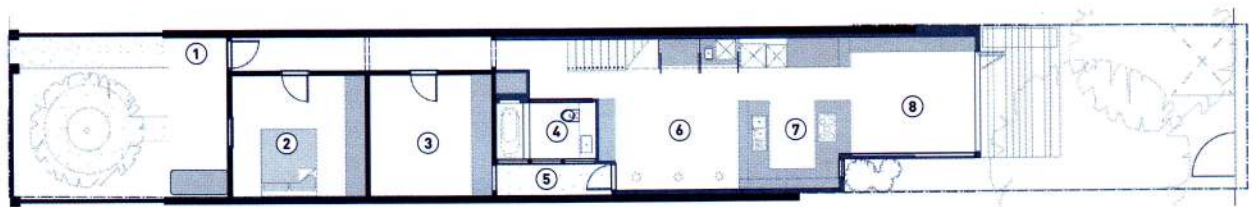
The couple had firm ideas of how they wanted the floor plan laid out so Gardiner's openness to Natalie and Andy's different ideas was the clincher at their first client meeting. "We had a very strong idea of what we wanted. They had to 'get' the vision in order for us to want to meet them a second time!" laughs Natalie.

"The downstairs area was designed with the kitchen in the middle of the living

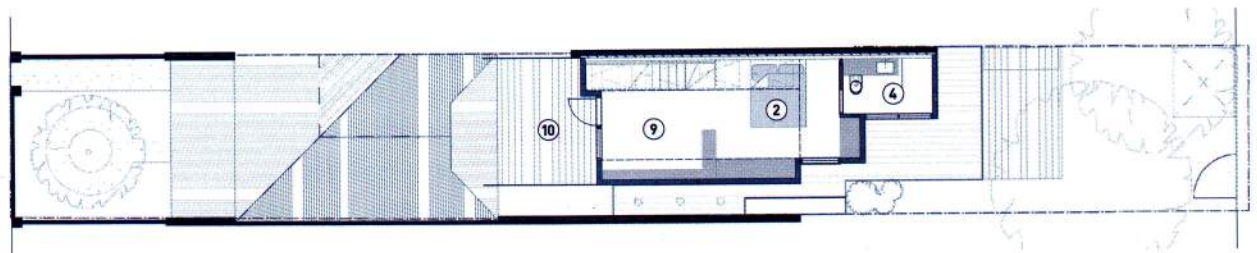
and dining space, to both separate and connect the areas," says Natalie. Paul says this approach is contrary to the way the architects usually approach space planning: "We tend to orient the living spaces to make the most of the garden."

"Our clients were very passionate about this project and we loved that," adds Amelda. "They were engaged and committed from the outset. It was a collaborative process and the design has benefited through this working relationship enormously." 5

GROUND FLOOR PLAN



FIRST FLOOR PLAN



LEGEND

- | | |
|--------------------|-------------------|
| ① Entry/Porch | ⑥ Living |
| ② Bedroom | ⑦ Kitchen |
| ③ Study/Guest room | ⑧ Dining |
| ④ Bathroom | ⑨ Sitting/Library |
| ⑤ Courtyard | ⑩ Deck |

Clifton Hill extension

—Specifications

Credits

DESIGN

Gardiner Architects

BUILDER

Adma Group

PROJECT TYPE

Extension

PROJECT LOCATION

Clifton Hill, VIC

COST

Approx. \$550,000

SIZE

House 135 sqm (floor area),
land 180 sqm

Sustainable Features

HOT WATER

- Apricus 30 evacuated tube solar hot water system with a 315L stainless steel tank and a Rinnai S26 booster.

RENEWABLE ENERGY

- 1.8kW solar system, including 8 Hyundai HiS-S225MF panels and an SMA inverter from G Store.

WATER SAVING

- An existing 700L tank in the front yard was retained to capture rainwater from the front of house for the front garden
- Rainwater captured from the rear of house is stored in a Tankmasta Bagel Toroid 5000L underground tank. A Vada Rain2Main controls reticulation back to the toilets, washing machine and garden.
- Water-efficient fittings and tapware throughout.

ACTIVE HEATING & COOLING

- Reverse-cycle air conditioner
- In-slab hydronic heating.

BUILDING MATERIALS

- Colorbond corrugated sheet in shale grey
- Recycled spotted gum decking from Shiver me Timbers
- Sugar gum shiplap cladding boards from SmartTimbers
- Ground floor concrete slab

with perimeter and underside polystyrene insulation

- Walls insulated with 15mm Foilboard or Kingspan Aircell sarking with R2.7 Bradford Gold Batts
- Roof space filled with two layers of R3.5 batts with reflective Aircell sarking under metal roofing
- Acoustic batt insulation in the ground floor ceiling.

WINDOWS & GLAZING

- European Window Company uPVC double-glazed windows with low-e film
- Breezeway louvre units in Euro frames with low-e film
- Velux VSE double-glazed top-hung skylights are electronically operated, remote controlled, have a rain sensor and internal blackout blind.

LIGHTING

- Solatube 160DS with Vusion diffuser provides additional light to the living area
- Feature lights:
 - Toss B Sphere with a compact fluorescent bulb
 - David Trubridge Coral pendant and 'Reed' pendant with compact fluoro bulbs
 - Tivah Wall Lights above the bed have LED fittings.
- All other downlights have LED fittings.

PAINTS, FINISHES & FLOOR COVERINGS

- Godfrey Hirst Carramar peat carpet
- Prefinished bamboo floorboards
- Bamboo kitchen benchtop and living room unit finished with Livos Kunos countertop oil
- Factory painted joinery
- Livos Alis decking oil to decking and cladding.

OTHER ESD FEATURES

- Mini earth tube system around the fridge drags cool air from under the house to circulate it around the fridge, and takes hot air out through a tube in the floor space and outside
- Materials were chosen for their long life cycle
- East-west orientation means the front of the building shadows itself from hot western sun
- Louvres and folding doors to maximise cross-ventilation
- The thermal mass of the double skin brick walls helps the building run more efficiently.