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Experiments in Space

Seeing the “before” and “after” shots of Peter Dann’s newly renovated Victorian terrace in Melbourne’s inner north, it’s hard to picture the place as home to a young family for years. When Dann first got his hands on this place three years ago it was a dark, south-facing, one-bedroom house crammed onto a 96-square-metre block on the side of a laneway with problems of graffiti and anti-social behaviour. The original floor plan was a classic of its day: living room and bedroom at the front of the house under a hip roof; kitchen, bathroom and laundry at the rear in a skillion-roofed structure. Needless to say he bought it with renovation in mind. “Because it was so small nobody else was interested in it, but I could see its potential,” he says. Dann’s plan from day one was to create a demonstration

When architect Peter Dann snapped up a tiny corner terrace in Melbourne three years ago he had one big idea in mind. Without increasing the home’s overall footprint, he set out to test the limits of useable space on a postcard-sized block. The end result is richly productive inside and out, as Kath Dolan discovered.

house of sorts, and he started as soon as settlement was completed. “I wanted to learn on this job rather than learn on others,” he says. He was keen to see how much useable space he could eke out of a small home and tiny block without increasing its overall footprint. He deliberately designed with future occupants in mind: a couple perhaps, or a young family happy to count nearby parks and public gardens as outdoor space. He also had some clever materials and technologies in mind to road-test, including corrugated cladding made from recycled sawdust and hydronic heating that uses →

The assertive new upper level sits comfortably in a laneway punctuated by two-storey structures including former stables. **opposite page** Dann kept costs to a minimum by building as much as possible himself and reusing timber from original joists and rafters for features like fences and screens.

copper rather than steel radiators to allow the use of regular (in this case solar) hot water to pre-heat the system for added efficiency.

Dann's loose budget was modest but feasible given his commitment to minimising materials, re-using as much as possible from the demolition of the interior, and doing much of the building himself. "I'm quite good on the tools so I actually did a lot of the building work," he says. "I laid all the bricks ... all the door frames, architraves, and skirtings I did, the tiling in the front ensuite, all the little bits and pieces in between. I did some of the external painting, all the latticework in the backyard. The timber that's in (the side gate) and screen is the joists and rafters from the roof ... and I built that, and the fence."

The small scale demanded a straightforward design scheme predicated on relocating the front entrance to the side. "I'm still ambivalent about it to be honest," Dann admits. "It's a way of making the house more space-efficient but having to give up your front entrance for it - I'm still not so sure. There's something quaint about a Victorian veranda."

The original front door - painted bright blue for extra emphasis - was retained as a signature of the original Victorian façade, but a printed sign leads visitors around the corner to the side lane. A new entrance opens into a compact living area at the rear. To the left is a simple kitchen and meals area carved from what was once the bedroom, with a small Euro-style laundry tucked behind the poplar veneer cupboards. Beyond that is a bedroom Dann currently uses as a sitting room. With future occupants in mind he has added a small ensuite into what was once the entrance hall.

To the right of the central living room, glass doors open into a delightfully verdant, north-facing courtyard garden whose trellised walls are ripe on three sides with produce: climbing passionfruit vines, persimmons, nectarines and lemons. At ground level there's a three-metre-long garden bed tightly packed with an abundance of herbs and veggies including tomatoes, zucchini, eggplant and pumpkins. Tucked in beside this is a five-square-metre chook run - with mezzanine level, as Dann proudly points out with a burst of laughter. It's home to three Bantams so pretty they look like they've been illustrated by hand. They're an experiment Dann's clearly enjoying, and they have the run of the garden by day while he's at work at the North Melbourne practice he runs with partner Craig Perry.

Upstairs Dann has added a small upper storey for a new master bedroom with study nook and ensuite. Outside there's a small timber deck with access to a rooftop water tank fed by a pit below, and a cubby style ceiling "shed" that houses Dann's neatly boxed collection of tools. Plans are afoot for a framing system for the box gutter to accommodate planters, and there's a low, steel-framed bench seat under construction too. Dann nominates the views from the rooftop, particularly of New Year's Eve fireworks from the nearby city, as a highlight of his redesign.

The upper storey is linked to the living room below via an elegant staircase made from a six-millimetre-thick piece of steel, bent and welded into shape. The outer side is suspended by thin cables from a beam above; the inner side is bolted to the living room wall. Beneath the staircase is a spacious cavity into which Dann has tucked a media unit. "I just wanted to build a staircase with the absolute minimum of materials and to maximise the room underneath," he says. "This whole job's about maximising useable space."

The cladding on the upper storey was as experimental for Dann as the chooks. It's made from lightweight Onduline, recycled sawdust →





Aiming for minimal materials and maximum space, a staircase of bent steel suspended by thin cables from an overhead beam accommodates a media unit in the cavity below. **opposite page top** The cantilevered upper level creates summer shading for living room glazing below. **bottom** Relocating the front entrance to a side lane optimised floor space inside and allowed the inclusion of a dining area within the new kitchen.

sheeting bound with bitumen. "The manufacturers claim they recycle 200,000 tonnes of sawdust a year," Dann says. "Another architect I had working in my office was aware of it and I tracked down the supplier. I've never seen it before on any other building. It's used a lot in Europe and, I believe, in New Zealand as well, and it's actually been around for a long time." So far at least, Dann's a fan. "It's light, you can cut it with a hand saw, the fact that it's a recycled material is the attraction but it's got deep corrugations which give a good effect and it seems to be perfectly waterproof. It probably will fade ... but it's paintable and comes in four different colours."

Even as a former municipal councillor well versed in both sides of the planning process, Dann found planning on this project to be arduous and protracted. Spending more than a thousand hours of his weekends over two years working on the place and living on-site throughout proved to be something of a trial, too. "It was tough, I'm just getting too old for it," he says with a laugh. "I won't do it again." But he's clearly pleased with the results.

He admits there are a few little things he'd change if he had his time again. "I didn't do double glazing, what I did do was use laminated glass ... mainly because it's hard to double glaze double-hung sashes," he says. "But I've since figured

out a way to do it. Probably all my jobs from now on will use double glazing."

He's pleased to have achieved his goal of "nutting out" technologies like the solar pre-heated hydronic heating panels and lighting that illuminates the place with a combination of LED and compact fluoros totalling just 200 watts. The one-kilowatt solar array on the rooftop has more than met his electricity needs so far, too, and should in theory provide a quarter of an average family's requirements.

Dann also hadn't predicted such a positive impact on his surroundings. He was always confident the contemporary side façade of his rear addition would complement its streetscape. "It actually sits quite well because of the two-storey nature of the lane," he says. "It's in the same rhythm as the two-storey stables buildings. And also, where the deck is, there's a sort of separation between the front roof and the two-storey section, so it really does everything right from a heritage point of view." But he didn't anticipate the more obvious presence it creates on the side lane would help reduce graffiti and problematic behaviour in the area, nor that locals would show such an interest in his personal experiment.

"Even now," he says, "the project continues to generate positive comments from neighbours and passers by."





top left A 1200-litre corrugated slimline tank on the rooftop supplies water to the toilets and laundry, while a 1300-litre tank in the courtyard below services the garden. **right** The north-facing rear garden was one of the initial attractions of the property to Dann, who saw potential for a simple, space-creating makeover. **bottom left** Dann's pretty Bantam chooks roam freely by day in the compact productive garden, which uses walls, as well as a tightly packed garden bed, to grow an abundance of fruit, veggies and herbs. **right** With no room for a garden shed at ground level, Dann carved a cubby-style ceiling space into the roofline to accommodate his neatly boxed collection of tools.



Specs:

Architect

Craig Perry Peter Dann Architects

Owner-Builder and Project Manager

Peter Dann

Structural Engineer

Mark Hodgkinson

Passive solar design

The interior was redesigned to orient the living area to the north and minimise windows to the east and west. A new upper story overhangs the ground floor windows below to provide summer shading. Internal thermal mass is provided by polished concrete slab flooring. The upper storey maintains a comfortable temperature via a ceiling fan and cross-ventilation.

Materials

Existing materials were re-used wherever possible. Bricks salvaged from demolition works at the house were re-used on the project. Original Oregon roof framing was re-used for the side gate and timber screens. Baltic Pine flooring was re-used in the kitchen and hallway. Original materials and fittings not required were either sold on Ebay or given away, which minimised landfill.

All timber used is either recycled or plantation. The first-floor decking and seat are recycled Blackbutt. First-floor cladding is Onduline (made from waste sawdust and bitumen) from Composite Systems. Windows are custom made KDHW frames with 6.38 mm laminated glass from Williams Joinery.

Insulation

Ceiling insulation is R4.0 Pink batts, 75 mm R1.8, Permastop foil faced blanket insulation directly under roof sheeting. Wall insulation is R2.5 Pink wall batts. All 70% recycled material.

Water

Rainwater is collected from the whole roof into two tanks. A 1200-litre corrugated Zincalume Slimline tank from Tankworks supplies water to the toilets and laundry via a Davey submersible pump and Rainbank diverter. A similar 1300-litre tank in the courtyard is connected to the garden irrigation system. To date water use is around 87 litres per day.

Lighting

Lighting throughout is either LEDs or compact fluoros with a total installed capacity of just 200w. Pendants are Stella by Ism fitted with CFG lamps. First floor down lights are Brightgreen D900 16watt LEDs. Both are from Richmond Lighting. Wall washers, ground floor down lights and landscape spotlights are all LEDs from Superlight.

Heating

Space heating is by solar pre-heated gas hydronic. Greenheat Hydronic panel heating from Hydrotherm uses a Rinnai Infinity 26 boiler, which also acts as the booster to the solar hot water system. The solar hot water system acts as a pre-heater. Water heating is by gas boosted solar panel. Hot water is provided by a Rinnai Exelsior panel and close-coupled, roof-mounted Beasley 180-litre SS storage tank. The system is boosted by the Rinnai Infinity and was supplied by Insolar. To date gas usage is close to zero in summer.

Electricity

The 1.08 kw grid-connected photovoltaic system on the roof is from Braemac. Panels are from Sharp and the inverter is by PV Edge. To date, in about 12 months, 1963 kw of electricity have been generated, of which 1217 kw have been supplied to the grid.

Garden

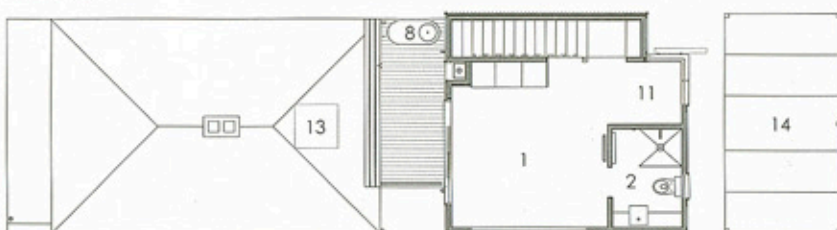
The small rear garden supplies an abundance of fruit, herbs and vegetables via climbing fruit trees and a three-metre long veggie patch. A five-square-metre chicken run complete with mezzanine accommodates three Bantam chickens which are yet to lay but help divert food scraps from landfill and improve soil fertility.



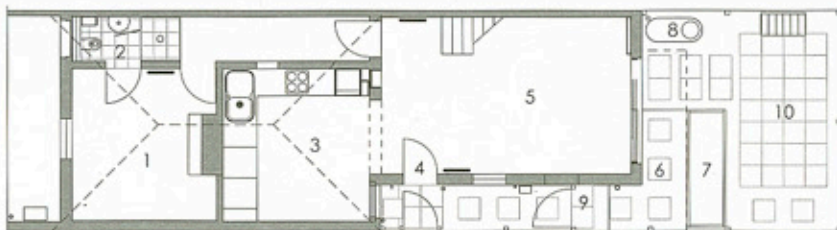
East Elevation



First Floor



Ground Floor



- | | | |
|------------------|-------------------|-------------------|
| 1/ bedroom | 6/ hen house | 11/ study |
| 2/ ensuite | 7/ veggie garden | 12/ deck |
| 3/ kitchen/meals | 8/ rainwater tank | 13/ roof storage |
| 4/ entry | 9/ store | 14/ pergola below |
| 5/ living | 10/ courtyard | |

