



# Open house

*Solar home where walls disappear*

BY SHARYN MUNRO

When you're building at the head of a valley that's filled with ethereal mists of a morning, or with sunshine turning the dams to shining eyes of tree-filled reflections – naturally you want to see it as much as possible. So Annie and Chris designed their home with as few solid walls as they could structurally get away with.

On their 40-hectares in the NSW Hunter Valley they had first built a large carport/storage/workshop shed, which included an enclosed and lined 5x8m weatherboard section. Tradesman-built to lock up stage, they then did all the internal fit out themselves, which is so good that the word 'shed' seems inadequate.

Given that they were to live in it for the next two years, they made it very comfortable, adding a small solar power system. Six large matching and screened western red cedar wind-out hopper windows were picked up second-hand; Annie spent three days de-nailing

lining boards from an old house; the concrete slab floor was stained with Black Japan (a black bitumen-based coating traditionally used for decorative painting of timber and ironwork) and then coated with an acrylic sealer. It all looks very finished and attractive – and un-shedlike.

The shed took three months; they moved in just as the settlement and moving out date fell due for their previously sold house. They had requested a long sale settlement so they could build the shed while still having somewhere to live. As this sort of time juggling is always a worry, meeting the deadline was an extremely welcome result.

## A tailor-made house

The couple had spent about five years thinking about their needs and wants, and designing a house that was closely tailored to their own lifestyles as

well as to the site. Annie was confident about owner-building it, since she had been involved in six other building or renovation projects, and was also an astute finder and collector of second-hand building materials. She drew detailed plans and took them to a structural engineer to have them professionally drawn up and checked.

What they'd designed was a very open, two-bedroom, double brick house, 17 x 11.5m, with 2.7m wide verandahs all round, screened on three sides and accessed via multiple bi-fold glazed doors. The central 6.1m high hip roof is supported on the external load-bearing walls and a steel ridge beam that rests on two steel posts. They wanted the large living area to be open to the roofline, with only a small loft area enclosed – no trusses.

Not all owner builders can do the major structural work themselves, and it is often hard to find a builder willing to travel to a rural site, let alone one willing to build as and what is wanted. Annie and Chris were able to secure the services of Master Builder, Ken Proctor, whom Annie had used once before – and this proved entirely worthwhile. It can be far more expensive in the long run, in Annie's experience, to use cheaper tradesmen.

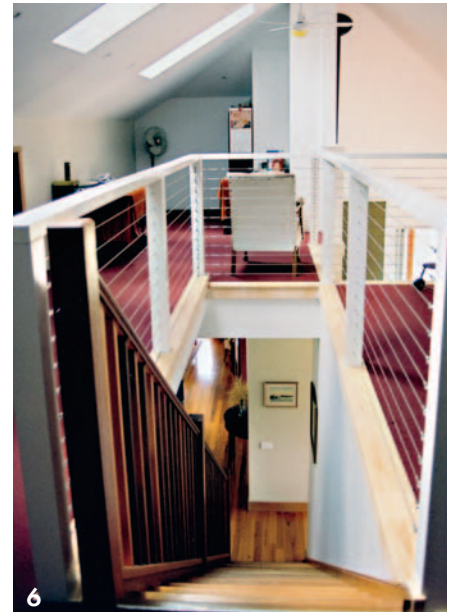
With termites and fires in mind, bearers and piers are all steel, and all accessible. The subfloor is totally clear and visible. A crane was needed to raise the steel vertical posts and place the ridge beam. As Annie was working on site every day, she could direct deliveries, for example of the bricks, to where they would be most efficient to use without double handling.

*As open-plan living as possible, while still pretending to have walls.*





PHOTO: ANNIE & CHRIS ARCHIVES



1. Large dam beautifully mirrors house and 'shed' (left) and bush setting.
2. Southern main entry and partly unscreened rear verandah.
3. Step guardians enjoying the sun on the screened northern verandah entry.
4. Main bedroom is also open to the verandahs and the views.
5. Fake fireplace stores wood for Loppi heater with super tall flue.
6. Skylit loft provides study/office areas and storage.



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7. With views like this, see-through walls were a must-have.

8. Ancient marble tannery basin lives again.

9. Liberated cook's kitchen – and pampered pooch bed.

10. Wonderful disappearing glass doors glide easily.

11. Hall behind 'fireplace' faces rear entry doors.

12. Beautifully floored screened front verandah.

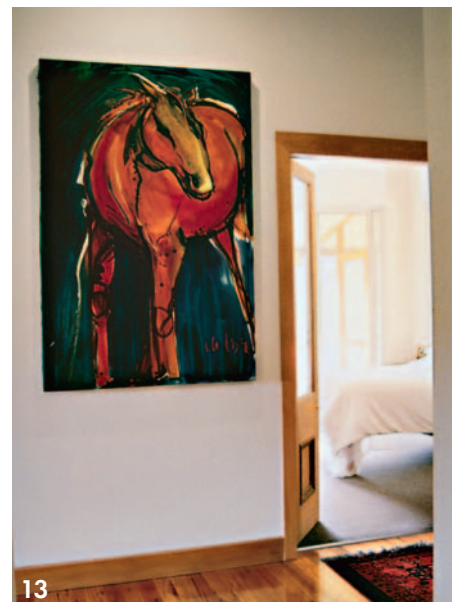
13. Artworks glow in light-filled spaces.



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Local Rob Johnson laid all the bricks except for the footings by himself. As they were sandstock and thus oddly sized, this was quite a challenge. Annie wanted double brick cavity walls for their strength and insulation qualities – and because ‘brick veneer just wouldn’t feel right.’ The house has obviously been built to the highest standards in materials and workmanship – it’s to be their home for a long time, so it has to be right.

## Of glass and sunshine

Because this house is designed around glass, it was a huge benefit to have picked a terrific supplier, Langford Windows. Annie can’t speak highly enough of Ken Langford, who worked with her on their needs over two years, and whose staff have returned four times to check all is well.

There are only four actual windows in the house, and these are *Clearvent* counter-weighted frameless sashes, as are the laundry and bathroom glazed doors. The majority of glazing is in the wonderful bi-fold doors that create the seamless indoor-outdoor look and feel, and which Annie says they keep open all day. Although, since they only moved in last spring, in October 2006, they have not yet been through a winter in this inevitably frosty valley.

Yet with the house facing north, and so much glass, the sunlight will stream in. This will be maximised by the *Vergola* louvred roof panels on the verandah, which can be manually operated to open and let in winter sun or to close against summer heat, and which automatically shut if it rains. The aluminium blades are insulated and there is a hinged screened panel below which can be dropped down for cleaning. Also on the northern roof are the eleven solar panels that make this house power self-sufficient.

As the roof of the house is galvanised iron, the half-round guttering had to be of the same material to avoid corrosion, and this had to come from South Australia. The couple like the idea of the iron weathering to a dull grey. With the aluminium mesh-screening cutting out the external visual impact of glazing, the whole house will then be very unobtrusive in the landscape. Those flat, screened sides will also help it survive a bushfire.



*Above: Seamless outlook from kitchen area – note adjustable louvre verandah roof panels. Right: Screens help house blend into landscape.*

## Timbers matter

One of Chris and Annie’s particular insistences was that the verandahs be floored with tongue and groove boards, not decking. They were aware of maintenance problems from weather coming through the screen walls, but wanted the floor to visually flow from inside to out. A slight slope will help any water drain away and Annie is prepared for re-oiling more often.

Annie sourced, bought and stored all timbers except the invisible structural ones. She had the 150mm square Australian hardwood verandah posts milled three years before and stored them. Blackbutt was used for flooring and spotted gum for the panels above the glazed sections of wall. All windows and doors are second-hand treasures found by Annie over years. They have not been fully stripped or sanded and Annie is now inclined to leave them as they are, partly because she likes the look – but also because she is ‘over’ such effort.

She did all the internal timbers’ planing and finishing, including making the mouldings herself. Skirting boards were made from old tongue and grooved 13mm thick lining boards; Annie planed the tongues off and made a bevel on top by eye. Internal timbers were treated with *Ardvos* natural oil, which she says worked fine on vertical timbers but not so well on the floor, where it seemed to remain sticky, and



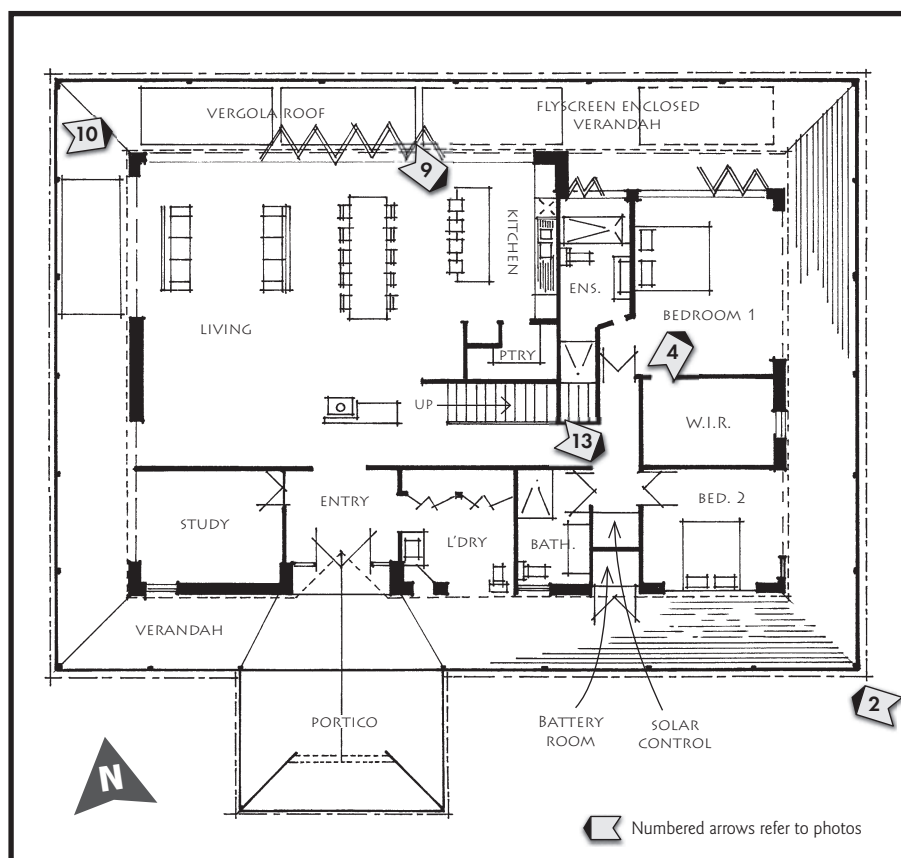
to which she has subsequently added a *Feast Watson* floor wax.

Except for the high living room ceiling, she and Chris did all the internal painting, using natural or *Porters’* paints throughout. For the same height reason, they had the plasterboard professionally done.

Once the main building structure was complete, their builder had to leave to start another house so a nearby carpenter, Brian Sutherland, came to do the many extra things still remaining, such as the screen framing and the timber-framed screen doors that lead to the unscreened end of the verandah.

## A cook’s kitchen

The kitchen is one with the living and dining area – and with the outdoors. It wasn’t easy to have two windows at the corner next to her sink area, due to the difficulty of making such narrow structural brickwork – but



View from verandah window into ensuite bathroom with open shower.

as a keen cook Annie knew she'd be there a lot and didn't want to miss out on her valley views.

A large walk-in pantry is accessed by a second-hand door, set in the 'gabled' architrave pattern that Annie has used throughout. It is next to the alcove built to hold the fridge. Another small alcove at the end of the main bench holds an antique Mixmaster and toaster. This is a carefully thought-out kitchen.

She built the kitchen herself, buying a flat pack for the basics in Sydney and trailering it home to put together. Once they were done, she organised for the one-piece stainless steel bench top and double sink to be measured on site and made in Newcastle, the green glass splashback from the Central Coast, the Corian island bench top from Sydney. It all works beautifully, she says, except for the brushed stainless steel drawer and cupboard handles which, unlike a 'D' pull, have protruding ends – to catch on clothes.

## Open bedroom

Handy to the kitchen, the verandah extends to nearly three metres for outside dining. This area is also adjacent to their bedroom and ensuite.

The main bedroom has only two walls that they can't see through, one of which holds a capacious and well-designed dressing room, with open shelves and hanging space.

As well as all the fresh air, this is a health-conscious bedroom, with natural citrus-oil based white paint used, and a special carpet imported for them from England. Made from the wool of Jacob sheep, it is the fleece's natural grey colour, undyed and chemical-free, over a pure wool underlay. It feels soft but firm under bare feet.

Travertine skirting boards form a link with the adjoining ensuite bathroom, which is fully travertine tiled, floor to ceiling, continuing through the open shower recess. The room is dominated firstly by the view through the tall windows beside the deep oval bath – but then the eye adjusts to the light and registers the large rectangular basin.

It's spectacular, unique, carved out of a single piece of greyish Carrara marble (white or blue-grey marble from Italy). Annie found it in a demolition yard, half-buried in the dirt. She had the worst ground off it and then finished it with wet and dry sandpaper. Pointing to wear marks from rubbing

and pitting and runnels from acid, she thinks it must have been a tannery sink and estimates it to be about 300 years old. As it weighs over 100kg, special studs had to be put in the wall to take supporting brackets, so it would not be spoiled by a visible stand.

Old French doors lead up the hall, past a pantry-type linen cupboard where the shelves wrap around for accessibility, to the spare bedroom, guest bathroom, and solar control cupboard. The latter backs onto the battery storage, which is accessed from the southern verandah. Both bathrooms have hobless shower recesses as Annie designed the house to be wheelchair-friendly.

Timber stairs lead to the loft, which has carpeted study areas for both Annie and Chris and lots of specific under-roof storages. Three opening *Velux* skylights maximise natural light and fans relieve any heat, but roof insulation was not skimped – polyester insulation plus *Air-Cell*. Loft railings are simple stainless steel wire and white painted timber.

From up here the view across the open living space emphasises its height, with the 6m high black chimney flue dominating. They had wanted a mantelpiece, so built a fake chimney adjacent to the *Lopi* slow combustion heater. This serves as wood storage. A large slab of polished black granite extends beneath both as hearth.

## Protected by fairies

At the southern 'rear' of the house is the main entry, protected by a large portico. This leads onto the verandah, which is not screened on this side. A pair of leadlight doors open to an inner entry hall, off which branch the study and laundry. On either side of those external doors are inset two slabs of sandstone, whose natural markings have been enhanced by being carved into fairies' wings, symbolising the name of the house 'Iolanthe' – Queen of the Fairies. The slabs go right through the walls so are visible in laundry and study.

Annie tells me that the missing laundry door is an old cedar one that is currently off being painted – with fairies.

They are self-sufficient in water and power. A 40,000-litre concrete tank was poured on site in an excavation near the house, the removed dirt being used as fill on the track. There is another 20,000-litre tank up the hill for gravity feeding to gardens, and this one is filled by pumping from the dam below. There is also a 40,000-litre tank for the shed.

The solar system designed by Dave Bartley works so well that they have never used the backup generator. Dave says the system is a simple one, which means it's more reliable. He suggests that its design was helped by Annie and Chris knowing what their needs were, and being willing and able to monitor it. After he'd worked out the system plan, Annie said to add a bit more capacity as insurance, which is always useful. They have 11 x 165-watt panels, 12 deep cycle lead acid batteries, a 3kW inverter and a 60-amp battery charger.

I was surprised at it running the 380-litre fridge but Dave says this probably only uses the power generated by two or three panels. He said that the star ratings labelling has greatly improved efficiency and made the range of choice greater and easier for solar power consumers. He can give them the figure below which they must stay, for their system, for annual energy use, and they can read such figures on the front of the refrigerators in any showroom.

Annie has also had installed a separate emergency backup system of 5 x 24-volt lights if the inverter should ever fail – saves looking for candles! The main house lighting is all recessed compact fluorescent downlights.

They are still moving in to the house really, and when emptied of all stored

items, the 'shed' living quarters will be accommodation for WWOOFers to give Annie a hand. Rural living and self-sufficiency does take a lot of work – there's always something needing attention, like the pump from the dam, or the track drainage.

At the end of owner building, Annie wants a break. She managed the project, kept the site clean, and worked every day on site. Chris works full time locally so could only help on weekends. The men might go home each evening but for Annie there was still cleaning up to do and preparing site and materials for the next day's work.

This fabulous indoor-outdoor house, makes the most of their gently elevated, sunshine-flooded site, and is a fine example of designing a very individual home – for and by the owners. They may be protected by fairies here but the rewards they are now enjoying are no fairy gifts; they are the results of comprehensive prior thinking, good organising and hard work. ■



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