



The line of deciduous shade trees along the northern boundary of the site shade the house in summer and are watered by the 3000 litre greywater system under the deck



Work-life balance

This home-office haven is turning heads, and changing hearts *By Verity Campbell*

Karen and Glenn were cooking dinner one night when there was an unexpected knock at the door. One of the neighbours had come by to find out why their home was lit while the rest of the neighbourhood was blacked out. A quick squiz at their solar system's backup batteries answered her question, and so ended the first of many visits by neighbours wanting to know more about this remarkable renovation.

When Karen and Glenn do things they don't cut corners, and their renovation was no exception. When they bought a double-fronted Victorian house in the leafy Melbourne suburb of Moonee Ponds, they enlisted the Sunpower Design team to create

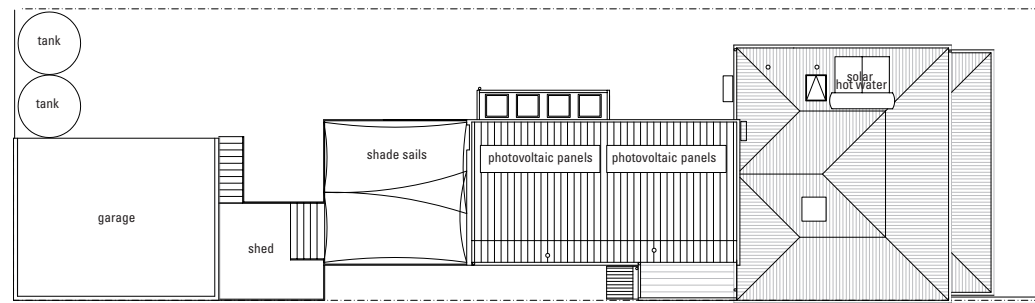
their green dream home.

"As you get older the idea of chaining yourself to bulldozers loses its appeal; you look for other ways to be an activist, to encourage change. We wanted a house that confirmed our commitment to the environment," says Glenn.

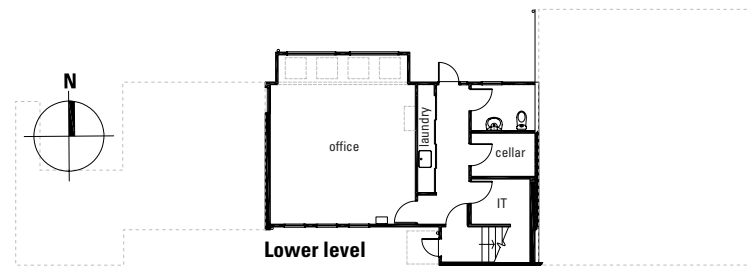
"But it also needed to look good," adds Karen. "The future lies in creating homes that prove you can be green and have a great-looking house too. Many people won't compromise on that."

Glenn runs his publishing company from home, so he needed an office where he and his employees could work. The couple wanted two bedrooms, one for guests, and an open-plan living area and

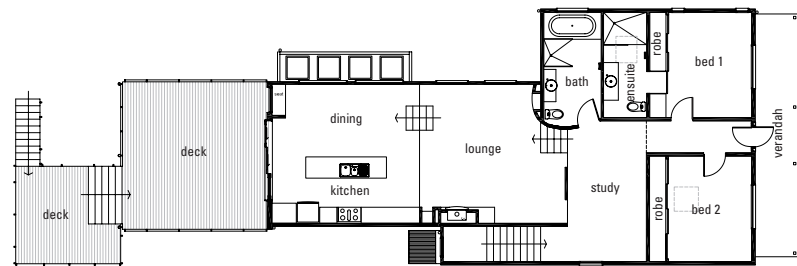




Site plan



Lower level



Upper level

North-facing, double-glazed windows are protected from the sun by awnings and internal blinds; in winter the sun peeks through to warm the house



kitchen, conducive to entertaining. They wanted a cellar and an IT room close by the office. And with the house perched on a hill, they wanted the renovation to make the most of the views. They kept the facade and the front two rooms of the original house and built a new bi-level dwelling behind it.

"I get frustrated when people complain about the cost of building sustainably," says Glenn. "If they took a few square metres off the size of their new home they'd find they'd make enough savings to cover sustainability features and they'd be lowering the running cost of the home." The design team agrees, adding "At a 7 Star rated performance for the extensions to this home, it will save tonnes of

CO2 over its lifetime as well as save the owners a small fortune in running costs."

Running a home business, the couple needed to ensure they had energy to run the computers whenever they needed it. So when they installed a grid-connected solar-panel system on their roof, they installed batteries as a backup. Which obviously served them well!

The original house had ceilings studded with halogen downlights. At first the couple thought they might leave them in, but they then remembered those freezing mornings and roasting summer nights. "With halogen downlights you have to put a hole in the ceiling insulation of at least 150mm

diameter around each light, due to the potential fire hazard from the heat generated by the lights. When you've got a lot of downlights you're going to end up with piecemeal ceiling insulation, and I just couldn't live with that," says Glenn. They decided to replace each of the downlights with nine-watt energy-efficient downlights. Lighting both rooms with the halogen downlights would have used 400 watts, but with the new downlights only 72 watts is needed!

Reducing water use was a top priority. The backyard holds two 9,000-litre water tanks, fed by the roof, and a 3000-litre underground greywater system concealed under the deck. While aiming



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for self-sufficiency with water, the house does tap into the mains water supply. There’s one cold tap in the kitchen that supplies drinking water to the house from the mains, and the house is “double plumbed” so the couple can turn on the mains tap and use mains water throughout the house should they need to, though they’ve only needed to do this two or three times in 18 months.

The block is oriented east-west, so the full length of the house is exposed to northern sun. The design makes the most of this by including large, double-glazed windows on the northern facade. The windows direct the sun to a concrete slab floor in the office, which then soaks up the heat

and radiates it all night. In summer, awnings and internal roller blinds shade the windows. The slab is kept cool, and so is the house.

Many people forget about the role plantings can play in aiding a home’s thermal performance, but not Karen and Glenn. They’ve planted a row of deciduous Robinia “Frisias” on the northern edge of the block. During summer the yellowy-green foliage of these graceful trees shades the house and provides privacy for the couple when entertaining outdoors. During winter the trees lose their leaves, letting the winter sun through to warm the house. Although Robinias are only one of many hardy deciduous trees available, the couple know

they can water the trees as much as they need to with water from their greywater system.

While Glenn and Karen opted for most of the big-ticket sustainability features for their home – solar panels, solar hot water, greywater system and so on – they insist that it’s the more basic features that make their home truly efficient. **“If I had a limited budget, I’d go for double glazing,”** says Glenn. **“When we got quotes we were surprised how little it cost and it makes such a difference to our quality of life. It keeps heat out when you want it, heat in when you want it, and it makes our house so peaceful and quiet.”**

North-facing skylights allow winter sun into the office to heat the concrete slab floor; in summer they are covered with external awnings



Only one tap
in the house is
permanently
connected to the
mains to supply
drinking water –
the cold water
tap in the kitchen



And it's the little thoughtful design features that they're proud of too, like the wall-mounted LCD television tucked away in a corner of the living room. You wonder how they can watch it without getting a crook neck, till Glenn demonstrates with a quick manoeuvre ("Taa daa!") and the screen curves out on an arm in perfect view of the couch.

Then there's the flyscreens. Cross ventilation is key to cooling a house at night during heat waves, but along with the cool breezes from the fully openable stacking doors can come swarms of mozzies ready to feast. So the design team designed stacking flyscreen doors, which discretely

slide away when not needed.

These days, when the neighbours knock Glenn knows it's for a friendly sticky-beak as much as it is for a neighbourly cuppa. "We know that everyone takes away a little something from this house and its design, and that's been well worth the effort." ◀



Designer: Sunpower Design Pty Ltd www.sunpowerdesign.com.au

Design team: Brent Lamb, Andreas & Judy Sederof

Builder: Brian Tyler

Location: Moonee Ponds, VIC

Photography: Rhiannon Slater

Features: ■ 10 x BP 165 watt grid-connected photovoltaic panels

■ 4 x Sonnenschein Solar Batteries (12V/185 Amp-hours each – a total of 740 Amp-hours)

■ Edwards gas boosted solar hot water

■ 2 x 9000L rainwater tanks

■ Garden Saver Australia greywater system

■ Pickering Joinery double glazed timber windows

■ Velux VS0075 with external awning blind and 4 Velux FCM 3030 curb mounted skylights

■ Polyester insulation in ceilings/ roof (R4 minimum)

■ DuPont 'Tyvek' green reflective wrap with R2.0 Polyester batts in walls

■ Recycled Messmate remachined overlay flooring over first floor suspended concrete slab

■ Awning blinds from Ace of Shades; Sails from Yarra Shade Co

■ CFLs throughout the house and GU10 Megaman 9 Watt CFLs in original part of home, LED desk lamps

■ Reconstituted stone benchtops by Stone Italiana

■ Energy-efficient appliances and water-efficient fittings (including Caroma Smartflush toilets)