

Australia's leading environmental homes

# sanctuary

Sustainable living with style

**WIN** A \$14,000 SOLAR POWER SYSTEM FROM EARTH UTILITY  
see p7 for details

PLUNGE INTO NATURAL  
**CHEMICAL-FREE**  
POOLS

**COOL**  
TREATMENTS  
FOR A  
HOT HOUSE

**10 TIPS** FOR  
SUSTAINABLE  
DESIGN

**SOLAR**  
**AIRCONDITIONING:**  
THE HOTTER IT IS  
THE BETTER IT WORKS

ISSUE 6 (AUD)\$9.95 NZ\$10.50



SANCTUARY SUSTAINABLE LIVING WITH STYLE

ISSUE 6

# Reach for the light

A clever addition opens up, lightens and transforms this period home

by Judy Friedlander



← The sustainably harvested bamboo floor is perfectly paired with bone-white walls and ceiling

The top of the new addition peeks over the existing facade, allowing northern light to enter the addition ↓



It's the classic makeover story: a neglected figure with a warm heart grown cold, just waiting for the kiss of life.

Three years ago, this bungalow in Sydney's West Ryde was forlorn and "homely". The rooms were dark, there was limited ventilation and the walls were cracking. But with the aid of some imagination and foresight, owners Kenneth and Terri saw the belle it could become.

"We felt the house had loads of potential and thought the location was perfect," says Kenneth. And there were features they wanted to keep, such as the high, ornate ceilings, solid doors and

architraves.

Kenneth and Terri bought the house when their first child was one and a half. Renovation was on the agenda, and after being introduced to architects Carol Marra and Ken Yeh through mutual friends, they became convinced the house could take on a much lighter, brighter quality.

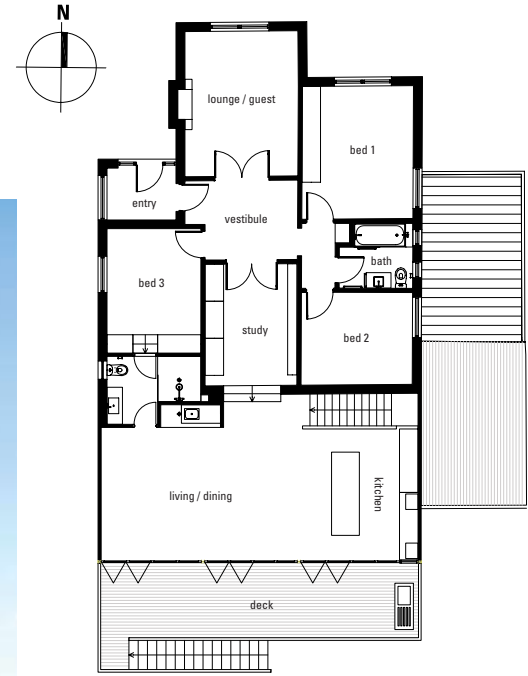
"There was an ad hoc extension on the back of the house but it let in little light," says Kenneth. "We thought we could extend out the back and add a deck and bifolds but we never thought about what Carol suggested, which was removing the old extension and starting again.

"We loved their ideas, particularly their attention to detail and their whole take on sustainability."

**Marra + Yeh are strong advocates of restoring and re-using existing buildings and materials, which they say, contributes to sustainability in reducing embodied energy.**

**Embodied Energy** is the energy expended in all stages of a material or product's life cycle, including its manufacture and transportation. It contributes between 10 and 45 per cent of a home's greenhouse gases over the home's life. The remainder are described as "operational".

“The north-facing clerestory windows in the new addition allow winter sun in – even on a cold day, the room is comfortable without heating”



Foyer to connecting passageway



Louvred clerestory windows, bi-fold doors, high ceilings and reversible fans regulate the internal climate

Carol says their experience working on many institutional buildings in Seattle, USA, attuned their sensibility to sustainability, in line with a “strong government push to have a lighter environmental footprint”. Says Carol, “It is important to see what can be done with what exists, with what is given. We always ask: ‘How can we adapt the existing house? What can we take advantage of and what can we recycle?’”

She admits the cracked walls posed a bit of a concern. “The soils in this area are reactive clay which are particularly susceptible to movement. There was a long drought in Sydney followed

by intensive rain and the soils moved quite substantially, which led to the walls cracking.

“However, the structural engineer established that the cracks weren’t a structural issue and because the house had gone through this cycle a number of times, we knew it could withstand these types of pressures.”

A decision was made to re-line an extra layer of plasterboard internally to the front rooms of the house but, of course, that was only the beginning.

The major initiative involved removing the extension at the back, which consisted of a bedroom, bathroom, dining room and part of the



kitchen. A central area in the middle of the house was designated a flow-through room which could be closed off to function as a study or opened to allow movement of air and light.

The old extension was replaced with a new addition incorporating a kitchen, large family/dining room, bathroom, laundry and deck. Timber bi-fold doors can be opened to maximise the space even more.

Marra + Yeh cleverly added **north-facing clerestory windows at the top of the new extension which, unimpeded by the old home, transform the south-facing rooms into light and airy spaces.**

When viewed from the street, the windows peek out behind the existing house.

“The north-facing clerestory windows in the new addition allow winter sun to penetrate,” says Carol. “Even on a cold day, the room is comfortable without heating.” Gas heating and reversible fans that distribute heat around the room, combined with the ability to close off this section, can keep the house warm when needed. The windows are also fitted with adjustable glass louvres to allow hot air to escape.

The new addition and the central open passageway/room have resulted in the existing house being used much more effectively. A small

family room at the front is now a hive of activity with Kenneth and Terri’s two children (their daughter was born after they bought the house) filling it up with trucks, DVDs and stuffed toys. To make the existing house more liveable and less reliant on artificial light, operable skylights were added to bring in sunlight and ventilation.

Carol says there was minimal disruption to the site and the steel structure meant that the weight of the building was relatively light, which reduced the weight of the foundation. “Minimal weight means reducing the amount of material excavated which means reducing the amount of dirt which needs to

“It is important to see what can be done with what exists, with what is given”

The steel structure of the addition reduces its weight



be disposed.” The lightweight roof and walls of the addition are well insulated to minimise heat loss and heat gain.

**Other sustainable features include bamboo floors in the new extension and water-based, low-VOC paints.** Fluorescent lighting is used above the pelmet which runs along the entire length of the extension. “It shines up and provides a beautiful glow, reflecting on the ceiling and washing down,” explains Carol.

“We tried to build flexibility into the design. As the family situation changes over time, the house can accommodate it.

“A basement level, created by the natural fall of

the land, has been plumbed for a future bathroom. A 6000 litre rainwater tank which is connected to the laundry and toilet ensures the demand for mains water is reduced.”

“We definitely wanted a home that could grow,” says Kenneth. “We love the area and want to stay here. West Ryde is close to the Lane Cove River where we go bushwalking and Bicentennial Park where we go bicycling and have picnics.”

With the home often hosting the couple’s large extended family, including a sizeable collection of kids, the new addition, which opens up to the back veranda and grassy backyard, has indeed given this old house a new lease on life. ◀



**Designer:** Marra + Yeh Architects [www.marrayeh.com](http://www.marrayeh.com)

**Builder:** Avex

**Location:** West Ryde, NSW

**Photographer:** Brett Boardman

**Features:** ■ 6000L Bluescope rainwater tank

■ North-facing clerestory windows, capturing sun and breezes

■ R2.5 insulation in walls, R3.5-plus reflective foil insulation in roof

■ High ceilings, operable windows and ceiling fans for cross-ventilation

■ Universal reversible ceiling fans

■ Minimal disruption to site

■ Steel structure minimises material use

■ Operable skylights added to existing house for light and ventilation

■ Teragren sustainably harvested bamboo floors with water-based, solvent-free finish

■ 4-star WELS-rated Caroma toilets

■ 3-star WELS-rated Dorf fixtures