

Savvy garden innovation

The terraced garden wall that is creating a water-saving revolution



The cutting-edge grey-water terrace garden makes this home a real winner.



Journalists are prone to hyperbole and overstatement. ‘First ever’, ‘revolutionary’ and ‘groundbreaking Australian initiative’ are, sadly, overused for effect by magazine and newspaper scribes.

So dispense with the cynicism, if you will, when reading about this house. Because the home, in Sydney’s beachside suburb Clovelly, features a first-ever and revolutionary groundbreaking Australian initiative.

The benchmarking feature of the home—one of the aspects that has won many awards for the architects, Kennedy Associates—is a plant-based

terraced grey-water filtration system, or a ‘vertical reed bed’ as it has been described.

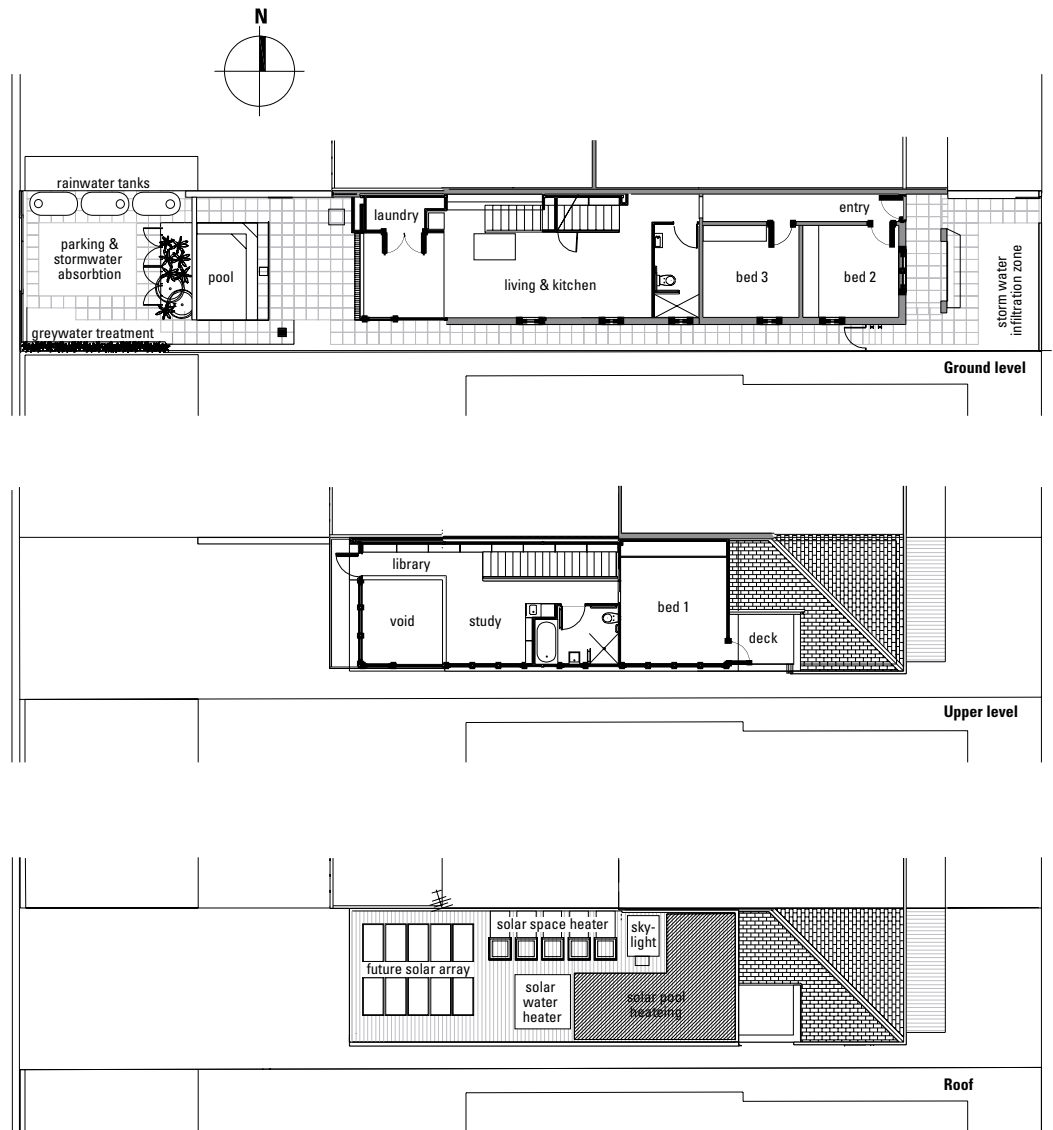
On first observation, it looks like a creative landscaping feature wall that complements the inviting jetstream pool/spa in the courtyard garden. Behind the beautifully-proportioned terraced planter boxes, however, lies a **cutting-edge water filtration system that cleans water from the bath, shower and basin for use in the laundry, toilet and garden.**

The system filters out ‘undesirables’ such as bacteria and suspended solids through a three-step process of different filter materials such as sand. The

filtered water ends up stored in a tank underneath the green wall for further use.

Mains water is used for drinking and cooking and three rainwater tanks collect and store 9000 litres of water for showers, baths and the jetstream pool. A triple pipe reticulation system accommodates rainwater harvesting and grey-water reuse. The owners estimate they use 80 per cent less water than an equivalent Sydney home.

Necessity, as they say, is the mother of invention and the owners felt sustainable water management was necessary for their house and as an example for



others to follow.

Environmental engineer Toby Gray from Environmental Design and Solutions (ENVDS), and Kennedy Associates had to think laterally, or should it be vertically, when devising a grey-water system for the narrow block. Gray took inspiration from images of green walls used for landscaping effect in Scandinavia.

While not an off-the-shelf product, it is hoped the grey-water green wall will inspire others who feel hampered in their water conservation efforts by lack of space.

The water is regularly tested and meets the requirements set down by NSW Health for its use.

“The biggest issue facing the country is water availability and we wanted to do something significant,” said one of the home’s owners. “There might have been an initial outlay to install the system but we hope we can raise people’s awareness collectively to save water—and money. Our aim was to get people talking.”

The home received the gold medal for the 2004 Green Buildings Awards, was selected as a ‘Best Practice House’ for both Sustainable Communities

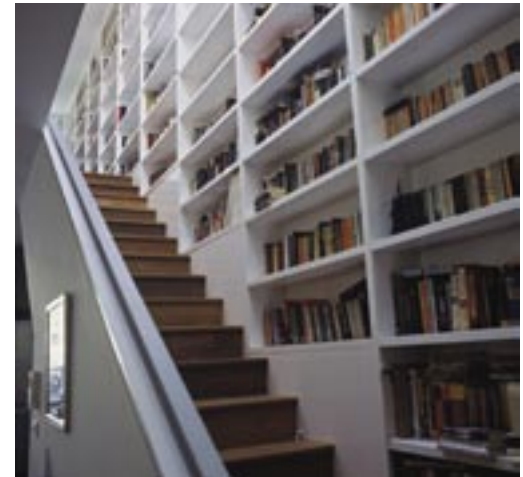
and Excellence in Building for the 2004 National Year of the Built Environment, was commended in the 2005 Royal Australian Institute of Architects Awards and has been selected as a leading case study for BASIX, a building sustainability index, by the NSW Department of Planning and Natural Resources.

The house incorporates many other clever ‘talking points’ and contributes to the growing realisation that sustainable architecture embraces form and function, and, as the owner says, “is not just for hippies”.

“This isn’t a mud-brick house,” says the owner. “The building itself is a work of art.” ↓



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← The openness of the house allows healthy airflow and the roof houses a myriad of solar collectors, which provide energy to the house and pool.

Architect Steve Kennedy says sustainable architecture is about using the environment to your advantage rather than trying to combat it.

“The current dominant idea in housing is to build houses which are utterly dependent on mechanical methods for their comfort, such as airconditioning, whereas careful and intelligent design can eliminate almost all that need, making buildings both healthier to live in, less demanding on their environment and less expensive to run,” he says.

“It makes a lot of sense and does not involve a loss of amenity or aesthetics, but people have to shift their thinking to see it.”

What is also extraordinary about this home is that one of the owners occasionally requires a wheelchair for mobility and, therefore, the architects had to incorporate a number of fundamental design parameters.

The staircase, for example, needed to be wide, gentle and straight and a kitchenette was required upstairs. Bathroom, kitchen and living spaces are wheelchair accessible.

It is hard to believe that the semi-detached home was once poky and dark. The whole back wall was removed and the house almost doubled in space with the creation of a void, or two-storey open area, at the

rear of the house with an upper level anchored over it. The office which is located at the back of the upper level looks out to the back garden. Even though the home is south-facing, it is now bathed in light.

Five small skylights were punched into the ceiling above the staircase, again a creative and functional solution.

The openness of the house allows healthy airflow and the roof houses a myriad of solar collectors, which provide energy to the house and pool.

The living area is partially heated by a solar space heater. The space heater consists of a solar panel and solar fan on the roof, which heats air and pushes



it down to the lower level. For cooling, the process is reversed with the fan extracting air through the return air grill.

The swimming pool and green wall in the back garden have the added benefit of 'conditioning' the air as it passes over the water and into the house, particularly on hot days. 📌

Designer: Kennedy Associates Architects

Builder: All Time Constructions Pty Ltd

Location: Sydney, NSW

Photography: Bart Maiorana

- Features:**
- Beasley solar hot water system
 - Sun Lizard solar space heating
 - National Solar pool heating
 - 3 x 3,000 litre Slimline rainwater tanks
 - Innovative grey-water treatment system devised by ENVDS & Kennedy Associates
 - Low watt lighting
 - Bio Paints plant and mineral-based paints
 - Native and indigenous plantings