



The house has been oriented to take advantage of the prevailing light and breezes (**this page**). The plunge pool has been constructed from a water tank and enjoys spectacular views across the landscape (**opposite page**).



Testing Ground

A bush site with incredible views through to the Sunshine Coast became the testing ground for two young architects with lots of ideas and a tight budget.



A compact home in the mountains of Queensland proved to be the ultimate learning exercise for a couple of young architects who envisaged living a sustainable lifestyle in the region they loved.

“Our intention was to explore – within a modest budget – principals of sustainable design and living while creating simple and playful architecture,” said owner and architect, Dan Sparks. “It’s something we wanted to do from the outset – design a house that was as sustainable and environmentally efficient as it could be and could provide Margo and myself with a testing ground for ideas.”

Dan and his partner Margo Reardon – both architects – worked together on designing the home in their evenings over a period of several months.

“Being our own clients for this project allowed for both greater freedoms and tighter constraints,” Dan said. “The lofty goals of us as young architects were, to a degree, kept in check by our modest budget.”

The three-bedroom house exemplifies the characteristics that good architecture and good sustainable design share – a sympathetic approach to its surroundings. It’s a beautifully designed home, which perfectly meets their needs and fits their contemporary style, while harmonising with the landscape around it.

The couple purchased the 1.25-acre site two years ago as the place where they could fulfil fantasies of living a sustainable lifestyle on the Sunshine Coast.

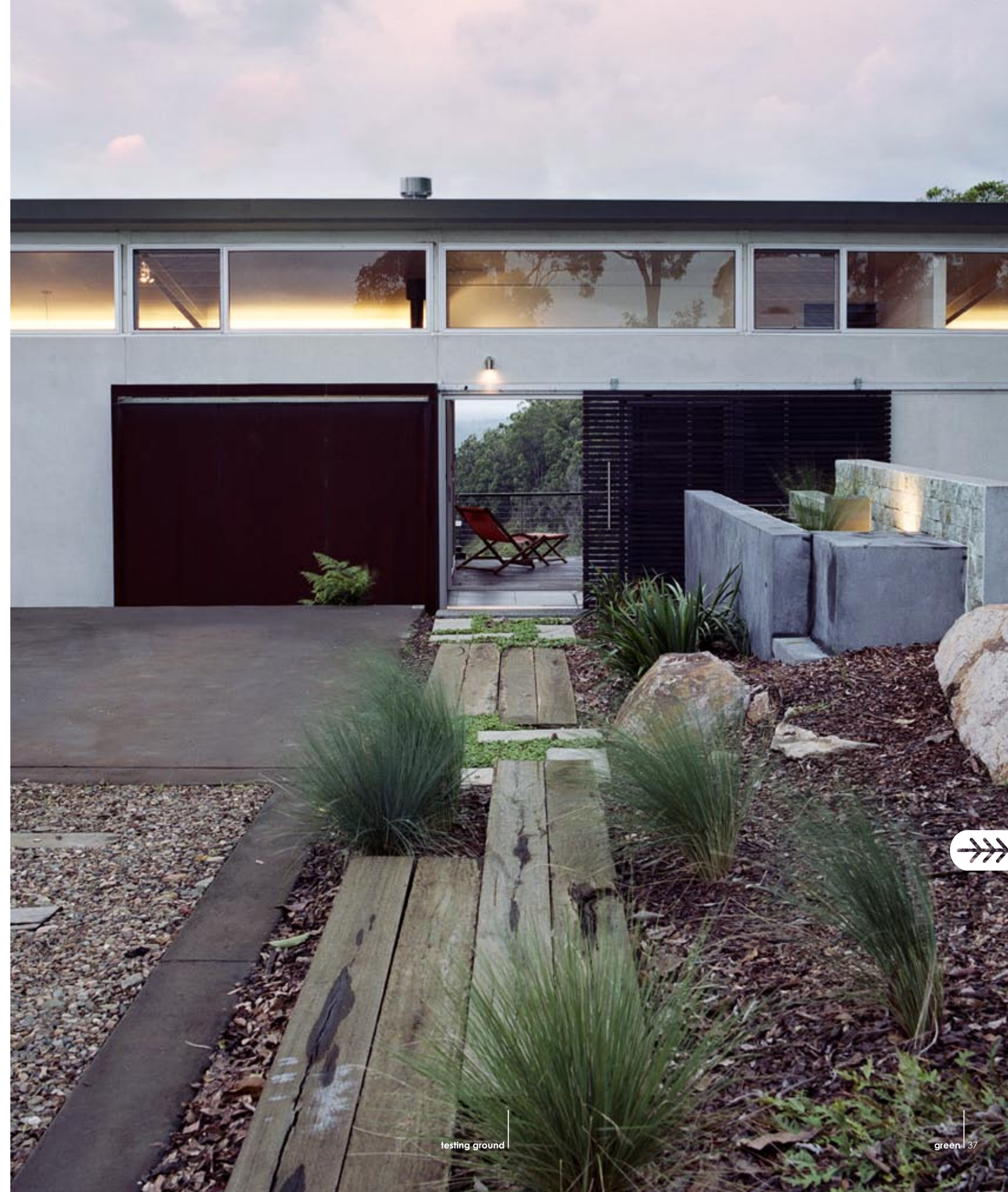
“We were keen to still be on the Sunshine Coast but to pull back into the scrub a bit and enjoy the bush, the birds and the views,” Dan said. “We were attracted to the bush nature of this site and the views are incredible.”

The narrow site, on Mount Ninderry, falls away steeply to the north and has views through a saddle in the ridge to Noosa North Shore and Double Island Point.

All rooms in the house, which is only one room wide, open to the views and the northern light for heating in winter sun. That also allows the house to be easily opened up for the prevailing breezes that come through the saddle and cool the rooms.

Three concrete rain-water tanks with a shared 58,000 litre capacity were installed under the floor of the home and act as a “heat sink” for further regulating the climate. The need for access to the tanks meant hatches were necessary within the living, dining and bathroom floors.

The couple chose to use glass portholes and to install underwater lights beneath them to reflect off the water and create flickering plays of light on the internal ceilings. The tanks also form the back wall of the downstairs studio where Dan works with two architecture students in his business, Sparks Architects. →



Colour has been used imaginatively to breathe life into the contemporary home (**this page top**). The house is one room wide and designed around a central hallway (**bottom**). Careful attention has been paid to establishing a low-maintenance landscape with native plants (**opposite page**).





Dan runs his business, Sparks Architects from a studio under his home **(this page top)**. The home's living room is a cosy room with a view **(bottom)**. Walking the plank has never looked so inviting **(opposite page top)**. Shade cloths can be extended over the deck to protect on sunny days **(middle)**. A water feature provides an interesting focal point in the garden **(bottom)**.



“Particularly in summer, you notice what an incredible thermal mass the water tanks are,” he said.

A fourth water tank was installed outside the home to act as a plunge pool. The pool is accessed via a bridge from the courtyard off the master bedroom – the perfect place for an early morning dip before the couple begin work.

“I love the plunge pool as a bit of a fun feature of the house,” Dan said. “It’s just on the edge of a drop so you look down through the trees and the view is amazing.”

All rooms in the home face north, with deep northern eaves designed to take advantage of both the winter and summer sun. The home has no air conditioning and no need for it thanks to clever ventilation and heavy insulation in the roof, floor and walls.

Currently, all the home’s grey and black water is treated in an Envirocycle waste-water treatment system but Dan has designed a grey-water system to split the two and plans to use grey water to irrigate the garden. The vegetable garden in particular is one of the couple’s passions and is slowly expanding down the hill as they work, becoming as self-sustainable with food as possible.

“It’s great working from home in that at lunch-time I can get out there and weed the veggie garden,” Dan said.

The next stage for the couple is to install the photovoltaic cells they need to further fulfil their vision of becoming self-sustainable. A carport with 18 cells on the roof has been designed and will be built next year, providing ample power for the house and studio. The couple also plan to install a domestic wind turbine as back up.

The house had to be constructed from non-combustible materials because of its bush location.

“We generally prefer to use materials that have inherent natural beauty and allow the material to ‘speak’ for itself,” Dan said.

The major part of the building was prefabricated which considerably increased efficiencies of labour and reduced material wastage. The structural grid was based on the standard sizes of the materials being used to further reduce waste.

“The plan is compact but highly efficient,” said Dan.

The building was constructed from nine prefabricated steel-framed modules that sit on steel columns to the property’s north and a block wall to the south. A curved plywood bulkhead runs the length of the building, serving as an electrical services duct and incorporating pelmets for blinds and fluorescent lighting.

The end product is a home that feels perfectly liveable and in harmony with its surroundings and location through a clever use of lighting, splashes of bright colour, and the many windows that invite the outside in.



Specs:

Architect
Dan Sparks & Margo Reardon
dan@sparksarchitects.com

Engineer
Rod Bligh, Bligh Tanner Pty Ltd

Construction
The building is constructed of nine prefabricated steel-framed modules that sit on steel columns to the north and a block wall to the south. "Solarspan" roofing panels were incorporated to eliminate the need for secondary and tertiary roof framing. The underside of the modules' floor framing is sheeted with "Air-cell" thermal insulation. The southern wall of the building consists of "ExinTex" board over the framed insulated walls of the modules.

Roofing
100 mm Solar Span roofing panel.

Internal Walls
Hoop Pine, ply sheets, clear finish, to hallway
Hoop Pine, veneer, clear finish, to joinery and curved bulkhead.

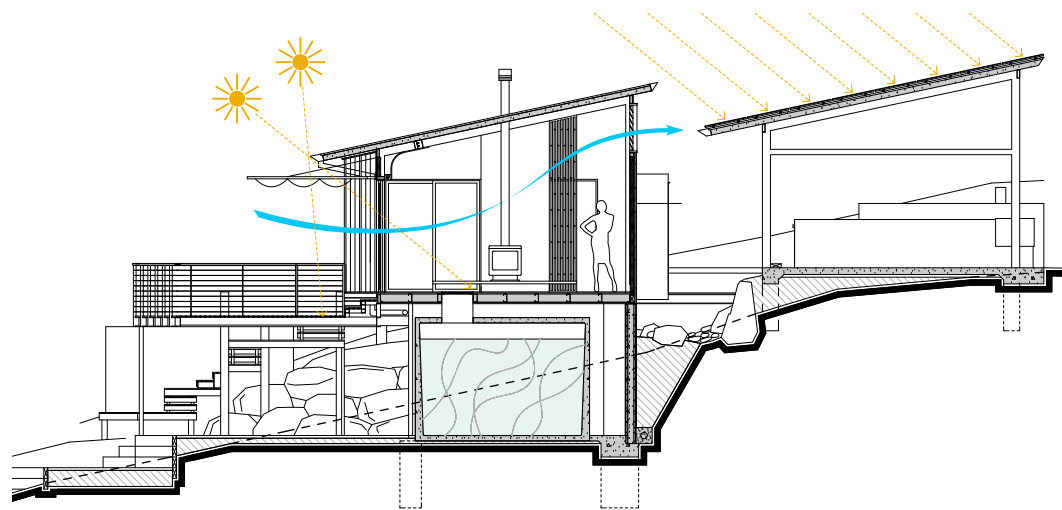
Floor
Steel frame integral with prefabricated module
Hardwood ply with top veneer of Sydney Bluegum – "Big River Timbers".

Lighting
Recessed fluorescent pelmet integral with curved plywood bulkhead.
Low voltage spots to pick up art-work on rendered walls. Feature lights from ECCr.

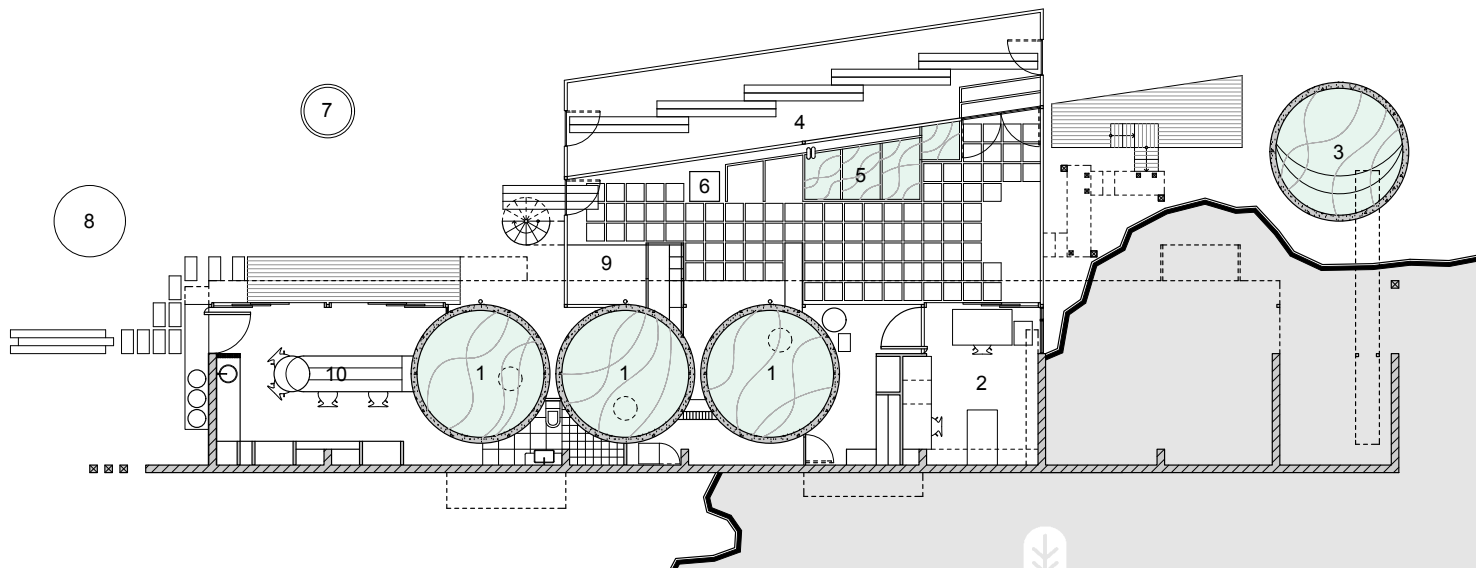
Bathrooms
Grohe shower-head.
Caroma Leda Invisi concealed cistern toilet suites.

Heating and cooling
"Woodland" slow combustion wood heater.

Landscaping
All native grasses, reeds and bush planting throughout, with native tropical planting around the pool and eastern courtyard.
Landscape design Dan Sparks & Margo Reardon, Simon Thomas, Cassandra Callinan.



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|------------------|-----------------------|------------------|
| 1 Rainwater Tank | 5 Greywater Treatment | 9 Chicken coop |
| 2 Workshop | 6 Compost | 10 Studio / unit |
| 3 Plunge Pool | 7 Fire Pit / Bbq | |
| 4 Vegie Garden | 8 Envirocycle system | |



A smart and sustainable home is:

- Socially Sustainable**
safer, more secure and comfortable
- Environmentally Sustainable**
reducing waste, water and energy use
- Economically Sustainable**
cost saving over the life of the home.

The Smart and Sustainable Homes program is a joint initiative between Queensland Government, local government and industry partners. The program is providing communities throughout Queensland with display homes which incorporate principles of sustainable design and performance, using the Smart and Sustainable Homes Design Objectives as the minimum criteria.



smart & sustainable HOMES



For more information on the program or homes open for display visit www.sustainable-homes.org.au and www.smarthousing.qld.gov.au