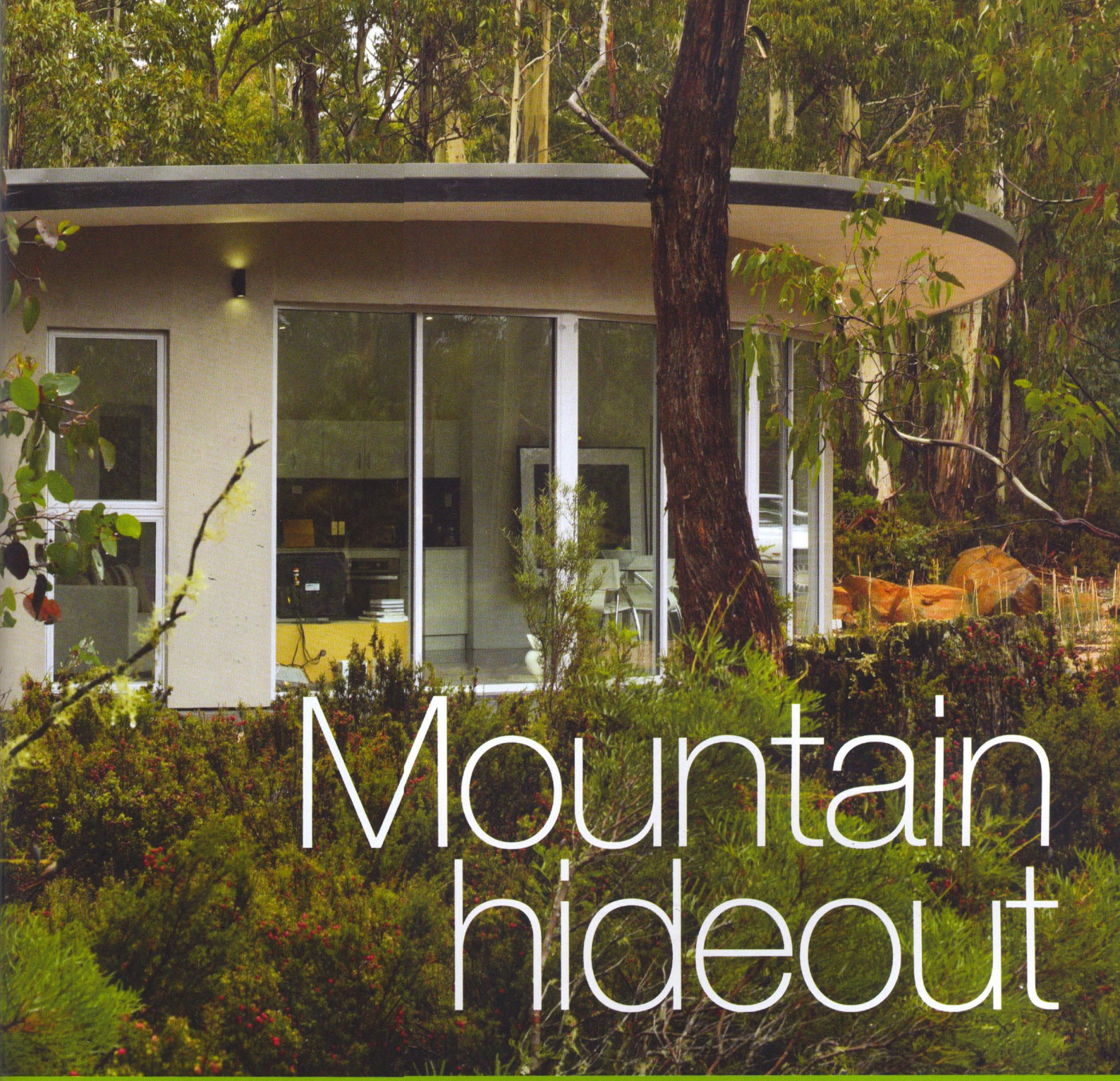


Mountain hideout

A contemporary bush retreat in Tasmania's alpine heartland

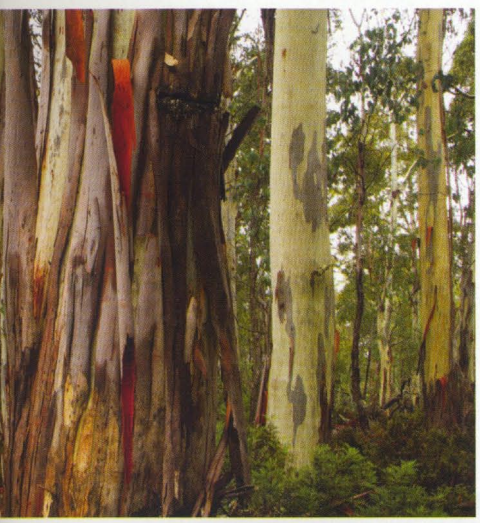
When you have owned your land for 20 years before you decide to build on it, you have had plenty of time to think about your house-to-be. When you bought the land to preserve its trees—and the land also happens to be on the edge of a World Heritage Area and national park—then you can bet you'd be after a house that's as environmentally-friendly as they come.

That was just the case when Alan Edwards and Gail Walker were planning their house near Cradle Mountain in Tasmania's alpine heartland. Dedicated bushwalkers who normally reside in Queensland, Gail and Alan have been visiting this part of the world for many years. "We were drawn to the remoteness and pristineness of the area," says Gail, "so when it came to designing a house here we wanted our footprint to be as minimal as possible."

Enter environmental designer Mark Dewsbury of Launceston-based design practice Carawah. A researcher at the University of Tasmania in sustainable housing and designer of many environmentally friendly homes, Mark is well versed both in the theory and practice of sustainable living spaces. "It's about maintaining a balance between the built environment and what was already there," says Mark.

> “We went back to first principles and took an approach where the whole form of the building evolved from the environmental criteria”





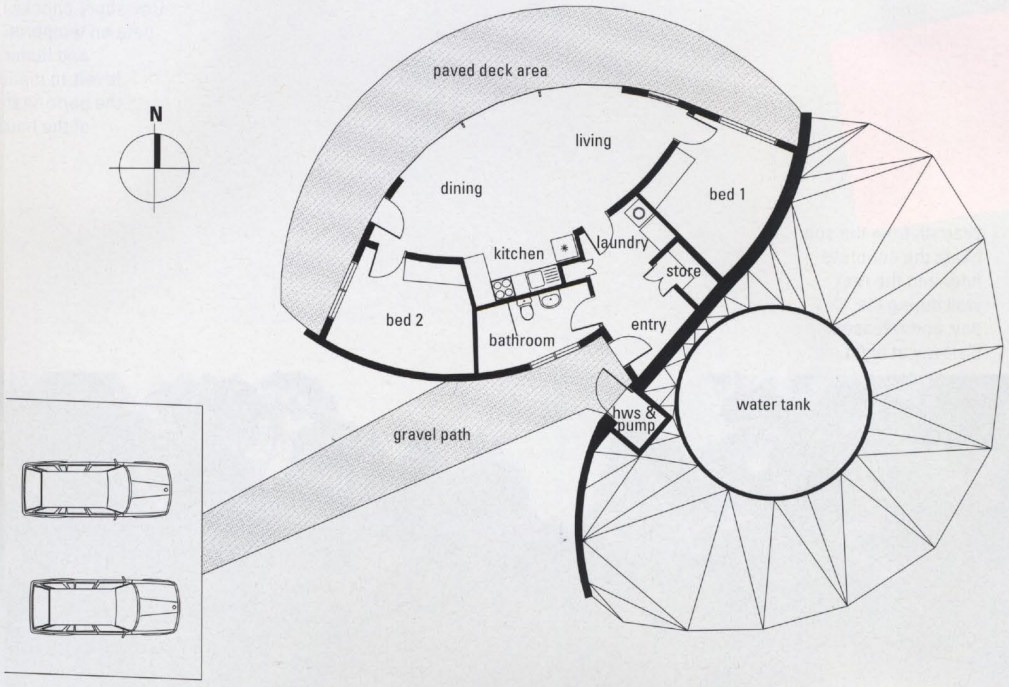
The glorious native woodland on the property and the alpine feel of the mountains nearby were the starting points for the design inspiration. “This land had been clear-felled 30 years before we bought it, but now, 50 years on, it’s thriving forest,” says Gail. With the soft grey-green hues and the curvaceous forms of surrounding nature, the site suggested something quite organic, but Gail and Alan weren’t sold on the timber cabin look.

“I’m inspired by Scandinavian designs that are simple, functional and beautiful,” says Gail. “The look we were after was that kind of very cool, northern European interior, but with lots of glass to bring the outside in.” And while the look had to be “cool” the temperature certainly couldn’t. The couple wanted a naturally cosy, inviting space to retreat to after time outside in the mountain wilds. **The site is surrounded by forest in a bushfire prone location, and is not always occupied, so the house had to be fire-safe.** The brief was for style, sustainability and protection—and plenty of sun and warmth.

“We spent quite a lot of time on-site, taking in the feel of the bush,” says Mark, “and came up with a rectilinear version, as well as a more organic version of the design, which is the one the clients decided to build.” That design was based on an ellipse or ovoid shape, inspired by the curved seed

Double-glazed windows span the front of the building bringing in uninterrupted views of the tranquil bush surroundings.







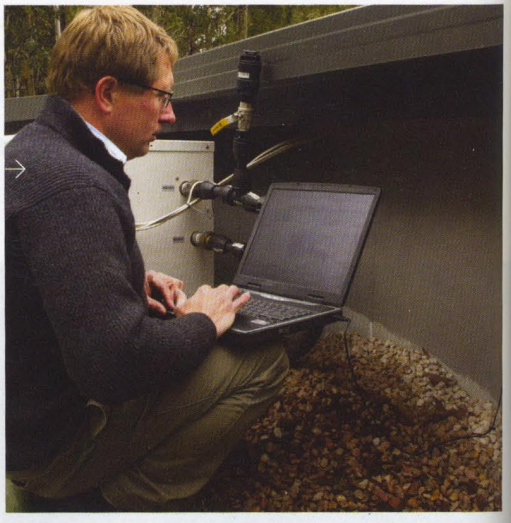
pods of native hakea plants. "It's like a seed pod or shell that's pushed into the ground at the back, and opens out to the front," explains Mark. "It allows that protected, cocooned, hunkered-down feel, offering warmth, even in the cold of winter, but still focused out on the natural landscape."

The house site was located on a tree-free, north-facing clearing and a driveway was built up to it, winding through the bush, so that only one tree had to be removed. The house then began to emerge as a timber-framed structure with rendered aerated concrete panel exterior walls and a polished concrete slab floor. A 7.2 metre multi-panel wall of glass spans the front of the building bringing in uninterrupted views of the tranquil bush surroundings, while the spine of the house is core-filled concrete block rear wall, which together with the slab provides the thermal mass.

"It's a highly efficient solar passive design," explains Mark. "Warmth from the sun heats the slab and the rear wall during the day, and releases it slowly at night." The slab is also heated with an air-based heat pump which ensures radiant heat, even on cooler, grey days. To keep the house warm in this cold alpine location, insulation was paramount. **There is extensive expanded polystyrene under-slab and slab-edge insulation, wall and double-layer ceiling insulation.** The house is double-glazed throughout. "You can sit here when it's snowing outside, and it's quite surreally warm and quiet inside," says Mark.

Behind the house a 50,000 litre water tank collects rainwater off the large skillion roof. This area has been back-filled with soil which is pushed right up against the rear wall. The wall is also insulated with another 100mm of polystyrene. This south side of the house seems almost dug into the ground, affording thorough protection against the southern cold.

Although the house receives adequate sunlight to make it efficiently solar passive, its forested location and the often overcast alpine environment made



Designer Mark Dewsbury checks the data on temperature and humidity levels to monitor the performance of the house.

Warmth from the sun heats the concrete floor and the rear wall during the day, and releases it slowly at night.



solar power impractical. "We had to acknowledge that this couldn't be an off-grid house, but we have ensured the appliances and lights are low-wattage and energy efficient," says Mark. A solar hot water system, however, provides ample hot post-bushwalking showers. Rainwater harvesting and storage ensures the house is self-sufficient for water, and water-efficient showerheads and taps have been used in the kitchen and bathroom. On-site wastewater management is by septic tanks with absorption trenches.

The house also has a hi-tech system of temperature and humidity logging. Two sensors—one in the living area and one outside the house—record and store this downloadable data, providing the benchmarks by which to measure the building's performance in the environment. "With these figures, we're able to monitor the house's performance against simulation software, so we're able to assess how well it's acquitting itself, in terms of its predicted energy efficiency," says Mark.

One of the strongest sustainability measures of this house is simply its size. "The house has a footprint of just 86 square metres," says Mark, "but although it's so compact it feels very spacious. The whole practice of making houses smaller is a major step forward in terms of sustainability, and this is a house that leads that trend."

"It's an ideal house in this environment," says Gail, "because it's simple, warm, easy to maintain; and while it's contemporary, it still sits well in the natural surroundings."

"When the sun is shining it's glorious, but even when it's grey, and you're sitting in the warmth with a good glass of red, and looking out at the floor-to-ceiling nature, it's pretty idyllic."