

AUSTRALIA/NEW ZEALAND

# BUILDING

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# MATERIALS

# EQUIPMENT

DESIGN □ CONSTRUCTION □ DECORATION □ LANDSCAPING



## DUGOUT IS A MANSION THAT GROWS AND GROWS... UNDERGROUND



Above:  
The kitchen would be a delight in any home. Large, lined with western red cedar shingles and ceilinged with oregon beams and white-painted infill panels, it is currently the most attractive room in the house. A solid oregon beam bench is a feature.

Right:  
Michael Davison has a genius for designing and working detail. This part of the big kitchen shows wall storage and the sturdy construction of sink cupboards. The post by the pots and pans looks as though it lay around Coober Pedy for a long time. (Michael Davison uses any materials that are available.) This timber, however, like some of the other beams, was part of an old jetty.



We decided to use lots of wood in the kitchen to help break the monotony of the natural ground and give us a bit of a back-home touch. Western red cedar shingles and shakes are very common cladding materials in the Pacific Northwest of America, both for interior and exterior. It is a material that weathers well, is easy to put up and needs no chemical treatment or paint.

To install the shingles in the kitchen, I nailed furring strips directly on to the wall using 75 mm galvanized nails. The furring strips were oregon, 20 mm x 100 mm.

Galvanized nails have to be used when nailing directly into the sandstone because iron nails literally dissolve by galvanic action.

Drive an iron nail into the wall to hang a picture, and six months to a year later the picture will fall down. The nail will have just dissolved. But a galvanized nail that is pulled out of the wall only a few months after it has been driven into the sandstone will resist coming out, usually bringing part of the wall with it, and it will have a hard growth around that part of the nail that was embedded.

The spacing of the horizontal furring strips will depend upon how much 'weather' you are going to use on the shingles. As these were for an interior wall, I chose 140 mm and so centred the strips on 240 mm.

The shingles are 460 mm long and of varying widths.

The first course is a double, starting at the bottom of the wall, the first layer being butted up tight together, with the second laid with 5 mm to 10 mm gaps between shingles and the widths being selected so as not to show the join of the layer below.

Each shingle is held in place by only two cadmium plated flat-headed nails about 30 mm long.

The nails are driven in 250 mm from the base of each shingle and 25 mm in from each side.

The second course is laid on a line 240 mm from the bottom of the first; and when you approach the ceiling, the shingles have to be shortened. In our case the last course was contact cemented on so that no fasteners would show.

### **The kitchen beams**

The large beams in the kitchen were part of the Port Noarlunga jetty, south of Adelaide. They were badly weathered and had huge bolts sticking out of them in three different directions, but otherwise they were in sound condition.

One day, equipped with an oxy torch and four days to spare, I and my wife used a large angle grinder and brought out the real beauty of the wood.





and decided to swap the humid tropical north for the parched outback.

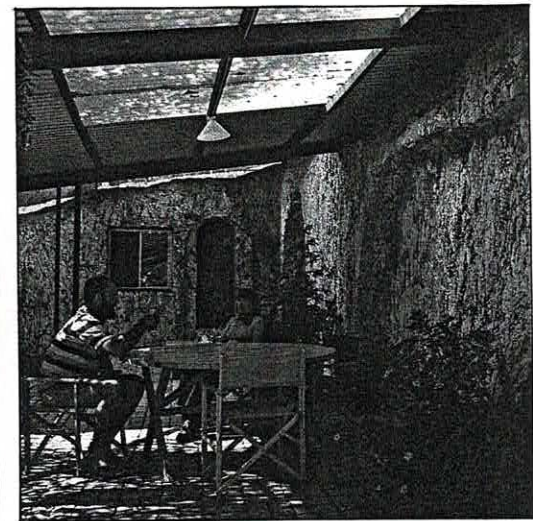
Susan said, "We enjoy the sun and open spaces, the pleasant weather and clear skies most of the year, the people and relaxed living pace, the sense of accomplishment that comes from doing things for yourself."

Mike began opal mining and they both found jobs teaching. There are 500 children in Coober Pedy. They decided to stay and build a house.

Nearly half the people of Coober Pedy live underground in "dugouts" — living quarters literally carved out of the rock.

There are good reasons. Lower cost, lack of building materials, the climate and no need for air conditioning, which can put a heavy burden on the town's electricity supply.

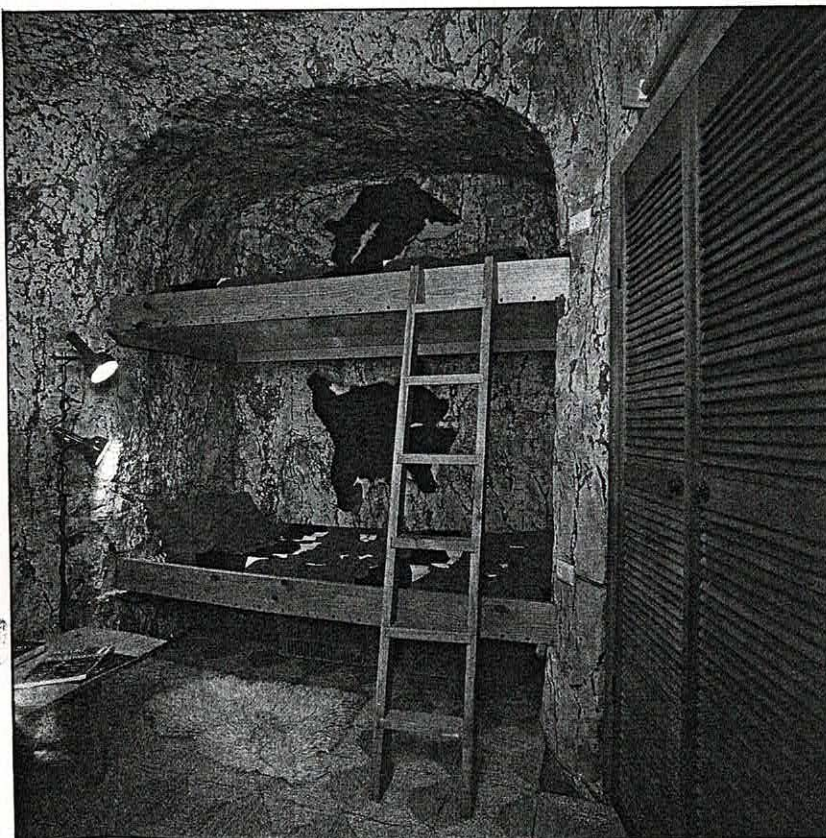
The Davisons decided that theirs would be a big, airy house with natural light wherever possible. ("I have a need for a bright, sunny house," said Susan.) So instead of the narrow ventilation holes of the average Coober Pedy dugout, they planned wide shafts that would be skylights as well as allowing a flow of fresh, cool air.



*Above: The shady verandah, with table and chairs and even a few plants, makes an ideal spot for above-ground entertaining.*

*Left: In the children's bedroom, a deep archway is a design feature that's functional, too. Bunks are built in, leaving the rest of the room free for other activities.*

*Above left: The main bedroom, comfortable and spacious, has a wall of built-in louvred cupboards. The wide opening in the ceiling is a shaft to the surface, allowing in both light and air.*





## IMAGES OF AUSTRALIA...

Considering the enormity of the task, they planned on a lavish scale of 27 squares; an entry area, sunken lounge, dining area and kitchen, pantry, master bedroom with ensuite bathroom, a second bedroom, a large storeroom and even the luxury of a billiard room and bar. Mike has recently completed an extension to the dugout, a sewing room for Susan who is a talented artist, weaver and spinner.

There are light shafts to the kitchen, both bedrooms, the billiard room and the bathroom. The natural lighting is supplemented from the town's supply.

Although the stone is fairly soft, stable and easily worked, digging was a mammoth job. But Mike Davison is a big man. He set to work with a jack pick, adze, shovel and explosives.

Apart from the cedar-panelled kitchen and bar, the only resemblance to a suburban cottage is a roofed-in verandah by the front door (being an escarpment, it is also by the back door!) where Mike, Susan and their friends can get together for a drink and a yarn on pleasant days. "We have many pleasant days," said Susan.

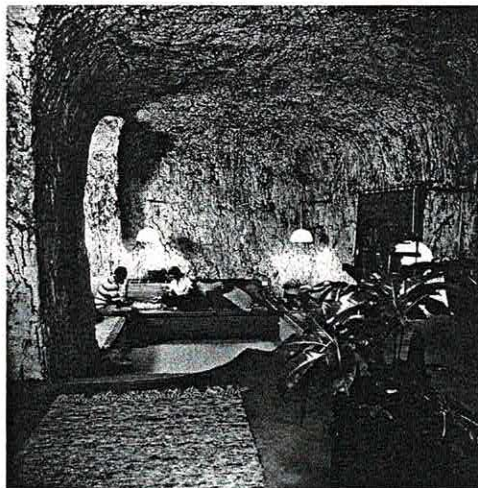
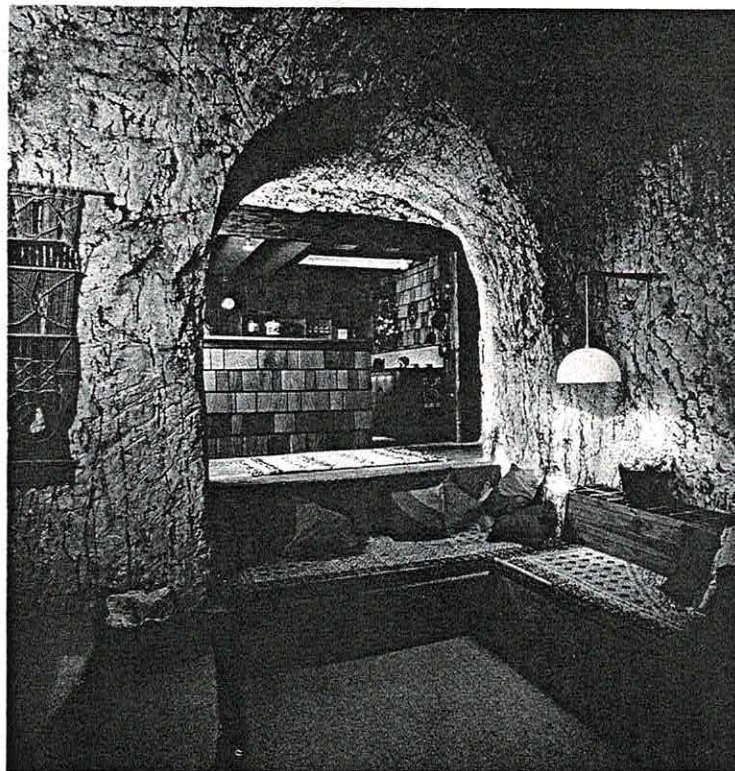
Inside, furniture is minimal and mostly built in, such as the cedar cupboards, louvred closets and laminated benches and solid oregon bar tops. There is a profusion of indoor plants, a strange and welcome sight in a place where water is \$54 for 4500 litres, trucked from a desalination plant. The durable Mike is making a 60,000 litre water tank by drilling down nine metres and excavating a cavern in the rock. Household waste is into deep shafts and is no problem.

So Mike and Susan have their home. The sheer amount of work led Susan to remark, when the job was half-completed: "We seem to be taking more time on this project than the workers on the pyramids!"

Calloused hands and aching backs have had their reward in an environment for living that is superbly adapted to its setting in the desert.

There was a more tangible reward. The house cost less than a tenth of what the Davisons would have had to pay for a timber-and-fibro three-bedroom cottage with paid labor and all materials laboriously carted from the south.

The rich beauty of the red cedar shingles are a reminder to Susan and Mike of their former homeland. How strange to think that a cedar tree that once stood high on a snowclad mountainside in North America should give pleasure beneath the sun-scorched rocks and lunar landscape of one of the world's driest and most inhospitable places! □

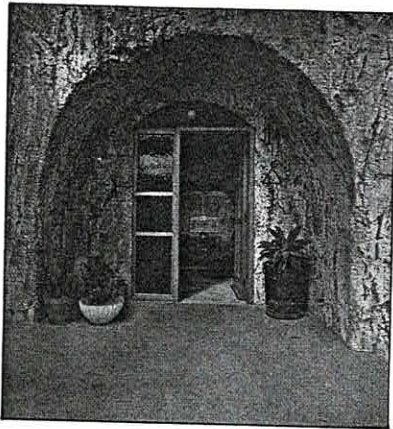


*All the comforts of home; the sunken lounge is an inviting room with its masses of bright cushions atop built-in bench seating. The spinning wheel and weaving add special personal touches.*

*Story courtesy of the Council of Forest Industries of British Columbia, Sydney.*



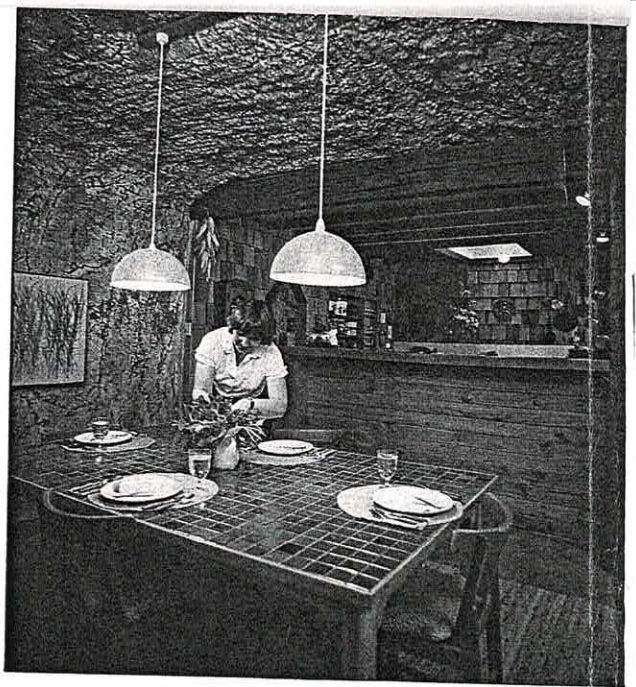
IMAGES OF AUSTRALIA...



*Right: The front (and back) door – set beneath a huge archway of solid rock.*

*Far right: The dining room, looking towards the kitchen.*

*Below: Cedar shingles, shining copperware, laminated benchtops and solid oregon bar top – all add up to a good-looking, well-designed kitchen.*









I cut the beams with an old two-man felling saw and put them in place with the aid of a couple of friends and a builder's roof jack. Two coats of satin finish Estapol finished off the job.

The ceiling beams are 90 mm x 45 mm pinus radiata that was burnt with a propane burner and then wire brushed to bring out the grain, then satin finished with Estapol. They were let into holes carved into the sandstone and mortised into the big crossbeam. The beams are 150 mm x 300 mm; and no one has been able to identify the wood for us.

Gyrock panels were laid on top of the ceiling beams by some careful manipulating and very clean hands (the panels were painted before they went up).

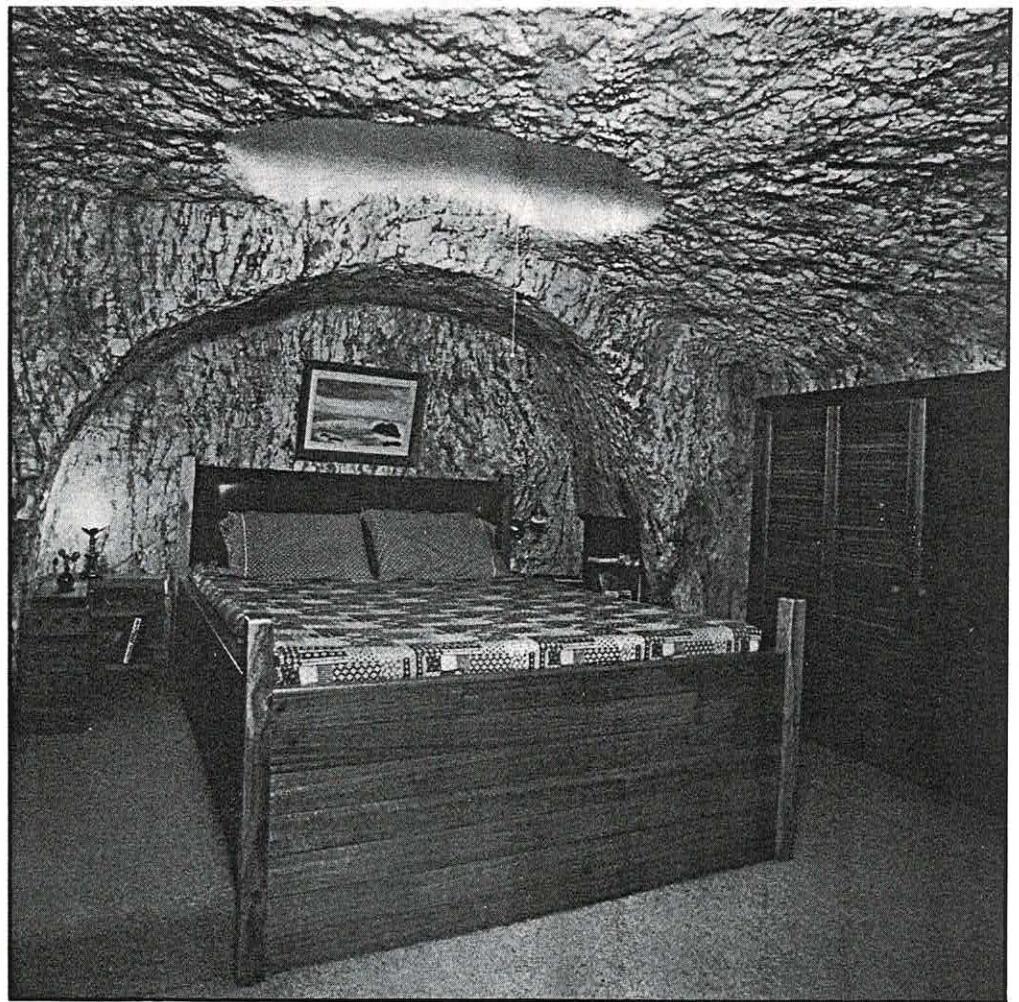
#### Light shafts

Light shafts were boxed in at the surface with concrete down into the ground about 1 m and above the ground by 1.2 m at the highest. They are situated with the long way facing east and west, to catch the sunlight for the maximum time and with a slope towards the north to reflect heat and shed rain.

There is a 300 mm square vent in the south wall of each box about 600 mm above ground level, this being the shady side of the box.

The top is sheeted with Lumalite corrugated clear fibreglass and is sealed with Pabco Press-tite.

The skylights allow plenty of light in during the day and give constant ventilation. Any time someone opens a door air moves through the shaft much as up through a chimney flue.



#### Large verandahs

The large verandahs outside were easy to build, as I was able to use the cut of the face as part of the supporting structure.

The uprights or columns were 50 mm black pipe set into 52 mm holes drilled into the sandstone. A little salt water poured into the holes, and those pipes were there to stay!

On the face of the cut I drilled 52 mm holes at the desired angle and set in shorter pieces of pipe.

Pinus timber was used between RSJ beams and Lysaght Zinalume corrugated cladding, with windows, of clear Lumalite three panels wide.

This roofing arrangement gives a nice, airy, light place sufficient shading for outdoor living. It also affords a large rainwater catchment, which is a very necessary aspect.

We have a 13,000 litre rainwater tank connected to the gutter at present, but I am building a 60,000 litre underground rain water tank.

P.S. In most places the personal pronoun 'I' should be changed to 'we' as my wife and young son also had a large hand in the building and planning.

\*The Davisons come from Oregon, in USA.

The bedroom and its built-in furniture. If you want a little more room space at Coober Pedy, and your home is in the right type of rock, you just dig a little further; so the bedhead is in its own alcove. Note the light and air shaft opening over the bed. And the bed is partly rock that was not taken away.

Right:

The son's bedroom has built-in bunks and other built-in items. A shaft through the rock provides plenty of light and air.

Far right:

Even though the house is bigger than most and better finished and furnished than many, there is always something else to do, because labor is scarce and materials even more so. Here, Michael Davison works in a large cavern that is his and his wife's workshop.

