

# THE **Owner Builder**

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# BUILDING OUR MUD BRICK HOUSE

## My Story

BY CAROLYN CLARKE

One of the many highlights of my life was being an owner builder and building my own house. It was 20 years ago now that the project began, yet it seems like yesterday.

It had been a dream of mine to build a mud brick house since my early 20s; I had been influenced by an early boyfriend and my involvement in a communal build with friends up in the forested hills of Ensay. I had also devoured mud brick building books and started buying *The Owner Builder* magazine to educate myself on the mud brick building process. I bought a small property in Venus Bay in 1995 due, in part, to my passion for windsurfing at nearby Sandy Point, and the seed to somehow live there was planted. A few years later I met my life partner Pete McCallum, and very soon we found that we both wanted to live away from the city and build our own place. So after travelling the world for 15 months and spending our spare time on the road drawing plans, together we started to make it happen. As a bonus, on our return to Australia late 1999 the neighbouring block was for sale, so we purchased it immediately, giving us land approximately one third of an acre (1300m<sup>2</sup>) in size.

Pete was a self-taught owner builder – a naturally practical person who could just look at how something was built and reproduce it – and had already completely renovated a house. He had also learned a lot from his father who was a qualified builder. I had researched everything there was to know about building with mud bricks and was particularly inspired by a *Renew* magazine article about a young female building her own muddie!

When we started to get the project off the ground, we had very little money saved as we had just returned from our world trip. But we had enough to buy our water tank and to start gathering second-hand materials. We tried to secure a home loan but were turned away due to me being self-employed and us both being owner builders. We found we could get personal loans and credit cards extremely easily, so secured three of the former and six of the latter. Back then I was very confident we would secure the home loan once we had the house to lock up. However, I would not recommend this method to others!

We had decided on using plans from architect Peter Lees as they were designed for owner builders and we could tweak the design to suit us as we went along. The loft design also meant less land was taken up by the building and we were attracted to the associated heating/cooling benefits. Pictures of our house ended up being featured in the next edition of Peter's plans book! ([www.cheapomedesigns.com](http://www.cheapomedesigns.com))

### Gathering and preparing

We spent the next three months gathering second-hand materials from a number of wreckers and salvage yards around Melbourne. We bought a mixture of period doors including solid Victorian 4-panel doors, Edwardian doors with glass panels and cedar French doors. We collected many old styles of windows including 60s windows complete with old style flyscreens, leadlight windows, sash windows and old-style casement windows.

We also purchased reclaimed chunky cedar timber for both the lintels and frames surrounding the windows and doors in the mud bricks, old hardwood for benchtops, and fence palings, red gum plinth and fence rails. Many hours of preparation followed. We had to strip the numerous layers of paint from all the doors and windows using a heat gun. Definitely a labour of love! But underneath, gorgeous timber finishes awaited. The recycled timbers were ready for use but all the fencing timber required many hours of denailing.

It was not possible for us to make the mud bricks due to the small size of the buildable area of our block and the fact we had pure sand. So, instead, we researched mud bricks to purchase by going and meeting different 'muddie guys' to check out their bricks and to see them in finished buildings. We settled on the lighter lowland puddled bricks made by Wayne Newton of Adobe Constructions in Willow Grove.

We bought a tent to live in on site and a small shed for tool storage and for the 'kitchen'. Extra tools were bought and all the other items we needed to lay the kiln-fired and mud bricks were purchased.

Firstly, we spent a few months preparing the site. This involved clearing just enough trees for the house site and removing three non-native pine trees. It was very important to us to retain as much vegetation as possible, for privacy as well as for windbreaks. We had the water tank delivered and hired a local concreter Peter Farrell (Leongatha) to lay the slab. Finally, in December 2001, after a year of preparation, we were ready to start the actual building.



## Muddie building

Firstly we laid the mandatory two rows of kiln-fired bricks for the damp course, which required decisions on external door positions, to work in with the surrounding vegetation... all of which was done over the phone, as I was stuck in Melbourne working at the time!

Next the door frames were erected, which were all very thick recycled cedar timbers. Electrical cables had to be laid at this point as they had to be placed in the gap between the fired bricks and run up and over the door frames. This meant a bit of guess work as to where we thought the light switches and power points would be most appropriate. We did all the laying of the cables, with our semi-retired local electrician Ray Fraser (Venus Bay) happy to do the fit-off.

Then it was time for the mud bricks, the most exciting part (for me) of the build. I loved how fast they went up and how quickly our house started to take shape. We had chosen to go with load bearing construction rather than post and beam, as my research showed it to be a stronger construction choice, as the corners of the building would be 'locked in' rather than having a change of medium from mud brick to timber that could separate slightly over time. And, as a bonus, it was more economical! We had chosen puddled over pressed bricks as, once again, my research showed them to be the stronger option, relying on the blend of 'ingredients' of the brick to hold them together as opposed to just pressure from the pressing process.







We had quite a production team going on with the bricks; Pete and his Dad laying, and his Mum and I moving the bricks on site, cleaning off excess mortar once laid and doing the pointing. I went for the pointed finish as we had decided not to render but instead leave the bricks raw, protected by the verandah. This meant there would be more air exchange as the bricks would be more breathable. The other bonus of mud bricks was that, once laid, inside and outside walls were complete.

The only fiddly bit was when we reached the higher layers of bricks, as we had to start drilling holes in some of the bricks to accommodate the holding down rods which keep the roof on. At the end of every day of laying we wrapped the mud brick walls in sheets of black plastic to protect the top of the bricks from rain. Ironically it did not rain once during the entire process. It was a momentous occasion indeed when the last mud brick was finally laid.

During the building process we were living very basically with just the tent for a bedroom and the little shed with an ice chest for a fridge and basic camp cooking facilities. A shower was either a swim in Bass Strait or one of those black solar bags hung in a tree. As for the toilet, let's just say our property is well fertilised! Fortunately there were not many houses or people around and all the blocks (including ours) had a dense cover of trees, so lots of privacy!

### Building the loft

Next came all the timber work to build the upstairs loft portion of the house, which would sit on the mud brick walls. This started with the top plate and the bearers and joists, which would have the support of two 300x300mm cypress posts. These posts were bolted to the concrete slab and carried a large portion of the load of the loft construction. We oversized them so it

was quite the challenge to move them. We oversized all the framing timber for upstairs to achieve the F8 rating, as we were using locally milled cypress (sourced from Adobe Constructions) that was only rated F7. Once the yellow-tongue flooring was laid we were ready to begin the upstairs framing. Being a loft, we were basically framing the roof, gable ends, internal walls and dormers.

At this stage of the build Pete and his Dad did most of the framing while I focussed on my remaining work in the city to bring in a much needed injection of dollars. We were surviving on only one car, so I also had to bring in food and hardware supplies when travelling from Melbourne to Venus Bay every weekend to do a few days labouring work on site.

In comparison to the mud bricks, the framing of upstairs seemed very slow. A lot of big beams were involved and it was heavy work. We had to hire a lifter for a few days just to get the huge bearers into position.



By this time we had had to move all our boxes of packed possessions into the house as we had given up our rental in the city. We initially stored them downstairs in one corner of the mud brick house so they would stay dry. But, during the course of the building, they were moved multiple times to get them out of the way. Not the ideal building scenario!

While we were framing, we researched our cladding and decided to go with locally milled radial sawn timber from Radial Timber Australia in Yarram. It was a relatively new industry at the time and just required us to go to the mill and select a few logs. This company has expanded

considerably since then and now operates from Dandenong as Radial Timber Sales. It was quite daunting when the delivery truck arrived and our logs were just rolled off onto the neighbouring vacant block. The idea was that we just had to chainsaw the ends off and the boards would all nicely come away from the core. In reality, a little extra encouragement was required.

Initially we applied an oil product (*Organoil*, which I loved) to the timber cladding but found this was not lasting long enough, most likely due to our exposure to salt air. So we had to change to products that provided more of a seal, like *Intergrain DWD*.

It must be said that our building site was always impeccably clean due to Pete's Mum. She would clean up daily, sorting all the building debris, with sawdust bagged, timber offcuts set aside for local firewood etc. Consequently we had very little hard rubbish from the build.

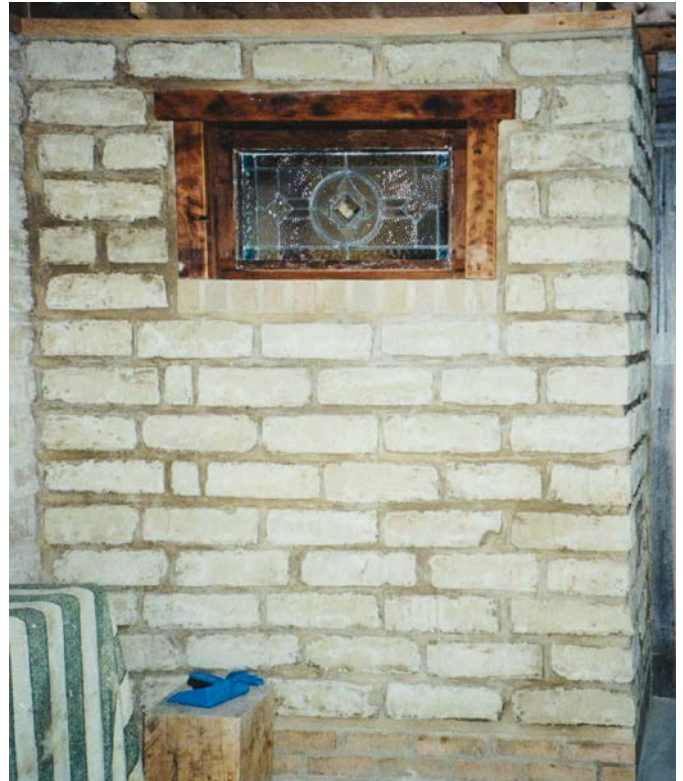
For the roof we had a bit of a challenge getting a plumber as most took one look at the 50 degree pitch and said 'no thanks'. One plumber even drove past without stopping and we never saw or heard from him again. Fortunately we found a local guy, Grant Starr (Venus Bay), who was very comfortable on steep pitches. He accepted the job and our *Colorbond* roof was laid. We were locked up!

## Moving in

Around this time Pete found local employment so that I could close up the remainder of my Melbourne work and re-establish my Remedial Massage work in South Gippsland.

It was also at this time that we were sent a notice from council to pack up our tent, so we were forced to move into our house at lockup stage. Probably timely, as winter had arrived. It was very basic living conditions, a camping setup in the 'kitchen', an 'outdoor' loo, no running water, and power via extension cords running everywhere. Living in unsealed walls upstairs also meant we had a lot of visitors from the outdoors including a resident possum, a local bat who loved to swoop us when in bed, a native rat that got trapped inside when we completed the lockup, and my favourite, the bogong moths!





## Second fixing and internals

The internal finishing of the house seemed to go on forever, especially as we were both trying to work as well. Rather than describe the process, I will just mention some of the key features. We still built absolutely everything ourselves.

### DOWNSTAIRS

**Bathroom:** Bath and shower were raised so there were no slab penetrations, to avoid use of chemical termite sprays. All the plumbing (bathroom, toilet, kitchen, laundry) goes out through the external mud brick walls and over the kiln brick damp course layers. Hence the need to raise the bath and shower to cater for the

traps beneath. I selected a steel bath and insulated around it with leftover green batts (*Autex Greenstuf*) behind the cladding to maintain the heat. We used fence palings for cladding around the bath and shower, and on the cabinet doors. *Mini Orb* was used to clad one internal wall.

**Kitchen floor:** Quite unique as it is a kind of parquet style cut from old hardwood fence rails. Pete spent many hours cutting each square of four 300mm lengths of fence rails, which were then glued to the concrete slab, each 'square' running in a different direction. This floor (being very thick) then had sloping timber edges to join the floors in the dining area and laundry. Economical

but labour intensive! It's naturally slightly uneven but beautifully soft to stand on and nothing breaks when you drop it.

**Kitchen:** Cupboards, drawers and separating half-height wall all made from fence palings. Benchtops made from reclaimed timber. Red gum posts were used as a feature between the kitchen and dining area.

**Internal mud brick entrance:** We built around the front door to create a 'mud room' to minimise loss of heat/cool at entry.

**Ceiling architraves:** Old hardwood and red gum fence plinth boards.

**Lounge room:** Feature fence paling wall.

**Leadlight windows:** Used in internal walls between rooms to let light through.

## UPSTAIRS

We had to tie in the internal look of upstairs to the earthy look of downstairs, so did a number of things to achieve this:

- The 9mm ply we used to clad all internal walls and roof lining was painted using a brushed technique in earthy tones.
- Leftover *Mini Orb* sheets were used to line the lower half of the dormer walls.
- Fence palings were used to 'frame' the internal and external windows and doors, for all the floor skirting boards, and also for a 'dado' effect on the walls in the hallway of the stairwell.
- The 'cores' of the radial sawn timber logs were used for handrails in the hallway.
- Solid second-hand Edwardian 2- and 3-panel doors were used on all rooms.

## OTHER STUFF

Even though the house location isn't the ideal north facing (due to block restrictions), there are two definite pluses: the cooling breezes in summer that flow over the dunes and through upstairs from the south gable end to the north; and the amount of water catchment we get from both buildings, having the large roof area facing west to south-west, where most of the rain comes from.

Heating/Cooling: I cannot rave enough about how brilliant mud bricks are thermally; they are warm in winter and cool in summer, without air conditioning.

Water Tanks: 2 x 25,000-litre tanks.

Wastewater system: We tried to get a wormfarm installed but it was rejected

by council, so we installed a *Super-Treat* wastewater treatment system. Irony is, when I had to have the tank emptied after 20 years, it was one big worm farm!

Termites: We avoided the use of chemicals by leaving 100mm of slab exposed on both buildings and no plumbing penetrations through the slab. Acquired this knowledge via the book *Building Out Termites: An Australian Manual* by Robert Verkerk (1990).

Quirky front fence: It was kind of built as an afterthought and the design made up as we went along, but it attracted so much interest. Once we spotted a builder get out of his car and shake some of the more 'freestanding' parts of the fence, quite bemused as to how it was staying together.

## Shed/studio building

Before we had even completed the house we started on our 'other' building, of which two thirds became our Karate and Yoga Studio and one third the carport/shed. The building was slightly bigger in floor space than the house but just the single storey. It was a more conventional build and we didn't use any mud bricks.

However, to create unity between the two buildings we kept it the same in terms of a concrete slab, 50 degree roof pitch, *Colorbond* roofing and all external walls and gable ends clad in the same radial sawn timber. I won't go into any more detail than that as it was another whole building journey. But we did get back to completing the house!



## Building Costs

**HOUSE** – Approx. \$100,000, major costs:

Slab	\$7700
Mud bricks	\$2667
Roof	\$9000
Cypress framing	\$14,411
Doors and windows	\$2555
Flooring	\$2689
Weatherboards	\$2554
Septic	\$5720
Water tank and pump	\$2800

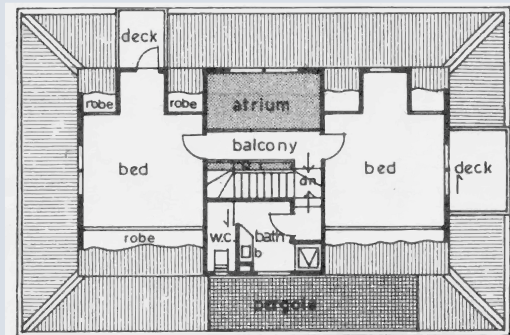
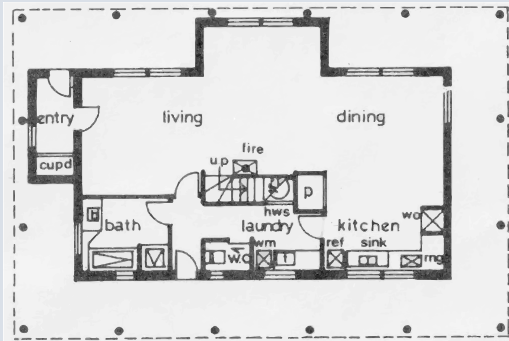
**STUDIO/SHED** – Approx. \$50,000.



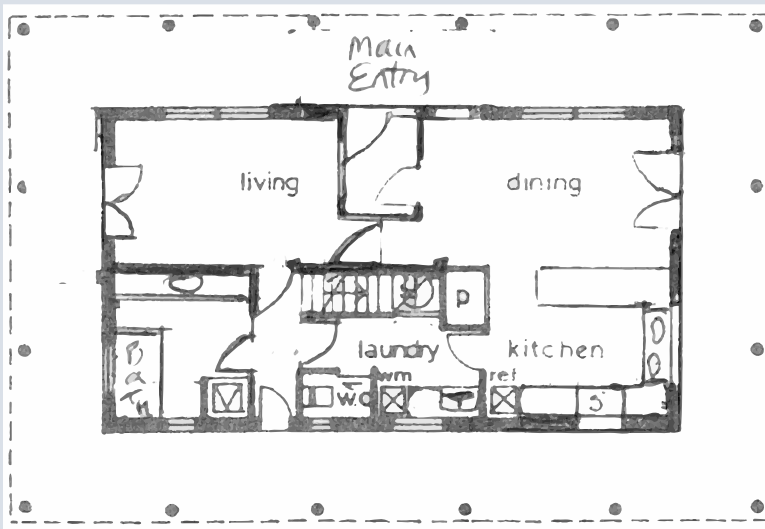




### Original floor plan



### Amended floor plan



#### Ground floor changes

We kept the building to a rectangular shape so that all mud bricks would have good protection from the verandah overhang.

No wood heater was included.

We added an internal 'mud room' around the main entrance which gave us separate living and dining rooms.

Bathroom internal wall was moved so that the stairs could come straight down and finish in the hallway (for business entry), separated from living areas.

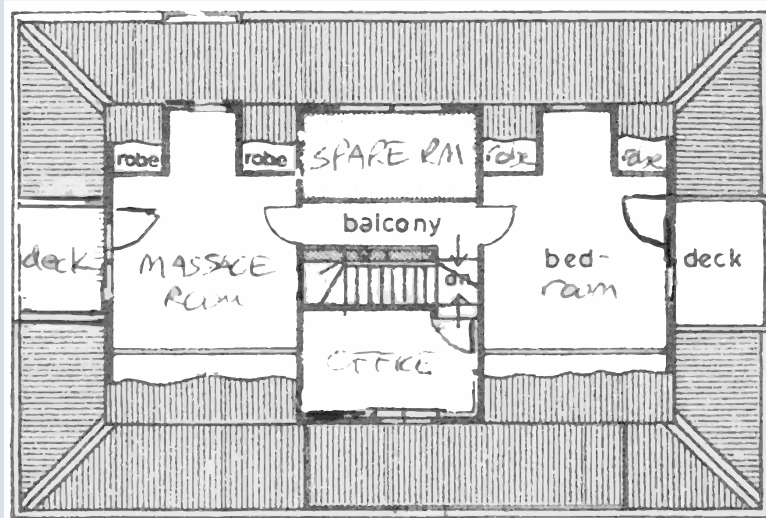
Ground floor

#### Upper floor changes

Deck attached to small dormer was removed and instead repositioned so we had one at each end of the house. This suited the block orientation and room use.

Upstairs bathroom was eliminated to keep our plumbing simple and cost effective by keeping it all on the ground floor. This room became an office.

The 'atrium' was walled in to form another room.



Upper floor



*'Sleep soundly, young Rose, for I built you a good ship, strong and true...'*

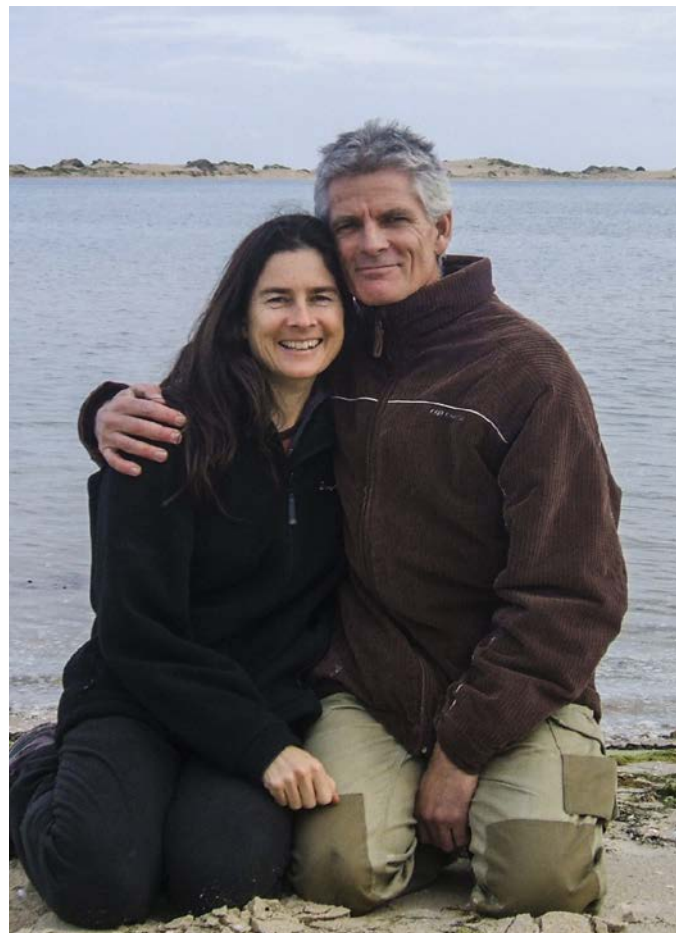
## The test of time

Both our mud brick loft house and shed/studio have stood the test of time. The mud bricks have not been touched in 21 years. The cladding on the house had to have some maintenance after 15 years as minor rotting had set in, especially on the sides and faces of the west facing dormers. I'm not sure why this happened but it was either due to unseen rot in the logs, or that the west and south faces and the 'in between's' of the dormers just didn't get enough sunlight to dry out properly. We didn't have this problem on the shed/studio building, which is clad in the same material. But other than that everything has stood up to the elements of where we live, constantly exposed to sea air and the winter south westerly blasts coming off Bass Strait.

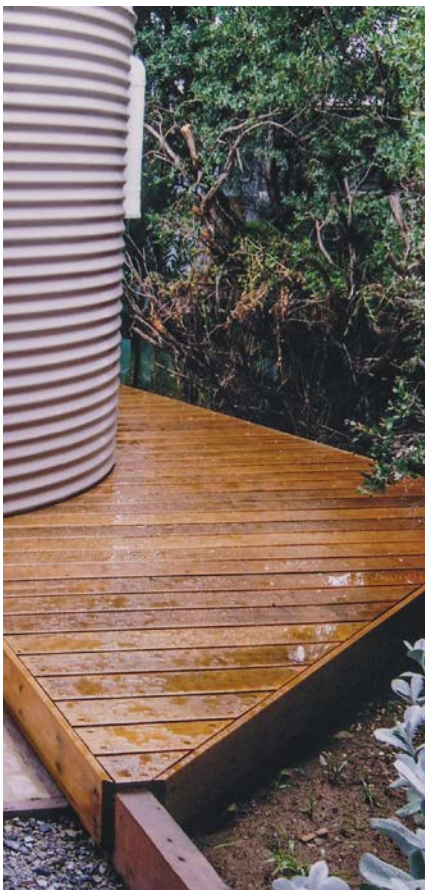
Would I do it all again? Just writing about it makes me want to do it all again! And, that was the original plan – to move to a larger property and do another owner build, but in a slightly different style, this time with both of us working full-time on the build. But alas, in 2007, Pete was diagnosed with a rare form of cancer and died four years later. But in those four years he built all the decks, did all the retaining walls and landscaping, created my vegie plot, laid the brick paving, built a garden shed and compost area, and finally started lining his shed. It became a therapy for him while dealing with his journey.

I always think of the line in the movie Titanic where the shipbuilder says to Kate Winslet *'Sleep soundly, young Rose, for I built you a good ship, strong and true...'*. My beautiful Pete certainly built us a good, solid, enduring house – with me as his number one labourer, of course! And everywhere I look I have wonderful memories of our shared owner builder journey.

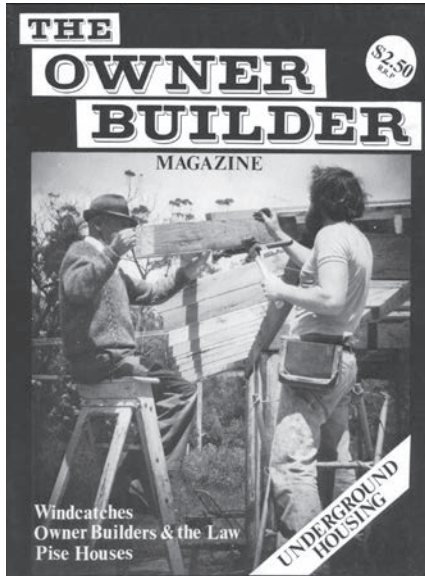
Definitely one of the highlights of my life! ♦







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