
Light earth construction

An owner built B&B in a Queensland rainforest uses a mix of light earth and weatherboard.

BY ROSE CUTHBERTSON

When I first met Russell I told him I had always wanted to run a bed and breakfast (B&B) as a 'non-retirement' plan – to provide an income and a pleasant lifestyle all in one. Russell had been brought up on a farm in country Victoria, and liked the idea of pottering about on a tractor and moving large quantities of dirt for landscaping.

Finding Turkey's Nest

Not long after we married, we started looking for properties near Brisbane, from northern NSW to the Sunshine Coast hinterland. An ad in the weekend paper took us to Mt Glorious, just 45 kilometres north-west of Brisbane, but surrounded by Brisbane Forest Park and Maiala National Park. The property didn't suit us, but when we stopped at the local café on the way home the waitress suggested Turkey's Nest, just down the road.

It was love at first sight! The property was just under 6 hectares, about two-thirds of it rainforest, with a

little cottage rebuilt from three former forestry workers' cottages moved down from Beerburrum. The cottage was a real 'blokes' zone,' somewhat rudimentary, and all the wrong way round – the best view was from the laundry, the kitchen faced a blank wall, the bedroom had no windows facing the forest view – but we spent our first wedding anniversary there, planning renovations.

Renovations

With plans sketched up, we called our carpenter friend Oliver to move walls, and install a decent bathroom. The laundry and bathroom became the bedroom, so you could wake up to that magnificent view! The bedroom became a new kitchen and bathroom, with large windows added over the kitchen sink to look out at the birds feeding on the verandah. The walls are all unfinished hardwood timber, so Oliver carefully planned the moving of walls to reuse every last piece!

Once Oliver had finished we set about fitting out the kitchen. We bought 100 metres of second-hand V-jointed hoop pine (*Araucaria cunninghamii*), sanded it back, and made doors for the IKEA cupboard carcasses. Russell carefully twisted and bent the tines of old silver forks to create handles.

Beginning the B&B business

We were living in Brisbane and initially didn't feel confident to rent the cottage out for short holiday stays, so we installed tenants. However, before long one of our children moved out of home, and we decided to experiment with the vacant cottage in the Brisbane backyard as a B&B business. It was so successful that we then had the confidence to offer the Turkey's Nest cottage for weekends and short stays.

It was at about this time that I discovered *The Owner Builder*. I immediately gave Russell a subscription for his birthday (isn't it great when you can buy your partner something you really want yourself). Ideas of green living and alternative building methods which had been fermenting in my mind for years now had a feast of information to feed on!

We applied to council for a Material Change of Use to build three more cottages and our own house on the property. Council was enthusiastic, but we hit a brick wall with the Department of Main Roads. We could not satisfy their stringent requirements for sight distance and turning circle into our driveway (who



Former 'blokes zone' transformed.



- 1-2. The new house is well under way with roof and weatherboard sections complete. Light earth infill sections are still to come!
- 3. Many gorgeous feathered friends regularly come to visit.
- 4. The property is surrounded by magnificent rainforest.
- 5. Russell's wood boxes made from discarded pallets.
- 6. Examples like this in the book 'EcoNest' inspired Rose and Russell to choose light earth for their build.



© EcoNest by Bokerlaporte & Ioparis, photo by Jamie Dickson



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7-15. The rudimentary 'blokes cottage' has been transformed while retaining its history.
16. Some of the magnificent rainforest on the property.

could on a winding mountain road!) so our application was rejected.

Back to the drawing board. Council said we could use two rooms of our house for a bed and breakfast business. From our B&B experience in Brisbane we knew that a 'room' could be separated from the house by up to 20 metres, so with clever design we could still have a couple of B&B cabins.

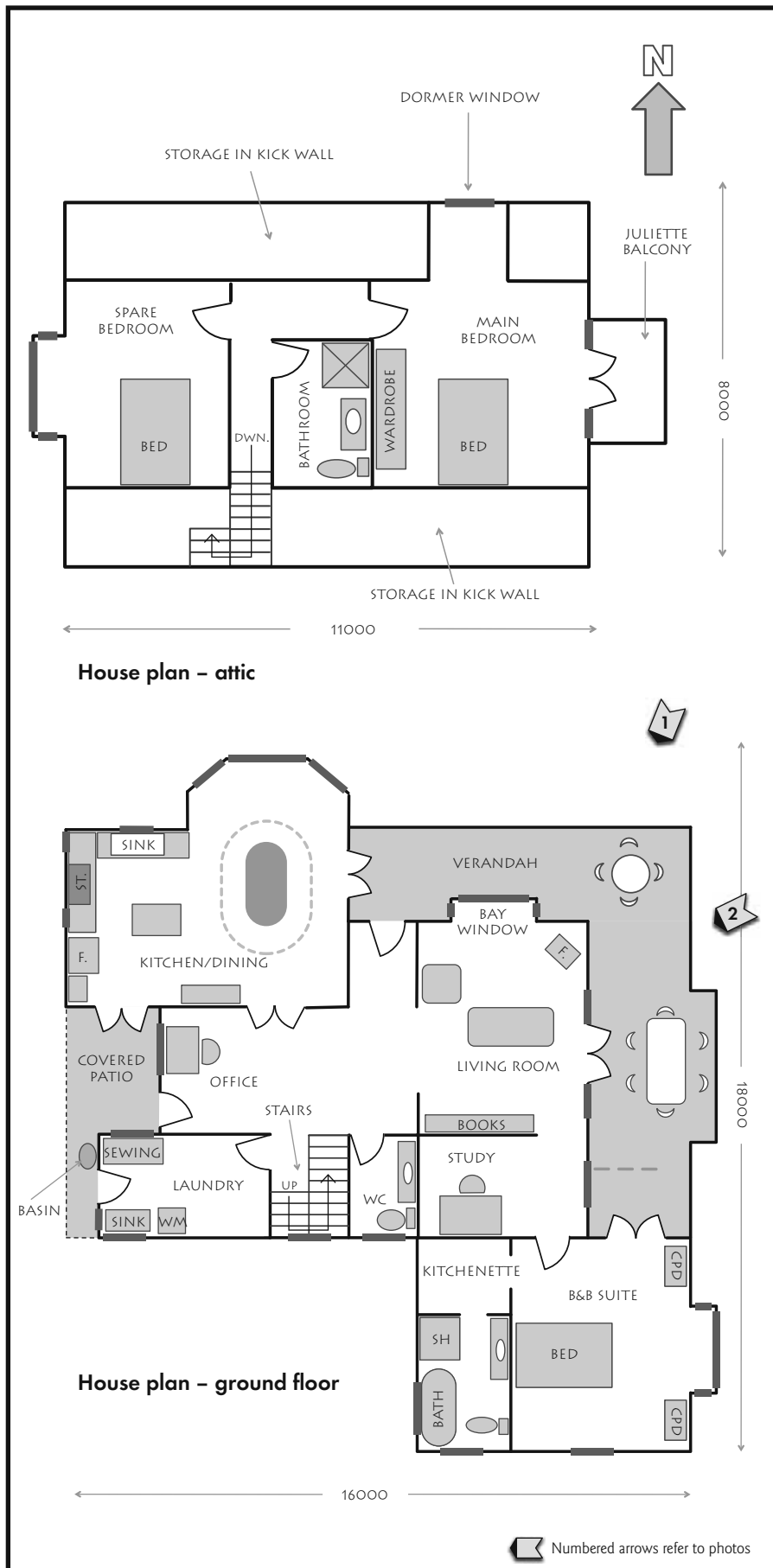
Light earth

We read articles in *TOB* and many books about mud brick, straw bale, rammed earth and other alternative building methods (I hate that term 'alternative' - these methods are the original ones, it's the brick veneers that are alternative!). Being less than young (but still energetic) we crossed off mud brick as too much hard work, we thought straw bale may not work well in the wet rainforest climate, and rammed earth did not allow a hands-on approach. A copy of *EcoNest* by Paula Baker-Laporte and Robert Laporte from the local library (see *TOB* Bookshop section) convinced us that light earth was the way to go. The process is simple and not heavy, and our clay soil was well suited to making the clay slurry.

Our land slopes steeply, so we would have to build on stumps, with suspended timber floor on all but a small section of the kitchen/dining area. We designed a house facing almost north, with good cross ventilation, wide eaves and verandahs. An attic would act as a thermal funnel for summer. Queensland gets pretty hot in summer, but Mt Glorious is 620 metres above sea level, so it's cooler in summer, and quite cold in winter. While still catering for summer heat, our focus would have to be on heating.

Plans and permits

Getting plans drawn up to incorporate the light earth walls was difficult. Wind loadings meant that bracing was a major requirement. Australia has little experience in the use of light earth, so even though it has been used in Europe since the 1500s, and is widely used in the USA, there were no Australian standards to draw on. In the end the design was drawn up as if the earth walls had no bracing value whatsoever. We had to construct two sets of 90x90mm stud walls, with cross-bracing between, and fill these



with the light earth mix. This house will never blow away!

Plans for a house and two 'satellite bedrooms' (our B&B cabins) were drawn up and approved in November 2008. The cabins would be well-insulated weatherboard, while the house would have light earth for the main core, and weatherboard 'bump-outs' to give it a more old world, added-on feel.

Not being in the first flower of youth, and with a difficult site to work with, we decided to hire a registered builder to construct footings, framework and roof, and the weatherboard cladding on the attic and bump-outs. He would also build one new cabin to lock-up, giving us a place to live and work while we finished the house. As the builder pointed out, lock-up is about half the total job. It left more than enough for us!

Removing old trees

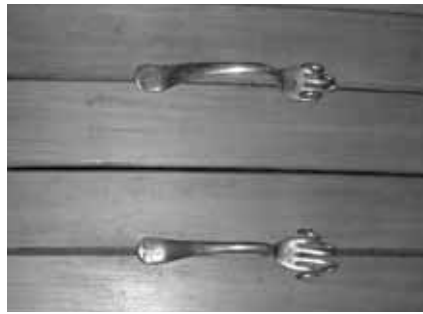
Before construction began we had to fell several 30 to 40-year-old rose gums. These trees were not safe to have near the house or cabin, due to their tendency to drop huge branches. They had been planted originally as plantation timber on the edge of the rainforest, so our intention was to reuse this timber in the house. Rose gum is not suitable for exterior use, so it would have to be used for wall linings and floors. Those that were not big enough to mill into boards were cut into solid beams, to be used as feature beams in the house.

Felling the trees themselves was bad enough, but removing the leaves and branches that were not to be milled was a massive task. Russell and I spent five very exhausting days dragging it all into a clearing in the bush, where it is slowly but surely composting down.

It starts!

Excavations started early January 2009. The hole they cut into the once pleasant, grassy slope was horrendous! Earthworks coincided with the breaking of the drought and our beautiful red earth, so good for growing things (and perfect for light earth construction), was not so great when caked 25mm thick on our boots!

We were blessed with the most fantastic builders. Garry Collier and his team were reliable, pleasant to have around, wonderful craftsmen, and flexible in working with owners who wanted to have a hands-on approach and use recycled materials. Working



Bent forks make great drawer handles too.

around Russell's four day a week job, we acted as unpaid apprentices. We dug trenches, ordered and collected materials, scavenged second-hand doors and windows. As building progressed, we tried to keep ahead of the builders, painting fascias, soffits and weatherboards before they went up six metres above ground level!

Heating

We liked the idea of hydronic under-floor heating. The gentle constant heat of warm water moving around under the floor would be perfect for the cold misty days that happen even in summer on the mountain. Our initial plan was to have the water solar heated, but the possibility of periods of cold weather with mist and no sun meant this would not be effective when we most needed it. We finally opted for a heat pump to heat the water in an energy efficient way. However, much research revealed no one in Queensland did hydronic heating and not many companies elsewhere in Australia were willing to install it under wooden floors. We eventually found a Victorian company who were willing to come up and install the pipe work.

Trying to be green

While we have tried to build as green as possible, it is a difficult thing to maintain when you are not in sole charge of the project, and where regulations are stringent. There is far more concrete in the foundations than we would have liked, and to insulate the slab under the kitchen and dining room we had to use polystyrene. We chose framing treated with *Tanalith E* (an oil based wood preservative) rather than copper chrome arsenate and any joinery we bought new was made by factories which use sustainable timber. But there

was still the ply flooring that goes down as the builders progress, held in place by copious amounts of glue, and treated against the weather with *Bar-D-K*. The off-gassing from this was noticeable, and though the surface will be sanded back before the recycled timber floors are laid, the glue underneath will remain.

Everything always goes slower (and more expensively) than planned. It was November 2009 before Garry and his team had finished to lock-up - with doors and windows suspended in an empty framework! It was now up to us to take over as true owner builders, filling the earth walls and completing all the internal fit-out. With the existing cottage always booked out on weekends, we would have to camp out in the unfinished new cabin while we completed the rest of the building, working around bookings so as not to disturb our cottage guests. And with money drying up, we had a juggling act; until we sold our house in Brisbane, we would have to do as many cheap jobs as possible to make the house habitable.

Now was the time to call on all those friends who said they'd 'love to help' with the earth walls. It was time for a barn-raising!

To be continued..... ■

The web page for Rose and Russell's B&B is www.turkeysnest.com and they have a blog (<http://turkeysnestmtglorious.blogspot.com>) that charts their building progress.



• Tanalith E

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• Turkey's Nest

Just 35km north-west of Brisbane, Turkey's Nest Rainforest Cottage is a perfect retreat from the bustle of city life, close to the city, yet a world away. 07 3289 0004, www.turkeysnest.com

• EcoNest

Baker-Laporte & Laporte, ISBN 9781586856915, RRP \$55, published by Gibbs Smith, distributed by The Scribo Group in Australia.
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