



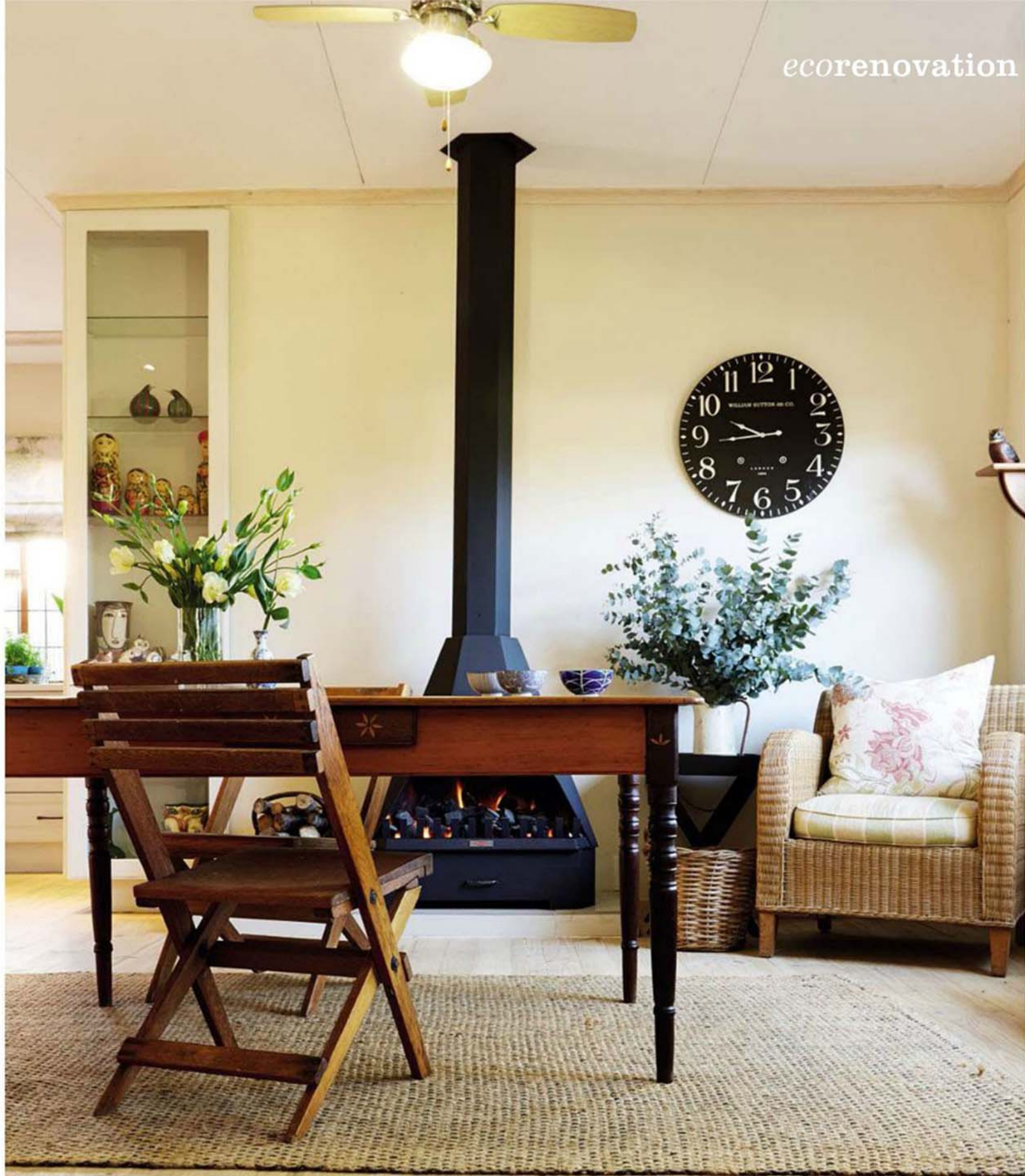
Homeowner
Erina Bezuidenhout



A green renovation

Ecofriendly building principles aren't just for new houses – owners of established homes can opt for a makeover that's kind to the environment.

By Beatrice Moore-Nöthnagel • Photographs: Francois Oberholster and supplied • Styling: Misi Overturf



We know architect Andy Horn as the man who builds houses from straw bales, sandbags or clay. But recently he took on the challenge of an old-fashioned house straight out of the '70s in the suburb of Pinelands in Cape Town – and it was not 'green' by any standards. The house was dark with many small rooms and windows and while damp walls posed a big problem, the afternoon sun was also an issue as the house is west-facing. And then, of course, all the rooms that were added over time contributed to the space lacking a good flow. Homeowners Morné and Erina Bezuidenhout contacted Andy's company, Eco Design Architects & Consultants, to help them get the house into shape, particularly as they wanted all the renovations and additions to adhere to 'green' building principles.



The vygie roof next to the study on the second level now ensures a cool house below.



Recycled bricks

During the course of the project, many of the interior walls were knocked down to improve the flow of the house, while additional rooms at the back of the house, the bathrooms and laundry were completely rebuilt. A second floor with a study for Morné was also added. All the walls were very carefully knocked out so the bricks remained whole. 'Although it was labour intensive to remove the cement off each brick by hand, it did reduce the carbon footprint as new bricks didn't have to be manufactured or transported to the site,' explains Andy. 'It's about a philosophy of life – everything doesn't have to be demolished and dumped.'

Plastered with lime dung

New walls were plastered with a mixture of cow dung, lime, sand and clay water to reduce the amount of cement used in the building process. 'Concrete is used far too often and contributes to about 6-8% of the world's CO₂ emissions!' Andy exclaims. Lime is also CO₂-neutral, meaning that all the carbon emitted during the manufacturing process is absorbed during its lifetime, and the cow dung makes the mixture more workable. Another advantage of using this plaster is that you can still use it the following day without it becoming hard – so there's no waste!

Paint that breathes

BreathCoat, a natural, ecofriendly paint, was painted onto all the walls and the roof tiles. 'Unlike other paints that boast low VOC emissions, this paint doesn't emit any harmful gases,' says Andy. The paint breathes and works like a membrane. Although it comes in a powder form and is processed on-site, this also means that it can be difficult to mix the same colour again and so any renovations may be a different shade. In this case, builders prefer to repaint the entire wall. 'Another benefit is that if there is a moisture problem in the walls, you'll see it immediately,' Andy adds.

Glass and insulation

A combination of double and safety glass was used for the new additions. Although double glazing costs twice as much as ordinary glass, you save on heating costs in the long run. The roof is insulated with two 50mm layers of Isotherm, made from recycled plastic bottles, as well as a reflecting layer of Alububble foil, which offers much better insulation than a 40mm single fibreglass layer.

Vygies for sun protection

A flat concrete roof above the lounge previously absorbed the sun's heat and then emitted it into the rest of the house. 'A vygie roof has many advantages: the concrete is no longer exposed to the sun, which improves insulation and heat emission by 80% in the living room. It also filters rainwater, creates a green habitat, increases garden space, protects the waterproof roof membrane and reduces maintenance of the flat roof,' Andy says.

In front of the window on the west side, an 'afdak' was constructed from latte that were harvested according to the phases of the moon – an ancient method that apparently makes the wood crack less and doesn't require it to be treated with any toxic wood preservatives. 'In addition, the wood is naturally resistant to fungi and wood beetles because of the nutrient-rich sap normally retained in timber which is absent when it's harvested during the right moon phase.'

Wood choices

Wood from sustainable sources, including local pine, panasta pine, recycled Oregon wood in the roof structures and African okoumé for the doors and windows, was used. The floors have a non-toxic traditional Scandinavian lye finish thanks to a product made locally by EnviroTouch. 'It bleaches the wood and transforms ordinary South African tongue and groove wood flooring into something special, with a lovely raw appearance,' Andy says. >>



A natural plaster of cow dung, clay water, sand and building lime is mixed on-site.

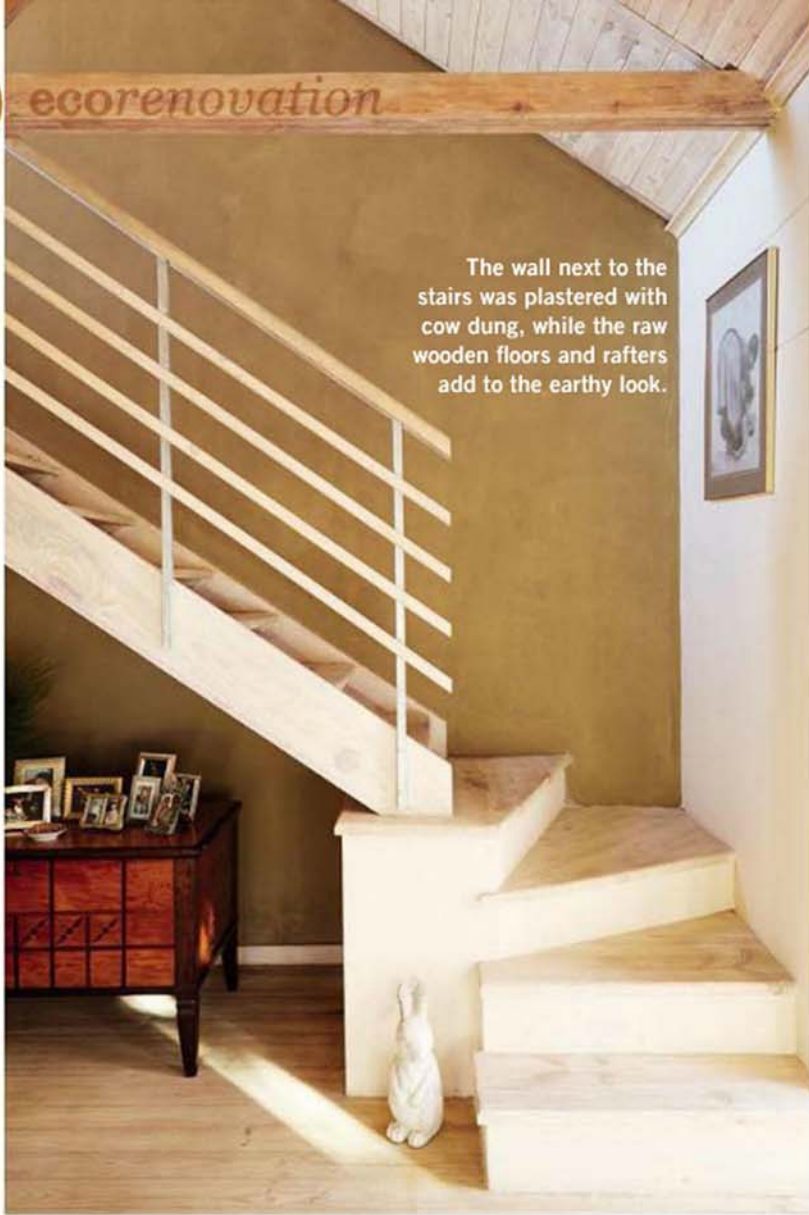


These latte, which act as a defence against the harsh afternoon sun, were harvested during a particular moon phase, so they're naturally resistant to mould and beetles.

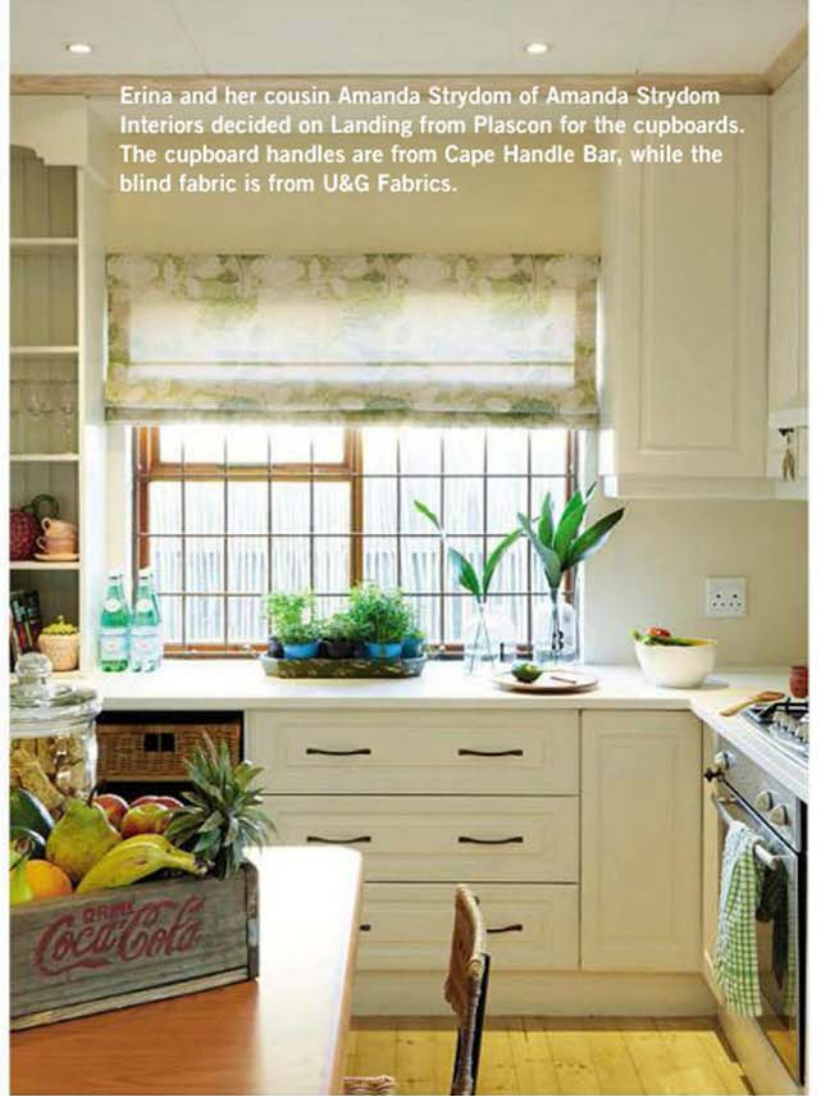
What about earth and straw bale buildings?

Houses made from earth and straw bales are struggling to gain momentum in South Africa. 'The reason,' explains Andy, 'is that there are no SABS standards for these methods at present and so the National Home Builders Registration Council (NHBRC) does not issue compliance certificates for these construction methods. Consequently, banks are not financing them and you are also not able to sell your house within the first five years. However, municipal approval is no problem. We really hope things change in the next few years. After all, these building methods are accepted in most other countries.'

The wall next to the stairs was plastered with cow dung, while the raw wooden floors and rafters add to the earthy look.



Erina and her cousin Amanda Strydom of Amanda Strydom Interiors decided on Landing from Plascon for the cupboards. The cupboard handles are from Cape Handle Bar, while the blind fabric is from U&G Fabrics.



In the kitchen, the most expensive improvement was the synthetic stone slabs from Granite Works, which don't emit harmful gases. The cupboards were given a fresh lick of paint and the cornices were treated with the same natural product as the floors.



Water-saving showerheads and taps from Flush Bathroom Interiors were used but the white subway tiles from Kenzan Tiles were a green compromise as they're glazed and not considered ecofriendly. 'On the other hand, a timeless white bathroom also has a smaller carbon footprint,' explains Amanda, 'because it doesn't have to be replaced after five or six years to keep up with changing fashions.' 🏠

