

# THE **Owner Builder**

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**STRAW BALE ♦ EARTH PLASTER ♦ STONE ♦ KIT HOME ♦ RETROFITTING**

# Building an energy efficient straw bale home

*Finishing off the second render coat in preparation for the final coat*

The second coat of render is arguably the most important, as it is this coat that establishes the shape of the finished wall. Not only is the second coat of render most important regarding shape, it also represents the hardest days' work in all rendering, as there is a lot more render mixed and applied for the second coat of render than any other.

The final coat of render is a thinner coat of render about 5–10mm thick so it cannot be used to shape the wall. One of the big mistakes people make is to try to change the shape of the finished wall with the final coat of render, which inevitably leads to cracking in the finished product.

## Shaping the wall

Having completed the second coat of render I was still not happy with the final shape of the wall, which left me with two options; I could either get Mark Beedle (spray rendering) back to do an additional coat of render, or do it by hand. Without hesitation, I would always opt for Mark to return, as it is so much faster using the pump than doing it by hand. However,

**BY BRIAN HODGE**

if you have plenty of time then you may choose to do it by hand.

I remember one client employed two extra workers to help him and his wife with the rendering on their house by hand before Mark had the pump. The two extras worked five days a week, the owners worked six days a week (sometimes seven) plus they got help from friends whenever possible. It took about three months to complete the rendering. They were somewhat put off when they saw the pump working some years later, as they realised that with the same number of workers it would have been done in 6–7 days.

## Flush or proud

Following my own system of construction, all windows, doors, cabinets, skirting and eave linings are installed after the second coat of render. I will use the skirting as an example of the approach that I took and recommend.

I use a straight edge or 1.2m level held against the wall to establish the line of the wall above. We want the skirting to finish up flush with the face of the finished wall (after the final render coat) so I installed packers between the bottom boxing and the back of the skirting to bring the face (front edge) of the skirting 5–10mm out from the line of the second coat of render. If you want the skirting to stand proud (be fully exposed rather than flush) on the face of the wall, then you would use packers to bring the back edge of the skirting 5mm from the existing line of the wall.

## Installing tiles

You can install tiles directly onto the face of a rendered straw bale wall by treating the surface of the render with 1 part *Bondcrete* to 10 parts water. This is not appropriate around baths and showers; however, over sinks and vanities it is acceptable as long as you apply a waterproof membrane to the wall (over the *Bondcrete* mix, which helps the membrane adhere) prior to the installation of tiles. The waterproof



membrane is readily available at hardware stores; it is the same product that you use on the bathroom floors.

The tiles can either be installed before or after the final coat of render. I have opted for fitting them after the second coat of render so that the final coat of render will end up flush with the face of the tiles.

## Ceiling lining

Our ceiling lining is *Colorbond Surfsmist Mini Orb*. We have used 65x19mm skirting material as cornice, which covers the last row of screws and any variation in the positioning of the sheeting at the wall.

While I am happy with the end result of fitting the *Mini Orb* in our curved ceiling, to say that the process of installation was somewhat challenging would be an understatement. The installation of the 65mm timber at the ceiling wall junction negated the need to be so accurate in the positioning of the sheets, as the gap would be covered.

Under normal circumstances the timber cornice would have been fixed using a fixing gun. However, fixing it over a metal lining presented some challenges, as the fixing gun nails simply bent when they encountered the metal. Many would consider the final solution somewhat extreme, as I ended up using the framing gun with 75mm nails. Some of the nails ended up flush with the surface of the cornice whilst others were inset. Using a large nail punch, the nails that were flush were punched below the surface and patched with wood filler, giving us a flush finished face.

## Eaves lining

The 900mm eave overhang on this house has been lined with standard *Colorbond*. The overall width of the sheet is 840mm. Adding our fascia thickness of 35mm, this gives us 875mm, leaving just 25mm short to cover.

Once the sheeting was installed, we applied 25mm of cob mix (render and straw mix) to the top of the wall to meet up with the back edge of the eave lining, flaring it slightly so that it blends in evenly. The final coat of render will then soften the appearance of the 'bulge' further, overlapping the eave lining slightly and giving a good seal against birds, fluffy vermin and even embers.





In the majority of homes the rafters or roof trusses are fixed about 900mm apart. If cement sheet or timber lining were to be fitted as eave lining it would be necessary to install additional framing, as most of these materials need support at least every 600mm. Metal lining is fine with supports up to 1200mm apart; it also complies with the bushfire requirements and is maintenance free.

You can expect to get render on the eave lining when you do the final coat of render. Using metal negates any issues regarding cleaning, as we will wait until the final coat of render is pretty much dry

and then clean the eave with a pressure washer. By using the circular rotating nozzle, which gives a very distinct edge to the water jet, there is little chance of damaging the render.

### Sculpting features

If you are creative you might want to add sculpted features to your walls. These should be done at the second coat of render stage using a cob mix.

I have a *Lightburn* 100-litre concrete mixer for mixing render. I am told that cob cannot be mixed in many concrete

mixers, however I have found using my mixer extremely successful when it comes to mixing cob. I would recommend that you mix the cob and put it aside for at least 24 hours so that the straw becomes more malleable when using it for sculpting.

When the final coat of render is applied over your sculpted feature it will tend to flatten and widen the shape, so it is important to keep the initial shape quite sharp. I have included a photo of some sculpting on our back wall, done by attendees at our last practical workshop, as well as a finished example from our previous house. ♦

*Brian has been sharing progress on his latest build with us in each issue since TOB 194 April/May 2016.*

*Brian Hodge is the director of Anvill Straw Bale Building Consultants. With over 40 years experience in the building trade, he now consults predominantly on straw bale construction, and also runs workshops. He is the author of 'Building your straw bale home.'*



### Links & resources

#### ♦ Anvill Straw Bale Consultants

Whether you are building a mansion or to a strict budget, we are here to help.

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#### ♦ Mark Beedle

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