1. *Landing was constructed on the ground...*
2. *...then moved around into position.*
3. *Slowly she goes....*
4. *Done! Rapunzel, Rapunzel...*
5. *Stringers and treads in place.*
6. *Balustrade in progress.*
7. *Finally – all done! The loft can now be used as a site office.*
8. *The lower set of stairs are supported by posts on stirrups in concrete pads.*

Slow boat to China

BY LYNDA WILSON

Well, it has finally happened – our house is sold and we have a very quick five-week settlement target. So time to stop procrastinating and GET ON WITH IT! With the amount of stock I hold for the magazine, the option of temporary storage is just not viable – moving 400 boxes of back issues once is bad enough...

What have we been doing since the beginning of July, when the garage loft reached lock up stage? The first task was the building of the staircase and landings, which took a few weeks over weekends. It was a great learning exercise in measuring twice (or three times) and only cutting once, and in discovering what can be done by two people with a pulley and some ropes.

Keith assembled the staircase and upstairs landing with posts in the garage, before getting help from a friend to move them around into position on the ground. We then spent a nerve-wracking Saturday raising the landing and connecting it to the building. Once up, the staircase was roped into place and fixed off – again, very slowly. Finally we could walk up to the 'door to nowhere' – it was a defining moment. The handrails were soon in place, and I was ready to set up the site office in the loft.

With that complete, I could then concentrate on the house build.

Windows

A major delay was my inability to come to a final decision about windows. As with many other things, I had left this a bit late – and nothing happens quickly when you are in a hurry.

I had originally had my mind set on double glazed timber windows, but after receiving a few quotes I realised that it was just not in our budget. I then considered timber/aluminium composites, with the same results. Reluctantly, but realistically, I followed up on aluminium windows.

My first port of call was Fin Aluminium, who had supplied the garage windows. Michael was very helpful, discussing a number of variations with me, before I realised that they do not supply double glazed units. Langford Windows was suggested, and after three (yes, three!) meetings and a number of phone calls and emails, the window schedule was finalised – or at least, I think it is...

Some interesting issues were raised during these discussions. There is a large bi-fold onto the deck; in order to ensure the end door can be a separately opening unit, to act as the back door without opening the entire bi-fold, there needs to be an odd number of doors in the unit. The planned bi-fold window on the same wall had to be changed, due to the fact that a bi-fold can only open to 90 degrees and cannot be folded back against a wall; this would result in a potential head hazard on the lower deck.

In the ensuite and bathroom, the window will be in the shower area and therefore exposed to water and we will be tiling all the way into the window area. To allow for the tiles to be installed at a slight angle to aid runoff, the gap between the frame and reveal was specified a little bigger than standard.

One point to note – check what the measurements on your plans are referring to. I had worked through my ideal window sizes and these were listed on the floorplan. However, once detailing the window schedule, we found that in some places (clerestory in particular) these sizes actually referred to the stud openings available and NOT the window size. A window size of 540mm high x 3930mm wide translates to an overall reveal size of 580mm x 3970mm and a stud opening of 600mm x 3990.

Where you are having full height or width windows or doors, this is especially important, as you have to allow for the structural framing members required between each set. So double check your plan dimensions before ordering windows based on them.

I have always disliked sliding windows, so these are limited to only two. Although casements are the best for ventilation, they can't be left open in rainy weather and are difficult to lock in an open position for night-time ventilation. As a result, most of our windows are awning style with chain winders and internal flyscreens. The five clerestory windows will all be power operated: a passive solar house requires active occupants, and I know I will not use these windows to their best advantage if I have to manually wind them with a hook on a pole (they are at 3.5m height). In the main bedroom, a low level louvre has been included.

As we are in a coastal position, a thicker micron coating was specified for the aluminium frames. I liked the look of the stainless steel handles for the bi-fold doors, but was told that the powder coated ones stand up better to the salty conditions. Also, the stainless steel would not be under warranty in our situation!

Timber frames

Once the windows were finalised, the timber frame order could proceed. I had already started the process with Trussted Frames & Trusses a long time before, providing them with an early plan for quoting purposes. Along the way, they were supplied with plan updates so that they would be up to speed as soon as the window schedule was done, and a deposit was paid so that the order could at least get into the workflow.

Some final details were checked just before the frame was ready for manufacture; good thing too, as they were about to build to the original plan! Make

Building diary...

Continued from previous page

a point of checking the exact plan version being used for any work you proceed with.

Steve and Mark at Trussted made some suggestions on alternative frame member sizes. They have software that calculates the suitability of various timber sizes for the intended application. As a result, the specified 240 x 63mm LVL (laminated veneer lumber) roof beams have been replaced with 195 x 65mm glulam (engineered timber), 200 x 45mm LVL rafters replaced with 190 x 45 MGP10 (machine graded pine) structural pine. This saved us a few thousand dollars.

Another point they made was about the main wall heights, which had been specified as 2400mm and 2700mm. As plasterboard comes in 1200mm or 1350mm widths and are laid long side down, it makes sense to use full sheets i.e. no cutting and therefore wastage. Remember to allow for a 10mm gap above the finished floor to keep plasterboard off the floor, a 10mm gap at the top plus the thickness of the ceiling plaster. This assumes you are using cornices – I am not, so no gap at the top is required as square set corners are specified. So to make best use of two 1200mm plasterboard sheets (2400mm), the internal height for my frames should be 2425 (10mm from bottom plus 10mm ceiling plasterboard plus tolerance).

The timber floor structure has been constructed with hardwood bearers (100 x 75mm F17) and joists (150 x 50mm F17) and covered with 19mm particleboard flooring. All timbers are untreated.

Insulation

Selecting insulation for the walls and roof has been another rollercoaster ride! I am trialing the following combination in the garage loft, before deciding whether it is the correct one to follow through on for the house.

Air-Cell has been used instead of sisalation for both roof and walls (R1.4 out, R2.6 in). To enhance this, *Polymax* polyester batts are also being used (R1.5 in walls and R2 in roof).

The main problem I am having is maintaining an air gap between the *Air-Cell* and the batts, which is how you make reflective insulation work best. In the roof, I can just slide the 120mm insulation into the 140mm gap as the lining goes up, thereby creating a 20mm gap. However, the 90mm wall frames are providing more of a challenge. Thermal batts usually start at 100mm thickness and are best left completely uncompressed to provide their maximum R-value. That would require a 120mm minimum frame to allow for the 100mm batts plus a 20mm gap. I have chosen to use the *Polymax* acoustic batts, which are only 75mm thick, stapled to the front edge of the frame to stop them falling back and closing the gap.

Polyester batts are a great use of recycled material, and are a 'healthy' choice to work with. However, there are a few issues to be aware of. They are not easy to use with screw fixings, as the heat produced binds the polyester to the screw; special fixation methods are required. They are easy to tear or cut in one direction (along the short edge) but are difficult to cut along the long edge or shape. They do produce loose material, even when not cut, and while it is reportedly not dangerous it is irritating to the nose, eyes and throat.

The entire loft has now been insulated and the *ECOply* lining is about to be installed. So far I am more than happy with the ease of use of the polyester batts.

By next issue the house should be at lock up stage – yeah! ■

Follow the progress of the build in more detail at http://theownerbuilder.wordpress.com

Ongoing costs breakdown

Brought forward (See TOB 160 Aug/Sep 2010)	***$62,000***
Plumbing	$800
Electric	$1900
Labour & materials (garage)	$41,000
Insulation	$2600
Tools	$500
Floor framing (house)	$9400
Bathroom (garage)	$350
Staircase materials	$2000
Design & engineering	$865
Bricklaying (house piers)	$3100
Framing (house)	$18,000
Windows (house)	$31,000
Total to date	**$180,000**

Left: Polyester batts tear easily for resizing – but in one direction only.
Below: The huge pile waits to be tackled.
Right: To maintain an air gap between batts and Air-Cell in the walls, the batts have been stapled to the front edge of the frame.