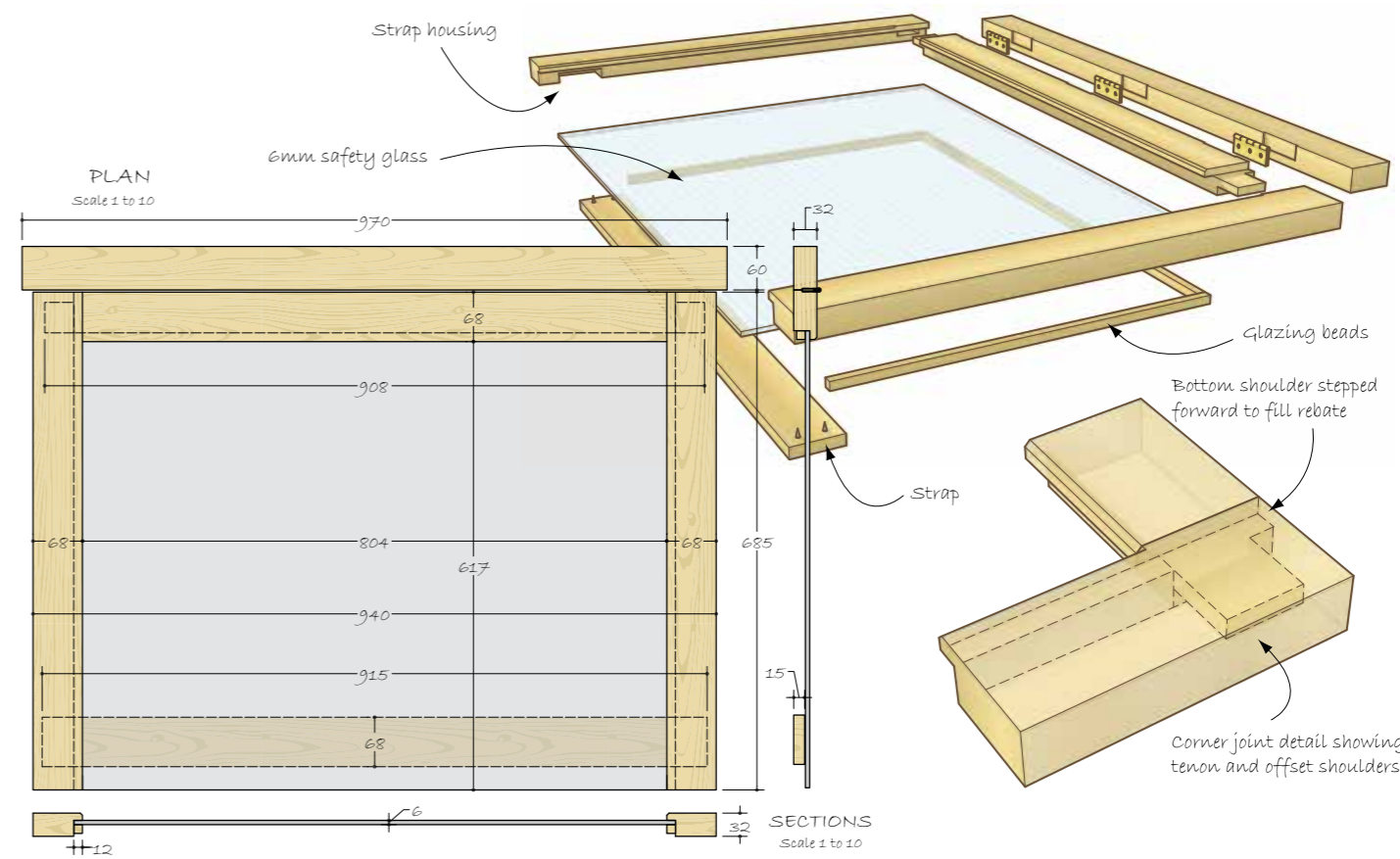




PHOTOGRAPHS BY GMC/ANTHONY BAILEY



Routed oak fanlight frame

In a well framed article, simply dripping with useful advice **the Editor** just proves he can't break through that 'glass ceiling'

Our living room is actually situated below ground – handy as a nuclear bunker should 'the bomb' go off... However, there is one fanlight window which I made in softwood many years ago and which is now rotting through. Time for a proper solution, ah – uPVC I thought, but no, the glass works told me it wasn't practical to make one up. That is like 'a red rag to a cabinetmaker' – never tell me no! I had already made a uPVC boxing to fit around the brick base I once built, now what I needed was a wooden frame solution that would sit on top.

1 If you have never 'worked' uPVC before, it is remarkably easy. I found some on eBay and cut it to size on the tablesaw, with the blade set well down and then siliconed and screwed two layers back to back with twinfast screws.

2 This stuff actually planed up beautifully so I had nice neat square edges. The boxing would be fixed to the brick surround on three sides with screws and masonry plugs and any overhang carefully trimmed off.

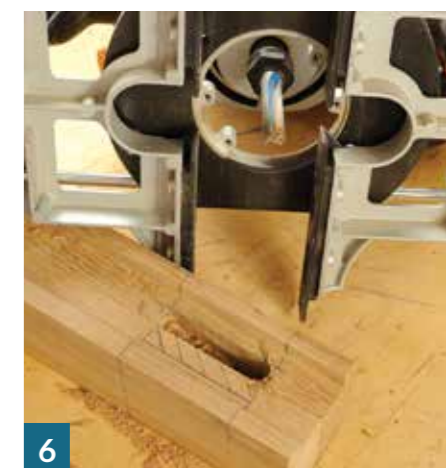


3 The frame is an inverted U-shape because there cannot be frame at the bottom edge where the water runs off. Here a strap of oak (*Quercus robur*) is fitted underneath instead to maintain the frame integrity. The first job was to machine the glazing rebate with a big **Wealden tenoning cutter**.

4 Next the two top corner joints were marked out very carefully. I didn't want to mess this up so I checked and rechecked what I was about to machine up. The frame needed to sit on the uPVC boxing with a slight overhang at each side and more so at the front.

5 The two sides would have blind mortises and recesses for the oak strap at the bottom end. Both sides were clamped together in the vice so the router could ride along the top. Two fences kept the router on track and a 12.7mm straight cutter was used for 'ramp' cutting (plunging while moving the router along).

6 The strap recesses were cut one side at a time, then the router was moved across to make the other recess.



7 The result was two recesses that would need the ends squaring up. So far, so good. The ends of the frame were already cut to length.



8 To square them nicely I used a small router and a 6.4mm straight cutter and a router T-square. The corners would need a slight nicking out with a chisel to complete the joint.



9 A completed strap recess which needed to be the correct depth allowing for the glazing which would sit directly on top of it.



10 The same machining procedure was used to create the mortises at the top of the frame. Because they were near the top edge of the frame I left extra length for the router to run on. I swapped to a 9.5mm Trend pocket cutter designed for deep mortising. The cutting edge is only at the end, allowing free cutting in the mortise.



11 The next job was to make two tenons on the top rail. See the drawings to understand the detail of the frame joints. In order for the tenons to fit tightly I bandsawed on a line that would make a curly shaving that told me I was at the correct width.



12 The tenons needed slight correction to fit nicely so I used a small shoulder rebate plane to clean up both the faces and shoulders of the tenons.



13 The result was two stepped mortises and tenon joints both left and right handed. The datum distance when setting out was the lower shoulder of each tenon as this would need to be watertight being on the upper face in situ.



14 I used Titebond III waterproof aliphatic resin, which should form a good long term weather resistant bond. Any surplus needed to be cleaned off promptly so the oak surface would be clean and ready to accept a finish.

Top tip

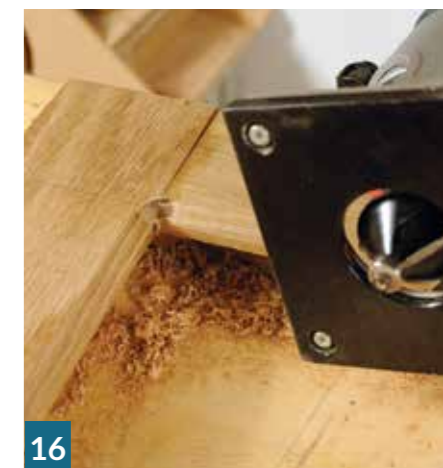
• The fanlight needed to be secure so I chose brass sprung sash catches with loop handles to undo them. However the catch bars had the ends bevelled. So a bit of crude re-engineering by drilling out the pivots and turning the bars over so the bars would latch properly and I used small diameter bolts and nuts to act as pivots which did the trick.



15 The whole frame was glued and clamped together with the lower strap dry fitted and clamped in place. Then the frame was measured corner to corner to check it was square and then the frame was left on a level surface to dry so it would stay flat.



16 The front edge would benefit from a bevel profile for appearance's sake so I used a router trimmer with a Trend 45 degree bevel cutter to run around and create a pleasing amount of bevel profile.



17 I had a piece of 6mm obscured wired glass cut to fit the glazing recess. I needed to check the fit and that the strap would lie properly over it and the whole underside needed to sit level on the uPVC boxing.



18 The next job without the glass in place was to make the hinge recesses in both the frame and the wall bar that it would hinge off. I chose brass hinges to limit the corrosion risk as the fanlight would not be subjected to much opening.



19 Because the hinges were 100mm long I made up a router sub base to prevent the router slipping into the hinge recesses. A cutout in the centre meant I could see where the pencil lines were that I needed to machine up to.



20 All the oak components were given two coats of tough all-weather Tonkinois varnish and the frame and bar were hinged together. Note the brown E-seal running along in the deliberate hinge gapping.



21 The frame rebate was sanded to roughen the varnish and a line of clear long life glaziers silicone (not the standard stuff) was run around the rebate and the strap screwed into place without glue in case the glass ever needs to be replaced.



22 The last job before installation was predrilling the oak strip to hold the glass in place and using copper nails to pin it in place. To avoid breaking the glass the punch used to drive the pins was sitting on a thin strip of wood. Now some waiting for a break in the weather and then I could screw the bar to the bay window wall before reattaching the frame, fitting some catches and the job was done at last!

