

# Shop Door Journal

TheOrganist24

11<sup>th</sup> April 2022



# Front Door



Figure 1: Before and After

A new front garage door was required due to the need for security, insulation (noise and temperature), and space, as well as the old one being broken.

The new doors are side-hung, 42mm thick (2mm steel clad with internal insulation), with windows at the top.



Figure 2: Completed door

# Rear Door

## Planning

### Current Door

Current door is outward opening.

<b>Item</b>	<b>Width</b>	<b>Height</b>
Frame	36 1/2" (3'1/2")	82 1/2" (6'10 1/2") 83"*
Door	32 3/4" (2'8 3/4")	77 3/4" (6'5 3/4")

<b>Item</b>	<b>Width</b>	<b>Height</b>
Frame	928mm	2095mm 2100mm*
Door	832mm	1980mm

\*Difference reflects gap between the top of frame and the lintel

## Frame

Frame replacement should be softwood three-sides and hardwood sill. Probably best ready-made. Travis Perkins' come ready-built.

- [External softwood door frame](#)

## Door

Door should be 1981x838mm (6'6" x 2'9").

## Material

Frame section is made up of stiles (vertical pieces) and rails (horizontal pieces). Stiles are 2x4 pine (Plane Square Edged). Make sure these are out of winding or else the door will be wonky. The rails should be:

- Top 2x4
- Mid 2x6

- Bottom 2x8

## Structure

The rails should be haunched, wedged tenons (see fig.3). Wedges can be made with the cut-aways from the tenons. The mortices should be snug face-face but should be slightly taller top-bottom. Initially cut to right sizes then chisel lightly to allow for wedges. Mortice depth should be 1/3 thickness of the door (2/3" or 17mm), use closest chisel size. When cutting the mortices, ensure that the stiles are left long at top and bottom, this will mitigate against splitting out the grain when hammering in the wedges.

## Glazing and Boarding

Glass and lower plywood board should be moulded in place. This should be done after the door has been hung. Before hanging the external moulding should be glued and screwed into place though. This is a security measure. Once hung, the glass and board can be put in and the internal moulding just nailed. Do not glue as this will prevent

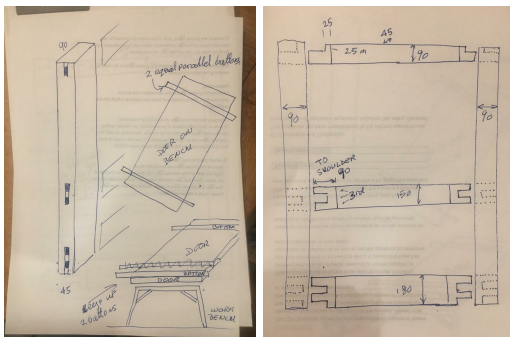


Figure 3: Notes from Richard

replacing the glass at a later date. Make sure the door is at least primed before putting the glass etc in. Use glaziers putty between the moulding and the glass.

## Framing the Door

Following [Matt Estlea's Guide](#) on cutting mortice and tenons, do a single joint at once. In order the joints to cut are:

1. Top (left and right)
2. Middle (left and right)
3. Bottom (left and right)

The window will be 700mm wide, so cut shoulders to that width.

### **Marking the Joints**

1. Mark the face side and edges of all pieces, these should go on the outside
2. Mark the shoulder lines on the tenons with a marking knife (these should be exactly 700mm apart to fit the window)
3. The mortice width should match the size of mortice chisel available but should be close to  $1/3$  depth of the door. My door is 43mm, which requires a 16mm chisel. Find the centre of the tenon and then centre the chisel on the mark and use the marking knife on the chisel edge to mark some notches. Then, from the face edge mark

the nearest line with a marking guage. **Do not mark the edge furthest from the face.**

4. Transfer these edges onto both sides of the stile as this is a through mortice, and then repeat for the furthest edge.
5. The haunch will be 25mm square, so mark 25mm all round the tenon from the shoulder, and then 25mm from the end on the mortice.

## **Cutting the Joints**

1. Cut the mortice first - work from the shoulder side.
2. Start in the center and work to the outside, leaving space for levering against before the line. Do not mortice out the haunch.
3. Use a depth stop piece of marking tape to get no more the 90

4. Tenon rip saw out the haunch without going to the line and remove the material with the smaller chisel.
5. Tenon saw off the cheeks (again not to the line) and clean up to push-fit.
6. **Do not glue at this stage.**

## Progress

I ended up marking the tenons to the mortices. I found cabinet chisels kept twisting so I've now purchased some mortice chisels. Pebble helped with the joinery.



Figure 4: Cutting the Joinery

I didn't wedge the tenons in the end (stupid combination of worry and forgetfulness); would definitely do this another time.



Figure 5: Fitting the Joinery

I cut the rails too short so glued some patches onto the tenon ends.



Figure 6: Glue Up

Managed to cut the the last piece of moulding too short so had to have an extra piece.



Figure 7: Mitering the Mouldings

A knot in the lock mortise wall tore out so was patched with a small off-cut. The lock was at max depth so the handle is not central.

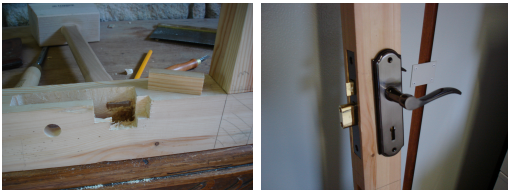


Figure 8: Lock Mortise Fix and Handle

Door: “Verdigris Green No.W50” gloss, frame: “Pitch Black No.256” gloss, moulding: “Babouche No.223” estate emulsion. All from Farrow & Ball with “Mid Tones” exterior wood primer & undercoat.



Figure 9: Painting

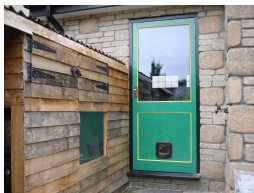


Figure 10: Fitting

## Fitting and Finishing Up

Lessons were learnt from the fitting. The frame was too tight to the cavity so needed to be trimmed width ways. The door then didn't fit as nicely as it had when not in situ, so needed the bottom and hinge-edge trimming. Additionally the masonry bit was too short for the wall anchors, so only managed to fit one; although the tightness meant that this is not a problem short term.

Finishing tasks:

1. Adjust the hinge-side jamb up to make the frame square, whilst maintaining door and latches fit
2. Fit two additional wall anchors on hinge side, and three on latch side
3. Fill gap outside of frame with expanding foam
4. Re-paint door hinge-edge and bottom, and touch up any scuffed areas



Figure 11: New Door