Through the Keyhole Nick Simpson

A new workshop within a 9m square metal shed.

We moved to our house overlooking Glen Convinth in October 2019.
There was a 30'x30' metal shed which I planned to convert into a woodworking workshop and wood store but it had to accommodate my classic car, an area for metal work and to continue to store garden tools.
It was raining heavily on the day my lathes and equipment were loaded on to the removal van and there they stayed for another week until unloaded here on another wet day.

The Shed

The contents of my previous workshop and shed arrive

October to December 2019 were very wet months and that combined with condensation within the shed caused all the metal items to rust.
I bought a tool cabinet from Machine Mart, cleaned all my turning tools, coated them in camelia oil and stored them in drawers with lots of silica gel sachets.

Cleaning up the lathe beds, the jaws and chucks had to wait for a dry workshop.

My new cabinet for turning tools

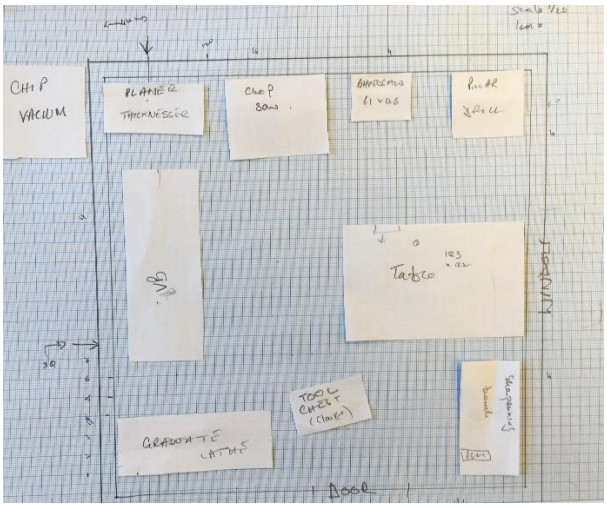
I had neither the time nor the skills to build the workshop and it became more urgent with the rusting problem. We commissioned a very excellent family team of Carpenter/Joiners from Conan Bridge, who had done an excellent job with alterations to our new kitchen.
The remit was to build a freestanding wooden shed with a mezzanine above. The workshop would occupy just over a quarter of the floor space within the green shed.

The workshop was to be 4.5 m square. The walls were finished in OSB and were lined with 100mm Kingspan.
We fitted a double window in the north facing wall (on the right in the picture). The natural light and views toward Sgur Mor and Ben Wyviss always make working at the table a pleasure.
Dust extractors, my table saw and large compressor would be outside the workshop in the shed.

Building begins with the back wall in place

The Plan

I decided against workbenches along the walls preferring to use my pre-existing 1800 x 2400 worktable and maximize the remaining floor space by placing the machinery along the walls but on castors where possible.
Electric lighting would be by four 1.5m 61W led tubes.
I believe that you cannot have too many electrical outlets in a workshop, but you must be aware of the load capacity of your supply. I already had a 40A supply to the green shed. I have forty-two 13A power sockets mounted on 'dado' trunking which runs round all the walls at the height of just under the worktable top. In addition, there is a flexible spur to the end of the worktable in the centre of the room.
Heating is provided by a single 800w oil filled radiator which can be left on low setting in the winter and is sufficient to keep the room damp free and tools rust free. It has a 1500kW setting to heat the room when working. The room is comfortable even on the coldest days.
My lathes are positioned so that there is no need to lean over for tools or switches. All vacuum/extractor pumps are controlled by remote switching (see below).
There is 100mm vacuum ducting along 2 walls with blast gates for the lathes, planer/thicknesser, bandsaw and pillar drill leading to a large Axminster chip/dust extractor situated outside the workshop to keep the noise level comfortable. There is a Camvac dust extractor with poze-able tubing between the Graduate lathe and the VB 36 and its 2 outlet pipes vent through the wall, again for noise reduction. The pump for my vacuum chuck is also outside and the pipe enters midway between the 2 lathes.
There is a compressed air line all-round the workshop with options to connect a nozzle at the worktable and both lathes. The compressor sits outside the workshop. (see below)
The finished structure is freestanding within the original shed and has a woodstore on a mezzanine above. Access to the mezzanine is by staircase.
The large Axminster dust/chip extractor can be just seen under the landing in the photo.

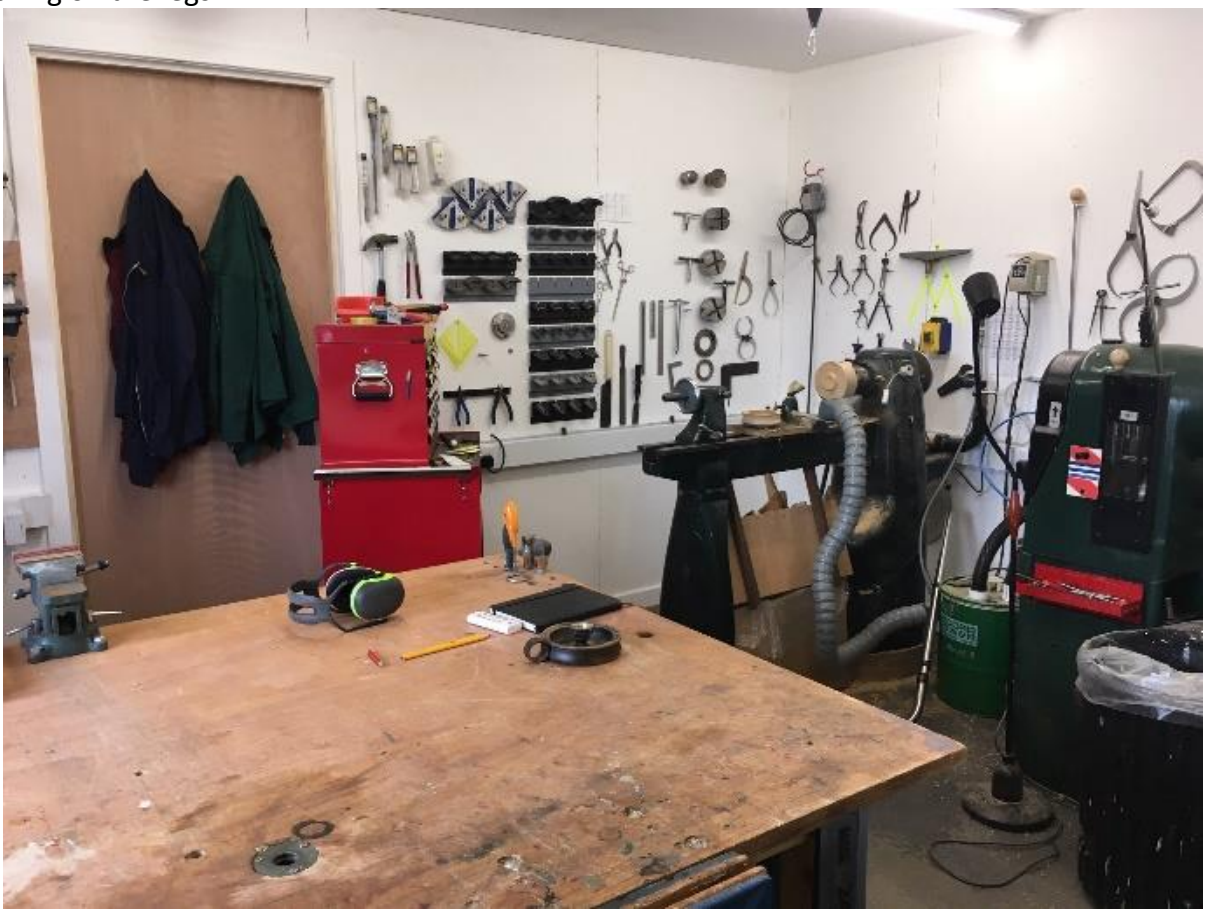


The proposed layout

The final freestanding structure with some tidying still to do

Inside the workshop

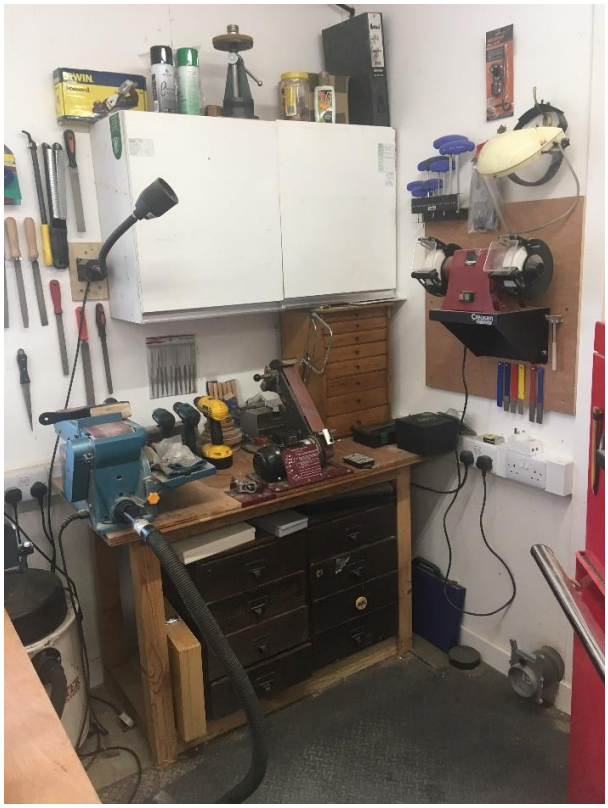
The next photos show the inside of my workshop in a clockwise direction from the door. The floor is covered by Axminster workshop interlocking matting. The floor of the worshop is concrete so I have c overed it with Axminster interlocking matting which is warmer and less tiring on the legs.



The tool cabinet houses all my turning tools and drive and live centres. It is on castors and moves over to the VB 36 lathe as required. (picture of contents above).
Almost all my accessories are Axminster product.
My small lathe is a 1969 ex-school Union Graduate with 4 pulleys. It has been converted to ¾ hp via an inverter with potentiometer, on/off and F/W switches on the headstock. This lathe predates NVR switching so the inverter is connected to an NVR box mounted on the wall alongside the lathe (yellow box in picture). The inverter reads out in Hz not rpm so I have a conversion chart on the wall for convenience although I seldom refer to it.
My second lathe is a long bed VB36 with a 2hp motor and 3 pulleys. There is an NVR switch on the headstock and a potentiometer in a box with magnetic backing which can be positioned on any ferrous surface. The potentiometer has a linear scale from 0-10 and an attached conversion chart gives the speed if needed. On/off control is via a foot switch.
Behind the Graduate you can see my chucks mounted on screw holders and the jaws mounted on Axminster racks. I find this a very convenient system and often leave jaws on the chucks when I know they are going to be used again in my current project. There is a Foredom power carving unit hanging in the corner which I move to a hook suspended from the ceiling over the lathe bed when in use. There is a similar suspension point above the VB.

This photograph shows the VB36 lathe, the planer/thicknesser, chop saw and Axminster bandsaw. These are all supplied with vacuum extraction through 100mm ducting and individual blast gates. The saw has since been moved to a permanent home outside the workshop. The wall-mounted dust extractor is switched on for 40 minutes when I leave the shop. It removes some of the circulating fine dust.
I clean shavings and dust from the floor into the dustbin with soft broom and shovel. Only for final tidying do I use a vacuum. I wear my respirator (see below) for sweeping etc.

The worktable is 6'x4' and has a a full shelf underneath which provides storage for my scroll saw, my pyrography kit with charcoal smoke extractor. My abrasives are stored on this shelf in the centre of the shop with easy access from both lathes.
My pillar drill is floor standing. I chose a floor-mounted drill to keep as much bench space as possible. The pillar drill is not really suitable for free movement. It is very top heavy but is stabilised by a 600mm square base of 25mm plywood with a castor at each corner. The tool cabinet, planner/thicknesser, bandsaw and pillar drill are on castors. The former to move from lathe to lathe, the others to accommodate larger pieces of wood when required.
The small workshop vacuum is also on castors for free movement when necessary.
The chop saw has moved outside the workshop since this photograph was taken because I needed much more room to cut boards for other projects.



Sharpening station, bench sander and finishes cupboard

My sharpening station and cupboard are in the remaining corner. The cupboard contains finishing products and my First Aid kit.

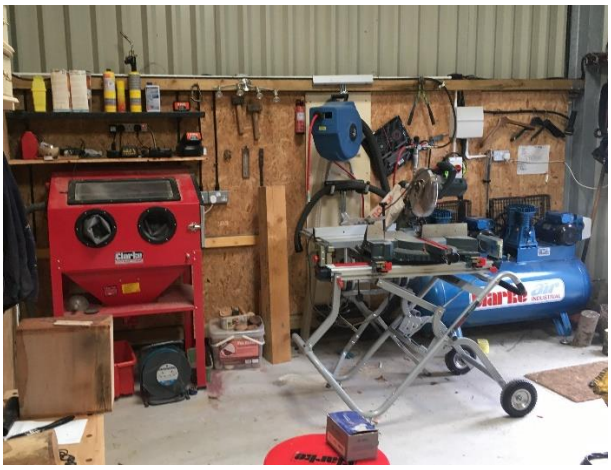
I use a Sorby Pro-edge system for almost all my sharpening but have a slow running Creusen grinder which is mounted on the wall at eye level and used for unusual-shaped grinds.

Also on the bench is a Clark flatbed belt and disc sander which connects to the small workshop vacuum extractor.
The 70mm pipe from this extractor can be fed through the 100mm blast gate seen at the bottom of the picture. This pipe can then be connected to the chop saw, table saw or sand blasting cabinet outside the workshop when required.
The 'dado' electrical trunking can be seen on the wall with 13A plugs in place.

Outside the workshop but inside the shed.

This area houses my 1954 MG Tf and garden machinery (out of picture). There is a large floor space for assembly and construction in front of the workshop. My table saw and chop saw are stored here and are on castors or wheels. The large compressor and sandblast cabinet are on the north facing wall.
There is a small metal-working bench with large vice and twin wheel grinder. The picture shows my grandsons' go-cart in the process of a rebuild.

Storage for my MG and the metal working area



Compressor and sandblast cabinet with chop and table saws

The next section shows some varied items which I use in the workshop.

Setup for photography on the lathe.

Light Tent setup on the work table

1. Photography.
   I take photographs of my work for my website and magazine articles. Some photos are taken at the lathe and others in a small ‘studio’ called a light tent.

2. Safety: PPE

I am allergic to pine dust and react to laburnum. I use a 3M Versaflow respirator which is excellent and problem free. It is lightweight and can be worn for hours without neck or headaches. Battery life between charges is excellent.

Safety: Eyewash Station

Eyewash first aid shouold be kept out of the dusty environment in a place that you can get to with youe eyes shut.

Mine is just outside the workshop door

3. Vacuum dust extraction:

All my vacuum and dust extractors are controlled by remote switching using a *Zap* system. This avoids leaning over the lathe to switch on the dust extraction.

I had to bypass the NVR switching on the Axminster chip/dust extractor to plug directly into the *Zap* slave unit, but no other wiring changes were needed.

I live remotely and cross-interference with a neighbour's system is not a problem

4. Tool storage at the lathe:

My lathes are free standing and tools are kept to the side in the red cabinet, but when in use at the Graduate I keep some to hand as shown here under the lathe.

This is a simple box structure suspended below the lathe bed by wooden pegs. The floor of the compartments is lined by rubber matting to avoid damage to the cutting edges.

Conclusion

My previous workshop was an enclosed third bay of a 30'x20' garage with a door at either end. The new workshop is much more flexible and benefits from the covered external area within the original metal shed for large woodworking projects. I keep all metal work out of the new workshop to avoid spark hazards etc.

The noise levels are quite acceptable with the chip extractor outside the room and the Camvac venting outside under the stairs.

We would all like a larger workshop, but compromise always rules, and I am pleased with the present setup.

I will add some wall cupboards at the far end to store aerosol finishes and the like when time allows.