Issue 20 November 2016

# Woodworking CRAFTS

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# Make a three legged stool

## with Nick Offerman from *'Parks and Recreation'*

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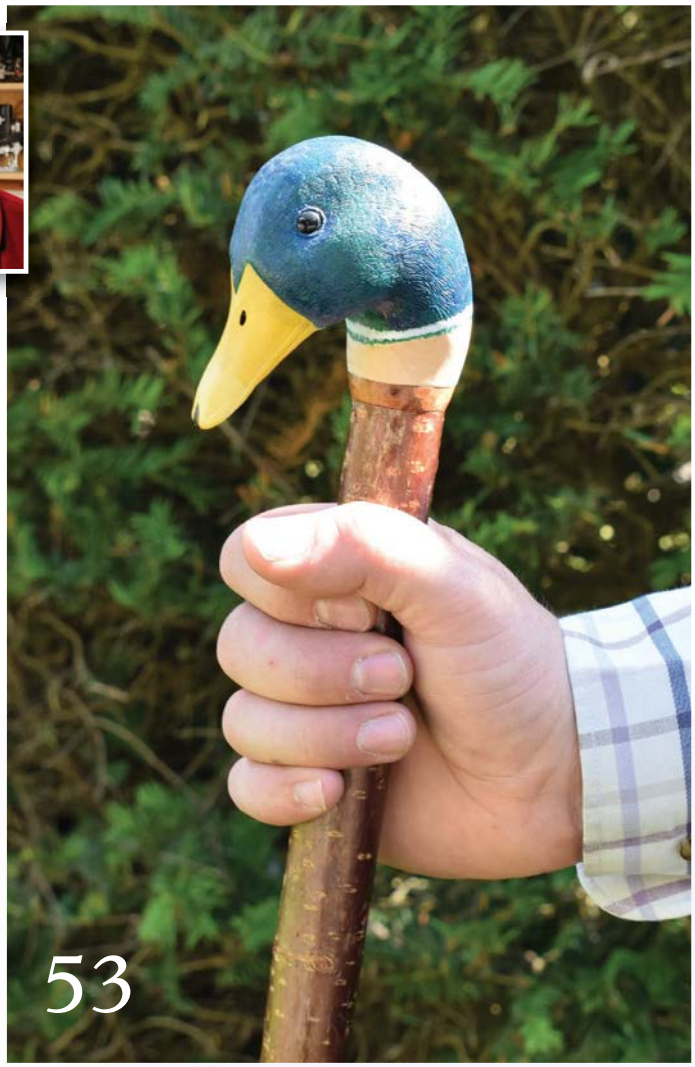
# Welcome

to the November issue of *Woodworking Crafts*




## Variety is the spice of woodworking

Hello everyone and a warm welcome to the November issue of *Woodworking Crafts*. The good news is this is the new and improved *Woodworking Crafts* with lots of extra content which we have managed to somehow cram in. It makes it an even better, more interesting read, so I'd like to have your feedback.

I also want to welcome Nick Offerman, woodworker, actor and man of many other talents to our pages. If you've ever watched 'Parks & Recreation' and his character Ron Swanson, you'll know exactly who I mean!

Although I am a 'dyed in the wool' conventional woodworker having done carpentry, joinery, cabinetmaking and restoration, I love unusual aspects of the craft which don't require a workshop and workbench. So, it's great to welcome Paul Purnell with his first article on stickmaking. These walking sticks can be very individual, unique and satisfying to do for the maker, in a world of otherwise mass manufactured sameness. Like spoon carving making walking sticks doesn't need tons of tools for the job, just a keen eye for the right material and the time to practice. I think I might even have a go myself!

**Anthony Bailey,** Editor
Email: anthonyb@thegmcgroup.com

30

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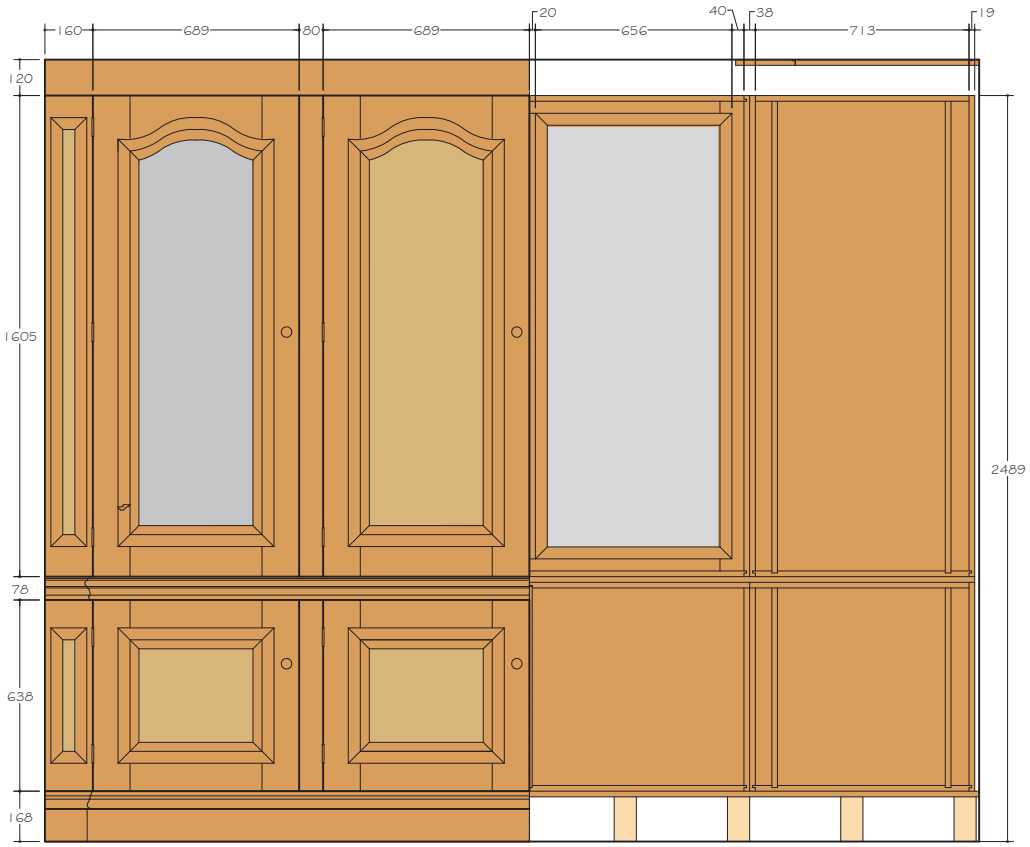
PHOTOGRAPHS BY LOUISE BIGGS

# *Walnut* drinks and media cabinet

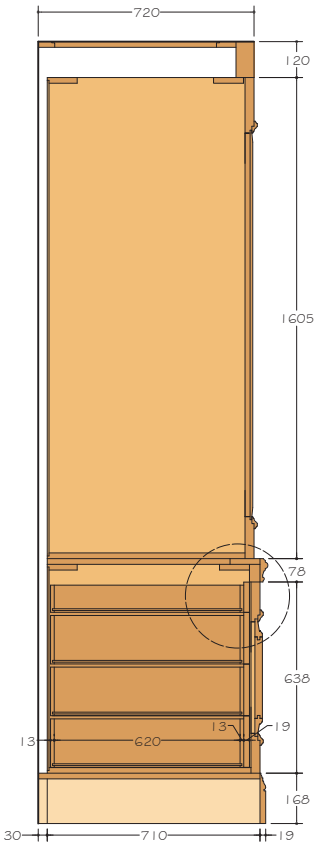
**Louise Biggs** explains how she made a beautiful walnut cabinet to a client's specification...

The cabinet complements the fire surround shown last month. As the room is panelled with traditional plaster moulding the cabinet was to fit in a large recess and had to be designed around some specific criteria from the clients:

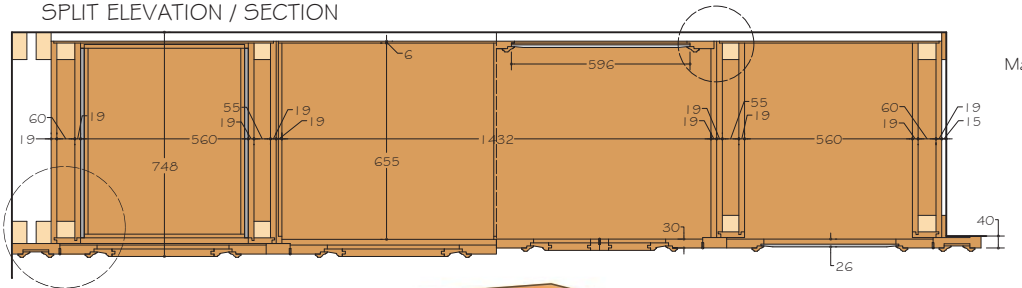
- Panels on the doors had to match the height and position of the plaster wall panels.
- Mouldings used on the cabinet were to match the plaster mouldings.
- Upper side cupboards had to house metal racks that would hold the media/computer electrical components. These were to sit central to the tinted glass in the two side doors.
- There had to be sufficient access for the cables to come through into each cabinet.
- Upper side cabinets needed access to the air conditioning system above.
- The bottom centre cupboard would house a mini fridge and dishwasher.
- The bottom side cupboards had to store the maximum amount of CDs and DVDs as possible with complete visual access.
- Doors for the top middle cupboard should protrude the minimum amount into the room when open.
- The clients would install a level plinth structure for the cabinet to sit on.
- Top doors were to extend to the underside of the plaster cornice moulding in line with the wall panels. ➤



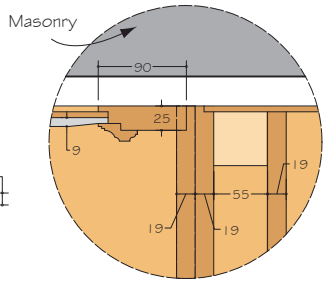

SPLIT ELEVATION / SECTION



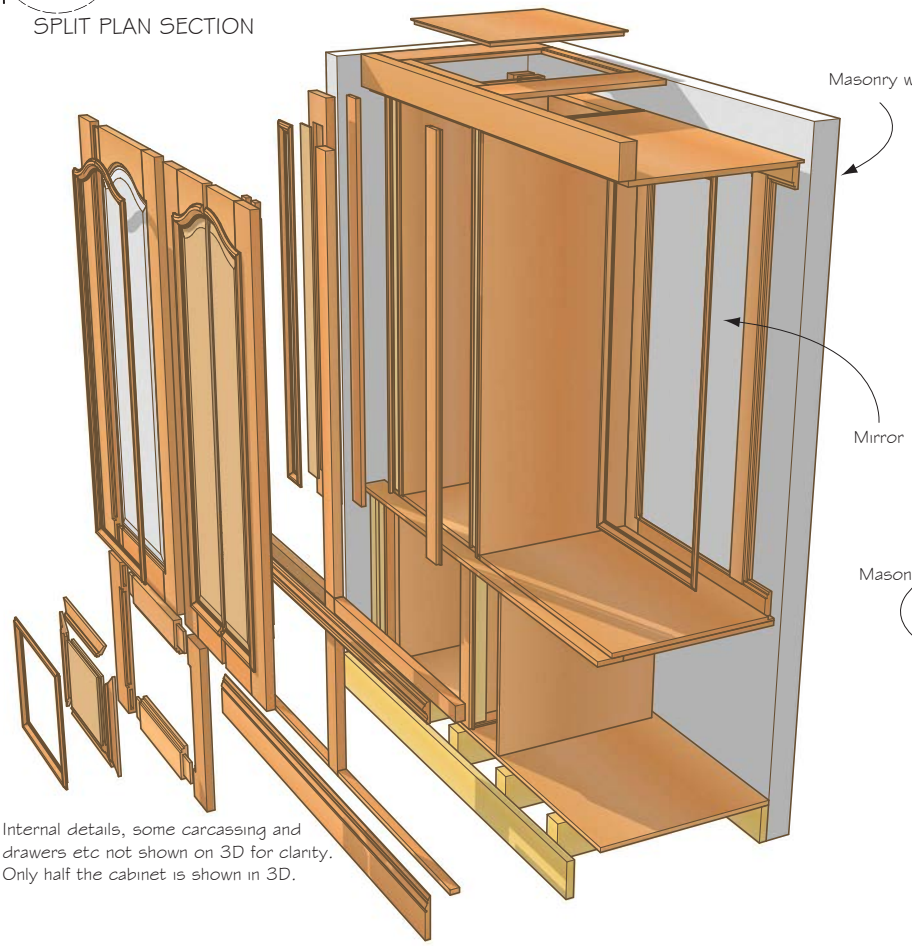

VERTICAL SECTION



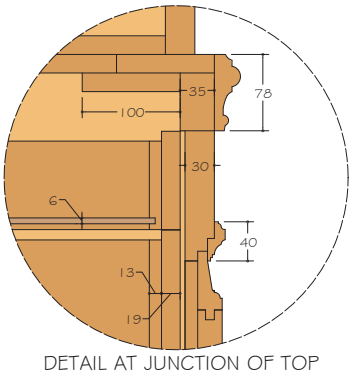

SPLIT PLAN SECTION



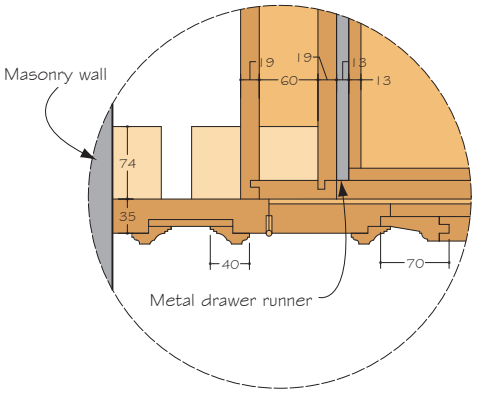

DETAIL THROUGH MIRROR FRAME




Internal details, some carcassing and drawers etc not shown on 3D for clarity. Only half the cabinet is shown in 3D.




DETAIL AT JUNCTION OF TOP & BOTTOM CARCASS




DETAIL AT JUNCTION WITH END WALL

## Tool list

- Panel/tablesaw
- Planer/thicknesser
- Bandsaw
- Various router cutters
- Planes, chisels and squares – various sizes
- Marking gauges
- Drill and drill bits
- Glue pot with animal/hide glue
- Veneer hammers
- Straight edge and knife
- Screwdrivers
- Sash and 'F' and 'G' cramps


1


2

The cabinet was made in sections for transportation before being fitted and finished on site. Made from American black walnut (*Juglans nigra*) burr veneer and timber and pre-veneered MDF, the inside carcase sides were plain MDF.

1 The bottom centre section was joined at the bottom corners using a tongue and groove formed on the MDF panels using a router. The wide top rails were dovetailed on both ends and cut into the top of each side. The side panels wouldn't be seen so the joints were reinforced with screws, which were kept in from the edges. Pilot holes were then drilled to prevent the MDF splitting apart on the bottom panels. The centre partition was recessed into a groove on the bottom panel and top rails. The back panel was rebated and screwed into the back edges. The cable holes for the electrical appliances were cut before assembling the carcase.

2 The top and bottom of the top centre section were tongue and grooved to the side panels, which were hand veneered with a pattern of burr veneer panels and crown cut veneer. Recessed bookcase strips were cut into the side panels using a router before the carcase was put together. The back panel (holding two pieces of mirror) was a timber frame with a central support constructed using mortise and tenons. The safety mirror was supported by two pieces of 6mm MDF, with a double rebate cut on the front side of the frame to accept the two thicknesses and the rebated moulding. This moulding matched the one used around the centre panel of the fire surround last month. A recess was routed into the central support to take a bookcase strip and extended metal shelf rests made, which were recessed into wooden brackets to give a central support to long narrow toughened glass shelves.

3 The width of the top and bottom side units were based on the requirements of the metal racks. To centre the racks these units had to be double-sided to still create the full width of the unit. The inner sides recessed into grooves in the bottom panels were left long to take the outer side panels with cut outs made to take the top rails. When put together a softwood spacer, planed to the correct thickness, was screwed into position on the sides with a secondary front tongue and grooved into place.

4 The top rails extended to be dovetailed into the outer sides. The inner sides and spacers were kept at 6mm, allowing for the back panels. The outer sides were rebated for the back panels, glued and cramped into position before screwing the back panels in place. ➤


3


4

5 Top rails were used on the top side cabinets which allowed entry to the air conditioning system access panels directly above. At the same time a false panel was made to be fitted to the ceiling to disguise the access hole.


5

6 The front frames were made by joining the components with mortise and tenon joints. The side frames extending past the carcase to eventually cover the join between the sections and the battens screwed to the walls for fixing on site. Recesses were cut into the far right and left stiles, top and bottom, in order to take a burr veneer panel.


6

7 The frames were screwed into position and then covered by the skirting and dado mouldings and the recessed panels. A spacer board was positioned on the bottom units with a timber front edge piece as this would be seen when the doors were opened.


7

8 The drawer boxes were made with machine cut dovetails, the bottom panels fitted within a groove and fitted to double extending runners so the back of the drawer could be clearly seen. A secondary front, fitted from behind should cover the front of the runners and have a drawer pull groove routed across each drawer front.


8

9 The door frames were made using mortise and tenon joints. The panels were fitted from the front of the door to gain the effect of the wall panels so a double rebate was cut around the front inside edges. I used one rebate for the panel and the second for the rebated moulding. The frames for the centre top doors were formed 4mm wider creating a flat in the shaped top rail to allow for a saw cut when they were cut in half.


9

10 The panels would be moulded to match the plaster fielded panels so would need a timber edging around the MDF centre. To align the grain on the top and bottom edges were short sections glued between the longer side sections extending far enough to clear the moulded areas. They were tongue and grooved to the MDF with the tongue on the timber section to avoid the mould profile. The centre top doors had an additional timber section through the centre of the panel 4mm wider than required to allow for splitting the door in half.

10

11 A rebate was cut around the panels to create the step of the raised panel and remove waste material. The centre moulding was then routed using a panel bead cutter. A straight edged vertical profile cutter was used to cut the raised panel chamfer. To hold the panel vertically on the router table, slightly tilting the panel to gain the client's required profile and work safely, angled support blocks were taped to the router table against the fence to support the panel between them and the fence edge.


11


12

12 Minor adjustments to the profile were carried out using a shoulder plane, before being cleaned up with abrasives.

13 With the centre top doors split so they can fold in half an additional centre support was added to the back, being glued to the panels and dovetailed into the top and bottom rails. The panels of these doors were screwed into the rebate making sure to keep the screws clear of the cut line.


13


14

14 The edges were veneered and the placement of the hinges established to keep them in line with those on the outside between the doors and frames. The outer edges of the mouldings set the top and bottom hinges with one placed centre of these two on the top doors.

15 Two marking gauges were set, one for the width and one for the thickness of the hinges and these gauge lines were applied to each hinge setting.


15


16

16 Using a flush cut saw the shoulder lines of the hinges were cut at an angle to the point of the gauge lines and squared up using a chisel.

17 There were two options available for removing the waste. The first by hand, making small cuts across the waste area, cleaning out the debris and repeating until the required depth was reached. Ideal for cutting out a couple of hinges, but labour intensive when cutting 20 hinges.


17


18

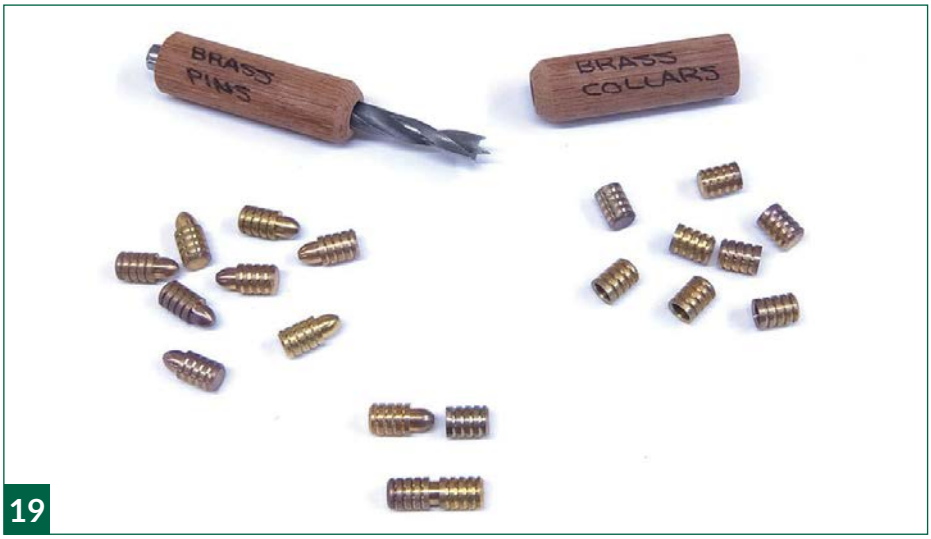
18 The second option was to use a router taking as much of the waste as possible before trimming the corners by hand with a chisel. ➤

19 With the cut outs made the hinges were then fitted drilling pilot holes for the screws. The screw heads were aligned on the final fitting with new screws. With the hinges and doors fitted it was found additional support was required on the split doors to keep the two halves of the doors flush when closed. Brass guide pins consisting of a pin and collar were judged to be the solution as these work very effectively in positioning table leaves on extendable tables and the principle was the same.

20 Once the positions were marked out, a depth stop was formed by drilling through a section of timber and cutting it to the right length. This stayed on the drill bit forming the stop between the door edge and drill chuck.

21 Now that the hinges and guide pins were fitted the folding doors were completed. The main door hinges were cut in exactly the same way.

22 The cabinet constructed, it was disassembled before being transported and fitted on site. A corner of the fire surround can be seen in the reflection of the mirror. ■



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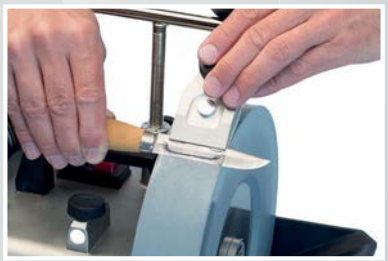

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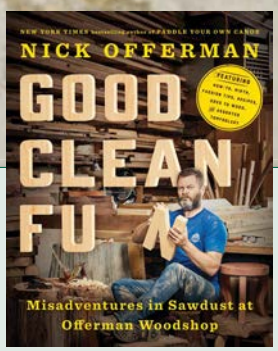
PHOTOGRAPHS BY JOSH SALISBURY

# Making the 'Wants to Be Berry' stool

## In an abridged extract from *Good Clean Fun*, Nick Offerman makes a three-legged stool




*Good Clean Fun* by Nick Offerman (£25, Dutton) is out in November and available from **www.thegmcgroup.com.**

I was already tickled beyond belief to be a cheerleader and co-producer of my pal Laura Dunn's documentary on Wendell Berry, *The Seer*, but imagine my elation when she asked if I would make a stool so that they could film it for the documentary, to underscore a section in which Mr. Berry (my all-time favorite writer) speaks in a moving way about people who make things, specifically artists:

We all come from divorce, now. This is an age of divorce. Things that belong together have been taken apart, and you can't put it all back together again. What you do is the only thing that you can do: You take two things that ought to be together and you put them back together. Two things, not all things. That's the way the work has to go. You make connections in your work. I reckon, I'm no filmmaker, but you'll put this film together by seeing how the parts of it belong together. The film, the made thing, becomes a kind of an earnest of your faith in and your affection for the great coherence that we miss, and would like to have again.

Well, that's what we do, we people who make things. If it's a stool, or a film, or a poem, or an essay, or a novel, or musical composition, it's all about that: finding how it fits together, and fitting it together.

Clearly, since he said "stool" first, Mr. Berry holds that art form above the lower, or more base, creations such as poetry or music. Therefore, Laura thought it appropriate to film my hands and tools crafting a stool, and I do believe it may be the peak of my career in film, especially because my face is never seen.

I love to make a three-legged stool, or anything with three legs, because a tripod cannot wobble. You can be as clumsy as, well, me, and screw up your legs six ways to Sunday and that thing will still sit sturdily upon the ground. That is why I chose to craft just such a stool for Laura's film, since we were hustling a bit to get it done during postproduction. I wanted to remove all the possible chances for error.

I chose a piece of walnut slab that had been ravaged by termites, which had carved out an organic pattern of hieroglyphs that would normally qualify the wood for nothing but the firewood pile. The Swiss cheese quality of the wood's appearance, however, struck me as beautiful, so I cut the stool's seat to feature the damage.

I'm also a big fan of the wedged through-tenon, for if you get the joinery even close to decent, it's permanence is idiot- (or Nick-) proof. Finally, I have recently been indulging in projects with curved details that require not so much accurate measuring as they do eyeballing for "fairness." Laying out, measuring, cutting, and shaping wood with acuity are very enjoyable skills to learn, but then, once those activities have been mastered and repeated enough times, cutting loose with some freehand techniques can provide a refreshing sense of liberation.

With that in mind, I whipped up a leg design that I liked and went to town. I'm sure that a person with talent could craft a nicer stool, but I'm afraid that this model, inspired by a call to illustrate Wendell Berry's language, will always be my favorite, as making it was one of the greatest privileges I've had on my bench. For the book, I have simply replicated the techniques in a couple more versions of the stool, and I do hope you enjoy building it.

1 Choosing your wood – this is a really fun place to use weird or irregular items from the scrap pile, since you only need a 12" disc, and not necessarily even that, because you can use any size or shape piece within reason that will support the joinery and your fanny. I am using some gorgeous (but difficult) red eucalyptus for one stool's parts and a nifty slab of California myrtle for another, with eastern black walnut legs. Use your common sense to determine seat thickness – my smaller stool is 1⅝" thick, and the myrtle slab will finish out at 2". If your stool is for a toddler, a stuffed animal, Adam Scott, or any other supermodel, you can get away with a much thinner seat, but if it's for a professional wrestler or a Sasquatch, then you'll likely want to beef up your dimensions, although good luck getting Bigfoot to sit still (they tend towards skittish in my experience).

2 Choose your shape, like a 12" disc, an octagon, or a weird heart (or a flower – who cares?), and cut it out on the band saw or with a jigsaw. Lay out the locations for your three mortises by eyeballing the inset you want underneath the seat from the edge of the stool to the leg. Find the center of your seat and mark a straight line wherever it makes sense – now you have a centerline. I use a protractor and the centerline to mark off the circle into thirds, or 120 degrees per mortise. No matter what shape your seat ends up as, it's good to use the circle system for layout if you want equidistant legs. Or not! Do as you please on a three-legged stool!

3 As wood contracts and expands with the humidity of the seasons, sometimes the cells can't keep up and so cracks occur, known as "checking." These most often happen along the grain, and they can be thin, hairline cracks, or they can be wide gaps. Dealing with checks is a different conundrum every time. Depending on factors like comfort of use and aesthetics, I do my best to leave checks alone when I can, maybe just easing the edges so that they're not uncomfortable to touch. If I want to arrest any further cracking, I inlay a butterfly key, which is effective and also a cute detail. However in a tabletop, I maybe don't want to leave any crevices that will collect gravy and subsequently be a drag to keep clean. In this case I will make a mixture of two-part epoxy, micro-fiber filler, and sawdust from the wood I'm working on (or something contrasting if I want it to become a design detail) and


fill the gap. This red eucalyptus had some small checks that were jagged and sharp, so I decided to fill them. The tape saves me a great deal of laborious cleanup. Mix in your filler and dust in equal parts until you like the color – doing tests ahead of time can help with color matching. Once your paste feels like peanut butter, pack it into the crevice being sure there are no voids or air bubbles left. A scraper makes quick work of cleanup after curing.

4 Next, I designed my legs, which in this case I had already done – but I wanted the Wendell Berry stool legs to be the right scale for my other two stools of disparate sizes, so I enjoined our trusty Jane to use the computer and scanner to scale the template to several other sizes so that I could dial in the best one for each new stool. We'll focus on the eucalyptus stool from here on out for simplicity's sake.

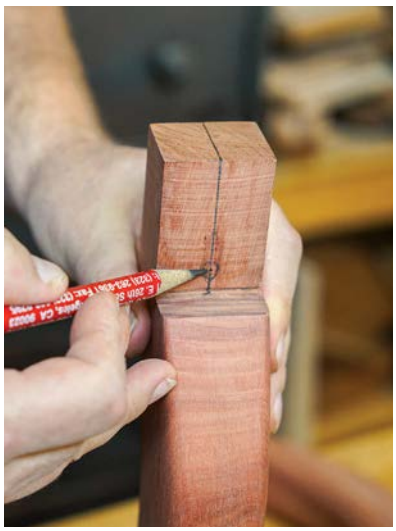
For furniture legs, you generally want a hardwood that can put up with a person's weight, and also get banged around a bit. Once again, I depend upon my eye to determine a good thickness for the leg. I like the thickness of the original leg, but I want to thin it down a bit for the slightly smaller version, so I mill my material until it looks right, which is at 1¾". I use our planer, but you can also do this with a hand plane.

5 It's very important to align the leg design with the long grain so that you don't have short-grain weak spots. Some of my walnut legs are guilty of this very deficit, but I make the top curve, or "thigh," beefy enough to hopefully withstand breaking. The leg curves are marked from the template, but then I go back in and more anally dial in the tenon layout, to ensure accuracy and squareness at the top of the curved form, so the joints will be friendly. Once I'm satisfied with my lines, I cut out the legs. Leave an extra ¼" of tenon length to protrude from the mortise for later flush trimming.

6 I cut my tenons close to the line, then use a chisel and/or a shoulder plane to pare them just right. Once I like the tenons, I use them to lay out the mortises in the seat. In this case, I cut some excess off the tenon end (I had left extra length) and used the block to lay out my tenon locations. A marking knife is ideal in this application, as you want to get these mortises cut as perfectly as possible. All three joints should be identical, but I always seem to manage to screw something up just a bit, so I mark the tenons and their respective mortises as A, B, and C. Mark the top of the seat to make the joints as pretty as possible where folks can see them. If it's going to get ugly (and with red eucalyptus, it will get ugly), you want that to happen on the bottom side, where it will pass undetected. Once I have cut the lines in with a knife, I double down with a chisel to reinforce my clean layout and protect against tear out.

7 You can use a bit and brace (which is really fun – you should try it) or a hand drill, but I'm spoiled, so I drill out most of the waste from the mortise with a Forstner bit on the drill press. I chisel the rest, taking my time to keep my chisel 90 degrees to the surface of the seat. No matter how careful I am, this ornery eucalyptus begins to crumble in places, leaving me with some less-than-perfect topsides and ugly blowouts below. Nick: Don't ever work with red eucalyptus.

8 Once you are satisfied with the mortise-and-tenon joints, you'll want to cut a saw kerf in the tenons, into which a wedge will be driven once the joint is assembled. Mark out your kerf to a depth of ¼" shy of your sear thickness. I cut mine with a Japanese pull saw. One kerf thickness is fine unless you want a thicker wedge for aesthetic reasons. Align your kerf and wedge perpendicular to the grain. If your kerf is parallel, you are likely to split the top. Drill a hole at the bottom of your wedge kerf line to relieve the splitting force once the wedge is driven in. Ideally, I would cut the kerfs before shaping the legs. There should be ⅛" between the drilled bottom of the kerf and the leg tenon shoulder.



9 Time to shape the legs. To me, this is the funnest part. I draw a center line down the front of the leg, just eyeballing, then freehand a reference curve along each of the two front edges, drawing it on each side of the leg. I taper the curve from nothing at the top corner to a width of ½" or so at the protruding part of the thigh. These lines are just to give me a loose guideline as I remove material from both edges. I want them to be relatively symmetrical and "fair," but it can differ from leg to leg, since you can never really look at more than one leg at a time from head-on. I start with a drawknife, but the grain is so ornery that I quickly turn to spokeshave and rasp. Remove material from both sides until you like the curves. Eventually this godforsaken red eucalyptus would not get along with anything but a card scraper, and then I finally won the argument thanks to that noble scrap of thin steel. A little hand-sanding and these legs were ready to go to work.

10 I mill a scrap at the exact width of the tenon (length of kerf) and at the length of the tenon minus ⅜ or so. I cut my wedges on the band saw at an angle of 3–4 degrees, then clean them up with a chisel so both sides of the wedge will be good glue surfaces. After I chamfer the wedge tips for friendly insertion, I make the thin end almost 1/32" less than the kerf width which allows me to leave an eighth to a quarter inch of space below the wedge when I drive it home, which gives the glue a place to go.

I glue up the seat mortises and the leg tenons, gently knock them together, then glue up the wedgse and tap them home. I wipe up my glue with a wet rag, since I know there is sanding yet to come. Once the glue dries, I cut off the tenon tops with a flush-cut saw.

11 Now look at this mediocre work. That's called a gap. One of the best things about working with wood is that you can do a job this crappy and still get away with it.

Cut some thin wedges in the appropriate species and tap them in with glue. Nobody's the wiser! Suck on that, eucalyptus. Bringing the tenons flush with the seat is a great place to use a card scraper. If you try sanding an end-grain tenon, the long grain surrounding it will usually be abraded more quickly, resulting in an uneven surface. Scrape the tenon flush with the seat until it requires little to no sanding.

12 Now you can sand the stool for finish, starting with 120 and working up to 220. When you think it's close to done, wet the whole piece with water to raise any possible grain, then sand with 220. This red eucalyptus is such a pain in the keister that I end up needing the card scraper for most of the seat as well. I finished the stool with a couple of coats of tung oil. ■

PHOTOGRAPHS BY MICHAEL T COLLINS

# How *square* is *your* square?

**Michael T Collins** looks at making your squares just that little bit sharper in shape

As woodworkers, we rely heavily on our hand tools and expect them to perform as designed. We hone our plane irons and chisels to keep them sharp, we realign tablesaws and once in a while may resurface a bench. But then again, some of the tools we use we take for granted and expect them to always perform as they did when we bought them.

Take, for example, a combination square. I don't know about you but that is my go-to square of choice – only one moving part – what could possibly go wrong with it?

Recently, I have been cutting a lot of joints, tenons in particular. I was a little perplexed as to why the shoulders were ever so slightly out of square, not that noticeable across a 40mm shoulder, but on a 150mm shoulder it was visibly out and by the nature of scribing, the shoulders errors were compounded as I worked around the stock. Certainly nothing to worry about on small stock, but it did make me think about all my squares and just how accurate they were. I have several squares, ranging from an antique try square and carpenter's square, to a new 300mm combination square. I had to test them all.

## HOW TO TEST?

Here is a very simple method to test your squares: get a piece of wood with a perfectly straight edge about 600 x 600mm and it must be at least as wide and long as the square you are testing. I started with the carpenter's square; a tool that I use all the time for layout and cabinet construction. Take the square and holding it firmly against the straight edge, using a fine pointed pencil, draw a line the length of the square on the outside edge.

Flip the square over and draw a second line about 1mm to the right of the first line. If the lines are parallel then the square is good, but converging or diverging lines are a sign of poor accuracy. Before you throw that square in the metal recycling box or bin, there are some things you can do to correct the issue.

Draw the first line

Draw the second line

## HOW TO FIX THE CARPENTER'S SQUARE

### What you will need:

Metal punch and hammer

### Diverging lines

To fix this, you will need a metal punch and hammer. Assuming you have drawn the two lines as indicated and the lines are diverging then the angle between the arms needs to be widened. Place the square on a firm flat surface, I personally used my bench which I find to be very solid. Whatever the surface, you want it to be a hard surface that is not going to deflect the square or absorb the impact.

Take a metal punch and place it about 6mm from the inside corner of the square and hit it firmly with the hammer. No tapping allowed. Just a single sharp blow!

Now, draw two lines again using the exact same method as before and check the square again – if it is still diverging, turn the square over and you will see where the punch left its mark. Use the metal punch and hit it again just a couple of millimetres away from this mark and the inside corner. If they are still diverging, turn the square over and repeat, but move the punch a little closer to the corner. Continue this process of punching and line drawing until the two lines drawn are parallel. My square was about 1.5mm out of true over the full 600mm length.

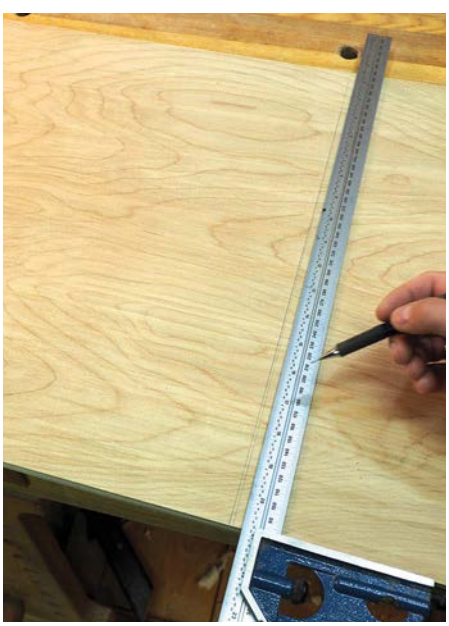
### Converging lines

If the square has converging lines the angle between the arms needs to be lessened. Take the punch and place it about 6mm from the outside corner and give it a firm whack!

### Parallel lines

Repeat the process of draw, check and whack. As the two lines approach parallel ease up on the force of each hammer blow. If you were correcting divergent lines and end up creating convergent lines, simply follow the procedure for convergent lines. At this point in the process the lines should be parallel. ➤

Single sharp blow on the inside corner



Converging lines

Parallel lines

## CORRECT THE COMBINATION SQUARE

To correct the combination square you need one additional item, a very thin, fine file. Draw two lines on the board as you would have done before and determine if the lines are diverging or converging.

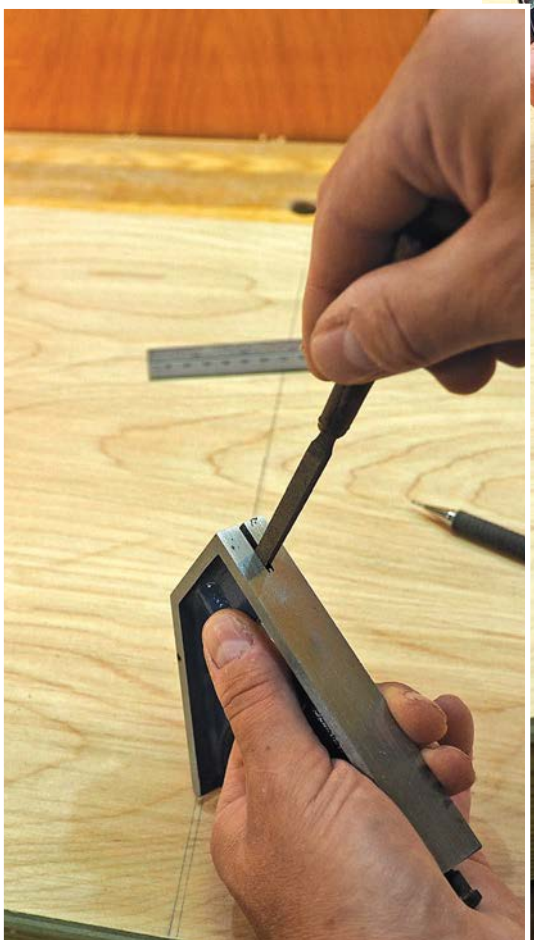
### Diverging lines

If the lines are diverging then you need to file down the little 'nub' in the slot at the 90° side of the square. Remove the ruler and file just a little and perform the test again. Repeat this until the lines are parallel. If the square is converging then file the other side of the groove. Whether diverging or converging go easy with filing as there is a limit to the amount of metal that can be removed. Test the square again.

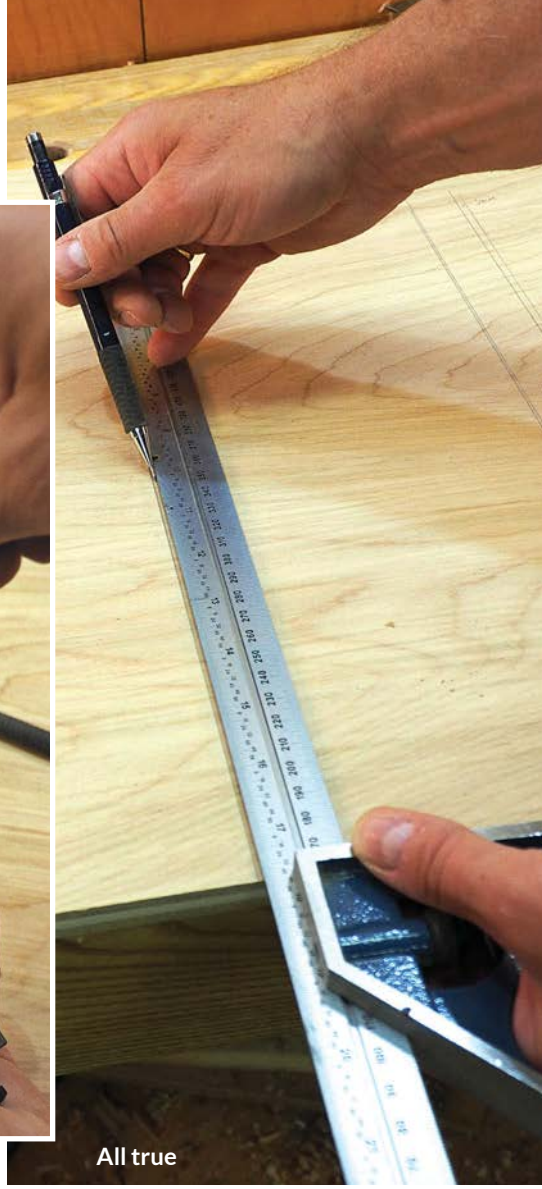
Fix a traditional try square that's done in much the same way as a carpenter's square. Place the metal punch about 6mm from the inside angle if diverging and 6mm from the outside edge if converging.

With judicious drawing, whacking and filing most squares can be brought back into true and give you many more years of serviceable life. ■

**For more tips and tricks please visit: www.sawdustandwoodchips.com**

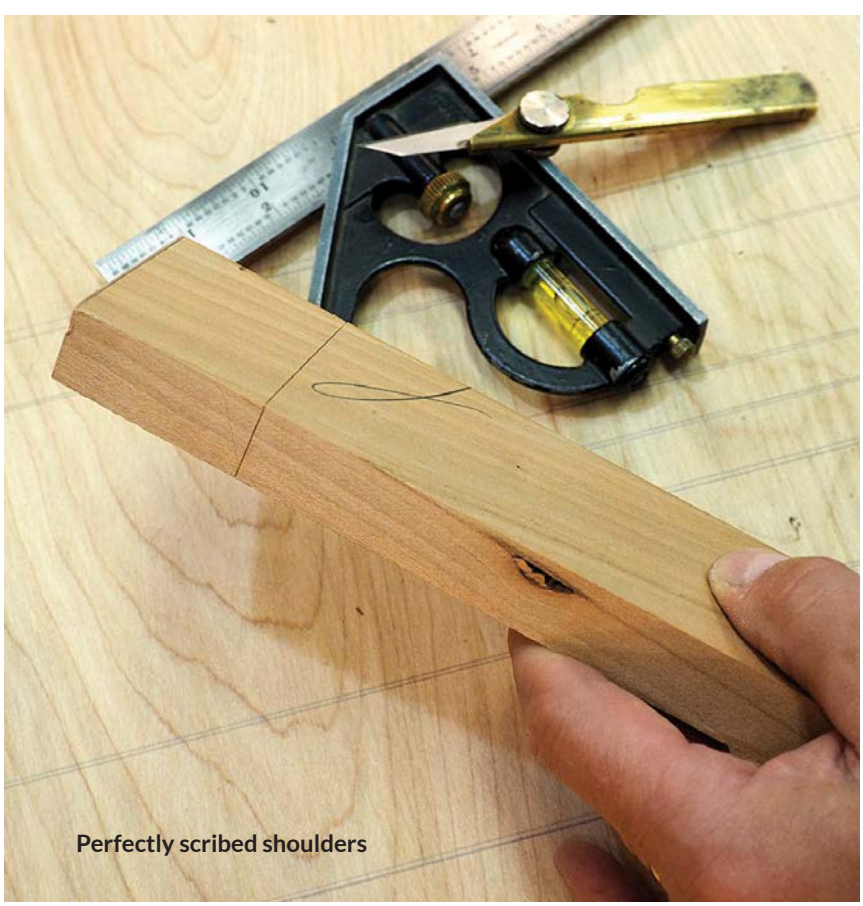


Gently file the nub in the groove



All true

Fixing a try square



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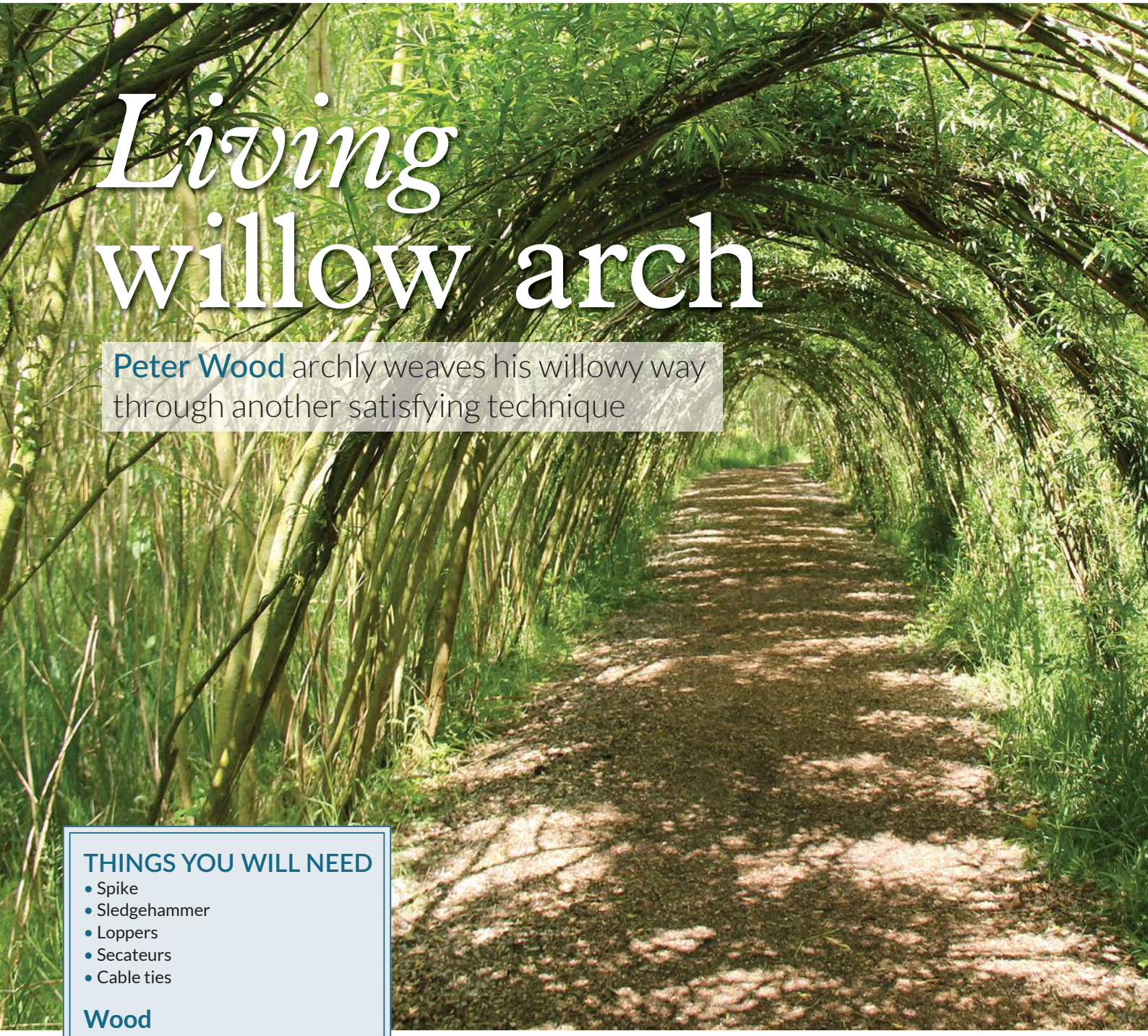
# Living willow arch

**Peter Wood** archly weaves his willowy way through another satisfying technique



## THINGS YOU WILL NEED

- Spike
- Sledgehammer
- Loppers
- Secateurs
- Cable ties

### Wood

Willow (*Salix* spp.) for weaving the arch – I've used Hybrid 2

### Willow Supplies:

www.willowgrowers.co.uk
www.musgrovewillows.co.uk

In this article I will be describing one way of creating a living willow arch. You could potentially plant or create your arch at any time of year, but it is always best to plant during the winter when the sap is down, when there are no leaves on the willow and the willow is dormant. This gives the willow a chance to send out some roots over winter, ready for spring.

1 For this job I ordered some Hybrid 2 willow from the West Country where it is grown on the Somerset Levels. It's a fast growing variety, giving long rods with no side shoots and forms curves reasonably well. There are plenty of other varieties on offer and usually they can be ordered in different lengths. It was delivered to the door in a state ready for planting.

2 If you buy willow, unwrap it straight away after delivery and if you're not ready to plant then stand the willow upright in water just 50–100mm deep. Here you can see the roots have started forming while waiting to be used.

3 You need just a few tools to create your arch; I use loppers, secateurs, a spike, sledgehammer and some cable ties.

4 I've chosen to plant my arch to frame in this area here, the ground is clear so there is little competition from surrounding weeds. You can plant through weed suppressing membrane if you want to, but with my project there are gardeners looking after the plot so it's not needed.

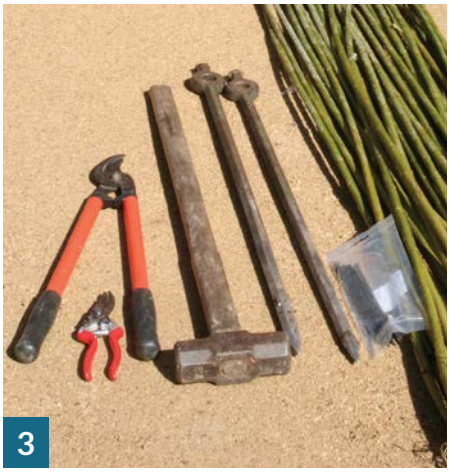
5 The willow needs to be planted in a hole ideally 300mm or more deep. With some loose soils you can just

PHOTOGRAPH COURTESY OF SHUTTERSTOCK

If you get bitten by the willow bending bug you could create a willow tunnel like this one!



PHOTOGRAPHS BY PETER WOOD, UNLESS STATED OTHERWISE







push the willow into the ground, but it's more common to make holes using a spike. Being careful of your back, knock the spike into the ground where you want to plant. The hole needs to be at an angle of approximately 45° which helps in the creation of the arch shape.

6 The hole needs to be close to the diameter of the willow. I was lucky enough to pick up a pair of Land Rover winching spikes. They are the right diameter and the hole at the top allows you to thread the second spike through, allowing you to grip and pull out the spike. Again be careful of your back! ➤

7 The willow will curve more easily at the thinner tip end and stay straighter at the butt end where it's thicker. To create an even curve you can 'train' the rod by standing on the butt end to 'pre-curve' it. Do this evenly along the thicker parts of the rod until you achieve an even curvature. Grip the willow close to the base and push the willow rod into the hole with the concave bend facing inwards to the centre of the intended arch form. This will give ample depth for the roots to develop and some essential support when bending the willow into shape.


7


8

8 Repeat this process on the opposite side of the intended arch. You'll now have two willow rods that can be bent over and wrapped around each other. You can adjust for height and push the curve of the willow until it is even in shape.


9


10

9 At this point secure the ends of the willow with a couple of cable ties. This will stop the willow untying and whipping up, which could potentially be dangerous.

10 Once you're happy with the shape start building up the arch from each side. This increases the bulk of the arch and the additional willow rods you add will reduce the 'wobble' of the arch and increase its strength. Again use the spike to form a hole at an angle to one side of the first rod.


11


12

11 Push the second rod into the ground and wrap it around the main rod. You should aim for some symmetry so it needs two rods on either side of the main arch.

12 This type of base increases the stability of the arch in one plane, now you can add two rods to the side of the arch which will further increase stability.


13


14

13 With all the rods I weave or wrap them around the main stem in pairs. One is woven clockwise and the other anti-clockwise.

14 This weave will give a strong base and fairly rigid arch.


15


16

15 As you weave the arch tuck each rod into the main weave, sometimes you'll have to lift a previous rod to get room. It wants to be as tight as possible with plenty of tension between rods.

16 The willow has a natural curve, with practice you'll feel when you can bend the willow more or when you're bending it too severely. Use your other hand to support the bending willow as you weave it.


17

17 If you try to bend too hard you'll kink the willow, as you can see in the picture. If you have plenty of willow just pull up the rod and replace it. Just leaving it in place will change the curves of your arch and the willow will die above the kink.

18 Finally, trim up the protruding tips to create some clean lines.

19 The willow should start to sprout from most of the buds.

20 Here I continued the weave along the path to create some different heights and a tunnel effect.

21 You can make variations of this if you choose to and even create a tunnel effect along a path. ■


18


19

**Safety**

Before you plant any willow make sure to check what is under the ground. The roots of willow can be quite invasive and will invade any pipework.


20


21

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| CVAC20PR2 | 1400W | 16/12ltr | £62.99 | £75.59 |
| CVAC25SS* | 1400W | 19/17ltr | £67.99 | £81.59 |
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|---|---|---|---|---|
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| CON300 | 230X115mm | 330W | £34.99 | £41.99 |

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*only Bobbin Sander

| OTHER MODEL | MOTOR | SPINDLE RPM | EXC. VAT | INC. VAT |
|---|---|---|---|---|
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|---|---|---|---|---|
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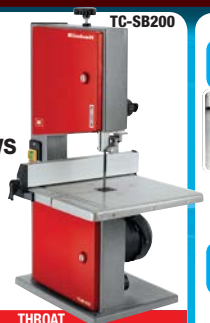

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| MODEL | MOTOR | THROAT SIZE | EXC.VAT | INC.VAT |
|---|---|---|---|---|
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MODELS ALSO FEATURE:


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|---|---|---|---|---|---|
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*DIY #Professional

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|---|---|---|---|---|
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*Black & Decker

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| CDP152B | 450 / 12 | £134.99 | £161.99 |
| CDP202B | 450 / 16 | £179.98 | £215.98 |
| CDP10B | 370 / 12 | £194.99 | £233.99 |
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CR1C

*DIY

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|---|---|---|---|---|
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|---|---|---|---|---|
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# NEWS & EVENTS

All the latest events and news from the world of woodworking...


## N.E.J. Stevenson creates luxury oak cask for final decanter in the Macallan Six Pillar Collection

Bespoke furniture company N.E.J. Stevenson has completed its latest luxury commission creating an exceptional oak (*Quercus robur*) box, encased in emerald leather with a rare Indian goat skin interior to house the final whisky in The Macallan in Lalique Six Pillars Collection. The final decanter in the global sell out collection is named the 'Peerless Spirit,' which features a 65-year-old whisky from the Macallan distillery.

N.E.J. Stevenson has created 450 boxes in a complex process where the company's precise attention to detail and exceptional craftsmanship have shone through at every stage, from veneering to assembly to inlaying the copper and creating the interiors to be covered in leather. The partnership between French crystal house Lalique and The Macallan started in 2005 with the joint aim of celebrating the art, beauty, heritage and craftsmanship of both whisky and crystal making.

The 'Peerless Spirit' decanter and cask is set to retail at approximately $35,000. Neil Stevenson, managing director of N.E.J. Stevenson said, "To be part of such a renowned series is a great privilege and is the perfect platform for us to showcase our craftsmanship."

N.E.J. Stevenson is one of the UK's most highly regarded furniture manufacturers providing design solutions for fine quality, bespoke furniture and fitted interiors. The Macallan was founded in 1824 and was one of the first distilleries in Scotland to be legally licensed. Furthermore, Lalique was founded in 1888 and is one of the crown jewels of France's crystal industry. N.E.J. Stevenson was the natural choice for the box due to their reputation for joinery and creative design.

**Contact:** N.E.J. Stevenson
**Web:** www.nejstevenson.co.uk


The cask created by N.E.J. Stevenson

PHOTOGRAPHS BY N.E.J. STEVENSON

## Free hedgerow pack for landowners in The National Forest

PHOTOGRAPH COURTESY OF THE NATIONAL FOREST

Year by year, The National Forest has been steadily turning what was once one of the least wooded areas of England into a multi-purpose, sustainable forest. The National Forest and the Woodland Trust have introduced a new scheme where landowners within the 200 square miles of The National Forest can claim a free hedgerow pack to help combat the threats from a variety of pests, and diseases to valuable mature trees that feature in the landscape.

Hedgerow trees are living things and even with a natural lifespan of centuries they need to be replaced. Simon West, Head of Forestry for the National Forest Company, explained: "Individual hedgerow trees are vital in our landscape: some species of bird use them as 'staging posts' as they fly over their territory; mature trees encourage and shelter many forms of wildlife; yet many are under threat from pests, diseases and changes to our climate."

The National Forest is offering up to 50 free hedgerow tree packs for landowners within the National Forest. The hedgerow tree pack is available to anyone in The National Forest with extensive hedging that can accommodate 45 trees spaced out to grow on as significant hedgerow trees.

**Contact:**The National Forest
**Tel:** 01283 551 211
**Email:** bfairbrother@nationalforest.org
**Web:** www.nationalforest.org

## Northern Woodworking and Powertool Show

The Harrogate show, as it is affectionally known, takes place on the 18–20 November, 2016 in the newly refurbished Hall One at the Yorkshire Showground. The new hall was officially opened a few weeks ago and will be great for the show with easier access, more catering areas and almost 20% extra exhibition and demonstrator stands. With 40 demonstrators and almost 100 exhibitors on show, this year's show will be something special. Make sure you do not miss it.

**Contact:** SK Promotions
**When:** 18–20 November, 2016
**Where:** Hall One, Great Yorkshire Showground, Harrogate
**Web:** www.skpromotions.co.uk

PHOTOGRAPH COURTESY OF SK PROMOTIONS

The new Harrogate venue


Find that perfect gift and enjoy a great day out at the Weald & Downland Open Air Museum. Entry to the Christmas Market is discounted. This bustling Christmas Market is located in and around the Museum's historic buildings, with over 130 stands selling arts, crafts, food, unusual gifts and much more, you will be able to browse and buy at your leisure. Visitors can also enjoy meeting the Museum's working shire horses and the visiting donkeys. As well as craft and trade stands, there will be festive music around the site, hot chestnuts to ward off the winter chill and other tasty seasonal treats to sample and buy, including a delicious hog roast.

**Contact:** Weald & Downland Open Air Museum
**When:** 26–27 November, 2016
**Where:** Weald & Downland Open Air Museum, Open Air Theater Road, Singleton, Chichester PO18 0EU
**Web:** www.wealddown.co.uk

## Health & Safety amendment

Health & Safety expert, Geoffrey Laycock got in touch to point out the following matter regarding the Workshop Safety article in issue 18 of *Woodworking Crafts*:

"A $CO_2$ extinguisher is not a good idea within a woodworking shop. Basically, use one anywhere near wood shavings or dust and the blast blows them up into the air and spreads a fire, rather than extinguishing.

"The best extinguisher to have available is hydro-spray, as these are move effective than water alone and often smaller and lighter. Foam is also a good option. Dry powder and $CO_2$ are more specialised and should be selected because there is a specific need. Dealing with fires of, or near electrical equipment, is not an issue as it should always be switched off as the first action should there be a fire – a very good reason to place either the electrical consumer unit or an emergency cut-off switch next to the exit route. If the fire progresses the attending Fire Brigade will ask a few very pertinent questions including: are there any gas cylinders, is electrical power still on, etc."

## Yeovil Men's Shed invite you to drop in

The Yeovil Men's Shed invite readers to visit the project in Thorne House, Eastville, BA21 4JD. Yeovil Men's Shed is a community-based organisation that provides a safe, inclusive environment for those who have time to work and socialise over a cup of tea. Members share their tools, knowledge and resources they need to work on projects of their choice. The Yeovil Men's Shed believes that social interaction supports individual pursuits and community projects. They currently hold meetings on Tuesdays and Thursdays, as well as the first and third Saturdays of each month. There is a small annual membership and 'shedders' are encouraged to donate £3 per session when they attend to cover running expenses.

**Contact:** Duncan
**Telephone:** 07974228767
**Email:** yeovilshed@gmail.com
**Web:** yeovilshed.org.uk

# Giving woodwork a decorative facelift

## Amber Bailey reflects on the benefits of adding decorative metalwork to wood

Metal has been a material used in the decorative arts to embellish wooden furniture for centuries. Inlay is the technique of inserting pieces of contrasting material into a base object. It is a decorative art that has been around for thousands of years with examples being traced as far back as the Ancient Egyptians. Materials vary throughout history, but are usually regarded as precious such as bone, ivory, pearl and metal.

**Brass inlaid into a box. Note the vulnerable edge pieces have been pinned into position, possibly as a repair**

### Natural glue for metal

Historically, fish glue has been favoured over animal glue for its higher adhesive properties. Sturgeon glue works better than conventional fish glue as it is essentially nature's superglue. The metal always needs to be 'toothed' with an abrasive to allow a stronger grip than the natural smooth surface.

### BOULLE MARQUETRY

A craft particularly prominent during the 17th century involves veneers of metal (traditionally brass or pewter) and tortoiseshell or horn cut into a decorative pattern using a marquetry done (chevalet), then glued to a wooden base. I decided to try my hand at the Boulle marquetry technique made up purely of brass, pewter and copper. I didn't anticipate quite how heavy the packet would be (the layers being sawn through are referred to as a 'packet').

**The business end of the donkey showing the clamping jaws and the fretsaw frame with a blade fitted**

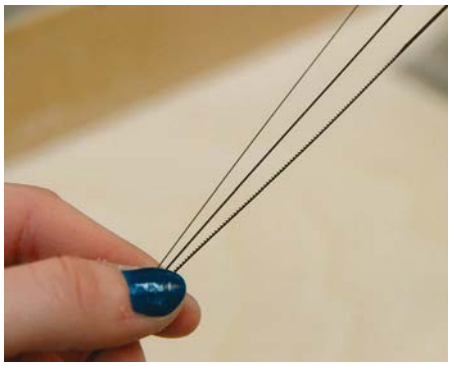
**Detail of some of the finely cut pieces which all have to be carefully saved reassembled in the correct order**

**One of the three alternate designs created by just one packet, ready to be glued up**

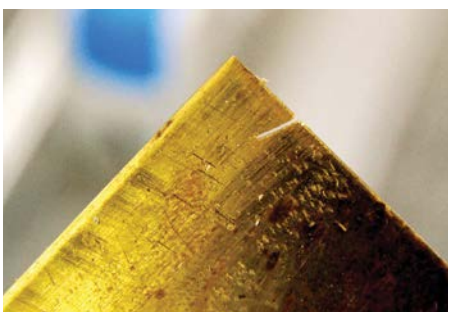
PHOTOGRAPHS BY AMBER BAILEY

## WORKING WITH METAL

All metals require to be treated as sturdier and heavier than wood, but pewter is alarmingly soft enough to roll up, while brass is far more solid. Cutting metal by hand is traditionally done using a jeweller's saw or fretsaw. Any coarse burrs need to be removed with jeweller's files



Metal cutting saw blades require finer teeth and produce a fine dust that is very dangerous if you get it anywhere near your eyes. It is a slower process than with wood



Polishing up metal involves sanding in a single direction with abrasive paper going from coarse until extremely fine, removing all scratches and leaving behind a smooth surface. Most metals require a protective finish to avoid oxidation

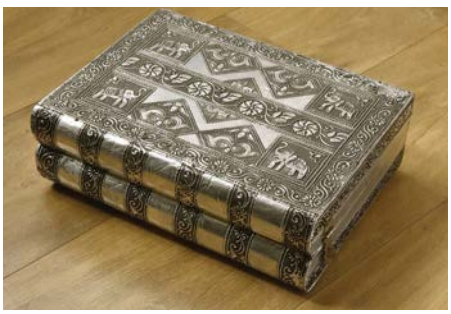
## A FRESH IDEA

A client approached me with the intention of having a brass and red veneer emblem inlaid onto a box, thankfully being your average furniture restorer, I seemed to have stockpiled a number of antique boxes waiting to find a use. The chosen box was made of rosewood (*Dalbergia latifolia*) and dates to the 19th century; it came to my possession in a fairly poor condition with any identification of its prior use long gone. It is largely plain and is likely to have been for jewellery or used as a writing box.

The marquetry was glued in place with a mixture of fish glue, red pigment and Microlight. This filler will seep into any gaps in the design, leaving a tight finish and then water dye was applied with a brush

The brass keyhole was cut with a fretsaw and designed to be the exact size of the original pearl escutcheon. Several layers of garnet polish were built up to rejuvenate the surface finish before hard wax stopping was rubbed into any damage on the box

Boulle marquetry would often have detail engraved into the metal for a much more pictorial finish



A cheaper alternative that requires hand skills for its assembly is to foil or wrap the wooden substrate in metal, often being secured in place with pins. The metal used in this process is particularly thin and can be indented with patterns

### Antique metalwork

This always builds up a layer of tarnish, which after a little bit of cleaning with '0000' wirewool or metal polish should be dislodged to leave a sparkling surface underneath. If it has been French polished this may need stripping off to bring back the metal brightness, although it will affect the surrounding wood finish.

### Suppliers

Antique boxes can be easily picked up at your local antique shop.
For metal sheets and veneer: www.originalmarquetry.co.uk
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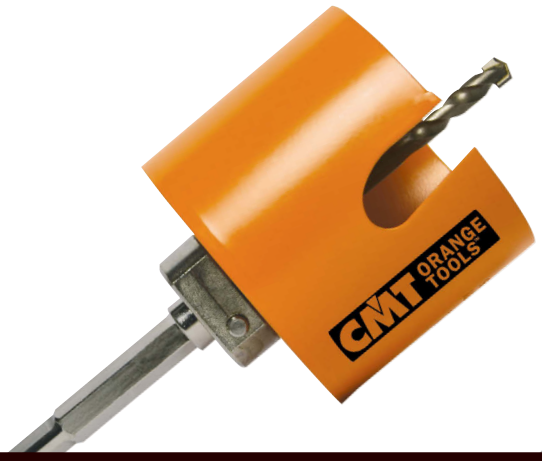
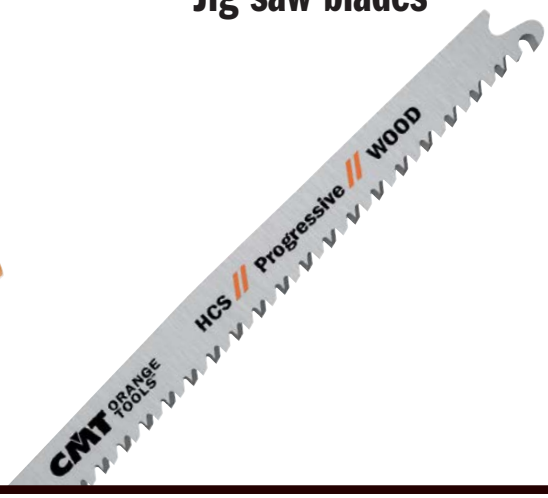



## Jig saw blades

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# What you need to know to start turning – part two

Having looked at the lathe last issue, this month **Mark Baker** takes a look at holding work on the lathe securely

Right: Work mounted between centres

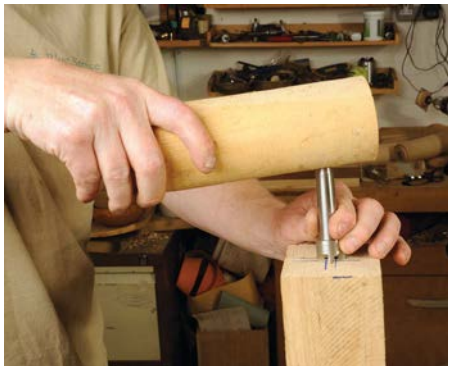
Holding work securely is very important. Get this wrong and work can come loose and heaven forbid, come off the lathe when working. Not something one wishes to encounter I can assure you. It's best not to ask me how I know that. Anyway, chucks, drives and centres are the names of the items that are used to hold work securely on the lathe and there is a bewildering array one can buy. The easiest way of determining what's needed is to break this down into the two styles of turning mentioned last issue: faceplate turning and spindle turning.

## SPINDLE TURNING

Spindles are usually held initially between centres. There are two types of centres: headstock and tailstock centres. Headstock centres comprise drive centres, drive spurs or prong drives – of those, there are many which fit in the headstock directly in the Morse-taper hole, in the threaded headstock spindle.

The most often Morse-taper (MT) used on woodturning lathes to house the revolving centres and drives are either 1MT, a thin small taper and the most commonly used. 2MT is a thicker version of the 1MT. Some drive spurs are designed to be held in chuck jaws. All types are used to lock/bite into the timber to drive it round. They come in a variety of shapes and forms and usually with sharpened blades, teeth or rings to bite into the wood. The number of spurs/prongs is relevant as to how they might be labelled so you might have two or four prongs – a four prong-drive is the most common of this type. The bigger the work being used, the bigger the drive needs to be to drive it properly; 19–32mm are the most commonly used drive sizes and will suit most turner's needs for the majority of things turned on a midi-sized lathe mentioned in the last issue. ➤

Various types of drive spurs



A drive spur driven into a piece of wood with a wooden block/mallet

Various types of revolving centres

The other type of centres fit into Morse-taper holes drilled into the tailstock quill. These are used to support the wood at the other end while it is being turned. The most common type are called revolving centres, meaning as the wood turns round, the centre in the tailstock revolves with the wood. There is an older and almost never used version now called a dead centre, which does not revolve when the wood is turning round.

Revolving centres come in various shapes and sizes. The most common type has a point on the end to press into the wood a little way and support it. But the end shape can be a sharpened ring, a ring of teeth a cone or a dome. The revolving centres with points, rings or rings of teeth are the most often used types. Some of the more expensive ones have interchangeable heads.

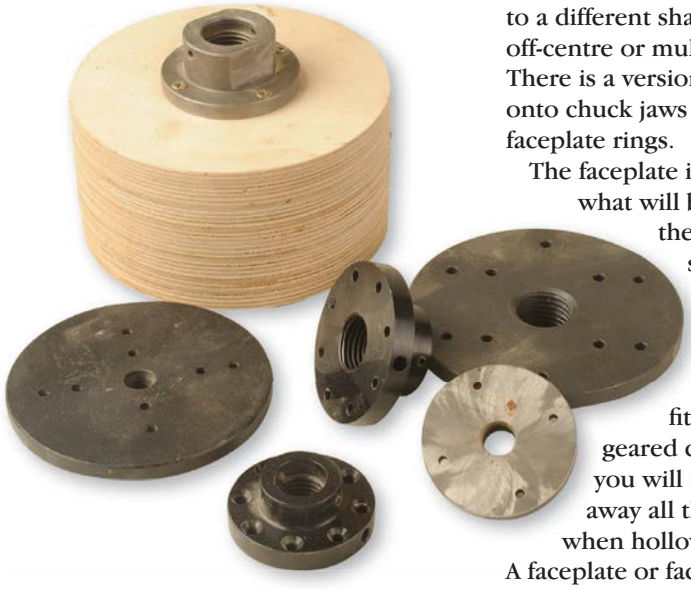
It is worth noting that tailstock revolving centres can be used to support work help in a chuck or on a screwchuck or faceplate. I would recommend as an ideal starting set of centres: a four-prong drive with 25mm diameter head and a pointed-conical end revolving centre. These often come as standard with a new lathe. Chair legs, stair spindles, balustres can all be turned between centres alone, but there are some projects like: boxes, goblets, vases spinning tops and others that might require your turning the tailstock end of the work to cut the shape properly. This means that you will need to use a chuck to hold the work.

## FACEPLATE TURNING

Bowls, platter blanks and other work where the grains runs across the lathe bed – 90° to the axis of the lathe bed is typically undertaken in part or wholly using the following methods.

### Faceplates

Faceplates are typically a machined piece of metal with a threaded female section at the back that fits onto the spindle of your lathe. The top section is a flange, available in various widths, with countersunk holes where screws are inserted into the work to firmly secure it. This method is best used on wood with a flat face to prevent any rocking of the chuck. The bigger the work, the wider the faceplate you will need to secure it and provide maximum stability. While the faceplate is usually affixed centrally to the work, there are occasions when it can be fixed off-centre so you can turn items to a different shape. This is called off-centre or multi-axis turning. There is a version that can fit directly onto chuck jaws and these re-called faceplate rings.



Faceplates come in a variety of sizes

The faceplate is usually fixed on what will be the top section of the bowl. The screws should be long enough to provide a secure hold, but not so long that when the bowl is reversed (it is usually fitted to a scroll or geared chuck for this process) you will not be able to turn away all the screw marks when hollowing out the inside. A faceplate or faceplate ring of 100–150mm in size is ideal.

A few types of screws for inserting into a chuck to hold wood

### Screwchucks

There are two types of screw chuck that you are likely to encounter. The first is similar to a faceplate, but has a screw in the centre of it. The flange of this type may also have screw holes in it and the second type is designed to fit the jaws of a scroll chuck. The screw fits in the centre of the chuck and when a workpiece is tightened onto the screw, the top rim of the jaws acts in the same way as the faceplate section and supports the work.

In each case, a hole of the correct

size is drilled into the wood – on what will be the top face of the work – and the wood is screwed down onto the screw. This type of chucking is only to be used if the face of the wood is flat. If it is not, the wood will wobble and you will not get a secure hold. The larger the work, the wider or bigger the faceplate section needed to provide proper support. As with the faceplate, the screw chuck is usually fixed centrally to the work, but it can be used for off-centre turning too. Screw chucks are usually used to hold the work initially while rough shaping before holding it in a chuck to refine it further.

## Chucks

Chucks come in various shapes and sizes to suit different projects and types of lathe, but fundamentally, they screw onto the headstock spindle and have jaws that can be contracted or expanded to hold work and accessories. The most commonly used types are scroll or geared chucks, which can be opened and closed by using a type of key.

Chucks are screwed onto the threaded headstock spindle – different lathes have varying thread sizes so chucks can come direct machined in the body to fit the relevant lathe or, more commonly, have interchangeable inserts that suit lathes. The latter are better options for most people because new inserts can be bought if one buys or gets another lathe that has a different thread size so you don't have to buy a complete new chuck.

The jaws can be contracted to clamp down onto a round tenon also known as a spigot. This is called compression mode. This holding method can be used for both faceplate and spindle work. It is important to ensure that the tenon is of a size that allows the jaws of your chuck to secure the work and gives as much jaw contact with the wood as possible. It is also vital that the tenon and recess are cut to the correct shape to suit the jaws. If you get the shape wrong, the hold is compromised. The tenon profile will typically be either parallel or dovetail in section to suit the jaws being used. The larger the work, the larger the diameter of the jaws you will need to provide proper support. This type of hold can be used on faceplate and spindle work.


A typical chuck package

Chucks come in all shapes and sizes, as do the jaws used to hold work

Work about to be held on a spigot

Chuck jaws opening up into a recess

You can also expand the jaws of the chuck to hold in a recess. This is called expansion mode. This method is commonly used for large, wide faceplate work such as platters and large bowls. Using recesses on spindle work is rarely used due to the risk of splitting the grain.

A little tip: it is worth making a note or drawing up a chart of the internal and external movement ranges of your sets of jaws. This means you won't have to keep cross-checking during the turning time, and you can set your measuring devices to a suitable size. You will often encounter a number of manufacturers offering chuck packages, which typically include a chuck with a set of jaws, a screw chuck insert and a faceplate ring or threaded one. These can often represent excellent value for money and are worth considering. Aim for a chuck about 100mm in diameter with jaws that will grip onto about 50–60mm spigots and grip into approx. 75–80mm external recesses. As this can cope with a lot of work before you buy more accessories and jaws to fit it. ■

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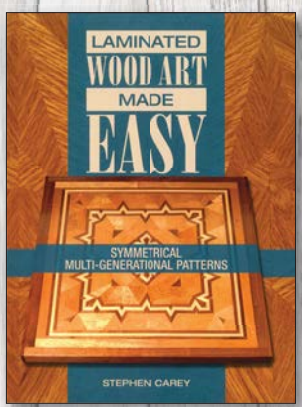
# BOOK REVIEWS

**Briony Darnley** and **Tamara Birch** review three books for your enjoyment and pleasure

## Laminated Wood Art Made Easy: Symmetrical Multi-generational Patterns

**By Stephen Carey**



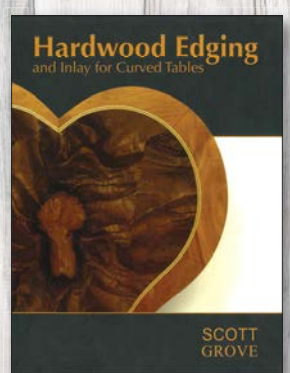

From Schiffer publishing, author Stephen Carey goes through a series of chapters that explain multi-generational processes to creating even the most intricate designs. The 'getting started' chapter highlights various aspects of wood art, starting from lamination and discussing the different generations of lamination. Each piece in this chapter comes equipped with pictures to help guide you and a chart of the most common designs is included too. The 'safety, jigs, and tools' chapter, like any project, is essential and highlights the importance of being safe when using tools. This chapter fully highlights what to look out for, such as dust, and how to clear it effectively and safely.

Throughout the book, Stephen has extra tips, a head's up and variation and application advice in each chapter. Other chapters include: materials, examples of symmetrical patterns and a pair of table tops. The designs in this book use evenly balanced patterns that can also be used to create new and fresh designs. This book is great for those who are looking to expand their knowledge, or try something new.

**ISBN:** 9780764350528
**Price:** $19.99
**Web:** www.schifferbooks.com

## Hardwood Edging and Inlay for Curved Tables

**By Scott Grove**



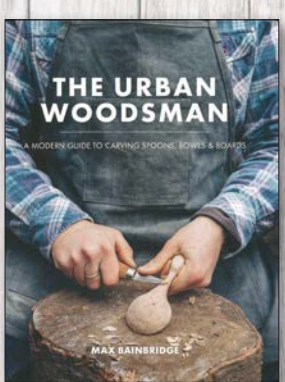

Author Scott Grove shows readers the challenges, and guides to applying a hardwood edge to an organic or complex curved table, which can be a challenge. The 'overview' chapter discusses templates and template guides on a router and includes the definitions of a table, master pattern, field, and a butt joint. Each chapter uses a series of images to guide you to the finished product, each with an in-depth description on how to complete each step.

Perhaps the most helpful aspect of this book is the tools page at the back, which informs you of each tool used throughout and presented in step order. This book is great for professionals and those who wish to expand their knowledge.

**ISBN:** 9780764351181
**Price:** $24.99
**Web:** www.schifferbooks.com

## The Urban Woodsman: A Modern Guide to Carving Spoons, Bowls & Boards

**by Max Bainbridge**




From Max Bainbridge of Forest + Forest, this beautifully photographed book of carving projects covers a great many techniques, finishing methods and tool care. Split into 'Introducing the craft', 'Projects' and 'Finishing & tool care' *The Urban Woodsman* takes you through from start to finish on a project, including an eating spoon, spatula, serving board and more. As the book states, these are 'tactile objects that are as beautiful to look at as they are to use'.

Each project is step-by-step, with accompanying photographs. Once you've finished your chosen project, the 'Finishing & tool care' chapter will take you through faceting, scorching, ebonishing, sanding and other finishing techniques. Max also makes sure to provide advice on looking after your tools once you've finished your project, or if you want to move onto the next one! Overall, a nicely rounded book, which would be great for beginner carvers.

**ISBN:** 9780857833778
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**Web:** www.irwin.co.uk

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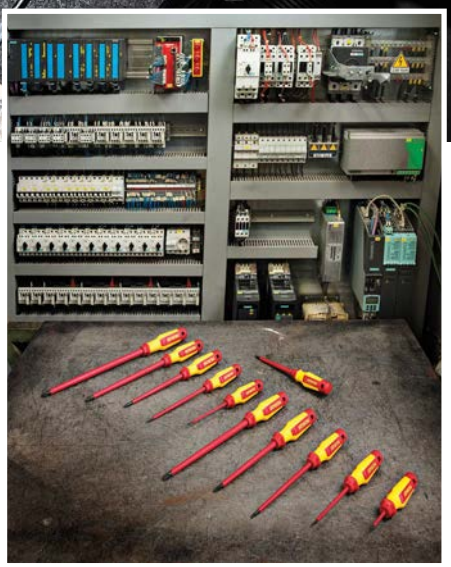

## Clarke cast-iron stoves

Bring the warmth and ambience of a real fire into your workshop with a Clarke cast-iron stove. The Buckingham model is a classically designed multi-fuel stove suitable for burning wood and coal. It has a maximum heat output of 6.0kW and can be used in rooms up to 120m$^2$. The Wentworth is a stylish, contemporary designed, highly efficient multi-fuel stove which has passed government DEFRA tests to demonstrate exceptionally clean burning of wood in smokeless zones. It has a max heat output of 5.3kW, making it suitable for rooms up to 100m$^2$.

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# Alice Holt Forest

Diving into the Alice Holt Forest, **Tamara Birch** takes a look inside the Forestry Commission's £2.3 million redevelopment plan for the area

Alice Holt Forest is a woodland paradise with hundreds of visitors every year stopping by the café, cycling along the cycle trails, or just having a particularly good time while on a day out with family. The forest covers 850 acres, and its large size, variety of habitats and long history of active management combine to make it an important home for wildlife in an increasingly crowded countryside. The Alice Holt arboretum restoration project is a partnership between the Forestry Commission and the Alice Holt Community Forum (AHFC), with a number of goals to continue the appeal for returning and new visitors such as the planting of new trees to increase the diversity and value of the collection for science, recreation, education and to enhance the ecological value of the site.

## History

Alice Holt has been through several phases of deforestation and replanting over the centuries. The Forestry Commission has a goal to restore as much of the native woodland that's been lost, as possible. Such a wonderful area, the Alice Holt Forest is filled with history, having been growing since around 5000BC, when most of the oak (*Quercus robur*) would have been a lot more extensive than it is today. In the first century, inhabitants began making pottery at Alice Holt, with the Romans later expanding pottery into a major industry, reaching as far as Brittany. In the Saxon era, some of the forest was cleared for farming and local people grazed animals in the woods, resulting in a mix of dense and open woodland with open spaces in between.

In the middle ages, Alice Holt was a Royal hunting forest and strict laws governed it, controlling the rights of local people within the forest. In the Tudor and Stuart period, timber was in great demand and the forest was in a poor state, but in 1655 the forest was replanted and left for 100 years to replenish and regrow. Until 1815 there were red deer in the forest, until they were removed when the enclosures were created, and today roe deer are quite common in the forest. The Forestry Commission took charge of Alice Holt in 1924 with the intention of growing trees to increase the home grown timber supply.

Today, the Forestry Commission manages forests for people as well as trees, and has an open access policy to the public. Already providing a great number of facilities for visitors, the Forestry Commission have introduced a £2.3 million redevelopment plan to further improve the Alice Holt Forest.

## The Forest

Alice Holt Forest is located close to Guildford, Farnham, Alton, Whitehill and Bordon, and is set to become the northern gateway to the new South Downs National Park. Providing a safe meeting place, friends, families and community groups come together to enjoy themselves in a diverse ancient woodland setting. Due to the large number of visitors over the past few years, Alice Holt has been able to expand, and the Forestry Commission has been able to conserve and enhance a variety of habitats and wildlife. The Forestry Commission are offering new sites, sounds, smells and experiences to visitors all year round and income is continuously generated through car park charges and similar, enabling ongoing maintenance of visitor facilities.

To help with the restoration, and to attract returning and new visitors to the forest, the Forestry Commission holds a number of events throughout the year. These include Guided Nordic Walking, Walking for Health and play trails for younger visitors that allow them to have fun, see the forest and educate them about ongoing and upcoming projects, as well as conservation projects. The Alice Holt Forest continues to update the grounds to appeal to the growing number of yearly visitors, while working hard to restore the forest to its former glory so it can survive for many centuries to come. ➤

PHOTOGRAPHS COURTESY OF THE FORESTRY COMMISSION

Main image: Autumn reflections in Lodge pond

Top left: Ladies group at a Nordic walking event

Top right: Going wild on the play trail

Right: Japanese maple trees (*Acer palmatum*) display stunning autumn colour on Pheasant Ride


Above: Enjoying a forest walk with the dog. Right from top: Orienteering map and compass; Children enjoying the sculpture play trail; Cycling in the forest

## The redevelopment programme

The Alice Holt Forest is something to admire and the Forestry Commission continues to work hard to preserve and improve the forest with the news of building a new café. The café is central to the public, meaning they can make a full day of visiting the forest and with the plans to double its current size by having over 100 seats inside and 120 outside, visitors will have a place to eat or rest no matter the weather. Like most attractions, visitors want to have the best possible time while they're at the forest, so this redevelopment plan has come at the right time to help meet the growing demands on site and to mark a new chapter in Alice Holt's long and interesting history. Cafés are a place for people to eat, drink and socialise, and the changes to the café will continue to give visitors of all abilities better access. The café will have a new design, with the higher quality standards that visitors have come to expect, and will be open from winter 2016. In addition to the new café, the forest's car park is undergoing important improvements to create more spaces, more specifically, disabled bays. The car park area will also be introducing safer pedestrian zones so parents don't have to worry too much about their children being in danger. There will be a turning area for cars improving access and easing the amount of traffic by making it easier for visitors to leave at the end of the day.

## The arboretum

In the 1960s, researchers were studying plant progeny and genetics created an arboretum, or 'tree zoo' as it's also known, and there is a path going through a fascinating collection of specimen conifers and broadleaves from around the world and it used to be very popular with visitors. The arboretum stands within a sloping site that contains a rich variety of wildlife habitats and sports great views over the Wey valley to the north. Within the arboretum, there are several scientifically important plantings, where each tree is a clone from a known parent tree preserving a unique gene bank of individual trees, each





Main image: Thinning work among a group of conifers and clearing undergrowth

Right: Purple Emperor butterfly

Far right: How the new café will look

with its own fractionally different characteristics. In the plan to fully restore the forest, the Forestry Commission aims to restore the arboretum to its status as a tree collection of national importance, while recognising the sensitive nature of the site. To maintain the beauty of the forest, the redevelopment plan will conserve, display and interpret the best examples of the existing specimen trees, and identify an appropriate monitory regime to record and help interpret ecological change over time.

## Laboratory

Further to its scenery, the Alice Holt Lodge is home to a chemical analysis laboratory that provides a wide range of inorganic analyses for plant, soil and water samples. This laboratory offers tests such as the chemical composition of soft and woody plant material including bark, leaves and roots. The Alice Holt plant analysis laboratory has supported forest-related research projects for more than 40 years, and can also recommend a bespoke fertiliser prescription to improve plant nutrition. Each test carried out use state-of-the-art laboratory equipment and instrumentation that offers low limits of detection and greater accuracies at trace levels.

## Conservation

Today, individuals are concerned with conserving energy for future generations. The Forestry Commission is also concerned with this and is putting in a new wood pellet boiler that will provide clean and sustainable energy to the visitor centre, and the new café. New planting areas are being built to help with environmental issues such as the conservation of nature and animals. Although the forest is well looked after, there is a lot of work to be done to return Alice Holt to its former glory. A key aim of the project is to provide an educational resource for all ages, and to encourage visitors to admire the beauty of the forest. The Alice Holt Forest has several activities for all ages including a cycle path offering a chance to explore further into the forest and learn more about their work to restore the forest with the new arboretum tree trail opening to the public for the first time. The ongoing restoration of the forest is to also improve the managing woodland for wildlife, where a small part of the forest is designated as a nationally important Site of Special Scientific Interest (SSSI) for its wildlife.

The project, in recent years, has been carrying out important works of ancient woodland restoration, defined as woodland that have been present since at least 1600AD, where non-native trees are being removed. There are important features for wildlife that visitors can see at Alice Holt such as deadwood which provides a home for fungi, stag beetles and great crested newts, similar to the coppice woodland that can be cut on a cycle to provide habitat for butterflies, dormice and woodland birds. The extensive network of forest roads, paths and open space add a lot to the diversity of wildlife habitats in the forest. These open spaces across the Alice Holt Forest are important for all its wildlife such as amphibians and reptiles. The challenges faced by the Forestry Commission is to help sustain woodland management of the forest, which will benefit wildlife. They feel by working with the government, partner organisations, and the voluntary sector, they can continue to conserve and enhance the cherished wildlife legacy that is the Alice Holt Forest. ■

# 10 TIPS FOR USING A HAND PLANE

## Take a tip from **the Editor** on the uses of a hand plane

The venerable hand plane is an essential piece of kit, but like any hand tool, it needs care and maintenance. There is lore and legend surrounding these tools that goes back centuries, but simple common sense advice is all you need to get a decent working result. Planes are prone to blunting, rusting, general abuse and often get left in the toolbox when they give disappointing results. So, here are some dos and don'ts:

1 DIY shops now only seem to stock very cheap and nasty plane models. Go to a proper toolshop or buy online. A plane should have a cast iron body not pressed steel or aluminium if it's going to be any good at all; wooden handles are more pleasant to hold than plastic. Some work is needed first. Your new plane may not be ready to go 'out of the box'.

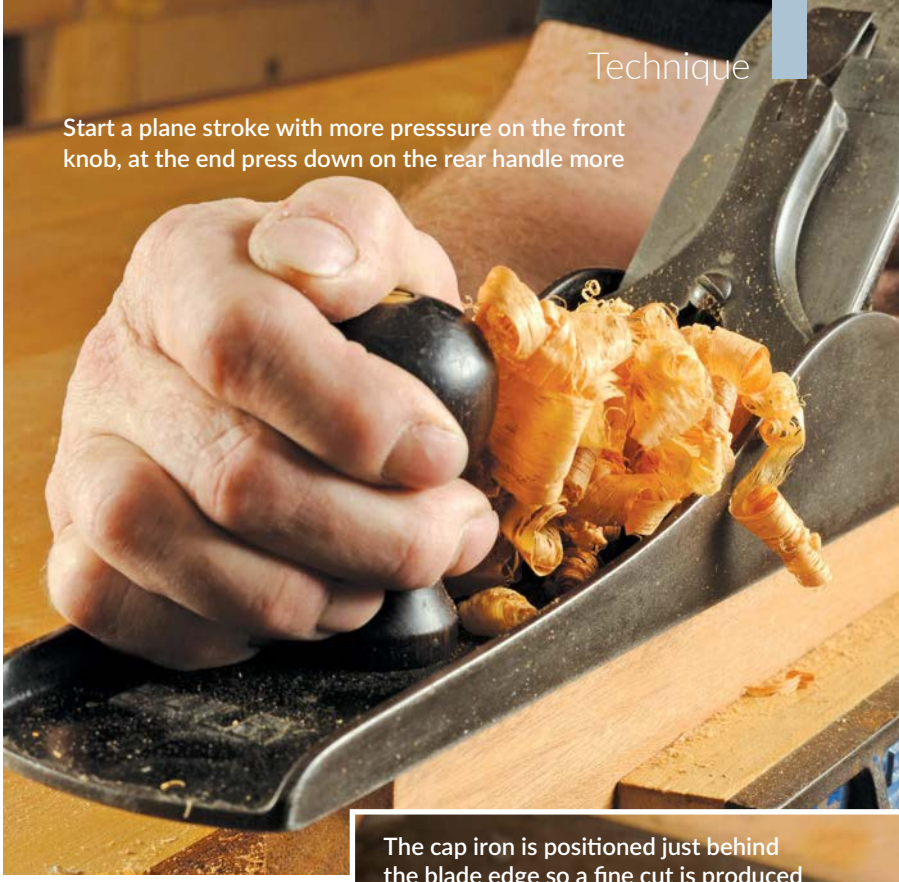
2 The blade is the critical item, very old or vintage planes normally have carbon steel blades which give a very good sharp edge. More modern planes tend to have steel of an unknown quality unless they're very expensive models. You can buy superior replacement blades though if you want better steel.

An original carbon steel blade (*rear*) and a modern much thicker high quality replacement (*front*)

PHOTOGRAPHS BY GMC/ANTHONEY BAILEY UNLESS OTHERWISE STATED

PHOTOGRAPH COURTESY OF SHUTTERSTOCK

A honing gauge and a diamond plate are the best combination for easy and accurate sharpening



Start a plane stroke with more presssure on the front knob, at the end press down on the rear handle more

The cap iron is positioned just behind the blade edge so a fine cut is produced and shavings can easily escape

Use an accurate square to check the edge is perpendicular from one end of the board to the other

3 Learn how to sharpen your plane blade, once sharp it will cut decent shavings. The simplest, more reliable, method is using a modern diamond plate and lapping fluid. 'Flat' the last section of the blade back until it is level right to the edge.

4 Now use a simple honing guide with the correct cutter projection, which marked on the side. Then run the blade back and forth until the edge is completely honed to the edge meeting the back of the blade.

5 Run the edge over a block of MDF strip and grain upwards using some metal polish. This will remove the 'wire' edge created by sharpening and polishing the edge. Your blade is now ready to use.

6 Place the cap iron on top so the leading edge is just behind the blade edge and tighten the cheesehead screw. Place this assembly back on to the frog – the cast mount, which it came off before sharpening. Make sure the projecting peg that moves the blade assembly is poking through the small hole in the blade. Fit the lever cap and snap or screw it down.

7 Sight along the base to check cutter projection. It should barely show and have an even edge just visible. If necessary use the big thumbwheel behind the frog assembly to withdraw the blade then turn the other way until it's just visible. You can tilt the blade by pushing the lever at the rear; this allows you to get an even cutter projection showing.

8 Let's assume your workpiece only needs the edge flatting rather than squaring an entire piece of wood. Hold it firmly in a vice or portable workstation jaws. Your working stance is important. Don't hunch over the work and stand legs placed far enough apart 'inline', i.e. one behind the other. Start at the beginning of the cut with pressure on the front knob.

9 Swap pressure to the rear handle or 'tote' as you push forward. In this way you can avoid excess cut at either end resulting in a curved edge. The first strokes may not take much wood away, but be patient and do several strokes as the blade cuts more continuously from end to end. Check the result by sighting along the edge or use a steel rule.

10 The next thing is learning to plane level so the edge is perpendicular to the adjacent 'good' face. Use a try square at several points along its length and plane again tilting the plane slightly to correct the cut so it is perpendicular. Planing in both length and width takes practice, don't be disheartened and don't do it to your prize project until you are confident in the result. ■

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# READER GROUP TEST

Welcome to our **Reader Group Test** by members of our very own Woodworker's Institute Forum

## Testers

Mike Gerrard, Paul Finlay, Joe Wilkinson, Tudor Joseph, Wendy Greenwood, Peter Bone

## IRWIN Weldtec circular saw blade

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The blade on test is 190mm x 24 teeth with an an RRP of £38
For more information visit: www.irwin.co.uk

PHOTOGRAPH BY GMC/ANTHONY BAILEY

PHOTOGRAPHS BY WENDY GREENWOOD

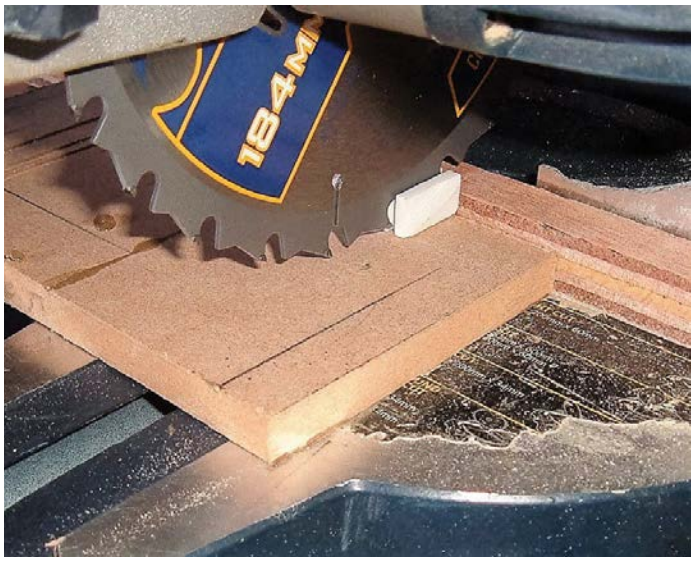
Wendy Greenwood found the blade's graphics rubbed off on to the wood

**Mike Gerrard:** I thought the teeth looked a bit small to start with, but this meant a nice thin kerf, which is better than other TCT blades I have used. This blade cuts very smoothly through thick or difficult material with a little kickback. The finish was fine, but not super smooth as it is not designed for finesse. At £38 it is a bit expensive, but after a quick search it shows most stores are selling it significantly cheaper and therefore good value.

**Paul Finlay:** I did some rip cuts on cherry (*Prunus avium*), ash (*Fraxinus excelsior*), oak (*Quercus robur*), yew (*Taxus baccata*) and sycamore (*Acer pseudoplatanus*), it left a good finish, then some corian, which is hard to cut and get a good finish on. I think the blade is good value for the money.

**Joe Wilkinson:** I felt the cross cut performance was better than the rip cut because when it was full depth rip cutting through 'green oak' it produced long fibres, which clogged the saw up. Crosscuts were clean and produced little or no spelch. A quick search brought up a lot of blades that are much cheaper although I feel their quality may be an issue.

**Tudor Joseph:** Full depth cuts were taken on a variety of materials including: 40mm kitchen worktop,




PHOTOGRAPHS BY PAUL FINLAY

Paul Finlay achieved some decent cut finishes

Paul found it to give a decent end grain cut

PHOTOGRAPHS BY JOE WILKINSON

Joe Wilkinson found cross cutting worked best for him

Tudor Joseph used the blade on a variety of materials

PHOTOGRAPHS BY TUDOR JOSEPH

11mm bathroom laminate, reclaimed teak (*Tectona grandis*) decking with the odd nail or screw, oak boards, and an aluminium extrusion. Fairly high feed rates were possible, the limiting factor was the power of my machines.

I cut 1mm and 2mm oak veneers, the resulting quality of finish was very impressive. Any slight scratches on the surface were due to the short workpieces 'idling' in the cut while waiting for the blade to stop. Edge breakout on laminates was evident, but not excessive. An extra 30mm to 16mm bush would also have been useful considering that the blade is only 184mm dia. and intended for smaller machines. With a little research online I was able to source this blade for as little as £22 including postage and at this price it is excellent value for money.

**Wendy Greenwood:** It crosscut through a piece of iroko (*Milicia excelsa*) without any problems. We also rip cut a piece of sapele which was managed without any problems. The cut is fairly clean that requires a thin pass on a planer. A bit of torn grain on the top surface, which is to be expected with a rip blade. The only problem was a slight colour transfer with the new blade.

**Peter Bone:** I tested it on six and 18mm plywood and some damp 36mm pine. The results were very encouraging, it didn't splinter the 6mm ply too much. Bearing in mind it was a rip blade the finish needed minimum sanding. I did get some kickback when I was cutting the thick pine, but I was forcing it to the limits. I was surprised it went through a nail in some pine with no problem. I personally think it's on the expensive side. ■

## How our testers rated the product

| | |
|---|---|
| How would you rate the product performance? | 8.8/10 |
| How would you rate the product ease of use? | 9/10 |
| How would you rate the product overall? | 8.9/10 |

## Editor's comment:

Editor's comment: IRWIN have invested in new technology to create this range, which they have a lot of faith in. The 24 tooth cut finish is obviously not going to be as smooth as a 40 tooth version. Colour rub-off is a problem that will go once the blade body has had plenty of use, but still unfortunate. One tester wanted a blade with a 16mm arbor fitting, there is one in the range. Another tester commented on ripping 'green' i.e. wet oak, this is bound to clog any blade to be honest. The Weldtec blades are a very reliable high quality construction work type for site use.

If you would like to be part of our panel of product testers, please go to our website www.woodworkersinsitute.com – and **SIGN UP NOW!**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# WALKING STICKS – part 1

## Paul Purnell looks at selection, storage, seasoning and straightening

When making your own walking stick, the first consideration is whether you intend to attach a head. If you are, you will need a straight shank. These are available to purchase via the internet and county shows for £3–5, but they vary in quality. Ensure you buy a seasoned shank free of woodworm. However, it is more satisfying to find and cut your own. Please remember that every tree belongs to someone; you need the landowner's permission before cutting. This applies to common land where it is a criminal offence to cut and remove wood. The shanks cut and photographed for this article are with the kind permission of the Petwood Hotel, Woodhall Spa.

### Selection of shank

Almost any tree variety is suitable for a walking stick shank. Most commonly used are hazel (*Corylus avellana*) that ranges in colour from silver to red-brown and the many shades in between; blackthorn (*Prunus spinosa*); sweet chestnut (*Castanea sativa*); holly (*Ilex* spp.); hawthorn (*Crataegus monogyna*); silver birch (*Betula pendula*); ash (*Fraxinus excelsior*); oak (*Quercus robur*) and sycamore (*Acer pseudoplatanus*). Although suitable material is hard to find, yew (*Taxus baccata*) make excellent shanks. When cutting blackthorn, wear gloves and eye protection as the thorns are vicious and infection is possible if the skin is broken. Selection depends on your choice of wood and appearance when finished, e.g. chunky or slim, long or short. Long straight sections of certain types of wood, e.g. blackthorn and hawthorn, are much harder to find. ➤

PHOTOGRAPHS BY PAUL PURNELL

Hazelwood

Hazel can vary greatly in colour

Yew trees

From the left: yew; rowan; ash; holly; silver birch; blackthorn and cherry

It is possible to straighten most bends in a shank; however, avoid shanks with a kink similar to a dog's hind leg. These are hard to straighten and rarely worth the effort unless you want the added character.

The length of the stick depends on the height of the user and style of stick. If making a stick for someone else, a rough guide for a hiking stick for a person 1830mm tall is 1400mm. For a short walking stick, aim for 915mm. The diameter is also an individual preference. If in doubt, a standard diameter of a finished stick is around 25–30mm at the top tapering to a bottom diameter of 15–19mm. The shank will lose approximately 25% of its diameter during seasoning. Keep in mind when cutting.

Cut shanks between November and March when sap is at its lowest. Cut at least 100mm longer than you need for your project. Using a folding pruning saw, cut the bottom of the shank at an angle of 45°. This allows water run-off and minimises damage to the tree. Check any fallen tree, with roots still attached, as they often sprout straight branches. Use the saw or secateurs to cut any side branch to 12mm. Do not cut side shoots flush with flank as this can leave an ugly pockmark when dried. Do not use dead wood from a tree or picked up from the ground. It may appear sound, but woodworm may have set up home.

Using a folding pruning saw, cut the bottom of the shank at an angle of 45°

Avoid shanks with a kink similar to a dog's hind leg

## STYLES OF SHANK

The length of twist can vary from the entire shank or a short section

If you find a short length of a branch with a good twist, consider cutting for use as a head attached to a straight shank

A straight shank – tall or short – to which you attach a head. The choice of head is infinite and sometimes bizarre. Types of head include: dogs, animals and birds carved from wood; plain handle styles, e.g. regency, derby, crook and market, in wood or horn; antler, horn or wood 'Y' thumb sticks and many varieties pre-cast from resin or metal.

When wild honeysuckle grows around a branch in a spiral, it sometimes tightens leaving a 'twisty'. Remove the honeysuckle to reveal deep or shallow grooves. The length of twist can vary from the entire shank or a short section. This stick gives a surprisingly comfortable grip. A twisty shank of the right thickness and height is difficult to find. Search in unmanaged woodland. If you find a perfect twisty, ignore previous advice of when to cut; as long as you have permission, cut when you spot it – if you don't, someone else will!

A short or tall one-piece stick cut with a section of root attached can be shaped into a knob or handle. Short sticks make good cudgels or beating sticks; blackthorn is one of the best. The runners of blackthorn travel from the parent tree just under the surface of the soil. Scrape the soil from around the base of a straight section of blackthorn and check the root system to see if it is usable.

If you cut the shank with a section of larger branch attached, the extra block of wood can be carved into a handle or many other designs

A one-piece 'Y' stick

A crooked shank can have bags of character. Blackthorn and hawthorn are good candidates

Scrape the soil from around the base of a straight section of blackthorn and check the root system to see if it is usable

## STORAGE

On a shank end, write the date cut and variety of wood. If you cut your shanks slightly oversize, the sealing of most varieties is not necessary because you can cut away any damaged section. The denser woods, such as blackthorn and yew, can split while drying; they may benefit from sealing with wax, paint, or varnish. If you have a shank with a larger section attached, this must be sealed. Remove excess moss and dirt and treat the shank with an anti-woodworm product.

Store shanks in a cool, dark place with good air circulation. Attics are not suitable. They can be stored upright, flat or even hanging from one end by a piece of string. If they are stored in rafters of a garage, ensure that you place them on struts that are close together to stop excessive bowing. Single shanks will get better air circulation and dry more evenly, but they can be stored in bundles of up to five. Tie bundles together with a soft binding – strips of an old towel are ideal. Tie at close intervals if you are drying a bundle, consider tying shanks to a rigid pole, such as an old broom handle, to minimise movement.

## SEASONING

As the moisture level reduces during drying, a shank hardens and decreases in weight. Season a standard shank of 25mm diameter, for a minimum of one year. Denser woods – blackthorn, yew and hawthorn – will need two years. If the shank is thicker, has a knob, root etc., it will need two to three years. The general rule of thumb is to season one year per every inch of diameter. Shanks seasoned for more than three years attract woodworm; if you are storing for longer repeat anti-woodworm treatment. If your intention is to attached a head, do not be tempted to use the shank before fully seasoned. There is the possibility of the shank continuing to shrink and loosening the joint.

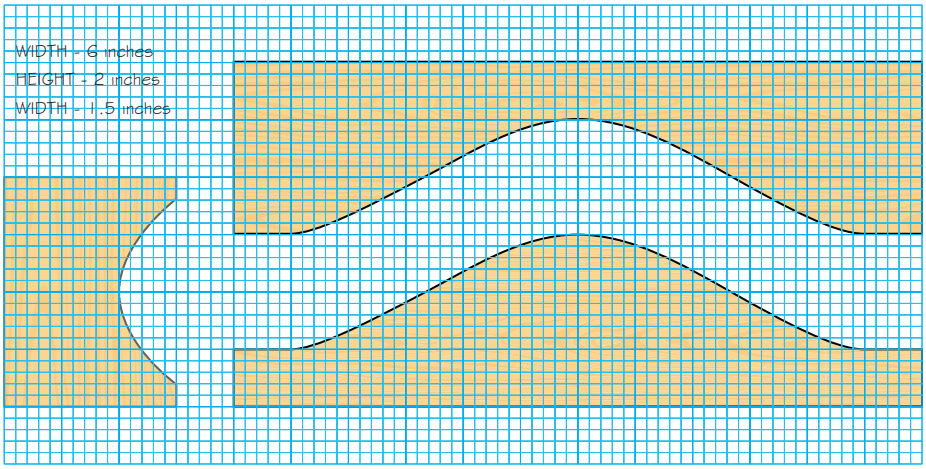
There are around 40 species of holly in the UK and some have an attractive grain under the bark. Apply a stain to a spare piece of shank to test. If you intend to strip the bark from any shank, it is easier when the shank is green, but this will make it more liable to split as it dries. Leave until the shank is at least part seasoned. ➤

They can be stored upright, flat or even hanging from one end by a piece of string

## STRAIGHTENING

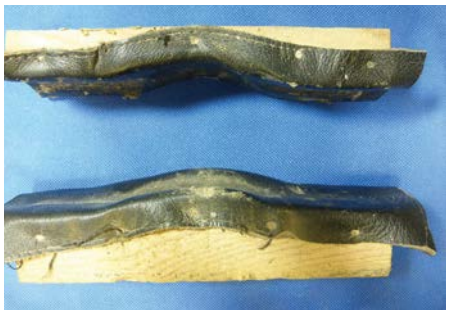
No matter how straight your stick when cut, after seasoning it is likely to have bends. If the shank was stored correctly they should not be too extreme. To straighten, there are two main methods; each has advantages and disadvantages...

Paint-stripping tool: this method is adequate for straightening one or two sticks at a time. Move the hot-air gun over a patch of around 100–150mm, and continually revolve the shank to prevent scorching the wood. A minute is enough depending on the shank's thickness. You can straighten most bends over your knee, but bends at the extremities are difficult and a simple jig will help. The diagram (*above*) shows a simple jig made from wood. Glue a strip of leather to the inside faces to protect the shank. You can find others styles on the internet. Methodically work from the top end of the stick and wait for a treated area to cool before attempting the next bend. As you bend the shank over your knee, you will feel the fibres stretch if heated sufficiently. Slightly over-bend and the shank will spring back straight. If the shank doesn't give, apply more heat, but don't force otherwise, the shank may snap. Some bends can be stubborn. This is not a task to rush; it can take up to an hour per stick.




Once you have straightened the entire shank, place it flat on the ground in a cool place to prevent the bends reappearing.

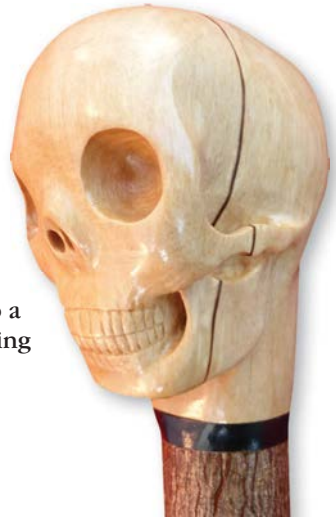
Steam: if several sticks need straightening, steam might be a better choice. A wallpaper-stripping machine will make a simple steamer. Obtain a length of plastic pipe four to five inches in diameter and a few inches longer than the longest stick you intend to straighten. Seal one end. Insert the steam outlet pipe into the open end or fix it permanently. Drill a hole the size of the end of the steam outlet near to the sealed end of the pipe. Fix steam outlet into the hole and seal with a waterproof sealant. Shanks need steaming for 30–60 minutes before pliable. This method will result in a scalding shank; use gloves or a towel while you work.



You can use the jig to straighten the entire shank if you wish

The shank will only remain workable for a few minutes, after which it will need reheating, so work quickly. ■

A range of walking stick designs



Part 2 will cover joining a head to a shank and finishing a walking stick.

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# DIY Eco-Makeover

How **Francesca Wakefield** and **Dan Stickland** sustainably retrofitted their Victorian home

PHOTOGRAPHS COURTESY OF PERMACULTURE MAGAZINE

**Above:** The author pointing clay blocks on the extension

**Right:** Only the triple glazed, wood framed windows give any hint of the extensive eco-renovation that has gone on inside

From TV's 'Grand Designs' to the UK government initiative, the Green Deal, the idea of the 'green home' seems to have finally entered the mainstream. But what is a green home? Toiling around some sustainable building fairs you might think your home can only warrant the label if it's a brand new zero-carbon Passivhaus (or a yurt in the woods...). For most of us these options are either not feasible or not affordable, and after much research into planning law and land prices, my partner Dan and I gave up the new-build dream in search of something more achievable and arguably even more sustainable.

Our new dream was to show what could be done in a hard-to-treat Victorian city house; creating a healthy and sustainable home for ourselves while hopefully also helping to inspire others. We wanted to do a retrofit that was good for the building, good for the planet and good for our health – an often much overlooked aspect of any house build or renovation, eco or not.

## Good for the building

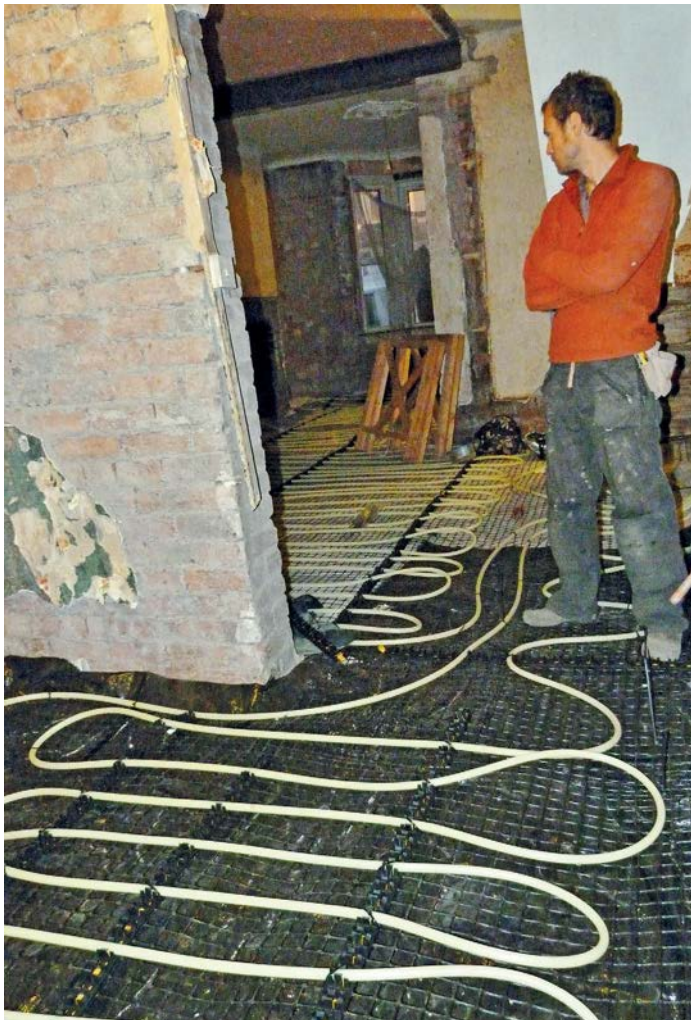
Standing outside our new home in Bristol some two years ago, keys in hand, I confess I rather wondered what we'd gotten ourselves into. The house was a crumbling Victorian terrace with an impressive collection of 1960s wallpaper but no central heating or kitchen. Unfortunately, for both us and the wallpaper, our first job was to strip it all off in order to restore the natural breathability of the solid brick walls. Having stripped the walls back to brick and original lime plaster, we then built up a breathable finish using lime and hemp (for added insulation) and natural paints throughout.

This approach will help to guard against any future damp problems, rising or otherwise. Aside from the unpleasant effects damp has on the internal living environment of any property, having damp walls is the equivalent of wrapping your home in a wet blanket; making it much harder to heat and risking other associated structural problems.

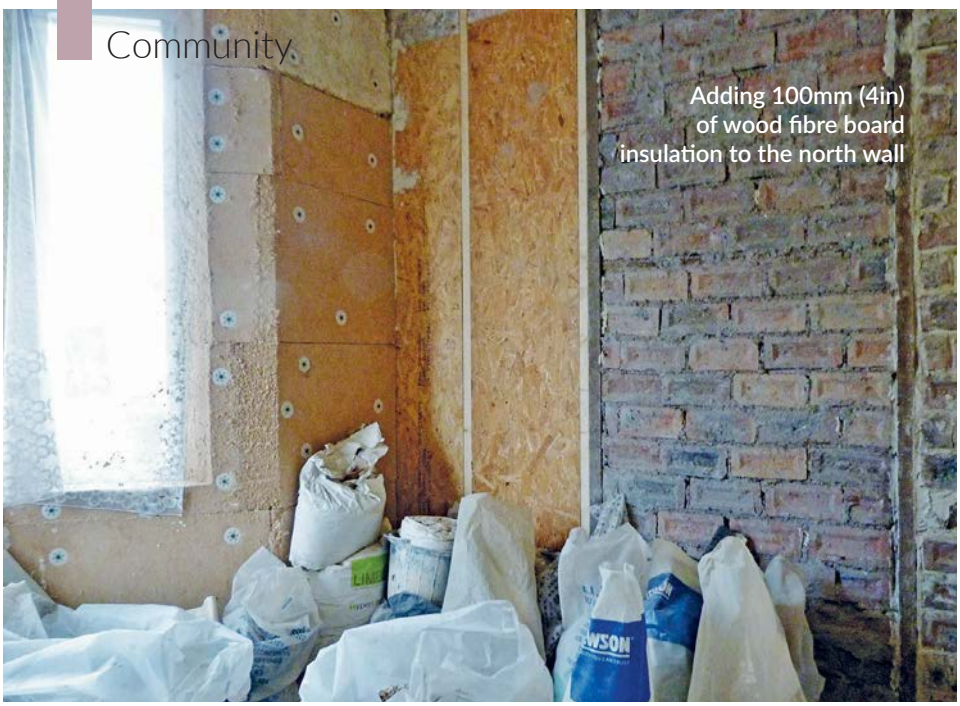
However, one of the problems with taking all the plaster off is that you find things you didn't know about. Already aware that the two storey extension off the back of our property was less than perfectly stable, we made the startling discovery when we took the plaster off that many of the ➤

Recycled glass aggregate being installed as underfloor insulation

Hemp lime plastered walls in the bathroom with wood fibre blocks to be used to insulate the ceiling



Underfloor wet system heating pipes being laid prior to finishing with a limecrete floor slab



Adding 100mm (4in) of wood fibre board insulation to the north wall

Finished window reveal detail, showing lime plaster and wood windows

bricks keying the extension into the main house had simply broken off. The damage was so severe we decided to simply take this part of the property down, redo the foundations and rebuild it with highly insulating clay blocks. This brought the extension up to modern building standards without the need for additional wall insulation.

## Good for the planet

Of course, the rest of the house did need insulating, and being built in the 1890s meant it needed a lot of insulating. We packed the loft with 300mm (12in) of local Welsh sheep's wool (a naturally breathable and sustainable option), internally insulated the north wall with 100mm (4in) of wood fibre board and plan to externally insulate what's left of the south wall (mostly covered by the clay brick extension). We also ordered new sustainably sourced timber windows, with triple-glazing on the north wall.

We laid solid floors throughout the whole of the ground floor, insulating and adding underfloor heating as we went. This meant taking up the original Victorian floorboards, removing the joists, shovelling in eight bulk bags of recycled glass aggregate insulation, clipping down 200m (656ft) of underfloor heating pipe before finally pouring the limecrete slab.

But as well as doing a retrofit which had an environmentally friendly end result, we also wanted to be environmentally conscious throughout the whole process. From the first day we resolved to re-use everything possible, from upcycling the turquoise '60s bathroom suite, to mixing crumbled Victorian lime plaster back into our new render, to carefully reusing the 3,000 bricks that came out of the house to build a shed, patios and fireplace hearths.

When we did have to buy materials in, we used reclaimed materials and local suppliers wherever possible. Having installed a super-efficient wood burner we've been enjoying burning all our off-cuts this winter – wood with limited onward use but which can now heat our home. A super-efficient combi-boiler heats our water and backs up the wood burner as a source of heating.

Our heating and lighting needs have been further reduced by installing LED light bulbs and the most energy efficient appliances, as well as opening out the ground floor into an open-plan living space, thereby helping to evenly distribute heat and light.

## Good for our health

Making a home that is good for our health is for many people an alien concept. After all, our homes are generally safe, healthy spaces, right? Sadly, the truth is that the air inside our homes is generally much worse than outside. The EPA puts the figure at between 2 and 5 times worse (See footnotes 1.) – and sometimes as much as 100 times. This alarming level of toxicity comes from a plethora of sources: formaldehyde in fabrics and furniture, pesticides from non-organic fruits and vegetables, volatile organic compounds (VOCs) in paints and varnishes, not to mention the array of chemicals in our cleaning and personal care products. (See footnotes 2.)

In pursuing our version of a green home we wanted to create a space that was sustainable for us to live in as well as build. Throughout the house we used zero-VOC natural paints for the walls and ceilings and organic linseed oil for the floors. We made our kitchen from solid wood, have brought in minimal new plastic and are stringent with any new furniture or fabrics to ensure they are as chemical free as possible. We've also installed a whole house ceramic water filter to remove as much chlorine and contaminants from our water as we can.

## Moving in and moving on

Having done all the work ourselves, with Dan working on the project full time, we feel very pleased (and relieved) with how little we've compromised and how much we've achieved – in a normal home with a normal budget.

In September we did our second open-home event for Bristol Green Doors, a city-wide sustainable homes event in Bristol. In answer to the million-dollar question everyone at the event was asking, after our first winter in the property we can happily confirm that our energy efficiency efforts have definitely paid off. In all but three of the very coldest weeks of winter, when we used the central heating to top up the temperature, we relied entirely on our wood burning stove for heating. Using it only in the evenings we managed to maintain a steady indoor temperature of over 18°C (64°F).

We still have a huge amount we want to do, with our current focus on readying the garden in time for the planting season and our new chickens – as well as a few other jobs readying the house for another new arrival due in August. But of course, as anyone who has ever worked on a house will know, the project is never finished... ■

Lounge/diner finished in natural paints and heated by a wood burning stove

Reclaimed wood was used in the kitchen

## Authors

Francesca Wakefield is a freelance writer and communications consultant specialising in sustainability and social innovation, she tweets @francescathinks.
Dan Stickland is the Director of the Bristol Sustainable Building Co.: www.bristolsustainablebuilding.co.uk

## Footnotes

1. www.epa.gov/region1/communities/indoorair.html
2. A 2009 study of homes in Arizona found an astonishing 586 different chemicals in the air inside the 52 studied homes. http://tiny.cc/environmentalhealthnews

## Sustainable suppliers

Some of the products and suppliers we used and would highly recommend:

- Ty-mawr: www.lime.org.uk
- Natural Building Technologies (NBT): www.natural-building.co.uk
- Earthborn Paints: earthbornpaints.co.uk
- Allback Linseed Paints and Oils can be sourced from: www.oldhousestore.co.uk
- Burley Stoves: www.burley.co.uk
- Osmio Water Filters: www.osmiowater.co.uk

Extract from Issue 84 of *Permaculture* magazine
www.permaculture.co.uk

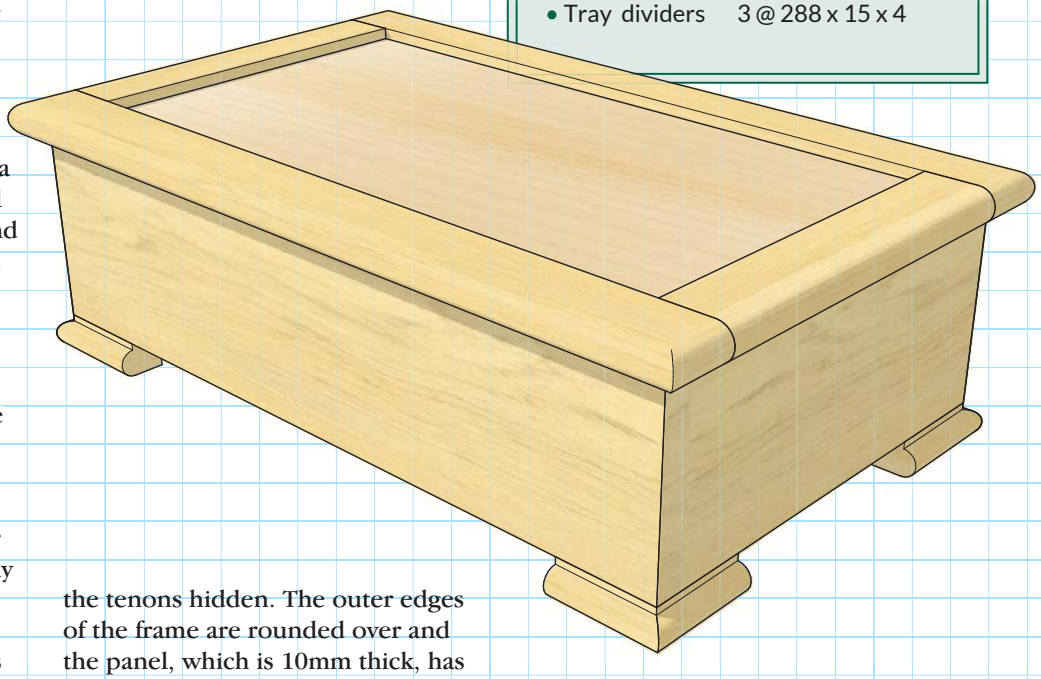
PLANS 4 YOU

# Jewellery box

**Simon Rodway** makes a simple jewellery box

## Cutting list

| | |
|---|---|
| • Sides | 2 @ 332 x 83 x 15 |
| • Sides | 2 @ 194 x 83 x 15 |
| • Lid frame | 2 @ 356 x 30 x 15 |
| • Lid frame | 2 @ 178 x 30 x 15 |
| • Lid panel | 1 @ 312 x 174 x 10 |
| • Bottom | 1 @ 314 x 176 x 12 |
| • Feet | 8 @ 50 x 21 x 15 |
| • Inner lining | 2 @ 302 x 25 x 4 |
| • Inner lining | 2 @ 164 x 25 x 4 |
| • Dividers | 4 @ 164 x 21 x 4 |
| • Dividers | 3 @ 294 x 21 x 4 |
| • Tray sides | 2 @ 302 x 35 x 7 |
| • Tray sides | 2 @ 164 x 35 x 7 |
| • Tray bottom | 2 @ 294 x 156 x 7 |
| • Tray dividers | 3 @ 288 x 15 x 4 |



The great thing about a jewellery box is it is relatively small, but also a potentially precious and treasured item. This means that you can justifiably use hardwoods that would normally be prohibitively expensive, and build in a few time consuming features that will show off some woodworking skills and emphasise the care and attention you have lavished on it. Before I get too carried away with this idea however, I should point out that this box is intended to be very buildable. The main carcass uses a corner joint more often seen in drawers; the lock mitre, a joint built for speed and ease of construction. This of course depends on having the right specialised router cutter, so a fine alternative is to simply mitre the corners and add plywood splines into grooves on the mitred faces to strengthen the joint. Grooves for the bottom of the box also need to be added before assembly and I've allowed an additional 2–3mm in depth for movement if you want to use solid timber for your panel and bottom. This means you can use a contrasting timber and something like an aromatic cedar (*Juniperus virginiana*) could really an exotic dimension to the project. The bottom is rebated underneath on all four sides to half its depth, forming a tongue 6mm in thickness and sits 7mm up from the bottom edge of the carcass.

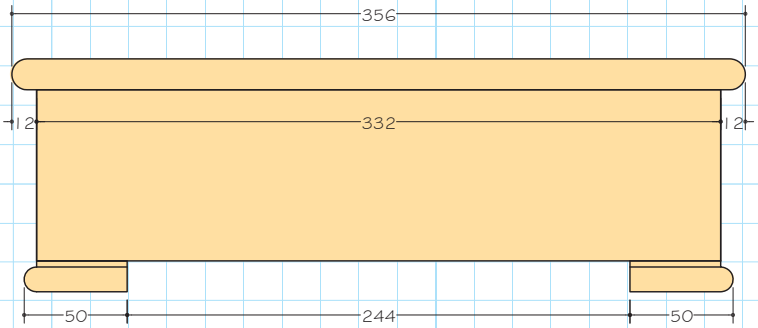
The top or lid is a frame, panelled construction, using mortice and tenon joints and a solid timber panel, again rebated along its bottom edges to half the depth leaving a 5mm tongue, which sits in a groove centred on the inner face of the frame. The groove can be carried through the whole length of the framing and stopped at the ends by tenons, which are the same thickness as the groove, as shown in the 2D plans, or stopped short with the tenons hidden. The outer edges of the frame are rounded over and the panel, which is 10mm thick, has its top face sitting 5mm below the frame to emphasise the contrast and create a shadow line.

## Inside

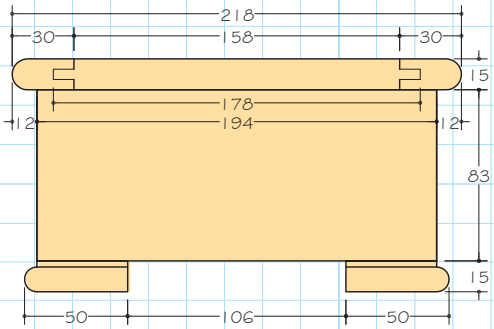
Inside, the box is divided into two sections horizontally. A fairly delicate 4mm thick lining runs around all four sides sitting on the bottom of the box, mitred at the corners, and an interlocking grid of dividers lies inside this lining in thickness, but slightly lower in height. This is so the outer lining to act as a support for the removable tray, which sits immediately above it.

With something like a jewellery box, I always think that having a small drawer or a lift-out component is essential as it gives that added element of mystery and anticipation. The tray of course hides the compartments below, and is designed to be an exact fit inside the carcase. The sides are slightly thicker, at 7mm, as is the bottom, which again has a small rebate on the bottom edges and sits in grooves all round the sides. These do need to be stopped on the tail sides, obviously, or all your fine dovetail work will be ruined by small notches showing through on the inner faces of the bottom tails. Optionally you can divide the tray as shown with more 4mm thick timber, or leave open.

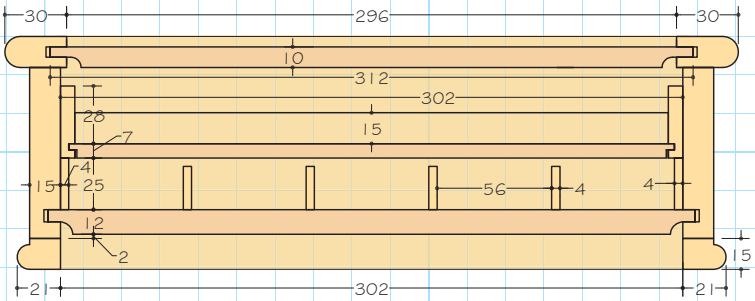
The feet are always a tricky feature on small boxes; too much or too big and tend to dominate or overpower the design. Small pads just inside the carcase and glued to the bottom are one solution and can lift the box 3–4mm up just enough to give an attractive shadow line and hint at a hidden support. In this case I've opted for a mitred moulding sitting on the bottom of the carcass at the corners, with a simple round over projecting beyond the carcase face and echoing the lid detail. Obviously you can use any moulding, but I think in principle it provides an effective and simple solution to finish your box off. ■



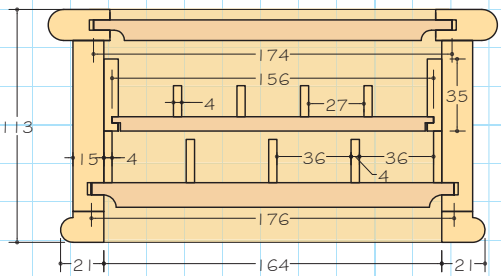

FRONT ELEVATION



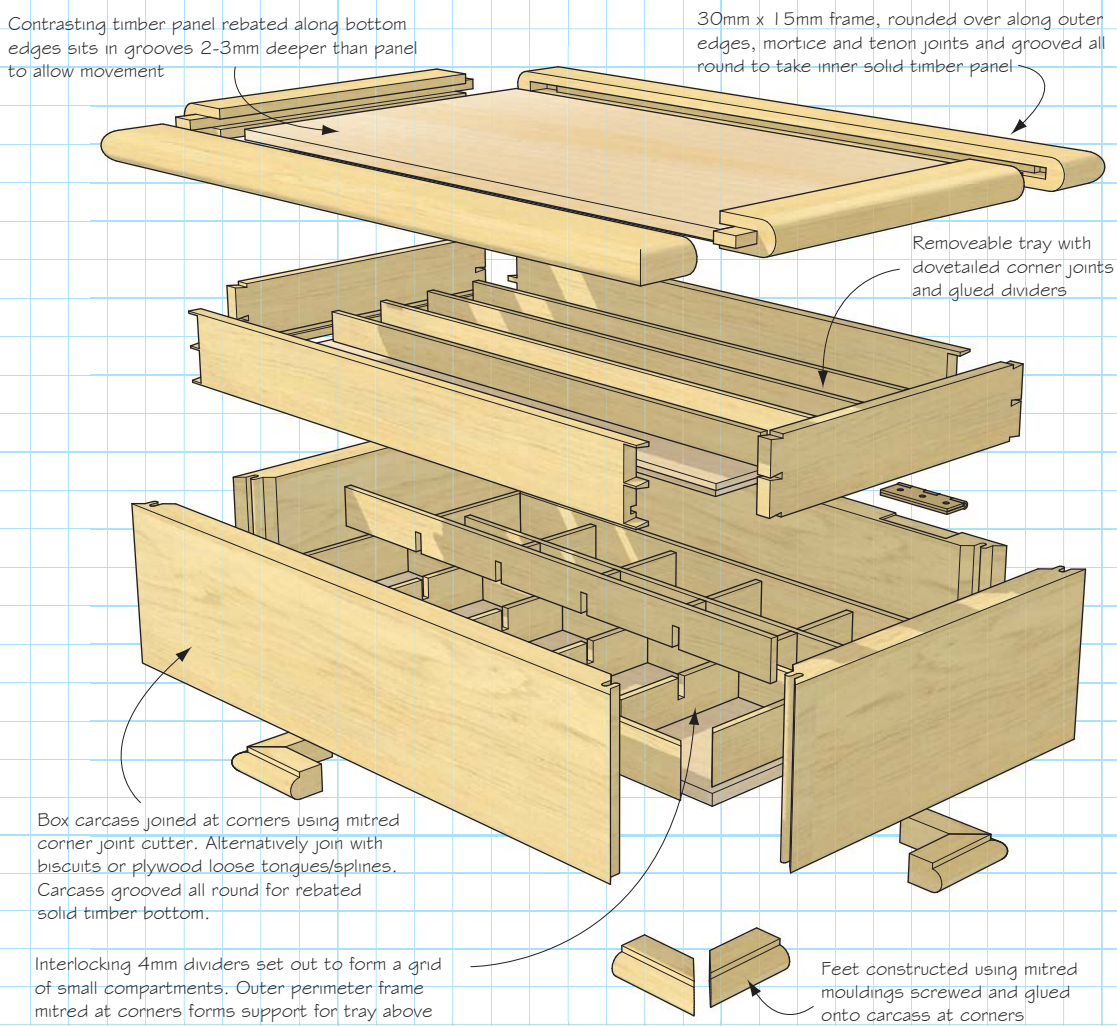

SIDE ELEVATION




LONG SECTION

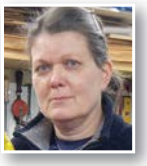



CROSS SECTION



# Meet the contributors...

We put all of this month's professional and reader contributors here, so you know exactly who they are and what they do!



## Louise Biggs

Having completed her City and Guilds, Louise trained for a further four years at the London College of Furniture. She joined a London firm working for the top antique dealers and interior designers in London before starting her own business designing and making bespoke furniture and restoring furniture.
Web: www.anthemion-furniture.co.uk

## Michael T Collins

British-born Michael has been working with wood off and on for 40 years. He moved to New York in 1996 and over the years, has made bespoke furniture, including clocks, inlay work, Adams fireplaces, book cases and reproduction furniture.
Web: www.sawdustandwoodchips.com

## Peter Wood

Peter has been a skilled green wood craftsperson making Windsor chairs and other creations for over 25 years. He demonstrates these skills around the country, gives lectures and runs hands-on workshops for all ages. He set up Greenwood Days in the National Forest as a centre to teach a range of traditional and contemporary crafts. He is also the current world champion pole-lathe turner!
Web: www.greenwooddays.co.uk

## Amber Bailey

Amber Bailey is a marquetarian and surface design artist with a background in furniture restoration. She has trained in prestigious decorative art schools both sides of the English Channel and is now based in North Wales working for a furniture company using laser cut marquetry.
Web: www.abmarquetry.com/services

## Mark Baker

Mark has always been fascinated by timber and loves exploring the different woods, shapes, surface enhancement and experimenting in his work. Mark is Group Editor of *Woodworking Crafts*, *Furniture and Cabinetmaking*, *Woodcarving* and *Woodturning* at GMC Publications.
Email: markb@thegmcgroup.com

## Simon Rodway

Simon Rodway also runs LineMine, a website with articles and online courses on drawing software. A new course, 'SketchUp for Woodworkers', is proving really popular. Simon produces many of the finished drawings in the magazine.
Web: www.linemine.com/courses

## Gary Marshall

Gary has had a life-long interest in woodlands and the countryside. He trained in countryside management and subsequently ran a company working with the local County Councils and Unitary Authority and their Countryside and Rights of Way Teams, as well as a wide range of conservation organisations.

## Andrew Potocnik

Andrew sees inspiration around him every day. He 'arrived' on the Australian woodworking scene in 1983, and since then, his work has developed into areas of sculpture, furniture making and the odd bit of cabinetwork.
Email: andrewpotocnik@telstra.com

**Your face and details could appear here in our 'rogues gallery' if you write an article for the magazine, and you could be rewarded for your efforts too!**

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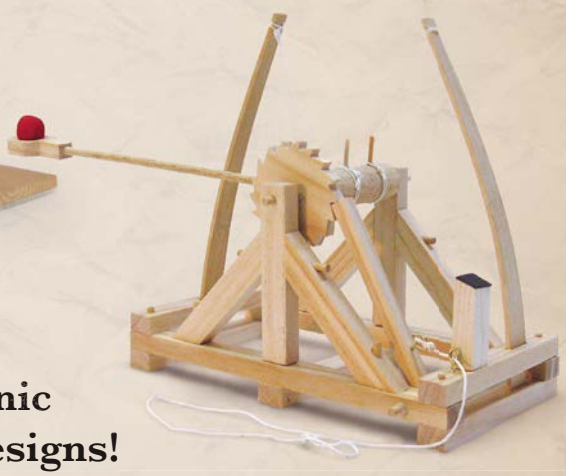

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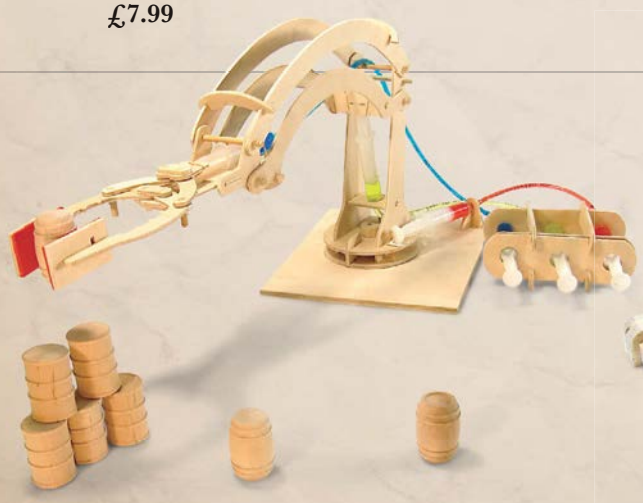

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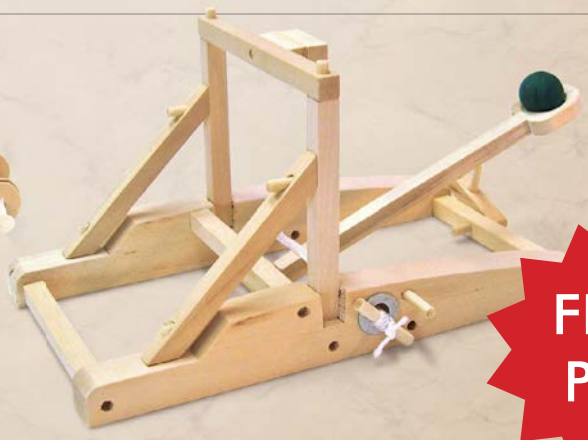

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# Working with Router Trimmers

Small can sometimes be very practical as **the Editor** explains

working overhead is easy holding a small router

PHOTOGRAPHS BY GMC/ANTHONY BAILEY


Varieties of cutter types are more limited but still cover a range of useful tasks

The trimmer, laminate trimmer or palm router, whatever you call it, is basically a small ¼in machine designed for one-handed use. Once intended for specialist use, they can now often take centre stage when freehand routing. Larger routers, even the smaller versions can be a bit of lump to hold and manoeuvre when all you want to do is round over an edge or do a 'stopped' chamfer. When I did site work years ago, it was very handy being able to clean up the raw edges of a wood-panelled room working vertically or even overhead without the weight and encumbrance of a big machine and possible risk of damage to surrounding woodwork.

A trimmer may only work in a fixed vertical mode, more expensive versions can have interchangeable bases including a tilt base enabling a bevel cut using a straight cutter for example. Some models may have fence options or a roller guide for following a shaped template or carcase. These are not essential for the main run of jobs however.

The thing I love about a trimmer is being able to quickly insert a cutter, do a brief test cut, adjust and go! Then it is down to careful one-handed control putting a finished edge on a piece of work. The small base size means you can apply even a very tiny bevel successfully to an edge because it sits better on surfaces. All work should have the arrises (meeting


The size difference between router types can be substantial

Breaking an arris (removing a corner) is almost 'touch and go' routing


This professional model has everything – fence, roller guide, edge trimming fence and even a tiny guide bush


More recently router trimmers have 'grown up', this one is a swap base model turning it into a standard router

corner surfaces) 'broken' for appearance and safety avoiding splinters, this is a good way to do that neatly.

There is a limit on cutter diameters usually constrained by the cutter opening. It isn't a substitute for a standard router. However if a cutter is just a fraction large for the plastic baseplate opening I have been know to carefully plunge by unlocking the motor body so it increases the opening slightly. The cutter range is limited to straight, roundover, cove and bevel rather than fancy profiles. Even so this covers quite a lot of applications.

Remember there is no plunging facility so if you need to do stopped cuts with such a small base area the machine needs to be rested on one edge against a batten for a fence and gradually tilted upright. Strictly good only for shallow cuts though.

When making deep passes you need to reset the depth each time rather than doing one heavy pass. Make sure you have done each pass in its entirety before resetting so the cuts are consistent especially the last pass to a finish.

Dust extraction is generally not possible because there isn't an effective way to fit it. Light edge machining doesn't create too much waste but do wear PPE for your own protection. A trimmer and clutch of cutters take up very little space in your toolbag, great for taking to jobs that need finishing off. ■


Here the swap base machine is guided by a straight fence for accurate slotting

# Ask the Experts

This is your chance to challenge our Editors and for them to answer your comments and queries

ANTHONY BAILEY
Editor,
*Woodworking Crafts* magazine

MARK BAKER
Group Editor,
GMC woodworking magazines

## The charge of the 'Lithium Brigade'

STAR QUESTION

*"Maybe you can explain something for me. I'm puzzled about why my DIY cordless drill comes with a small charger and takes forever to recharge, when a professional cordless drill can charge really quickly. Can't they make quick chargers for amateur cordless tools?"*
Tom Venables

A small charger with an outsize battery intended for home use (*left*) and an intelligent charger with a compact professional Li-ion battery (*right*)

PHOTOGRAPHS BY GMC/ANTHONY BAILEY

*Anthony replies:* This is something much bigger than just slow or quick charging, but I will try to keep my answer brief. Most cordless tools now use lithium as the active ingredient in battery cells. Lithium is highly unstable by nature, both in its raw state and when processed into batteries. Manufacturers jumped at being able to use it because, unlike NiCad cells for example, which contain toxic material and crucially develop a 'memory' i.e. they don't charge fully, lithium promised full charges and less harm to the environment. Unfortunately, it can become unstable quite easily in a battery if charged too quickly. This because high levels of activity allow the development of 'plates' – sections of lithium which 'short' the battery causing overheating and possibly fire or explosion. This has hit the headlines with airliners using lithium batteries, but it can also happen with cordless tools as well.

So your DIY-type cordless drill takes a long time to charge to avoid this problem. Professional fast charging systems are a lot more expensive because the charger actively works with the battery that is attached to it, so it can check whether the cells are overheating or fully charged (so-called 'intelligent charging'). In the future, no doubt, cordless tools will be able to charge faster and safely.

STAR QUESTION PRIZE

The Tool Marketing Company, or TOMACO, as it is known, who sell a variety of tool brands, including COLT, Sharp Edge and Narex Tools, are pleased to be sponsoring the 'Ask the Experts' section in collaboration with GMC Publications.

Each issue's 'Star Question Prize' will receive a Narex six-piece chisel set worth £79.95 and all other published questions will receive a 20mm half-round fine cut Narex rasp worth £20.95. For more information see www.tomaco.co.uk

TOMACO THE TOOL MARKETING COMPANY

# Rock steady

*"I want to install a work surface for my wife to use for dressmaking. It will fix against a wall, which is plasterboard so I guess plasterboard fixings should work alright. It needs to have neat looking legs that fix to the floor, but I am not sure how to do that without using rather visible brackets that might also catch on the dress material when it hangs down to the floor."*

Gerry Ruthin

A leg with a de-headed twinfast screw wound into a pre-drilled hole

A desk using the method described by the Editor for secure floor fixing

*Anthony replies:* If your floor is boarded, this suggestion is one that I have used successfully. The idea is to drop a plumb line at every point where you need a support leg, and mark the floor. Do this once you have cut and temporarily fitted the worktop with some supports at the front to keep it level and safe. Once you know where each leg will be, cut the legs to match their respective positions. Now mark the centre position and drill a small diameter hole. Drill the end of each leg in the centre with the same drill bit. Take some twinfast screws and hacksaw the heads off and wind the headless ends into the leg holes so enough thread is still exposed. Push each leg firmly into its hole in the floorboard and thump it down so the leg is right on the floor. Using a spirit level, check each leg for upright, drill and screw down through the top or you could repeat the trick from the bottom end on the tops of the legs if you want it to be really discreet. The screw threads should hold the components together firmly and no one will know how you did it!

# Surface finishes

*"I am having trouble with surface finishes. I usually use a spray, but sometimes wipe on or brush on lacquer and when it is dry it always feels a bit gritty. When I take the piece outside into direct light I can see tiny imperfections in the surface. I guess they are dust of some sort. What is the best way of minimising the risk of this happening?"*

Lena Goodwin


A lacquered and limed door being de-nibbed prior to the final coat of finish

*Mark replies:* I am glad that I am not the only one who has had this happen. In fact, everyone has experienced this at some time or other. You do not mention if the finishing is done in the workshop. I suspect like many woodworkers it is and the culprit is likely to be dust.

Most workshops harbour some dust or other, despite the best efforts to deal with it. Shelves, floors, work surfaces all gather dust during the day and can harbour it if our cleaning regimen is lax. Walking, working, picking up things, alongside sanding things and sweeping up rather than vacuuming up will generate and disturb dust, making it airborne. This causes problems.

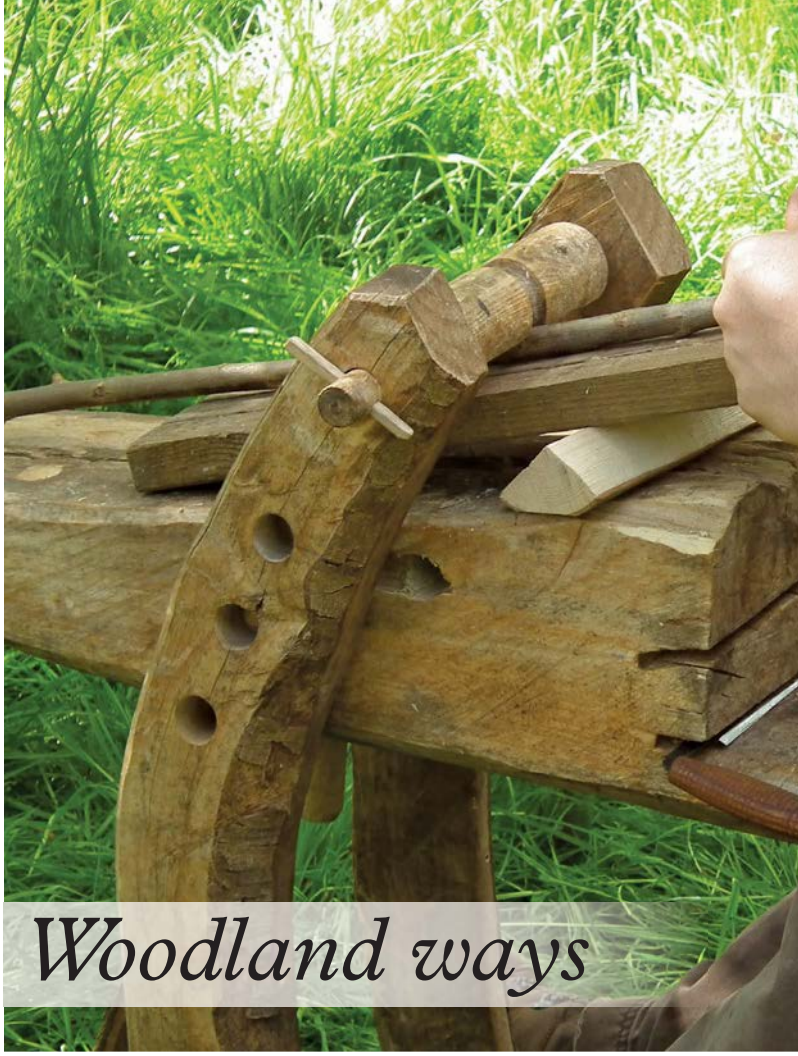
My advice is to try and finish items outside of the workshop. When this is not possible, sand your item in the workshop ensuring you deal with dust to the best of your abilities to minimise it becoming airborne. Use a vacuum to remove any dust and debris in the immediate vicinity including the floor and do not remove any items from shelving nearby, cupboards and so on nearby to minimise aerialising any dust. Then use a tack cloth to wipe over the item to remove any surface contaminants, leave for five minutes and do this again. Next, apply your finish. If you are using sprays, be aware that the pressure of the spray can dislodge nearby dust. Aim the spray onto areas clear of stacked and stored items. Once dry, de-nib with a fine abrasive and use a tack cloth once again to remove and debris and apply your finial finish.

I must admit I try to do major finishing in large surfaces outside of the workshop. No matter how much I try something it always seems to stick to the surface in a workshop. This is why professional workshops have finishing rooms. Oh, to have the luxury of space! A good workshop cleaning regime and being meticulous in cleaning surfaces nearby before applying finishes certainly helps.

If you have anything to say, write to: The Editor, *Woodworking Crafts*, 86 High Street, Lewes, East Sussex BN7 1XN.
Alternatively, email: anthonyb@thegmcgroup.com

The rough and ready raw material awaiting conversion into useful things

Chestnut sheep hurdles



*Woodland ways*

# *Setting up a* green woodworking area

**Gary Marshall** explains what you need in terms of space to get going in woodland crafts

Although my own sphere of competence is woodland management I have had plenty of contact with experienced green woodworkers. For many people it can be hard to know where to start this craft. So I thought I would approach it from a 'dabbler's' and 'occasional hobbyists' point of view.

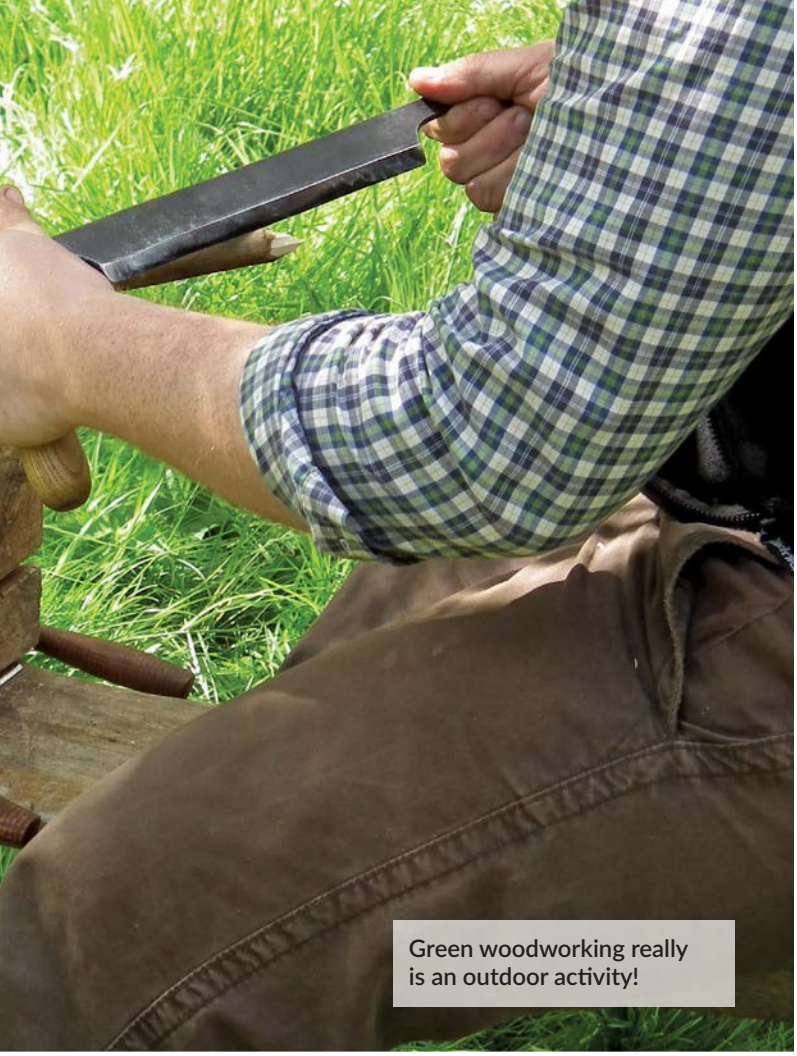
## Starting from basics

You don't need to own woodland to be a green woodworker, just access to 'green' wood, some working space and a selection of tools. And of course, time to practice with one of our most precious commodities – wood.

Years ago I helped set up a green woodworking area in

Charcoal burning is much more of a commitment but worth trying

Pole lathe turning doesn't get more rustic than this...



Green woodworking really is an outdoor activity!

Gypsy flowers and wooden spoon making are enjoyable pastimes

A shave horse need not take up much space (see Lee Stoffer's article *WWC* 19)

a barn where a group of us were making chestnut sheep hurdles at Plumpton College's Open Day. We learned 'on the job'. Using some good, recently felled chestnut poles between 100mm and 230mm in girth and up to 2.75m in length, we set to. These were split using a 'cleaving break' that we made with strong timbers and coachbolted together. We used froes and mallets to split the chestnut into manageable sized 'wedges'. We found the cleaving could be 'steered' by leaning down or pulling up, on the pole being cleft. Split wood was sawn into appropriate lengths using a decent saw and our 'assembled on the spot' saw horse. It was split further as necessary and shaved and shaped with drawknives on a shave horse. Joints were simple mortise and tenon, and I remember using a twivil (or twybil) which is a traditional tool for chopping large mortises. Split sections were kept and assembled in pairs to take up opposing tensions. The end result was as in the picture (well, more or less) and the hurdles sold well.

## What you need

The larger items I'd favour in a green woodworking area are a saw horse, a cleaving break and a shave horse. Maybe not for the purists, but I'd also have a 'workmate' to hand. At a pinch you could work in an area as small as 2.75m square, but the more space the better, provided you keep your tools close at hand. If you want to keep dry and don't have a large shed or barn, try knocking up a woodsman's shelter as I did in my article in issue 15. In Forty Acre Wood Robin and Diana are still keen to set up a green woodworking area, but have been a bit dogged by lack of time but they hope to get properly setup soon.

Finally, and I hope our Editor, Anthony Bailey, won't mind if I plug a GMC publication – go out and get yourself a really good green woodworking book – I recommend *Green Woodwork* by Mike Abbott (**ISBN 9870946819181**) – it's inspired me on many occasions and is, in any event, a good read! ■

How about carving your own version of 'The Green Man'?

An outdoor shelter gives protection from sun and rain but keeps you in touch with the great outdoors

# Triton TWX7 Workcentre

The future is definitely bright with this example of Triton orange, as the Editor finds out...

When self-confessed amateur woodworker, Australian George Lewin invented the original Triton workcentre many years ago, little could he have envisaged that in time it would not only inspire other workcentre-type products, but also result in the ever expanding Triton brands' latest offering. The TWX7, whose thoroughly modern design is nevertheless informed by all the experience of earlier iterations.

Is it all it's cracked up to be? The Editor finds out.

## The basic concept

The key is portability and versatility. It seems to have nothing in common with earlier models. The rigid tubular legs unlock, swing down and push up into the receiving sockets. I found this operation was safest with the workcentre upside down on the floor as it is quite a heavy and somewhat unmanageable lump to deal with. Once righted it forms a remarkably rigid table surface, not unlike the Festool equivalent, but less wobbly on its legs as we discovered by trying out both products. The centre table surface, with its holes intended for fitting bench type dogs, can be unclipped and replaced in theory with any number of inserts either manufactured or homemade. That, in essence, is what this machine as I would call it, is all about.


PHOTOGRAPHS BY GMC/ANTHONY BAILEY

## SPECIFICATIONS

### Triton TWX7 workcentre

Maximum load: 330lb
Folded size: 317H x 1045L x 730Wmm
Max power input: 3500W
Product weight: 27.25 kilo
Standing size: 900(H) x 1036(L ) x 737(W)mm
RRP: £348.00

### Contractor saw insert

Bevel range: 0–45°
Blade diameter: 255 x 16mm bore
Cut capacity: 90°/86mm
90°/56mm 45°
Rip width capacity: 775mm
No load speed: 4500rpm
Power: 15A
RRP: £322.80

### Router module

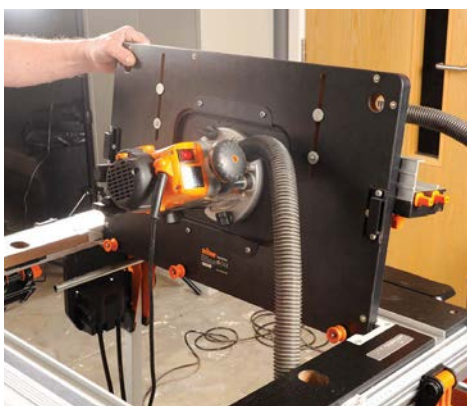
RRP: £190.80

### Project saw module

RRP: £216.30
For more information on the Workcentre system and all modules visit: www.tritontools.com

The outfeed fence can be moved forwards by inserting rods

Cutter changing is done above the table



Easy access to the router controls

The fence clamps at both ends for sawing

## The inserts

Currently there is a contractor saw, router table and project saw modules with others possibly to follow, depending on demand, practicality and safety requirements. This doesn't stop the user making up their own specialised inserts for specific jobs and two that immediately spring to mind are a vacuum bed sanding table and fences for biscuit jointing panels, but you can no doubt come up with others that would work well with this unit.

The contractor saw is a commonsense departure from the old method of setting up a Triton or other saw and trying to get the correct alignment. This time the saw is set and ready to go apart from adding the crown guard. The long fence, which is set against a scale at back and front, is exactly like the old workcentre and does give accurate positive locking, although you need to add a short sub-fence for ripping solids.

The router insert is likewise very similar to the old version, but now mounted on it's own insert table. The joy of this is that you can not only unclip to remove it, but like other inserts it can be tilted backwards giving full access to the router, although with a Triton model you can fit and remove cutters from above thanks to the full plunge and spindle lock design.

Lastly, the project saw is a rework of the GMC brand laminate flooring saw, which I previously found to be very useful. It isn't a substitute for a large tablesaw but for thin material like flooring it is very handy either locked in position for ripping or sliding for cross cut work. On-off switching with all live modules is done via an NVR paddle switch on the front, another carry-over from the previous model.

## Portability

Rather like the Triton Superjaws portability isn't quite what it should mean because both are big heavy well-founded bits of kit. The optional wheelkit with the pull handle seem essential if you want to cart this machine around and you need a bit of muscle to do that, but once on site it makes for a rock steady reliable place to carry out all manner of woodworking operations.

## Verdict

This cleverly conceived device has a lot to commend it and very few minuses. Me being me, and a router buff, I would make my own router table insert with different features to the Triton one, such as a high fence and ready adaptation for replaceable break-through fences. I think it's also asking for an insert fitted with a vice, possibly the 'parrot' type which can change to work in two adjacent planes, although you could make your own. But that is the point, versatility and extendability mean this version should be around for a long time to come. It's up to your own imagination how to best use it…■

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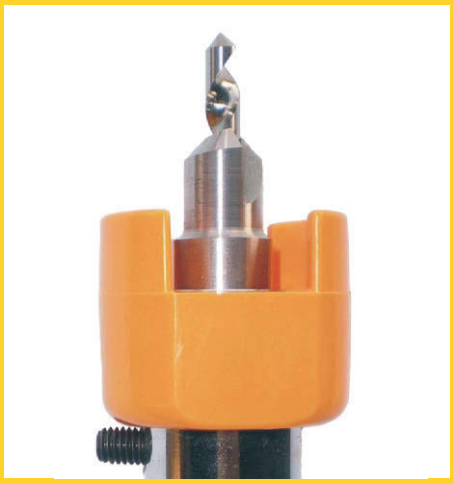

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5. Available in metric and Imperial sizes.


# A drilling jig with a difference

**Colin Sullivan** gets to grips with drilling shaped work from virtually any angle

PHOTOGRAPHS BY GMC/ANTHONY BAILEY

To be able to drill accurately and safely without the use of a pillar drill is not a very easy feat. In fact, however careful you are, the result is never as clean and square as it would be if you were using a machine. I use three in my workshop: one is permanently set up as a drum sander; one is a mill drill for heavy work like drilling metals, and one is for regular drilling. Even with these options, holding work on the pillar drill can be difficult because drill vices tend to be quite small and therefore limited to the size of work they can hold. For best results they need to be bolted down and are ideal for holding small metal components, but not of much use when it comes to drilling timber sections for furniture. Wood is best worked on wood and any pillar drill will benefit from a sacrificial top fixed to the metal table. A simple method to achieve this, if your table is square and without fixture, is to design it in such a way that it slides onto the table with battens on three of the sides. Further improvements can be made by clamping a fence to the back edge. This can be upgraded with an aluminium 'T' section and stops to provide an adjustable mechanism for repeat drilling.

## Hybrid jig

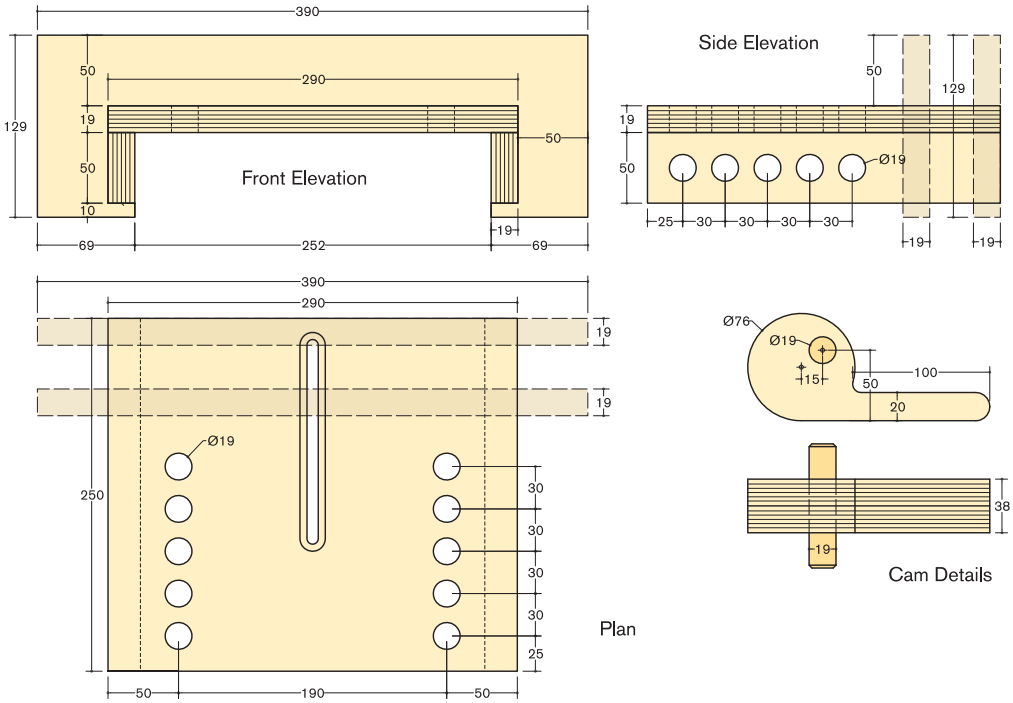
The jig shown in this article is a hybrid of the two just mentioned and might be described as a wooden drill vice. It is designed to be as versatile as possible and is capable of holding workpieces in both horizontal and vertical planes. It is constructed from plywood offcuts that were too useful to throw away. To construct this handy jig, you will need to carry out the majority of the work using a bandsaw and disc sander, apart from the centre groove used to bolt it to the drill table which can be machined with the help of a router.

Vertical drilling on the end of wood is usually done by rotating the drilling table through 90°. I wanted to avoid this so designed it with overlapping sides that would allow me to hold things vertically.

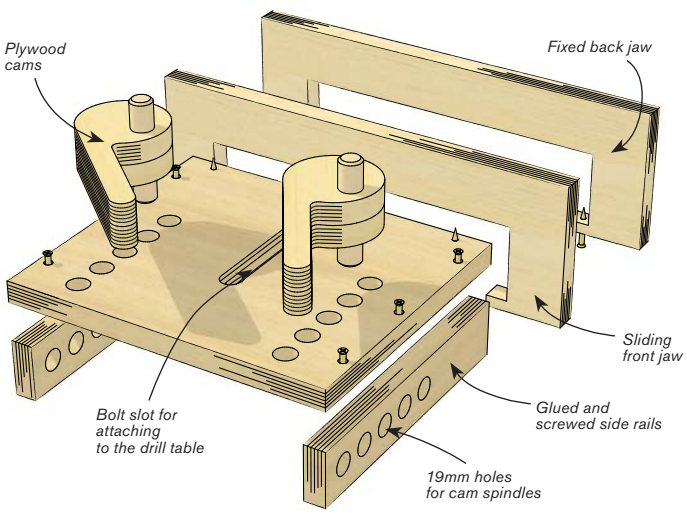
## Making the jig

Construct the vice by laying the top piece of 18mm ply on the drill table and marking the width from underneath. Next, using these marks, drill and screw on the two side pieces. Always use a cramp where the screw goes into the side piece; this will help avoid the ply splitting and spoiling the fit on the table. Do not glue this joint until all the holes have been drilled and you have a sliding fit on the drill table. Mark the centre and rout a slot to suit the bolt head you have – I used a 10mm coach bolt and filed the dome

Use a packing piece at the other end of the vice to generate a pinch effect. An additional cramp can also be used



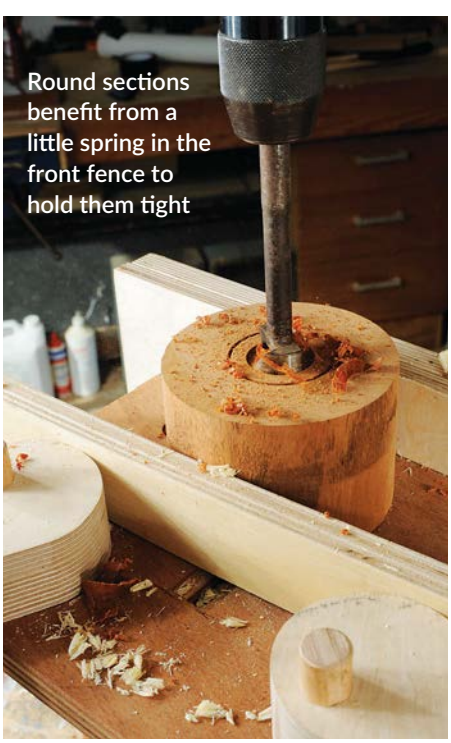

Position the cams in the most convenient holes to secure the workpiece




off the top so the slot was only 3mm deep. Clean up the edges so the top ply is flush and square with the two sides members. Remove the sides and mark out the centres of the holes to the top and side pieces and drill the 19mm holes carefully. Now the sides can be glued and screwed back in place.

## Overlapping jaws

Cut two pieces of 18 or 25mm plywood for the fences, which will measure 390 x 130mm. Stand the board 'above' on these, 50mm from one edge and central to mark the piece to cut out. The rear fence should be a tight fit and glued and screwed in place at 90° to the top board. The loose fence can be made a sliding fit with the inside vertical edges rounded over to allow the fence to move at an angle to the rear fence. The cams are made from two pieces of 19mm ply glued together and cut to shape on the bandsaw, followed by a clean up on the disc sander. Drill the 19mm holes as shown on the drawing and glue in the dowels. Use a good hardwood such as steamed beech (*Fagus sylvatica*) turned to an exact fit for the holes. The centre bolt will have to be made to fit your particular pillar drill and the lower section can be made of wood with a nut let into it; this will engage the bolt. Fit the vice on to the drill and try it out on some scrap wood. Always put a thin piece of ply under the work to avoid drilling the vice top section. Once a piece of work is clamped, an additional cramp can be used to hold the work more firmly if required. Like any new gadget, it will take a bit of practice to get the best from it. I would love to hear feedback from anyone who decides to make one for their workshop. ■



Round sections benefit from a little spring in the front fence to hold them tight

# Hollow forms and shelves

After spending hours, days or even weeks creating works you're so proud of, it's often difficult to find a way of drawing attention to each form's individual integrity, as **Andrew Potocnik** finds out...

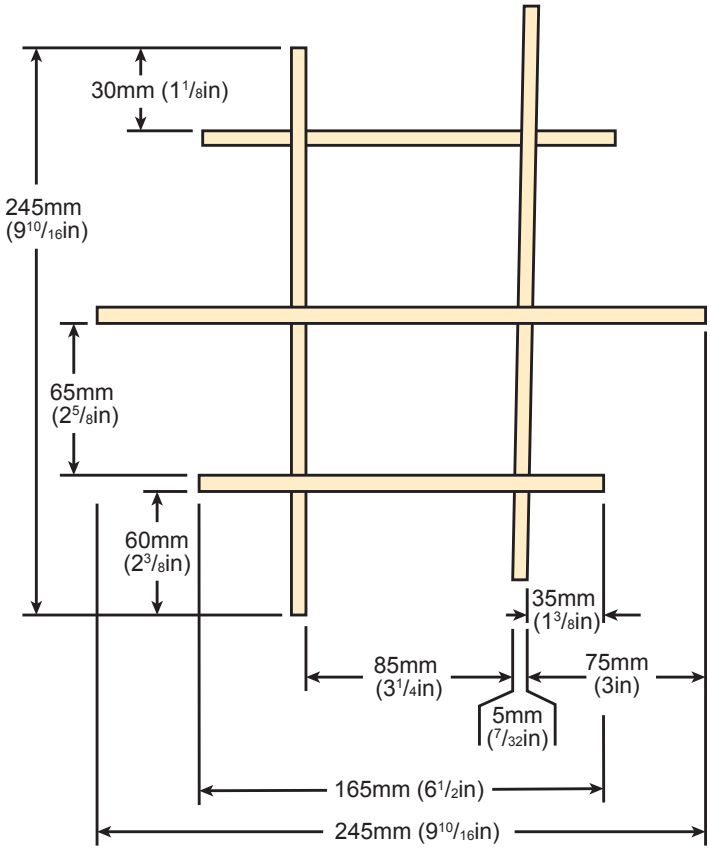
PHOTOGRAPHS BY ANDREW POTOCNIK

PHOTOGRAPHS BY PETER WOOD, UNLESS STATED OTHERWISE

## Things you will need

- Electric planer
- Hand plane
- Quick action clamps
- PPE: latex gloves, facemask, respirator/dust mask

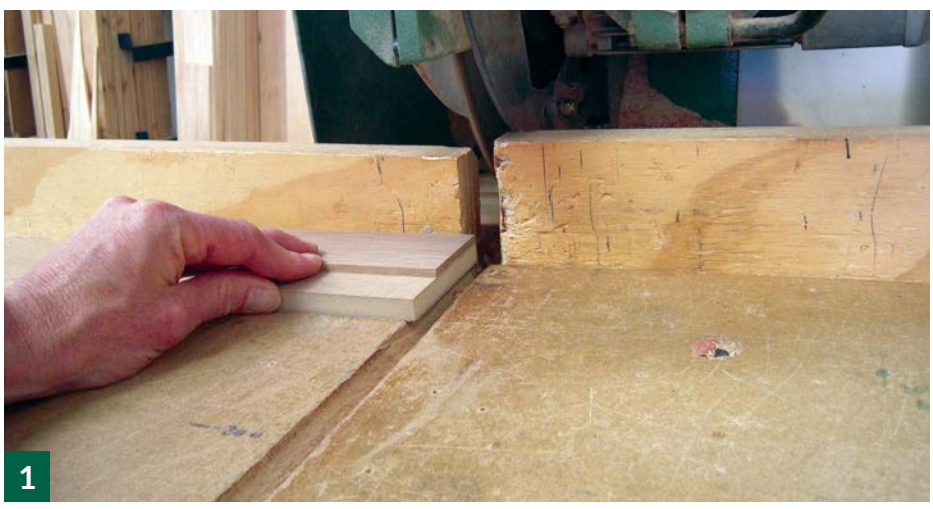
I'd made a series of small hollow forms from timber that had been felled by one of those 'once in a hundred year storms', which seem to happen all too regularly these days as our climate continues to change. Turning these forms was great fun, providing an opportunity to explore small-scale hollow turning of many shapes in a relatively short period of time. These forms looked great grouped together on a flat surface; however, with nearly a dozen of them, I wanted to create a display surface where each individual form could be highlighted, so here's a solution to my particular display quandary. Initially, I needed to isolate which forms I really wanted to display. As you can imagine not every piece you create is worthy of display, so it's important to identify pieces that complement each other and blend without simply being repetitions of the same form.




All timber is 5mm (7/32in) thick

## The shelves

1 Machine a number of slats down to about 5mm thickness and 60mm wide before cutting them down to the required lengths, using sacrificial backing material to reduce the possibility of tear-out caused by the radial arm saw. The timber I used had been air-dried for a couple of years, cut into smaller flitches, allowed to sit, cut into boards and allowed time to dry even further and settle before final machining. Hand-sand all material to 320 grit; however, you should leave all pieces at a longer length than needed so 'snipe' at the ends can be removed.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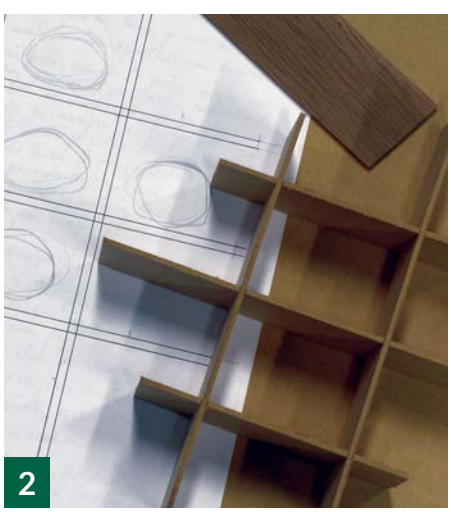
2 Make a drawing of the proposed structure in full-size, with sketches of the forms included. This will show you how the size and spacing would look, followed by a mock of the shelves made of MDF.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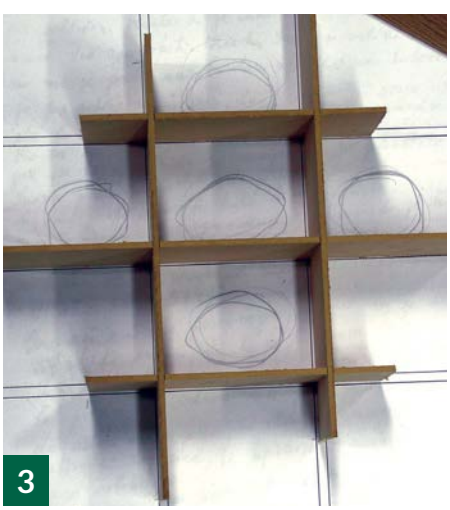
3 Place the mock over the drawing to see whether it looks OK in a 3D form. Things look different in real life compared to how they appear in 2D drawings. ➤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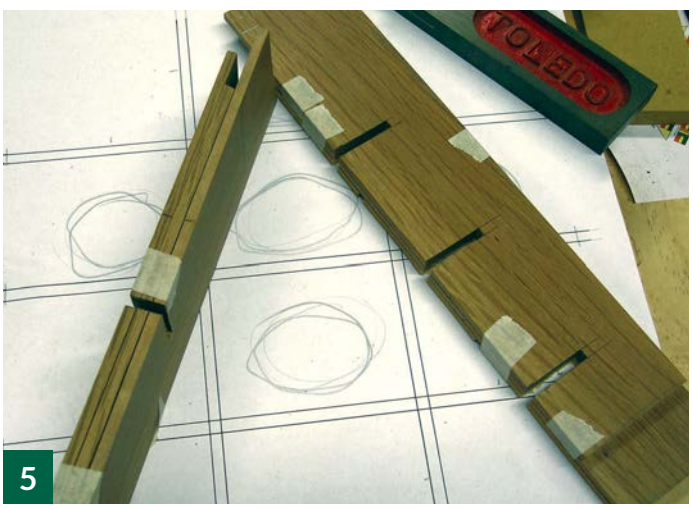
4 Then, set up the mock and forms to fit into the shelves to see how everything looks. One of the verticals is propped up so the shelves sit horizontally. Lengths of all vertical and horizontal components can now be finalised before cutting the final material.

5 Tape the timber together, cut the joints on the bandsaw and file to a snug fit. To prevent tear-out place a sacrificial piece of MDF underneath the pieces while cutting.

6 On my shelves the fit was so snug that I needed a clamp and extra blocks of wood to fit all the components together. Better a little tight than a little loose, I think! A single clamp provides localised pressure, ensuring every joint closes completely, as flush as possible, before running a small amount of cyanoacrylate into the back and front of each joint.

7 Once the glue has dried, sand the front and back of the shelves on a sanding board. Sand the ends using a sanding block and finally 'ease' all of the edges with 320 grit abrasive. Apply a polyurethane finish to complete the shelves. An appropriate method of hanging them still needs to be resolved. There are many types of hooks and brackets available on the market and there is the option of making your own, but I wanted to retain the clean lines of this structure. You could place a small bracket in a spot where one of the hollow forms would hide it; however, you can simply drill a 2mm hole in the back of a shelf, which will slip onto a 2mm nail protruding from a display stand – which I needed for the exhibition. ■


4



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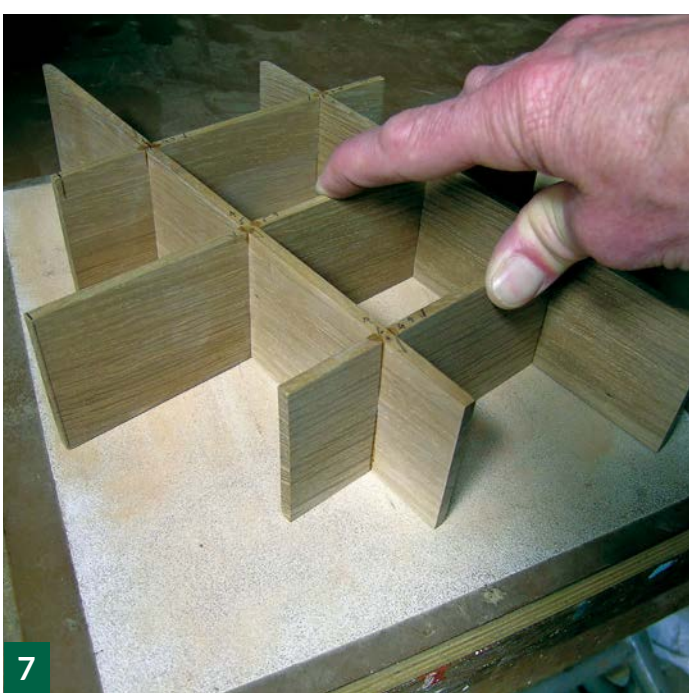
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The completed hollow forms on their purpose-made shelves

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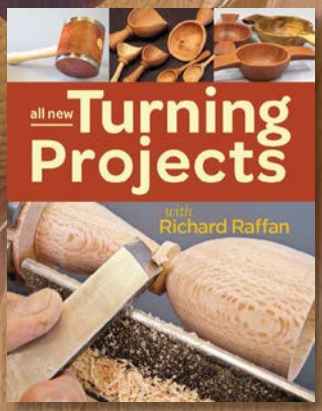


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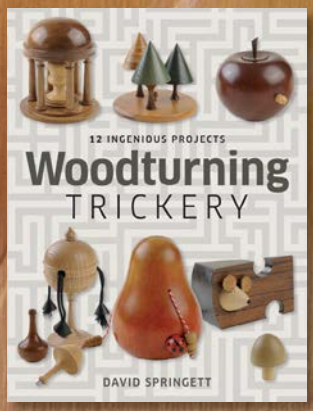


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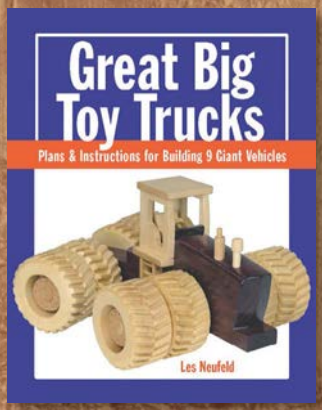


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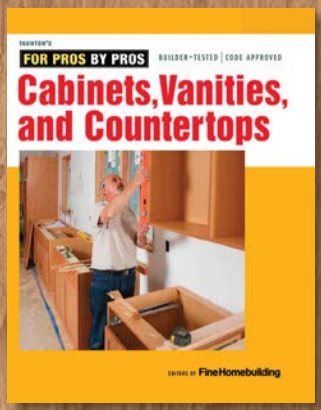


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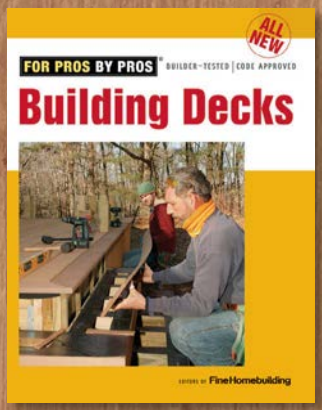


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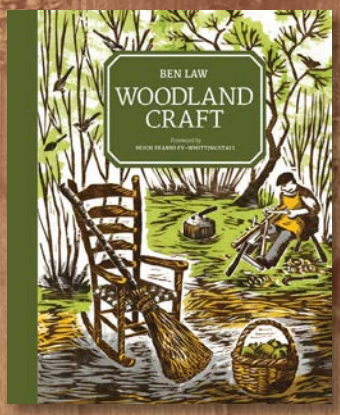


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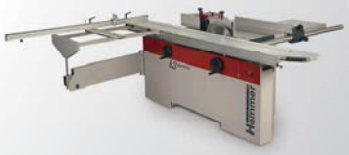

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# *Focus on…*

# the K2 phone box

## This month, **the Editor** looks at a classic 20th century design icon

The original K2 telephone box was designed by architect Giles Gilbert-Scott in 1924. Produced in limited numbers mainly for metropolitan areas such as London, on account of cost it spawned the much smaller K6 model which was widely distributed to towns and villages up and down the land. These phones boxes became quintessentially British icons just like beefeaters, black cabs and Routemaster buses. Sadly, this triumph of design has been in decline for a long time thanks to a new revolution in communication. Unloved scruffy examples are still to be found, but many have been sold off to enthusiastic buyers of these retro items or in a few cases painted up and repurposed as community hubs in remote locations.

The K2 was inspired by the shape of the tomb of Eliza Soane in Old St Pancras graveyard, which was designed by her husband, the neo-classical architect, Sir John Soane who's architectural style Gilbert-Scott much admired. A universal phone box design was needed to feed a much earlier telecommunications revolution and the K2 and its smaller cousin the K6 did just that. It was made from cast iron in bolt-together sections for ease of assembly with a pierced crown design for ventilation and illuminated signs.

The one shown here at The Royal Academy of Arts, London is a bit different. Not only is it a fully working phone box, it just happens to be the original wooden prototype still in service more than 90 years after craftsmen first built it… ■


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## TWX7 Workcentre Systems

The TWX7 brings the precision and convenience of the legendary Triton Workcentre to a new generation. Constructed using lightweight yet robust extruded aluminium sections, which support innovative low-friction work surfaces, the TWX7 is the ideal solution for the woodworking enthusiast. In addition the all new TWX7 is now a highly capable and mobile multi-purpose workshop for professional site use.

Router Table Module Precision router table & fence with featherboards

Contractor Saw Module Powerful & accurate table saw with full length fence

## Optional Modules

TWX7
Workcentre

Clamping Table Module

**Clamping table supplied as standard**
with 120Kg working load

TWX7 RT001
Router Table Module

TWX7 CS001
Contractor Saw Module

triton
Precision Power Tools

# Engineered Precision

tritontools.com