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Issue 101 December 2014

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Draining Board Repair
Design – Ergonomics

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'Tis the season to be jolly!

Hello and welcome to the December issue of *Woodworking Plans & Projects*. Well, the end of the year 2014 is in sight and, as always, it has been a busy and eventful year for me and no doubt for all our readers as well. The year seemed to slip by with alarming speed. I tend to judge it by the shows I attend during the year and this year I attended quite a few: the South East Woodworking Show, Yandles Spring Show, The Midlands Woodworking Show, Toolshow 2014, Yandles Autumn Show, etc. Once I've done my stint for the year, I know we can't be far off Christmas!

The weather has been quite kind this year but like a lot of folk, I can't help wondering if we aren't in for a harsh winter by way of retribution! Time will tell but at least my log store at home is far more extensive than it was last year and if I do get stuck at home because of heavy snow, I can just carry on working at home. Well, we shall see...

We are always looking at ways to improve the magazine and there will be some changes in 2015, which should definitely be for the better. I hope you will like them when we do integrate these changes. Magazines cannot stand still or they can look repetitive and boring and I certainly want this magazine to be the very best it can be!

Accessing information

Don't forget that you can access the magazine and its information in several ways. Firstly, you can buy *Woodworking Plans & Projects* in your local newsagent or you can take out a subscription, which will save you money and ensure continuity of supply instead of searching shops for it in vain. Alternatively, you can download a digital version for your tablet computer from the GMC Publications website – www.thegmcgroup.com – or go via www.pocketmags.com and make a real cost saving. Lastly, there is our very own Woodworkers Institute website



PHOTOGRAPH BY GMC/ANTHONY BAILEY



Merry Christmas from everyone at WPP!

– www.woodworkersinstitute.com – which features a huge amount of really useful content – perfect for visiting over the Christmas break while slumped in an armchair after a hefty festive blowout! There are so many ways to enjoy the magazine.

Before I go, may I and everyone at the magazine wish you a very Happy Christmas and a Prosperous New Year!

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Printed in the UK by Stephens and George Print Group

Distributed by Seymour Distribution Ltd

Tel: 020 7429 4000

WOODWORKING PLANS & PROJECTS
(ISSN 1753-254X) is published every four weeks by
GMC Publications Ltd, 86 High Street, Lewes,
East Sussex, BN7 1XN

Subscription rates (includes postage & packing)

	UK	Europe	Rest of World
12 issues:	£47.40	£59.25	£66.36
24 issues:	£94.80	£118.50	£132.72

US customers should call the Subscription Department for subscription rates in USD (\$).
Cheques made payable to: GMC Publications Ltd.
Current subscribers will automatically receive a renewal notice (excludes direct debit subscribers). Post your order to: The Subscription Department, GMC Publications Ltd, 166 High Street, Lewes, East Sussex, BN7 1XU, UK. Tel: +44 (0)1273 488 005
Fax: +44 (0) 1273 402866 Email: pubs@thegmcgroup.com
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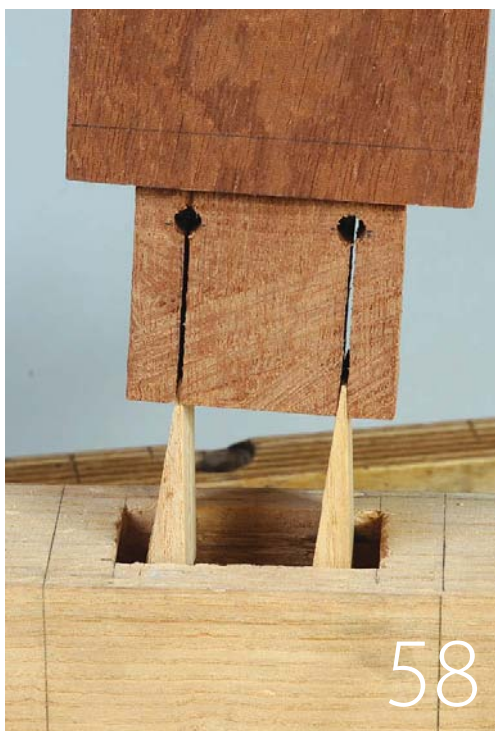
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We go into the spacious workshop of furniture maker David Barron

Woodwork on the web

To find more great projects, tests and techniques like these, visit our fantastic website at: www.woodworkersinstitute.com



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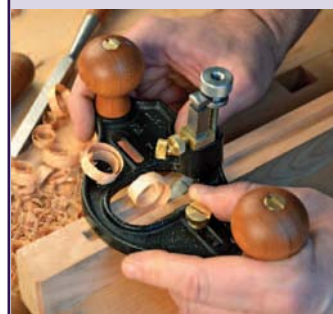
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Noticeboard

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



Students on the course, which took place earlier this year

PHOTOGRAPHS COURTESY OF NEW ENGLISH WORKSHOP

New English Workshop Summer School 2015

The summer of 2014 will be remembered among woodworkers as the year that brought the classic English tool chest home. A design that has been transported around the globe for centuries, it has become the symbolic emblem of a true craftsman. Lightweight and built to withstand the rigours of a typical journeyman, the hand tools inside have quite literally shaped our world.

Nowadays, a new army of would-be artisans are championing a hand tool renaissance as more of us realise the true value of handmade goods over mass-produced hybrids. It's a quiet revolution of sorts, aimed squarely at rekindling our relationship with the things we need and use everyday. The Anarchist's Tool Chest – after the book by Christopher Schwarz – is now the

mark of the modern artisan and New English Workshop held the first course in the UK this year to show 36 students how to build their own chests and make their mark in their chosen craft discipline.

The event was hosted by Warwickshire College in Leamington back in July and saw a total of five students gain a free place on the course. Additional funds are being raised for the college by auctioning off the tool chest built by Christopher Schwarz and contents donated by vendors and artisan tool makers from around the world.

Plans are already underway to make this an annual event held at two sites in 2015, with a line-up of some of the most influential woodworking professionals that have ever been to the UK. There are courses to suit the genuine first timer on limited funds, up to advanced practitioners looking to hone their skills. To be part of the handmade revolution and to book a place on one of next year's courses, see details below.

DETAILS:

Where: Bridgwater College, Bath Road, Bridgwater, Somerset TA6 4PZ; Warwickshire College, Trident Park, Poseidon Way, Warwick CV34 6SW

When: Various dates depending on the course chosen – see the website for full details of each course and the date

Web: www.newenglishworkshop.co.uk



Christopher Schwarz, the man behind the Anarchist's Tool Chest

Clikcraft – a website for craftspeople for only £50 per year

Clikcraft is a new service targeted at any crafts person who wants a website without the cost and hassle of setting one up. The service combines an easy-to-use admin system with a wide choice of stylish templates designed especially for craftspeople. Minimal expertise is required, so users can create and edit their own website quickly, easily and very cost-effectively.

You are invited to visit www.clikcraft.com and sign up for a free 14-day trial. You can then download the 'Easy Start User Guide', select a template and start to build your website.

Website highlights

You can update or change your website whenever you want, taking as many pages as you want, with a variety of formats, including a blog, contact form, about page, events diary, etc. The website is created for those who may not be too technical and is, therefore, easy to navigate. The system has already been used by over 15,000 artists and photographers.

Tim Hunt, of Clikcraft.com said this of the site: "Having had tremendous success in the photography and artists markets, we recognised that the UK crafts market offered us a real opportunity. Not only is it a booming activity, but



there is great synergy with our portfolio templates, so we decided to offer a similar service to craftspeople.

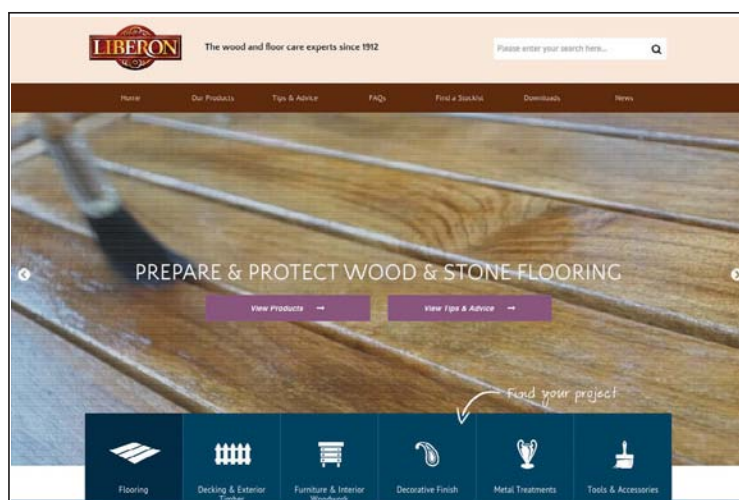
"The key challenge was to come up with really effective e-commerce templates that are easy to update and use. We hope we've managed to achieve this. For only £50 pa craftspeople can have their own online shop and be trading within a matter of days, even hours!"

DETAILS:

Contact: Clikcraft

Web: www.clikcraft.com

Liberon reigns as online expert



Liberon is delighted to launch its new and improved website – www.woodcareexpert.co.uk – making the brand fully accessible for both professionals and consumers alike.

Optimised for both tablet and mobile the new site has a modern, flat design using full-screen homepage video content to create a premium feel without losing the traditional values of the brand. It is the only platform where users can view all 300 product lines available within the Liberon ranges. In addition, the store locator is searchable by postcode and town, giving both DIY and professional users the ability to find the nearest stockist of Liberon products while out and about.

The site also provides users with full coverage calculators, recommended tools and application techniques, and all are easily accessible to ensure the consumer has all of the information needed to complete the job including the correct amount and associated tools required.

Built on the cutting-edge Sitecore platform, the new website provides personalised content for each user. Plus it ensures the 'step by step' and 'how to' information in video content is of exceptional quality.

DETAILS:

Contact: Liberon

Tel: 01797 367 555

Web: www.woodcareexpert.co.uk



Wood news:

New app solves problem of identifying young trees and shrubs

A new app-based field guide from the Forestry Commission has been launched to help identify almost 100 tree and shrub seedlings under one year old that are commonly found in British woods and forests.

Ecologists, woodland managers, foresters, surveyors and conservationists often want to identify young trees and shrubs that have established themselves naturally to help them plan for the future and decide what to keep and what to remove. However, plants under one year old are notoriously difficult to identify, even for those with long experience working in the field.

Selecting naturally established seedlings has always been a part of traditional native woodland management and is becoming more common as continuous cover forestry (CCF) expands. CCF does not use clear-felling and replanting. Knowing what is growing where sooner rather than later helps people take decisions on the spot rather than waiting until plants have matured a little.

Speaking from the APF, forestry's biggest biannual show, Forest Research's Matt Parratt said: "Most professionals and experienced amateurs can readily identify trees and shrubs after the plants are just a year or two old. But young seedlings often look significantly different to older plants and this can get in the way of accurately recording what is growing where. The app allows people to quickly and accurately identify self-set trees and shrubs regardless of their age. They can also record field notes and locations using GPS without a mobile signal. This is always going to be more efficient and helpful than revisiting a site. We tested the app on experienced colleagues using seedling pictures of rowan and common lime – both trees which are readily identifiable when older. A number of them were unable to correctly identify either one, and were surprised once the app revealed what they were."

Easy to use

The app includes high-resolution



images of leaves and other seedling features that can be used for identification. Instead of flipping through a field guide it uses dynamic filtering to allow users to identify seedlings based upon a number of key characteristics including leaf shapes and stem hairs. It supports species searches and includes listings by common and scientific names. The field guide app has been developed by the Forestry Commission from content supplied by Forest Research. It costs £1.49 and is available from iTunes Store and Google Play.

DETAILS:

Contact: Forestry Commission

Tel: 03000 674 000

Web: www.forestry.gov.uk

News from HSE

Launch of occupational disease Community Site

The Occupational Disease Community site provides an excellent way for organisations to promote the work that they are undertaking to tackle the burden of occupational disease and for others to generate novel ideas for new approaches. The site provides information on the methods and materials that have been developed by a range of organisations to raise awareness and create behavioural change in the workplace.

Pilot project report on wood dust exposure

This report presents the findings of a pilot project to research the need to update HSE's evidence base for wood dust exposure risks in GB manufacturing and construction

industries. Information was sourced from businesses which had participated in previous exposure surveys, contact with manufacturing – woodworking – businesses and trade associations, a literature review of papers reporting wood dust exposure data and occupational hygiene surveys for wood dust exposure at three construction sites.

Regulation of health and safety at work

HSE has published a document that explains the main features of the regulatory approach taken by HSE and local authorities to improve standards in health and safety performance. It includes the main regulatory intervention techniques used to influence, encourage and advise business and, where necessary, hold to

account those who fail to meet their responsibilities.

The document will be of interest to businesses regulated by HSE and local authorities, as well as others working in health and safety who help set and promote health and safety standards. You can read the document by visiting Regulation of health and safety at work.

Risk assessment leaflet revised

A new and revised version of 'The five steps to risk assessment' has been published. Download your free copy by visiting: Risk Assessment – a brief guide to controlling the risks in the workplace. For more information, see details below.

DETAILS:

Web: www.hse.gov.uk




**USER
REPORT**

Record Power BS350S bandsaw

Peter Brett tests the Record Power BS350S bandsaw, a big capacity and it fits into a garage workshop too!

PHOTOGRAPHS BY PETER BRETT

I have managed to outgrow two bandsaws, simply because I didn't have the cash to buy the bigger one I wanted at the time, but I did need the everyday usefulness of a bandsaw. It is truly one of the most useful tools in the workshop – especially if it is set up correctly.

In, what I hope, is the workshop that will last through my retirement, I decided that I needed a bandsaw

that would be much closer to my ambitions. After a lot of research I settled on the Record Power BS350S, because it has quite large capacities at 230mm depth of cut and 340mm throat depth, with a very respectable 1½ hp motor and yet it still fitted comfortably into my garage workshop. Also, the quality thresholds seemed to be higher than similar capacity machines I looked

at. The blade guides especially, were more robust and more easily adjustable than all other makes of bandsaw in this category and they are a key to accurate cutting.

Setup

Delivery was pretty straightforward – on a pallet – and I am lucky because I have a flat paved space just outside the workshop door where I could



Heavy cast band wheels have good momentum and allow smooth cuts

assemble the machine. The instruction booklet is quite well written, comprehensive and well illustrated with photographs. It did become clear later that the machine had been changed in some respects, but the instruction booklet hadn't caught up – more of that later.

Much of the assembly can be done single-handedly, but it is necessary to follow the sequence of assembly as laid down. Lifting the bandsaw body and table needs assistance. In retrospect, I should have opted for the wheel-set option as the wheels supplied as standard are a

rudimentary, but useable solution. If bought at the same time as the bandsaw, it is usually possible to get a better 'deal on the wheels'.

The final setup to table, fence, blade and guides also means following the sequence set out in the instructions and, provided they are followed, success is pretty much guaranteed. The bolts, fence, etc. are strong and well made and are definitely made to a good standard.

First use

When I started the bandsaw for the first time it was almost silent,



Blade guides are easily adjustable using this system with supplied locking nuts

vibration free and the first cuts I made into a chunky piece of softwood confirmed to me that I had made the right choice.

The more I used the bandsaw, the more I liked it. The heavy cast iron wheels are well-balanced, but have a momentum that makes for a smoother cut and more 'oomph' than lighter cast alloy wheels used in other machines. All the adjustments are very easy to use and the blade tension mechanism seems to be more robust than many I've seen. It helps that there is a blade tension indicator in the upper wheel housing that references tension and blade widths as a guide for the user. Using the cammed lever, blade tension can be released at the end of the working day, which helps to prolong the life of bearings and blades.



Despite dust extraction, a regular clean is still needed

Inevitably, with use and blade changes, it is necessary to keep up adjustments on the blade guides and tracking. However, after some practice, I can now change blades and adjust guides in a few minutes and this means that it is not a hardship to use the correct blades for ripping, circle cutting, etc. – I am not tempted to simply use the same old blade for everything until it needs changing.

Despite being connected via the 100mm dust port to an industrial vacuum, dust still gathered in the casing and had to be vacuumed out at every blade change or at the end of the working day. However, dust extraction does seem to make for an easier and less clogged cut line and is to be recommended.

Six months later...

I had something to complain about, when after about six months of using the bandsaw, quite unexpectedly, the drive belt broke. Thinking I was still covered by the five-year guarantee I phoned Record Power to get a replacement. However, it seems that many parts of the saw are regarded as 'consumables' and are not covered, so I ended up having to pay what I think is an inflated price – approximately £15 – for a replacement. Subsequently, I discovered via the Internet that there are places to buy the correct drive belts at a fraction of the price. Having never worn out a drive belt on any other bandsaw I have used before,



Rip width scale is accurate and easy to see

I was somewhat put out, but I guess faulty belts occasionally happen.

The instruction booklet is clear on how to replace the belt, since it involves removing the bottom band wheel to access the drive pulleys behind. However, the nut has now been replaced by a socket screw and the need to remove the circlip that retains the bearing is not mentioned in the instructions either. Ideally, a puller would have been used to remove the wheel from the hub, but I had to use a hammer and wooden drift to achieve this. All this was

adding insult to injury after having to pay so much for the drive belt.

However, once all parts were returned to their correct places and adjusted, the bandsaw functioned as well as before. Touch wood, the new drive belt – which was correctly tensioned via the tensioning handle – will last for many years to come.

And now...

After nearly a year of use I have learned a lot about the Record Power BS350S, but the most important thing is that keeping adjustments spot on is a necessity. Sharp, correctly chosen blades are essential for good quality cutting. I would definitely recommend this bandsaw for demanding amateurs and small professional workshops, and if you keep your eyes open, there are all sorts of deals around to help you get the best price. This bandsaw will see me out. ■



The chromed fence bar is very rigid and easily adjustable for accuracy

THE NUMBERS

Record Power BS350S bandsaw

Maximum depth of cut: 230mm

Table size: 548 × 500mm

Motor power: 1½ hp

Blade width capacity: 6-20mm

Table height from floor: 998mm

Blade speed: 820 & 380m/minute

Size: 1,795 high × 880 wide × 780mm dia.

Weight: 100kg

Typical price: £759.99 (inc VAT)
– but shop around!



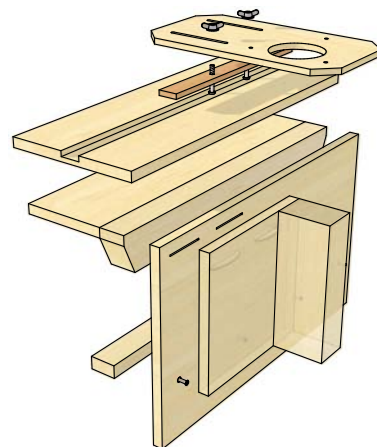
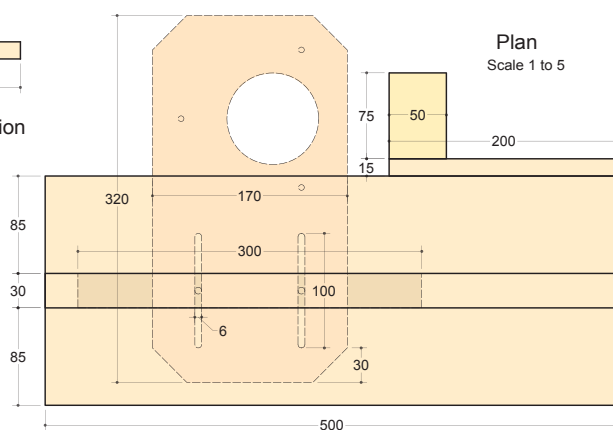
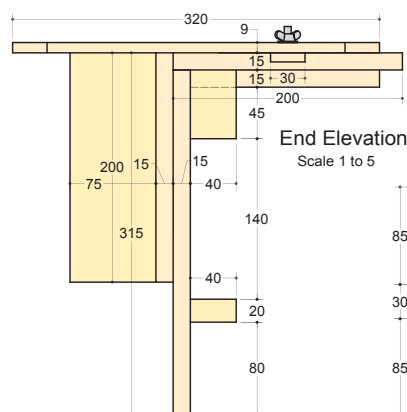
Mortising jig

The Editor thought that as mortise and tenons are featured in Joint Solutions, it would be useful to create a mortising jig to use with a router!

There are a number of ways to create mortises with a router. The mortise box and the self-centring jig are two of them and a guidebush template is another, but they are all for edge or face mortising, not the end of components – as would be needed for loose tenons, so a jig that can make that possible

is really useful. If you have a lot of identical components, you can make a guidebush template with battens underneath to keep it located exactly on each workpiece. However, if you need to be able to mortise a variety of component sizes, a different jig is required. A key thing is being able to hold it firmly in a vice, which also

brings it up to a more convenient working height. You need to be able to clamp the workpiece in the jig using a reference mark for the correct positioning. Next, you need end stops to limit the router cutter travel and then a means of setting the width.



1 Cutter-wise for mortising there are various options: long two-flute straight cutters, pocket hole, stagger tooth and the more expensive spiral bits – the up-down shear variety in theory being the one to use.

Making the jig

2 The first job when constructing the jig is to make up a reinforced L-piece. The components are just butt glued together accurately. Lower down on the vertical board a batten is glued in place, the purpose of which is to act as a stop so the jig sits nicely at the correct height when clamped in the vice.

3 A means of holding components vertically requires another smaller removable L-piece to be used. This time a section of 75 × 50mm softwood forms the return.

4 Once the glue in both constructions has set, all edges need to have their arrises bevelled slightly with a block plane; this will allow them to not only look better but will also avoid splinters.

5 The batten on the vertical section needs reinforcement with three screws, so it can't snap off in use. The other joints should all be tough without screws.

6 The L-piece for holding vertical components needs to locate positively. To allow this, a couple of biscuit slots for No.10 size biscuits is just right.

7 Two No.10 biscuits are glued into the slots in the face of the smaller L-piece. Once the glue has dried, the edges of the biscuits are sanded slightly to smooth over, as they will need to withstand being fitted and removed from the jig many times.

8 Next, cut a piece of 9mm ply as a sub-base, then mark and drill to fit your chosen router. This can be either a small or large router and you can make more than one sub-base, so you can use different routers. Once it is fixed on with machine screws, two slots are then needed.

9 A piece of flat section prepared hardwood needs to be fitted with machine screws and wing nuts.



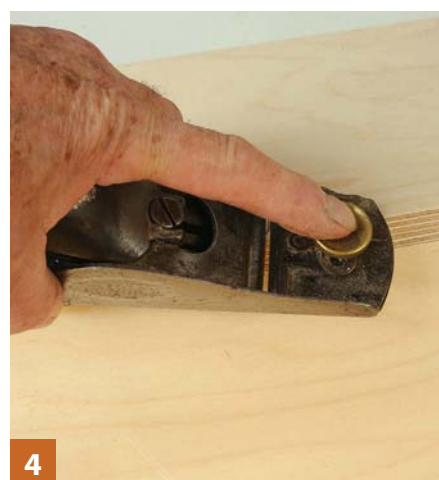
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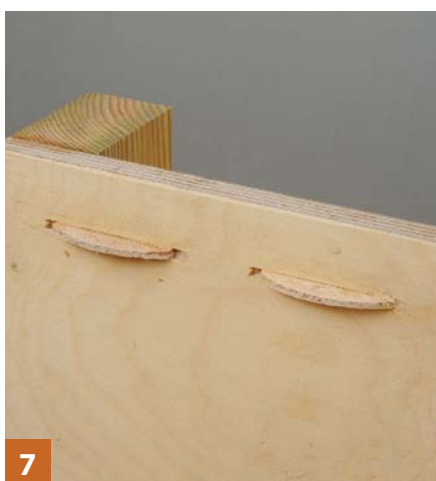
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8

I managed to find a couple of tri-corner knobs later on, which really helped me out. The holes need to be drilled at the machine screw core-diameter so they can be screwed in tight. A drop of CA adhesive fixes them firmly in place and makes everything secure.

10 A large straight cutter or tenoning cutter is used to create a slot for the adjustable strip, shown in step 9. The slot needs to be a good running fit with no free play. The router fence must have a fillet of wood double-sided across both faces for smooth running to avoid machining defects.

11 The router sub-base needs a large opening so you can see the cutter path and mortise markings. One option is to use a large holesaw, but you can use a router, guidebush and circular template instead.

12 All faces and edges need thorough sanding prior to applying a finish to the sliding surfaces i.e. the top, the sub-base and the guide strip.

13 An aqueous varnish is perfect for this job – two or three coats flatted off between coats, followed by a light waxing.

14 Lengthwise, workpieces need to be clamped firmly and level with the top of the jig. The method used here was two Kreg Pocket Hole clamps, the pin arm of each fitting in a hole drilled in the jig side nearest the camera and the pad on the far side presses firmly on the workpiece.

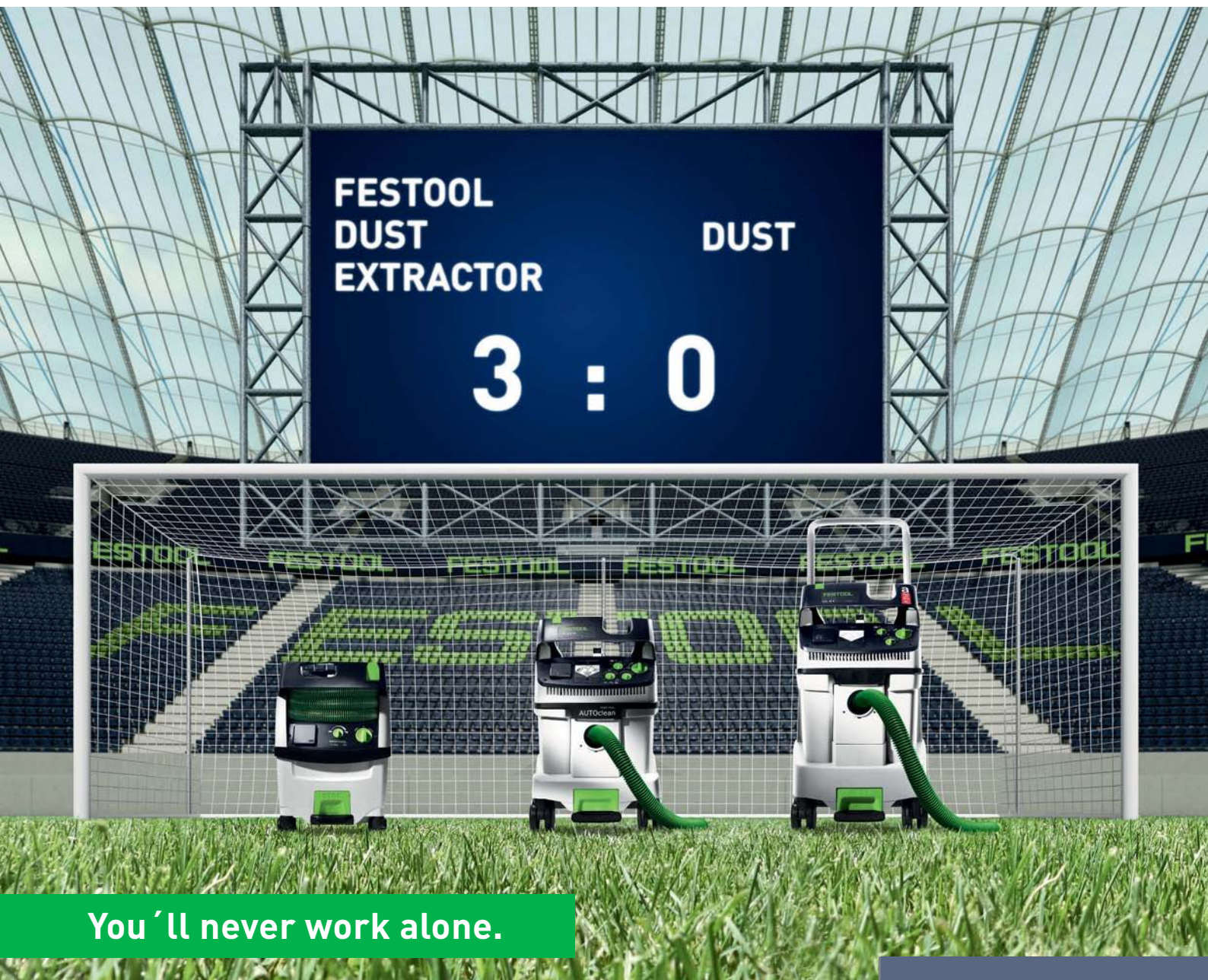
15 The setup for end mortising using the smaller L-piece made earlier on. This is clamped against the jig and then the workpiece clamped in turn to it. Note the end stops clamped on top of the jig to limit mortise length.

16 The router tipped on its back to show the freshly cut mortise and the front end stop. Any tendency for the router to tip sideways is counteracted by having a workpiece clamped in place and also the end stop, which holds the guide strip down in the groove. A handy addition to any workshop! ■



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Upcycle woven chair

Amber Bailey restores a discarded oak chair using her Danish weaving skills

While gallivanting around the country last summer, on one of my many internships, I came across the sorry looking remains of a broken chair chucked onto a bonfire ready to be turned into firewood. I couldn't resist rescuing it and bringing the chair back to my workshop for a little TLC, even if this did mean a five-hour journey of trains and traipsing through various cities with it under my arm.



PHOTOGRAPHS BY GMC/AMBER BAILEY



The chair components in the state that I recovered them

Consolidation

1 Before even travelling home with the chair, I identified where each section belonged and labelled these up for later reference. This eliminated any possibility that I might accidentally leave anything behind. With the front legs and rail labelled up, I did not worry about the tape damaging the finish, as it needed to be stripped down anyway.

2 Although the majority of the chair was in pieces, the remaining joints were in a bad state and needed to be opened and cleaned to provide a tighter fit. Like most traditional furniture the components had been adhered with protein glue and could be easily rehydrated by pumping water back into the joints.

3 The same method can be used for removing damaged dowels; however, this means a constant switch between drilling and rehydrating.

4 Unfortunately, none of the remaining dowels were suitable to reuse, so modern dowels replaced them, secured in place with Colle de Poisson – otherwise known as fish glue – as were all of the joints.

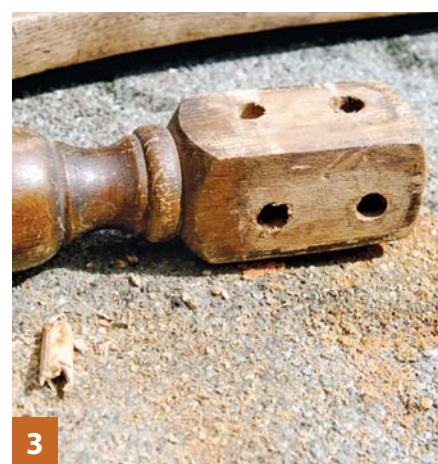
5 When it came to rebuilding the chair it became apparent that the quality of the chair was never particularly great and to make it sit straight required a little bit of jiggling about and brute force.



The only sign of a maker's mark, giving minimal clues to the chair's history



1. Before the dismantling stage during conservation and restoration, it is important to not only mark up all large furniture components, but also everything down to the screws and hardware. For authenticity everything will go back in exactly the same place that it originally belonged.



6 Fitting one side of the front rail threw the other side completely off as the back ends were angled wrong. The rail had to be hit down with a mallet before clamping.

7 The chair was clamped up to dry. Colle de Poisson needs to be left for at least 24 hours to cure.

Clean up

8 The original surface was a flaking varnish or lacquer, which could be removed using paint stripper, but this is a messy and long process. It is ideal, however, if the finish is being stubborn – in this case scraping the remnants was nice and quick.

9 The actual oak is much lighter in colouring than the dark varnish suggested.

10 The chair stripped back to its bare wood.

Surface treatment

11 Unlike the original finish, or the practice I usually use on chairs, I decided not to add a stain to darken or warm the wood. Keeping the colour muted felt like a reminder of its bonfire history, a rich finish instead of a faded appearance felt insincere. Transparent polish is the clearest shellac available, choosing shellac all depends on the desired appearance of the wood.

12 The chair was French polished with a cotton rubber and a mop for detailed sections, using transparent shellac and Isopropyl Alcohol to prevent any yellowing from occurring. A sealant layer was applied at a 50:50 ratio, then thickened to layers of 75:25 ratio until I was happy with the overall look. Finally, the chair was polished over with Microcrystalline wax leaving it until it had hardened, before buffing off. The chair was now ready to weave.



2. During the surface treatment process the wood grain can raise. Denibbing the surface with fine wire wool between coats will give you a smooth appearance.



How to weave a seat

Danish weaving was a skill I learnt during my final year of university, not because it was on the syllabus, but because another student required a seat weaving and despite having absolutely no previous experience the job seemed to fall to me – or did I get roped in? By some miracle it actually worked and soon enough I became hooked. But enough of me weaving you a story; let's move on to how this is actually done.

13 Traditionally, Danish weaving involves natural cord in a single neutral colour, but various cords are now available for a number of different purposes, many of which come in vibrant colours and are just as suitable to use. Polyester cord is incredibly cheap, which is great when it is required in such large quantities and is fairly soft to the touch. This is advantageous when it needs to be pulled tightly.

Phase one

14 Starting with the vertical weaving, the cord needs to be tacked into place in the back corner of the seat, looping around then following over the back rail and under, pulled towards the front.

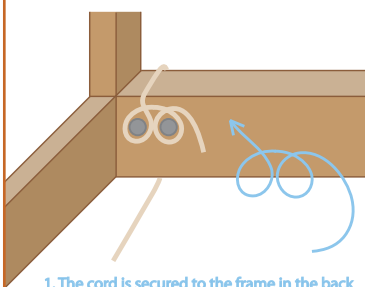
15 When at the front, loop the cord over the front rail twice and on the second loop, pull the cord to the back again, going under and over the rail twice. On the second loop, you need to pull towards the front. Repeat the step along the entire length of the chair.



3. Weaving a seat requires a lot of cord and will vary depending on the frame size. As a general rule, always have 200 metres to be on the safe side. This is 100 for each direction, although my project took approximately 80 metres.

4. Always keep the cord pulled taut when weaving, otherwise the seat will sag. Gradually over time the weaving will naturally loosen through use, so it needs to be as tight as possible to begin with.

The direction in which the cord should be looped for maximum security



1. The cord is secured to the frame in the back left-hand corner, looped around two tacks then carrying on over the back rail and underneath the seat frame.



"Exploiting my recently found fondness for Danish weaving, I thought I would add my own 'twist' to the restoration of this chair – a perfect solution if upholstery isn't for you. If you are feeble like me, then Danish weaving is hard work and will leave your muscles aching and your hands red raw!"



5. Cord tends to come on large reels, which may not fit through the back of the chair, rather than taking all of it off the reel and getting it all knotted up, cut at 20 metre lengths so the size is manageable. Reattach pieces with a tight knot facing into the seat, so that it is hidden. The cord is likely to fray if it isn't sealed; avoid this by dabbing on a spot of glue or clear nail varnish, or burn the ends.



16 The pattern should be continual vertical strips, with a gap between each strip where the cord is wrapped around the rails. Keep the cord wrapped tightly, constantly rearranging along the rails.

17 Where my chair has back splats I had to make allowances, wrapping the front rail with cord to fit the length of a splat before carrying on with the pattern. Gaps left because of the back splats won't be anywhere near as noticeable when the horizontal weave is put on. The very end of the vertical weaving should finish with a strip towards the front rail that goes underneath and across to the other side of the chair leg and up over the side rail.

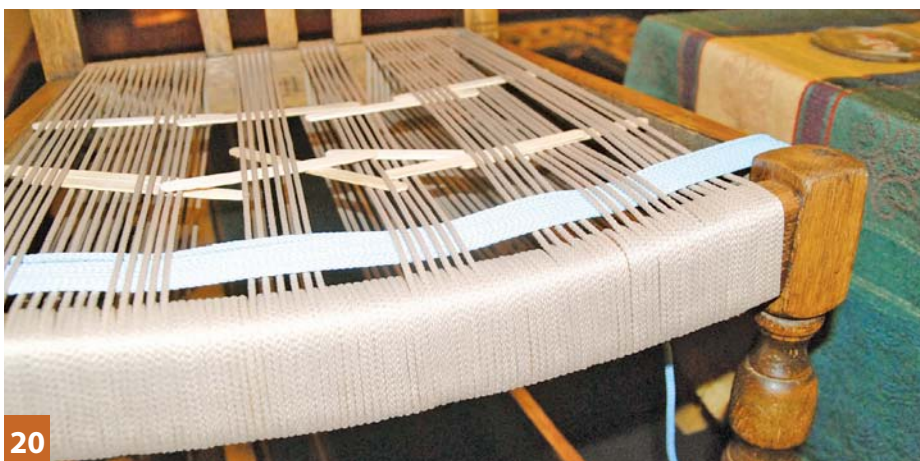
18 This is the point to decide between one continuous colour or – just as I chose to do – two colours. If using two, then before the cord comes up the side rail, cut off and tie a new colour on.

"The pattern should be continual vertical strips..."

Phase two

19 To decide where the horizontal weave should intertwine, count and evenly divide up the vertical weave. Wooden sticks work well as markers. Following the grouped-up divides in the vertical weave, thread the cord in and out alternating across the seat before pulling the cord down and repeating the exact same pattern underneath before pulling back up the side rail.

20 This needs to be repeated a set number of times. For me this was in groups of eight horizontal lengths, before alternating the 'in-and-out' action. Repeat again until the horizontal weave is built up in blocks that switch between whether they start by going in or out of the vertical cord. Finish by cutting off any waste – leaving 50mm – and sealing before pushing the remaining cord neatly into a gap at the back on the top of the weave. Once finished, the chair is ready for use. ■





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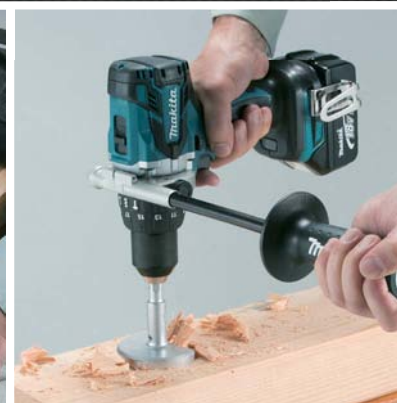
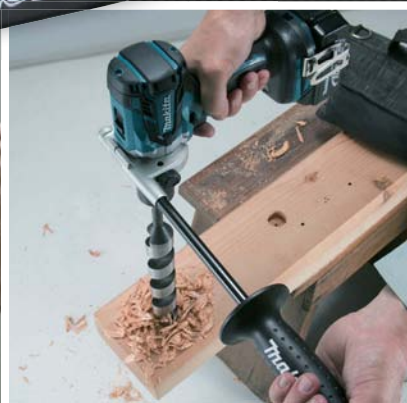


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The Geffrye Museum

– *A Christmas Past*



We take a look at the Christmas Past exhibition at the Geffrye Museum of the Home in Shoreditch, London

The Geffrye Museum stands in Shoreditch, just minutes away from the City of London. A museum of the 'home' and how it has changed and developed over time, the Geffrye Museum has 11 period rooms to walk through, portraying home décor from the 1600s to the present day. Each room represents the main living space used by the family and their guests during their set period. How the families would have lived in those rooms, alongside furnishings, lighting and heating, decorative arts and paintings show how the home and home life have changed over time. These elements all reflect the ongoing changes in society, behaviour, style, taste and the wider world.

Not only does the museum show the main rooms in a home, but the exhibition extends outside into the grounds to show the change in garden style over time, described as

'an urban oasis in the heart of Hoxton, an area of London once renowned for its horticultural expertise'. The gardens situated behind the museum illustrate how domestic gardens have evolved, but the greenery at the front of the museum is open all year round, to provide lush green space just off the busy Kingsland Road.

Additional to the museum and gardens, is the restored almshouse. The almshouse, from the 18th century, has been restored back to its original condition and provides a glimpse into the lives of London's poor and elderly in the 1780s and 1880s.

This year has marked two major milestones in the Geffrye's history: 100 years since the museum opened and 300 years since the opening of the almshouses, the Christmas Exhibition marking the end of a celebratory year.



PHOTOGRAPH BY CHRIS RIDLEY



PHOTOGRAPH BY STEVE SPELLER



PHOTOGRAPH BY CHRIS RIDLEY

Main photo: A drawing room in 1870; top: A parlour in 1695; above: A living room in 1965

A history

The museum is set in the former almshouses of the Ironmongers' Company, elegant, 18th-century buildings. Built in 1714 by the Worshipful Company of Ironmongers, the Geffrye Almshouses were funded by Sir Robert Geffrye, former Lord Mayor of London and Master of the Company. The almshouses comprised 14 houses, four rooms in each house, providing retirement homes for up to 56 pensioners. In the 18th century, the surrounding area was largely rural, cultivated by market gardeners, who were supplying Londoners with fresh vegetables and herbs.

The area became the centre of London's furniture and clothing trades as London expanded during the 19th century and the farmland was built over with terraced housing, factories and workshops. By 1910, the area had become one of the most heavily populated areas of London with severe overcrowding and little sanitation. Because of this, the Ironmongers' Company decided to sell the almshouses and move to the cleaner, safer suburbs.

Bought by the London County Council in 1911, the almshouses and gardens were to mainly provide a public open space in such a densely populated area of London. The Council was subsequently persuaded by leading members of the Arts & Crafts movement to convert the almshouses into a museum, related to the local furniture

industry. Its purpose was to provide a reference collection of furniture of a 'fine standard of technical and artistic excellence' to educate and inspire the local workforce.

The museum

The Geffrye Museum opened in 1914. By the 1930s, the furniture industry was relocating from Shoreditch and in 1935 management of the Geffrye was taken over by the Education Committee of London, with a remit to provide London schools with a unique resource for learning about the history of domestic life. The collections were organised into period rooms, the structure of which still exists now.

Over the years, the museum has acquired a collection of complementary decorative art, paintings, personalia and archives relating to English domestic interiors. Since becoming an independent charitable trust in 1991, the museum has embarked on an ambitious programme of developments, including refurbishing all of the period rooms and building a major new extension, which opened in November 1998.

It is not only the rooms that have been developed, but the gardens have also been extensively and imaginatively developed. The creation of the Geffrye's award-winning herb garden, which opened in June 1992, presented a unique opportunity to add a new dimension to the



A hall in 1630

PHOTOGRAPH BY STEVE SPELLER



A drawing room in 1830

PHOTOGRAPH BY CHRIS RIDLEY



A drawing room in 1910

PHOTOGRAPH BY MORLEY VON STERNBERG

museum's collections. By transforming a derelict site adjacent to the museum, the Geffrye has not only added an 'outdoor room' to its series of period rooms, but has also provided a haven of beauty and botanical interest in the East End. A series of period garden rooms showing key changes in town gardens from 1600 to 1900 opened in 1998.

The collection

The museum's private holdings of furniture include; items that would have been used in the main living spaces of 'middling' London homes from the early 17th to the later 20th-century, an important collection of over 450 English regional chairs, significant pieces of 18th and early 19th-century London furniture bearing labels or inscriptions relating to their supply, examples of original upholstery and furniture produced under the Utility scheme during and after the Second World War. Enquiries about the collection, including requests to view objects, should be addressed to – curatorial@geffrye-museum.org.uk.

Events

On top of the simple walk around exhibition, the museum and gardens are regularly brought to life through an innovative programme of seminars, workshops, drama and music. These activities provide opportunities for learning and enjoyment to visitors of all ages and interests. The Geffrye has earned a high reputation for its education programmes, previously winning the Gulbenkian Award for

Most Imaginative Education Work and more recently, the Sandford Award for Heritage Education.

Special exhibitions are mounted throughout the year, exploring a wide variety of themes relating to the period room displays. A traditional favourite at the Geffrye is the Christmas Past exhibition, having already run for over 20 years, with ongoing research constantly adding new dimensions to the displays each year.

Christmas at the Geffrye Museum

Each year, the Geffrye Museum's 11 period rooms are transformed with authentic festive decorations, lighting, music and greenery to give visitors a magical glimpse into how Christmas has been celebrated in English middle-class homes, over the past 400 years. A perennial favourite, many visitors say that the 'Christmas Past' exhibition has become an essential part of their own Christmas traditions.

So, the Geffrye Museum allows you to step back in time, through the centuries and discover the origins of our Christmas traditions, from feasting, dancing, kissing under the mistletoe and playing parlour games, to hanging up stockings, sending cards, decorating the tree and throwing cocktail parties.

Over the Christmas period, the Geffrye Museum hold a course of events, focusing on the 18th-century, in celebration of the tri-century of the museum's almshouse buildings. The Christmas celebrations don't stop inside the rooms, but spill over to the café, serving festive food,



Loft apartment in 1998



Christmas exterior at dusk

and Christmas decorations are sold in the shop. A well-illustrated book, *Christmas Past, Christmas Present*, written by Geffrye curators tells the history of Christmas in English homes and is available in the museum's shop.

Christmas events

This year's Christmas events at the Geffrye Museum include: a Crocheted Christmas workshop, in which visitors will use crochet to create contemporary seasonal decorations, including snowflakes, stars and baubles; a Concert by Candlelight with a moving recital of a cappella Christmas music by acclaimed group Bocca Aperta – including a glass of sherry or port and a mince pie; a Christmas Greenery workshop with the Geffrye gardeners, to create a Georgian-inspired festive decoration with fresh greenery and an Exhibition Talk: Christmas Past in Focus, in which visitors will explore Georgian Christmas traditions in an informal gallery talk.

The Geffrye Museum also holds a couple of events suitable for the whole family, such as: Open Evening: A Georgian Christmas, where visitors will enjoy Christmas



The Christmas tree in the 1870 drawing room

Past by candlelight, listen to festive music, learn about seasonal entertainments or bring their children to a decoration-making workshop; and Geffrye Museum's Farewell to Christmas event, their traditional burning of the holly and ivy, with carol singing, stories about Epiphany and a taste of mulled wine and Twelfth Night cake, all in the Museum's gardens.

Future

The Geffrye Museum is currently in the planning stages of an ambitious capital project to develop the museum, create more space and open up access to the museum's collections, archives, buildings and gardens. The development will include a new library, learning and exhibition spaces, restaurant and the revitalisation of the Geffrye's existing public areas. This major project will improve access by embracing the new Hoxton Station directly behind the museum and greatly enhance the overall visitor experience. Dependent on funding and planning, the new development will open in 2020. ■

DETAILS

Further information on the Christmas Past exhibition:

Dates: 25 November, 2014 to 4 January, 2015

Where: 136 Kingsland Road, Shoreditch, London, E2 8EA

Web: www.geffrye-museum.org.uk

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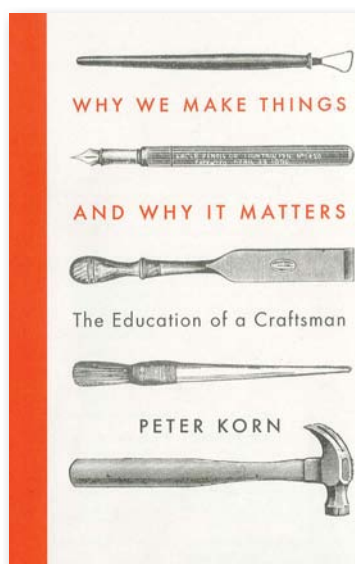
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Book reviews

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Why We Make Things and Why It Matters

by Peter Korn

Why We Make Things and Why It Matters: *The Education of a Craftsman* by Peter Korn is anything but your usual woodworking guide. In this text-based book, Peter concentrates on the philosophical and takes a look at the reasons for craft, why we make things and why we choose to create both emotionally and physically demanding work. The book is 'part memoir, part polemic, part philosophical reflection', taking anecdotes from his own life, to teach, share and raise more questions on the subject. As mentioned, this is a heavily text-based book, but the odd image and illustration is dotted throughout, illustrating points where necessary. It is 'a book about the process of creation and what it means to be a craftsman in a mass-produced world', proving to be a very interesting read.

Briony Darnley

ISBN: 9780224101097

Price: £15

Where: The Random House Group

Chests and Cabinets

by Fine Woodworking

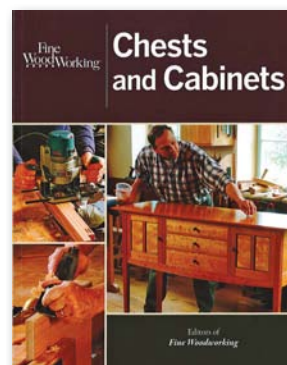
Chests and Cabinets from *Fine Woodworking* has within it 'the best storage projects in one collection'. I would advise it is more for the intermediate and advanced furniture makers, as other than a one-page introduction by Tom McKenna, the book takes you straight into the big projects – of which there are 18 to complete. It is assumed the reader knows the tools, safety procedures, techniques, etc., and there are no background notes or histories included; the guide simply tells you how to make the pieces. The photographs in the guide are of a brilliant quality and the illustrations exceptionally detailed, but not so detailed as to confuse. The writing is in block form, but with numbered images to help you along the way. There are handy conversion charts in the guide and the projects are split into various sections. This is a great guide if you have an exact piece of furniture in mind that you would like to make.

Briony Darnley

ISBN: 9781627107129

Price: £14.99 (plus P&P)

Where: www.gmcpubs.com



Pocket Hole Joinery

by Mark Edmundson

Furniture maker Mark Edmundson's guide to pocket hole joinery dives right into the technique, with only a short introduction and 'basics' chapter at the beginning. Following are eight projects, from a small mirror/picture frame, to a full bathroom vanity and a dresser – and the in-between projects are a daybed, bookshelf and blanket bench. All of the projects centre around the use of the ever increasingly popular pocket hole joinery.

Mark claims the guide to be 'a complete course' in pocket hole joinery, from looking at selecting the correct jig, to how to use pocket screws with dowel and biscuits. Mark includes a number of 'work smart' tip boxes along the way, giving snippets of useful advice as you read. Mark points out that the pocket hole joint is 'strong, quick to learn and easy to master', making the joint a very tempting one to learn, but he also addresses the possible problems that may arise and tells you how to solve them.

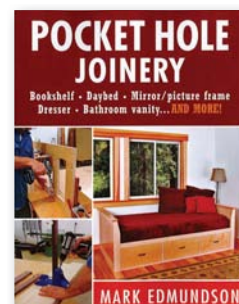
Chapter two marks the beginning of the projects. The materials list in each project is printed in a large format and they are very clear. Each piece has an accompanying illustration, with measurements. The projects do not have numbered steps, but are mostly in block text, although with captions and images included. This could, unfortunately, perhaps cause a little confusion in steps. On the very back page, Mark includes a conversion chart, for those who may not be too familiar with the imperial measurements.

Briony Darnley

ISBN: 9781621136743

Price: £16.99 (plus P&P)

Where: www.gmcpubs.com



Swedish Carving Techniques

by Wille Sundqvist

This book has apparently been the 'bible' of Swedish woodcarving in the English language for a long time. First published in 1990, it went out of print and the advertised second-hand price reached hundreds of pounds before the publishers were persuaded to reprint it. A slim volume with slightly murky photographs, typical of their time, it nevertheless contains a wealth of useful material.

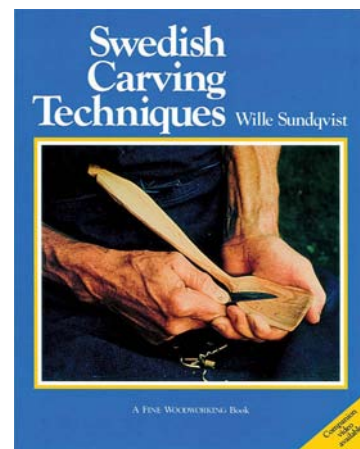
Examining the 'contents' page one is impressed with the range and diversity of information. Tools including knives, axes, hatches and adzes are described, together with specialist instruction on other carving tools, how to make handles, edge protection and safety procedures. The equipment section is complete with sharpening, grinding and honing techniques.

In terms of actual carving projects, each one is used to illustrate a particular tool or technique. Axe and adze work is used to produce a dough bowl and consists of roughing out the blank, shaping the inside, roughing the outside and finally smoothing the bowl. The initial design work of the bowl is covered in detail and there are some impressive photographs of work with the adze, particularly one in which the tool is swung over a low bench between the legs of a man in shorts.

A delightful range of butter paddles are illustrated, making which are recommended as a good way of learning the basic grips and techniques of carving. These include power strokes and the chest-lever grip for working away from yourself. Several different techniques for carving towards yourself are described such as the simple pull stroke, the reinforced pull grip and the draw grip and so on. The instructions for these different grips are painstakingly and impressively described and illustrated.

It is not difficult to understand why this book has become such a 'must-have' for the carver in the Swedish tradition and it is thoroughly recommended.

Barrie Cummins

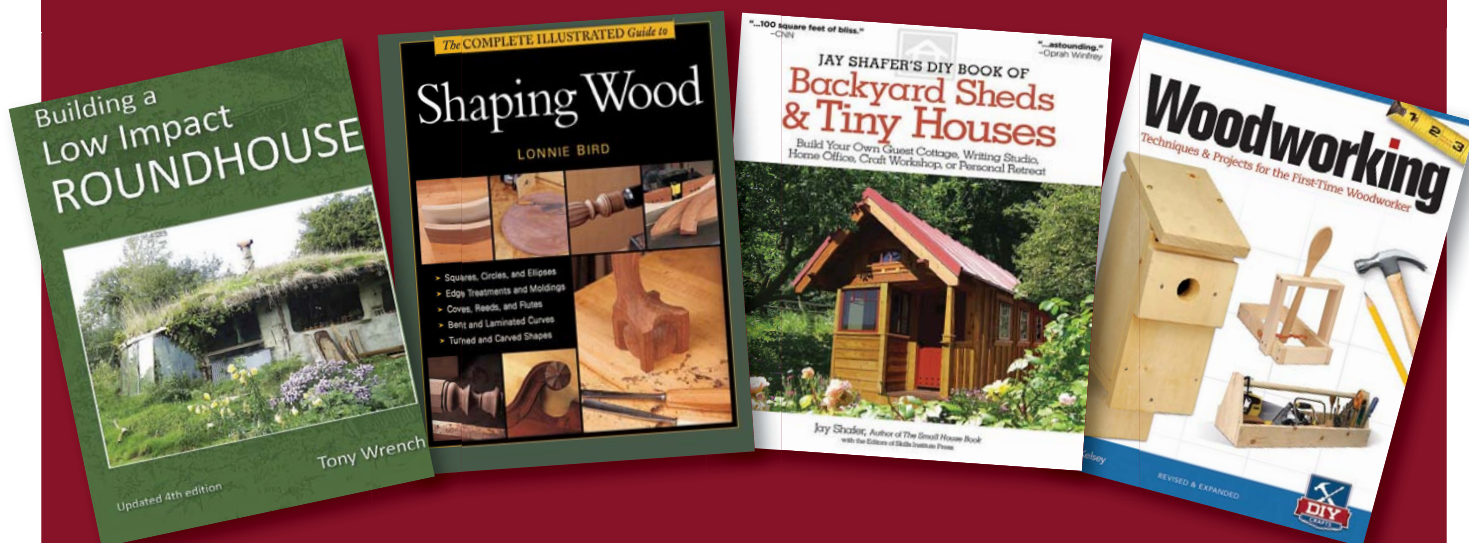


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Millers Falls No.5 hand drill restoration

Walter Hall shows us how he brought an old favourite, an 'egg-beater' hand drill back to tiptop working condition



The 100-year-old Millers Falls No.5 hand drill

With the ready availability of cheap rechargeable drills nowadays, many woodworkers no longer use, or even own, a traditional 'egg-beater' style hand drill. I think this is a pity as I turn regularly to my hand drills for accuracy and ease of use, when small holes are needed and the feel and control afforded by such tools makes them a real pleasure to use. I have long admired the Millers Falls No.2 and No.5 drills that were the tools of choice of American woodworkers for decades and have looked longingly at the beautiful, professionally restored versions available in the USA. However, at £120 or more, plus import taxes and shipping costs, this was never going to be a realistic option for an amateur woodworker, so when I found this No.5 drill for sale in the UK for £25, I jumped at the chance to restore it.

The hand drill

The drill is fitted with a McCoy's patent springless chuck, has the 'star' trademark on the crank, a mushroom-shaped side handle and tropical hardwood handles, all of which date it to around 1914, so I was pleased to find that it was to all intents and purposes complete and in working order. It was, however, heavily coated with grease and dirt and with little of the original paintwork left.

Some might shy away from restoring a 100-year-old tool or even consider it sacrilege, but this drill was not in a condition that would interest a collector and anyway, in my opinion, tools are meant to be used not displayed in cabinets. While antique furniture develops a patina with age,

the brown colouration on old tools is not a 'lovely patina'. It is rust and if left to its own devices it will ultimately destroy the tool, so I have no qualms about removing it. The grease and dirt in the mechanism can be clearly seen.



PHOTOGRAPHS BY WALTER HALL

If the rust was left, it would ultimately destroy the tool

DISMANTLING



Dismantling the tool was mostly done through the unscrewing of components



I made sure to keep an eye on the small components of the thrust bearing



Two more dowel pins had to be removed before the handle could be removed



Cleaning up the gearwheel

The first job was to dismantle the tool into its component parts. This was mostly achieved by straightforward unscrewing of components, but to remove the shaft it was necessary to drive out the dowel pin from the bevel gear with a pin punch.

With the pin out, the shaft could also be removed, taking care not to lose the small components of the thrust bearing, which fall from their socket when the shaft is released.

To remove the handle, two further dowel pins had to be removed before the handle could be unscrewed and the stud removed from the frame with the assistance of a suitably sized rod through the dowel hole – and a good soaking with penetrating oil.

At this point the shaft on which the upper bevel gear runs should have come away freely from the frame, but as it was unwilling to do so and as I did not wish to employ unnecessary force that might cause damage, I left it in place and cleaned up the gearwheel in situ using an abrasive impregnated nylon brush. The poor condition of the paintwork and rust pitting on the frame can be clearly seen.



The poor condition of the paintwork and rust



The remnants of finish were removed with a combination of stripping gel and scrubbing

Several applications of a proprietary paint stripping gel and some judicious scrubbing with an old toothbrush were required to remove the remnants of the finish, which unfortunately revealed yet more rust pitting beneath the paint. All the remaining metal components were given a thorough wash in a bath of paraffin – kerosene – to remove the accumulated grease and dirt. Automotive de-greaser would be equally effective. Magnetic parts trays were used to keep the smaller parts safely where they will not roll off the bench and disappear forever. It is difficult, if not impossible to find replacements for 100-year-old parts!



All remaining components were also given a thorough wash



The dismantled components

RESTORATION

At this point a decision was needed about how much restoration to do – whether to go for the ‘better than new’ look achieved by the professional restorers, or to simply clean up the parts and reassemble. I decided to take a middle route, aiming to achieve a standard of finish that would result in a tool in the condition a careful user might have kept it. First, the hand wheel was mounted on the lathe and the ‘patina’ of rust removed from the rim by working through the grits of cloth-backed aluminium oxide abrasive and polishing with an abrasive compound.

Once the frame had been fully stripped of finish, the full extent of the rust pitting could be seen. This needs to be removed before a new finish is applied or corrosion will continue and shorten the life of the paintwork.

Several coats of rust removing gel were required to bring the frame back to pristine condition, each application followed by a scrub with fine non-woven nylon abrasive.

The handwheel was given the same treatment and both components given a final cleaning off with methylated spirit – de-natured alcohol – ready for finishing. The professionals would use a baked-on enamel to re-finish, but I settled for automotive acrylics – Gloss black and Ford ‘Sunset’ red.

Careful masking is essential before spray painting.



Removing the ‘patina’ or rust



The full extent of the rust pitting



Rust removing gel was used



The hand wheel was given the same treatment

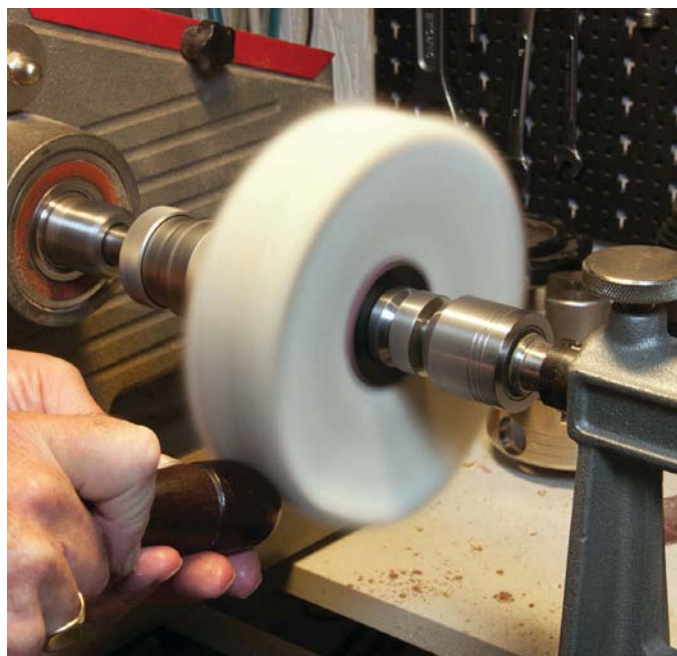
Every minute spent masking will save 10 minutes cleaning paint from where it was not wanted. A bolt, nut and washers fastened through the centre hole of the wheel proved an effective means of masking the bearing surfaces. Masking the gear cogs was a bit more troublesome.

The hardwood main handle and crank handle were in surprisingly good condition once they were de-greased, so I left them alone apart from a polish with Tripoli and white diamond compounds, followed up with carnauba wax using buffing wheels. The side handle was less well-preserved and required sanding off, staining with a mix of mahogany and medium oak stains to match the original colour and sealing with sanding sealer before it too was finished with carnauba wax.

Small components, such as screws, were held with pliers to enable a thorough clean and polish using a fine abrasive impregnated nylon brush. The McCoy's patent springless chuck was carefully dismantled and 100 years' worth of rust and dirt gently removed by hand, using rust removing gel and non-woven nylon abrasive. I did not want to resort to over vigorous polishing here, seeking to achieve a good clean working chuck rather than an exhibition piece. A light oiling followed.



Masking tape was used to prevent spray paint getting on unwanted areas



Very little was done to the main handle and crank handle



To hold nails and other small components steady, pliers came in handy



100 years' worth of dirt and rust was removed by hand

REASSEMBLY



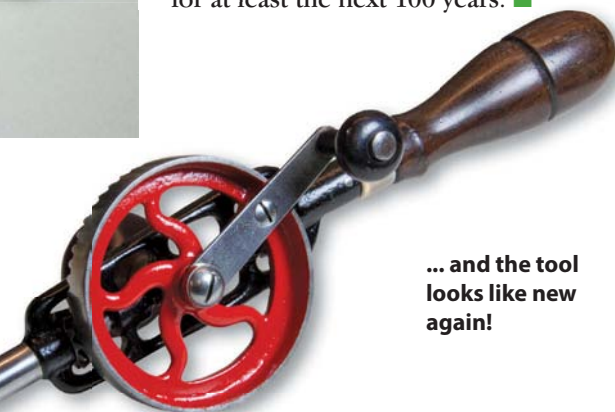
The components cleaned up nicely!

The cleaned, polished and re-finished components are now ready for re-assembly. Note: the tiny thrust bearing parts are still safely retained in the magnetic tray. The thrust bearing was packed with high temperature copper filled brake grease, the main shaft lubricated with the same and the components carefully re-assembled.

The final result is a tool which, while not perhaps as showroom perfect as the professionally restored models that I so admired, will give me and hopefully many more generations of users great pleasure to work with for at least the next 100 years. ■



The components were carefully reassembled...



... and the tool looks like new again!

For more information

If, like me, you are interested in the history of these drills, or just like looking at photographs of beautifully restored tools, then I can thoroughly recommend the following websites:

www.georgesbasement.com
www.oldtoolheaven.com
www.wkfinetools.com

New Magic Gripper Pro

This patented but simple effective British invention as proven to be a real second pair of hands, it uses gravity and the weight of the product to create clamp securely. This brand new version with its new body shape the Magic Gripper Pro is stronger and more stable, and with its anti rock square feet makes them easier to control.

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Many More Uses



Optional Extras

The red pads are for working with pre finished surfaces and glass just for that extra peace of mind .

Anti slip pads for working on smooth surfaces creates more grip and helps protect the floor.

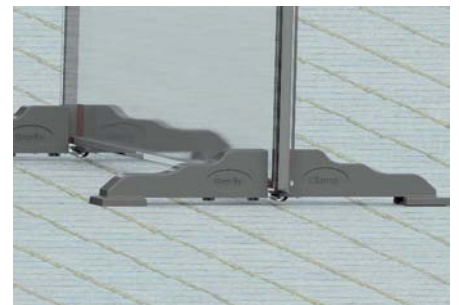


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Optional Extras

Wheels and bars to turn your gripper into the Magic Gripper Pro Bogie set . This enables you to transport doors, sheet material including glass and Solid surfaces over generally smooth surfaces



Narrow bookshelves



Jim Robinson shows you how to make a handy bookshelf to fill an odd space

These bookshelves were made to fill an odd space and, at the same time, were not allowed to project too far to restrict access to a nearby door. However, they are still useful for storing maps and guide books, which are often somewhat narrow. It is of course a simple matter to increase the width of the shelves and sides if space is not a problem.

This unit was made for my daughter, so I used European yellow oak (*Quercus robur*) with a natural finish to match an oak dresser I made earlier. The timber for the sides and shelves was purchased as 27mm superior grade sawn oak, which had two straight sawn edges, so by selecting suitable widths, waste was kept to a minimum. The boards were 2.1m in length so they were just right for the sides. I selected the two flattest boards for the sides because any slight curve could easily be planed away on the shorter lengths, which were required for the shelves. For the back of the unit, I purchased 13mm sawn oak boards. The only material available was partly brown but I thought the brown patches would be a feature and at least would look better than plain MDF, although more preparation work would be needed.

"The Danish oil has brought out the colour in the backing boards"



PHOTOGRAPHS BY JIM ROBINSON

For
Pull-out
Plans
see P40

Construction

1 Begin with the boards for your project – mine looked like this and were 2.1m in length.

2 Next, you need to look to see which of your boards show the most figuring and select appropriate positions so that these will show.

3 The next step is to plane and thickness the two sides to finish at 22mm, then plane the front edge straight and square before trimming to width. Leave an extra 3mm; this will allow for trimming any splintered edge after forming the rebate to take the backboards.

4 Use a portable saw to cut the shelves to length. Take out 19mm-wide 12mm-deep housings for the shelves; these start at the back but finish about 25mm short of the front, which ensures they are not visible from the front of the unit. The edges of the sides then need to be straightened. Use a block equal in width to the distance between the router cutter and router edge to position the guide for the housing.

5 Take out a similar rebate on the reverse side near the top so that when sawn to size, a 9mm-thick 12mm-high rebate is formed to fit in a similar size housing cut in the underside of the top.



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6 You can now take out a housing for one of the shelves. Fit your router with a 19mm diameter straight cutter and guide it using a right-angled jig clamped to the surface.

7 Once the sides with the shelf housing are cut out and complete, they should look like this.

8 Use the same cutter but this time guided by a fence to take out the rear rebate to take the backing. The rebate is taken out initially 16mm in width and then planed to a width of 12mm; this will allow you to remove any splintering in the process. Plane all the shelves to a thickness of 19mm, ensuring they are a reasonable fit in the housings already formed in the uprights.

9 Once the shelf housings have been cut, the sides should look like this.

10 Use a portable circular saw guided by a board clamped to the surface to square off the ends of the side pieces.

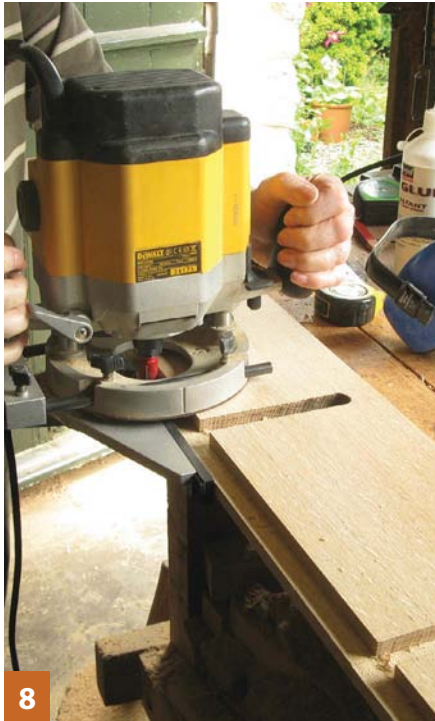
11 Fix a stop to the bandsaw table so all the shelf notches can be cut without marking individually. Before starting to assemble, sand the inside face of both sides and the upper and lower face of each shelf. You then need a dry run to make sure everything fits together. Apply glue to the housings only so that glue is pushed in rather than out. Next, place the shelves in position and then hold in clamps until set. Note that the top two shelves are set back 12mm; this allows for the arched front to be glued in position later.



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12 Cut all the shelves square and to size, remembering to allow an extra 25mm for where the shelf penetrates the housings. The shelves can be sawn and planed to width: the upper two shelves are made 12mm less in width; this allows for the curved arch fitted to their front. To complete the shelves, take a 12mm notch out at the front corners. If you set the fence and a stop on the bandsaw, you will not need to measure each individual shelf. Use a belt sander to sand the inside faces of the uprights and both sides of the shelves before gluing together.

The top

13 I selected a slightly thicker board for the top, which I glued together with a simple butt joint to make up the required width. After planing and thickening, place this board on top of the unit so that the position of the mortise needed for the tenons can be outlined as well as the position needed for the rebate to take the backboards. It is good if you have left the length of the top, as this allows it to be trimmed to size after cutting the mortises.

14 Use a 9mm diameter straight cutter to sink the mortises 12mm. You can use the same cutter to take out the rebate for the backing boards, but this time guided by a fence, which is preferable, taking more than one pass. After cutting the top to size, work a small moulding along the front and sides using a self-guided half-round cutter.

15 Once the top has been glued in position, it needs to be held with clamps until set.

The arched decoration

16 The arched decoration on the upper shelves should be cut to shape with a bandsaw before



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thickening to 12mm. After trimming to length, fix in position with a simple glue joint. Glue the arches under the upper shelves in place and hold in clamps until set.

17 Here you can see a close-up photo of the upper arches held in position.

The plinth

Make a plinth to finish the base. In this case, I made it to line up with notches cut in the sides; this allowed the unit to go above the skirting and finish against the wall above. The front board is fixed to blocks, which in turn are fixed to the inside of the sides near the base.

Wall fixing

18 This unit has a high centre of gravity so I would advise a simple wall fixing at the top; this can simply be achieved by screwing a small block to the top near the rear. Keep the block low – it is not obvious but it is advisable to drill the fixing hole at a downward angle – which will make it easier to use an electric drill without it marking the top of the unit.

The back

19 The easiest way of applying a back is a simple sheet of MDF and there is something to be said for this as not a lot will be visible when the shelf is full of books. However, a planked back has a look of quality and I think it looks better. My back was made from 12mm sawn oak, which had patches that were brown in colour, but I think this added a little interest to the appearance. Most of the wood I had available was long enough to use in one length but shorter pieces can be used and if joined at the rear of a shelf, they will not be obvious. Cut the boards into widths of about 75mm to suit the widths of the boards, then plane and thickness so they fit nicely in the rebate. After making sure the board edges are straight and they fit well together, work a 3mm rebate half the width of the board using a self-guiding rebate cutter. The rebates should be alternated top and bottom so the boards fit together.

20 To complete the boards ready for fixing, use a hand plane held at a slight angle to work a small





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bevel along the edge and then sand smooth. I use a single hole fixing near the centre of the board; this avoids any risk of the board splitting if shrinkage occurs.

21 When I made my shelves, I found that some of the backing boards were too short to complete a full length, so I joined a short length in at the rear of a shelf.

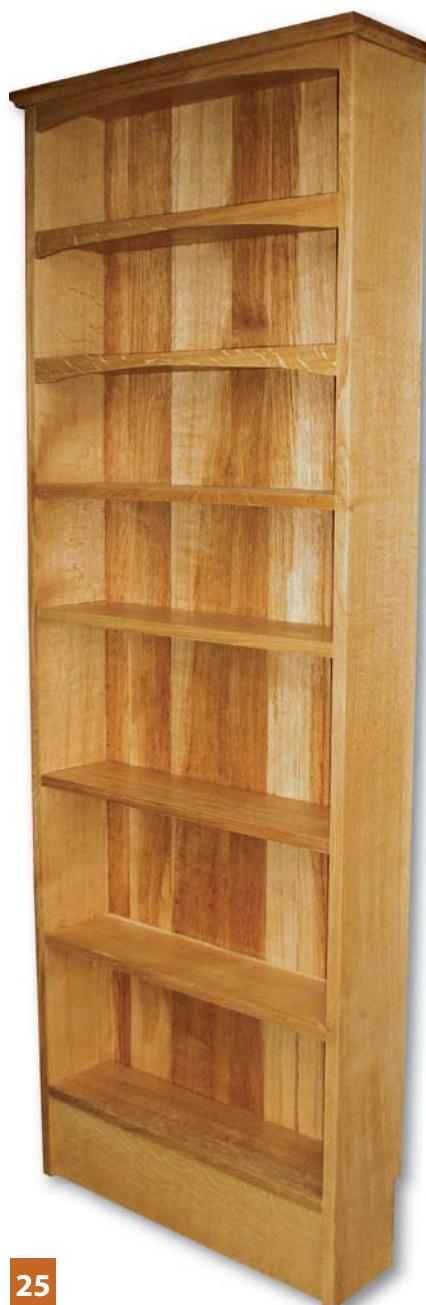
22 Hold the backing boards in place with one screw at their centre. Drill and countersink the boards and apply a little wax to the screw thread to make things easier.

Finishing

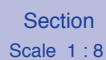
23 To complete the unit, apply a coat of Danish oil to seal the wood. Here is the unit with one coat of Danish oil applied.

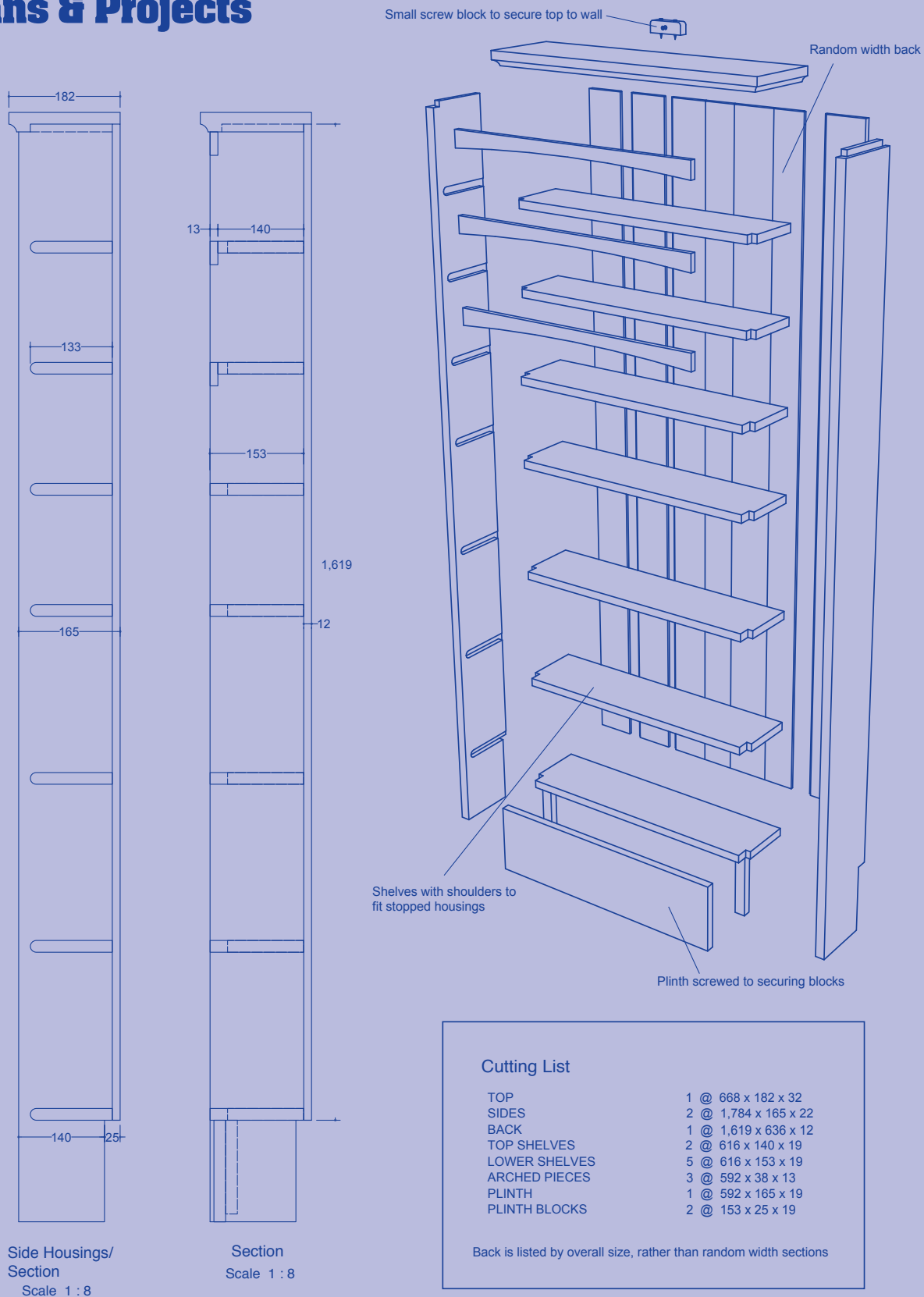
24 Here you can see how the Danish oil has brought out the colour in the backing boards. After allowing sufficient time to harden, apply a coat of clear wax polish with a Scotchbrite pad before buffing to a finish.

25 The completed bookshelves are now ready to be filled with your favourite reads! ■



25





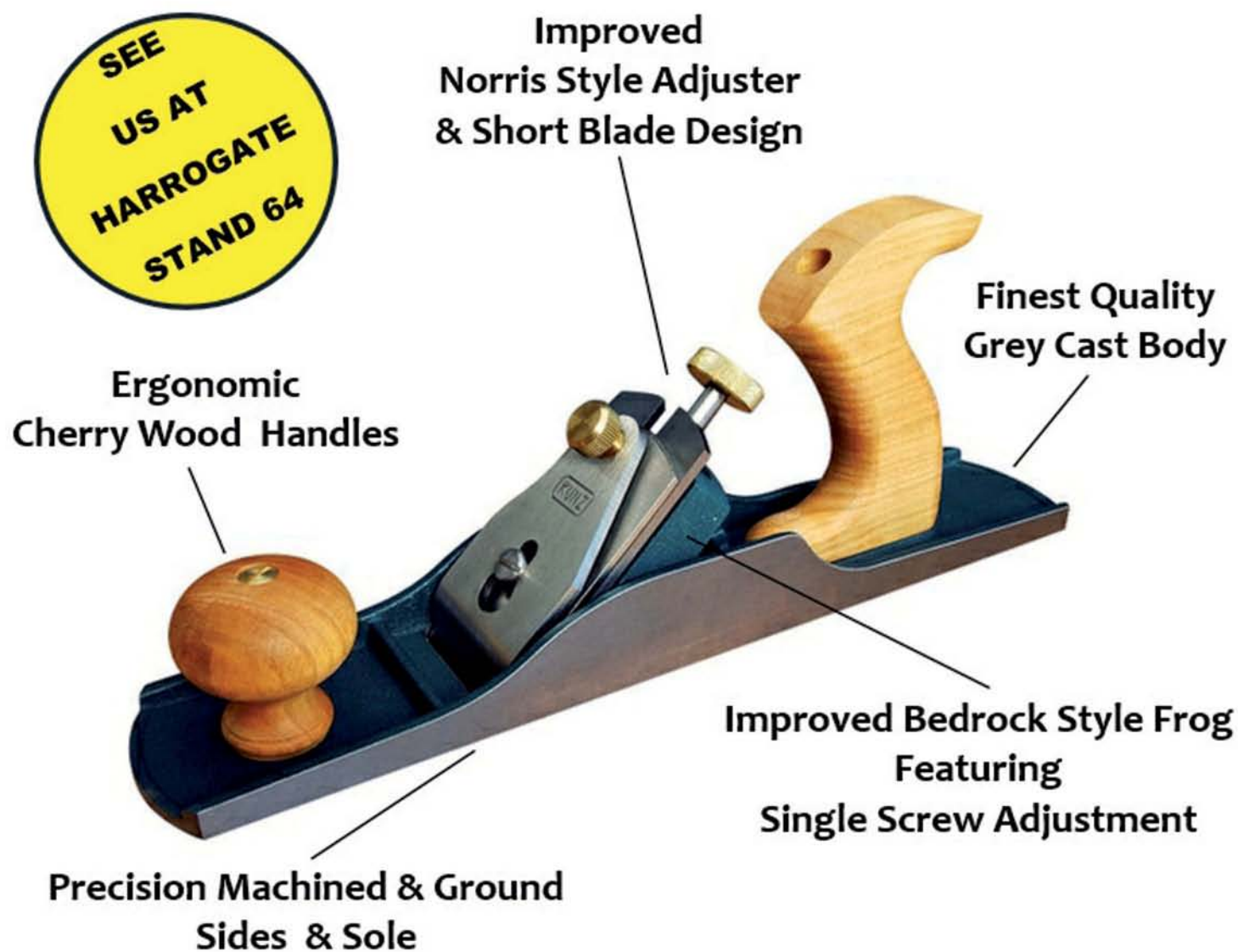
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PLANS

4 YOU

Lidded box

Simon Rodway makes a fun project this month – a lidded box with a secret compartment

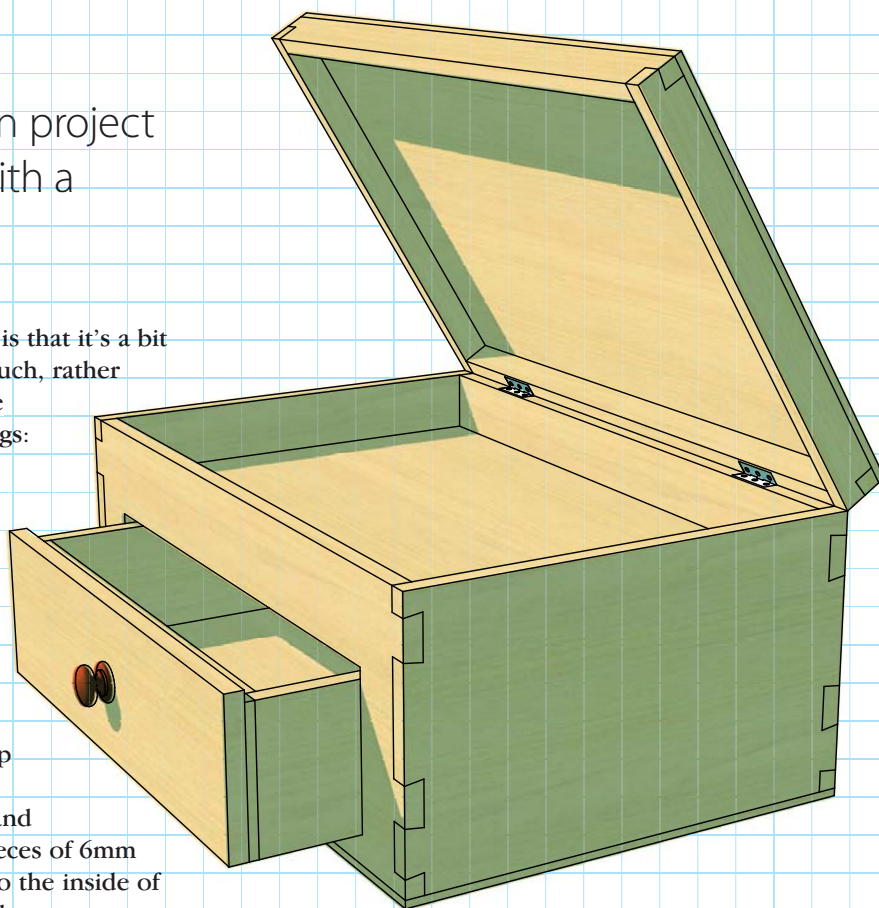
The first thing to say about this project is that it's a bit of fun and should be approached as such, rather than in a serious way. It's one of those boxes that could be used for all sorts of things: keeping important things, or bits and pieces you've got nowhere else to put. I've added a secret compartment, which would also make it great for kids, once they can be trusted with fingers in the lid and drawer.

Construction

I've tried to make the construction as simple as possible, but you will need to get the router out to form the rebates for the top and bottom and grooves for the drawers. If even this sounds too much, then the top and bottom could each be made up from two pieces of 6mm ply or similar, with the smaller piece glued to the inside of the bigger, so it fits inside the carcass of the box that way. The drawer is a bit trickier to get round, but a simple box, butt jointed, glued and pinned, with battens to form basic drawer slips for the bottom, would work almost as well as the more conventional solution I've drawn, with a box formed by rebating the front section to take both sides full width and then grooving the sides for the drawer bottom and back. In both cases, this drawer box has to be screwed to a false front.

The carcass

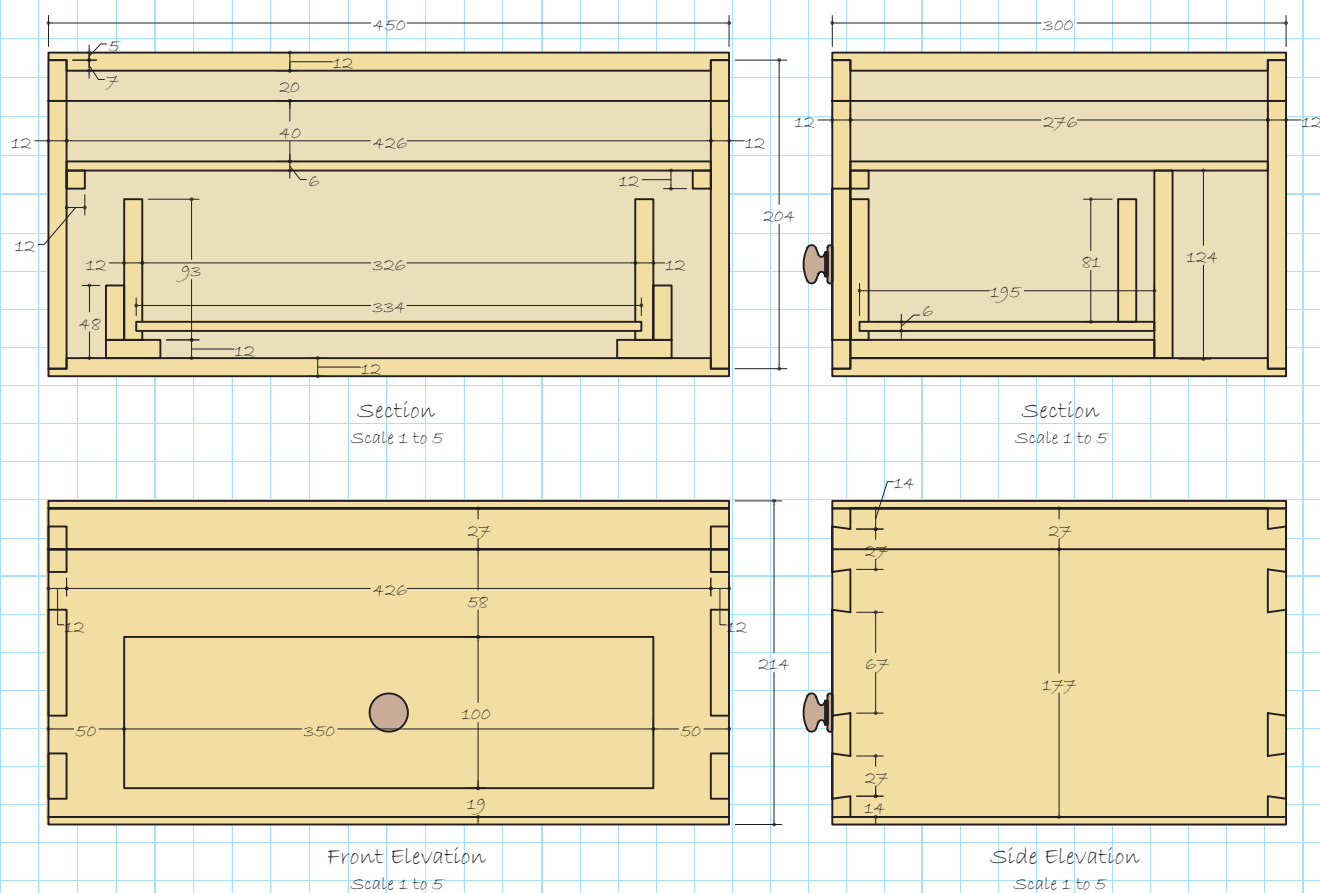
However, I've got a bit ahead of things, as the first task is to construct the carcass. I've used dovetails for decoration rather than strength and simple finger joints would do just as well here. This is one of those boxes where you make the carcass up and then saw the lid section off, so you need to allow for the thickness of the saw kerf, which is probably around 3mm. Add that and maybe a bit more to allow for finishing and smoothing the edges of the top and base where they meet. Before you assemble and glue up the carcass, saw the opening for the drawer front as it will be much easier to do at this stage. Ideally, the section you are removing should also be the drawer front, especially if the grain is left visible, but this is entering the realms of fine woodworking and not quite in the spirit of this box, so I will leave that bit up to you.



Cutting list

Carcass front/back	2 @ 450 × 204 (210) × 12mm
Carcass sides	2 @ 300 × 204 (210) × 12mm
False drawer front	1 @ 350 × 100 × 12mm
Top/bottom	2 @ 450 × 300 × 12mm
Drawer box front	1 @ 350 × 93 × 12mm
Drawer box sides	2 @ 195 × 93 × 12mm
Drawer box back	1 @ 334 × 81 × 12mm
Drawer box bottom	1 @ 334 × 195 × 6mm
Divider	1 @ 426 × 124 × 12mm
Battens	2 @ 189 × 12 × 12mm
Battens	1 @ 426 × 12 × 12mm
False bottom	1 @ 426 × 276 × 6mm

Carcass dimensions are shown before lid and base are separated

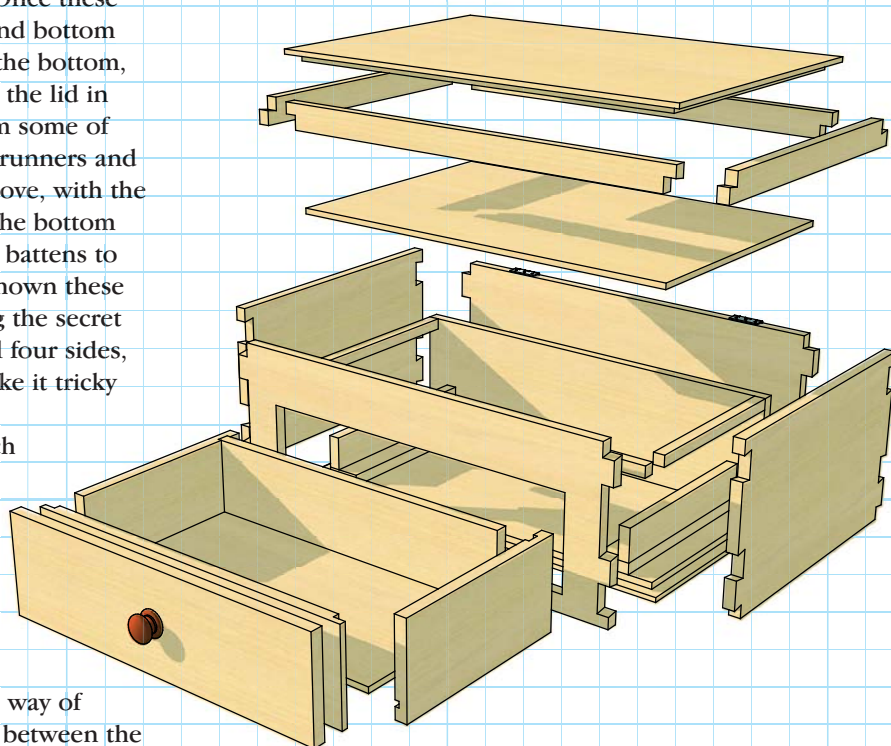


Assembly

The rest of the box is really just an assembly job, once you have constructed the drawer. Try a dry run before gluing the top and bottom into their respective carcass sections, checking that the lid and base still line up and adjust if either section is being pulled out of square. Once these are glued up, mark and cut the rebates top and bottom for the hinges and screw to the top, but not the bottom, as fitting the bits and pieces is easier without the lid in place. Next, form a couple of 'L' sections from some of your 12mm ply; this is to make some simple runners and guides for the drawer. Position these from above, with the drawer in place, just using some glue along the bottom of the runners. Finally, fit the divider and the battens to support the false bottom of the box. I have shown these on three sides finishing at the divider, leaving the secret compartment at the back unobstructed on all four sides, as it's quite small and battens, etc. would make it tricky to access.

The next job is to fit the false bottom, which just sits on the divider and battens. You can use a variety of devices to pull this up when you want to access the secret compartment: a small strip of cloth or a dome-headed screw, for example. Make it unobtrusive or the effect is spoiled. Finally, fix the lid to the base using the hinges you fitted earlier. I haven't shown anything in the way of catches, but you may want to add something between the

lid and base and even a small rotating clasp or catch at the top of the drawer, which will stop it opening when you're carrying your vital documents/treasured toys to a safer place! ■



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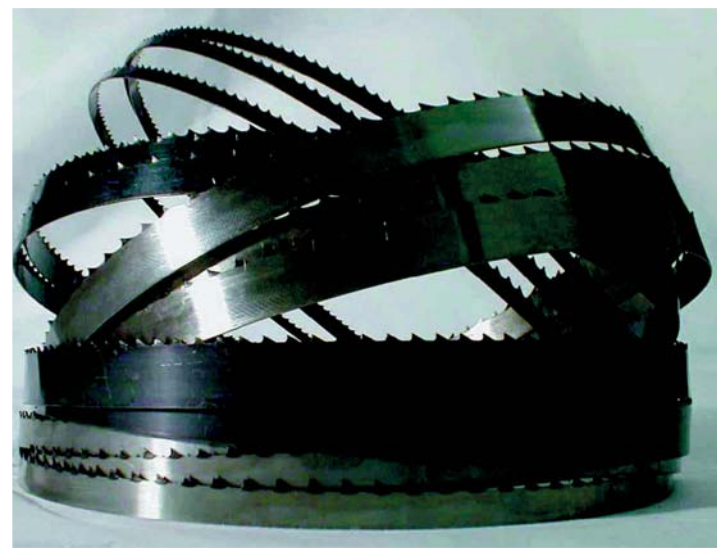
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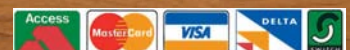
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How to enter

Send your details on a postcard with the title 'IRWIN chisel set & circular saw blade giveaway' to WPP reader giveaway, 86 High Street, Lewes, East Sussex BN7 1XN. The closing date for the competition is 31 Dec, 2014

The competition is open to UK residents only. Only completed entries received by the closing date will be eligible. No entries received after that date will be considered. No cash alternatives will be offered. The judges' decision is final and no correspondence can be entered into. The winner will be expected to be in possession of *Woodworking Plans & Projects* magazine. One entry per household. Employees of GMC Publications, their associated companies and families are not eligible to enter. By entering the competition, winners agree to their names being used in future marketing by GMC Publications, unless you mark your entry otherwise.



Makita outdoor power tools

Craftsman's corner

The Editor takes a closer look at these outdoor power tools from Makita

Makita is well known for their construction tools, including power tools for workshop use, but perhaps less well recognised for their outdoor machines, which are equally well built and powerful. Better than that, Makita have spent a lot of time and effort improving and updating their range in significant ways that benefit the user. Take, for instance, the highly efficient new four-stroke engine used on a number of their machines, which can save a lot of money over the lifetime of the tool and help the environment too.

Increasingly, 18V cordless tools are making their mark in unusual ways, because Makita have opted to fit twin 18V lithium batteries to tools that normally require a big expensive, non-compatible 36V battery. You get both the power and the interchangeability and therefore a reduced cost with battery sharing. The latest breed of twin 18V tools hold their own – power-wise – in their class. Makita is in the process of beefing up their dealer servicing and spares network, so trade users can not only get quick servicing

and parts, but depending on the machine, a set servicing programme rather like a main car dealers, which will ensure the kit stays running and well maintained during the extended warranty period. Below are just a selection from their extensive range, visit the Makita UK website to find out more about the full range.

TWO- AND FOUR-STROKE PETROL RANGE

EY2650H25H pole saw

A class leading four-stroke machine incorporating Makita's MM4 four-stroke technology, like their other machines. It is just short of 4m, at 3.92m, giving a massive advantage for low as well as high level trim back of hedges and branches with its telescopic action. It therefore gives effectively a 5m reach from the ground and it is economic to run.

PRICE: RRP £670.80 (inc VAT)

EM2651LH line trimmer

This 25cc four-stroke machine is easy to start. As with all Makita's four-stroke machines there is reduced running costs, no chance of accidental



From top: The Makia pole saw, line trimmer and engine unit

PHOTOGRAPH COURTESY OF MAKITA UK

PHOTOGRAPHS BY GMC/ANTHONY BAILEY UNLESS OTHERWISE STATED

engine damage caused by the machine being tipped over and no bad cold starts. It can be used with the much appreciated Makita harness, which gives an operator comfort to be able to work all day if necessary.

PRICES: RRP £374.40 (inc VAT)

EX2650LH engine unit

This four-stroke MM4 technology unit teams with any one of five attachments – cultivator, pole hedge trimmer, pole saw, straight line trimmer or bent shaft line trimmer. A great machine for lower level trimming or smaller cultivation work at the snap of a lever for changing tools.

PRICE: RRP £298.80 (inc VAT);
attachments priced from £126-£378 (inc VAT)

PLM4622 petrol lawnmower

Makita claim it is good for lawns up to 1,800m², it comes with a Briggs and



Hand-held blower

Stratton 675EX ready start engine and is self-propelled with a three-speed gearbox. It has a 60 litre grassbox and a steel deck. Makita also make a smaller petrol model and an electric push-along scarifier.

PRICE: RRP £502.80 (inc VAT)

BHX2501 hand-held blower

A four-stroke machine benefitting from Makita's MM4 technology. Lightweight and fuel efficient, with low emissions and easy starting and maintenance.



Petrol lawnmower

It has a 1.08hp output and a maximum airflow of 10.1 m³/min. At 4.4kg it is a comfortable, well balanced machine that doesn't have the tendency, like other blowers, of swinging to the side when switched on thanks to good design.

PRICE: RRP £226.80 (inc VAT)

TWIN 18V LI-ION RANGE

DUB361Z twin 18V blower LXT

This lightweight, low noise blower uses twin 18V lithium batteries and has a run time of between 24 minutes on the high setting, or 73 minutes on the low setting. Like all twin battery tools in the Makita range, it has a battery capacity indicator, so the user knows the state of both batteries and the tool will always work at the lower charge state. With a net weight of 3.1kg and a maximum air volume of 4.4m³/min this machine competes well with petrol blowers but has lower running costs and weight.

PRICE: RRP £139.20 (inc VAT)

DUH551Z Twin 18V hedge trimmer LXT

Hedge trimming with a corded tool can be a considerable nuisance, so the Twin 18V machine is a welcome relief. Being relatively light at 5.1kg with no trailing lead, danger of cable snagging or needing an RCD for protection makes this unit a joy to use. Better still, the front body swivels if needed, so your back hand is out of the hedge line when trimming. It features an electric brake and warning lamp for the battery charge state.

PRICE: RRP £237.60 (inc VAT)



The twin 18V line trimmer in use

DUR362LZ twin 18V line trimmer LXT

Again, the light option for levelling awkward grassed areas. It benefits from having Twin 18V batteries and a 5.6kg weight, meaning a harness isn't needed. With a 300mm cutting diameter and brushless motor with variable speed and overload protection this is a useful workhorse where you don't need a hefty petrol model. It has a slow reverse feature to unclog grass from the trimmer head.

PRICE: RRP £405.60 (inc VAT)



Twin 18V blower



Twin 18V hedge trimmer

DETAILS

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£29.99

IRWIN nine-piece 6X auger bit set

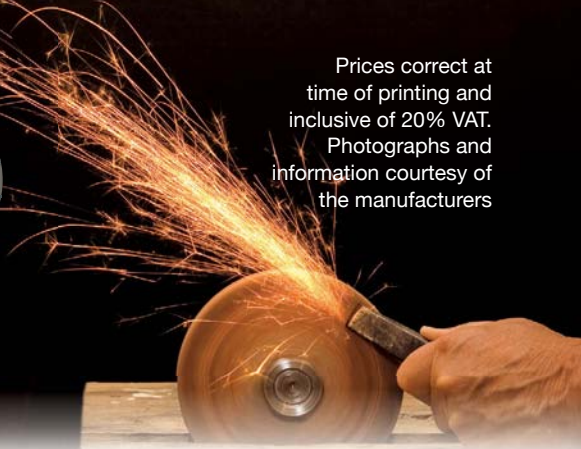
IRWIN 6X auger bits have been a revelation for tradesmen since they were launched a few years ago. They have been developed and engineered from high-quality steel for speedy, efficient drilling. They cut up to six times faster than a standard flat bit and this nine-piece set covers the most commonly used sizes. It is also supplied in a neat storage wallet.



For You



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DETAILS

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PROJECT DECONSTRUCT – *ideas & techniques*

PHOTOGRAPHS BY JEAN GRACE



Mirrored bathroom cabinet

Chris Grace takes us through the stages he encountered when deciding to transform a hole-in-the-wall into a stylish bathroom cabinet

When I moved into my current house, which had been extended, I found there was a recess in the bathroom wall where there was once a window. The original outer skin of the wall had been bricked up and plastered over, but the inner hole had only been partially blocked up, leaving a small recess and shelf. This 'hole' cried out to be finished, so 'management' ordered a bathroom cabinet. On further investigation I found that the inner blocks used to reduce the size of the hole would come away cleanly revealing a bigger recess the size of the original window. Now there was

room to design a more interesting cabinet. Designs were submitted to the relevant authority and naturally, my wife Jean selected the one that included lots of cupboard space and mirrors. That's when the real fun started as I didn't really know how I would hang the doors to disguise the gap between the carcass and the edge of the recess, which would inevitably not be exactly square.

Luckily, work coincided with refitting the bathroom, which apparently needed an expert! So the tiler was instructed to leave a square hole and I was put to work on the cabinet.



The doors needed to fit neatly against the tiles

Making the carcass

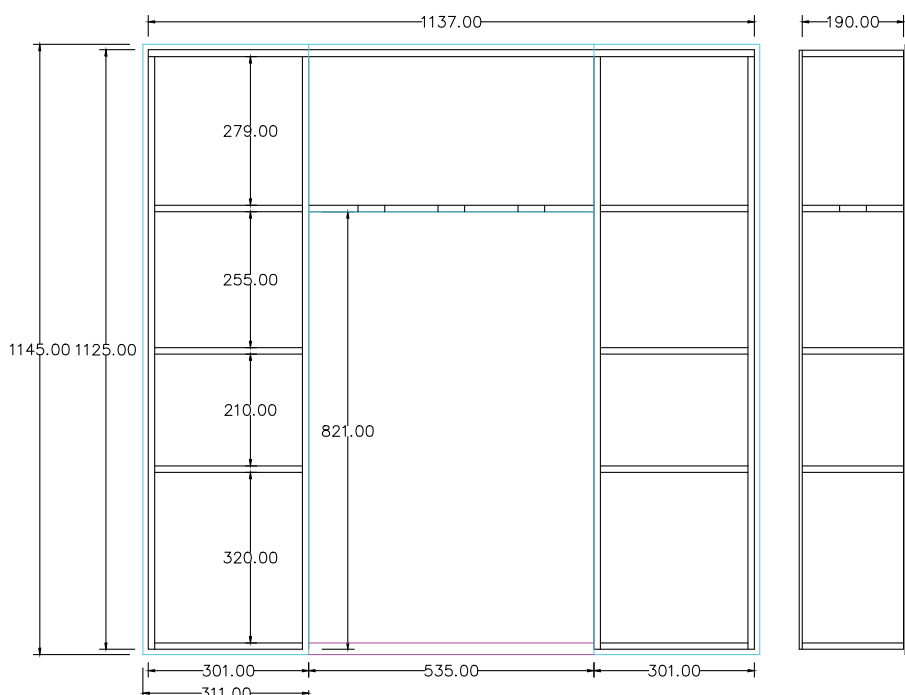
With some moisture-resistant MDF, work started on cutting all of the elements of the carcass, partitions and shelves on a tablesaw. As the outside of the carcass would be hidden in the recess, there was no need for fancy joints, so I simply butted the pieces together, pilot drilling, gluing and screwing. This was nice and easy as I only had to pay attention to the exact size and ensure that everything was kept square. The only element that would be visible is where the shelves meet the inner recess, which would require blind dowels.

The next step was to drill a hole from the recess into the loft through which a power cable could be connected and run down for the lights – another job for a specialist! Now, everything was ready for the installation of the cabinet.

I carefully shimmed it out from the back of the recess, so that it was flush all the way around at the front and then secured it with four screws into the wall behind.

Installing the doors

The doors needed to overlap the edges of the carcass to hide any small gaps between the cabinet and the walls. I did this using some offset



hinges. I calculated the size of the doors, then cut them and painted them. I took mine to my local glass supplier to have the mirrors fitted. When looking to install the doors, you need to be especially careful to select screws that will not go through and touch the glass. A mirror can also be fitted on the central recess. While I was waiting for the mirrors

to be fitted on the doors, I fitted the downlights into the pre-cut holes and wired them up to a standard bathroom pull cord. To do this, I threaded the cord through the panel that supported the lights. I took the precaution of putting a small piece of flexible pipe in the hole to resist chafing the cord, which has worked well!



Here you can see the detail of the corner blocks and hinges



The special lighting compartment



It has fitted nicely in the recess

Choosing hardware

Once the mirrored doors were installed on the cabinet, I decided I needed to find a way to prevent the doors from opening beyond 90°. This could cause either distortion of the hinges, or worse, the breaking of mirrors or tiles, so I used chain stays. I also added magnetic catches to keep the doors closed. There is just enough room behind the doors to slip the tips of your fingers when you want to open the doors, so no handles are required. This keeps up the clean look I was aiming for.

Disguising the windowsill

The final problem now was how to disguise the original windowsill at the bottom. Using an appropriate piece of wood, it was off to the tablesaw to size it correctly and then lots of routing to round over the front and cut a massive rebate underneath; this would hang over the edge of the hole the

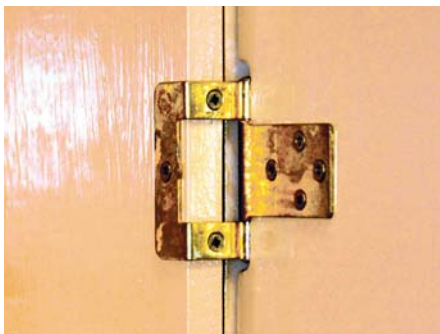


The door chain restraints

same amount as the doors. Now, our cupboard is well-used and houses a variety of essential bathroom products and I'm even allowed one little corner for shaving cream. All these items are hidden away behind what appear to be mirrors mounted on the wall. The downlights above the central mirrored recess add interest and provide additional lighting. ■



The mirror recess complete with lighting pull cord



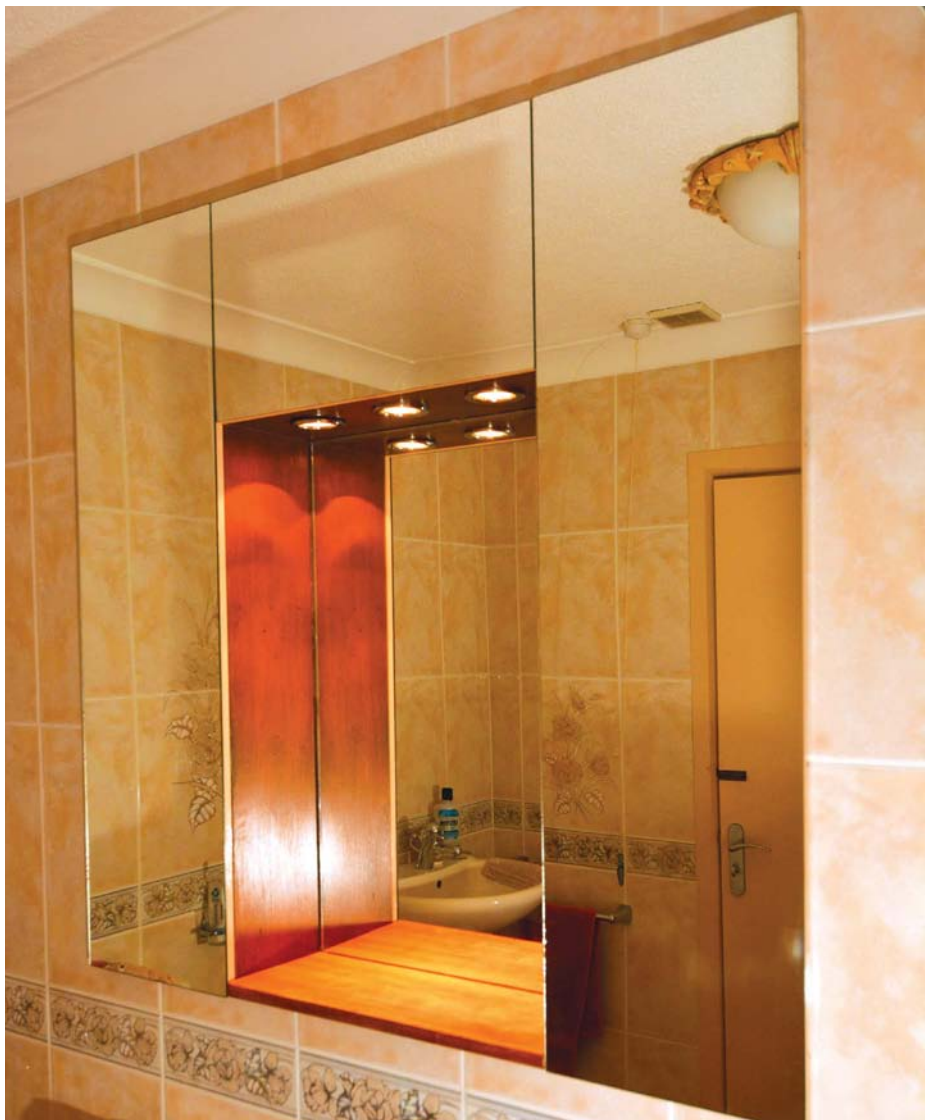
The hinges used were slim and require no recessing



Ready for the sill to cover the exposed tile edges



The lipped sill profile; ready to push back to cover the tile edge



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Joint solutions

Mortise and tenons

Part 2

In the last issue, **the Editor** showed us just how many variants of the mortise and tenon exist. This time he shows us how to make this invaluable joint

Mortise and tenons are the polar opposite of dovetail joints. The former is a construction joint for making framework, often on a big scale, while dovetails are an assembly joint for carcasses, drawer boxes, etc. However, you still need care to make a really neat and fully-functional mortise and tenon. A loose joint doesn't work well or look good. Having run through the gamut of mortise and tenon types previously, I now show you how to make a through mortise and tenon and a fox-wedged version, too. If you can make either of these, then you can also tackle other types as well.

Before you begin, you need to decide how you are going to make the joint. It can be by hand using a mallet, chisels and handsaw, or with a router or a chisel mortiser, if you have access to one.



CONSTRUCTING A STUB MORTISE AND TENON JOINT



1



2



3



4



5

MORTISING BY HAND

It is important to cut the mortise first because it needs to be accurate for the tenon to fit. It also requires more effort and setting up than for tenoning.

1 The component with the tenon can either be the same width or narrower than the mortised component. If the tenon component is wider than the mortise component, it not only looks wrong, but the joint strength won't be right and the tenon shoulders won't have enough area to rest on. Prepare the stock properly, including its squareness.

2 Mark the area of the component to be tenoned on to the other piece. Do this accurately so you know exactly where it is going to fit. Decide how big the mortise needs to be. Common sense suggests the tenon should be slightly wider than the sides of the mortise, because the width of those combined would be greater than tenon width otherwise. However, some woodworkers believe in the third-third-third width principle instead.

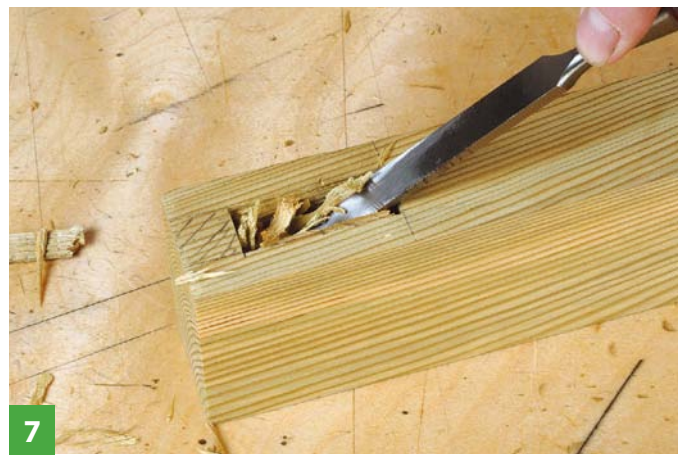
3 Mark across to define the ends of the mortise. Use a mortise gauge to mark the mortise width. You may need to take note of the width of a router cutter or the chisel in a mortising machine. You can increase the width of a mortise by using repeated passes.

4 Because this one is going to be right at the end of a leg joint, we need to cut a haunch. This means the last bit of the mortise will be quite shallow. Mark the joint clearly so you don't forget this difference in depth.

5 Mortises can be quite deep so a wide brad point drill, flatbit or other suitable bit and cordless drill combination can be used to remove the bulk of the material. Put tape around the bit, so you know when you have reached the correct depth. The mortise needs to be slightly deeper than the tenon to allow space for glue to escape into. Keep the drill perpendicular – having a try square next to it can help as a visual guide.



6



7



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10

6 Alternatively, you can choose to chop the mortise out entirely with a mallet and chisel. You need two very sharp chisels: one the width of the mortise and a second wide chisel for paring down the sides of the mortise. Make a series of cuts with the mallet and chisel, making sure each end of the mortise is defined carefully.

7 Do repeat cuts going down gradually to depth and chop the ends square and perpendicular. Clear the chippings as you go, so you are chopping into a fresh layer of wood each time.

8 Now use the wide chisel to pare the long sides of the mortise straight and vertical. If you used a drill to take

out the bulk of the waste, now is the time to clean the ends and sides of the mortise in the same way.

9 If a haunch is needed, i.e. at the end of a component, the safest method is to cut the sides of the haunch with a fine-tooth saw. Chiselling downwards will split the cheeks of the mortise – pads and a clamp are needed to prevent this. Sawing is a safer option as the saw already has the cut mortise opening to slide into.

10 Finally, pare the haunch waste away working from the end. Once that is done, it is a good idea to use the wide chisel to pare the sides of the haunch; this will make sure they are flush with the deeper mortise.

MORTISING BY MACHINE

1 If you are lucky enough to have access to a chisel mortiser, there are two critical things. One is having a really sharp boring bit fitted inside the chisel and two, really good clamping to prevent the workpiece from lifting when you push the head of the machine up after each downward stroke.

2 More likely, you will have a router, which can be used with either two fences and longish fence rods...

3 ... or, make up a guidebush template that sits on the workpiece with a slot for the guidebush to run in...

4 ... or, thirdly, make up a mortise box that the router can slide along.

5 Whatever routing method you decide to use, deep mortises need more than a straight cutter can manage, so you may need to finish the holes with a drill and large boring bit instead.



1



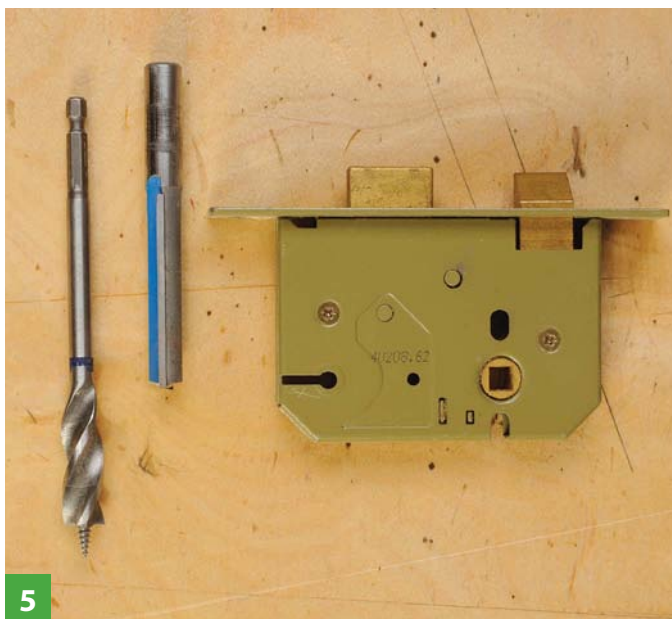
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5

CUTTING TENONS

1 This can be done by hand and is a good way to practise your handsawing skills. This method is similar to the way we have previously cut lap and rebate joints.

2 Alternatively, the bandsaw can be set up with a decent blade and the fence adjusted, with a stop block beyond. Choose a blade that isn't too coarse so the tenon faces are reasonably even.



3 Equally, you can machine tenons on the router table. A large tenoning cutter is the best solution, but a standard straight cutter will do a reasonable job.

4 Loose tenons are very effective and you can make your own tenon materials, which can be cut to fit slots created with the router. Make sure the radii of the tenon matches the mortise radius and don't forget the glue relief slot done with a 'V'-point cutter.



CONSTRUCTING A FOX-WEDGED MORTISE AND TENON JOINT



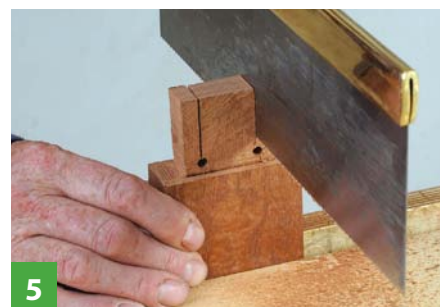
I first used this joint on a 'Glastonbury chair' when I was 19 years old. I wanted a joint that wouldn't separate or be visible and it worked perfectly. Proceed by doing all the making steps for a standard stub mortise and tenon. Remember the tenon needs to be slightly shorter than socket depth to allow for glue squeeze-out and for the wedges to be under pressure for a tight fit.

1 Judging the angle of the enlarged mortise is a matter of practice, but if you use a sliding bevel to draw lines



on one face of the component you can sight down them. It may help to start the slope slightly down from the top of the mortise, so the first part will be straight.

2 Use a chisel, the width of the mortise, to chop downwards at an angle to cut the desired slope. This needs to be done in several goes until you reach the final angle position. Some wood will come away naturally, but cleaning up the dovetail shape requires some artful chisel work to try and get right into the corners.



3 It helps to cut all the tenon shoulders first, ensuring they all line up, using a sharp chisel to create a bevel up to the knife line for the blade to sit in helps.

4 Start by cutting the tenon cheeks almost down to the shoulder line, sawing from both sides in order to follow the mortise gauge lines. Then, turn the workpiece 90° and cut the narrow pieces away to create the shoulder and then go back and finish the wide cheek cuts. That way, for accuracy purposes, you keep the marked lines visible as long as possible.

5 Mark two kerf lines down the face of the tenon and drill a small hole near the base of each one. Then, use a tenon saw to cut down to these holes. They should help relieve the stress on the wood when it is wedged.

6 Saw two slim wedges that mimic the shape created by opening out the base of the mortise. They can be cut with a fine-tooth saw or on the bandsaw. In length they

need the depth of the mortise to the top of the drilled holes, NOT to the tenon shoulder line.

7 Insert the tips of wedges in the kerfs. Whether you use glue is a matter of choice but should not be necessary as the wedges will lock the joint. Insert the tenon in the mortise. Use a mallet to drive the tenon home and the wedges should be forced right into the kerfs. Once the joint has closed, possibly helped with a sash clamp as a last push, the joint should now be locked tight.

8 Cutting a test joint open shows what actually took place. It is worth mentioning that some woods suit this joint better than others, because they are a bit less brittle, oak (*Quercus robur*) and ash (*Fraxinus excelsior*) are certainly suitable. ■

In the next issue we look at the under appreciated, but useful, bridle joint

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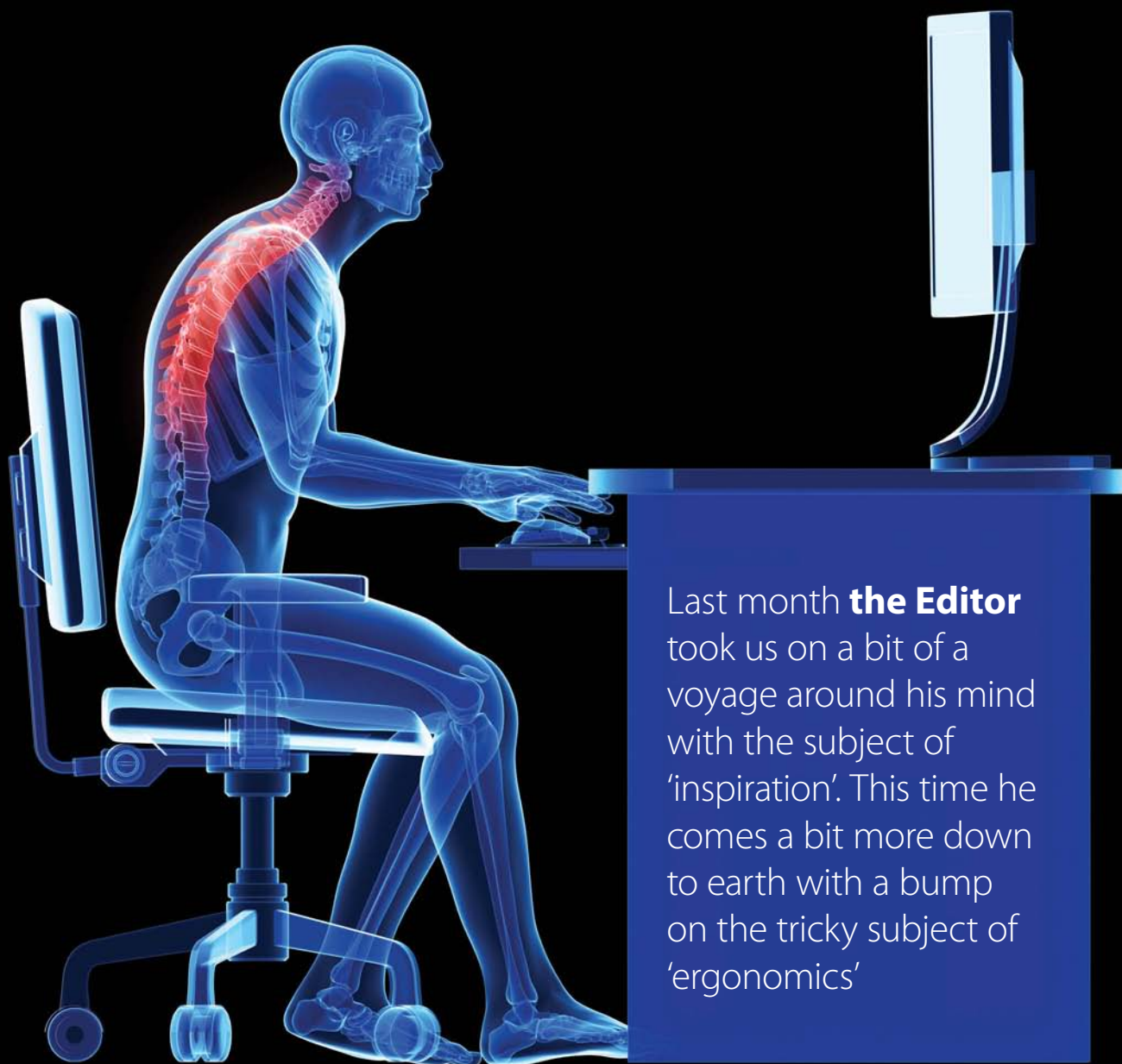
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Design – ergonomics



PHOTOGRAPH COURTESY OF SHUTTERSTOCK

Last month **the Editor** took us on a bit of a voyage around his mind with the subject of 'inspiration'. This time he comes a bit more down to earth with a bump on the tricky subject of 'ergonomics'

Wikipedia definition

Human factors and ergonomics – HF&E – also known as comfort design, functional design and user-friendly systems, is the practice of designing products, systems or processes to take proper account of the interaction between them and the people that use them.

It is a multidisciplinary field incorporating contributions from psychology, engineering, biomechanics, industrial design, physiology and anthropometry. In essence it is the study of designing equipment and devices that fit the human body and its cognitive abilities. The two terms 'human factors' and 'ergonomics' are essentially synonymous. Er, slightly confused?

I think we all know the term ergonomics, but more correctly it should be titled 'human factors'. 'Human factors' could be loosely described as the interaction between human beings and 'things' or objects.

In fact, human factors or the equivalent thereof is nothing new at all. Ever since the dawn of time, attempts have been made to create clothing, tools, furniture and many other necessities that suit particular



Core axe of flint from Ertebolle age BC, found at Southern Sealand

needs and users. We no longer concern ourselves about whether a flint-headed axe is balanced for throwing or if our doublet and hose are comfortable as well as a fashionable fit! Inevitably, it was the wealthy and aristocratic who would benefit first from any new and comfortable contrivances. An upholstered sedan chair with glazed windows would no doubt have been the height of personal luxury, carried around in all weathers by long suffering servants while showing off one's status to damp, mud-caked passersby!

Now we have mobile phones so big, sleek and clever, so exquisitely designed and manufactured we are



PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS

The upholstered sedan chair – once the height of personal luxury

seduced by them; that is until our hands prove unable to keep hold of these shiny 'phablets' and they hit the ground for the first time hurting both the device and denting our pride and wallet, too.

So, when we consider furniture and other wood-based domestic appurtenances, we need to have regard to a number of things: functionality, aesthetics, economy



PHOTOGRAPH BY GMC/ANTHONY BAILEY

An example of a new tablet – not so easy to keep hold of

and comfort are high on the list. For any given project – does it do what is actually required? Does it look good? Is the cost justified? Is it comfortable to use?

You could suggest that if the first three points have been met, then comfort ought to come along with it. Unfortunately, that isn't the case so we need to pay special attention to it.



PHOTOGRAPH COURTESY OF SHUTTERSTOCK

A functional chair, if uncomfortable



PHOTOGRAPH COURTESY OF SHUTTERSTOCK

A chair where comfort was clearly high on the list

Case No.1 – kitchen refit



PHOTOGRAPH BY GMC/ANTHONY BAILEY

The octagonal gatehouse with diamond-shaped kitchen

PHOTOGRAPH BY GMC/ANTHONY BAILEY

'Broken' work surfaces aren't safe

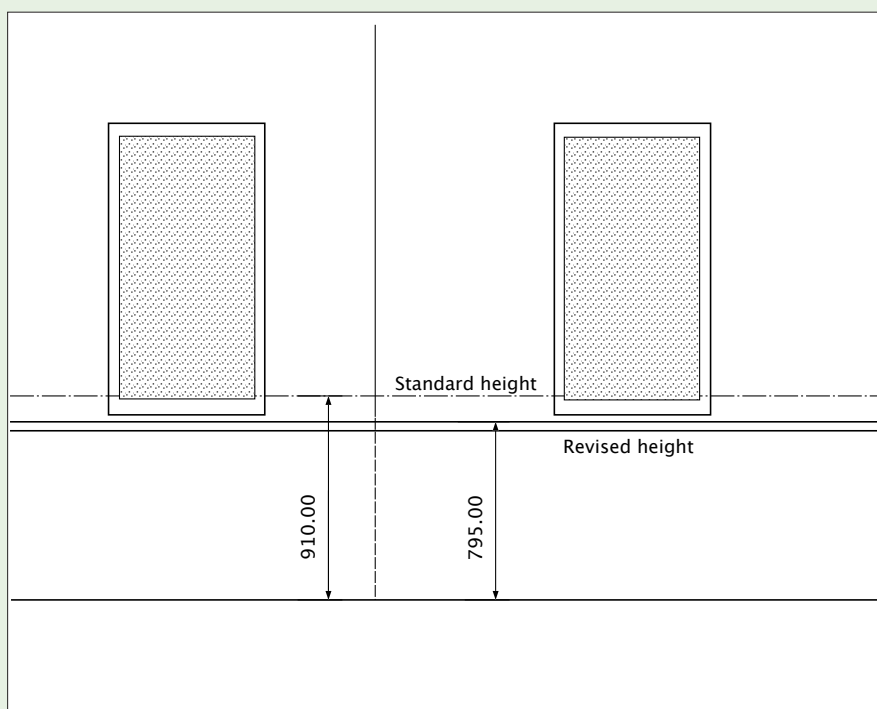
Many years ago when I was a self-employed designer and maker, I was asked by someone I knew to quote for building some kitchen carcasses. It should have been straightforward, but I knew the client and his wife lived in a rather special property. It was an octagonal gatehouse, to what had once been a large estate belonging to the landed gentry. The kitchen was a sort of five-sided diamond – hard to 'picture' I know – because of the way the rooms were all divided up. This chap, Keith, didn't want to spend loads of money; he was very practical but couldn't get his head around making the most of this unusual kitchen shape.

An architect had done a possible drawing, but it had flaws, in particular his handbook of ergonomics said that kitchen worktop height should be 'X'. Unfortunately, the two windows were below this height, so he stated the worktops had to be 'broken' with the lower sections running under the window frames. Anyone who's ever used a kitchen will appreciate how impractical and even a bit dangerous this could be with less space to put plates, pans and chopping boards and the risk of a hot vessel tipping off the 100mm drop at the end of a worktop section. Not smart.

Keith then called in a well-known bespoke kitchen company to come

up with an alternative scheme. They were a) very expensive; b) wanted to block off one end of the diamond shape, thus reducing the kitchen size and spoiling its uniqueness; c) at the other end of the run of cabinets they wanted to fit a 'lazy susan' pots and pans rack, in the awkward angled shape of the cabinet where it met the corner of the room. These rotating racks waste loads of space and break after a year or two, and in my experience, have to be removed. Another fail...

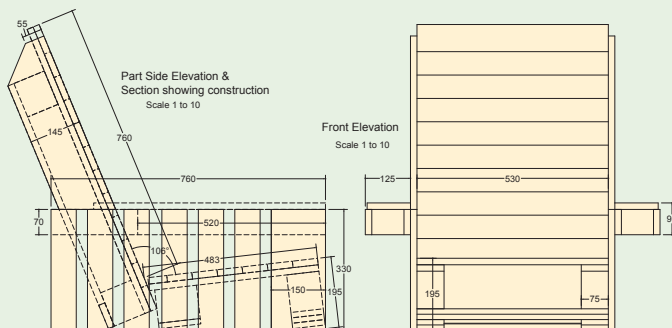
My answer didn't take very long. Keith was a tall chap with – it has to be said – quite long arms. His wife on the other hand was a lot shorter – so lowering the entire worktop by 100mm as a continuous run under the windows from one end of kitchen to the other would solve the problem. No blocked off end and no 'lazy susan', instead the little-used pans were easily tucked away in the cabinet end and my solution cost vastly less than the 'professionals'. Simple!

**Worktop height**

Case No.2 – pallet chairs

If there is one thing we all need apart from a comfortable bed – “oh, my back’s killing me” – it’s a comfortable chair. Back in issue 96, I made a pallet chair out of recycled industrial pallets. Neither the material – rough softwood with nails in it – or the low level design seemed to anyone looking at it to be a winner. Wrong again. Yes of course, if you find getting in and out of low seating difficult, then this design won’t be for you. However, if that isn’t an issue, then the low position and chosen seat angle have the interesting effect of making the sitter relax. Put some cushions in place on the dry unfinished,

but heavily sanded, bare wood and lie back in the chair and the last thing you want to do is get up again! Your legs are spread out comfortably in front without any need for a leg support, thus avoiding a DVT – deep vein thrombosis – and a deliberate back angle that makes you lie back just enough, and of course, wide arms with loads of room to place your own arms or a drink, book or tablet PC. The tactile feel of the unfinished warm dry softwood is extremely pleasant and combined with the other elements of comfort and a glass of wine, you are pretty much guaranteed to nod off to sleep!



The pallet chair project from issue 96



The pallet chair is much more comfortable than it looks

PHOTOGRAPH BY GMC/ANTHONY BAILEY

LESSONS LEARNT?

Ergonomics is less to do with following accepted conventions than fitting the furniture to the task and person using it.

A kitchen is about convenience. If you follow the rulebook – yes, there is one or more – it may not be convenient at all, just playing it safe design-wise can in fact be a disaster – after all kitchens are expensive to fit.

Regarding the pallet armchair, an elderly or disabled person will need a higher chair, possibly even motorised

and adjustable, while a more able person can sit in a different way using a lower seat with different seat and back positions.

APPLYING ERGONOMICS IN PRACTICE

It isn't frankly necessary to read up on ergonomics, although it makes quite interesting reading. Instead, start by looking at common items of furniture around the home and office and try

measuring all the critical components and seeing if you can discover why particular chairs or tables are better or worse to use than others.

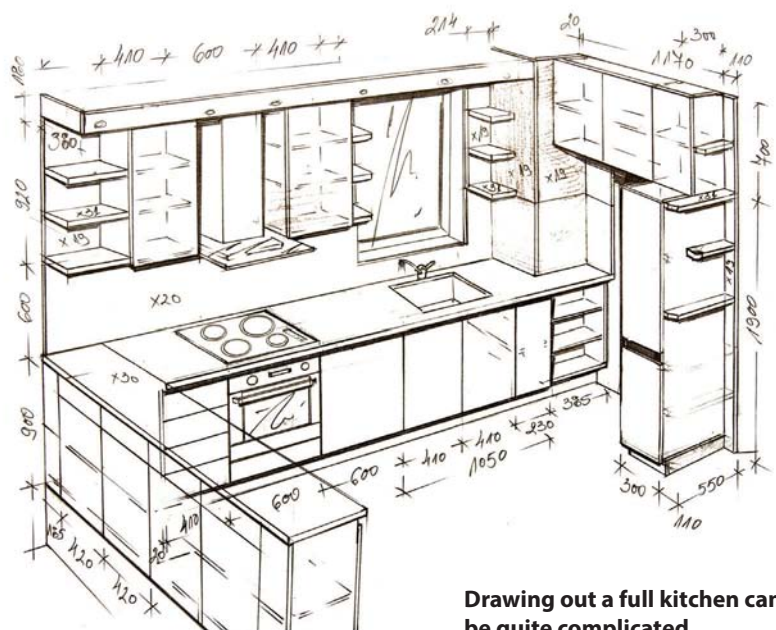
Examples

The good old Windsor chair may not be the height of comfort, but it is not only an efficient piece of design using fairly primitive manufacturing methods, but it also has a sculptured seat to suit the average fundament. The ash (*Fraxinus excelsior*) hoop

PHOTOGRAPH COURTESY OF SHUTTERSTOCK



A higher chair is more suitable for older or disabled users



Drawing out a full kitchen can be quite complicated

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PHOTOGRAPH BY GMC/ANTHONY BAILEY



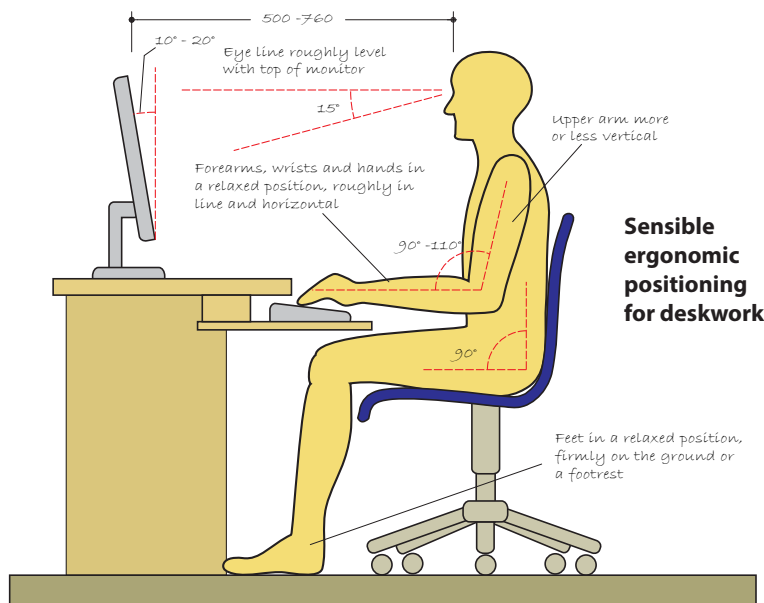
A Windsor chair with arms

back curves down not only for strength, but also taking pressure away from the shoulder blades. The legs splay, ensuring stability and also giving the sitter confidence to sit back firmly in the chair without worrying about it tipping backwards or stressing the leg frame. Believe it or not 'proper' chairs for ordinary folk are a more recent contrivance, early chairs were for the wealthy folk or ceremonial use. At one time medieval chairs used not to have splayed back legs and could easily tip backwards, so not for the drunk or sleepy! Desks are another case in point – standard desk height is always about 710-720mm. That's fine, but is your chair adjustable to suit it? If not, then you may need to either change the chair or alter desk height. You certainly shouldn't be so low your arms press on the desk surface, it should be hands only when using a keyboard, for example, so you may need to be higher up. You may also need a footrest for comfort.

Workbenches

In an ideal world we would need several different workbenches. One to be low for when using power tools, such as sanders, and then a higher one for close operations, such as hand planing and chisel work, so you don't bend your back too much. It is perfectly possible to make stilts for a standard manufactured bench to raise it to better working height, especially if you are taller than average or use a work platform.

So, there really isn't a set standard for anything – you need to use smart thinking to work out the best way to achieve a comfortable result without compromising the design or construction. ■



Computer Ergonomics



An ergonomic platform for sanding operations, using a thick board

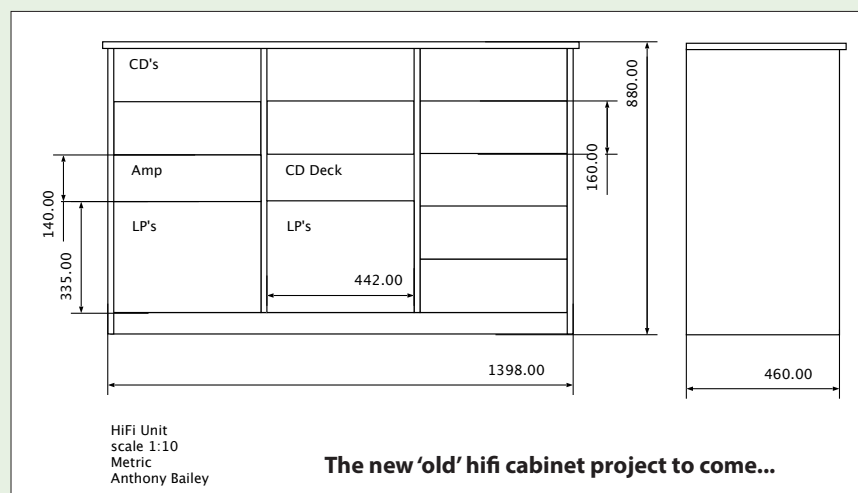


The correct way to plane without leaning over too far

PHOTOGRAPH BY GMC/ANTHONY BAILEY

PHOTOGRAPH BY GMC/ANTHONY BAILEY

In the next issue, we go to the drawing board and start laying out a project that I'm about to make. A 'low tech' unit for vintage hifi for those rich, switched-on sounds you can only get from analogue technology! ■



The new 'old' hifi cabinet project to come...



DIY FIXES

Draining board repair

The Editor got that sinking feeling when he saw how bad a state this draining board was in, but still, a challenge like this is 'just like water off a duck's back' to our good old Ed!

This ash (*Fraxinus excelsior*) draining board was installed about five years ago and over time it has gradually slipped into a terrible state. There are several lessons to be learnt here, I feel. One, regular refinishing in-situ is a necessity using a suitable water-resistant coating and two, although it is nice to see the top edges of the sink china, it is a recipe for allowing water to run under the edges of the drainer and damage the underside and the carcasses beneath. Rather than replace the entire top, which would include making a sink cutout and tapering draining grooves, I thought it was worth one last shot trying to restore it. Only time will tell if I was right...

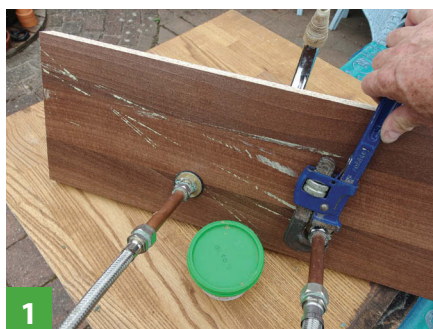
Assessment

1 The first thing to do was undo and remove the wooden drainer, after shutting off the inline valves and removing the taps. The next task was to make up a small board as a temporary surface to fit the taps on, so the sink would be useable during repairs, which could take some time.

2 All mastic and silicone was then scraped and chiselled off the wood so it was as clean and free of excrescences as possible.



PHOTOGRAPHS BY GMC/ANTHONY BAILEY



1



2



3 The area around the taps was in a poor state and combined with the rot under the right-hand drainer, things weren't looking at all good. However, never say 'never'.

Clean up

4 I decided to deal with the major task and sand the top completely with 80 grit Abranet, followed by 180 grit. I found my very old Hitachi random orbital sander was mean enough to do the job of sanding away the old varnish very efficiently.

5 The next job was to rather precariously balance my Trend T5 on the edge in front of the tap

mounts, fitted with a 'grounding' cutter and then clean up the surfaces. The cross-grain machining runs were completed using a T-square for guidance. The burns would be cleaned up with abrasives.

6 Rather than remachining the draining grooves, I decided to dry-grind a radius on a bent L-bracket and use a burnisher to raise a burr on the edges. I used this to scrape back to bare wood, removing as much discolouration as possible.

7 Next, a good hand sanding using 150 grit to smooth away the scraping marks. I discovered that the

surfaces were a bit porous near the edge, so I was relying on varnish to fill the grain properly.

8 Before tackling the rotten underside, I wanted to get a protective first coat of varnish in place. I decided to use Le Tonkinois Vernis No.1 as this is an extremely tough, hard wearing low VOC – Volatile Organic Compound – varnish used by the French Navy for their training yachts.

9 Although not in perfect condition, the area around the tap mount is now sealed and has 'character' shall we say...



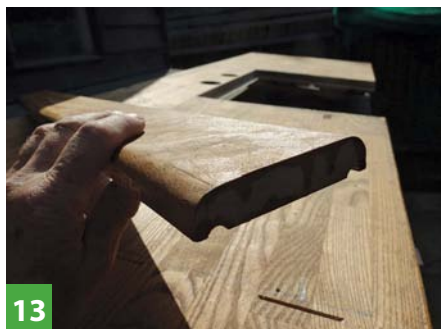
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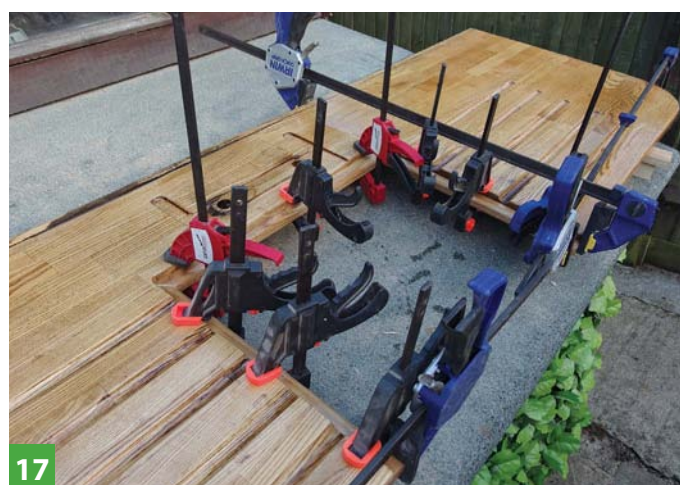
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15



16



17

10 With the draining board turned over and resting on battens, it was time to machine away the rot and mess around the sink opening. After a lot of head scratching I reached for my under-used 'beast' – a Flex Porter Cable biscuit jointer, that can saw quite deeply when required.

11 Having done the horizontal cuts, the jointer was reset to do the vertical runs, effectively cutting a rebate. It couldn't reach the corners, but using this method allowed removal of the bulk of the waste and gave a precise line to machine to with a router.

12 Using a slab of thick MDF as a fence and my big ELU machine with a straight cutter, I could set the cutter against the already sawn surfaces and get the accurate fence alignment I required. Now I could

machine right into the corners as well as removing other waste routing freehand, so long as the base was straddling the corner safely.

13 This silhouette shows the profile of a new moulding that would be cut in half and fitted in the newly created rebate and this time, overhang the sink edge. Note: the drip groove to stop water running back under the draining board.

14 After some repeated cutting and fitting with the rear section done first, the overhangs are clamped in position to test the fit. They have already been sanded and sealed with a coat of Vernis No.1.

15 The whole sink top – minus the new sink overhangs – was left to harden before sanding the varnish with self-lubricating finishing

paper. This was done thoroughly to get as smooth a surface as possible.

Finishing

16 When I'm working on a project using oil-based finishes, I put the brushes in clean water to stop them hardening. Putting them in any solvent means the brushes keep dripping solvent if you aren't careful, whereas with water, I just prepare the brush by wiping it on the fence outside my workshop to get rid of any water.

17 The sink overhangs were glued in position using PU glue. This glue will bond most surfaces and it cures with moisture so it is quite at home around a sink. Nearly ready for installation time. Once fixed back in position, a third coat of Le Tonkinois varnish and fitting a wooden upstand would complete the job! ■

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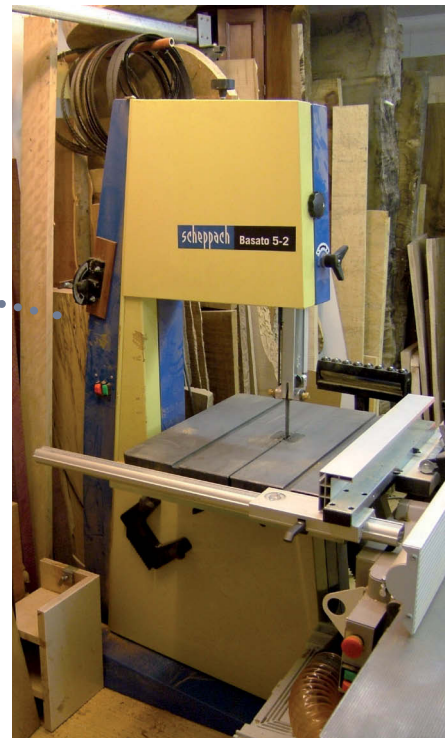
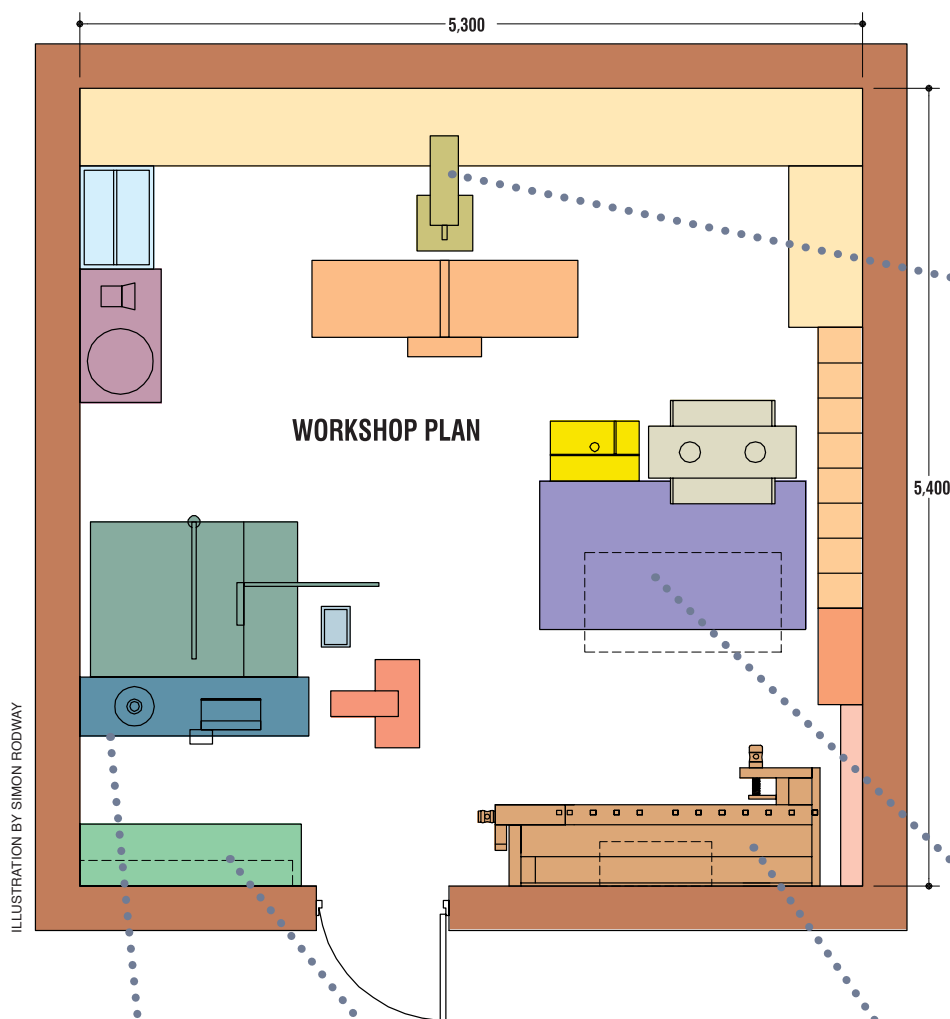
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A look at...

David Barron's workshop

Furniture maker **David Barron's** workshop is a double garage. The family cars have to make do with the drive



Scheppach Basato 5-2 bandsaw couples power with precision



Assembly bench



Natural light from a window is useful when at the workbench



Felder tablesaw



The disc and bobbin sanders are handily placed together

PHOTOGRAPHS BY DAVID BARRON

hop

David outside his palatial double garage workshop. Since this article was written, David has expanded his workshop even more!



As is the case with many woodworkers, my workshop was once my garage. When I moved house about five years ago, I thought I was in heaven with a double garage all to myself. But as you can see, the old adage of never having enough room soon proved true. Having relocated the cars permanently to the drive, I was determined to make my workshop as pleasant a place to be as possible.

WORKSHOP EQUIPMENT

Workbench

The heart of my shop is the workbench. Mine is a traditional Swedish bench with a tail vice and an L-shaped front vice. I have worked on a number of different benches and for me this style is by far the best. It is very popular in Europe and the USA but is surprisingly not available from any UK suppliers. I bought mine from Lief Karlsson in Sweden at a very reasonable all-in cost of about £1,000.

Assembly bench

This is used in tandem with the workbench for assembly and laying out parts. Mine measures 1,800 × 1,000mm and is much lower at 790mm high.

Tablesaw

I recently traded in my trusty Scheppach 2500 for a Felder 500, which is a joy to use. Although Felder outperforms the Scheppach – as it should for £3,000! – it cannot match

its glass-smooth finish when cross cutting, which is a shame.

Planer/thicknesser

Another recent purchase is my Ixes 405mm planer/thicknesser, with a three-knife block and disposable knives. Almost all the wood I buy is rough sawn and wider than the 305mm of my previous machine, so this is already proving invaluable. The finish is superb and I'm still on the original blades.

Bandsaw

My main bandsaw is a Scheppach 5-2, which is powerful and accurate. I can cut 3mm veneers in hardwood to its maximum depth of 300mm, although patience is required! This is a good value and reliable bandsaw. I have also recently squeezed in an old Startrite Bandit, which is a lovely little saw with wonderful blade guides and lots of cast iron. It is better than the Scheppach for curved cuts with thin blades.

Thickness sander

The Axminster Senior sander has proved to be very useful for cleaning up bandsawn veneers and flattening panels. It has a good 610mm capacity and is surprisingly robust for a machine costing less than £1,000.

Dust extractor

After buying the 405mm planer/thicknesser it became immediately clear my existing machine would need

to be upgraded. The Jet extractor copes admirably, with enormous suction, and the standard fine filter makes it ideal for the tablesaw and thickness sander as well. At around £350 this is very good value indeed. I also have a Jet background dust extractor, which is suspended from the ceiling.

Router table

My Veritas router table is easy to use and accurate, if a little small. The Triton router makes bit changing very easy and is suited to inverted use.

Storage security

I have about 4.2m³ of timber in my workshop and by far the easiest and most efficient way to store this is vertically. I have a small parts bin, which is regularly 'thinned' with burrs, and smaller boards on wall shelves or under the tablesaw. When I buy rough boards I always trim off the obvious waste so that they take up the minimum amount of space. Hand tools are wall mounted above the main bench and power tools are stored underneath. Apart from the extractor I haven't yet hung anything from the ceiling, but that time can't be far away! ■

About the maker

David Barron is based near Southampton. His work can be seen online at www.davidbarronfurniture.co.uk

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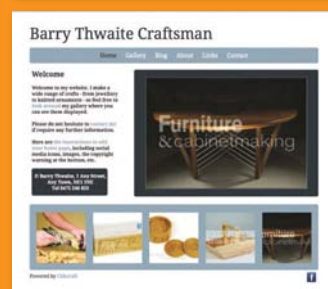
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