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WELCOME

Are there limits to human creativity? Writer Maya Angelou said you can't use it up – 'the more you use, the more you have'. But creative thinking has its challenges too. In a world that is measured in hard cash, it is not uniformly productive. It's also not always reliable – inspiration ebbs and flows, and facing a creative block can feel like working a tough surface with a blunt blade.

But when it comes to furniture and cabinetmaking, the opportunities for creativity are endless. What can't you make with wood? You can turn it into a fabric and make it into wall panels, join it into neat dovetails in a decorative box or take it in its raw state and cast it into tables or stools. You can fashion massive slabs into useful items for the home or glue tiny pieces together to create unusual shapes in works of art.

In the new-look *Furniture & Cabinetmaking* you will meet designers and makers from all over the world who have taken innovative approaches to the traditional craft of making wooden furniture and décor.

Take San Diego-based artist Nuge. He shapes wood into the ripples and folds of scrunched-up fabric, and has built up a massive following for this novel and intriguing approach. Or Israeli design duo Tesler + Mendelovitch, who make fabric from wood, which can then be turned into wall panels, shelves and even bags.

Furniture doesn't grow on trees – or does it? Learn all about the Derbyshire business that is literally growing chairs out of the soil. If sustainability's your thing, you can also find out about the future of vegan furniture and the Canadian carpentry team who have crafted a business out of recycled skateboards.

Alongside this inspiring line-up, we've got step-by-step guides to creating a live-edge table, a chest of drawers, a moveable lamp and much, much more.

Take a leaf out of our book and you'll find there need be no barrier to your imagination.

'Wood is universally beautiful to man.
It is the most humanly intimate of all materials.'

FRANK LLOYD WRIGHT

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COVER PHOTOGRAPH: Getty/Hero Images

Woodworking is an inherently dangerous pursuit. Readers should not attempt the procedures described herein without seeking training and information on the safe use of tools and machines, and all readers should observe current safety legislation.

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FURNITURE & CABINETMAKING

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CRAFT ME A RIVER

THE TREND FOR LIVE-EDGE, RIVER OR SLAB TABLES MADE FROM SINGLE CUTS OF WOOD PAIRED WITH RESIN FOR A NATURAL, STRAIGHT-FROM-THE-FOREST LOOK IS RESONATING AROUND THE FURNITURE WORLD. **FRANCESCO CREMONINI** SHOWS HOW YOU MAKE THEM


1

It's not a new idea to take a rough slab of wood and simply add legs to make it into a table – but add in resin and you have a hot and increasingly commercial trend. Resin allows you to use wood that might otherwise have been scrapped or used in smaller pieces, and transforms what would once have been defects into intriguing and attractive details. Transparent and coloured resins also work with the wood to make large surfaces look less static.

Use keywords like 'natural table resin edges' or 'one-slab dining' to search the web and you'll come up with a whole array of tables ranging from rustic hand-crafted one-offs to mass-market versions and elegant pieces by contemporary architects and designers. These sturdy tables have a very fragile aesthetic balance and there is a danger that they can end up looking primitive or even kitsch, so beware – it just takes a wrong base, an inappropriate finish or a misguided use of resin and the whole effect can be spoiled.

Apart from the usual difficulties involved in designing a functional object with a consistent appearance that fits in with current furniture trends, river tables throw up a whole range of other practical challenges for the maker – starting with choosing the wood.

CHOOSING YOUR SLAB

Selecting the right wood is important for any project, but the appearance is absolutely crucial when it comes to live-edge tables. In other projects you can pick the wood and then change its shape, size and colour – but with a slab table you are much more limited because you want to retain its natural look as much as possible. Instead of changing the wood to fit your project, try to work backwards and adapt your design to the slab you choose. Take careful note of the dimensions, curvature, twisting and thickness. And look out for nuts, cracks and slots – these are normally seen as defects in wood, but in this project will add to the character of the table and enhance its natural look. Choosing a log with a crack in the middle allows you to widen the finished table and create a resin 'river' at its centre. At the same time remember to balance the aesthetics of the project with the need to end up with a usable table.

THE PROJECT

1. Before you start

Slabs like the one used in this project weigh well over 100kg and will need three or four people to move them – so trim them to size as soon as you can. Use a jigsaw with a long blade to make a rough cut several centimetres longer than the final length you want. This will slice off the intact upper part of the wood from the fractured lower part, allowing it to split.

SAFETY

During the course of this article there are processes that create dust and involve machine use, you therefore need correct RPE (Respiratory Protection Equipment) and PPE (Personal Protection Equipment) – a suitably rated dustmask, eye protection and gloved hand protection, ear defenders or earplugs may also be required.


2a


2b


3

FLAW OR FLAIR?

In many tree species, natural decay of the pith – the inner core of the log – can create cavities all along the length of the trunk. A log from this type of tree – like the Lebanon cedar pictured here – or one that has split in half is perfect for this type of project, not just because it is easier to work with two smaller pieces than one huge slab, but also because you can adjust the width of the table by making the gap between the two halves bigger or smaller, as desired. The natural appearance of the gap means the resin – even coloured resin – won't look odd in the final composition.

2. Preparing the wood

For the next stage you will need a drill, steel brushes, chisels and levers to remove bark, any rotten pieces and anything that crumbles easily from the slab. This work will create lots of dust and debris, so it is best done outdoors. Remove all rotten and crumbly material from the slab. Mount a steel brush with long bristles on to a drill to work quickly even inside the cavities, but remove bark by hand using levers and chisels.

3. Smooth operator

As the aim in this project is to create a contemporary table, the first thing to do is to get rid of any lumps, bumps, twists or irregularities which would create a rustic, uneven appearance in the finished piece, and you are likely to have to do this by hand. In our project we found that one end was 3cm higher than the other – far too much to level out by hand. We inserted a wedged beading strip into the slab to straighten it. The downside was that this created a definite underside to the slab, so we could no longer choose which way up we wanted it.

Be very careful not to go too far at this point: if you level out the surface too much and take some of the thickness out of the plank, you will have to match this on the other side of the slab. You're not looking for perfection here – the final finishing will take place after the resin is cast, and your best tools are a hand-plane, an electric plane or a belt sander.

4. Check your work

Use a straight piece of wood to check if the surface is flat. With your eyes at the level of the work, you will be able to see whether there are any gaps or irregularities. Once you have finished the first side of the slab, turn it over and work the other side. Make sure you check the thickness so that the table ends up level. If you are working with a split slab, you will then need to repeat the process with the other section of wood. Use the finished piece as a guide to make sure you get a level surface.

5. The flipside

The flipside needs to match the first side exactly so check the thickness all along the edge using a compass thickness gauge. Use the finished slab as a guide to

preparing the second side. By sliding a straight piece of wood across the surface you will be able to see how much needs to be planed off.

6. Seal the deal

Before joining the two pieces of wood, brush them with a few coats of resin to seal the surfaces that will be cast. This is to prevent microscopic bubbles trapped inside the porous wood from flowing into the resin and causing flaws. It can be done on a single slab or, as in this case, after squaring the board.

7. Square the edges

At this point, cut the edges of the slabs straight to make it easier to put together a watertight casting frame for the resin. You don't need to cut the table to its final size yet. You will need power tools: a circular saw or a router for thicker slabs. Square big slabs with a portable circular saw and a guide rail.

8. Clear the smaller pieces

Use a chisel to remove big chunks of wood along the grain quickly and easily.

9. Joining the slabs

Next we joined our two slabs by screwing a pair of small cross-beams to the underside of the table, at the points where the table frame will be screwed at the end. This gave us the exact width of the gap where the resin was to be cast and the width of the table. We chose the tabletop's central axis – a somewhat random decision given how uneven the edges were – and placed the guide rail of the saw at a 90° angle to it. Having completed our partial cut at the ends, we removed the offcuts and turned the tabletop upside down to trim off the remaining few centimetres using a router. Use the cut made by the circular saw as a guide to make this section level and make sure you stop before you reach the uneven edges between the two pieces. Once the tabletop has been turned upside down you can complete the detailed cut using a router. We finished off the last few centimetres using a small hand-plane.


4


5a


5b


5c


6

7


8


9a


9b


9c


10a


10b


11a


11b

10. Get ready for resin

While the tabletop is still upside down you can assemble the casting box, which has to be treated with release wax and be leakproof. A number of different materials can be used for the casting box, as long as they are treated with a release agent, but in our case we used acrylic glass sheets (usually polycarbonate or polypropylene) 4mm thick to make the bottom and the side walls for the short edges. These can be screwed to the wood if the surfaces are even and the holes won't be visible once the job is complete, and otherwise can be glued on. We chose the second option and used a mastic suitable for bonding acrylic glass to wood. It is important to use enough adhesive and form thick beads so that even small hollows in the surface are covered. Use thick beads of mastic to seal vertical panels to the ends of the casting box. Once you have assembled the casting box, leave time for the mastic to harden and move on to preparing the resin.

11. Mix it up

Resin casting must be done in layers of no more than 15-20mm, which means the volume needed for each layer has to be calculated by multiplying the length and width of the table by the required depth of the resin. As many of the cavities in this project are irregular, much of this will necessarily be approximate, and it

USING EPOXY RESIN

Epoxy resin is the most commonly used resin for this type of project. It is self-levelling, completely clear, can be coloured and has UV filters that help it resist yellowing. Epoxy needs to be mixed with a hardener to a specific ratio depending on the product and its planned use. It is critical to prepare the compound correctly and measure quantities carefully, otherwise the mixture could harden before you are ready, so always check manufacturers' instructions. Room temperature affects the density of the resin and the time for the chemical reaction to take place. If you are working in a cold room you can heat the resin or its components to make them more fluid, but if the temperature drops below around 15ºC the reaction may be delayed and the epoxy may not cure, or harden, at all. The chemical reaction produces heat, and this in turn accelerates it – so the thicker the resin, the quicker it will cure. If the resin gets too hot it may deform the casting box and leave marks on the surfaces. At the same room temperature, a thin layer of resin will harden much more slowly than a thick one. Epoxy resin is odourless, but you must still take proper precautions to avoid contact with the skin and inhalation of fumes. Always follow manufacturers' instructions carefully.

is better to underestimate rather than overestimate the amount of resin you pour in each layer. Once you have mixed the resin, you may add colour pigments if desired. These should be dissolved in a small amount of resin before it is mixed with hardener and then used to colour the rest of the mixture. Do all your colouring in one batch before you begin so that you can be sure the finished colour will be consistent across the table. When you add the coloured, unmixed resin to the rest of the mixture it will need time for the dye to infuse before it can be cast.

12. Pouring the resin

You're now ready to pour the first layer. The curing time for epoxy resin will vary from product to product, so always refer to manufacturers' instructions before pouring the next portion in order to avoid visible layers in the finished project. Don't worry if you see a few little air bubbles even though you've sealed the edges of the wood – this is normal, and if necessary you can use a blowtorch to heat the resin and ease the passage of the air to the surface.

13. Filling the gap

The top layer of resin reaches the surface of the wood and can overflow. Leave the last layer of resin to harden for at least 72 hours at a temperature of at least 25°C. The casting box can be removed around 24 hours after the last layer is cast.

14. Starting the finish

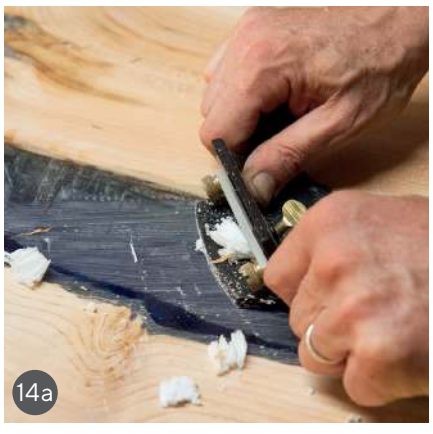
Once the resin has cured you can detach the casting box from the slab and begin finishing the table. We turned the table upside down and began working the underside with a hand-plane, but found that the tool did not work well on resin. Instead, try using a cabinet scraper for the resin. Unfortunately the scrapings, although they may look it, are not biodegradable. Sanders can also be used to complete the levelling, but either way you will need to stop often to sharpen blades or replace sandpaper. Continue until you have a smooth, even surface across both resin and wood.


12a


12b


13a


13b


14a


14b


15a


15b


15c


16a


16b


17a


17b


17c


17d


17e


18

15. Even smoother

Now it's time to get a really smooth finish. Start with medium to coarse-grit sandpaper (P100 or P120) and then gradually work up to the highest grit, P600, always working across the whole surface of the table. A sharp spokeshave is the best tool for rounding off edges, although a file or sandpaper can be used. If you are sanding resin and wood together you will need to change the paper more often as it can get clogged up. Sanding so finely will give an even, shiny finish that will make the natural wood stand out against the brightness of the resin.

16. Protect the wood

Before you start, give the wood a coat of oil to protect it from staining. Use a cloth to apply an undiluted coat and leave for 10 minutes, then remove any excess and leave the slab to dry for a few hours.

17. Polish the resin

Once you have finished sanding the wood, use polishing paste to finish the resin. Apply medium-fine polishing paste to the resin with cotton wool, moving up gradually from P800 grit to P2000 or P3000, or use a polisher small enough not to stray on to the wood. Polishing by hand will take a lot of patience: alternate circular, figure-of-eight and straight movements until all marks have been worked off. Stop every now and again to remove any excess polishing paste from the wood, either using a cloth and some solvent or waiting for it to dry, when it can be brushed away. At this point the resin should look clear.

18. Finishing touches

Finally add some more coats of oil to the wood to make the surface waterproof and stain-resistant. To adequately protect it you will need at least three layers. Remove any oil that gets on to the resin immediately with cotton wool and a solvent. Finally, attach the table legs.

THE FURNITURE MAKERS' COMPANY DESIGN AWARD

The Furniture Makers' Company Design Award was presented at the Celebration of Craftsmanship & Design, the largest selling exhibition of designer-maker furniture in the UK, in August. The award honours truly exceptional design, singling out the best work from the hundreds of pieces exhibited at CCD.

This year's award was presented to Fernanda Nunez for her Guilloché Bedside Tables. Fernanda is a recent graduate of the Waters & Acland Furniture School, and CCD was her first exhibition experience.

Three other pieces received Highly Commended accolades: Piper Sideboard by Laurent Peacock, Toro Hallway Chairs by Dave Taylor of Leatham Creative Woodwork and Console Table by Theo Cook.

For more information, see: **celebrationofcraftsmanship.com** and **furnituremakers.org.uk**







PHOTOGRAPHS COURTESY OF THE FURNITURE MAKERS' COMPANY

GUILLOCHÉ BEDSIDE TABLES BY FERNANDA NUNEZ

The drawer fronts were inspired by the Guilloché pattern on an Art Deco mirror. Guilloché is a decorative French technique in which a pattern is mechanically engraved via engine turning, commonly engraved in metal. These bedside tables explore the possibilities of transferring this technique into the realms of woodworking. Crafted entirely in maple with ebonised maple legs, the timber was carefully selected to create a dramatic light contrast. The iridescence of the Guilloché together with the colour of the timber evokes the rising sun, framed by the dark silhouetted shape of bamboo scaffolding.

PIPER SIDEBOARD BY LAURENT PEACOCK

Laurent is constantly exploring ways of using materials in unconventional or unfamiliar ways. In 2018 he launched his Piper range, a collection of tables and homeware featuring a unique surface material handcrafted from whole peppercorns and resin. This sideboard is the most recent addition to the range.

TORO HALLWAY CHAIRS BY LEATHAM CREATIVE WOODWORK

Dave Taylor, AKA Leatham Creative Woodwork, graduated from the Peter Sefton Furniture School in 2018. Keen to push the boundaries and create something with a difference rather than sticking to standardised forms of furniture, Dave took inspiration from animal horns to form the natural flowing lines that make these chairs so distinctive.

CONSOLE TABLE BY THEO COOK

Theo is well known in the furniture world as the vice principal and senior tutor at Robinson House Studio furniture school. This year he exhibited at CCD for the first time in his own right as an exceptionally talented furniture designer-maker. The beautiful simplicity of this console table with the highly skilled detail of the Japanese dovetails left those who saw it completely awestruck.

PHOTOGRAPHS: MARK SANGER

INGENIOUSLY INEXPLICABLE

WABI SABI IS A DIFFICULT CONCEPT TO PIN DOWN, BUT PERHAPS THAT'S THE POINT. COULD THIS JAPANESE CELEBRATION OF IMPERMANENCE AND IMPERFECTION ADD SOMETHING TO YOUR WOODWORKING PROJECTS?

In 2009 novelist and presenter Marcel Theroux travelled to Japan to film a documentary entitled *In Search of Wabi Sabi*. His quest took him to Tokyo, where he cornered some of the city's residents and asked them to explain what the term meant. His enquiries led to amusement and a fair amount of confusion. One lady thought he was talking about a restaurant while another simply smiled and nodded, silently willing him to go away.

While most of the people Marcel questioned had a sense of what wabi sabi meant, none could put this feeling into words, but perhaps that is no surprise – in his book *Wabi-Sabi for Artists, Designers, Poets & Philosophers* Leonard Koren writes: 'Essential knowledge, in Zen doctrine, can be transmitted only from mind to mind, not through the written or spoken word.'

At a push wabi sabi could be described as an appreciation of the imperfect, incomplete and impermanent. It can be applied to everything from music and poetry to crafts – including woodworking. Indeed wood, with its warmth, personality and irregularity, is the perfect vehicle for wabi sabi.

It can be hard to accept vagueness and uncertainty – most people like to know what time a train will arrive, how much a meal in a restaurant will cost or where they are going to sleep for the night, for example. To satisfy this desire for certainty, Marcel attempted to provide his own definition of wabi sabi. 'The idea of wabi sabi can be split into two parts, and they each mean a different thing,' he proposed. 'Wabi means simplification and cutting out the non-essential. Sabi means change, transience.'

But in reality the Japanese have avoided a neat, clear definition of wabi sabi for centuries, and the only way to truly understand it is to look for its expressions in everyday life.

It's seeing a crack in a vase and still finding it beautiful – if the vase leaks it's about admiring the shape created by the pool of water underneath it. It's an intuitive feeling that encourages the rejection of learned ideas of beauty and the nurturing of non-intellectual feelings instead. Wabi sabi is also about acknowledging that everything (including our own lives) is in a state of flux – even a piece of wood that appears solid will bear the scars of time passing. For a woodworking project consider the materials you are using. Weathered or scarred pieces of timber can add a sense of imperfection to an item of furniture; knots in a tabletop give character; irregular shapes can add personality; open cabinets allow you to look inside; exposed joinery reveals the workings and structure of a piece; and worn timber provides a sense that something has been loved.

IN THE ZONE

A clear expression of wabi sabi is the Japanese tea ceremony. Often held in a small, secluded space, the ceremony offers participants the chance to enjoy food and drink mindfully, as well as to observe a tea master at work. The tea master moves in a precise and deliberate way, each gesture having undergone centuries of refinement until nothing is surplus to requirements. No hand movement, gaze or utterance is made unintentionally. Hosting such an event requires intense concentration, and this feeling of being in the zone is shared by all of the participants. It's no surprise to learn that the first wabi sabi tea master was a Zen monk. As Theroux observed: 'At the heart of wabi sabi is the tea ceremony, and at the heart of the tea ceremony is Buddhism.'

The utensils used in the tea ceremony have undergone a dramatic change over the centuries. Once ornate and elaborately decorated, cups and pots are now more humble and unpretentious. Because of their rustic beauty they have great presence. The form of each piece is dictated by its function, so there are no embellishments or decorative touches offering clues as to the artist's identity.

The most prized objects are made of clay, wood and iron – substances that show the effects of time, and the scars left by human touch. The rough surface of an unglazed pot, for example, is thought to be more wabi sabi than a smooth, expertly glazed vessel. Likewise the wooden handle of a teapot is considered more wabi sabi once it displays the contours created by years of continuous use.

Consider applying these same principles to a woodworking project. A craftsman can, some might say should, take a similarly 'Zen' approach to his or her work as the tea master. Every action takes place for a reason and must be carried out as perfectly as possible.

And anyone working with wood will also be using skills and following traditions that have been passed down from generation to generation.

There could also be an element of wabi sabi in the tools you are using. Handles may be worn from years of use, there could be peculiarities in certain tools that only the user understands. These idiosyncrasies, a craftsman's signature, can find a way into the final product, so why not accentuate them?

TOUCH AND TEXTURE

Wabi sabi objects are often neutral in colour. The materials from which they are made are as close to their natural state as possible so muddy, earthy tones are common. For wabi sabi woodwork a piece of driftwood or an irregular offcut offers far greater possibilities than regular-sized, neat and newly sawn timber.

While the colour palette may be limited, objects are immensely tactile, ensuring they never appear cold or sterile. Wabi sabi objects are usually small in size to encourage a feeling of intimacy as well as a desire to handle them. What's more, their edges are often undefined – another reminder that everything is in a state of flux. These objects are the physical equivalent of a haiku – they call on the participant to notice small details and then to interpret them in his or her own way. This is not conventional beauty and it requires an open mind.

Wood has a huge advantage over other materials here. It is a warm and inviting material. Who can resist the urge to stroke or handle a wooden object, feel its weight and run a hand over the grain? Imperfections and intricate details only add to the allure. Handmade dominoes or chess pieces are works of art in their own right. An irregular fruit bowl can be as striking as a vase of flowers.

There is much to be learned from wabi sabi expressions. It's clear, for instance, that nothing – no matter how solid it appears – is truly permanent. Everything (including all human life) starts from nothing and eventually returns to nothing – if we can accept this fact then it can be extremely liberating. Also, by acknowledging that everything is in a state of flux we can begin to see that happiness and sadness are just temporary states. Similarly, wabi sabi can show that nothing is perfect, at least in the traditional sense. If you look closely enough you can see that even the smoothest wooden tabletop has flaws. These imperfections should be celebrated and considered part of the object's history.

In the west much emphasis is placed on perfection and permanency when both of these states are unobtainable. It could be that the beauty of an object lies in the smallest details – the hairline crack in a pot, a chip on a chair leg or the pink blush of a rose. Maybe wabi sabi is about questioning the way you look at the world as much as it is about adopting new ideas. It might even be that it's never possible to settle on a clear definition of what these two words actually mean, but then perhaps it's best to leave the unexplainable unexplained.

WORDS: TRACY CALDER

WOOD CASTING

HILLA SHAMIA'S DESIGNS EXPRESS THE WABI SABI CONCEPT BY EMBRACING THE IMPERFECTION OF NATURAL MATERIALS

Wood Casting pieces are the signature collection of Hilla Shamia's Tel Aviv-based design studio. They exhibit a unique combination between two materials, using a completely new technology, to create a perfect balance between a natural resource and an industrial matter.

THE PROCESS

The Wood Casting process involves the use of whole tree trunks, mostly using local trees from the Tel Aviv area. The wood is cut up lengthwise and inserted into a mould, which defines the furniture's frame and legs. Metal is then poured over the wood. The casting process is like a drama, accompanied by high heat, flames and smoke.

This drama produces a third material – coal. A charcoaled strip functions as a line drawn at the meeting point between the two materials, delineating and separating them. The merging outlines of the materials provide evidence of the leaking aluminium and the carbonisation of the wood, maintaining a sense of flow even when the two materials are forever frozen.

The Wood Casting pieces demonstrate a perfect balance between two contrasting materials. Wood is an organic material, which evokes a sense of warmth and heaviness. Metal, on the other hand, is very durable and strong, and is characterised by a sense of coldness and lightness. Its silver-bluish colour contrasts with the warm and earthy colours of the wood. The combination

Olive wood and metal casting

PHOTOGRAPHS BY IDO ADAN PHOTOGRAPHY COURTESY OF HILLA SHAMIA DESIGN STUDIO

Carob wood and metal casting

of the two is very common in the furniture industry, but the special technology of casting metal into wood allows the formation of completely new connections and geometrical adjournments between the two.

Hilla first started working with this unique technology of casting metal into wood in 2012, as part of her final project in the Department of Industrial Design at the Holon Institute of Technology, Israel. Her initial thought and obsession were with the connection made between two materials, without any mediating factor, as well as the contrast between two very different substances.

The geometric shape of the piece sets clear boundaries to the natural form of the wood and enhances the overall sense of artificiality, but nevertheless the memory of the organic material and shape is present. Each material is granted the respect it deserves, and fully expresses its natural qualities. The aluminium is strong, and therefore functions as a constructive structure. The delicate and noble wood is elevated to the top by the aluminium, and functions as a surface, supporting the body and touching the skin.

In this encounter, the element of fire is transformed from a negative process to a productive creation, with its own aesthetic and sensual values. Hilla is interested in the concept of imperfect objects, which facilitate a stronger emotional connection. The starting point for her designs is nature, which is full of seemingly imperfect, unpredictable processes from which creativity emerges. In the Wood Casting pieces, the defects of the wood – its cracks, wounds and scars, as well as its process of burning – become a positive and desirable aspect.

Like in nature, each final product is unique. No two pieces of Wood Casting are identical, due to the production process, in which the mould is broken down. The incompleteness and randomness give the product its aesthetic value. As in nature, the processes are exposed, but still the results are surprising, each time a new discovery.

For more of Hilla's work, see: **hillashamia.com**

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PHOTOGRAPHING YOUR WORK

ADDING A HUMAN TOUCH TO IMAGES OF FURNITURE CAN BRING PICTURES TO LIFE, BOOST BUSINESS AND HELP COMMUNICATE UNIQUE STORIES, SAYS **TRACY CALDER**

PHOTOGRAPH: SHUTTERSTOCK.COM

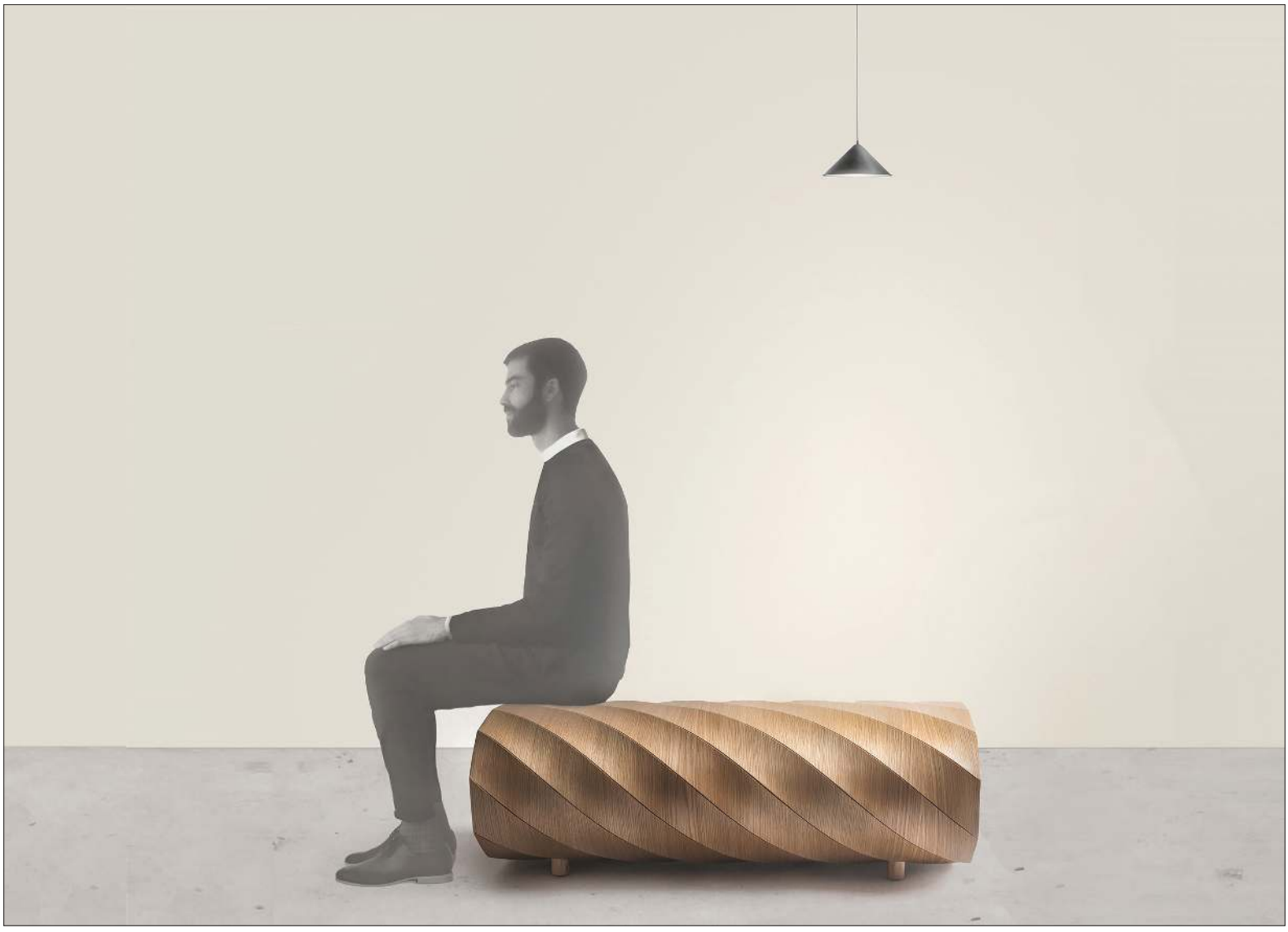
It's Sunday lunchtime and you're at a farmers' market. Propped against a nondescript food van is a chalkboard detailing the types of burger for sale: beef, beef with cheese, beef with lettuce and gherkins. Next-door there's another van, only this one has a huge photograph on the side showing a cow happily munching on grass, set against a backdrop of lush, green hills. A similar chalkboard lists the menu, with a few notable differences: organic, grass-fed British beef with award-winning extra-mature cheddar, served with tomato relish in a brioche bun. It's not hard to imagine which market trader will be heading home with a full money belt. The fact is, back stories sell, and if you're charging a premium price for your product you really need to stress what makes it unique to you and your business.

Creating a back story for a piece of carefully crafted furniture is easy, but it does involve some planning. It can help to create a storyboard outlining the process you intend to go through from start to finish. You might begin with a sketch of the raw materials: a wonderfully gnarly piece of wood, a bolt of fabric or a sheet of weathered metal, for instance. The second sketch might outline the tools you plan to use: a hammer, the handle worn smooth by years of use; a pair of antique upholstery scissors, for example. Next you might sketch details of what happens to the materials as they are being prepared: sanding, varnishing, etc. Naturally, the bulk of the storyboard will be dedicated to the stages of construction, but it's good to include sketches of the finished article too. These are the images you need to take. Document every part of the process, and you'll have plenty of options when it comes to bringing your story to life.

FOCUS ON THE DETAILS

We've all seen record shots of furniture – the kind you gloss over in a catalogue produced by an auction house. These images have their purpose: they present buyers with facts – how big an item is, how intricately carved certain sections are, how worn or damaged a piece might be. More often than not, however, they are soulless. The furniture is shot against a white backdrop, seemingly floating in mid-air, while the lighting is artificial and lacking in mood. The back story (or provenance in this case) is sometimes listed in the text, but there is no emotion, no real human touch to the pictures.

To make someone care about an object (and potentially buy it), you need to encourage them to have an emotional response to it. It might sound challenging, but it's easy to achieve if you combine feelings with facts. One way of doing this is to appeal to the senses: if a chair is squishy and comfortable, show a cat or dog curled up on it, for example. Likewise, if a piece of wood



PHOTOGRAPH: SHAI YEHEZKEL, TAL HARADA

is particularly tactile, photograph a hand touching it, following the path of the grain. To convey the feeling of different materials you can also use contrast: a leather chair can be paired with a wooden table or a cashmere blanket, for instance. Think about the feelings you want to evoke. Write a list of keywords and use them as a guide.

When you're preparing to take your pictures, ask yourself what's special about each piece: it is the beautiful dovetail joints, the drop handles or the pink flush of the chalk paint? Identify what makes your piece unique and find a way to show this in your photographs. Hone in on the details and exclude everything that doesn't add to your story. It's tempting to step back and include all of the piece in the frame, but be brave and just focus on areas of particular interest. If you're shooting a table, for example, it's okay to visually cut it in half: we know most tables have four legs so we complete the picture in our minds.

OBSERVE THE LIGHT

Some photographers shoot furniture in studios with infinity coves (seamless backdrops) and banks of artificial lights (think auction catalogue), but there's a lot to be said for keeping things natural. You might need to shuffle a few things around, but if you can expose a wall big enough to serve as a backdrop then setting up at home will save you time and money. But before you hoist the three-seater out of the way you need to spend time observing the natural light in your chosen location: where is it coming from? Is it hard or soft? What shadows does it create? How does it change throughout the day? The way an object is lit can alter its appearance dramatically: side lighting is great for revealing texture, for example, while light from directly above can produce dark shadows and high contrast. To maximise the amount of daylight reaching your subject open the curtains fully, clear the windowsills of clutter and invest in a collapsible reflector to 'bounce' light where you need it most.

At this point, it's important to check if there are any artificial light sources affecting the scene. The light from an incandescent bulb, for example, is warmer than natural light on an overcast day and, as a result, it can produce a yellow colour cast. (Human eyes adapt well to changes in colour temperature, so you might not notice this until after you have taken the shot.) Having two competing light sources is not ideal. To keep things neutral, turn off the lights. If this is not possible, locate the white balance menu on your camera and select a setting that matches the predominant light source. (If you shoot Raw files you can alter the white balance later in post-processing if you prefer.) Alternatively, you can replace the bulbs with daylight-balanced versions.

PHOTOGRAPH: COURTESY OF THE FURNITURE MAKERS' COMPANY

COMPOSE LIKE A PRO

The way elements are arranged in the frame can say a great deal about your subject, your brand and you as a person. Over the years, photographers, graphic designers and painters have come up with a set of 'rules' to aid composition. The first is known as the 'rule of thirds' and involves dividing the frame into a grid using two horizontal and two vertical lines, and then placing key elements where these lines intersect. (Many cameras have grid lines in the menu system to help you achieve this).

The second 'rule' declares that an odd number of objects (usually three) has more visual impact than an even number. So, three stacked chairs, one vase on a table, three cushions on a sofa, etc. The reason for this is that our brains like to pair things up, which helps us to make sense of a scene, then rapidly dismiss it. When we're presented with an odd number of items, however, our brains have to work harder to make sense of things, which holds our interest.

We also derive pleasure from symmetry. Our brains are wired to recognise asymmetry as a sign of illness or danger, so when we come across something perfectly symmetrical we feel we can relax and enjoy the sense of order. The same can be said for repeating patterns and shapes. But, like pictures containing even numbers of objects, images displaying symmetry can be rather one-dimensional as we understand them quickly and then move on. One way to hold the viewer's attention is to include a single element that breaks the symmetry and creates a slightly unsettling feeling.

Successful compositions lead the viewer's eye around the frame, encouraging his or her gaze to linger at predetermined points of interest. To direct the viewer in this way you need to make the most of any lines (literal or implied) in your image. Landscape photographers are fans of lead-in lines: fences, rivers, roads – anything that encourages the eye to enter a picture at a desired point, travel steadily through it and pause where directed. The same technique can be applied to furniture. Is there a curve on the arm of the chair that might serve as a lead-in line? Could the grain of the wood be used to direct the viewer's eye in some way? Lines don't always have to be literal, they can be created by the edges of different shapes, the clash between two colours or even points of high contrast where light meets shadow.

Naturally, following these rules slavishly can lead to dull and ineffective pictures. The key to composing a successful picture is to determine what it is you're trying to say, and then remove anything that doesn't help you to communicate your message (either by physically removing it or using the technology at your disposal to play it down).

BECOME A STYLIST

If you want to prevent your pictures from looking like they belong in a furniture catalogue, you need to put some effort into styling. For many of us this doesn't come naturally, so it can help to look at interiors magazines, Instagram and Pinterest for

PHOTOGRAPH: WILL ACLAND

ideas. Creating a vision board can be useful as it encourages you to focus on the location, lighting and props you might need to evoke a specific mood, or obtain a desired look.

Finding the right location is crucial. For a clean, unfussy look a plain wall at home will often suffice (you can always add mirrors or pictures that tie in with your theme if that feels appropriate). But if your home, workshop or studio shows signs of your craft, then use it to your advantage – step back and include the wood shavings on the floor, the paint-splattered skirting boards or the old tools in the garage. Give the piece some context. Alternatively, try the opposite and place your piece in a location that seems at odds with its purpose – shoot a kitchen table on a beach, an armchair at a skate park or a chest of drawers in a nightclub, for example. Use contrast to shock and amuse.

When it comes to props, don't go overboard. Build up a stock of suitable items over time – car boot sales and antique markets are great sources for vases, cushions, handwritten notes and books. The items don't need to be perfect, a little wear and tear adds to the finished look. Similarly, don't be too tidy when you position your props: let the fallen petals from a vase stay on the table, don't cut the frayed edges off an old cushion you bought, allow the indent where someone has sat on a chair to remain there. These are all signs of life, and provide evidence that this is not some flatpack piece of furniture that can be replicated by a machine; this is an object with a biographical history, created with love, skill and passion.

PRACTICALITIES

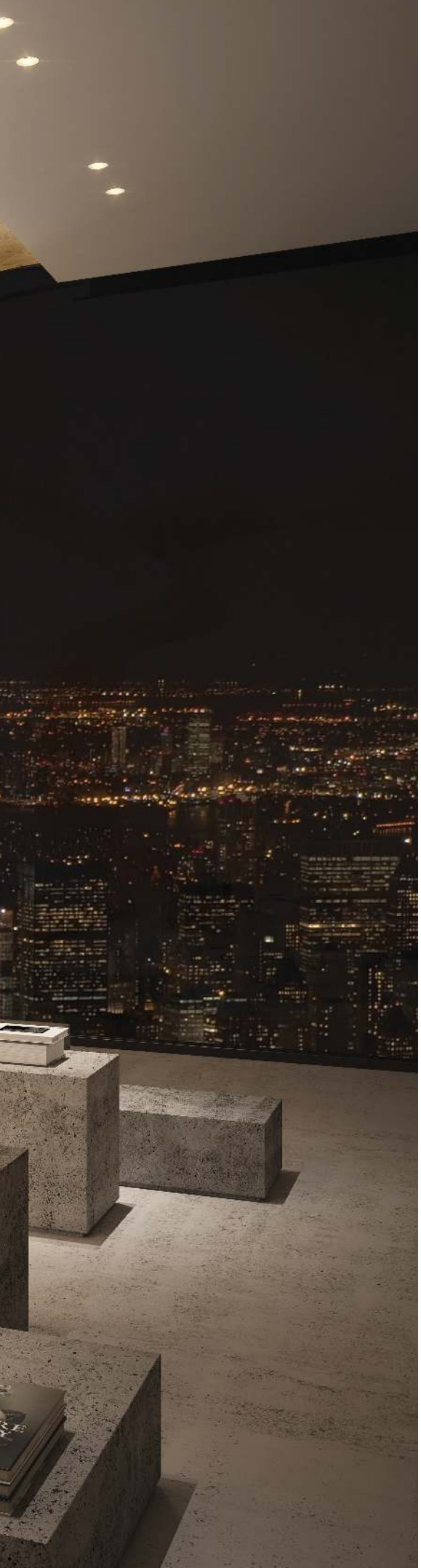
Camera Whether you're using a smartphone or a DSLR, there will be times when the automatic settings will limit your creativity. Try to familiarise yourself with some of the semi-auto and manual settings – knowing how to use aperture priority, manual focus and exposure compensation, for example, could prove extremely useful. Shoot Raw + JPEG and compose in Live View. A zoom lens in the region of 70-200mm is ideal, but you might also like to consider a macro lens for capturing details, and a wide-angle lens for providing context.

Tripod Keep all of the lines in your composition nice and straight by using a tripod. Make sure the model you opt for can bear the weight of your camera body and longest lens, and check that it extends to at least eye-height – many of your pictures will be taken at waist-height, but this will give you plenty of options. For even more flexibility, consider a tripod with multi-jointed legs that can be bent and twisted into different configurations. Use the self-timer on your camera, or trigger the shutter remotely, to avoid camera shake.

Lighting Natural daylight is hard to beat, but if you want to experiment with artificial sources don't start with the pop-up flash on your camera – the light is too harsh and direct. There are plenty of moderately priced lighting kits available, but remember that you will need space to set up and store these items. You can also experiment with LED panels, reflectors, diffusers and off-camera flash.

Post-processing If you're familiar with Photoshop or Lightroom you'll know that many of the problems you'll encounter when shooting furniture, such as under-exposure, colour casts and perspective distortion, can be easily corrected in post-production. Even so, it's preferable to get things right in-camera. (You can use Lightroom and Photoshop on your smartphone, and there's a good range of phone editing apps available too.)


DIGITAL BY DESIGN



PHOTOGRAPH: STUDIO MAAYAN GOLAN

THE GEOMETRIC ART OF WOOD TEXTILES

THE YOUNG ISRAELI DESIGNERS BEHIND TEL AVIV-BASED **TESLER + MENDELOVITCH** USE WOOD TO CREATE STRIKING THREE-DIMENSIONAL TEXTILES. THEY EXPLAIN HOW A PASSION FOR WORKING IMAGINATIVELY WITH TIMBER HAS CREATED A SUCCESSFUL BESPOKE DESIGN VENTURE

A young Israeli design team is using wood to create textiles used for everything from wall panels to sculptures and from tables and chairs to clutch bags. Orli Tesler and Itamar Mendelovitch met while studying at Shenkar College of Engineering, Art and Design in 2008, and knew early on in their studies that they wanted to open a studio together.

Orli explains: 'Although we have very different personalities, we share similar views on the subject of aesthetics and materials as an innovative agent for new product design. Itamar is extremely methodical and very precise – almost rigid in his design philosophy. I come from a much more expressive background, so when these two polarising philosophies meshed we complemented each other. I became more precise in the way I do things and Itamar let things go a bit.'

Aiming to create an original design solution with sustainability at the core, they combined their creative visions, drawing upon university facilities and academic knowledge to experiment and advance their skills in textile technology and design. Orli says: 'We graduated in 2011 and opened our studio in 2012. The first year was dedicated to the development of the textiles and product design, and by 2013 we were ready for production.'

So what started the idea of geometric folding and shaping of linked shapes to create these fascinating wood textiles?

Orli says: 'Having experimented and made a serious mess with a wide range of natural fibres, wood veneer was the one we found ourselves experimenting on the most. The rigidity, brittleness and inflexibility of these surfaces were screaming for a new application, and we decided while still at university that we were going to find a way to transform these rough surfaces into a flexible textile. The square grid which is now used for all our textiles was inspired by our own weaving practices.

PHOTOGRAPHS: STUDIO MAAYAN GOLAN

The perfect symmetry and repetitive rhythm of the weaving process showed how strong certain geometries can be when applied to a 2D surface. Using these same techniques for the wood proved useful. This method created strength for the material's weak points and softened areas that were too rigid to work with.'

The fabric is flexible and lightweight. The way the panels are shaped and seamlessly fitted together suggests complex mathematics and closely guarded construction secrets, but Orli is happy to share the process. She says: 'The wall panels are actually rather simple. They are made up of scaled-up wood textiles that are "frozen" in place. As the textiles have plenty of curvatures, we decide on a certain composition and then copy the curvature to a back structure. The textile is then attached to the front of the structure and that's pretty much it. Compared to other furniture pieces of ours, which have quite complex anatomies, the panels are much easier to manufacture. By creating horizontal junctures between each panel, the end result is seamless.'

The flexible panels can be used for seating, shelving and lighting, and also have an impact on the acoustics of the rooms they are in. Tesler + Mendelovitch also produces innovative twisted tables and chaises as well as faceted tables and wall sculptures.

Orli says most people are surprised to learn that these pieces were, for many years, handmade with a ruler and a utility knife. 'Basically, all our products could have been made 100 years ago. As demand grew, we had to develop new processes that were faster than what a hand could produce. Nowadays, the studio creates larger quantity orders with metal templates. These help to speed up the folding process, which makes up 50% of production.'

The pair decided that their design philosophy would be 'form follows material' and that any innovation they were able to create with the veneer would automatically inspire new forms.

'Having developed these textiles over many years now, we are still learning about the fibres and finding more geometries that can be made from this versatile material. So in that sense, there is no limit design-wise,' says Orli. 'However, it took us many trials to achieve the first prototype. The wood would not bend in the way we wanted and it would constantly break. Then once we achieved flexibility, we had to figure out how to work this material into a three-dimensional object. The design process then started all over again. So the biggest design challenge for us is patience.'

From their original desire to create wearable wood fabric, the pair turned their talents to furniture and interiors. This proved

to be an auspicious focus as there has been increased interest and demand for their custom-made pieces as well as their architectural and acoustic wall structures.

'The wall panels are gaining traction very quickly. We did not expect it to be so fast. But since they are quite new we cannot assess yet how they will go in the next few years,' says Orli. 'The faceted tables and stools have been very consistent since day one. They accommodate diverse tastes and styles and do not go out of fashion. But that is true, we hope, for all our designs. Geometry is classic and beyond passing trends and fads, and is also much more sustainable.'

Because of their dedication to sustainable production practices and zero waste, Orli and Itamar are growing the business slowly. Figuring out how to expand production is

PHOTOGRAPH: SHAI YEHEZKEL

PHOTOGRAPH: YOTAM FROM

PHOTOGRAPH: YOTAM FROM

challenging, but it's important to them both that they maintain their sustainable ethos. Everything made in the studio is carefully measured and used. Nothing is thrown away. And by working meticulously and slowly, the team has developed handcrafted woodworking techniques that do not require battery or power outlets.

They are also passionate about working with wood. Every piece is hand-selected and of the highest quality, ensuring a beautiful grain composition. Orli says: 'We really admire many wood species. There are woods that are easier to work with than others. Macassar ebony wood is so beautiful but it's a very dense wood and incredibly difficult to work with – it really wears on the hands and also blunts our tools, but it's so worth it. Another favourite is sycamore. We have only recently begun producing with this wood. It has such a beautiful yet complex tone. American walnut is another classic. It's by far one of the easiest wood species to work with and also has a very interesting tone. It has a taupe colour, some undertones are purple, some brown, while the heartwood is a pale yellow.'

Each finished piece has a delicate intricacy and yet is surprisingly robust. For every application, the textile is reinforced in a different way. All furniture pieces have an internal skeleton that allows them to bear heavy weight and distribute it evenly throughout the structure. The furniture textile is also reinforced with a heavy cotton weave.

Since the studio opened, feedback for Tesler + Mendelovitch products has been encouraging. The pieces are tactile and visitors can't resist running their hands over everything. Many are surprised by how light the tables are, considering that they can bear such heavy weight.

Orli says: 'We definitely put a huge emphasis on the finish and of course the proportions and aesthetics of each design. So it's

PHOTOGRAPH: SHAI YEHEZKEL

PHOTOGRAPH: YOTAM FROM

very important that the pieces not only look good but feel great too. As designers, receiving enthusiastic feedback and positive user experience is what we do this for in the first place. We like to think we are taking care of people through design.'

As to the future, Tesler + Mendelovitch, inspired by the design challenge, is working on creating wood textile footwear. In terms of bespoke furniture, the company is currently developing a very special piece. Orli reveals: 'I can tell you that it's a floor seat and will be quite large, inspired by a traditional upholstery technique called capitonnage. It's a long time in the making.'

TESLER + MENDELOVITCH **tesler-mendelovitch.com**

WORDS: CAROL ANNE STRANGE

PHOTOGRAPH: YOTAM FROM

PHOTOGRAPH: SHAI YEHEZKEL

PHOTOGRAPH: SHAI YEHEZKEL

PHOTOGRAPH: SHAI YEHEZKEL

TURNED TABLE

ANDREW POTOCNIK USES HIS TURNING EXPERTISE TO MAKE THIS SMALL TABLE

When asked by my in-laws to make a hall table that would suit the entry of their recently downsized home, I was a little apprehensive. There were several qualms: it's a modern build, my in-laws are in their 80s and I don't make mainstream furniture. So I had to tread a fine line to keep all of us happy, especially as I'd only recently become an 'in-law', hoping not to become an 'out-law' too soon...

Assessing the space and requirements of the table it quickly became apparent that a receptacle for keys and other bits that need to be deposited as one enters the home could be fulfilled with a dish form at the centre of the table-top. There needed to be a flat area for a light to stand on, so my mind went to work. It seemed that the simplest solution, from my turning background, was to turn a dish-like form into the centre of a rectangular table-top.

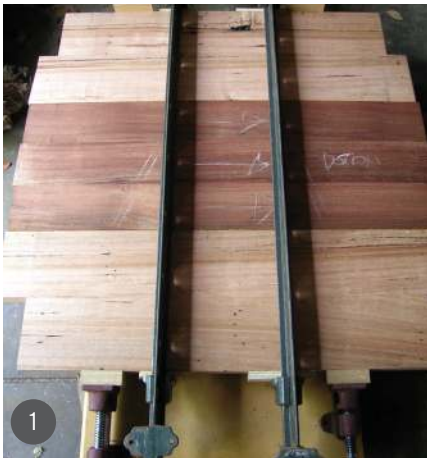
But could I actually turn a piece of wood this size? Fortunately for me, the answer was yes. I could fit a disc of 750mm diameter to my Stubby lathe.

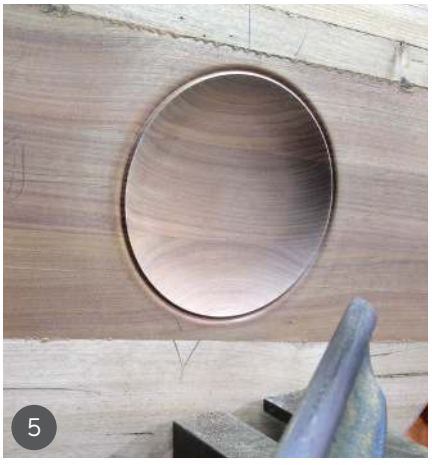
With something this big, however, it is not just about lathe capacity. It is also about working safely and, because the top is long and thin, holding the wood effectively, turning it at low speeds and never standing directly in with the edge of the work.

Many people do not have this size of lathe to work with, so if you like the idea of turning the table-top smaller than shown here, the techniques for turning the top still work and it makes a great bowl in its own right without the leg and sub-frame.

TOOLS AND MATERIALS

- PPE & RPE
- 13mm bowl gouge
- 20mm spindle roughing gouge
- 20-25mm skew
- Round-nose scraper
- Faceplate and screws
- Revolving ring centre
- Woodworking tools for the table legs and frame
- Belt and random orbital sanders
- Metal table supports
- Drill with drill bit to suit the metal support spacers
- Dowel drilling guide
- Clamps
- Abrasives
- Bandsaw
- Adhesive
- Finish of your choice
- Timber to suit the drawings
- Sacrificial timber or boards for the top and back support





PHOTOGRAPHS BY ANDREW POTOCNIK

1 Start by laminating three pieces of wood, machined flat and edged – I used Australian blackwood – and glue the boards together edge to edge with gap-filling PVA on the planed edges. Then use sash clamps to ensure all surfaces are bonded thoroughly before adding extra material that would enable a full circle of wood to be turned on the lathe. The alternative would be having a propeller of wood spinning around, which is dangerous with large work using this method, so it's better to spend time and add sacrificial material to complete a full disc of 750mm diameter, making the process safer. I hate to waste wood, so I used feature-grade Australian mountain ash for this part, knowing I'd already worked out a way of creating another table-top out of the waste, but that is another project. Once all is glued together and allowed to dry, mark a circle and cut on a bandsaw.

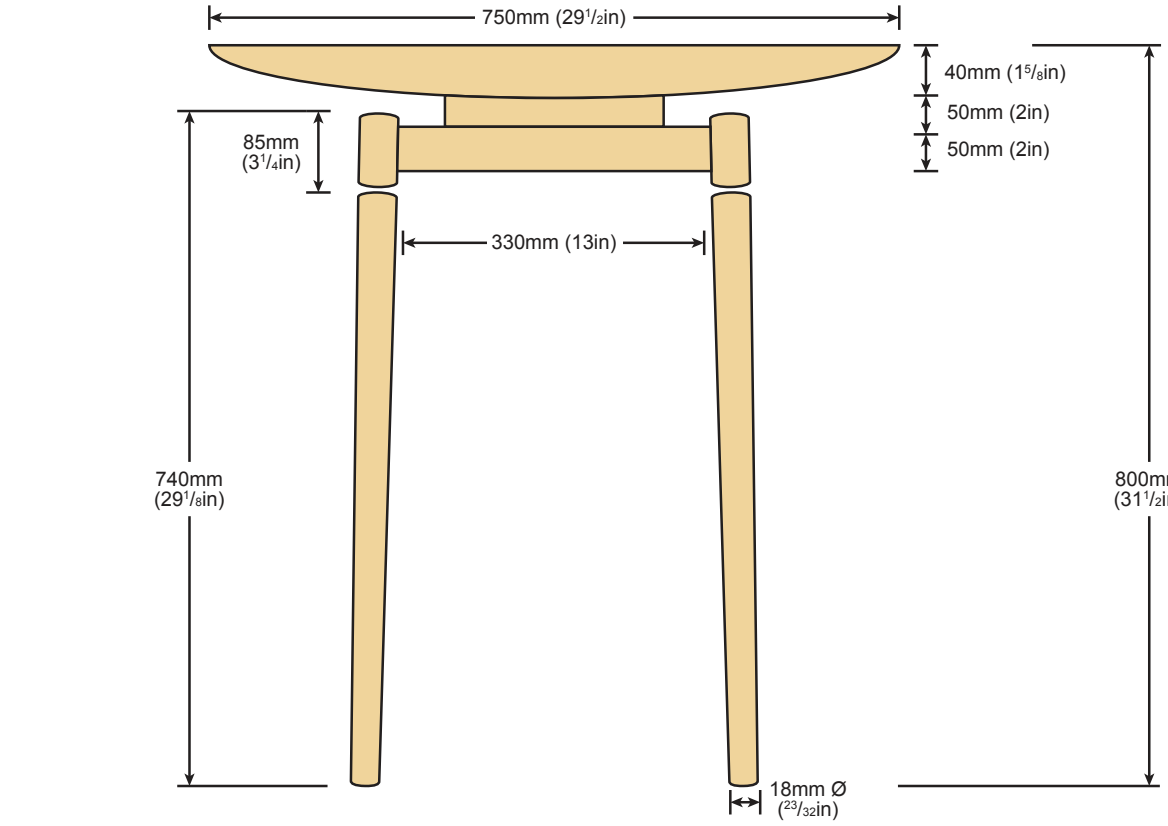
2 Attach a wide strip of 18mm plywood to a large faceplate...

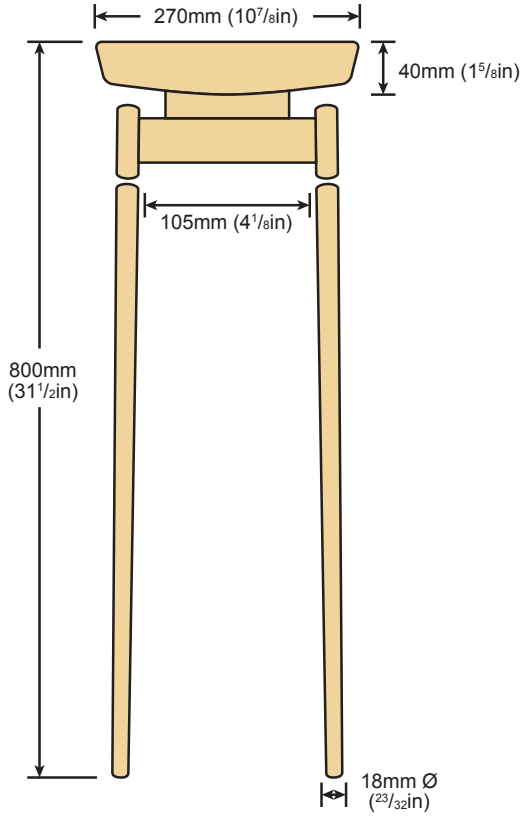
3 ...then mount the faceplate and ply on the lathe. Mark the centre of the table-top and centre the table blank to the faceplate/ply carrier using a revolving tailstock ring centre. This ensures the blank will be perfectly centred. Screws can now be driven through the carrier into the blank, into the outermost ends of the table-top. Any screw holes will be turned away later.

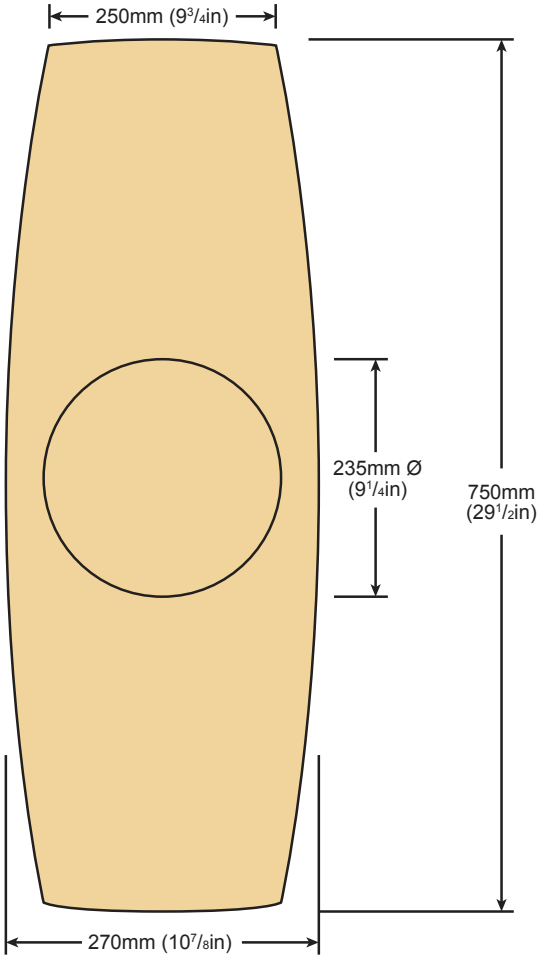
4 Using the lowest speed you have on the lathe – for something this size about 125-150rpm will work, but do check speed charts and go slower if needed – turn the bowl section but avoid any work to the flat sections, as they had been machined flat and clean before attaching the sacrificial material. Now cut a V-groove around the perimeter of the bowl area for a nice visual effect and also to enable accurate location when reversing the blank.

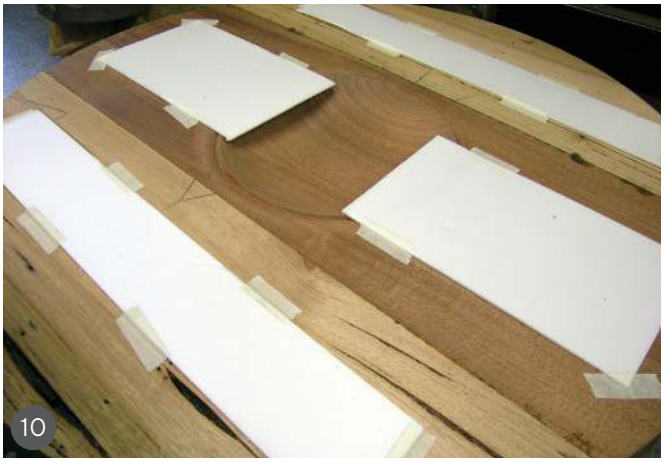
5 With heavy cutting and shaping completed, remove the tailstock and trim away the supporting stub. If needed, refine the bowl with a scraper, then sand the surface through to 320 grit.

6 To reverse the item, make a carrier/friction drive with a protruding V-shaped ring that matches the groove on the table-top so the two surfaces can meet snugly to prevent any possible lateral movement when the top is reversed and pressed against this carrier. Some electrical tape or paper towel needs to be applied to the carrier to prevent marking the sanded surfaces of the top.


750mm (29 1/2in)
40mm (1 5/8in)
50mm (2in)
50mm (2in)
85mm (3 1/4in)
330mm (13in)
740mm (29 1/8in)
800mm (31 1/2in)
18mm Ø (23/32in)


270mm (10 7/8in)
40mm (1 5/8in)
105mm (4 1/8in)
800mm (31 1/2in)
18mm Ø (23/32in)


250mm (9 3/4in)
235mm Ø (9 1/4in)
750mm (29 1/2in)
270mm (10 7/8in)



7 Now, locate the hollow bowl section up against the carrier and bring the tailstock into place. Insert a small wide spacer block into the live centre and between the table to act as a pressure drive to avoid an unwanted hole.

8 Turn the underside of the table to a gentle upsweeping curve using very light cuts with the lathe running at a very low speed – 125rpm or lower. Then sand it to 320 grit.

9 Remove the disc from the lathe and lay it flat on either a trolley which has a blanket as a shield to prevent marking the table-top or on padding on the floor. Finish sanding all over with a random orbital sander.

10 The next stage is to remove the sacrificial timber. To protect the top of the table, place high-density foam on the flat surfaces.

11 With padded surfaces resting on the table, cut the waste material as close to the joint as possible without actually cutting the table-top section. For the next bit I chose to machine the edges flat – although you can use a long hand plane – so angled cuts could be executed on a tablesaw. Again, you can create the angled sections with a hand plane if you choose. I wanted the top to look as 'light' as possible and angling the sides would reduce visual bulk. It is up to you to decide the shape you want and, of course, you can use hand tools or machines to help you to do this.

12 To further lighten the appearance you can curve the edges slightly on a belt sander/finisher. About 15mm was removed at each end for this top so the rectangular shape was 'softened'. Again, your table, your choice as to how you wish it to look.

13 The timber for the legs needs to be machined to about 40mm square and turned, leaving a pommel at the top while the leg is tapered to about 18mm at its end. Mount the wood between centres and use a combination of a spindle roughing gouge and skew to make the elegant, simple, tapered shape. I chose to hold the headstock end of the spindle in a chuck and the tailstock end with the revolving ring centre.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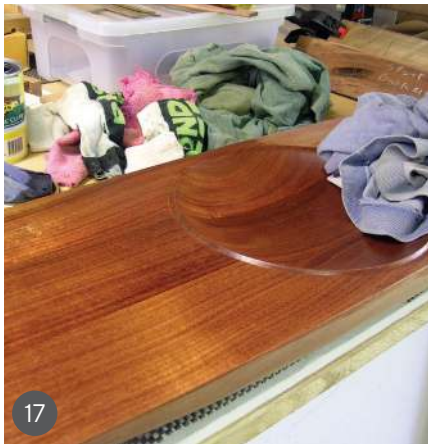
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14 Now is the time to get the proportions right and check a few things out. Create some temporary skirts and clamp them to the legs. To support the top – the design of this has the top sitting clear of the subframe – use a stool with a block of wood on it. This is the 'trial and terror' part where what worked in the mind's eye as two-dimensional drawings is put to the test as a three-dimensional object. Adjust what you need to so that you are happy with how the frame looks and also how the top sits in relation to the subframe. I ended up tweaking the lengths of skirts and distance between top and subframe.

15 Now you have to make a decision as to how to join the legs to the skirts. Traditionally it would be via a mortise and tenon and I chose this method but opted for floating tenons. For speed, I used a mortising machine to cut the mortises.

16 Dry-assemble all the pieces and check everything is okay. Make any adjustments now. Before gluing and clamping up, pre-finish the subframe. This can be with a shellac, sanding sealer, oil or similar. Once dry, lightly denib/knock back then glue and clamp everything together, ensuring any squeeze-out was wiped off with a damp rag.

17 While that subframe is drying, apply a finish to your table-top. I chose polyurethane using my favourite wipe-on, wipe-off method, which does not leave a thick layer of finish on the surface. There is, however, a fair bit of elbow grease needed to wipe back a surface as large as this, but I opt to do it in stages, making sure the finish doesn't become too tacky before being wiped off. If it does, simply apply more finish, which will dissolve the sticky surface and allow you to wipe it back. The finish you select needs to be durable and the right lustre for you.

18 Now you need to drill holes for the aluminium spacers, which required another bout of lateral thinking on my part. The reach of my pedestal drill was insufficient to handle this frame, so I reverted to a dowelling jig clamped to the rails. But as it's designed to drill holes parallel to its sides, I needed to cut some 2° angled spacers to tilt the jig back to perpendicular. A piece of aluminium tube inserted into the guide sleeve lined up with a tri-square ensured holes would be at 90° to the floor, not the rails.

19 Now drill holes with a cordless drill using a bradpoint bit and some masking tape to determine consistent depth of holes. Once drilled, apply your final finish on the subframe and let it dry before moving on to the next stage.

20 To mark where holes are required on the table's underside, insert bradpoint drill bits into holes already drilled in the frame. Before locating the top, measure and mark as closely you can the position of the rods on the underside of the top

to avoid marking the underside with the sharp bradpoint bits as much as you can. When you have done so, place the top in its final position and press down so centre points create marks ready for the next stage of drilling.

21 Once marked with the little indent, bore holes to a consistent depth using a pillar drill, or very accurately with a hand drill, ready for final assembly. Fingers crossed, all will fit together correctly. Add a few drops of adhesive to bond the wood and spacers. Thankfully, much to my relief, mine did, just in time to keep the in-laws happy.

Making one-off pieces is a time-consuming process where there are many problems that need to be solved along the way. Experience gives you a 'vocabulary' of techniques and solutions to fall back on, but pricing? In this case it was a love job, completed late… but the in-laws were happy, so I'm not an 'out-law' at this point.

22 The finished table.

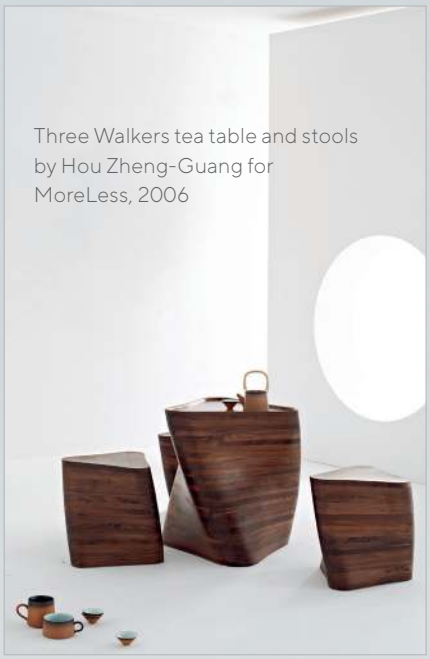

barnby design

LEARNING FROM THE PAST AND LOOKING TO THE FUTURE

Since the mid-1990s a definable movement in contemporary Chinese furniture design has been growing and evolving, and has now reached such creative critical mass that it is possible to speak of it enjoying a 'moment'. The exceptional quality and innovation of the furniture associated with New Chinese Design will undoubtedly set in motion a significant reappraisal of contemporary Chinese design in general. But what is more, this extraordinary development may initiate the tipping of the balance of international design influence from west to east, such is its astonishing creative vitality and snowballing momentum.

Charlotte and Peter Fiell explore this shift in their new book, *Contemporary Chinese Furniture Design*.

From left to right:
Tiandi yokeback chair, Qingyuan clothes rack, Tiandi table (with 'Giant's Arm Braces'), Tiandi Horseshoe chair, Pumpkin stool, Tiandi couch, tray/table and Tiandi stool, all by Chen Yanfei for Pusu



Three Walkers tea table and stools by Hou Zheng-Guang for MoreLess, 2006

The first thing to understand about New Chinese Design is that it is foremost a design reform movement. Ideologically guided, it has been responsible for an extraordinary renaissance within Chinese furniture design, the first green shoots of which began to emerge in isolation with the designs of Samuel Chan in Britain during the late 1980s. It then coalesced into a definable movement in mainland China in the mid-1990s with the work of artist-designers such as Shao Fan, Song Tao and the late Chen Zhen, as well as the craftsman-designer Zhu Xiaojie. The movement's momentum has steadily built over the intervening 25 years, with successive generations of talented Chinese designers tapping into their cultural roots in order to create original and innovative furniture pieces that are inspired by the remarkable design legacy of their ancient forebears. Channelling the spirit of the Song and Ming dynasties, as well as other Chinese styles and themes, these designs express a 21st-century Sinocentric national romanticism. And in our increasingly globalised world, the focus on cultural roots is becoming ever more important, for they have the power to reconnect us with where we come from and help give us a sense of who we are, our place in the world and ultimately our shared humanity. By drawing inspiration from their 5,000-year-old culture, today's Chinese designers are able to imbue their work with an all-important sense of identity or character, and that is what people are responding to on a deep emotional level.

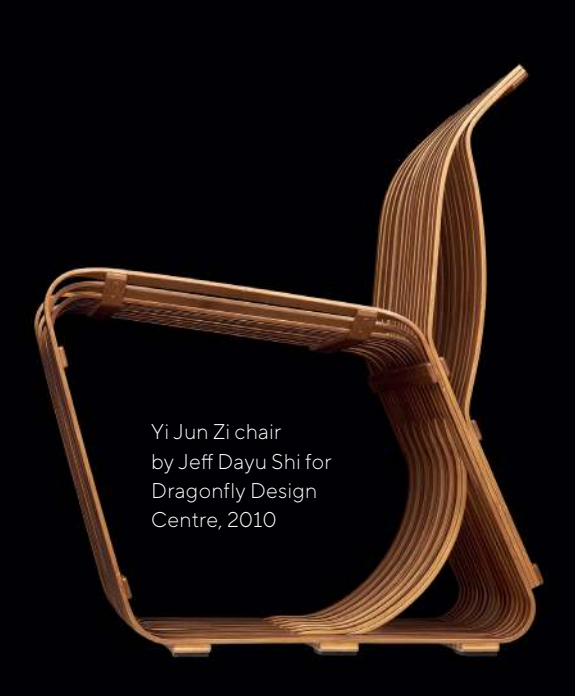
More than this, the New Chinese Design phenomenon has also opened

Above and below:
Big Fish tea table, bench and stools by Hou Zheng-Guang for MoreLess, 2015

up an important debate among Chinese designers and design educators about the ultimate goals and ethics of design. This new focus on defining what good design is and why its adoption is so imperative for China will undoubtedly produce major benefits both nationally and internationally. That is because the level of thoughtfulness underlying any design thinking ultimately determines the inherent value of what is produced and consumed. It has, therefore, far-reaching social, economic and environmental implications. Certainly, the sands of consciousness are rapidly shifting within Chinese design circles, and that is without question a hugely encouraging development. Today, in our increasingly interconnected world, what happens in China in terms of design and manufacturing has an impact not only within its borders, but elsewhere, too. Given this, thankfully there is a remarkable level of talent, intelligence and resourcefulness among the pioneers of New Chinese Design, who, with encouragement and the right conditions, could have a tremendously positive influence on world design. Indeed, within the context of this specific moment in Chinese design, it feels that this is not so much a question of 'if', but rather 'when?'

The numbers bear this prediction out, for according to Ralph Wiegmann, the CEO of the iF Design Awards, there are an estimated 1 million Chinese art and design students studying in China at any one time, and, as he noted in a talk at the 2017 China Craft Week in Hangzhou, 'If only 1% of them are any good then that constitutes more [design] graduates than the whole of Europe combined.' In fact, there are more than 100 art and technical colleges in China that specifically teach furniture design, and each year more than 5,000 students graduate from their courses. And that is not counting the sizeable cohort of students studying abroad, a significant percentage of whom are being trained at the top design teaching institutions in the world. Nor does it include the legions of product designers, interior designers and architects who also inevitably

Left and above:
South Mountain sideboard by Hou Zheng-Guang for MoreLess, 2012

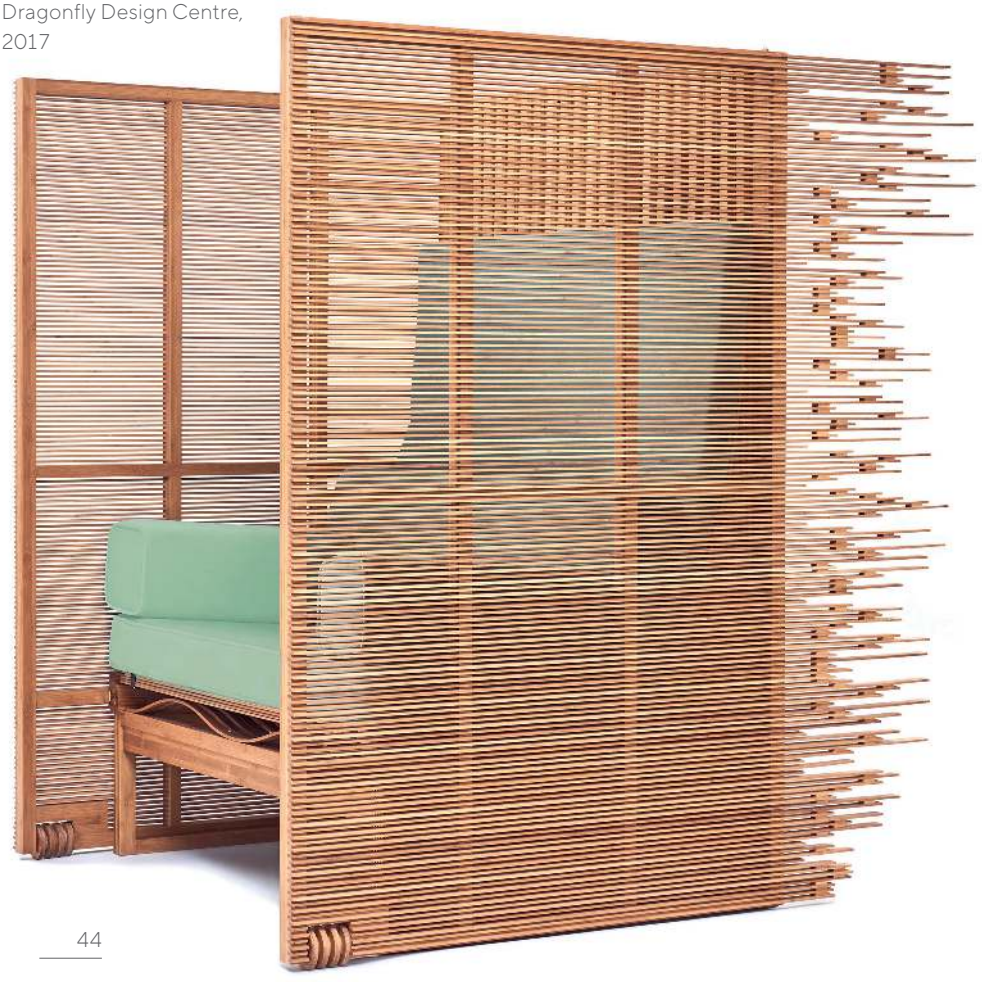


Yi Jun Zi chair by Jeff Dayu Shi for Dragonfly Design Centre, 2010

Yi Ge Wu chair by Jeff Dayu Shi for Dragonfly Design Centre, 2018

Yi Ba Shi reclining chaise by Jeff Dayu Shi for Dragonfly Design Centre, 2018

Yi Ping Liu Ying screen chair by Jeff Dayu Shi for Dragonfly Design Centre, 2017



gravitate towards furniture design during their careers. But apart from this incredible pool of creative talent, there is also an interesting synergistic clustering effect taking place among the acknowledged stars of contemporary Chinese furniture design. In fact, it is this dynamic synergy, especially between the different generations of designers, that has creatively sustained and ultimately shaped the evolution of New Chinese Design over the past 25 years.

So, how can the term New Chinese Design be best defined? It is a loosely organised groundswell of designers, of Chinese birth or descent, who are looking back to their indigenous design roots for inspiration and creating work that embodies the Chinese cultural spirit in refreshingly contemporary ways. To date, it is in the realm of furniture that New Chinese Design has made the most definable inroads into changing and radically improving the status quo. Given China's rich design history, it might seem strange to those in the west that this has not happened before, given that many design icons of Danish Modernism, for instance, can trace their formal ancestry back to historical Chinese archetypes. Among the most famous examples of this are Hans Wegner's Ming-derived China Chair (1944), Chinese Chair (1945) and Cow-Horn Chair (1952), which are – somewhat ironically – among the most widely copied chair designs in China today.

Certainly, in the west various historic Chinese object typologies have long been seen as instructively representing 'ideal' forms. Yet for much of the 20th century, China's design past was consigned to the annals of history – with the emphasis being firmly placed on forward-looking progress. Another reason for this seeming disregard of historic design culture is that it is all too easy to take one's own society for granted when one is immersed in it, and it is only with distance that its core values become more apparent and understandable. In fact, it is no coincidence that the vast majority of contemporary designers associated with New Chinese Design gained this valuable perspective on their own culture while studying abroad.

Another thing that is quite surprising, at least from a western standpoint, is that until very recently design teaching syllabuses in China have largely, if not entirely, focused on teaching an established Western canon of design – with Bauhaus Modernism being held up as the shining exemplar. As a result, many contemporary Chinese designers learned about the rich design culture of the Song and Ming dynasties by conducting their own self-guided research. And the more they learned from collecting antiques, rooting out specialist publications or visiting museum collections, the more enthralled they became with this seemingly 'lost' design legacy. Their inquiries not surprisingly uncovered a wonderful fount of design inspiration, from elegant Ming forms and ancient symbolic motifs to precisely executed mortise and tenon joinery and long-forgotten lacquering techniques. But even more importantly, through this research they rediscovered the refined aestheticism and lifestyle culture of the Chinese literati, based on the ethical humanism of Confucianism, which represents an alternative mode of being that is the very antithesis of the unbridled consumerism that has been such a defining factor of globalisation over the past 30 years – and, of course, China's own economic miracle.

In fact, the recent history of China's furniture industry reflects the extraordinary growth unleashed by Deng Xiaoping's introduction of landmark economic reforms and open-door policies in December 1978. As Professor Xu Mei Qi, a leading furniture historian, explained, 'Over the past 30 years or so, Chinese furniture went from being a very small industry to becoming one of the largest, and today it represents a 1,300 billion yuan annual output, among which approximately 30% was exported.' And while much of that revenue stems from Chinese companies producing furniture for overseas brands, throughout the past decade a significant number of homegrown start-ups have appeared, creating original New Chinese Style furniture for the burgeoning domestic market. Some of the more outward-looking of these so-called design brands

Magnus chair by Samuel Chan for Channels, 2015

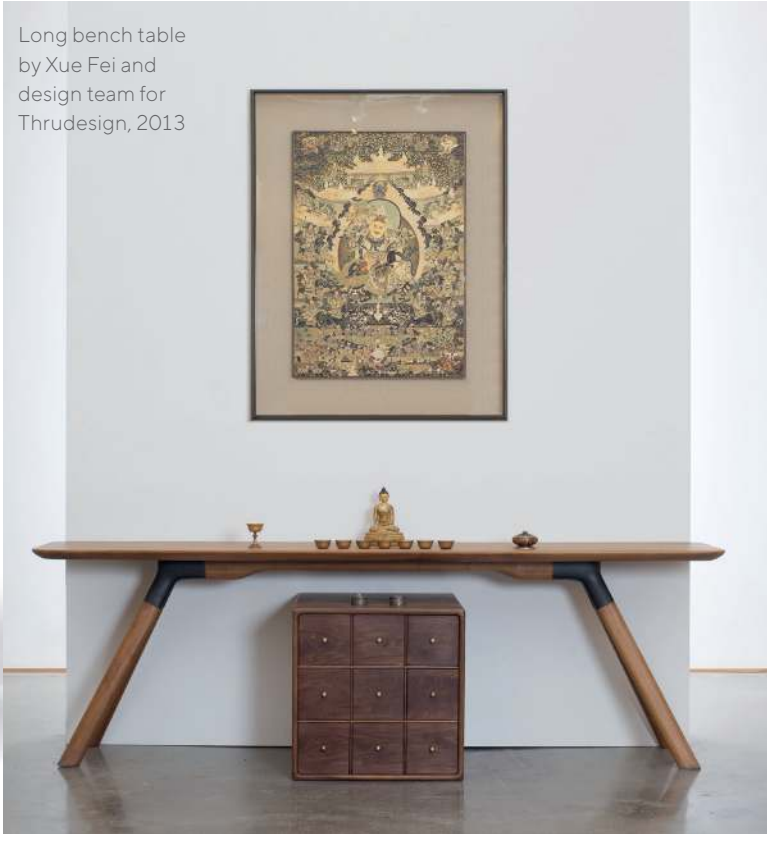
Motley II Baton Drum stools/table by Samuel Chan for Channels, 2008

You Rong sideboard by Wu Wei
and design team for Thrudesign, 2015

Dynasty room divider by Philip Yap
for Tang Tang, 2015

CCTV Building wardrobe from
I am a Monument series by Li Naihan
for Gallery ALL, 2014

Long bench table
by Xue Fei and
design team for
Thrudesign, 2013



Single sofa chair from
The Crate series by Li Naihan
for Gallery ALL, 2014

Tea table from The Crate series
by Li Naihan for Gallery ALL,
2014

Chaise, Work No.32- from Zan Zhi- In Praise of Rectitude series by Jerry Chen for Chunzai, 2012- comprising three elements (sofa, table and chair), which can be joined together as shown or used apart in an interior setting

have already made inroads into export markets, and the success of these daring design entrepreneurs has woken up larger and more established Chinese furniture manufacturers to the fact that true authenticity and originality can actually make the best business sense.

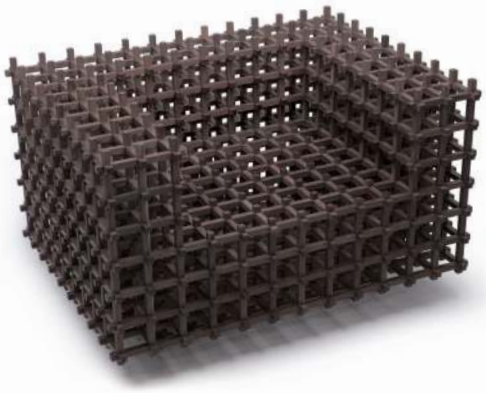
One of the thorniest issues facing China's current furniture industry is the use of rosewood. Growing demand, especially among home-market consumers, has over recent years far outstripped sustainable supply. In 2016 John Scanlon, the Secretary-General of CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora), highlighted the fact that the survival of 300 different species of prized tropical hardwoods is now under threat. That same year, to legally protect this dwindling supply, over 250 species were added to the international treaty that regulates the tropical hardwood trade through logging permits and agreed quotas, to which China is a very important signatory. Sadly, illegal trafficking of exotic woods is still a major problem, and accounts for an estimated 50-90% of the hardwoods harvested in Amazonia, Central Africa and South East Asia. Thankfully, however, growing environmental awareness in China is already leading to a shift in attitudes and tastes, especially among the younger generation. Certainly, it is a difficult dilemma to resolve because the use of these rare tropical hardwoods is so inextricably bound, through the threads of time, to China's extraordinary historic furniture culture. That said, a significant proportion of Chinese manufacturers are already eschewing rosewood in favour of sustainably harvested American walnut, which has a similar grain and colour. This is a trend that will hopefully continue to grow, and which crucially allows Chinese manufacturers the possibility of exporting to important overseas markets, such as the USA and Europe, where the importation of rosewood furniture is so tightly regulated that it is effectively banned.

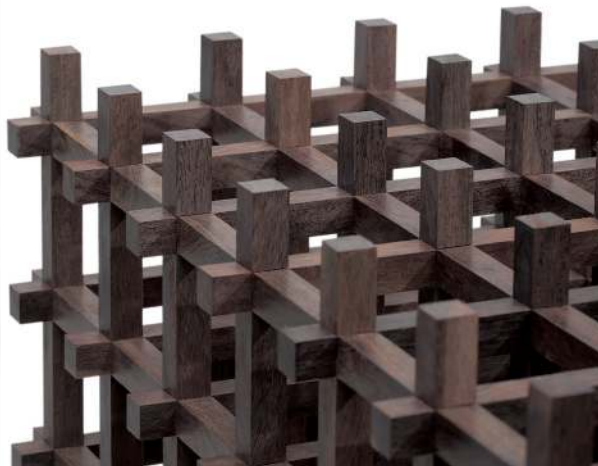
Although the first tentative expressions of New Chinese Design were evinced in the work of the British-based designer Samuel Chan as early as the late 1980s, it was the artist Shao Fan's creation of his landmark 'Chairs(?)' art furniture series in 1995 that must be regarded as the incendiary touch paper that set off the whole movement in China. This pioneering design-reform crusade has since evolved and matured into a remarkable force of creativity. The innovative and imaginative works resulting from this exciting two-and-a-half-decade adventure not only mark a new watershed moment within Chinese design, but also will undoubtedly radically alter, around the world, people's perceptions of what 'Made in China' really means today. Even more than this, as a significant collective body of work, New Chinese Design unequivocally testifies to the British historian and broadcaster Michael Wood's belief, as expounded in his BBC *Story of China* documentary series, that the march of modern progress 'means embracing history. For to be open about history, after all, is a foundation of a better present and a better future.' And that is ultimately why so many Chinese designers today are looking back in order to look forward. Perhaps this is not so surprising, for it was the Chinese philosopher Confucius who said 2,500 years ago: 'Study the past, if you would divine the future.'

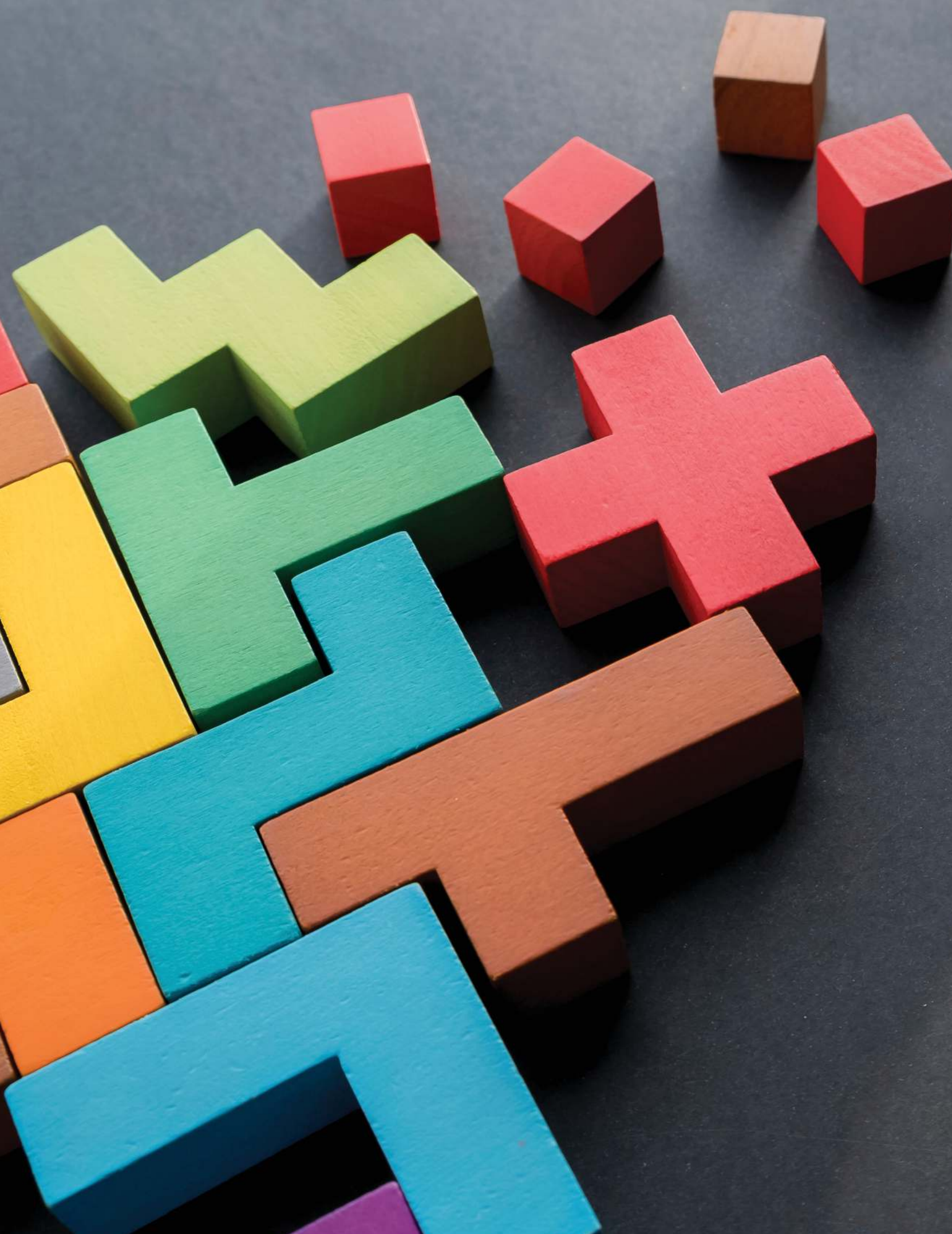
Contemporary Chinese Furniture Design: A New Wave of Creativity *by Charlotte and Peter Fiell, with Zheng Qu, is published by Laurence King on 28 October 2019. Available at laurenceking.com, RRP £30.*

Below left: Xi armchair- by Hong Wei for Wei, 2016

Below: Detail of the Xi armchair showing its puzzle-like construction







NO LIMITS?

IT'S OFTEN SAID THAT THERE IS NO LIMIT TO WHAT YOU CAN ACHIEVE. BUT IS THIS TRUE WHEN IT COMES TO CREATIVITY – OR IS THE EXTENT OF YOUR CREATIVITY GOVERNED BY THE BOUNDARIES OF YOUR IMAGINATION?

'You can't use up creativity. The more you use, the more you have.' So said Maya Angelou, the American writer, actor and civil rights activist. Maya was one of those people who believed that human creativity had no limits.

Yet not everyone agrees and the question of whether there are limits to creativity divides opinion. It's certainly a question for woodworkers and craftsmen, who have the licence and skill to give free range to their imaginations.

There are no clear-cut answers – after all, creativity isn't something that can be tested in a laboratory. But before delving into the debate, a brief look at the evolution of creativity will help make sense of the question.

HISTORY OF CREATIVITY

Creativity as we know it is a relatively new idea. The ancient Greeks, for example, believed inspiration came from the Muses. They had no term equivalent to creativity, and neither did the Romans. For these civilisations, questions about human limits to creativity would have been nonsensical.

During the Christian period, the word 'creatio' came to mean God's act of Creation and didn't refer to human activities. In fact, it was only at the time of the Renaissance that people started to express their sense of individuality and freedom, although the term creativity still wasn't associated with human endeavour. Artists and craftsmen were artisans, even figures like Michaelangelo and Thomas Chippendale were working to a brief.

It seems the first use of the word to describe something done by a human was made by the 17th-century Polish poet and theorist Maciej Kazimierz Sarbiewski. He wrote that a poet 'invents' or 'creates anew'.

The concept of creativity started appearing more frequently in art theory a century later, when it was linked with imagination. By the 19th century art was widely regarded as creative but it wasn't until the 20th century that discussion of creativity in the sciences began. The scientific study of creativity may have its foundations in JP Guilford's address to the American Psychological Association in 1950, which made the topic fashionable. Following Guilford's speech, questions started being asked about the nature of creativity and its limits.

WHAT IS CREATIVITY?

It's only since the dawn of the so-called creative industries that people have begun to celebrate creativity, says Professor Can Seng Ooi, a sociologist and anthropologist at the University of Tasmania.

But as any craftsman or woodworker knows, a dose of creative thinking has always played a key part in the design and construction of beautiful objects.

Indeed wood and stoneworking could be seen as the original creative industries, which now find themselves classed alongside 21st-century skills such as digital marketing and graphic design.

The idea that there could be 'creative industries' developed in the 1990s, during Tony Blair's time as prime minister. The movement involved bringing together distinct practices – such as architecture, film-making, design and marketing – and giving them the label 'creative', chiefly as a means to make money from them. Since then ideas about managing and monetising creativity have become popular worldwide.

According to Can Seng, while creativity has always been about experimenting and trying new things – meaning it is not always efficient or effective, as the cut-offs and unfinished projects in the corner of the workshop suggest – the rise of the creative industries has brought with it a fresh set of problems.

Applying the concept to mainstream subjects such as architecture and design – including furniture and cabinetmaking – means creativity is now seen as something that can be managed and developed, with money to be made from it. 'Before that, I think we took a more cautious approach about the idea of creativity, in the sense that there can be good and bad consequences [and] we have to exercise our creativity with caution,' he says.

It might seem strange for a woodworker, armed with the tools of the trade and a vision of what they will create, to ponder such concepts, but Can Seng argues that any discussion about creativity needs to be grounded in a social context. Whether or not there are limits to human creativity depends on how you want to define it.

He describes creativity as 'a mental capacity for humans to respond to circumstances and a mental activity that involves rising to the occasion when challenges are presented to us'.

'I don't see creativity as a noun – as an object with boundaries and limits. I see it as a process,' he explains.

And it is one that should be familiar to most woodworkers, who must frequently overcome issues on projects, work round unexpected hiccups and reimagine designs on the hoof.

OBSTACLES TO CREATIVITY

Those who believe creativity has limits often cite personal barriers such as lack of education, reduced access to resources, poor health or the bounds of a person's cognitive capacity as things that can affect it. Other challenges that can hinder creative potential include stress, busy routines, inadequate time for relaxation, rigid beliefs, self-criticism, fear and having conflicting goals. It can be hard to think creatively when you're overworked, exhausted or worried about what people will think of your efforts. If you're struggling to get by from week to week, the task of producing something creative could seem impossible (though it might be suggested you can find creative ways of getting by).

Some who argue that there are limits to an individual's creativity believe that this is not the case when it comes to humanity as a whole. Wider limiting factors include the current state of technology and knowledge. On a more prosaic level, materials and circumstance may also play a part. A bad workman may blame his tools, but even the greatest will struggle to carve, say, ironwood, with hand tools.

There are limits in the realm of ideas and designs as well. One thing that has been the subject of much debate is intellectual property rights. Can Seng notes that promoting innovation and encouraging people to find creative solutions to problems can be difficult in industries that have protectionist tendencies.

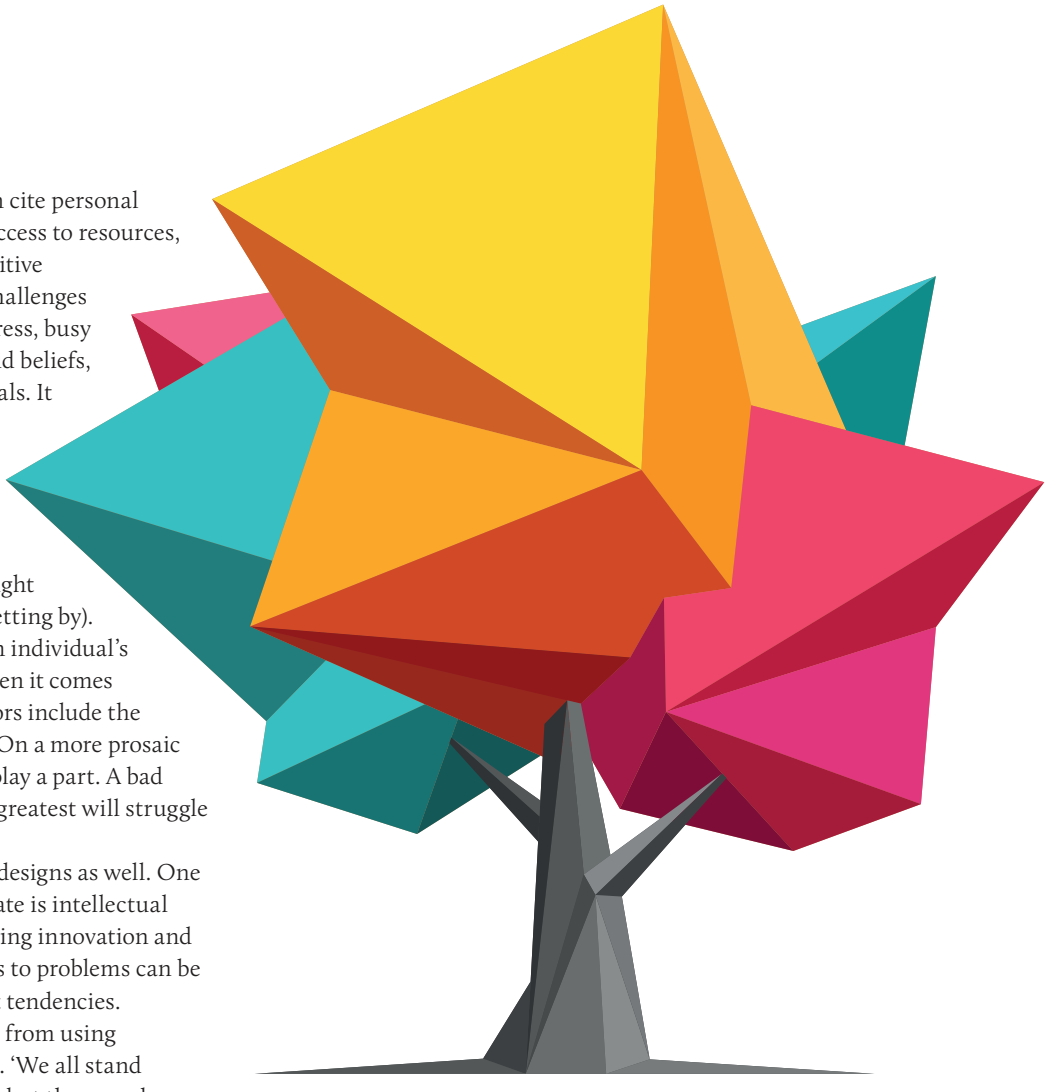
'There are regulations that prevent people from using certain ideas to build up other ideas,' he says. 'We all stand on the shoulders of giants to move forwards, but then maybe regulations prevent us from doing that.'

A recent example of this is the strange case of Tesla owner Elon Musk and the flatulent unicorn. To promote his vehicles, the electric car mogul reportedly borrowed heavily from artist Tom Edwards' image of the mythical creature experiencing some wind problems. His alleged appropriation of the artwork led to a Twitter spat, in which Tom's daughter claimed that Elon had 'ripped off' her father's image. 'Don't you think artists deserve to be paid for their work?' she tweeted. Elon responded by saying Tom should be happy that 'this attention increased his mug sales'. Happily the feud has now been resolved, but the debate about the rights of artists to protect their work versus the promotion of creative endeavour continues.

Can Seng thinks a balance needs to be found. 'I think regulations and laws can be a hindrance, but at the same time we need that to protect creative individuals,' he says. The sociologist also suggests that the idea of protecting an artist's work is a new – and distinctly Western – cultural phenomenon. Polynesian societies fighting to protect their unique and culturally sacred tattoo designs may argue otherwise.

FOSTERING INSPIRATION

While creativity is often thought of in terms of visual and performing arts, it's important to remember that invention and science can also be creative. And this is where woodworking has a foot in both camps. 'The human species and human civilisations have improved because we have made use of tools and technology to make our lives easier,' says Can Seng. 'Before the hammer and screwdriver making things was a lot more difficult, but thanks to tools [it's] a lot faster today.'



More recently, the advent of high-speed internet and computer technology has seen an explosion of scientific progress that offers seemingly unlimited potential. Digital technology has been a boon for craftsmen and has also been incorporated into areas including graphic design, furniture making and architecture.

In terms of unlocking creative potential, getting people together is an excellent way to get results. 'We often think best with others,' Can Seng says. 'There's an exchange of ideas and a sense of opportunity and excitement to inspire people.' This theory is evident in the development of creative districts in cities around the world, such as London's new creative hub at Wembley Park and Newtown in Sydney. But perhaps the idea is not that far removed from the concept of guilds, set up by craftsmen centuries ago.

Creativity may be a 21st-century buzzword, but woodworkers have always had a handle on it.

WORDS: SOPHIA AULD

FEEL THE FLOW

Overcoming slumps in creativity

Creative slumps can make you feel hopeless, but accepting them as natural, or as a challenge to expand creative thinking, flips the situation and maintains a healthy working pattern. Don't despair – just think differently.

Creativity isn't a basic human trait or something ever-flowing in an artist or craftsman's mind – it seems to come and go as it pleases. There will be highs and lows. A slump isn't the end of the world or a sign of a declining skill, so don't be tempted to hit your head against the wall or give up on projects – that will release only some of the frustration. Instead, try to accept the moment for what it is. Let go of the desire to try to control creativity and it will become easier to navigate any slumps that come your way.

Contrary to some headlines, there's no magical way to live at a constant creative peak – everyone does their best and finds what brings on their own inspiration.

Here's the thing: just accepting the fact that you're in a slump won't suddenly make you feel creative again. It's important to acknowledge this, because you may be there for a while. You have to push through the lows to get to the highs. Sometimes the best advice is just to keep chugging along. It may not be the fastest route, but it'll get you through.

For crafts like woodwork, which combine creativity and technical skill, it can be hard to marry the freedom of ambition with the challenges of execution.

It can become frustrating and emotionally challenging. Finding an ideal state for creativity may seem impossible, but there are ways to keep track of how you're feeling and what's causing some of those emotions.

Here are some things you could try:

- **Journalling** allows you to look back and discover patterns. If re-reading entries identifies a distraction – another cup of tea, an escape to social media – you can begin to plan how to make your emotions work more effectively for you. Pair low-motivation activities with the beginning of the brainstorming process. Then channel your high-attention and motivational activities when you need to hunker down and work with details to get things done.
- **Keep a diary of your projects.** This can help identify areas where you struggle. If you put off tricky parts of a project, address the skills that you need to improve to make it less daunting. Is prep work a chore? Would cleaning down your workshop at the end of the day make starting again the next day easier?
- **Take care of yourself.** Finding ways to focus on creativity is important, but there are also times when it can be detrimental. If you're mid-project, focused yet feeling drained, don't push aside how you feel, either psychologically or physically. Self-care is important now. Take a break, consider your situation, meditate or call a friend to talk through your feelings.
- **Take stock of your environment.** Put aside any emotions and ask yourself what's wrong. What's standing in the way, or what is missing from this situation? Are you at the start of a project? Are you lacking inspiration or is there too much going on and you don't know where to begin? Is everything too structured, or do you need more discipline to sit down and plough through until the end? Reflect on your environment. A workspace could be too cluttered, too open or maybe you just need a change of scene. The ideal environment will vary, depending on each individual's needs. A person searching for a creative boost may actually benefit from messier surroundings. Author and professor Kathleen D Vohs, a specialist in human behaviour and motivation, notes that creativity thrives in surprising places. Cluttered, dark and unusual surroundings may seem distracting, but can lead the mind in new directions. If you're more frustrated than curious, a tidier environment might do the trick. A bright and organised workshop might help you work through a project in a more disciplined, step-by-step way.
- **Check your habits.** Multitasking seems like a good way of getting lots done, but success doesn't always involve rushing around and juggling an endless to-do list. In fact, scientific studies have suggested it can be counterproductive. This is especially important during a creative slump. If everything seems to be working against you, it can help to focus on just one task. Multitasking might make you feel productive, but it's not something the brain is necessarily able to do well. Two different thoughts can't run continuously at the same time with a high level of success. Concentrating on what's in front of you will allow the mind to get to a point of higher-level, creative thinking. Only unpacking the tools you need for a certain part of a project could stop you from being side-tracked by a different part of the job.
- **Make a plan or throw it away...** Once the surroundings are taken care of, you can return to the project. Concentration can help you push through difficult moments, but it can be hard to figure out what to focus on. If you're struggling to keep your mind on your task, try a strict schedule for a day or two. The Pomodoro Technique, which uses a timer to break down work into short intervals, or a productivity app that helps to structure your day, can help keep you in the mindset needed to think deeply about a subject. If it's still a challenge to find a spark, try throwing the schedule out of the window. Let any feelings guide you and explore random thoughts. They may seem silly, but that could lead to a surprising innovation or a shift in perspective. On a larger project, try not to think about the finished article. Instead focus on the individual jobs and work through them one by one, seeing them as discrete tasks that each have their own merits.

WORDS: JASMINE HARRIS

PHOTOGRAPHS: SHUTTERSTOCK.COM

RAISE CHEST OF DRAWERS

TRADITIONAL HAND SKILLS HELP **THOMAS EDDOLLS** CREATE A BEAUTIFUL PIECE OF FURNITURE

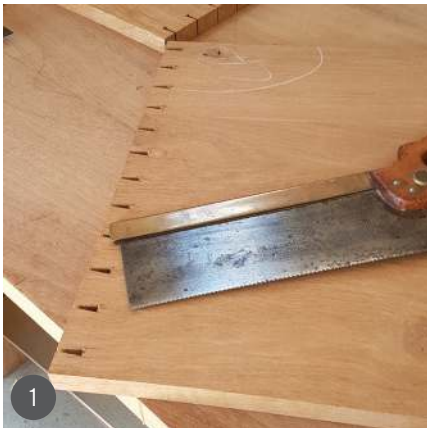
The Raise chest of drawers was made as a speculative piece for exhibition at the Celebration of Craftsmanship & Design in Cheltenham. I'm not entirely sure where the inspiration came from – I somehow unconsciously sketched out an idea from my mind's eye and there it was, a sunburst-fronted chest of drawers. I was happy with the sketched concept and the next step was to make it, what could possibly go wrong?

CHOOSING THE TIMBER

I decided that a rippled sycamore would be very effective for the frontage, and I sourced some lovely planked and seasoned boards at Tyler Hardwoods. I wanted a dark, contrasting colour for the carcass timber and I found the perfect material while helping a local craftsman, Jonny Walker, who had previously felled, air-dried and milled a brown oak. He dug out some boards which I could immediately tell were right for the project: both the crown and quartered boards had an even and constant brown throughout with a smattering of catspaw figuring. How lovely, I thought, they will go together like coffee and cream.

With the materials assembled, I made a scale maquette and then some proper hand-drawn working drawings. I quickly assembled a model with a roughly hand-carved frontage to give myself an overview of scale and impression and was quite delighted with the outcome. Now I had a model, drawings and materials, the next step was to convert the timber for the carcass.

PHOTOGRAPHS: KENNETH JAMES PHOTOGRAPHY



STEP PHOTOGRAPHS: THOMAS EDDOLLS

MAKING THE CARCASS

I found my quantity of material to be quite tight for what I had to do. As the boards were consecutive, I managed to grain match two book-matched sides together, each out of three pieces then jointed up a book-matched top.

At this stage I hadn't decided on the construction details – when making speculative work, I like to resolve issues like this at the bench, it often gives me more options and scope working this way.

1 After jointing up the carcass panels and a solid maple base shelf, it was time to start making decisions. I opted to through dovetail the top to the sides. These were cut by hand using an antique tenon saw. The tails were cut straight off the saw and were then transcribed very lightly on to the pin board with a scalpel. These fine lines were firmed up afterwards using a shop-made bevelled marking knife.

2 Once this was done, I sawed out the pins using fine bevel-edged chisels to pare down to my knifed marks.

3 The corners were mitred so as to maintain a sharp, clean contour to the piece.

4 The piece was developing an Arts & Crafts feel, so I decided to incorporate wedged through tenons into the base shelf. These were extended off a full width cheek housing and cut using a router, referencing from the bottom edge of the panel using a straight fence, first working out the housing position. Then, turning the panel over, piercing through the face on the same set out lines, squaring out the mortise by hand.

5 The next obstacle to overcome was the working guide system for the drawers. To keep the weight down, I opted to use frame and panel dustboard dividers for the drawers to run and kick on. An obvious problem was the opposing grain directions of the maple runners and the cross-grained brown oak carcass panel. To overcome this, I ran housing channels into the sides and then constructed the dustboard frames.

These were mortised and tenoned together and grooved for 4mm dust panels. The front tenon was glued and cramped while

1 The tails were cut out with an antique tenon saw and the recesses cleaned up with a narrow chisel

2 The neatly matched up carcass pins and tails with mitred corners

3 Detail of the mitre and pin corner joint

4 The through-wedged tenons of the bottom carcass shelf

5 Four dry-assembled dustboard frames and the bottom shelf in position

6 The housed in dustboard frames after glue-up in carcass

7 The narrow grooving planes used to create the initial channels, note the maquette in the background

the back was left dry. I left a 5mm gap to allow for movement. Once assembled, I routed on the male part of the housing.

GLUING UP

I needed to apply adhesive to two 80mm-wide stub tenons, both the front and back endgrain sections of the backboards were glued whilst the middle long grain part of the housed joint was left dry to allow for movement. This being allowed for, in a dry rear framework tenon with a 5mm gap to the shoulder. After a dry fit to make sure everything worked, cramping blocks and cramps were assembled and then it was time to get down to business. I used a two-part urea formaldehyde adhesive mixed with a slow-setting hardener to give myself a long open time.

6 Brushing glue on to both mating components after forming a sequence of workable and efficient operations, the carcass and frame works were assembled and knocked home before the joints were pulled up tight with sash cramps. After a sweat-inducing hour, everything was home and, when I measured across the diagonals, the assemblage was square and true.

MAKING THE FRONTAGE

Now it was time to look at the frontage. I had considered using CNC for the shaping, but after impulse-buying a job lot of antique hollow and round moulding planes, I decided to tackle it strictly by hand.

Converting the rippled English sycamore revealed some glorious figuring. I sized the drawer fronts on the panel saw slightly over before shooting them in with a number seven. They were then length cut 0.2mm oversized of the aperture. The saw marks were lightly removed with a sharp smoothing plane, which gave me a snug fit in the carcass. Once I was happy and all five fronts were at the same stage, they were laid on the bench and cramped together.

7 This is where the fun began. I needed to feel my way into the shaping process, not really having anything strictly mapped out three-dimensionally. Working from my elevation drawing and looking at what I had in front of me, I set out the indent lines with a pencil. These were then scribed in using a straight edge and a narrow gauge round-bottom moulding plane.

Once these were established, I began to deep taper them out from the centre and slowly began to round over the scallops. After experimenting with various different moulding planes, the bulk of the work was done with a Stanley 93 shoulder plane. While trying to tune it up I overground the edges, meaning they now sat minutely inside the body. This was a massive advantage for this job as it meant the body could follow the grooved contours without the iron scoring it any deeper.

Stock removal working across the grain was quick and efficient, being mindful of planing direction. I found this process immensely satisfactory and the bulk of the work was completed in a two-day time frame.

MAKING THE DRAWERS

An important aspect of any piece of furniture is its functionality. I had arrived at a point where the frontage was to a degree sculpted but for the drawers to be of any use there should probably be some handles. I had resolved this issue at the concept stage: desperate not to break up the cleanliness of the sunburst, I had gone for undercut finger pulls shaped into the ends of each drawer. These were achieved by forming a hand-shaped template, which I referenced with a guide ring to undercut the finger pull handle.

8 The first attempt looked OK but there wasn't enough room for my fingers, so after reworking the template, I reshaped them all again. The second attempt was much more satisfactory and I must admit I let out a sigh of relief at that point.

9 The next stage was to construct the drawers. After running the drawer sides into the carcass, I cut all of the front tails on the bandsaw. This is a technique I employ to save valuable time. Again, they were transcribed on to the drawer ends and the laborious process of cutting out the lapped pin boards began. I used a router and straight fence to remove the bulk of the waste, freehanding close to the pins before finishing the joints by hand.

8 Detail of the discreet drawer pulls, the scalloping on the front almost finished

9 Checking the drawer sides are a good fit in the carcass

10 One of the dry-fitted drawer fronts, the side not pulled in yet

11 The pins on the drawer sides ready for shooting flush ready to fit

12 Drawer detail, not the ripple sycamore inside the drawer and on the front edge

13 The chest of drawers nearly ready for finishing

9 and 10 The backs were sized exactly to the fronts before through-dovetailing to the sides in a similar fashion, carefully leaving a proportion of drawer side proud to clean up the the pin ends afterwards. After routing a groove in the drawer front to accept the drawer base, it was time to glue up the drawers. Using sash cramps, the drawers were pulled tight, carefully checking for wind first, then for square. I used Titebond 3 for this because it has a slightly longer open time in the heat than than Titebond 2. Rippled sycamore slips were machined up and drawer bases were made, veneering 1.5mm-thick straight grained oak on to 6mm birch ply, to give me a 9mm drawer base.

10 After leaving the glued drawers 24 hours before manipulating using a drawer board (a stiff board to lay the drawer down on), I began to hand plane the sides down to the pin ends using a couple of vintage No 7s. In theory, once this is done the drawer should be a perfect fit in the carcass. My preparation had worked well and things were looking promising.

11 Once I knew my given base thickness I could groove my slips and glue them on to my drawer sides. When they were on, the bases were grooved with a router creating a tongue for the slip groove, carefully ensuring the shoulder lines mated well with my drawer assembly. The front of the base was treated similarly to mate with the drawer front.

12 After a final clean-up of the inside of the drawers, I could push the bases home, gluing the fronts in. Once I had got to this stage, I could finally fit the drawers, using paste wax to lubricate running surfaces.

13 With the drawers fitted, I could now see how the frontage sat together and work out any minor discrepancies. After a final clean-up, the piece was finished using Osmo Polyx oil, which I find creates a beautiful finish and is repairable.

BEAUTY IN THE UNEXPECTED

SAN DIEGO-BASED ARTIST **NUGE** SHAPES MASSIVE WOOD SCULPTURES INTO SOFT RIPPLES AND FOLDS – AND HAS DRAWN A HUGE FOLLOWING FOR HIS WORK. HE TELLS *FURNITURE & CABINETMAKING* ABOUT HIS JOURNEY

Dan Nguyen, known by his nickname Nuge (pronounced Nooj) has made a name and a business for himself – and drawn a following of well over 100,000 on Instagram – by sculpting hard, dense wood into the soft folds and ripples of scrunched-up fabric. 'I enjoy playing with the juxtaposition of the hardness of wood and transforming it into a soft, delicate texture because there is beauty in the unexpected,' he explains. 'I think it's fun to transform a certain material beyond what's expected.

'I enjoy this idea of juxtaposition in any form actually,' Nuge adds. 'One of my good friends applied this concept to her wardrobe one day: she wore this very elegant white dress but paired it with some combat boots. Those are two items you wouldn't expect to go together, but it was extremely memorable and breathed new life into items that could've been worn traditionally.'

Nuge grew up in Boston, Massachusetts, then studied architecture at the Roger Williams University in Rhode Island before moving to California to work for architecture firms in San Francisco and San Diego. But he found sitting at a computer, drafting and drawing construction documents, tedious and began looking for a way to express his creativity.

He began teaching himself woodwork in 2014 at the age of 26. 'I started off making cutting boards as a hobby while I worked as an architectural designer,' he recalls. 'Starting off in a shared woodshop space greatly helped me because there were a ton of guys there with tons of experience. I was able to gain a bit of knowledge from every single person. I initially got myself into the woodshop because I wasn't getting as much creative freedom in the office as I had hoped.

A CAREER IN ART

'The first thing I ever made was a cutting board with a tumbling blocks pattern that had a step-by-step instruction posted online. I followed this tutorial in making my first piece ever in the woodshop. This piece was also sold to one of my very good friends. I didn't know it at the time, but selling this piece to my friend Rick would eventually snowball into a career of making art.'

Nuge continued to make cutting boards as a hobby for around two years, progressing into making tables and clocks. But when he was laid off from his job in 2016 he took the opportunity to move into art full-time.

'Before I ever set foot in a woodshop, I thought I wanted to learn to make furniture and making tables was a step in that direction, but, as my craft evolved, I became much more interested in making work that is strictly art,' Nuge says. 'I really enjoyed making work that could be interpreted differently depending on who is looking at it. Seeing people connect to my work was one of the best feelings I could ever experience as an artist.

'The main difference between creating a piece of furniture and a piece of art is the freedom and the experience of the final product. My experience with furniture has been very rigid in its approach, which has limited my ability to be wild and free. There are guidelines and rules for me to follow. There are functional needs that have to be met. Making art pieces is like a breath of fresh air in comparison. There's freedom for me to make changes and adjustments whenever I see fit. There are no boundaries that I have to stay within. I'm able to go as wild or as minimalistic as I want. The experiences of furniture and art are quite different as well. Furniture has a set function. It is supposed to be used in a certain way and its purpose is that. Art, on the other hand, is meant to be experienced. And the experience of a single piece can vary greatly from one person to the next. I like that it is unique to each person.'

Nuge uses a mix of exotic woods, often glued together in complex designs, along with resin and metal. His first pieces, including early work Almond Milk – a wall carving made from cherry wood – aim to create the look of bed sheets. He says: 'The idea of being in your bed surrounded by sheets is one of the most sensual and comforting feelings out there. With Almond Milk, I tried to mimic the way sheets act and then gave it a little twist. This particular piece is significant in my art path because it was the first building block that defined my style. My desire was to carve a surface that emulated the soft, fluid nature of fabric because the idea of transforming a hard, rigid surface into the polar opposite is a beautiful juxtaposition. Everything that I made after this piece has been built off of Almond Milk's aesthetics.'

PHOTOGRAPHS: KEVIN TAM

BEAUTY IN THE PROCESS

Rather than beginning his creative process with formal designs or drawings, Nuge 'sketches' by pushing a piece of fabric on a flat surface so he can visualise his ideas. 'The lines that I draw on my piece give me the bones for the flow, but everything in between the lines is up for interpretation. Some areas that I work on take longer than others and I come to a stop when it feels right,' he says. 'I think the beauty of my process is that everything is handcrafted as opposed to being produced on a CNC. Revisiting my work daily allows me to massage my work into place and work out the fine details that can't be experienced through a computer screen. I like having the ability to make adjustments as I go along.'

Once Nuge has a design sketched out on his selected piece of wood he starts working it with a variety of power tools. He uses a Dremel and angle grinder with abrasive tools to remove the bulk of the wood and an orbital sander to finish off. He creates his work in a shared workshop space in San Diego and because of this he has access to a wide range of machinery such as bandsaws, tablesaws and planers that would be too expensive if he were on his own.

Many of his works are glued together – a tedious and lengthy process, according to Nuge, but he prefers it to working from one big chunk of wood. 'Laminating my pieces so that they are layered gives me the desired thickness and it also ensures that no splits would be able to form,' he explains. 'When layering the dimensional lumber, I make sure the grains of the two pieces are curling away from each other. I do this because the grains will fight against each other if the climate changes and the wood tries to cup. This method keeps my work having very little cupping, if any at all.'

He has even taken this process some steps further and created a piece made from tens of thousands of small sticks cut to different lengths and then glued together. It took him over half a year to complete this work, compared to four to eight weeks for one of his chunkier sculptures.

Ash is Nuge's go-to wood. A hard, dense material that doesn't warp much over time, with a very open grain that can be recognised even from the opposite end of a room, ash is also very heavy and can be backbreaking to work with.

MIXING MEDIA

Nuge's career may have germinated from a desire to get away from computer screens, but software and social media have been key parts of his business. All his work is beautifully photographed by his friend Kevin Tam, a hobbyist photographer, then posted on Instagram where he has a following of more than 132,000. He also uses Photoshop as a tool to help potential customers get an idea of what his works will look like. 'It's hard for clients to visualise my work in their spaces, so I sometimes Photoshop my sketches into their space. I also superimpose images of my already completed works into different home interiors.'



Nuge is now working on his first freestanding sculpture, which incorporates LED lights into the carved wood. In the future he would also like to work with porcelain, leather, clay and bronze. 'It has been a fun challenge for me to work on a piece where I have to pay attention to every angle,' he says. 'Adding lights is extremely tricky because it can be really loud and then look cheap as a result, but I think it can also be very interesting and sophisticated if done correctly.'

After that he will be working on a commissioned wall carving. 'I try to balance out my projects by reserving time in my schedule to do a non-commissioned piece every other project,' he explains. 'This ensures I'm still able to work on projects that don't have any restraints so I can experiment with new techniques and continue to grow my craft. It also helps me steer the direction of my artwork as it evolves. My greatest fear as an artist is that my work will become stagnant and I'll start making the same stuff over and over again.'

One of the hardest moments for Nuge is when he sends a piece of art off to a customer. 'It is bittersweet because I've spent so much time shaping each piece to ensure they're all unique and have a voice of their own. I want to be able to enjoy the piece in its finished state, but it's also an amazing feeling to ship off a piece to someone who is eagerly waiting to make it a part of their home. One of the best feelings I could ever experience as an artist is seeing people really connect to my art.'

Nuge takes inspiration from a number of other artists. 'I love discovering new work that makes you think differently,' he says. He has eclectic taste in music, loving anything from hip hop and house music to indie and 1980s alternative rock, and loves going to the beach, art galleries, concerts and music festival around his southern California home.

'Beauty means something different to everybody,' he says. 'What inspires me is my desire to share with other people my interpretation of what is beautiful. My hope is that my work will inspire other people to create something of their own and share it with the world.'

Find out more at **nugeandwood.com**

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info@watersandacland.co.uk

Above *CCD New Talent Award - Winner 2019. Writing Desk by Tom Galt.*

Below *The Furniture Makers Design Award - Winner 2019. 'Guilloché' Bedside Tables by Fernanda Nunez.*

Right *Young Furniture Makers Award - Shortlist 2019. 'Ice' Cabinet by Lasse Kannegieter.*

ON YOUR WISH LIST

THIS MONTH'S MAKERS' MOST WANTED

Lorenzo Milano tool kit with mahogany wood box
US$6,925, **mrporter.com**

Bleu de Chauffe Gaston tool bag
£209, **bleu-de-chauffe.com**

Heritage Super Tool 300
£109.95, **leatherman.co.uk**

Swiss Essential Tool Set
£1,275, By WohnGeist
The Conran Shop **conranshop.co.uk**

Waxed canvas tool roll
US$89, **redcloudscollective.com**

Felling axe,
US$398, **bestmadeco.com**

Lie-Nielsen No 5 jack plane
£329.95, **axminster.co.uk**

Bad Axe 12in stiletto dovetail saw
15ppi rip
£240, **workshopheaven.com**

Fabriano tools notebook
£24, The Conran Shop
conranshop.co.uk

Clifton 650 curved sole spokeshave
£114, **flinn-garlick-saws.co.uk**

Rare translucent Novaculite Arkansas
stone 8in x 2in
£84, **classichandtools.com**

Bridge City MT-1 dovetail,
mitre and square multi tool
£134.50, **axminster.co.uk**

Cantilevered metal toolbox
£130, **labourandwait.co.uk**

PLAYING WITH TIME

YOUNG MAKER **MATT GILBERT** HAS ENGINEERED A BUSINESS OUT OF MOVABLE WOODEN STRUCTURES. HE TELLS *FURNITURE & CABINETMAKING* THE INS AND OUTS OF WORKING WITH WOOD IN SUCH INTRICATE MECHANISMS

Making the invisible visible is an idea that has inspired Matt Gilbert, founder of Animaro Design, since his early studies in architecture and furniture design. The 31-year-old designer, who works from a studio space shared with an architect, a structural engineer and an origami artist in London's Bethnal Green, has created visual reprentations of gravity – in the form of his adjustable Crane Lamp – and time, in his new Solstice Clock.

Both are crafted from hardwoods – walnut, sapele and oak to match different interiors – with metal fixings and electronic components, and both have been brought to market thanks to successful crowdfunding campaigns.

'I want to create things for the home which are inherently playful,' says Matt. 'I'm interested in creating things that will surprise people, make them laugh or smile and be quite unexpected. In addition to that it is about showing something that is not normally or not obviously visible.

'In the case of the clock it is about time – time is an invisible thing being made more invisible by, for example, looking at phones to tell the time. The Solstice Clock makes time very visible in a very playful way. With the lamp I was quite interested in the idea that by lifting it up and down it was more about forces and gravity and making that visible but in a playful way. If those things didn't exist, the lamp wouldn't work.'

The Crane Lamp is an adjustable desk or floor lamp made from a movable extendable scissor structure. Matt explains: 'The idea is that when it is on your desk you can have it very small or very easily lift it up over the top of where you are working. There are no electronics or motors – you just move it with your hand and springs hold it in place. The floor lamp works on a similar principle but at its highest could be about 1.8m high, so you can lift it up and over a sofa or lower it to where you are sitting reading.'

Matt adds: 'The idea was partly for something functional, as you can change where the light is, but more than that it creates something quite playful. As you move it you can see the structure changing dynamically and it looks quite radically different at its largest and smallest.'

He started off with an order for 50 units and CNC-cut them himself, along with other furniture makers and freelancers he hired, in a workshop in London. The fixings and brass mechanism were bought from a company in Birmingham and the vintage-style lighting cables, which can be bought in a range of colours, were made in China. Matt has since adapted the idea to a few other lamp styles, including a wall lamp and a standard lamp.

CHANGING TIMES

His latest project – about to hit the production line as *F&C* went to press – is the Solstice Clock. This was a real challenge to prototype as it combines an aluminium clock mechanism with a wooden scissor structure moving on stainless steel rails. Matt says: 'The idea with Solstice was to create a clock which would turn the passing of time into a moving artwork. As time passes throughout the day the clock changes shape: at midday the clock is at its biggest and by six in the evening it is at its smallest. It shows time in a new way through shape and pattern, as opposed to where you would normally see the hour and minute hands.

'It is also inspired by the idea that historically time was observed through seeing shadows on the ground or stars moving across the sky or elemental things like that. It created a really close connection between people and the world they lived in. In order to know the time of day you had to be aware of your environment. Technology and phones can create more of a disconnect between people and their environment, because ultimately you can look at a phone screen, see a few digits and know what the time is. There is something nice about people needing to be more aware of their environment to know what the time was.'

Matt's original idea for the clock was to make it from metal alone, even though his previous experience had been in wood. 'I realised when doing the Crane Lamp that it is quite difficult working with wood in a really precise engineering way and making things which move and change shape. Wood is prone to warping and can be difficult, and I wanted it to behave like a metal or a plastic.' But an online poll of his previous customers, potential clients and supporters found that they unanimously preferred a wooden version. 'A lot of people said that when it was all metal it felt very cold and mechanical. When it was wood it had a kind of warmth to it. The two materials play off each other quite nicely. The central part is aluminium, the rails are stainless steel. The metal makes the wood sing – it lifts it off the backdrop and makes the wood feel really special.'

WOOD CHOICES

Coming up with the prototype meant lots of research to work out what kind of wood would work for the project. 'It needs to be very stable in that it can't warp or twist over time – if it warps the mechanism will jam,' Matt explains. He spent a lot of time trying out different woods, exposing them to humidity over time and testing them to see if they would work. 'African ironwood for example is really dense and is used for bridge building,' he says, 'but in the end I didn't use that because it was so heavy – that is the flip side of being really stable.'

In the end he chose an engineered wood made of thin layers glued together and a facing of hardwood – again walnut, sapele and oak. 'Because it is engineered it essentially means it's much less likely to warp or move,' he says.

The wood is all CNC-machined using a digital cutting system. The pieces could have been cut with a kind of giant cookie cutter, but this would have meant a greater risk of splintering at the edges, or laser-cut, but this would have meant that burnt edges needed to be removed. 'CNC means you get a clean edge and each piece comes out exactly the same,' says Matt. 'A lot of the finishing is done by hand, sanding for example, but for the actual cutting it made most sense to do that with a CNC machine.'

The clock is mains-powered, with a cable that can be part of its style, as in the Crane Lamp, or could be chased into the wall behind the lamp to make it invisible. Matt explains: 'If there was a battery it would need to be changed very frequently, which would defeat the object of it being calming and motivating because it would need constant maintenance. The idea is that you can turn it on and leave it.'

DIGITAL REVOLUTION

He first prototyped Solstice with an AC synchronous motor, but abandoned this because it was too powerful. 'If there is anything wrong with the clock the motor could pull it apart or cause damage,' he says. 'The motor I'm using now is a digital stepper motor just powerful enough to keep everything moving with a bit of a buffer, but beyond that point it won't because it's better for the motor to stop than to damage the clock. Essentially, if it stops, it is an indication that the clock needs to be cleaned.' He also notes that synchronous motors are around 10 times as expensive as digital stepper motors.

Matt adds: 'Solstice has two modes – clock mode and demo mode. In clock mode the hand behaves just like an hour hand and the clock slowly opens and closes over a 12-hour period. You won't see it actually moving because it is moving too slowly. In demo mode it opens and closes every 60 seconds so you can actually see it gradually opening and closing like a moving artwork. You could leave it for a few hours and it will continue to keep time in the background. To do both those things you would need to design quite a complicated gearing mechanism to switch an AC motor from one rotation every 12 hours to every minute. It is cheaper and simpler to do it with a digital stepper motor and a small circuit board with a bit of code that does the switching. To switch between them it has a touch sensor towards the bottom of the clock – there is no obvious button, just a secret way of switching.'

STEP IN TIME

With so many small moving parts involved, developing a clock mechanism that would keep time was an extra challenge. 'If there is too much friction in the mechanism it can cause the clock to lose time,' says Matt. 'That has been the difficult problem to solve to make the overall mechanism as low friction as possible and then use a motor which is more powerful than that amount. It can still move even if there is a little bit more friction than I have tested it with.

PHOTOGRAPHS: DUNJA OPALKO, DUNJAOPALKO.COM

'I'm now at the critical point about to place the first purchase order with the factory. The scary bit is coming up! I have had the sample back from the factory and I'm very happy with it generally. It has been running in my studio for three months and hasn't lost any time,' he adds.

Matt originally trained as an architect, studying for his bachelor's degree in Cardiff and then moving to Copenhagen for his master's, which was a split honours covering half architecture and half furniture. 'It was while I was there that I got inspired to pursue furniture design,' he says. He started coming up with ideas while he was still in Denmark, and continued developing them as a hobby while he gained experience in a number of architecture and design practices in London. In 2016 he decided to take a few prototypes to the Milan Furniture Fair, where he exhibited in a special area for designers under 35 who were doing more unusual, avant-garde things. Talking to fair-goers who gave him feedback on his work as well as sharing their experiences helped to shape his plans for the future. He decided not to take the traditional route to market, in which designers license ideas to furniture manufacturers who then develop and market the products and get around 3% of commission per sale.

Matt recalls: 'Talking to designers and other manufacturers I decided I didn't really want to go down that route because I would need to design so many products to start making a living, and I had spoken to so many people who had been doing that for years and were finding it difficult. You hand the risk and reward to someone else, but I think a bit of the fun as well.'

KICKSTARTING A CAREER

Instead he decided to use crowdfunding to bring the products to market himself. 'I felt the design language I was trying to develop of things which move and change shape, which involve lots of aspects of engineering but are also quite playful, would be better if it were captured in one brand.' He named the brand Animaro, which means 'animated' in Latin and also contains the Italian word for soul, anima. His first Kickstarter campaign, in 2017, raised £14,500, beating its £10,000 target and selling some 50 lamps. In order to develop the prototype for Solstice, Matt joined a business accelerator called Central Research Laboratory, where he took part in a six-month programme learning about motors, manufacturing and mechanical engineering. Through the programme he met his current manufacturing partner, before going on to run another Kickstarter campaign for the clock in autumn 2018. This time he raised more than £58,000, smashing his initial £20,000 target.

Although both crowdfunders have been successful, Matt is planning to raise funds for his next project through his own means. 'I'm happy with the result but it was quite stressful,' he says. 'There is a common misconception with crowdfunding that if you have got a good product it will do really well, but that is not the case. You have to put money into marketing.' His programme included hiring a PR company, buying Facebook ads and appearing at two trade shows, as well as a lot of social media work. He adds: 'The issue with using Kickstarter and Indiegogo is that their core target market is people who are very interested in technology and fashion, and if you put something on there it is surrounded by lots of projects nothing like it.' He is currently weighing up the pros and cons of crowdfunding for his next project, which is likely to be some variation on the Solstice Clock. 'I'd like to turn that into a range of timepieces,' he says. 'It makes sense because I have developed a lot of the mechanisms of how it works already.' For Matt the design process usually starts with a moving wooden structure, which he then connects to something that already exists, like a lamp or a clock. He begins prototyping using hand tools, but will often move to digital manufacturing later in order to get the accuracy he wants.

When he's not working Matt loves swing dancing, which he says is 'absolutely huge' in London and to which he is 'completely addicted'. 'I go at least every evening,' he says. 'I take two classes a week, meet up and practise with a dance partner and go to a mixture of parties. So far I have just been doing it for fun, but I have started thinking about competing. I am taking part in a competition in November with some friends, where we will do an aerial performance – which means that all the dance moves involve the followers getting lifted over the leads' heads. It's quite acrobatic.'

Find out more at **animarodesign.com**

MASTERCLASS:

MAKING THE CRANE LAMP

MAKING A CRANE LAMP IS A TRICKY AND DELICATE PROCESS. CREATOR **MATT GILBERT** OF ANIMARO DESIGN GIVES YOU A TASTER OF HOW TO DO IT


1a


1b

STEP 1: UNDERSTANDING THE CONCEPT AND CREATING A DESIGN

If you would like to make a Crane Lamp, before even picking up any hand tools or timber, start with cardboard and split pins (for the joints). Start by creating straight, thin rectangles of card with three holes in each, one at each end and one in the centre, then use the split pins to create a straight extendable scissor-arm. Once you have a grasp of this, try to put an angled kink into each rectangular piece halfway along its length, so that it becomes slightly 'boomeranged' in shape. The kinked rectangles should be assembled in exactly the same way as the straight version. By adding the kinks you will make an extendable scissor-arm with a smooth arch to its shape. Now try to make a few more and experiment with the angle you use to make the kink, an angle closer to 180° will result in a more subtle arc while a more acute angle will produce a more pronounced arc. It is these two principles joined together, a straight extending scissor-arm and a curved scissor-arm, that result in the shape of the Crane Lamp. Through this experimentation you should be able to settle on the perfect form for your lamp – you can add more straight rectangles to give the lamp more vertical height and you can use more kinked ones to give it more reach. However, be aware that if you give more horizontal reach to the lamp you will also need to stabilise the base to stop it falling over when fully outstretched!

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STEP 2: YOUR MATERIALS

Next you need to think about the materials and parts you want to use. Essentially you will need timber for the main body of the lamp and the base. I would recommend timber in sheet or plank form if using a CNC machine or square sections of timber if working with hand tools. The base can be a simple rectangle of wood and needs to support the lamp at one point that is fixed (but able to rotate) and one point that can extend. You will need to create an axle for the fixed point and for the extending part you can use an off-the-shelf rack and pinion wheel. The rack is inserted into the base and the pinion wheel connected to the end of the lamp. I also use a spring connected between the pinion wheel and the axle, to help keep the lamp upright when fully extended. Depending on the amount of friction or tightness of the joints, you may not need the spring, so will need to do a little experimenting to see what works best. You will also need to choose a method for creating the joints. The simplest would be to buy aluminium or brass tube and cut it to consistent lengths. You can then thread each end and add some nuts to keep them in place. One thing to bear in mind is that the lighting cable will be threaded through the joints, so you need a large enough bore in the tube and thin enough cable to pass through. In terms of electrical parts you will need cable, a lampholder and a plug. You can either get a lampholder with a switch or you can use a separate in-line switch. I use fabric vintage-style cable and a brass lampholder because I think this suits the overall aesthetic of the lamp.

STEP 3: CHOOSING YOUR TOOLS

In this guide I will describe how to fabricate a Crane Lamp using a CNC machine as opposed to hand tools. This is because of the volume I need to make, but also because I find the accuracy makes the lamps incredibly smooth in their movement. That said, it is definitely possible to make a lamp without a CNC machine and that is how I made the first 10 or so prototypes. All you will need is a bandsaw, a pillar drill and some hand tools. With the second method it is important to create a jig to get all the holes in the same place on each part.

STEP 4: PREPARING THE CUT FILE

Next you need to choose the timber you will use. I use walnut, sapele or oak for the lamps. Plywood can also be used but I find that because you are exposing so much endgrain to create the individual pieces it results in a lot more hand finishing at the end. Also, if you use a solid wood it will look the same from all


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directions. After choosing the timber you will need to prepare your cutting file for the machine. I find that I can fit all the parts for a floor lamp on a plank of hardwood measuring 190mm wide x 2000mm long x 19mm thick. On the same piece of wood I can also fit two smaller desk versions of the lamp. Because I want to waste as little timber as possible, when laying the parts out I do not leave a thin strip of timber between them. This means the cutting bit is cutting the face of two parts at the same time. This saves a huge amount of time in cutting and also material, but it means you need to take a bit more time preparing the file and thinking about where to place tabs. This part of the process also depends on whether you will be operating the machine yourself or working with a local CNC company, in which case you should work to their standards.

STEP 5: CUTTING, FINISHING AND OILING

Once the cut file is ready you can load the timber on to the CNC bed and prepare the machine. I would recommend double fluted carbide bits and use a downcutter to get through the first half of the thickness and an upcutter for the second half. I also tend to use a 'finishing sequence' at the end where I run the machine quickly around the whole cutting path to neaten up and save sanding time.

After the parts have been cut you can use a multitool or similar to remove them from the bed, then for removing the tabs you can either sand them off (ideally with a disc sander) or use a router. It's easy to spend a lot of time on sanding all the parts, but I find the fastest method is to clamp a good handful of parts together (so all faces are aligned in the same direction) and use an orbital sander to run across lots of faces at once. Then to rotate all the parts to do the same for another set of faces.

After you have finished sanding, use a rag and oil the parts. I normally use Osmo transparent but this is up to you. The easiest method to dry the parts after oiling is to hang them using the holes, a simple jig with some wire can be built for this purpose.

STEP 6: ASSEMBLY

First it is best to assemble the lamp mechanism itself (before worrying about the electrical parts). It is easiest if you lay the parts out flat in the shape that you will assemble them. Then pick them up one at a time and add the joints. You should also attach the rack into the base at the same time if you are using this method. Next you need to connect the lamp mechanism to the base using the axle and also connect the pinion wheel and spring. In terms of threading the cable through, I find it easiest to first wire the lamp holder on to the cable and leave a loose wire at the plug end, then feed the cable from the top of the lamp down to the base. You need to go from one side of the lamp to the other and through the joints as if you are stitching fabric. Also pay attention to not threading the cable between two joints which will move closer or further apart, the cable should always run between two points of fixed distance. Once you have the cable through and out the other end you can attach the plug to the end and your lamp is now complete!

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IS VEGAN FURNITURE THE FUTURE?

VEGANISM ISN'T JUST ABOUT YOUR CHOICE OF FOOD – IT'S MAKING WAVES IN THE WORLD OF FURNITURE PRODUCTION, TOO

Well-known musician and vegan Moby takes no prisoners when it comes to his views on furniture and furnishings made from animals. 'A leather couch makes me think of Christian Bale in *American Psycho*,' he told global news and insights website quartz.com. 'You walk into someone's house and you see a black leather couch, a dead cow hide on the floor, and an alligator skin chair; you just don't want to be friends with that person. They could be narcissistic and very entitled – or possibly a serial killer.'

As dramatic and uncompromising as the outspoken Moby's opinion is, a rising global vegan-furniture movement does seem to point to an increasing number of people who agree – at least in part – with his headline-grabbing viewpoint. And with the number of vegans in the UK quadrupling between 2014–2018 to 600,000 according to the Vegan Society, there are more consumers than ever in the marketplace with a desire to source furniture made from animal-friendly materials.

In response, companies such as DiMare Design, a 100% global cruelty-free interior design firm, are stepping forward to meet the burgeoning demand. Indeed, founder Debbie DiMare firmly believes that in the future, it will become the norm for all households to be furnished solely with vegan furniture. 'Change is already happening,' she says. 'Ten years ago sourcing organic produce was a challenge, now it's mainstream. Just look at how many big fashion houses have banned fur – from Tom Ford to Armani. The world is becoming ethical, thankfully, and the furnishings industry is next.'

PHOTOGRAPH: SANTIAGO BERNAL

The 'world's first vegan hotel suite' at Hilton London Bankside by Bompas & Parr.

PHOTOGRAPH: XAVIER MUYARD

DiMare's commitment to the movement led to the foundation of vegandesign.org. This umbrella organisation offers certification to design companies from around the world that produce vegan-made furniture and furnishings. So far, around 60 countries are represented, including the UK, with the immediate aim of putting the 'inhumane furnishing skins industry' out of business. According to Vegan Design, it takes the hides of eight cows to make just one leather sofa.

A whole industry, known as biofabrication, has sprung up to develop vegan textiles and is producing innovative and surprising materials for designers to work with. So, for example, the pulp of eucalyptus trees is currently being used in the production of stylish rugs, and bamboo is used for everything from furniture to wall coverings and flooring. Versatile grass is a sustainability superstar because its shoots grow up to 10cm per day. And as you read this, animal-based materials are being mimicked and cultivated in cutting-edge laboratories around the globe. 'The future is amazing,' says Debbie DiMare excitedly. 'We could soon be using faux leathers made from mushrooms, for example.'

It's not as far-fetched as it might sound. Consider the creation of the 'world's first vegan hotel suite' at Hilton London Bankside by Bompas & Parr. The company is globally recognised as the leading expert in multi-sensory experience design and used Piñatex, a flexible material made from the cellulose fibre extracted from pineapples, to upholster chairs, cushions and the bed's headboard.

Cassina Croque La Pomme installation by Philippe Starck, Cassina Paris

PHOTOGRAPHS: SANTIAGO BERNAL

Interiors from DiMare Design

While it's tempting to dismiss the suite as a clever PR gimmick, another interesting collaboration seems to indicate that the design world is taking the production of vegan furniture pretty seriously. French architect and industrial designer Philippe Starck, known for iconic pieces such as the ghost chair, recently joined forces with Italian furniture brand Cassina to launch a 16-piece collection of furniture upholstered in Apple Ten Lork, a leather alternative made from skins and waste products from, yes, you guessed it, the apple industry. The innovative collection features a minimalist sofa and reimagined versions of two of Cassina's own classic chairs, the Caprice and Passion.

'Leather, like plastic, will disappear because we will become vegetarians,' Starck comments. Although it is still in its infancy, he believes the fruit-based textile has the potential to be a 'material of the future' and most crucially, it signals 'the beginning of a big debate that is urgent and obligatory'. Starck is of course touching on one of the most pressing issues facing humankind today – sustainability and our planet's very survival. While it's a subject worthy of a separate feature, many aspects of vegan furniture production have a lower carbon footprint than their animal furniture counterparts, making it a sound eco-conscious choice.

PETA, the largest animal rights organisation in the world, is also helping to raise awareness of the increasing availability of vegan furniture through its Vegan Homeware Awards. Now in their third year, the awards aim to recognise 'the skyrocketing interest in vegan living'. The 2019 winners include a wool-free ottoman by Weaver Green, made from recycled bottles, and Dutch designer Tjeerd Veenhoven for a collection of rugs made with vegan leather. Previous winners, including Swedish furniture giant Ikea and Habitat, highlight the fact that vegan home furnishings are becoming ever more available.

An important stakeholder meeting in 2014, attended by representatives from the Vegan Society, saw Ikea take on board the changing attitudes around animal-derived furniture and furnishings. Ever since, not only has the company strived to provide alternative options, but it also ensures that the vegan choice is of equal quality to the original it is mimicking. Today, according to head of sustainability Lena Pripp-Kovac, around 9,500 of Ikea's products are technically vegan, although they aren't always labelled as such. And indeed, a quick online browse shows that there are more fake-leather sofas than actual leather.

IKEA sofa

PHOTOGRAPH: IKEA.COM

PHOTOGRAPH: SUSZI SAUNDERS

Suszi Saunders' vegan renovation

It's a move welcomed by Dominika Piasecka, spokeswoman for the Vegan Society, who says: 'The fact that well-established and well known companies like Ikea are producing vegan-friendly furniture shows this lifestyle has moved into the mainstream. Vegans and non-vegans alike are able to make kinder purchasing choices by choosing furniture that was produced without animal exploitation.'

An ethical approach to furnishing homes with entirely vegan products is being spearheaded by Instagrammers and influencers such as Suszi Saunders. Crucially, the images detailing the ambitious vegan renovation of her London home show an über-stylish space crammed with highly covetable pieces, helping to shake off veganism's 'worthy' image. Not only did the ambitious project gain her 40,000 followers, but it also saw her named as another winner in this year's PETA Vegan Homeware Awards.

And despite its high-end look, Saunders says her vegan makeover cost no more than if she'd used leather and non-vegan alternatives.

Another winning attraction of the brave new world of vegan furniture is the fact that in many cases, the textiles being used are actually far more comfortable – so the buttery leather many people have previously held as the pinnacle of style and softness could soon be a thing of the past. As Debbie DiMare explains: 'Leather is expensive, smells, and it's not as durable as leather companies want you to think. After all, it's a skin, like ours – therefore it scratches and is porous. Faux alternatives are great for those with pets, children and clumsy folk – like me. They feel soft, buttery and luxurious and are gentler on the body.'

Could we all be sinking into a sofa made from apple, pineapple or even mushroom leather in the very near future after all? Moby will be pleased.

WORDS: RACHEL ROBERTS

PHOTOGRAPH: SANTIAGO BERNAL

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ROOTED IN SUSTAINABILITY

FURNITURE DOESN'T GROW ON TREES... OR DOES IT?

Eco-friendliness and sustainability in furniture production are arguably more important now than ever before. Consumers and furniture makers alike are seeking answers to address growing global concerns about the renewability of resources, the environmental impact of the processes involved, the durability and utility of the finished pieces. These pressing issues can, of course, be positive drivers for change; they can encourage a rethink of existing practices and provide an opportunity for innovation. A number of furniture manufacturers are responding to this challenge, marrying environmental conscientiousness with beautiful and intelligent design. Among them is Derbyshire-based company Full Grown.

Headed by married couple Gavin and Alice Munro, Full Grown produces chairs, tables and lamps, as well as other bespoke commissions, with a twist – in fact, with several twists: they grow, train and graft trees into the shape of each piece, which is then harvested, seasoned and skilfully hand-finished. This is living furniture, slowly and expertly grown into useful and appealing forms. It also answers a question that had played on Gavin's mind for some time: 'Why grow trees for 60 years in order to cut them down, chop them into little bits and glue them back together again when we could grow the shapes we need and harvest them as complete pieces?'

PHOTOGRAPH: CHRIS ROBINSON OF FULL GROWN LTD

PHOTOGRAPH: CHRIS ROBINSON OF FULL GROWN LTD

It's a process based on a premise of making the most subtle interactions with nature in order to create objects that are solid and useable. Their 'furniture orchard' is a field in which trees develop around custom frames with sensitive grafting to refine and reinforce the shape. 'You cut off a little bark from each bit of branch, then you line up the edges of where you've cut, so the vessels can reconnect again,' explains Gavin. 'Grafting usually happens in commercial horticulture,' adds Alice. 'It's usually one species to another. Here, though, we're grafting a tree to itself and it's quite keen to do that.'

For Gavin, the first seeds of Full Grown were sown as a child. In his formative years, he was fascinated with his parents' overgrown bonsai tree that had taken on the shape of a throne – an image, he says, that stuck in his mind. Back problems as a youngster meant he spent a lengthy amount of time in hospital having his spine straightened. 'I would look out of the window at the woodland while receiving kind and competent care from the hospital staff,' he recalls. After studying furniture design at university, he spent time in America, where he made pieces from the driftwood on a San Francisco beach. Those different strands of his life came together and melded with a long-gestated idea about growing furniture. Full Grown was born.

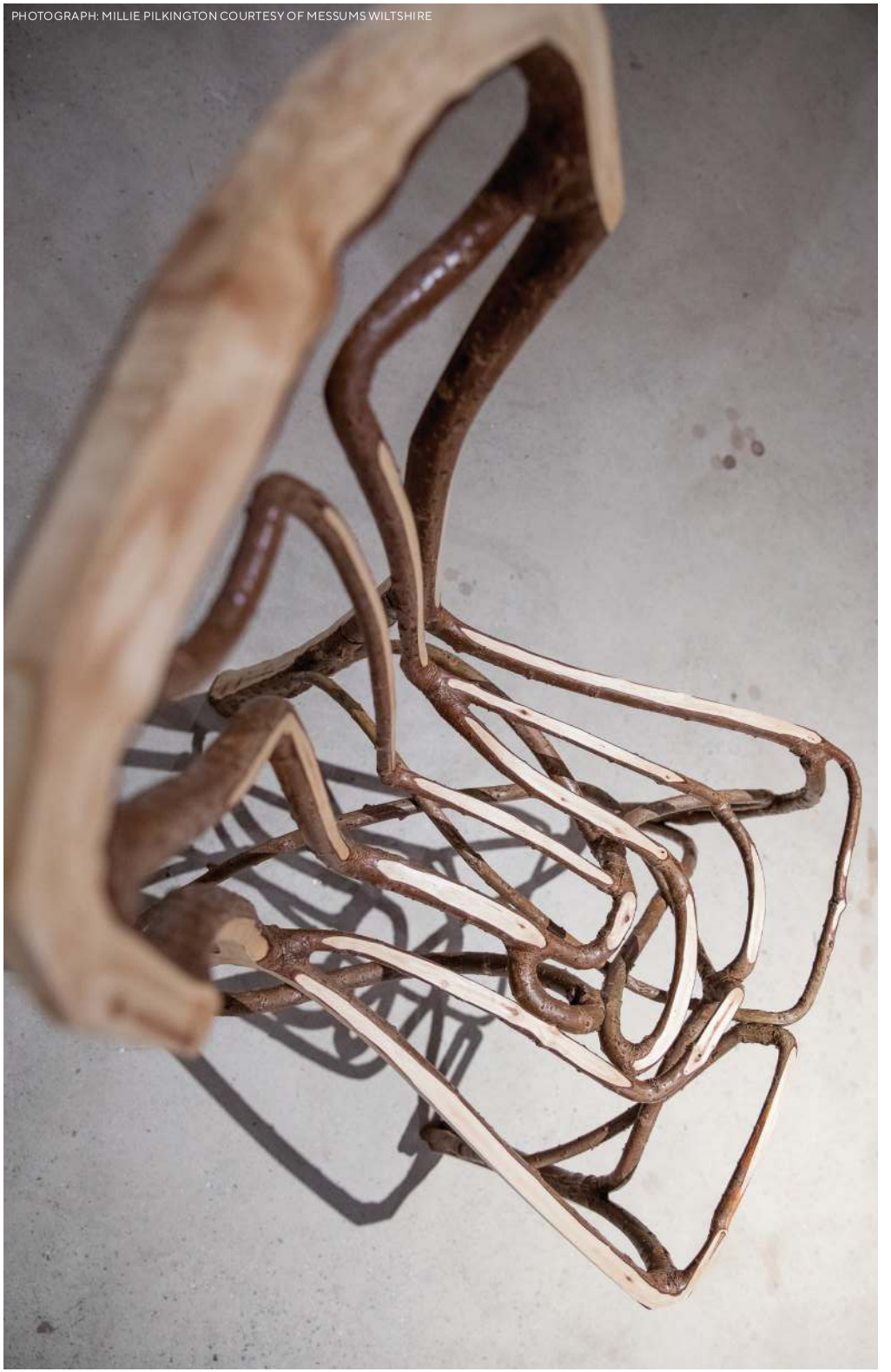
'When we first started in 2006, it was as experimental as experimental can get,' says Gavin. 'We were using Alice's mum's old vegetable garden, then a small plot of land that was opened up to us by friends with a farm. We did about 200 experiments and had a couple of successes, but we were always developing. We started out growing the chairs the right way round, with each leg provided by a different tree – but bringing four trees together meant they were fighting for light and one tree always did better than the other three. So we moved to growing chairs upside down, which makes much more sense for the growth of a single tree. In 2012 we started our first small batch production, but it wasn't until 2014 that we started selling things and our first delivery was in 2016 to Switzerland.'

They now have 400 trees in growth to varying degrees, with 40 chairs currently reserved or commissioned – and for each of those chairs, they grow a backup and a backup of the backup, which can also be sold when they become harvestable. There are orders for other items besides. And as their 'organised woodland' has developed, it seems that nature itself has sought to boost Full Grown's eco-friendly credentials. 'When it all first started it was just a field with some small trees in,' says Alice. 'But this has grown and grown – it's become more of an ecosystem and nature has helped us. We have aphids and caterpillars, for example, that we were worried about at first – but then birds started coming in and eating the caterpillars and so on. Making an ecosystem has been a big part of this. Trying to bend nature to your will doesn't work. You have to bend your will to nature.'

It's a point echoed by Gavin. 'We realised that you really can't force trees to do what they don't want to do. So what we do is more encouragement than control. Our favourite trees to use are willow, hazel, sycamore, crab apple and hawthorn. We're also experimenting with oak and beech. We tried ash, but sadly ash

PHOTOGRAPHS: CHRIS ROBINSON OF FULL GROWN LTD

PHOTOGRAPH: MILLIE PILKINGTON COURTESY OF MESSUMS WILTSHIRE



PHOTOGRAPH: CHRIS ROBINSON OF FULL GROWN LTD

PHOTOGRAPH: MILLIE PILKINGTON COURTESY OF MESSUMS WILTSHIRE

dieback meant we had to give up on that one – a shame, because it's a really good, predictable tree to grow with. We coppice our trees and know they're robust.'

Of course, harvesting the grown pieces doesn't mark the end of the process, it simply heralds a new stage in the production. A chair, for example, can take up to a year to season. Then there's the skilful sanding down and planing of key surfaces. 'We approach our pieces through a mid-century lens of clean lines and geometry,' says Gavin. 'Ultimately the aim is for it to not be immediately apparent how the piece has been formed.'

Time really matters here. This is furniture making that's driven by nature and nurtured by considered human intervention. Each piece is unique – the developing shape of each tree informs how its growth is guided into living furniture. For a customer, it's about delayed gratification – the statement piece they order today will not reach the harvesting stage for several years, but they will know that it's being grown and nurtured for them. 'The stuff that we're doing right now, it might be another decade before that comes out,' explains Gavin. 'It'll be the mid-2020s before we really have regular harvests. The timescales are certainly interesting.'

For Alice, too, time and sustainability are key concepts for Full Grown. 'This is not about growing a tree for 50-plus years just to chop it down and reassemble it, with all the machinery that entails,' she says. 'We can grow a number of chairs in that time from the roots of one tree. And we're primarily interested in creating useful, solid objects. It makes for a vastly lower carbon footprint.'

Full Grown is an example of how furniture makers can answer questions of sustainability for the future by developing techniques from the past and approaching the natural world with an ethos that is respectful and responsive. The company's aim is to reach a point where it can become a social enterprise, sharing expertise and training others, as well as collaborating with scientists and horticulturalists. Says Alice: 'Part of my dream is that this can be both a production method and also a wildlife corridor – imagine the motorway networks around the country, and alongside these are grown furniture factories; it means there would be a space for nature that would otherwise be crowded out. That's my vision for our sort of furniture production, and we want to make these spaces even better habitats for wildflowers and pollinators and other wildlife. I don't mind saying I'm a bit soppy about it.'

For more information on Full Grown, visit **fullgrown.co.uk**

WORDS: DEAN AGIUS

PHOTOGRAPH: IAN KEMP COURTESY OF MUSEUMS WILTSHIRE

PHOTOGRAPHS: WATERS & ACLAND

WOODEN IT BE NICE?

FORMER ENGINEER **TOM GALT** GAVE UP HIS JOB AND STARTED A NEW LIFE AS A DESIGNER-MAKER – BEGINNING WITH A SESSION LEARNING THE ROPES AT FURNITURE SCHOOL WATERS & ACLAND. HE TELLS HIS STORY

I began my woodworking education at school at the age of six. I absolutely loved it and, if I remember correctly, made a tractor, a small bookshelf and possibly a toy boat. The main tools were a spokeshave and a hand drill and that seemed to get the job done. Apparently I won the school's woodworking prize before I left at the age of eight.

Fast forward a few years and I've got an engineering degree and am working on projects in the world of recycling and renewable energy, a field I continued in for a decade, both as an engineer and in a management role, working across the UK and Germany. The work varied a lot, but there was a lot of computer-aided design, process optimisation and troubleshooting – the regulars of an engineer. It changed from role to role, but I often spent a lot of time sitting in front of a computer and getting to actually make something with my hands was a rarity.

Woodworking was something I always fancied getting back into but, living in rented homes, I never really had space to get the tools and give it a go.

Sometime in 2013 I remember reading an article in the *Guardian Weekend* magazine about a pair called Hendzel & Hunt who were making furniture in Peckham, mainly from reclaimed wood. This was really inspiring – I'm sure what they were doing wasn't easy, but it sounded really exciting and they appeared to be making a living. I got straight on to their website to scroll through the work they were producing.

In 2015 my mum had some building work done at her house and there was a pile of leftover timber at the end of the project. I decided to spend a few weekends seeing what I could make with it. First off was a pair of saw-horses, but soon after that I was on to a coffee table, a dining table, another dining table, benches, a tool storage cabinet and even a double bed. I was hooked.

I didn't have a lot of space but I slowly built up the tools as I needed them. There was a lot of trial and error in my learning: I picked up some knowledge from YouTube and bought and read a few woodworking books, but looking back there were lots of gaps in my knowledge.

PHOTOGRAPHS: GALT DESIGNS

BACK TO SCHOOL

Towards the end of 2017 I decided to leave the engineering project I was working on and look for something new to do. I told my partner Jane about a pipe dream I had of making furniture. I'd always thought it wasn't really a career someone could pursue – great as a hobby, but to do it as an actual career? But she persuaded me I should give it a go. It was Jane who discovered a furniture school in the Lake District called Waters & Acland, whose website looked interesting.

After visiting the school, in April 2018 I did a one-week course with them. The whole of the first day was spent preparing our planes and chisels – making them flat and making the bevels sharp, well beyond what I'd previously thought a sharp tool looked like. Over the next four days we made an octagonal serving board with chamfered edges, a Chinese burr puzzle and a dovetailed bookend. It was a really intense week and by the end of it I was exhausted, but I loved every minute.

Before the end of the week I had booked myself in to return to Waters & Acland that September for the proper designer-maker course. Initially I signed up just for one term, but as time passed I extended it to two and then finally three terms.

We started out on the same set pieces I'd made on the one-week course, but very quickly moved on to more challenging projects. I made a wall-hanging cabinet in American cherry wood, based on a standard model from Waters & Acland, but we all tweaked it to show our own design choices. By the time we were done all seven students had very different pieces, each reflecting our own visual styles and tastes.

After this we did a short project, again working to a standard design from the school – an occasional table. The purpose of this was to introduce us to the machine room and the powerful industrial-scale machinery in there. Our tutor took us through things in a methodical way to ensure we understood what the machinery could do, but also the dangers and risks they posed.

STRIKING OUT ON OUR OWN

It was at this point that things started to get really interesting, when we were let loose to create our own self-designed projects. It's fair to say that all the students were very conscious of the extremely high quality of work that had been done at Waters & Acland before – both by previous students and the school's team. The pressure was on to make the most of the opportunity of being there and to achieve a design that, when finished, we would be really happy with.

This is where my previous life as an engineer really came back to help me. Many months spent doing CAD designs of industrial processing plants was not a bad foundation for designing furniture, albeit on a much smaller scale.

At least once a week we would sit down with Will Acland and Olly Waters and review our designs, looking at the visual research we had drawn inspiration from, the ideas we had derived from it and the concepts we had come up with. This was followed by evaluation, iteration and refinement. Slowly things started to come together in a piece of furniture I actually wanted to make. With a finished CAD model of the entire piece I started preparing manufacturing drawings and a cutting list of parts.

After three months of hard work, lots of learning and a fair few mistakes (but none that couldn't be recovered from) I had a completed writing desk. I'd even managed to fit a hidden spring-loaded drawer inside the piece, ejected by a brass latch.

PHOTOGRAPHS: GALT DESIGNS

ON WITH THE SHOW

In spring, as part of London Craft Week, Waters & Acland took part in an exhibition called Celebrating British Craft, hosted by the Guild of Master Craftsmen at the OXO Tower Wharf and open to passing trade. I was really excited when Waters & Acland asked me if I wanted to take part in it. By this point I had my completed writing desk and also a dining chair I'd designed and made. I'd never really been in a direct sales position – this new dynamic of talking to interested people about my work took a bit of getting used to, but within an hour or so it was going well.

After leaving the exhibition for half an hour one day to go and grab some lunch, I came back to see a man carefully inspecting the joints on my writing desk. As I got closer I recognised Jan Hendzel, now working as Jan Hendzel Studio, whom I'd read about in 2013. It's really strange when you meet someone you've been aware of for years and whose work you really admire. We chatted for a good 10 minutes and it was really interesting to hear his views on the industry.

By the time I got to my final term at Waters & Acland I was in a bit of a routine. In the evenings and weekends I worked on designs so as not to eat into workshop time. Once a week I would catch up with Olly and Will to review plans for my next piece. And in between that I was busy working away on my bench or in the machine shop on my current project, very aware that time was moving fast and trying to get the most out of being there. Head tutor Graham Loveridge was still around to help if I needed him, but by this point I only needed guidance for the really complicated bits. At the beginning of August we had to say a final goodbye to the workshop and the Waters & Acland team, although I'll definitely be dropping back in from time to time.

THE GRADUATE

A couple of weeks after leaving I headed to the Celebration of Craftsmanship & Design in Cheltenham. Waters & Acland had been asked to put forward some students to exhibit pieces there alongside students from other UK furniture schools and other makers, many of whom had been exhibiting there for years. On the opening night I walked past my oak and sycamore writing desk at least a couple of times before I noticed a sign on it saying it had won the 2019 New Talent Award – I couldn't believe it! The prize had been sponsored by Design-Nation, so I received a year's membership to its portfolio of designer-makers and also the opportunity to exhibit some of my work at the National Centre for Craft & Design.

The rest of the 10 days of the exhibition were really useful for someone trying to enter this industry – I met loads more people whose work I've admired for years. They were all really friendly and more than willing to share knowledge with a newcomer.

Back at home the week after, I had an email from a man I remembered chatting to, who wanted more details on a piece I'd made at Waters & Acland but hadn't brought to the exhibition. Two weeks later I was delivering it to him in Bath and picking up a cheque for my biggest sale to date! He had enough interest and belief in what I was doing to want to help support it, and for that I'm really grateful.

What's next? I'm looking at jobs but also considering starting up my own business, potentially with a few other people – an exciting but daunting prospect. I've agreed with the team at Waters & Acland to be able to use their facilities short term. I'm very conscious that there's still lots to learn and I need to carry on developing my skills. On top of my other awards, my dining chair design has been shortlisted by The Furniture Makers' Company for the 2019 Young Furniture Makers Bespoke Award. That will be another great chance to take some furniture down to London and meet lots of other people with a similar love of designing and making furniture.

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OLD SKOOL OR WAY TO GO?

INEXTRICABLY LINKED WITH ANTIQUE FURNITURE AND RESTORATION WORK, FRENCH POLISH SEEMS MORE THAN A LITTLE DATED. BUT IS IT ACTUALLY A GENUINE FINISH FOR TODAY?

Woodworking and furniture making, like most other disciplines and interests, change over time. We now use power tools, cross-head screws and complex machinery instead of hand tools, nails and pit saws, as new technology lets us make things faster and more accurately. The same applies to finishes: instead of being made from bug exudations with complicated application techniques, they are now available in the form of synthetic spray lacquers and easy-to-apply acrylics. These finishes are extremely convenient to use and provide excellent results.

However, there are those who will argue that a French polish gives wood a quality that can't be achieved with modern finishes. It is a bit like people who prefer the sound of vinyl records to digitally downloaded music. Perfectionists may be able to tell the difference, but the majority of people will be more than happy with a modern version.

On a practical level, French polishing is a skill that needs time and effort to learn, and if your expertise lies in the actual making of the piece you may not want to make this investment. If you fall into the category of woodworker rather than finisher, your best option may be to have a finishing expert complete the project. The finish used may well be French polish, but that should be left up to the finisher, depending on the project and the budget.

If having an expert do the finishing isn't an option, it may be best for the maker to apply a modern finish. Most people can quickly achieve respectably good results with one of them, whereas if an unskilled person attempts to French polish, the end result can look like treacle has been applied with a broom.

However, it is undeniable that the shellac finish is superb if expertly executed, so learning this skill is well worth the time and effort.

SHELLAC FACTS

The basic ingredient of shellac is the refined exudations of the lac beetle from South East Asia. It has been used in various forms for centuries and, when discovered by western adventurers, became the finish of choice during the golden age of cabinetmaking, right up until the 20th century.

Every since shellac was discovered it has found a variety of uses. In the glory days of recorded sound in the early part of the 20th century, shellac was moulded and 'pressed' into 78rpm records, which you can still find in junk shops and boot sales. Its ability to record fine detail has meant it can produce music and speech to a high degree of quality. Being made of a 'plastic' material has also meant that many records have ended up being heated and softened in a warm oven to create folded flowerpots! In the food industry, a clear layer of shellac was used to give some confectionery a hard protective shell – it is perfectly digestible. Indian ink is basically soot (carbon black) and water, but it needs a fixative to hold it in place on the paper and guess what? Right, shellac of course. As it is very thin and easily soluble, it is the perfect medium for setting ink. Some legal documents and sealed objects still require a special seal applied using a stamp that is unique in its markings so it cannot be forged – shellac is the perfect material for this. Hardened shellac is also brittle, making it easy to detect any tampering with something that has been sealed with the substance.

The resinous lac has to be heavily processed and refined

The shine and depth of good French polish improves the look of furniture

THE BENEFITS

French polish is quick to apply, although repeated coats are needed over several hours, or even spaced out over several days if you prefer to let it harden. It is done by hand and no special equipment is needed, just a selection of brushes, polishing rubbers, spirit solvent, fine abrasive, dyes, French polishes and jam jars to store the rubbers. It seals and shines wood beautifully, creating what is known as 'chatoyance' – a depth and shine – more sympathetically than spray lacquer, which is tougher but looks highly artificial. It is less flammable than lacquers, which are highly volatile, so is safer to use. It is a genuine learnt skill and you can take pleasure in doing it and improving your technique.

APPLICATION TECHNIQUE

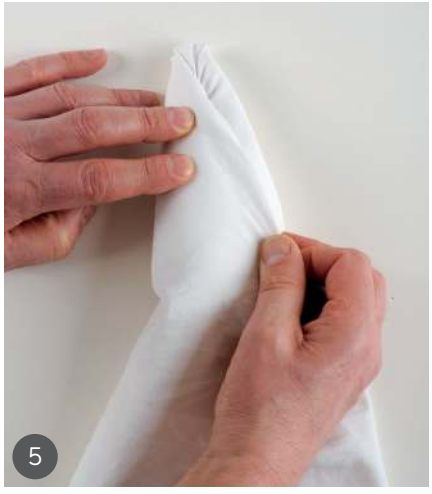
There was a time when it was considered essential to add a little mineral or linseed oil to the application 'rubber' to lubricate and prevent it sticking as it traverses the work. The downside is that the oil makes the polish cloudy and has to be lifted off with a second rubber that has only methylated or finishing spirit added. This takes time and skill, especially to avoid melting the previous coats in the process. It is possible with modern French polish of good enough quality to omit this finishing step and still achieve a reasonable result, but we are demonstrating the correct method here.

Basic selection of materials for French polishing

SURFACE PREPARATION

If you are working on a restoration piece, then gentle use of a wax cleaning agent may be necessary unless it is likely to disturb the patina. Wipe the surface clean and allow it to dry. On new work ensure it has been sanded to at least 320 grit 'with the grain'. A superior finish needs to have the grain filled to completely level the surface. There are proprietary grain-filling compounds which are wiped on in a circular motion, rubbing into the grain, and the surplus wiped off. If a dye is needed, this should be applied evenly.

Using grain filler to level the surface of the wood before sealing and French polishing



A BRIEF GUIDE TO FRENCH POLISHING

The first step in French polishing is to learn how to make a rubber, sometimes called a fad, and it is important for flat surface work. Mouldings, etc can be done using a lightly loaded mop brush. Once this is made the French polish can be applied and finished. Time, patience and skill will play a big part in the successful completion of the finish.

1 Take a square of white cotton sheet about 300mm square, place a slightly smaller square of wadding in the middle.

2 Fold the wadding diagonally in half and then in half again.

3 Pull the wings in to create a pointed 'mouse' shape.

4 Place the folded wadding towards one corner of the cotton sheet.

5 Fold the sheet in first from one side and then the other to enclose the wadding.

6 Now take the long 'tail' of cotton and twist it tightly around to constrict the wadding.

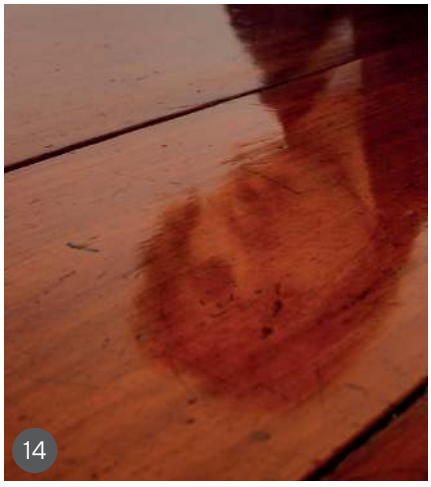
7 When the cotton has learnt its new shape, open it and pour in some French polish.

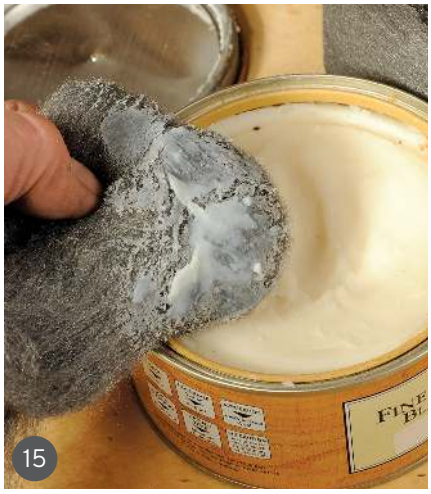
8 It should be wet enough when pressed – it is messy, you will get brown fingers!

9 Add a spot of linseed oil or any clean mineral oil to the face of the rubber for lubrication.

10 The rubber is wound tight and charged with French polish, ready to be used.

11 The rubber is swept down on to the work and swept off to prevent sticking. Work in circles, then figures of eight and repeat for successive layers for an even result.





12 The final coats are done with the grain, building up the shine as you go. Leave plenty of time between coats for it to harden.

13 When you are satisfied that it has good coverage, you need to remove the oil. This is known as 'spiriting off'. It is done with methylated spirits applied to a new rubber and must not be too wet to the touch.

14 The result should be an even shine, whether it is an antique or a brand new piece of furniture.

15 To complete the job use ultrafine 0000 wirewool to flat off the brightness and then load the wire wool with a hardening wax – the wire wool helps the wax stick. Apply evenly and buff off using muttoncloth: its open weave will drag off the surplus wax.

MAINTAINING FRENCH POLISH

A regular beeswax polishing is all it needs. Avoid direct contact with hot objects and ensure spilt liquids, especially spirit drinks, do not lie on the surface. In future you can clean off any wax and muck to recoat with French polish if you need to. Do not use silicon-based spray wax as it can scratch shiny surfaces, especially on antiques.

French polish used well really can equal or improve on other finishes when used on both new and old furniture, and add to your hand skills.

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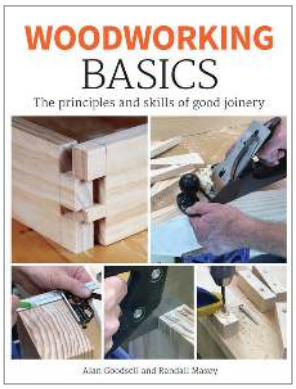

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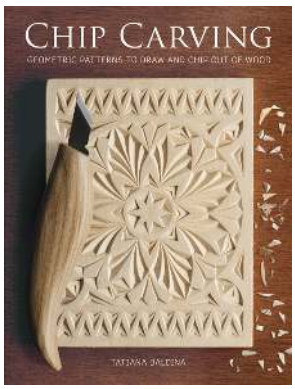

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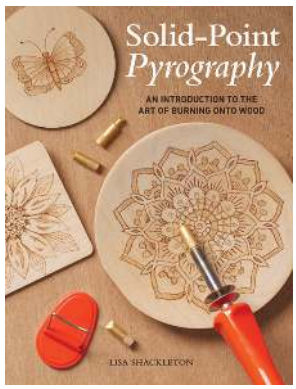

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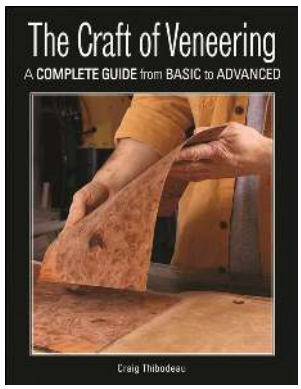

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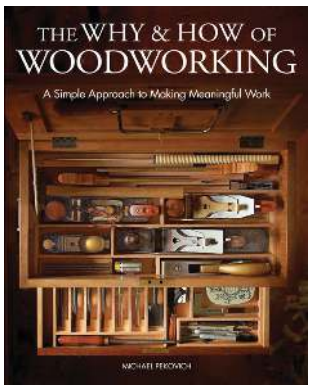

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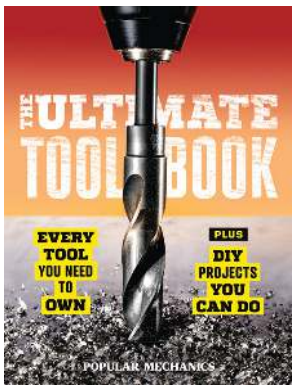

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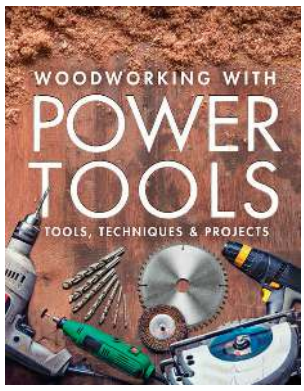

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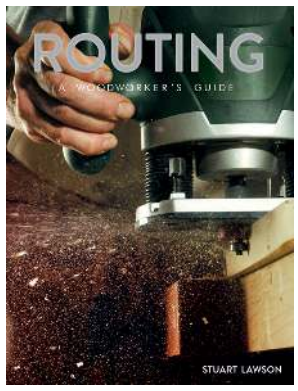

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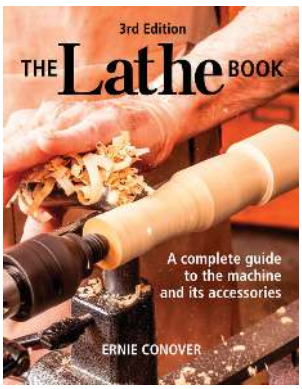

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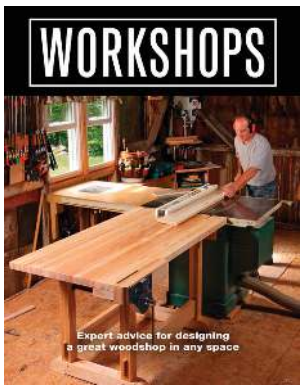

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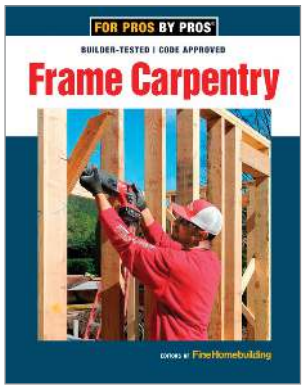

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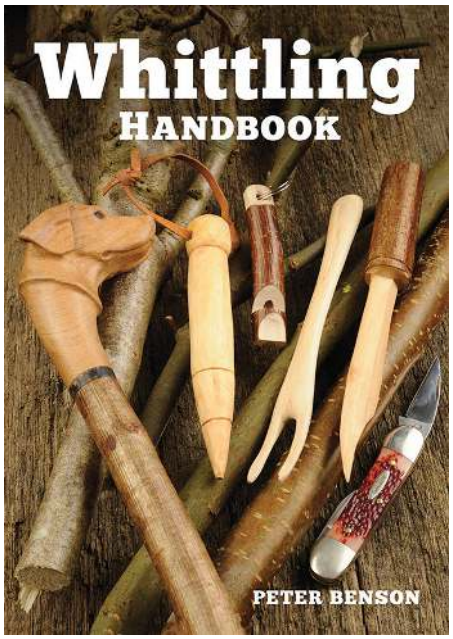

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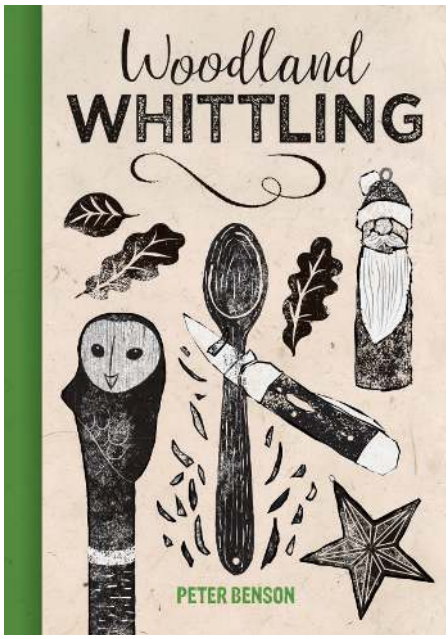

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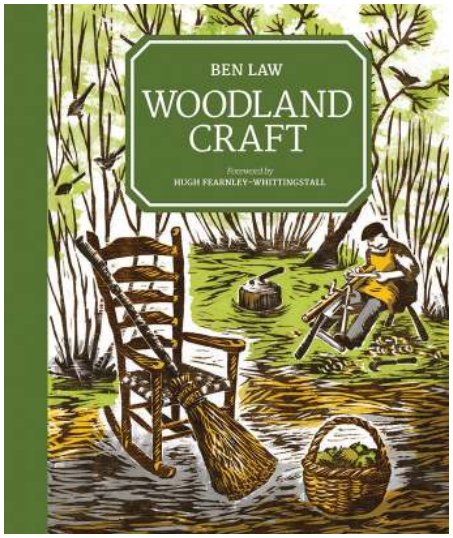

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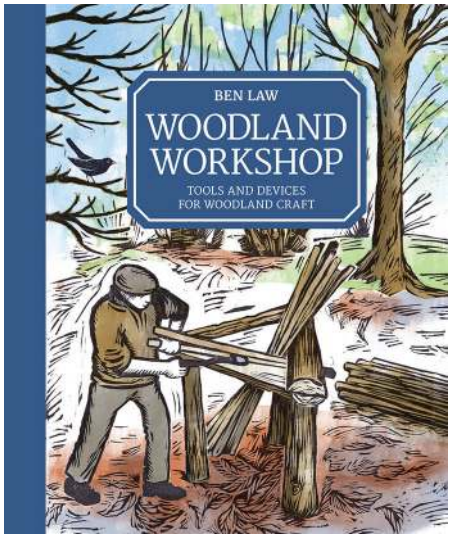

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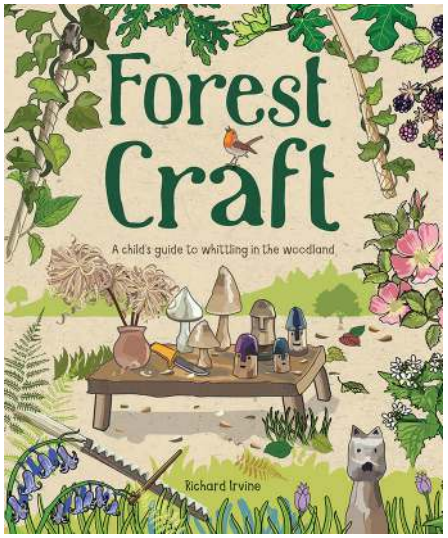

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PHOTOGRAPHS BY DAVID BARRON

ANGLED DOVETAIL BOX

FINE DOVETAILS NEED A FINE DOVETAIL SAW, AS **DAVID BARRON**'S BOX PROJECT PROVES

The starting point for this project was a lovely 50mm-thick board of olive ash. I re-sawed it on the bandsaw, then left it to settle for a couple of weeks, standing it on end so that air could freely circulate. The flat-sawn board had warped quite badly so I removed some material from the top and bottom before planing it flat to a thickness of about 15mm.

MARKING AND CUTTING

The trickiest part of making this box was not cutting the dovetails, but rather the stock preparation and marking out – this was the part that took a lot of time and care. I played around with the angles until I was happy; if all the sides had the same angle that would have been easier and if just the ends were angled that would have been easier still. However, as it was I felt that a 6° angle for the ends looked good along with a more subtle 3° for the sides. When the angles had been cut and cleaned up on the shooting board, I planed the top and bottom edge of each board with the angle of its mating piece. I took great care to make sure these were planed the right way round – marking the parts with coloured dots helped with quick identification of the outside of each board. As the lid was going to sit within the ends of the chest, these were cut 20mm higher than the front and back boards.

The tails needed to be marked out so their centres were parallel to the bottom edge. I decided to use my favourite dovetail angle of 10° (about 1:6) and as the ends were angled at 6° this meant setting my sliding bevels to 16° (6+10) and -4° (6-10). Marking the end grain is usually done with a square, but again this had to be angled to 87° to take account of the 3° slope on the

mating board. I found that, throughout the cutting and marking process, offering up the mating boards gave quick confirmation that things were OK.

Finally it was time to start cutting the tails. I used a long stroke dovetail saw from Skelton Saws, which cut beautifully and tracked dead straight. I then routed the grooves for the base on my shaper/router table; of course, these too had to be at the same angle as the bottom edge, which I achieved using angled spacers and double-sided tape.

Marking out the pins from the tails was straight forward but marking down to the base line was done at 93° (90+3) so that the pins stayed parallel to the bottom edge and matched the angle on the tail board. I mounted the board in the vice so that the pin cuts were vertical, which I find helpful in staying on the line.

1 The boards were left to settle and then re-planed flat. The ends were cut to a 6° angle and the sides to 3°. Note the ends are 20mm higher

2 The top and bottom of each board is angled to match its mating piece

3 The tails are marked out parallel to the bottom edge. For a 10° dovetail angle the sliding bevels are set at 16° and -4°

4 The completed angled tails

5 Marking the pins from the tails

6 Marking the pins to the base line, parallel to the sides

7 Cutting the pins with the Skelton Saws dovetail saw

FITTING AND GLUING UP

With all the pins cleaned out, I tested each corner to check for a good fit prior to gluing up. At this stage it's good to check that the grooves for the base also line up. Before adding any glue, I tapped all four corners in a short way (not forgetting the base). This gives a final check as well as saving time. With a total of 36 large dovetails to knock home, I like to use my workshop 'persuader' (dead blow mallet) to complete the job before the glue starts to grab. When all the base lines were closed, I checked for square and then set aside to cure. Despite all these angles it's easy to forget that each corner is still 90°.

MAKING THE LID

I had some really nice spalted beech to use for the lid, which I re-sawed to a thickness of 6mm, giving a lively book match. In order to get a nice book match on the inside of the lid, I did the same with some plain stock, which, once glued together, would give a pair of perfectly matched 12mm-thick panels. The frame for the lid was made of some quartersawn olive ash, which had bridle joints at each corner as well as a centre bar. The joints were cut carefully on the bandsaw and cleaned with a file for a tight fit. A 6mm groove was cut in all parts to receive the inside pair of book-matched panels. The glue-up requires plenty of clamps to close the joints properly and they were carefully placed so as not to introduce any wind in the lid.

The spalted beech panels were planed on a shooting board to a perfect fit in their respective openings. Once the fit was achieved, I created a shadow line around the panels by shooting a 25° bevel on each edge, taking great care not to go too far. The panels were then glued on in a vacuum bag and planed flush once the glue had dried. All this may seem like a lot of extra work but the nicely matched interior panel and the perfect shadow lines are worth the effort.

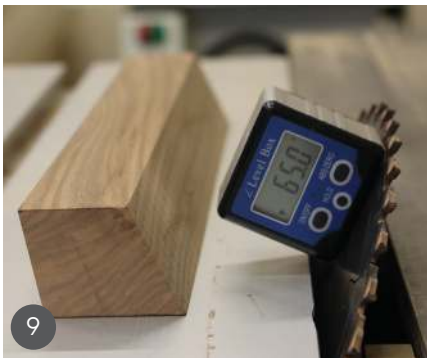
MAKING THE BOX FEET

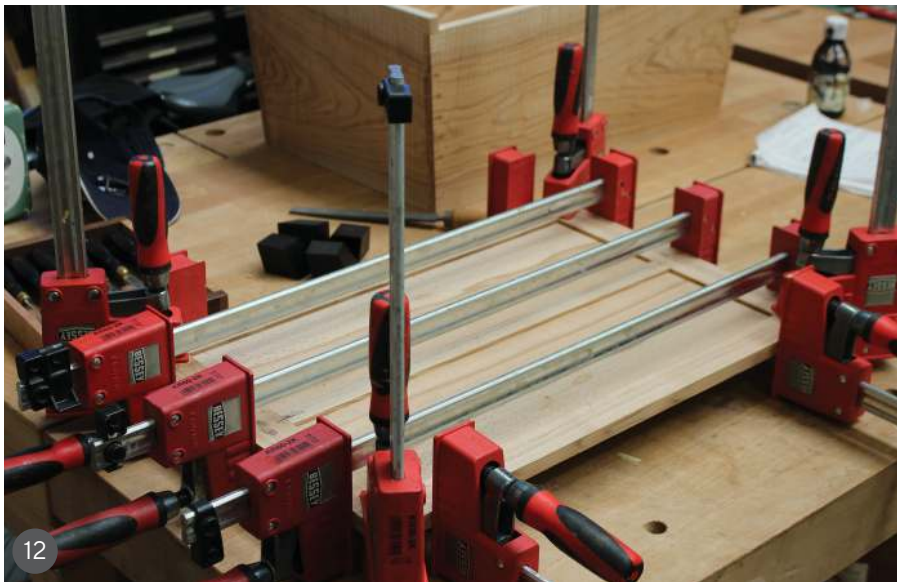
The feet were made by taking a length of 50mm square walnut and cutting the two different angles for the feet lengthways on the tablesaw (10° and 25°). The feet were then cut from the length by using the same two angles on the other side. This meant plenty of adjusting of the tablesaw blade but a digital bevel box made this fairly quick and it was a safe and accurate method. I then added strengthening corners to the underside of the base and planed these flush. The feet were attached with dowels and secured with screws drilled from inside the chest.

FINISHING TOUCHES

I fitted the lid tightly on the shooting board using a 6° bevel on the two ends, I flushed the back edge square to aid the marking out of the hinges. After fitting the hinges, they were removed and the 3° bevel could be shot on the back edge as well as flushing up the front edge again at 3°. The tight fit of the lid was eased with a swipe from each end on the shooting board.

I'm not a great fan of handles unless they are an integral part of a box design, so I made a finger recess instead to enable the lid





to be opened. This is easily and quickly made using a rasp and sandpaper wrapped around a large cylinder. I made the recess large enough to get a single fingertip in so that it remains discreet.

The protruding sides were left a little proud of the lid and a rounded edge was planed to add a little interest. The box was now ready for finishing. To start, I used hand-rubbed melamine lacquer on the spalted beech. Some areas were more absorbent than others (as happens with spalted wood), so I just kept going until all areas were shiny. The lacquer dries hard and quickly so was ideal for the task. It was then rubbed back smooth to 320 grit and the whole box was finished with five coats of Skelton Peacock oil (clear honey) for a silken finish.

8 Fitting all the dovetails before adding the glue
9 Cutting the feet on the tablesaw
10 The book-matched spalted beech for the lid panels
11 All the parts for the lid ready to glue up
12 Plenty of clamps were needed to ensure tight joints
13 The angled feet were attached with dowels and then screwed from the inside of the chest
14 Using a shooting board to ensure perfectly fitted panels
15 I added a recess instead of a handle

COMPARING UK AND US SAFETY STANDARDS

GEOFFREY LAYCOCK TAKES A HARD LOOK AT THE SUBJECT OF WOODWORKING MACHINE SAFETY IN THE UK AND THE USA

THE LEGAL SYSTEMS

UK

The primary legislation for safety at work in the UK is the Health and Safety at Work Act 1974, which led to the creation of the Health and Safety Executive in 1975. Other countries in the European Union have similar overall organisation to the UK but sometimes with considerable detail differences. The one consistent feature is that all are expected to comply with the relevant European directives on safety, implementing these within their specific legal systems. These standards and their implementation may or may not change after the UK's exit from the EU.

USA

The system in the USA is similar in overall structure to the UK. The Occupational Safety and Health Act 1970 led to Congress creating the Occupational Safety and Health Administration (OSHA), which essentially is the equivalent of the UK Health and Safety Executive.

LEGISLATIVE LIMITS

In both systems the approach is to have legislation requiring the safeguarding of workers with limited detail contained within the law itself, with reliance being placed on specific legally binding guidance for industries, work activities or individual machines.

INJURY STATISTICS

A direct comparison is quite difficult as there is no commonality in definitions of severity of injuries other than death. Statistics for woodworking alone would be almost impossible to compare due to serious differences in categorisation and breakdown. Only Finland has a lower rate than the UK within the statistics of European countries. That figure alone suggests a huge difference in the expected and enforced standards at work.

- USA 2017 – total of 5,117 workplace deaths, a rate of 3.5 per 100,000 employees.
- UK 2018 – 147 deaths, which is a rate of 0.5 per 100,000.
- USA – serious injury rate is 2,800 per 100,000 employees. (Their definition of serious injury is amputation, loss of an eye or hospitalisation. This is very different to the UK definitions).
- UK – injury rate is 2,000 per 100,000 for any workplace injury involving one day or more off work.
- For injuries defined as 'specified' – much closer in comparison to the USA serious injury definition – the rate is 68 per 100,000.

Personally, I believe the huge difference in fatalities and serious injuries reflects what I have seen in work practices in the USA, which seem far less controlled than here with much poorer expected standards.

GOOD GUIDANCE IS VITAL

USA

For OSHA I found difficulty searching for guidance on standards – I was only looking relative to woodworking. What I found I thought were not easy to read and lacked detail and constructive advice to employers, workers or others.

For woodworking the primary guidance appears to be Guide for Protecting Workers from Woodworking Hazards. Available online, this is a soulless, uninteresting document with little in the way of practical illustrations to guide people in best and safest practice. I did recognise several illustrations I worked on in the early 1980s which were part of one of our British standards and obviously 'borrowed', but generally not helpful at all. For example I found only two illustrations showing safety at circular saw tables and one of those was purely about push sticks/blocks. Having found only one document on woodworking machinery safet, I found 36 on whistleblowing at work, which rather seems the wrong way around in terms of priorities.

UK

It is always easy to be biased when comparing two systems and being very familiar with one. I did find looking for specific guidance on the HSE website easy and it is comprehensive. It was easy to find specific guidance on circular saws, spindle moulders and surface planers – or jointers – further supported by the Approved Code of Practice: Safe Use of Woodworking Machinery – Provision and Use of Work Equipment Regulations 1998. We have often quoted from and used illustrations from all of these HSE publications. Interestingly, a former editor of one of the largest circulation American woodworking magazines came to exactly the same conclusion in 2013, so maybe I'm not so biased. I'll forgive his comment about our quaint use of his language – where did he think the English language came from?

THE DIFFERENCES
CIRCULAR SAWS, TABLESAWS, SAW BENCHES, PANEL SAWS, ETC

UK

Whatever name you use, it has been a fundamental requirement in the UK since before 1974 to have the blade fully guarded below the table, to have a riving knife at the rear of the blade to prevent rip sawn timber binding on the blade, and to have an adjustablesaw blade guard, also called crown guard or top guard. Methods of use are to have the top guard adjusted so the front edge is as close to the timber surface as practical, which reduces the likelihood of fingers moving into the danger zone of the blade. Use of push sticks and blocks also further reduce this risk. Having a fence that can be brought forward for ripping to prevent binding on the blade is also common.

USA

Essentially the requirements for the USA are the same, yet it is well known that many woodworkers discard the top guard and the riving knife, whether professional or amateur user.

Set-up for typical rip sawing. The fence face is slid forwards, the blade has been adjusted so the teeth are just clear of the timber upper surface and the guard isas low as possible. The thin push stick allows passage to the side of the top guard

One recent development has been the SawStop technology, which aims to prevent serious injury from the rotating saw blade by almost instantly stopping it should contact occur. This does not solve the issue of not having a riving knife. In the last couple of years the SawStop tablesaw has become very popular and there is increasing recognition that the basic requirements of a riving knife and top guard are essential elements to safe use of a tablesaw. SawStop was recently purchased by Festool and it is very possible the technology will become available in the UK and Europe, but will also still have those basic physical safeguards.

DADO HEADS

UK

Firstly let's get the terminology correct. A groove across a piece of timber is a groove or housing, not a dado, which is actually a horizontal wooden rail fitted to a wall, often with panelling below it. Some say it was intended to prevent damage to walls from chair backs, but it is mostly decorative. It is not illegal to use dado heads on tablesaws in the UK, but if so they must be correctly guarded. Most suppliers of saws in the UK and Europe do not supply spindles designed to take dado heads, although some may just take the narrowest of blade combinations. This should not be done as the spindle is not intended to take the strain. On most saws the braking is also likely to be inadequate to cope with the added weight/inertia, therefore making the machine non-compliant with machinery standards.

USA

Use of dado blades in the USA seems common, but almost inevitably they are unguarded and fully reliant on the machinist ensuring their hands do not come into contact with them. The easy thing to miss is that they are completely hidden beneath the workpiece until emerging from the end of the timber. Unsurprisingly a common injury is to the palm of the hand, and it isn't going to be a narrow groove, is it? Use a straight edge and a router – you'll get a far better finish and avoid the hassle of blade changing.

SPINDLE MOULDERS

UK

In the UK the basic requirement begins with physical guarding to restrict access to the cutting head/spindle to the greatest extent possible. This will include also using a false fence to minimise cutter projection to only that part in use. Push sticks and blocks are again expected to prevent fingers approaching the danger area of the cutter block. Having cutters with a limited depth of cut has been a significant factor in reducing accidents at these machines and they are a long way from earlier machines

Planer/surfacer/jointer set up per European rules for surfacing, with the guard as low as possible to the timber surface to minimise risk of cutter contact. Note the guard attached to the rear of the fence automatically covers the cutter block behind the fence

using a 'French' or slotted spindle to hold a single simple projecting cutter. These are quite simply very dangerous. Pads to form tunnel guards or 'Shaw' guards are expected for repeat moulding operations and, if easy to set up, significantly increase safety even for a one-off run of timber. Power feeds are a further significant risk reduction when carrying out repeat work.

USA

In the USA the information found was that the cutting head should be enclosed with a cage or adjustable guard to keep the operator's hand away from the cutting edge. It also says in no case shall a warning device of leather or other material attached to the spindle be acceptable. What? I have no idea what that is and I was a specialist in woodworking machinery safety for a period when I was in HSE. I was unable to find any helpful illustrations or detailed guidance on how to safely use these machines, including leather warning devices! They are potentially more dangerous than tablesaws.

PLANERS/THICKNESSERS

UK

In the UK we expect a planer or jointer to have two guards over the cutter block – one to the rear of the fence and often integral with that, to safely cover any cutter block behind the fence, the adjustable one to the front of the fence. This guard can be adjusted horizontally and vertically and two methods of guarding are used. For edge jointing the guard should be placed as close to the machine table as possible and the end adjacent to the timber as close to that as possible. This does mean that at the beginning, but particularly at the end of a pass, a narrow section of cutter block is exposed. Generally for surface planing the guard should extend fully across to the fence face and be just above the timber being machined. This should mean that fingers on the timber surface should hit the front edge of the guard before contacting the cutter block. In both cases, use of push blocks is expected. For the thicknesser sectional feed rolls and anti-kickback fingers are expected as this is the primary risk. As with most machines, correct technique is also important.

USA

In the USA the requirement is for an automatic or 'swing-away' guard. This is intended to be pushed out of the way by the timber being fed forward, then closes after the timber end has passed. This type of guard does pose a significant risk of injury to the trailing or rearward hand. In the guidance, push sticks/blocks are not mentioned as a safety requirement.

Set-up for edge planing or jointing. The guard is set as close to the table as possible and to the side of the timber. Using additional guides such as these MagSwitch featherboards and a suitable push stick/block makes it a very safe arrangement

VIDEOS AND ONLINE ADVICE

There are thousands of online videos showing how to use machines, undertake certain operations and so on. Some are good, many are poor and some are quite frankly dangerous. I have read magazine articles by 'experts' that are absolutely appalling. The best advice would always be to look for videos produced commercially by either the enforcement body of your country, machine manufacturers or well-known woodworkers with a recognised provenance, but sadly from my experience those last two may not be any guarantee of competence either. I know I am biased but the best instructional videos and books I have seen are by established British names.

SUMMARY

The difference in numbers of injuries is huge and I know that years of experience and analysis of accidents has resulted in UK standards of machinery safety that work. Although many criticise the 'elf and safety' lot, it is based on hard facts, experience and lots of thought. That is why machines available in the UK should have all the required safety features on delivery. Development of guidance with easy access, provision of verbal advice and enforcement action, and working with machinery suppliers to ensure better designs have all led to significant reductions in injuries using woodworking machines in the UK. Those drastic reductions occurred in the 1970s after the new standards began to be enforced and training at work made a legal requirement.

THE NEED FOR CHANGE

In the USA we often see, even in popular TV programmes (sadly also occasionally in some UK TV programmes) lack of guards, poor practice and continuation of standards that have not developed with growing knowledge on the subject. We know from those years of experience that relying on 'I'm careful', 'I know what I'm doing', 'you'd have to be stupid to do that', does not work. I have seen numerous US-based articles stressing the importance of wearing eye protection at tablesaws, which is laudable and correct but won't stop you ripping your fingers off as they demonstrate using the saw with no guarding, no riving knife, no push stick! This is changing and increasingly use of saws with guarding is being taken on board as more people realise it makes a real difference and fingers are quite useful.

ABOUT THE AUTHOR

Geoffrey Laycock was a UK Health and Safety Executive Inspector and a safety consultant for 45 years. He has investigated far too many woodworking related injuries and most involved tablesaws, planers and spindle moulders. In almost all cases the recommended or required guards were missing and machinist training was inadequate or missing altogether, and in a large percentage the injuries were life-changing for the individual.

FURTHER INFORMATION

All About OSHA
osha.gov/Publications/all_about_OSHA.pdf
OSHA Standards on woodworking
osha.gov/laws-regs/regulations/standardnumber/1910/1910.213
Health and Safety Executive
hse.gov.uk

Search for woodworking information sheets, in particular:
WIS 16 Circular Saw Benches – Safe Working Practices
WIS 17 Safe Use of Hand Fed Planing Machines
WIS 18 Vertical Spindle Moulding Machines
WIS 37 Tooling for Use with Hand-fed Woodworking Machines

NEXT ISSUE

ON SALE FROM

5 DECEMBER

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PHOTOGRAPH: SHUTTERSTOCK.COM

SKATING TO SUCCESS

RECYCLING USED SKATEBOARDS AND HARDWOOD INTO INNOVATIVE FURNITURE AND ACCESSORIES HAS BUILT A BUSINESS FOR CANADIAN CARPENTRY STUDIO **ADRIANMARTINUS DESIGN**

What do you do with a skateboard when it won't skate anymore? Why, make it into furniture, of course. That is exactly what the young team of carpenters behind AdrianMartinus Design in Calgary, Canada, have built a successful business doing.

Brothers Adrian and Martinus Pool grew up outside Red Deer, Alberta, and started skateboarding when they were around 12 years old. They practised on their neighbours' paved driveway and at the same time were 'always building stuff', from a treehouse to skateboard ramps.

Younger brother Adrian, now 28, began his carpentry apprenticeship while still in high school, whereas Martinus, now 31, went to film school in Vancouver before starting his.

Frustrated by the construction material waste they saw on worksites, the pair were inspired by Japanese sculptor Haroshi, who makes art from old skateboards, to use their own collection of old boards to create something new. What started as a hobby turned into a business in 2012, and the brothers have been working on it full-time since 2015.

'We started using our own boards, then asking our friends and eventually the local skate shops,' Martinus recalls. 'Now we work the local and regional shops and have a sort of informal recycling programme running with them.'

The studio currently has around 300 skateboards in stock, which Martinus expects will see them through the winter, but as they can be in short supply the brothers also began using recycled hardwood flooring. 'This is fairly available and relatively inexpensive compared to wood from a lumberyard. By applying the same sort of mentality that we use with the

skateboards we were able to develop a product line and style using the flooring. Now we are a lot more selective of the material and products that we use and focus on what is best for the project,' Martinus says.

'We use the flooring like building blocks for the products that then get the colourful accents of the skateboards, because the skateboard wood is too valuable and scarce to use for the entire product when trying to produce them in large numbers.

Learning to work with skateboard wood took a lot of trial and error – but now the brothers have it down to a fine art. Martinus says: 'The skateboards need to be stripped down to bare wood to be usable, so that involves peeling off the griptape and removing the glue residue, then sanding off the graphics. Each board is a little bit different so there's a lot of different little tricks and processes to get the material prepped. This is incredibly labour intensive, and another reason why we developed a use for every part of the board so that none of that time is wasted.'

The company started out in the brothers' parents' garage, and some 'really good craft shows in the city' helped them find their local market and grow the business. 'When we started it was more for fun than anything,' says Martinus. 'In the first couple of years of doing it we would never have thought we'd be able to do it as our full-time gig.'

He adds: 'Moving out of our parents' garage and into our own was a really big step, and shipping our products around the world.' Their work was spotted by sports brand Adidas, which commissioned the brothers to make a table in the shape of its trefoil logo for its LA shop. 'It was a really tight deadline and






PHOTOGRAPHS COURTESY OF ADRIANMARTINUS DESIGN

required some creative solutions, but the final product came out great,' says Martinus.

AdrianMartinus Design now has a wide range of bowls, dishes, kitchenware and coffee tables as well as sports equipment such as a baseball bat made from old skateboards. The Pool brothers have also teamed up with Danish artist and designer Anne Tranholm – who is not a skateboarder – to create small-batch home goods, décor and accessories at accessible price points under the name Pool Product Design. The range includes jewellery, tea light holders, cribbage boards, wall hooks, kitchen boards and rolling pins.

The studio started out with the aim of challenging the boundaries of conventional woodworking practice – but now it is working to include more widespread techniques into its processes. Martinus explains: 'Much of our early years were spent figuring out the different ways to work with the skateboards and finding a use for every bit of the scarce material which wasn't always the best technically, so a lot of the work now is finding ways to apply proper woodworking techniques and integrating new technologies like CNC and laser cutters into our work.

'We have a fairly versatile shop with all the normal woodworking machines: jointer, planer, tablesaws, bandsaws, half a dozen sanders and some more specialised equipment like our lathe, CNC and laser engraver.'

As the business has grown, the brothers have narrowed the commission work they do to focus on their own style. 'We try and offer a really wide array of items that fit into all different price points and styles so that we have something to offer for everyone,' says Martinus. 'We are currently working on a matching end table design for our R5 coffee table and prepping for the holiday markets.'

At the moment the studio's biggest challenge is a lack of time and space. 'We have a fairly efficient shop set-up, but there's always more and new tools we'd like, and just not enough hours in the day to do all the work that goes not just into the woodworking but also running the business end of things,' says Martinus.

'For the future our biggest goal is to figure out a better work-life balance, which can be really tough with having the shop in our home. We want to keep expanding our product line and retailer lists and focus on developing our style and working towards releasing a full furniture line.'

In the meantime Martinus and Adrian try to get out to a new skate park down the road from them once or twice a week, and enjoy camping in the Rocky Mountains when they can get away.

Martinus' tips for other carpenters keen to work with recycled materials are to invest in quality tools – 'recycled material is very hard on equipment, and having good tools that can handle the abuse is a huge time and money saver in the end' – and to find a niche. 'Either find a unique material to work with or a unique way to use something thats already out there,' he says, adding: 'Use it wisely – recycled material isn't always the most readily available, so design within your supply.'

Find out more at **adrianmartinus.com**

PHOTOGRAPHS BY KIERAN BINNIE

A GRAND WORKBENCH JOURNEY
NAILING IT

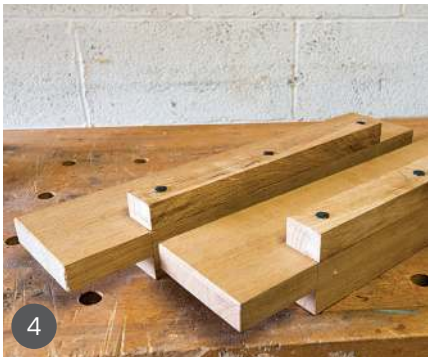
KIERAN BINNIE ADDS SHELF SUPPORTS

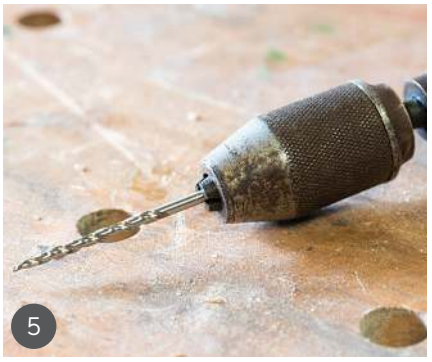
TO HIS 18TH-CENTURY-STYLE WORKBENCH

I have been building a sturdy workbench based on one described in a book reproduced by Lost Art Press: *With All the Precision Possible: Roubo on Furniture*, by 18th-century carpenter and author André Roubo. One thing I needed to tackle was fitting the shelf supports to the stretchers and preparing the shelf. Fitting the supports to the stretchers is easier to do before the undercarriage is assembled. The shelf was entirely optional, but it was worth adding as it would provide useful storage for bench hooks, shooting boards and the like. This stage of the build was a useful introduction to key techniques for casework, including tongue and groove joinery, beading planes (the gateway to moulding planes) and choosing and using good quality nails. These are the techniques I will be looking at in this article.

SHELF SUPPORTS

In *L'Art du Menuisier*, André Roubo shows the shelf fitted to the stretchers, but does not give any further dimensions or details. I nailed hardwood supports to the interior faces of all four stretchers. The supports can be built with any hardwood scrap you have to hand – I had oak left over from making the bench stretchers, which I ripped to width and then cleaned up with a No 5 jack plane so that they were 1 pouce thick and 1½ pouce wide, as this will be plenty to support the shelves and the tools I routinely keep below the benchtop (a pouce is an historical French measurement equivalent to 1.066 modern inches). To ensure that the supports would not prevent the undercarriage from going together, I traced the shoulder of each tenon on to the underside and back of the stretcher, then cut the supports so that they would fall just a hair inside those lines and allow the tenons to pull tightly into the legs.





1 Roman nail on the left, and cut nail on the right

2 Laying out the nail locations with dividers means there is no need to measure

3 Drilling pilot holes is critical when using historic nails

4 Supports are fitted to the short stretchers

5 A tapered drill bit provides a good pilot hole for cut or Roman nails

AN INTRODUCTION TO FURNITURE-QUALITY NAILS

But how to fix the supports to the stretchers? I prefer not to glue supports, as it becomes difficult to remove them in the future, should that be necessary. Nails on the other hand offer a solid work-holding method which can be removed (with a bit of effort) later on. Modern nails are generally made of wire which has been given a sharp point and a head. Wire nails have limited holding power, due to a shaft which is of consistent diameter and smooth. Instead, I prefer to use 'cut nails' such as those made by the Tremont Nail Co (available from Tools for Working Wood), or die-forged 'Roman' nails made by the Rivierre Nail Factory in France (available through Dictum). These nails have some distinct advantages over modern wire nails, which are derived from the method of manufacture. Cut nails are sheared off a steel bar before having the head shaped. These nails are generally wider in one direction than the other, and they have corners along the shaft, which will also taper. Those corners are important, because they allow the nail to grip the workpiece. The 'Roman' nails also have corners and the shaft, which tapers along the length, tends to be square in cross section (rather than the rectangle of the cut nails). Both of these types of nail have incredible grip, and to my eye are much more attractive when used on furniture than wire nails.

It is important to drill the correct sized pilot hole for cut or Roman nails, otherwise you risk splitting the workpiece. I use a tapered drill bit, selecting one that most closely matches the maximum diameter of the nail shaft, and drill between half and two thirds of the nail length, depending on the timber species I am fastening. It does help to prepare a test hole in some scrap of the same species and thickness you are intending to nail, to check that the nail will not split the workpiece.

For the shelf supports I used a 50mm Roman nail. I prefer to avoid measuring whenever possible, so I used dividers to lay out the location of the nails on the supports, starting roughly 1 pouce from each and dividing the space between into equal steps. The supports on the short stretchers had three nails in, which will be plenty to hold these shelves in place, and I used a similar spacing on the supports for the long stretchers. To drill the pilot holes I clamped the supports to the stretchers, placing the bottom edge of the support flush with the bottom edge of the stretcher, and drilled the pilot hole with a tapered bit in an egg beater drill. The nails were then driven home with a 16oz hammer.


6

SHELVES

Roubo shows the shelves running front to back under the bench, which means they will be as long as the bench is wide, less the thickness of the stretchers. I chose to make my shelves from some oak I had left over from previous projects, so that they matched the rest of the bench (which is all oak construction), but you could use whatever timber you have to hand. I processed the timber to the correct length and ½ pouce thickness. My preferred joinery method for multi-part shelves and backboards is tongue and groove. Ship lapping the boards would also work nicely, but I find tongue and groove is a quicker process if you have a dedicated plane. If you don't, then ship lapping with a shoulder plane or moving filister is a straightforward process.

AN INTRODUCTION TO TONGUE AND GROOVE JOINERY

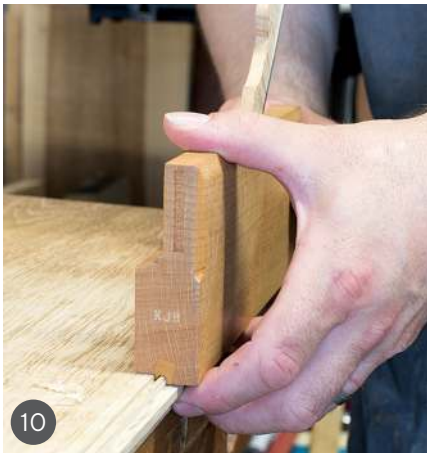
Because I use tongue and groove boards quite frequently in my work, I keep a Lie-Nielsen No 49 tongue and groove plane in my tool chest. This speciality plane only performs one task (cutting both halves of a tongue and groove joint), but it does it very well indeed. If you are thinking of using tongue and groove joinery on more than one project, a plane of this sort is a worthwhile investment.

While tongue and groove planes are very simple once you are familiar with them, there are a few points to remember as you practise cutting the joint. Fundamentally, a clean tongue and groove joint requires both halves of the joint to be perpendicular to the face of the workpiece. With some muscle memory this is very easy to achieve, and building that muscle memory is easy enough with some care. Here is how I do it:

- First, think about both hands. They each hold the plane, but have very different functions. The dominant hand (in my case, my right hand) provides forward momentum to the plane, while my left hand pushes the fence tight into the workpiece. Don't try to fulfil both functions with each hand, that leads to a wavering line. Dedicate each hand to one function and the plane will move sweetly without wandering away from the edge of the workpiece. If your plane has a knob at the front, ignore it – it is just there for decoration. Instead, place your non-dominant hand firmly against the fence and press into the workpiece. The Lie-Nielsen plane I use has a small concave curve behind the knob, which I hook my thumb over while my palm presses against the fence.

- Secondly, instead of starting with full-length passes of the workpiece, start at the far end and add a few extra inches to each stroke. This creates a path to guide the plane, which minimises the risk of the plane drifting away from the reference edge, and after a few strokes you will be taking full-length passes.

- Finally, do not lift the plane up at the end of the stroke. Instead, slide it backwards along the workpiece and then take another pass. This avoids bruising the joint (particularly the tongue half) by lifting the plane up and placing it back down on the workpiece.



6 Preparing the shelf material
7 Your off-hand keeps the plane fence against the workpiece
8 Your dominant hand pushes the plane
9 Tuning the tongue with a small shoulder plane for a well-fitting joint
10 Adding a beading profile to the shoulder of the tongue adds visual interest and protects fragile corners from damage
11 The beaded shelf board

Dedicated tongue and groove planes are sized to cut equally spaced joints in specific thicknesses of timber (the Lie-Nielsen No 49 is sized for ½in thick work, and the No 48 is sized for ¾in timber) and although I could not find any planes sized for half a pouce timber (which serves me right for using an outdated unit of measurement!), it does not make any practical difference providing you are consistent about which side of the workpiece you plane from. I referenced my tongue and groove plane from the show-face of each board, which meant that while the tongue was off-centre, the size of the offset was consistent and all of the joints went together.

Straight off the plane, these joints can be a little tight, and I tend to ease the fit with a small shoulder plane set to a very fine cut. Just a couple of swipes on one side of the tongue is enough to get everything to fit smoothly.

BEADING PLANES – THE GATEWAY TO CUTTING MOULDING

Beading planes are the perfect accompaniment to tongue and groove joinery. The shadow line introduced by a bead adds a nice level of visual interest, and also disguises the joint line between two boards. Whenever I use tongue and grooves for backboards or box bottoms, I always add a bead to the shoulder of the tongue board. Beading planes are also a perfect first step into the truly addictive world of cutting moulding by hand, so if you have not tried planing moulding profiles or beads yet, the shelf to a workbench is an ideal opportunity to try.

Many of the same pointers I gave for the tongue and groove planes apply equally to beading planes. Use your dominant hand to push the plane while your off-hand keeps it against the workpiece. Take short passes from the far end and work your way back along the length of the board. But most importantly, slide the plane backwards instead of lifting it off the workpiece after every stroke, as this will protect the profiled boxing on the sole of the plane. Take light passes, and keep going until the plane stops cutting – the profile is done.

I planed a ⅛in bead on the tongue boards for the shelves. Remember not to cut this profile on the groove boards, or you will weaken the joint. Once the shelf boards were finished I stickered them in the corner of my workshop, waiting until the bench is assembled.

CONCLUSION

The shelf adds an extra layer of utility to my workbench, and is well worth the time investment during the build. But more importantly, if you look at the workbench project as an opportunity to build a wider skill set, then this process offers an introduction to using furniture quality nails, tongue and groove joinery and cutting moulding profiles.

RESOURCES

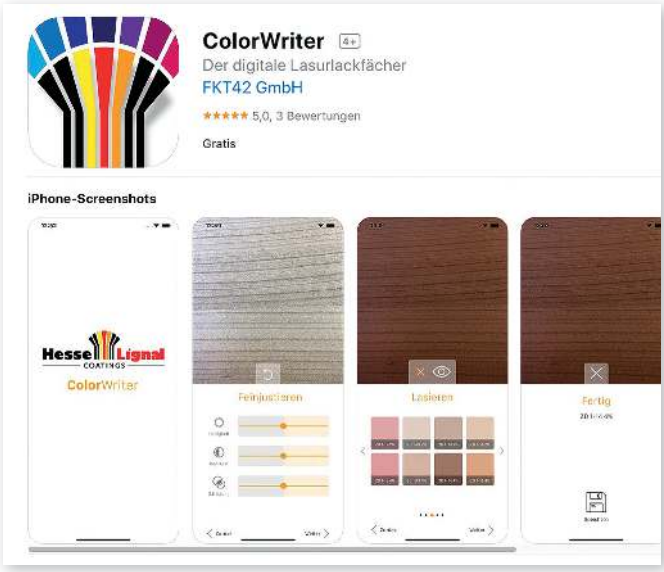
Cut nails available from: **toolsforworkingwood.com**
Roman nails available from: **dictum.com**

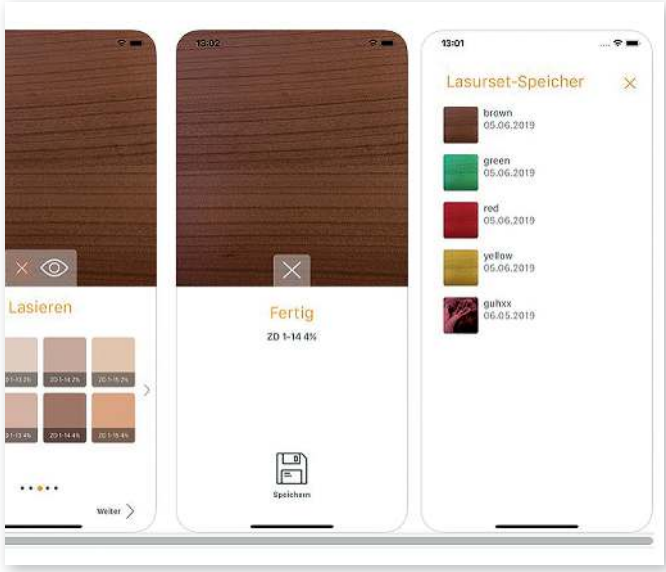
JAPANESE SUNRISE DOVETAILS

WE SHINE A LIGHT ON THIS DECORATIVE JOINT BY ROBINSON HOUSE STUDIO'S **THEO COOK**

Sometimes we come across an item the making of which is impossible to explain through the use of words and pictures alone. Typically these stories are more about inspiration than instruction and any attempt to describe blow-by-blow how it was made detracts from the experience. Theo Cook's Japanese sunrise dovetails are a perfect case in point. In theory I think we can all surmise how the joint goes together and if you ask Theo, who is in fact a man of very few words, he might even be able to lull you into a state of confidence and have you believe you could. Five minutes in, however, and you'd probably wish you hadn't started. So rather than waste too much valuable ink in an attempt to get you all up to speed, we've decided instead to keep it simple and just let the work tell the story.

PHOTOGRAPHS: THEO COOK/ROBINSON HOUSE STUDIO





Hesse ColorWriter

Hesse Lignal COATINGS

The ColorWriter app is the latest development from coating and stain specialist Hesse. In just a few steps, this app enables digital colouring of veneer and solid wood and replaces the previously much used glaze lacquer sampler.

Simply use the camera on a smartphone to capture an image of the wood to be coloured. The next step is to make fine adjustments to the photo so that it matches the original. Then the colour filter can be selected. The colour filter corresponds to the previous slides in the glaze lacquer sampler. The photo is accordingly coloured and can then be saved in a library. This is then used to document the corresponding formulation for the colour concentrates. Both aqueous glaze lacquer concentrates and those containing solvent can be used as the basis for colouring.

ColorReader

The Hesse ColorReader is a truly smart colour finder and fits in any handbag or trouser pocket. The device measures the desired sample within 1 second; this equates to a time saving of over 90 % compared to conventional colour tone searches using colour cards. Collated data is sent via Bluetooth to an Apple or Android smartphone. The app then searches through the Hesse database and the best match of colour tone is displayed on your smartphone with the Hesse product number.

The colour data is stored in the Hesse Cloud and currently contains around 5000 colour tones including RAL Classic, RAL Design and NCS S. The app also provides a timeline and the option of creating a file structure.

Further information via the Hesse website: https://www.hesse-lignal.de/en_GB/news.html or directly via this QR code:

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