



14 Practical
DESIGN TIPS



8 CANADIAN
INNOVATORS



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APRIL/MAY 2012
ISSUE #77

CANADIAN Woodworking & HOME IMPROVEMENT

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Build a Panel
Mitre Sled

Made in
the Shade:
The Pergola

Tale of Two
Hall Tables

The
**DESIGN
& BUILD**
Issue

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These 8 Canadian furniture makers are pushing the envelope when it comes to furniture design.

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Cover photo by Nik Groot, illustration by Gerry Wiebe

34 Build a Wine Rack

This classy wine rack will display and store your wine collection until it's time to pop the cork.



CANADA'S WOODWORKING & METALWORKING SPECIALISTS



14" Deluxe Wood Band Saw

The CX104 is loaded with features from top to bottom!

This band saw is equipped with a solid one piece upper frame steel body, a powerful 1HP motor and features a 14" x 18" work table. With resaw capacity at 7", precision balanced cast iron wheels and 2 working speeds, there isn't much this saw can't handle. Other features include quick tension release, large ON/OFF switch, upper and lower blade guides, tilting table and overall high quality construction.

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new!

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- ▶ Upper body solid one piece steel frame construction
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- ▶ Quick Release Blade Tension Lever
- ▶ Precision Ground Cast Iron Tilting Table
- ▶ Upper and Lower Blade Guides
- ▶ Includes Blade & Solid Mitre Gauge
- ▶ Powder Coated Two Tone paint
- ▶ Miter Gauge
- ▶ Made in Taiwan

SPECIFICATIONS

- ▶ Motor: 1-HP, 110-V, Single Phase
- ▶ 2 Speeds: 2300 / 3200 FPM
- ▶ Cast Iron Table Size: 14" x 18" (Including sheet metal extension table)
- ▶ Table Tilt: -5° to 45°
- ▶ Max Blade Width: 3/4"
- ▶ Min Blade Width: 1/8"
- ▶ Maximum Cutting Height: 7"
- ▶ Floor to Table Height: 44"
- ▶ Cutting Capacity/Throat: 13-5/8"
- ▶ Dust Collection Port: 4"
- ▶ Blade Length: 101"
- ▶ Bearings: Sealed and Permanently Lubricated
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- ▶ Approximate Weight: 78 Kg (173 lbs)



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Design & Build Issue



rbrown@canadianwoodworking.com

Woodworkers' skills range widely when it comes to designing their own projects. Some rely so heavily on plans that they don't feel comfortable lengthening a table by 3". With shop time at a premium for many of us, there's something comforting and relaxing about following plans to a successfully built project. Others design every aspect of a piece of furniture either in their mind, on paper, or on the fly during the building process.

For those of you who enjoy following plans, we have two step-by-step project articles for you this issue: an elegant wine rack and a very functional stool. We also have two slightly different project articles. These require a little bit of design work on your part; a pergola that can be built around your existing deck and a hall table project that discusses the process of learning from a previous build. The fifth project article covers building a mitre sled for shop use.

For the furniture designers, you're in for a real treat. Meredith Nicole brings forward her extensive art background to discuss seven fundamentals of design in general, and how they relate to furniture design. I also share some thoughts on how I design furniture. I've picked up these 14 very practical tips over the years, and I find them crucial to the studio furniture work I do. I also bring you some wild and crazy ideas from eight Canadian furniture makers whose work could only be described as "outside the box". Their efforts push the envelope regarding furniture design. To round things out, we have our *Finer Details* and *Community* columns, covering both designs and techniques by some skilled designer/makers.

I hope this provides something for everyone; the "designers" should head straight for their sketchbooks, and the "makers" can start up their table saws. But, remember, there's nothing wrong with changing sides now and then.

Rob Brown



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- Min. stock length: 8"
- Max. cutting depth: 1/8"
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- Cutterhead speed: 5000 RPM
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- Max. cutting height: 6"
- Overall size: 66 1/2"H x 26 3/8"W x 30 1/4"D
- Precision ground cast iron table size 14" x 14"
- Table height: 43 1/8"
- Tilt: 45° R, 10° L
- Fence construction: Deluxe extruded aluminum
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- Blade size: 92 1/2" - 93 1/2" (1/8" to 3/4" wide)
- Approx. shipping weight: 198 lbs.



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- Table tilt: 10° L, 45° R
- Cutting capacity/throat: 13 1/2"
- Max. cutting height: 6"
- Blade size: 92 1/2" - 93 1/2" L (1/8" - 3/4" W)
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- Max. stock thickness: 3 1/2"
- Min. stock length: 8"
- Sanding drum size: 4"
- Sanding belt: 3" x 70" hook & loop
- Dust collection port: 2 1/2"
- Approx. shipping weight: 160 lbs.



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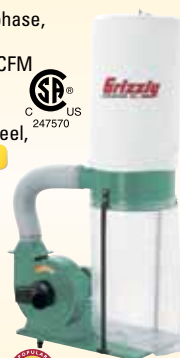
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readers' letters

eNewsletter Traffic

I checked the stats on my YouTube channel after noticing the number of views of my videos went up dramatically. It turned out they were coming to my site directly from your eNewsletter.

Thanks for the coverage, eh!

Paul Moore

www.youtube.com/user/stockroomsupply

In the Dark Regarding Night Table Joinery

I'm interested in building the Night Table from the article by Ryan Coyne in the Dec/Jan 2012 issue of Canadian Woodworking Magazine. Ryan talks about using "slip tenons" in this project. Do you know where I can purchase slip tenons, or do I have to make my own?

Dick V.

Hamilton, ON

Dick,

Ryan starts by routing $\frac{3}{8}$ " wide mortises in both the sides of the legs and the ends of the rails. He then planes hardwood stock to $\frac{3}{8}$ " thick, rips it to width and rounds over the four edges to produce the "tenon" material. At this stage, he cuts the material to length, according to how deep the mortises are, and assembles the joint. Some companies make tenons of varying thicknesses, but there's nothing wrong with making your own. The choice is yours.

C.W.M.

Subscription Draw Winners

NEW SUBSCRIBER

David A.
Saskatoon, SK
has won a Haussmann 10" Table Saw from RONA.



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Randal T.
Abbotsford, BC
has won a \$250 gift certificate from Lee Valley.



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woodworkers' gallery

Don't Chip a Tooth by John Spitters

John Spitters, from Abbotsford, BC, used an assortment of tools and techniques to make this fruit bowl, and the appetizing fruit inside it. Starting on the lathe he turned the bowl. He then applied water-based dye to the piece and patiently added texture to the rim with a pyrography pen. Wipe-on poly added some protection. To make the fruit he turned the bottom of each piece first, then rotated each piece and shaped the top. John said the hardest part of the project was shaping the fruit carefully, so it looked just right.



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Correction

The lead photo for our HVLP spray-finishing article in the Feb/Mar 2012 issue shows Bill Perry spraying a small chest without wearing a protective mask or goggles. What the photo doesn't show is a 1500 cu. ft/min. exhaust fan, just out of picture to the right, channeling overspray (from a waterborne finish) out the open back door of his shop. Both mask and goggles should be worn whenever spraying a finish. We also didn't include the suppliers list. It will be included in the April eNewsletter, or email rbrown@canadianwoodworking.com to obtain a copy.

Prize Winners!

Ron Sass, from Muirkirk, ON, won one of the Lee Valley draws for loyal subscribers. He's a retired contractor with 12 grandchildren. Ron keeps busy making things for them, such as a rocking horse, rocking chair, stool, coat rack, mirror and shelves. This picture shows the floor he laid, the fireplace he built, a glider rocker from Lee Valley plans and a chip-carved hearth stool.

Ron says he always looks forward to shopping at Lee Valley as they have the kinds of things that interest him.

Congratulations Ron!

Martin Matheson from Edmonton, Alberta is the winner of an Excalibur Tilting Head Scroll Saw from General International, Model Number: EX-16, which appeared in the Apr/May 2011 issue of Canadian Woodworking Magazine. In the photo is a nativity scene Martin made.



Better Blades, Better Skills, Better Results:

Real-world tips for getting the most out of today's best saw blade technology

While it's true that the best saws in the world are only as good as the blades they spin, this is just part of the story. The other part of success depends on you. No matter how good your tablesaw, chopsaw or radial arm saw is, success and safety still comes down to your skills equipping, setting up and wielding these fundamental power tools.

Match the Blade to the Work

Crosscutting and ripping solid wood is a different job than cutting veneered sheet goods. Sawing melamine is different than trimming particleboard. Crosscutting crown moulding is different than sawing 2x6 wall studs. This is why a complete set of traditional saw blades should include a coarse ripping blade for sawing solid wood to length, a fine-tooth blade for crosscutting, a melamine blade for chip-free cuts in factory-finished sheet goods, and a combination blade for rough, general-purpose work. And while owning a group of blades like these works well, there is now one, single blade that's capable of cutting very smoothly and efficiently in all situations. Freud's unique Premier Fusion blade creates absolutely smooth, flawless cuts in all materials – from ripping heavy hardwood to cutting veneered ply and everything in between. The entire world of saw blades will probably follow this one-blade-for-all lead, but for now, Fusion is unique.



The knife-like profile of Fusion's Hi-ATB tooth design slices wood and sheet goods exceptionally cleanly in all situations – from ripping hardwoods to mitering trim.

Match the Blade to the Machine

Today's move towards smaller, lighter tablesaws and chopsaws have made it easier to carry tools wherever the work is, but reduced cutting power is usually part of the price you pay for portability. If you have a lightweight chopsaw or portable benchtop tablesaw, you can make the most of their smaller motors by using "thin-kerf" saw blades. Kerf refers to the swath of wood removed by the blade, and thin-kerf models chew through about 30% less wood than full-kerf blades with each pass, delivering that much more cutting power to your work. Freud's Premier Fusion blade is available in both full- and thin-kerf configurations, and is one of the few thin kerf blades that includes polymer-filled, anti-vibration slots to keep the blade running true and wobble-free.



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Senco F-16A Cordless Nailer

Tasked with putting up a ceiling of V-joint pine in a boat-access cottage in early December, I had the perfect opportunity to field test Senco's new F-16A, an incredibly portable cordless pneumatic 16-gauge angled finish nailer. Without the hassle of compressors and hoses I blasted through nearly 2000 2" nails over four days. At only six pounds, I appreciated its lightness on ladder work, while the 20-degree angled nose fit easily into tight spots. While the F-16A isn't easy to stand up on a flat surface because the magazine protrudes below the battery, it has a great belt-hook that makes up for it. There's no lag time when you pull the trigger, so I could keep a good pace up throughout and never had to deal with fuel cell changes, cleaning, or fumes.

The F-16A's single 18V Li-ion battery easily powered the nailer all morning, and then returned to nearly a full charge over a quick lunch. The nailer features a handy LED task light, battery gauge, and a roomy padded carrying case. I had one nail jam when I hit a hidden screw head, and the convenience of having a quick-release latch on the magazine got me back to work in about a minute without having to touch an Allen key. Overall Senco's F-16A is a light, fast, clean machine that exceeded my expectations and quickly made itself indispensable in my collection of tools. **www.senco.com**

Matt Dunkin



shop**news**

from our supporting advertisers

Bosch Vibration Control Sander

Holding a random orbital sander while you progress through various grades of sandpaper looking for that final finish can be tiresome work. The vibrations transmitted through the tool, into your hand, wrist and forearm can fatigue tendons and muscles and require frequent breaks. Thanks to a cool new Bosch-exclusive suspension system that isolates the handle from the tool body, vibration transfer to the user is minimized, enhancing handling, user comfort and improving productivity.

Available in either a 5" x 8 hole (ROS65VC5) or 6" x 6 hole (ROS65VC6) soft, microcellular hook and loop pad, these sanders provide two dust collection choices. The included Microfilter Dust Canister with integrated paper filter catches those fine particles the competitors

miss while the screw-off cap makes clean-out a breeze. If you have a vacuum dust control system, use the vacuum hose connection with airflow control for a direct connection.

With a powerful 3.3 amp, 5500-21000 OPM variable speed motor and die-cast aluminum gear housing, the ROS65VC series random orbital sanders are ready for serious



use. A removable front handle and multiple ergonomic soft-grip locations on the body provide user versatility and comfort. On the business end, a dual-bearing pad mount (another Bosch exclusive) and internal pad dampening system helps prevent swirl marks, provides for fast or fine, controlled stock removal and smooth well-blended finishes.

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It's very "Canadian" of us to look abroad in admiration at the globe's great furniture makers, while in our own backyard countless skilled artisans produce gorgeous pieces that could compete with the best in the world. This is a small collection of some of our best.

BY ROB BROWN

John Wiggers Kidney Shaped Desk

Photo by John Glos

Macassar Ebony

The precise dimensions of this desk are founded in ancient Chinese Feng Shui texts as being conducive for attracting wealth, prosperity, nobility and integrity into one's life. The shape and proportion of the kidney-shaped top is also consistent with the spiritually-based sacred design system of the Vastu Shastra, which is itself derived from the Vedic tradition in India. www.wiggersfurniture.com



Doug Ives Dragonfly

Photo by Raquel Jordao Fors

Afromosia, zebrano, port orford cedar, wenge, cocobolo and basswood.

The story of this cabinet involves a woman, as so many stories do. A woman I was fond of had a dried dragonfly, so I thought I would make a case to display it. As things go, the design became more involved, morphing from a simple box to a case with legs. I built a maquette and was pleased with the direction the case was taking. A few mock-ups helped get the overall size and proportions settled and I was off.



Jim & Eileen Jones Woodland Chains

Photo by Benjamin Laird

Cherry

Jim was going to have Eileen hand-paint three images of Alberta scenes. However, after sealing the piece they decided to just let the grain of the cherry do the talking. The piece is finished with wipe-on poly.

www.joneswoodworks.com



Reed Hansuld Entry Way Table

Photo by Karver Whitmill

Zebrawood, Walnut, Holly and Slate

A steam-bent, double-tapered base elegantly supports the compound curved frame, which features a reclaimed slate top bordered in subtle inlays.

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Panel Mitre Sled

This handy sled will help make mitres and bevels with ease.

BY TED BROWN

A mitre sled comes into play when you wish to mitre a panel, or plank, where the width dimension of the panel or board is small compared to its length. If you have a board that is to be the side of a mitred box, for example, it may be 18" long by 6" wide. In this scenario, you cannot safely use the table saw fence as a reference to cut the mitre because the width of the board does not provide enough reference surface running against the fence to keep the board from skewing during the cut. The mitre sled solves this issue and turns a challenging joint into a simple process.

Start With the Surface

I used 12 mm thick Baltic birch plywood for the panel of the jig and hard maple for the runner and the solid rear fence. Cut the Baltic birch panel such

that the grain of the outer veneers run with the longer length of the rectangular jig, to reduce warping of the jig over time. Using the bandsaw, rip off a maple strip to be used as the runner or guide. Mill the strip to $\frac{3}{4}$ " wide by $\frac{3}{8}$ " thick so that it will make a snug fit in your table saw t-slot. The panel of the jig is 24 inches wide by 17 inches from front to back. The width dimension was selected to hold a reasonably large cabinet panel, whereas the depth dimension was chosen such that the fence of the jig just hung over the table-saw deck, but not so deep as to allow the jig to tip. A small tip: make the runner about one inch longer than the depth of the panel and have it protrude front and back by $\frac{1}{2}$ " – this makes it easier to see while lining the jig up with the t-slot.

Drill and countersink three holes in the maple sled runner. Drill the holes using a $\frac{5}{32}$ " bit, which keeps the screws

tight in the bore of the drilled hole, eliminating slop. Flip the panel upside down, align the runner with a framing square, and then attach the runner using three 8 x 1" flat head screws. The runner should be placed so the jig's surface overlaps the blade, ensuring the jig will be cut by the blade (tilted at 45 degrees) on the first pass. Do not use a pilot hole through the plywood; simply power the screws through using a manual screwdriver. Remove the screws, which poke through the panel slightly, and then grind them back about $\frac{1}{8}$ ", removing the point from each, thus keeping the screw from protruding through the panel, while achieving maximum purchase with the threads.

A Smooth Fit

Try sliding the jig on the table saw – it will likely bind slightly. Pass the jig back and forth to create burnishing marks on



Attach the Runner – Secure the runner to the underside of the jig so it protrudes beyond the front edge by 1". This will allow you to visually align the jig in the saw's t-slot.



Trim the Jig – Once the runner has been installed set your blade to 45 degrees and trim the jig to size.

the runner. Remove the jig and then fare the runner using your shoulder plane to establish a snug, yet smoothing running jig.

Raise the blade on your table saw, and verify that the angle is precisely 45 degrees. Run the jig through the table saw, cutting a mitre on the left edge of your jig.

Prepare a solid maple fence that is 27 inches long x 3" high x 2" thick. Drill and countersink four $\frac{5}{32}$ " holes in the bottom of the panel to mount the fence, offset one inch from the rear edge of the panel. Use your framing square to set the fence at exactly 90 degrees to the mitred edge of your panel, and then clamp the fence in place. Drill a $\frac{1}{8}$ " pilot hole through the panel and into the bottom of the fence for all four holes. Fasten the fence, keeping the right edge flush to the panel edge, using four 8 x 1 $\frac{1}{2}$ " Robertson screws. Do not glue the fence, as you may wish to tweak its position at some later date should the wood move or the jig get dropped. Now that your jig is assembled, ease the edges of the fence with your block plane, followed by a light sanding.

Using the jig

Now for the fun part. Place a stop block in position, and secure it with two f-clamps, to ensure the block does not move. Keeping the stop-block tight ensures that the panel does not creep laterally during the cut. Check the angle of your mitre with your combination square, and make any adjustments to the fence.



Accurate Alignment – With an accurate square, set the fence at 90 degrees to the freshly cut edge, and secure it in place.



TED BROWN
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Ted Brown makes custom furniture and tutors woodworkers in his shop in Ottawa, Ontario. When he is not in the shop he can be found tearing up the highways on his 2.3-litre Triumph motorbike.

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Build an Arched Pergola



Adding a pergola to your deck is a great way to expand its usage. If well thought out, it will provide shade when you need it, and create a cozy space in which to relax.

BY MATT DUNKIN

One of the many factors to consider when approaching an outdoor living space like a deck or patio is how to create shelter from the sun during the hottest summer months, while still allowing light through during the rest of the year. This is even more imperative if the outdoor living space is attached to, or directly adjacent to your

house; a permanent structure can block a significant amount of light during the winter months when direct sunlight is most welcome.

The answer is the pergola, a wooden framework of posts supporting a horizontal trellis over which leafy vines can grow to provide shade during the summer, but allow light through during the early spring, late fall, and throughout the winter months. Pergolas define a space,

turning a deck, which might otherwise feel too exposed, into an outdoor room, combining our need for shelter with our desire for a vantage point. The pergola is the perfect sheltered place to sit and enjoy a meal on your deck or patio during those relaxed summer days when you yearn to be outside.

Unlike porches with a full roof, pergolas do not encounter a significant amount of snow load or stress

from wind, and so are considered more ornamental than structural in terms of needing to comply with building codes. They need to adequately support their own weight and the weight of whatever is grown on them, but beyond this pergolas can provide an opportunity for creativity and a significant amount of flexibility and variation from a design perspective. By the very nature of their vertical posts and horizontal frame, the average pergola can look a bit boxy. On a couple of deck projects, I have attempted to escape that tendency by creating pergolas with a bit more visual interest, incorporating a gently curving arch into the framework of the horizontal trellis supports. I've built two now out of western red cedar and in this article I'll outline my design and construction process as well as the technique I used to make them stand out.

The Posts

While they do not bear an intense amount of weight, pergolas have an implied weight about them and posts need to be sized accordingly. Because of the visual weight of the vines and horizontal members, to place them on anything less than a 6x6 as a post will make the pergola look top-heavy and flimsy. Both pergolas I'll refer to in this article have used 6x6s that are integrated into the floor framing of the decks into which they are built; additionally, one

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forms part of a built-in bench while the other is incorporated into the deck's railing. In each case, that intermediate support is important to laterally brace the post and make the pergola above solid. Because the post tops are exposed to rain and snow, I cut angles on them to

shed most of it away.

The first pergola I built was to be narrow and cover a built-in bench, and so I used only two posts to support two parallel arches. The second pergola was to be built into the corner of a deck and would form a right-angled triangle, so incorporated three 6x6 posts tied into the deck railing. Hereafter I'll refer to them as the "parallel" pergola and the "triangular" pergola to avoid confusion.

The Arches

When it comes to building most things out of wood, straight lines are simple and inexpensive to create, while incorporating curves can increase complexity, expense and waste. In approaching my arched pergola design, I drew inspiration from a stunning railing my father built for my elderly grandfather several years ago. In searching for a way to make more accessible the winding stone stairs down to the lake at our family cottage, he created a curved handrail by ripping fine strips of cedar, steaming them and then laminating them together in place to trees and strategically-placed cedar



Create a Space – A pergola sets the mood for your deck. The parallel curved arches add intrigue to this otherwise simple, yet inviting, pergola over a bench.

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posts along the serpentine pathway. The resulting handrail has been both beautiful and functional and appreciated for many years now.

Adapting the technique of ripping, bending and laminating, I decided that the degree of curvature I would need for the pergola I envisioned was less dramatic and so I omitted the steaming step. I created a bending form 16 feet long from a full sheet of plywood, another partial sheet, and wood scraps. A block at the apex of the arch held it about 10" for the parallel arch and a slightly more dramatic 12" for the longer span on the triangular arch. Intermediate blocks helped to round out the shape of the arc.

Next, I ripped approximately 1" strips of 2x cedar after experimenting with the degree of bend I would require. I kept them in sequence after ripping them by numbering them to aid in re-assembly. After the width of the table saw blade was removed, a 2x8 provided a finished width of 5 1/2" when laminated for the parallel arches, and the longer triangular arch was cut out of a 2x10 and finished down to near the width of a 2x8. In order to be able to glue them together, I needed a smooth surface and so I gang-planed both cut surfaces on a thickness planer to clean up the ripped surfaces. I laid the first strip down on the form and fastened each end to the form with one screw to bend the wood into place. With a small paint brush, I applied a generous coat of waterproof wood glue to the face of the strip on the form and then clamped the next strip in place at one end and worked along it fastening deck screws every 12 to 16" to connect the pieces mechanically while the glue dried and as insurance against the possibility of glue failure in the future. A second pair of hands made this go much more smoothly the second time I did it. The thickness of subsequent strips allowed me to connect multiple strips together with longer screws as I went. I made sure to keep screws away from the areas near the ends where I would need to cut a finished angle on the arches to avoid damage or injury from hitting a screw with my saw.

When the glue dried, I removed the initial anchor screws, scraped the glue squeeze-out off and sent the arch

through the thickness planer again on each side to give a nice clean face. Placing it on the ground "arch-up," I used a level to draw plumb marks on either end for the final vertical cuts on the mitre saw. I used a small router with a round-over bit to finish the edges and ends of the arch making it blend in with



Keep Things Simple – A flat platform to work on and some spacer blocks aid in producing a pleasing arc.



Flatten the Faces – Once the curved arches have dried, Dunkin planes their faces smooth.



Cross Members – A series of cross members provide some of the shade. If they are cut at different lengths they will add visual interest with curves or other patterns. Dunkin also took the time to chamfer the ends of the cross members, adding a small, but classy detail to the pergola.

the other pieces of milled dimensional lumber. The result was a curved piece of wood that was relatively simple to make and yet was more appealing and imaginative than a straight horizontal piece of wood.

Trellis Cross Members

Traditionally, a pergola would have horizontal trellis members laid in two layers, perpendicular to one another; far enough apart to allow light to pass through and yet close enough to support the growth of vines. To create a simple but pleasing finish detail on the ends of each trellis cross-member, I cut it square and then with four successive mitre-saw cuts created a chamfer on the end.

For the parallel pergola, set on two posts, I inset a horizontal 4x6 piece of cedar 32" long into the top of the post and spanned them with two identical arches. Across these arches I used 2x2s set apart at 4" centers. Wanting to give the arch a bit more visual interest, I varied the length of the 2x2s to create another arc in the distance they protruded over the side of the arches beneath. This curved arrangement is cast in shadow

during the brightest part of the day across the deck in an interesting pattern.

For the triangular pergola, only the hypotenuse of the triangle would have a curved arch to it, while the rest of the frame would be formed by straight horizontal 2x8s. Because those 2x8's differ in length, the cross-members create a soaring asymmetrical pattern, especially since I again arranged the length of the cross-member overhang in each case to create a secondary arc. The spacing is much wider between the cross-members (10 inches) but they are of thicker stock given that their span is much longer – a 2x6 ripped in half and set on edge.

Assembly

Because of its size, it was relatively simple to assemble the parallel pergola's components in place from a step ladder. I toenailed screws through the arches into the 4x6 supports below, and was able to screw the cross-members from above with 3" deck screws. Given the size of the triangular pergola and the height of its deck off the ground, I had to get more creative. I created the 2x8 triangular frame, attached it

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Fasteners – If you use exterior fasteners, you will be better off in the long run. Be sure to use a heavy enough product – lag screws in this case – as wind and other elements can punish a pergola.



Keep Things Low – Until most of the work is done keep the main part of the pergola at a comfortable working height. Once it's ready, you can lift it in place and attach it to the structural framework.

together, and left it resting on the railing. I then experimented with the layout of the cross-members and cut them to finished length and chamfered their ends all without needing a ladder. I fastened the cross members to the frame by screwing down through the cross-members with 4" wood screws. Then, with everything ready, I enlisted help to raise the entire pergola up to near the top of the posts, level it and screw the frame to the posts with self-tapping lag screws whose head sunk flush with the face of the wood frame.

Greenery Creates Shade – There are many options when it comes to choosing a species to grow on your pergola. Check with your local greenhouse or nursery to determine what's best for your area.

Finishing

It is with a certain amount of resignation that I build something out of wood and then place it outside for the sun and rain and temperature extremes to do with it what they will. Even the most carefully constructed outdoor project will begin to show signs of weathering in the first few

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months after being placed outside. In an attempt to protect the parallel pergola, I finished it with Benjamin Moore's Arborcoat exterior stain system, which involves the application of one coat of stain followed by one coat of a protective clear coat. For me, it was most critical to have the laminated arch sealed from potential water damage so I stained the arches before putting them up. Subsequent advice from staff at my local supply store was that I would get better adhesion of stain and clear coat if I waited a year for the oils in the wood to dissipate. At a minimum, I made sure that the laminated arch of the triangular pergola was clear coated over the winter, and next year it can be given a quick sand down before beginning the process of finishing the entire pergola.

Made in the Shade

Now that the framework for each pergola is in place, it's time to consider what you might grow on it to give the most shade from that glaring summer sun. While many creeping vines will suffice, I've had a couple recommended to me. Wild grape vines are native to our area, will grow nicely and have the benefit of providing fruit for jams or wines should you be so inclined. I've also heard that hops vines have amazing climbing ability and that their growth can be an impressive 8–20 inches per week under the right conditions. And if you are into brewing your own beer, you will have a seasonal supply of hops within reach, grown on the very pergola which will keep your deck cool this summer.



Plan Ahead – A pergola that is well thought out and complements the design of the deck and surroundings is a great addition to a home. Consider overall design, as well as function, wood selection and finish to arrive at the best pergola for your space.

MATT DUNKIN
greenbydesign@cogeco.ca

Matt is a green building contractor specializing in renovating existing homes in Peterborough, Ontario. In his off time, he writes and spends time adventuring outside with his family.

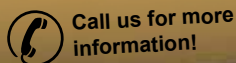


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Required Supplies

- 4-Way 175 degree Hinges (2)
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- 3" High-Density Foam (1)
20" x 13 1/2" – Upholstery Supplier
- Batting to fit –
Upholstery Supplier
- Black Material to fit –
Upholstery Supplier
- Fabric to fit – Upholstery Supplier

Build an Upholstered Foot Stool

This easy-to-make project will teach you some basic upholstery techniques. It will also give you place to put your feet up after a busy day and read some of the magazines stored inside the stool.

BY MARK ROSE

When making the legs, it's best to choose a hard, straight-grained wood so it will match nicely after the mitres are cut and the halves are glued together. It's easiest to mitre the leg parts then glue them up in one blank before cutting four legs out of the length. A 36" long board will be mitred in two, giving you mating, mitred parts. Machine the wood to 1" x 6 1/2" x 36" long. Put a sharp blade on the table saw and tilt the blade to exactly 45 degrees. The fence should be set at 2 1/4" from the inside of the 45 degree angle, in order to split the blank in half. If you're a little large, don't worry, as the exact leg profile will be shaped later. Make your cut as even as possible and keep the wood from lifting off

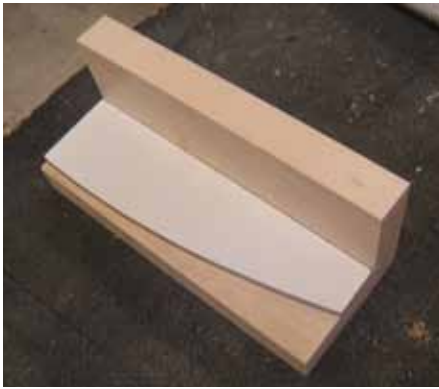
the saw table, as this newly cut surface will become your gluing edge. If you're having problems getting a good finish off the blade, move the fence in a hair and take a light skim cut or run the pieces over the jointer with the fence at 45 degrees.

Lay the two pieces on the workbench with the bevel down and in to each other. Apply strips of masking tape between the parts, bringing their mitred tips together. Test the fit by turning the pieces in together – they should



Glue the Legs – After applying masking tape to the front of the legs, apply glue to the surfaces and fold the legs together. If more clamping force is needed, use opposing F-clamps to close the joint.

Photos by Mark Rose Illustration by James Provost



Use a Template – After making a template, use it to mark the legs then cut the majority of the waste off with a bandsaw. You can then use double-sided tape to adhere the template to the leg and flush trim the rest of the waste with a router.



Springy Top – In order to give the top some additional comfort, you can machine grooves in it before applying the batting and fabric.

close tightly. Glue the inside of the bevel and turn the pieces together for good. If needed, add a few clamps to close the joint. Use good masking tape; you're looking for a tape that stretches a bit but does not break.

When the glue is dry, remove the masking tape and scrape off any squeeze out. Now cut the single long piece into four pieces $8 \frac{3}{16}$ " long. You can make the template for the leg out of $\frac{1}{4}$ " masonite or plywood. Draw out the pattern from the template on the inside of the leg and rough off the waste using the bandsaw. Temporarily attach the template using two-sided tape. Use a top-bearing flush trim router bit in the router table to finish the edges. Remove the template and repeat the process on the opposite edge. If you make more than one template the job goes faster. You could also bandsaw close and sand the edge smooth.

Materials List

Part	Label	Qty	T	W	L	Material
Legs	A	8	1	$3 \frac{1}{4}$	$8 \frac{3}{16}$	Hardwood
Long Sides	B	2	$\frac{3}{4}$	5	20	Plywood
Short Sides	C	2	$\frac{3}{4}$	5	13	Plywood
Bottom	D	1	$\frac{1}{2}$	19	$12 \frac{1}{2}$	Plywood
Top	E	1	$\frac{3}{8}$	20	$13 \frac{1}{2}$	Baltic Birch Plywood
Long Trim	F	4	$\frac{5}{8}$	$1 \frac{1}{8}$	$20 \frac{3}{4}$	Hardwood
Short Trim	G	4	$\frac{5}{8}$	$1 \frac{1}{8}$	$14 \frac{1}{4}$	Hardwood

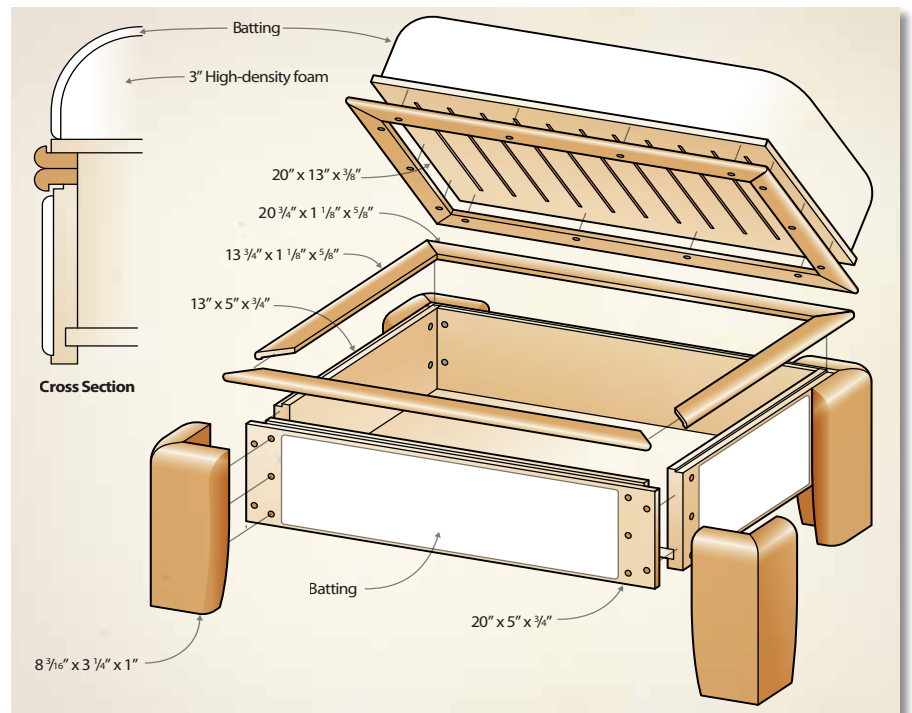
The edge profile on the legs is made from a fingernail round-over bit (Lee Valley 16J6151 or Busy Bee 757714). The sides and top are profiled using the router table.

Build the box

Next the simple box is made which the four legs will be fastened to. This 5" high box is made from $\frac{3}{4}$ " plywood. Rabbet joints fastening the four sides together are $\frac{1}{2}$ " deep x $\frac{3}{4}$ " wide and are machined on the two long sides. Cut all four sides 5" wide. The length is what determines the overall size of the stool. I made mine big enough for two stacks of magazines. I cut the two long sides 20" long, and the two short sides 13" long. Machine a $\frac{1}{4}$ " deep x $\frac{1}{2}$ " wide dado $\frac{1}{2}$ " away from the bottom of the sides to accept the $\frac{1}{2}$ " plywood bottom. Assemble the

sides and bottom with screws or brads and glue. Clamps ensure everything is tight. Once assembled, a $\frac{1}{16}$ " x $\frac{3}{8}$ " rabbet needs to be cut in the top, outside corner of the box. It will form a fabric stop.

Next you will have to machine some $1 \frac{1}{8}$ " wide $\frac{5}{8}$ " thick trim. This trim will be mitred and attached to the top of the box and the underside of the top, after the fabric has been applied. With my 20" x 13" box, I machined two 6' lengths. Rout a $\frac{5}{8}$ " bullnose or half round on one of the edges and a $\frac{7}{8}$ " wide by $\frac{3}{16}$ " deep rabbet on the other. That will leave a $\frac{7}{16}$ " thick tab that can be attached to the box or top. It will also provide a small lip that will visually cover the slightly varied fabric edge. Sand and finish all the "show wood" as upholsters call it – the legs and trim – and apply a finish.





Apply Batting – Once the box is made, use a spray adhesive to attach the batting to the sides of the box. The batting gives a softer look and feel to the stool.

The Top

The top is 3/8 Baltic birch, cut the exact size of the box. With great care, I made some plunge cut slots on the table saw but the same thing can be done with a router. Space the slots about 1 1/2" from each other and about 2" from the edges. The idea is to make the top slightly springy and more comfortable but still rigid without going through the added time of traditional webbing. It's certainly not the end of the world if you didn't add these slots to your top.

Fabric

A trip to the fabric store or foam/upholstery supply is needed. I brought the top with me to get the foam cut to size. The top is 3" high-density white foam but 2" will work. Medium density was too soft for my liking. While you're there, you could ask the store to bevel the corners back about an inch or so, but I used my bandsaw back in the shop, which cuts this density foam surprisingly well. You will also need a piece of white soft batting cut 3' by 4'. If you add batting over the foam, it makes the surfaces feel softer. While you're there, pick up some black bottom covering or some thin black fabric. Total cost was just over \$20.

Upholstery

I used the 3M Super 77 spray adhesive to attach strips of batting to the sides of the box. Don't apply batting right up to the corners. Staying back an inch from each corner will reduce the build-up near the legs. Spray the top board and stick on the foam. For the rest of this project you may want to get an inexpensive



One Nail at a Time – First attach the fabric to the top by nailing through the fabric into the 1/16" deep fabric rabbet on the top of the box. Then slowly work your way around the rest of the perimeter.

upholstery air stapler around \$70 or an electric stapler to make the job much easier. Lay the top, foam side down, on the centre of the batting and rap it over to the centre of the batting and staple one of the center points first, about 1/2" from the edge. Pull the opposite edge tight at the center and staple it, then do the other two sides. Flip the top over, press on it and see if it feels and looks right. If so, flip it back over and continue working from side to side pulling and stapling. You may find it easier with a second set of hands. Trim off the extra batting when you're done.

You will need just over a yard of fabric to cover the box. I would use a simple, small pattern to learn on. Large patterns can be difficult to centre and make look right. Cut pieces for the sides 2" wider than the edge of the box, but the exact length. Staple at the top of the box into the 1/16" deep rabbet made earlier. Then pull the fabric around to the bottom and staple it to the bottom edge. Cut off any additional fabric.

The top is little more difficult to cover with fabric, but similar to the batting procedure. Place the top upside down on the center of the fabric. Put one staple on one side then pull the opposite side tight and staple it. Work down the sides going back and forth but stop 2" from the corners. At this point, it's a bit like wrapping Christmas presents, you have to find a folding-in procedure you like. On mine, I folded the corner under and rolled the sides in to meet up at the edge. It might take a couple of tries, so don't put lots of staples in until you're satisfied. Trim off any extra fabric.



Show Wood – With the fabric in place, install the "show wood"; the trim on top of the box and the legs. Install the trim to the underside of the top as well.



It's a Wrap! – Like wrapping a Christmas present, the corners of the fabric have to be dealt with carefully. Don't use too many nails until you're satisfied with the look.

The black cover fabric is stapled at the edges to cover the box's bottom and the underside of the top. The wood trim that was made and finished earlier is mitred on the corners, then attached with either screws or a fine finishing nail gun. To attach the legs, drill clearance holes for the screws on the corners of the box. Use a band clamp around the outside to hold the legs in place while you screw them on from the inside. They butt up against the trim. The top is hinged using four way hinges from Lee Valley (00H63.01). They have a nice built-in stop and they pull shut.

MARK ROSE
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Having made furniture for most of his life, Mark teaches and works in his own shop professionally, focusing on the designing and making of fine craft pieces. Detail and classic design are important characteristics of his work.



Design principles, their definitions and how they relate to furniture design.

Seven Fundamentals of Good Design

BY MEREDITH NICOLE

My woodworking mentor, Robert Van Norman, studied under the esteemed woodworker James Krenov. Robert remembers many of JK's wise words, especially "trust your eye". When it was time for me to hear those words, I remember feeling such relief and permission to embrace my inherent perspicacity. Intuition is essential in the

design and creation process, and for developing work that reflects the maker beyond his or her technical skill alone. At times, the craftsman is called on to explain the aesthetics of his design and saying "it just feels right" doesn't always cut it. This article covers seven common design considerations, their definition and how they are generally accepted and understood. Not only will the article help increase design vocabulary and awareness, but it may also assist

in problem solving and recognizing the aesthetic strengths and weaknesses of a furniture piece.

The best way to use this article is to visually break the furniture piece down with reference to the categories listed. On a piece of paper, write down the main focus or core of the piece and place it beside the project. With a critical eye, question whether all the elements support the main goal. Ask why you have designed it this way. For example, if the main focus is to have a comfortable chair, you might want to consider which lines, texture or colours visually inspire people to think the chair is comfortable and stable even before they sit in it.



Contrast in a Chair – Smooth and rough, light and dark are the main contrasts in Michal Opalski's chair.



Subtle, but Important – Craig Johnson of Studio Tupla uses subtle contrasts on his cabinet. Besides changing the wood direction slightly on the cabinet doors to create the V-shape, each section of wood also has a slightly raised edge, which creates soft shadow lines and subtle texture.



Contrast

Contrast is created when you have two or more related elements that are different. Contrast can be used to add visual interest, depth and to highlight a dominant element. It is also a way to unite a piece and often bestows energy to a design. If there are too many contrasts or the differences are too severe, there is risk they will not only compete for attention, but may also create unbalance, confuse the viewer and create optical illusions. To achieve success with contrast, ensure the differences are obvious enough, but without an overpowering presence. Each design element mentioned in this article can be manipulated to create contrast. Each of the images not only relate to the corresponding element but also exhibit contrast.



Playful Approach – Juan Carlos Fernandez plays with proportion of the squares and rectangles created in the positive and negative space of this box.



Proportion

Proportion is the correlative relationship of all the parts to the whole. Although proportion usually refers to size, it is also a way to compare harmony between colour, quantity, placement and degree. Proportion is achieved when all sizes, shapes, textures, colors and so on complement one another. Remember that the eye appreciates some differences and may find equal parts monotonous and boring. Dividing space into equal parts such as halves, quarters and thirds is predictable and as a result the eye often skips past it.

Our understanding of what makes pleasing proportion is deeply imprinted in our mind and of all the design elements is the least influenced by one's cultural experience. Desirable proportion has long been based around ratios we see in nature with an emphasis on the human body. The "golden rectangle," considered to be divine proportion, has been used since at least the Renaissance period in art and design and has largely influenced our common experience with architecture and design. In fact, we often don't even see proportion until something is out of proportion.

Balanced Bed – Karen McBride was careful when dividing up the headboard, the bed area and side-tables to avoid a calculated feel and still create visual proportion. (Photo by Christopher Solar)



Time for Geometric Shapes

– Neil Moledzki Tribute clock is a reproduction of a clock made by James Krenov. The sweeping curves and the impression we get of the clock weighing down the stand produces an organic and even animated feel to the piece. It should be noted that something that has an organic feel is not the same as having an organic shape. If we break the parts down on the clock, we can see it is made entirely of geometric shapes.



Straight Lines – This small jewellery box, built by Scott King, is a great example of how to successfully use line as the main focus.

Crisp, Clean Design – Ian Godfrey successfully keeps the viewer focused on line by ensuring the proportions and details support clean and uninterrupted lines.



Shape or Form

Shape or form is determined by outline and defines an object or space. Two-dimensional form has height and width, whereas three-dimensional form has height, width and depth. There are three basic types of shapes: geometric, organic and abstract.

Geometric shapes are made from straight or curved lines such as circles, squares and triangles. Their easy-to-recognize and often symmetrical patterns offer a sense of order, efficiency, strength, formality, but to some may be seen as uninteresting. Squares and rectangles are the predominant geometric shapes seen around us, not only in furniture, but in all areas of life. A circle has no beginning or ending, making it complete and inspiring thoughts of nature, perfection, unity, initiation and inclusion.

A great example that highlights our emotional connection to the rectangle and circle is to look at how these shapes have influenced table design. Rectangle tables have often been used in boardrooms and for formal dinners with, traditionally, the most important person being seated at the head of the table, which can perhaps create an instant hierarchy. A solution to this perceived inequality may have been found in the design of the round table, much favoured by King Arthur who considered his knights as equals.

Organic shapes are typically irregular or asymmetrical and are representative of shapes found in nature such as leaves, puddles and flowers.

Abstract shapes are considered in two ways. Shapes that are difficult to identify and sit outside our daily visual experience are called abstractions. The others are highly stylized organic shapes that are recognizable and usually provide specific information. Letters of the alphabet and the male/female symbols for washrooms are examples of abstract images.



Sculptural Shape – Meredith Nicole houses an organic shaped sculpture inside of a rectangle cabinet. The organic pattern on the back panel and the cathedrals on the door mirror the main focus, which is the sculpture.

Line

Line is defined by two points and is long relative to its width; it can be thick, thin, vertical, diagonal, straight or curved. Lines are often used to define a space, draw attention to a particular area and guide the viewer's eyes around a piece. To critically examine line in your design, look at the relationship between the lines, including ones which may be created in the negative space. How do they align? Do they lead your eye around the piece or do they stop abruptly and create disorientation?

Horizontal lines communicate a feeling of length or width and continuation. Being parallel to the earth they suggest stability, calm and rest.

Vertical Lines provoke a sense of height, evoking feelings of power and courage but at the same time instability.

When vertical and horizontal lines are used together, they create balance and connect us to the structurally reassuring square and rectangle.

Curved lines inspire happiness and create a feeling of movement.



Obvious Repetition – There is no question that pattern is the main attraction on Laë'l Gordon's sideboard. By using a motif size that complements the cabinet's size, the full effect of the motif is appreciated without feeling busy. (Photo by Allen King)

Texture

Texture is the surface quality of a material. Texture has great potential to connect the observer emotionally to the work, inviting the person to touch and explore it. On a chair, for example, the texture of fabric can tempt persons to sit in it or immediately reject it. Smooth surfaces reflect light and can appear shiny making a piece feel light. Heavily textured surfaces absorb light. When considering texture, look at it from all angles and under different light conditions to see the full impact of its surface. To help determine scale with texture, the guidelines under pattern and proportion can also be followed.

Eye-Catching – Junior Brake created beautiful texture on his chair using a chisel. He reminds the seat's occupant of the texture on the seat by repeating it on the top of the arm-rest.



Simple Squares – Ian Crosby adds a subtle visual interest to an otherwise plain piece of maple by inlaying a pattern of squares (frieze). Crosby played with the prismatic of the wood and rotated the squares to create the illusion of using a light and dark wood.

Pattern

Pattern is the ordered repetition of an individual element. Pattern needs repetition in order to be considered a pattern. However, as already mentioned elsewhere, repetition can become boring. Slight variations in a pattern break monotony and add life to it. This also makes a pattern more familiar, especially if it relates closely to patterns found in nature. If a pattern is being created using a decorative motif, consider the dimensions of the surface area on which the motif will be seen to determine the motif's scale. Larger surfaces can support a larger motif and allow the viewer to fully appreciate the impact of the repetition. If the motif is too small, it can be distracting and make the area feel busy.



Checkered Texture – Hong Hyunsoo uses pattern and texture on this cabinet door. Each square was cut individually at a slight and non-calculated angle. This understated variation is key to creating a sense of movement and energy to the texture without screaming for attention.

Colour

Colour has three main qualities: hue, value and intensity. They can also be described as warm (red and orange) or cool (blue and green).

Hue is the name of the colour: yellow, red, blue, etc. Value is how dark or light it is. Intensity is how bright or dull it is.

Dark colours appear heavier and create a feeling of stability, whereas light colours hold less visual weight and can appear unstable. When joining woods of dark and light colour, the visual effect of heavy and light suggest that darker woods work better when used on the bottom. A suggestion from my mentor to help getting proportions right was to spray paint mock-ups with a colour similar to the woods to be used later.



Colour Variations

— Jacques Breau frames in the parquetry and provides a visual cue for the user as to where the pulls are for the drawers and the cabinet door with the use of a dark wood.



Colour Integration — Brian Newell creates a dynamic relationship between light and dark. Often, when contrast is employed, the focus is about the difference, but here Newell's focus is about integrating the light and dark. This is achieved by using dark wood (Macassar Ebony), which also contains the same hue as the light wood (Pear), and by creating dark areas on the light wood from the negative space of the pierced carving and the pulls. (Photo by Yoshiaki Kato)

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When not woodworking, Meredith is inspired by interior decorating, running and cooking. Her favourite activity though, is riding her motorbike.

An advertisement for Triton Precision Power Tools. It features a close-up of a person's hands operating a Triton plunge router. The router is orange and silver. The Triton logo is prominently displayed at the top in orange and black. Below the logo, the text "Precision Power Tools" is written in a smaller font. At the bottom, the slogan "Reliability, Performance & Innovation" is written in a bold, italicized font. The website address "www.tritontools.com" is displayed at the bottom right.

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An advertisement for Steel City woodworking equipment. It features a collection of various machines, including a band saw, a planer, a jointer, and a dust collector. The Steel City logo is at the top, with the tagline "BY WOODWORKERS | FOR WOODWORKERS" below it. At the bottom, the text "To Find a Dealer Near You, Visit : www.nordis.ca" is displayed. A QR code is located in the bottom right corner.

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Outside the Box

While there's a place for simple and straightforward, these artists don't want any part of it. To keep their work fresh and interesting, these Canadian makers turn to unique themes, processes and materials to design eye-catching pieces.

BY ROB BROWN



Broken Masterpiece – Figured wood plays heavily in Mike Wolos' work, as do intricate details like inlay and curves. (Photo by Ken Mayer Studios)

Mike Wolos

www.thewoodartist.com

After doing a three-year apprenticeship with his uncle about 20 years ago, Wolos started working in a small garage. He's now moved up to a 1000 sq. ft. space, which he usually works in by himself.

Designing and making a piece from start to finish is the high point of his time spent in the shop. In fact, design plays a large role in his work, and it's one aspect of the job he can't help but take home with him. "When I get an idea about a piece in my mind, I first make sketches about specific design elements. Sometimes a solution to a design problem comes to me at night just before falling asleep, then I write it down in the morning."

Wolos knows what he likes, saying "I love coffee tables because of the endless possibilities to create unique one-of-a-kind pieces of furniture art. For materials, I like to include exotic burls in the design since they look great and are easy to touch up, compared to uniform straight-grained woods, which show off any marks or finishing mistakes." He also knows what he doesn't like – staining a piece. That's why he usually opts for exotic woods that don't need any stain.

Lead photo by Ken Mayer Studios



Wall Cabinets – In order to complete the cabinets, Hogbin had to develop a new lamination technique to satisfy a client's request. They show milling marks characteristic of much of his work.

(Photo by Stephen Hogbin)



Public Installations – Hogbin constructed this bench, called *On The Edge*, for the Tom Thompson Art Gallery & Grey Sauble Conservation Authority by using a fallen Hemlock tree. The question surrounding this installation was about wood usage: how many trees are used for a specific object? This bench provides a nice place to sit and contemplate the question, before going into the gallery. (Photo by Stephen Hogbin)



Transformation – Krivoshein enjoys taking an ordinary object and transforming its function. In this case, he turned a ball and shackle into a jewellery box. A series of trays fit together into a sphere, which are then placed inside another sphere.

(Photo by Benjamin Laird)

Stephen Hogbin

www.stephenhogbin.com

Stephen Hogbin has been working wood since he was 16 years old, and he doesn't plan on slowing down any time soon. Currently he's working on a number of pieces for a new book titled "How to Hogbin", and says "Always too many ideas" when asked about any upcoming furniture work. Hogbin works in a large studio near Owen Sound, Ontario where he builds pieces for private and corporate clients, as well as speculative work. His work ranges from smaller, decorative items to large installations in public spaces.

Hogbin went to Rycotewood College near Oxford, England to learn furniture design and construction, and then attended the Royal College of Art to fine-tune his skills. Now 70, he says he enjoys the luxury of "working in his own space, making decisions from concept to context for the final work." He also has the luxury of owning a woodlot that produces ash, maple, beech, elm, pear, birch, ironwood, basswood, oak and apple, all of which he uses when the time is right.

When it comes time to design a project, Hogbin has a system. "First I establish the program – what is to be made, for whom, why, what's the budget – and then develop a succinct statement of purpose. The ideas flow in relationship to these criteria. With many ideas sketched, usually in a drawing, it's possible to make a decision of what's best in relationship to the statement of purpose. Then it's a matter of making the idea with appropriate material, technical ability and formal presence."

Having been in the industry for a while, he's seen a lot of great makers. Gord Peteran, Heidi Earnshaw, Michael Hosaluk and Peter Pierobon are some of his favourites.

Merv Krivoshein

A steel sculptor turned woodworker, Krivoshein now works alone in a large shop on his property, complete with skylights and more than 20 windows. Though he works with exotics from time to time, he usually uses local woods like spruce, elm and birch. "I like wood that has worm/insect holes or any other natural defect that I can adapt to use as a feature in the project" says Krivoshein. "I also like to use the natural contour or edge of wood so there is a marriage between the natural and man made products."

Of all the aspects of furniture making, Krivoshein enjoys the initial design stages the most. "I enjoy taking an idea and developing it into a work of art. I like the process of making decisions and the risk of moving from the known to the unknown. Sometimes I start with a drawing, a to-scale model or work with cutting and gluing cardboard in the shape of the proposed design. I have hundreds of woodworking books, art books and magazines and use these as references for technical expertise and for ways to resolve difficult problems. If I can't solve a problem immediately I put it aside and start working on something else until another idea comes to mind for resolving the difficulty. The danger here is that some projects are unsolved for years until the inspiration returns and I can finish the piece. I also like to try new techniques just for the fun of it and for gaining an increased mastery of woodworking." But as the project progresses, Krivoshein admits he sometimes has trouble staying focused for the duration of the build, saying "I have a hard time finishing a piece after all of the exciting decisions and risks are over."



Loud Tables – Guitars are one of Daniels' favourite forms to play with. These tables are made with figured woods, and finished with colourful dyes, to make them stand out that much more. (Photo by Phil Daniels)

Phil Daniels

www.phildanielswoodworks.com

Custom work has been keeping Daniels busy since 1978, making everything from armoires and kitchens to his signature bent guitar coffee tables. It always takes him longer than anticipated to finish a project. "I'm fussy and want to produce high-quality work," he said, about his refusal to cut corners.

Once he's confident in a general design, Daniels moves to Google SketchUp to work out most of the details in 3-D. When the drawing is complete, he can print computer generated cutlists and material lists before getting to work. Once in the shop, he gravitates towards figure; "I love highly figure woods, especially my bent guitar tables. They get the best wood."

Daniels doesn't mind standing out a bit, explaining "I use different colours to stimulate people's imagination, and to show what coloured furniture can do to a room."

Gordon Galenza

www.ggalenza.ca

Galenza, a self-taught furniture maker, has been building furniture for about 45 years. As most of his work clearly shows, he enjoys working with hardwoods, metal, glass, stone and paint. Their ease of precision machining, colour, texture and the many possible combinations entices him to break new ground.

The design process, followed by the work to bring a piece to life, gets Galenza most excited. "For speculative pieces, I enjoy a lot of uninhibited sketching and playing around with materials and concepts until I hit upon something that I'd like to build," he says, about his approach to design. When it comes to working with a client, the process is slightly different. "An initial meeting with the client to generally determine the function, placement, aesthetics and materials that would inform the design. This is followed by sketches, drawings and models until I pretty much resolve the shape, details, materials and finish."

Galenza also mentioned that "potential clients who request a replication of something from the past" is what he enjoys the least about his job. This is understandable, as Galenza is only interested in looking forward, pushing the boundaries of what can be done next.



A Bit of Everything – Made of zebrano, sycamore, bubinga, steel, aluminium and paint, these tables have everything Galenza enjoys working with. This was a challenging and satisfying piece for a client who was adventurous enough to request it. (Photo by John Dean Photographs Inc.)



Zig Zag – A speculative piece of wenge and jatoba, Galenza built this to be sculptural as well as functional. (Photo by John Dean Photographs Inc.)



The Dancers – This sturdy table has no aprons. The bent-laminated legs are more than enough to keep the curly sycamore surface stable during use. (Photo by Richard Bachmann)



Trembling Table – The finely crafted bent laminations that support the top are made to allow the top to 'tremble' with a touch. This style was very popular in Victorian England, but Cumming has added his own touch to the piece; a black chorite top and a white alabaster base. (Photo by Sally Cumming)

David Cumming

Cumming got into furniture making for very practical reasons. Years ago, he and his wife couldn't afford to buy furniture, so they scavenged for entire pieces, as well as any useful parts. He would take apart the old furniture and breath new life into it. Eventually wanting to know more about how furniture was made, he focused more and more on country antiques, learning design, joinery and many other critical aspects of the craft.

Though he currently enjoys working with softer rock, Cumming looks much further than red oak and maple for the wood component in his work. "Over the last 40 years, I have made things out of about 150 woods. If I have a few favourites, they would be Burmese Padauk (no longer available) and Narra. These woods were a favourite of the great Chinese makers of the 15th through the 17th centuries, and you can see pieces made from these woods at the Royal Ontario Museum. I have also worked with at least a dozen different rosewoods. That said, all woods are good woods."

Cumming tackles the design aspect of furniture making differently than most makers. "I never use or make drawings. I envision the piece in my mind, and then imagine the specific processes involved, often as an exercise while I'm falling asleep. I'm mildly dyslexic, and my main difficulty has always been in transcribing and transferring measurement." He also feels this process allows for greater flexibility, and spontaneity, than is usual in furniture making.

Always aware of other makers around him, Cumming first was inspired by James Krenov and Wendle Castle. In fact, after seeing some of Castle's work, Cumming fell in love with all the possibilities that bent laminations offered. Cumming also mentioned that he has always enjoyed Michael Fortune's work.

Scotty Lewis

Lewis, a regular contributor to Canadian Woodworking Magazine, is still fairly new to furniture making, but he has certainly made a name for himself. After five years of professional experience, two of those working with Michael Fortune, he has a great mind for design and can handle pretty much any tool you throw at him. As long as it's powered. When asked about the tools he enjoys using, he doesn't hesitate: "If it doesn't plug in, it isn't worth sh*t." He does admit to using a few hand tools, but not much more than a rasp and a card scraper.

Lewis also knows how to enjoy himself. "Listening to the radio and just having a good time is important. It's not all fun and games, but when the radio is on and I truly enjoy my time it's a really good feeling."

To start the design process in the shop Lewis builds full sized mock-ups or sample parts from scrap material. "I find this a really good way to end up with a piece I'm totally happy with."



A Place to Think – Lewis designed (the model is at the bottom of the photo) and made this stool, with a carved wooden brain below the seat. (Photo by Scotty Lewis)

In a Vacuum – Two vacuum-formed panels were joined together with multiple strands of shaped wood. Lewis enjoys using vacuum formed parts in his work. (Photo by Scotty Lewis)



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Little Black Dresser – This unique, almost sexy, cabinet in the shape of a dress hangs on the wall. Curved parts and curious surprises are a big part of Beaumont's work. (Photo by Kyle Huinink)



Apple Cabinet – Beaumont came up with this idea one day while eating an apple. The maple upper section is held up by a fibreglass 'core'. Beaumont's knowledge and use of materials has made it possible to do so many creative things. (Photo by Kyle Huinink)

Judson Beaumont

www.straightlinedesigns.com

Upon graduating art school in 1982, Judson Beaumont realized jobs in the field were hard to come by. He began doing sculptures and people started to view them as pieces of furniture, so he continued. Beaumont designs and builds pieces that makes a furniture maker say, "How did he do that?" Beaumont's work often takes shapes or ideas from everyday life and turns them on their head, which creates a piece of furniture that makes you smile.

Beaumont has come a long way since he started art school, remembering "I used to think that in order to build anything one had to get a set of instructions from a book or a magazine. I always assumed that someone else had to come up with the ideas and then you were supposed to build it that way."

Beaumont employs about eight craftspeople, and it's their collective knowledge of materials in general that have allowed them to construct the wild and crazy ideas he comes up with. In fact, the challenge of how something will be built is a huge part of the fun for Beaumont. The design process usually starts with pencil and paper, as lots of concepts are bounced around for a single piece. And by introducing more technology into the process he's looking forward to seeing what's down the road.



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This wine rack is great for a smaller home or a room that's in need of another small surface for storage or serving. It's also imperative that its owner loves wine, because it's made to be used. Cheers!

BY BILL PERRY

What makes this project interesting is that you get to choose the style you prefer. In this table, the "cloud lift" profile in the walnut frame surrounding the top was strongly Greene and Greene-influenced, while the outward-curving legs were another North American interpretation of Asian furniture treatments. If you don't want an Asian-style piece, however, it's a simple matter to replace the "gumby" legs with ones that are straight or tapered. The same applies to the frame around the table's top. You can lose the cloud lift profiles, replace the bridle joints at the corners with mitres or use a slab top instead of frame and panel.

Full-scale drawings or patterns are a good idea with this piece. You'll be cutting 24 mortises and fitting their respective tenons into them. Measuring each of their locations individually is a recipe for disaster; ticking off their locations from marks on a template is less risky. (It doesn't mean you can stop thinking; you still have to mark the correct sides of the components.) Full-size templates or models also help you to envision how the final construction will look. And if the design you're trying just isn't going to work, it's less painful to scrap a piece of plywood or pine than a piece of walnut or birdseye.

Wood selection

Once you have your design, take your time assembling the wood you'll need. It's tempting to look for a spectacular specimen for the top while neglecting other components. This is a grave error. All parts must work together and, in this case, the grain of the legs must complement the table's form, whether viewed from the front or the side.

Photos by Bill Perry (Lead Photo by Nik Groot) Illustration by James Provost



Try a Template – To increase your chances of success, make a template for the mortise locations. It will virtually guarantee all your mortises end up in the correct location.

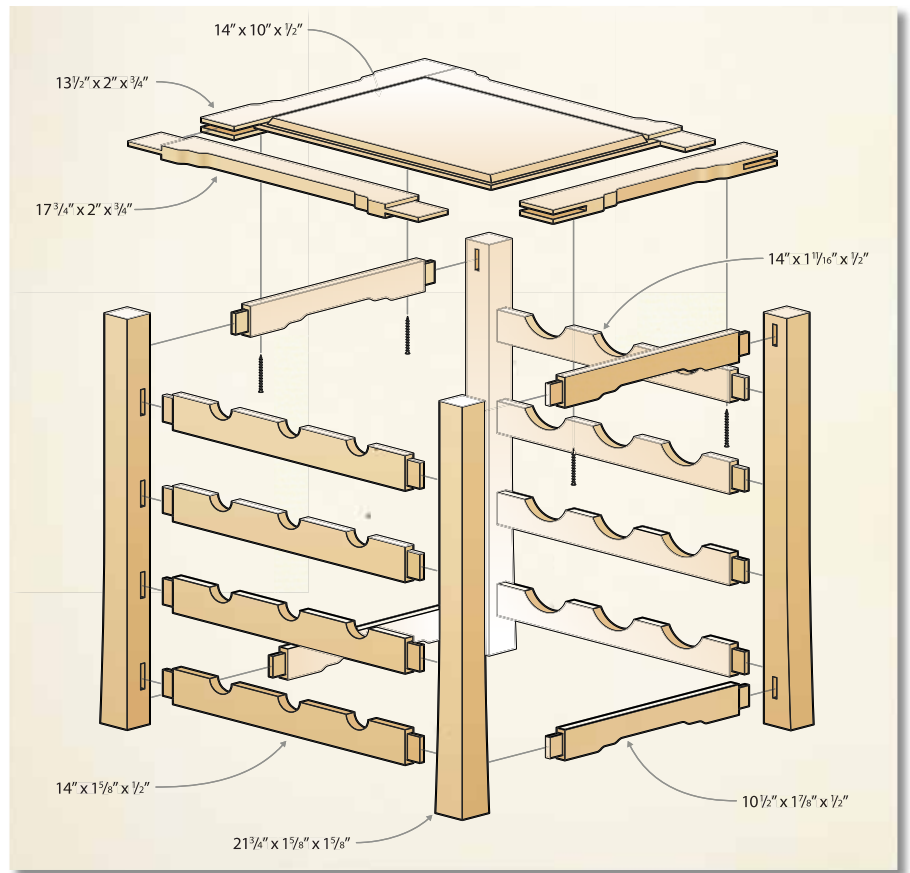
Imagine how the legs would look if the grain curved inwards instead of having it flow out, matching the table's form. Not only would the shorter grain weaken the construction, it would also look awkward. Now consider the table's top. If you're going to use a spectacular piece of wood for a panel, you don't want rails and stiles in a flashy, contrasting species that competes with it. An understated frame in quartersawn timber works far better.

Construction

Try to cut all your stock from the same piece of lumber to ensure consistent grain and colour. It's always a good idea to mill the components just slightly over-size and let them acclimatize in the shop for about a week. Then mill them to finished size, saving a few final passes with a hand plane for later.

The legs are the structural elements and support the table's framework and top, so we start with them. It's easier to cut mortises into stock that is still square, so mortising is done before any other shaping of the legs. Begin by marking the locations of the six mortises in each piece, using the template you made. (You did make a template, didn't you?) Pay attention to grain direction and pattern, and mark each leg with both its position and orientation so it doesn't get turned around. How you cut the mortises is up to you. I used a hollow-chisel mortiser. Plunge routers, Forstner bits or mortising chisels do just as well.

With the mortises cut, the legs can be



shaped. The very gentle taper on these legs was traced from a masonite pattern and then bandsawn out. Spokeshaves and scrapers faired the curves.

I cut the tenons with a dado set on the table saw using a single setup – a huge timesaver. With the workpieces supported by a sled I could use a single height adjustment for the blade, while a stop block clamped to the sled regulated the length of the tenon. After refining the machine setup with a test scrap, cutting perfectly-thicknessed tenons was a breeze. Then I marked the width of each tenon directly from its corresponding mortise, trimmed these to size using a hand saw, and the tenons were done.

Another timesaver was to double up the width of the stretchers that would support the necks of the wine bottles. They would have a 1 1/4" hole bored through them along their centre line. Once the tenons' thickness had been milled, these pieces could then be ripped in half, yielding two for one. With this done, the tenons' widths were laid out directly from their corresponding mortises – the same as for the other components.



Great for Tenons – A sled for your table saw, designed to work with your dado head, makes cutting tenons very straight-forward. The front rails are machined in pairs, then once the wine neck hole has been drilled, they were ripped in two on the table saw.

The stretchers that hold the wine bottles' bodies had their curves cut out on the bandsaw and then faired with rasps. If you prefer, you can make a template for the stretchers, rough-cut them to size, and then use the template to pattern-route them to final dimensions. However you make them, once they're cut to finished size, run around their edges with a bearing-guided round-over bit on the router table.

Materials List

Part	Qty	T	W	L	BS	Material
Top panel	1	1/2	10	14	-	Figured maple
Top rails	2	3/4	2	17 3/4	-	Walnut
Top stiles	2	3/4	2	13 1/2	-	Walnut
Legs	4	1 5/8	1 5/8	21 3/4	-	Walnut
Side stretchers	4	1/2	1 7/8	10 1/2	9	Walnut
Front stretchers	4	1/2	1 5/8	14	12 1/2	Walnut
Rear stretchers	4	1/2	1 11/16	14	12 1/2	Walnut

You should be able to assemble the table's base now and begin work on the top. If you've decided on a single-piece table top, that just means gluing up the boards you'll be using, cutting them to final size and adding any detail work such as an edge profile. An arts-and-crafts style like this requires a bit more work, but if you're careful it shouldn't present any great difficulties.

The female portion of the bridle joint for the tops' frame can be cut by hand, on the bandsaw, or on the table saw using a tenoning jig. The mating male joint can be cut using the same tools, or

they can be milled to their proper thickness using a dado blade set and a sled on the table saw.

Whichever method you choose, remember to cut the length of the tenons and of the open mortises a bit longer than their width so they can be rounded over to give the "pillowed" look of arts and crafts joinery. That can be done using a round-over bit used with a router in a router table, or even more easily using rasps and sandpaper.

The tabletop's panel is bevelled steeply down to a tongue that fits into a groove milled into the frame. I formed the



Another Template – The back rails can be marked from the template. Then cut the arcs with a coping saw or bandsaw and clean them up on the router table.

bevel using a Lee Valley Tools router bit (16J66.51) which was designed to form the rabbet on the inside of Shaker-style door panels. The Shakers would use a door with a flat panel on the outside for ease of cleaning, and the bevel of the raised panel on the inside. This tabletop could have been done exactly the same way, but I preferred to have the bevel showing, so I just flipped the raised

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panel over. The tongue could also be machined on the table saw.

A framed top such as this one makes it a snap to attach it to the table's legs and stretchers. There is no issue of wood movement since the grain of the table-top's frame and that of the stretchers between the legs runs in the same direction. That means just a couple of screws driven through from underneath are all you need.

Finishing

If you're going to use a frame and panel style of tabletop it's wise to pre-finish the panel before gluing it into the frame, just in case it shrinks when humidity is low, exposing an unfinished edge. It's also much easier to pre-finish the table's components before gluing up. That way you have easy access to all sides of them instead of trying to brush finish into corners after assembly.

The walnut I used for this table was air-dried, which helped to avoid the grayish tone walnut often gets from kiln drying, so I decided a couple of coats of amber shellac to warm up the colour and bring out some gold in it would be sufficient. For walnut that has a strong gray tone from the kiln, a couple of drops of reddish-brown liquid dye concentrate such as burnt sienna added to amber shellac will create a colour that restores the warmth of the walnut.

I used a 2-lb. cut of shellac, which I wiped on using a rag, working quickly and trying to avoid any heavy build-up or changes in colour. The thin cut of shellac dries so quickly it's possible to

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put on two or three coats in a day. I buff it down lightly between coats using a gray Scotch-Brite™ pad.

If you're confident that the table will only receive light wear and won't be subjected to spills – especially alcoholic ones – you can complete your finishing with a coat of wax. I'm never that confident, so while I left the table's legs and stretchers with a shellac finish, the top received an additional coat of

water-borne polyurethane rubbed out to a satin finish.

BILL PERRY
bill@wmperry.ca



Not wanting a reputation as a "drinker with a woodworking problem," Perry stopped building this table and placed its design in the public domain. (He might still make a copy in a good vintage year.)



Round the Edges – The stretchers that hold the wine bottles all get their edges rounded over on the router table, to give a softer look.



One Pass – Perry uses a tenoning jig and a table saw to machine the first half of the bridge joint in a single pass. This joint will secure the four frame pieces that surround the top panel.



Pillowed Ends – Carefully round all the edges and ends of the bridge joint. It's a good idea to pre-finish these pieces and the table's top panel before assembly.

14 PRACTICAL STEPS TO DESIGNING FURNITURE

Use these steps to help you design furniture that is beautiful, unique and functional.

BY ROB BROWN



Au Naturelle – The natural world has so many interesting and varied shapes and lines that you will never run out of inspiration. The design on this shoji screen was inspired by the general form of a bonsai tree. After making the frame, I applied the white background paper then cut and applied the four different papers that make up the image on the front of the screen. (Photo by dreamstime.com)



It's easy being green – Leaves often have simple, flowing lines, which make for great furniture. After seeing the simple form of this black cherry leaf I thought it would make a great coffee table top. Cherry leaf and berry inlay added a focal point to the table-top. (Photo by dreamstime.com)

Inspiration from nature. The natural world is one of the most common ways I find new furniture design ideas. Everything from shadows and plants to animals and water can give me a general shape or form as a starting point. I then have to work out the details, and turn it into a piece of furniture. It doesn't have to be an exact shape from the natural world; it can be more abstract or impressionistic. Once you start looking, you will be amazed how many organic, fascinating shapes you will find.

Photos by Rob Brown



Everyday occurrence

– After driving past this window many times, I finally noticed it. Nice proportions and lots of room for artistic freedom made me play around with the overall design when building this wall cabinet. I used hand-made paper for the door panels. Keeping your eyes open to things you see everyday will go a long way to finding new design possibilities.



Great-tasting idea –

Part way through a box of chocolates one caught my eye. The graceful curves and comfortable feel inspired me to save it. Back at my shop I shaped some softwood model pulls that I could keep. Then, naturally, I ate the chocolate.



Taking Things for Granted

– After making a list of all the things I took for granted about a typical cabinet on stand, I chose one point and didn't follow the typical route. This whisky cabinet has everything most cabinet on stands would have; the only difference is that it has six sides, instead of the typical four.

2

Inspiration from humanity. We see so many shapes, forms, textures, patterns, etc. on a daily basis – often we pass by them and don't give them much thought. You can be in the supermarket, driving down the road or just going through your day-to-day life when something strikes your fancy. If it's a shape or subject that speaks to you, then run with it. Inspiration can sometimes be in silly or weird places. I have paused a movie so I could take a photo of a building in it and I have also been inspired by the pattern made by swirling paint in a can as I stirred it up.

3

What do you "take for granted" about a piece of furniture?

We take things for granted every day, and that can give us tunnel vision. Make a list of the things you take for granted about the general style of furniture you want to design. Once you have your list, go through it and consider what the piece of furniture would look like if you didn't follow one or more of the points. What do you take for granted about the cabinet on a stand? 1-Cabinet on top of stand, 2-door(s) at the front, 3-cabinet is square or rectangular in shape, 4-two sides, one front and one back, 5-four legs, 6-drawers and/or shelves inside, 7-doors hinged to gables, 8-often simple or subtle in design, etc. After I made my list, I focused on "4 – two sides, one front and one back", and made a hexagonal shaped cabinet.

4

Use two, or a maximum of three strong elements in one piece of furniture.

Any more will likely clutter or overpower a piece of furniture. Often the KISS (Keep It Simple, Stupid) theory is good guidance. "Elements" can be figured wood, strong curves or angles, texture, pattern, contrast, visible joinery, etc. If you cram too much into a piece the details tend to disappear and the piece of furniture becomes too busy and difficult to look at.



Too much of a good thing

– By limiting a piece of furniture to two, maximum three, strong elements you ensure that the piece is not too overwhelming to look at. The legs on this chest command attention, as do the rich red drawer fronts, made of chakte-kok.



A walk in the woods – While trying to decide what to do with the top of a coffee table, I decided to go for a walk in the woods. Once it started to rain, I noticed small water rings in the river. I immediately thought of the table's surface. I would never have had this idea if I didn't head for the woods.
(Photo by dreamstime.com)



More than just wood – Other materials bring wonderful strengths to a piece of furniture. Copper, on the face of this music stand, adds warmth and colour and can be textured with the right tools. Hand-made Japanese paper comes in many colours, weights and textures. When placed in front of a light, like this lantern, its natural fibres are easily visible.



Time well spent – This lantern model saved me a lot of grief and wasted time. As soon as I made it, I realized it looked more like a weird waste bin than a classy lantern. I removed the taper on the sides and was happy with the final result.

5 Give yourself time to think. My favourite thing to do when I get stuck for ideas is to go for a walk in the woods and not pressure myself to continue the piece of furniture. By just allowing myself to relax, and not be forced to come up with an answer, I often come up with a solution. Walks may be the best thing for me to generate ideas. This might also be why I often bring nature into my designs. Another option is to work on another piece of furniture, until you're sure of the next step. Be prepared to put something on hold until you come up with an idea you like, or you may kick yourself later for ruining a piece.

6 Incorporate different materials into your furniture. Rock, copper, hand-made Japanese paper, tile, stainless steel, glass, etc. are all great options. Depending on the material you can add colour, sheen, texture, pattern, functionality or durability as each material has its strengths and weaknesses. Often if you can't do the work yourself, there is someone that can. Don't think of working with someone else as a failure; think of it as a collaboration and a learning process.

7 Use models to work out an idea. Don't make mistakes with your expensive exotic wood ... do that with the cheap stuff: 2x4s, Masonite, Styrofoam, construction paper, etc. Use anything that is cheap, strong enough and easy to work with. You can also use different spray paints to mimic the colour of solid wood, allowing you a more realistic view of the finished piece. Models can be full-sized or to scale.



Big or small – Sometimes it's much easier and faster to make to-scale models of a piece before you start building it. Details are easy to make and the piece can be visualized quite clearly. I changed this table's base substantially before deciding on the final details.



Symmetry ... sometimes –

Asymmetry adds visual interest to a piece of furniture, and gives you lots of options when designing furniture.

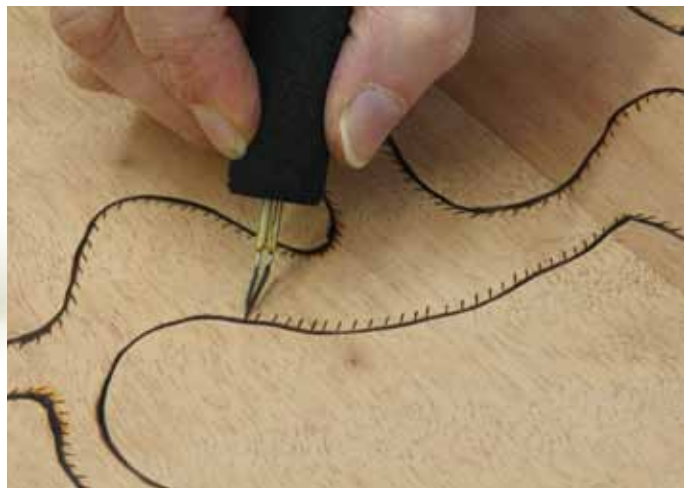
Add some asymmetry to your work. Symmetry is quite common in our lives, so breaking from the norm can add intrigue to a piece of furniture. It's a good idea to not ignore balance, as I think you can go too far, and create something that is more of an eye sore than a work of art.

Add curves or angles to your work. Curves don't have to be difficult to cut – often the bandsaw and some basic handtools will get the job done. Bent laminations, steam bending and hot-pipe bending are some other techniques you can use to add curves to a piece of furniture. Curves and angles add energy and elegance to a piece of furniture, and they both go a long way to set your work apart from a store-bought piece of furniture.

Feel free to experiment Using new techniques, machinery or approaches to building furniture may help round out your skills and improve the pieces that you make. When I purchased a vacuum press, I expanded what I was capable of quite considerably. I could now add figured and exotic veneers to my projects and well as make curved panels with relative ease. Maybe you've always wanted to chip carve, turn, or make your own hardware. Try it out and you may be surprised how much you learn and how your furniture improves because of it. Your project may take longer to complete as you learn the new techniques, machines, etc. but it will likely turn out better in the long run. You will also have fun doing it.



A slight twist – Curves and angles add energy to a piece of furniture, as well as separate a piece of custom furniture from its store-bought counterparts.



Expand your horizons – By experimenting with different techniques and machinery you will likely enjoy the process more. You will also have more freedom when designing a piece of furniture. When I bought a pyrography pen, I was able to add some designs – Native American petroglyphs, in this case – to some of my work.

Look to the East – Different countries and geographical regions offer a wide array of furniture designs. You may want to do some research on the different styles available, and be inspired by some of their work. This step tansu was used for storage in small homes, and was also used to access the upper level of Japanese homes. (Photo by dreamstime.com)



Look to the West – If reproductions are your style then you have lots to look at. This empire style table by Ontario maker Jacques Mathurin is one of many pieces that you can look to for inspiration. There are many books on specific styles if you have your sights on something specific. (Photo by Jacques Mathurin)



1 Look at other furniture. Sometimes a good starting point for overall sizes and critical dimensions is other pieces of furniture. There are many traditional styles of furniture available for viewing in books and museums. Different regions of the world have different furniture styles to inspire you. There are also many contemporary pieces available for inspiration. When looking at contemporary furniture, it's very important not to "steal" designs, but to just be inspired by an aspect of the piece of style. Maybe it's a combination of wood species, or how someone has performed a specific technique that interests you. Don't follow 100 percent in their footsteps though.

2 Don't rely heavily on exotic/figured woods. Sometimes people think that as long as they use enough heavily figured wood they will be left with a gorgeous piece of furniture. That's not the case. My general rule is that a piece of furniture should still look nice if you were to remove all the figured wood and replace it with very simple, plain wood. Use exotic and figured woods to accentuate a piece of furniture, but don't rely on them to disguise poor design.

3 Use non-standard dimensions when appropriate. Material thickness, overhangs, widths, etc. should sometimes vary from the standard, in order to create different looking pieces of furniture. Having said that, there are certain dimensions that generally should be adhered to: seat heights, dining table heights, counter heights, etc.

4 Use a sketchbook to explore ideas. Use it to work out different designs and shapes, and don't get frustrated if the vast majority of your ideas don't look good at first, or ever. After sketching out many different design options you will start to get an idea of what looks good and what doesn't. And sometimes when you're stuck for ideas, you can look back at some of your old sketches. Most people don't enjoy sketching and are not great at it, but if you practice you will improve.

Too much of a good thing – Exotics and figured wood will not disguise poor design. They should be used carefully, as too much figure competes with the overall design of the piece. The pomele sapele tops on this set of nesting tables are the focal point. To not draw attention from the tops the straight-grained white ash base has been ebonized.

ROB BROWN

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Rob finds the design process challenging and frustrating, rewarding and exhilarating. If it wasn't for the fact that the process goes well about 10 percent of the time, he would surely have changed careers by now.

Designing a Hall Table

There are so many things you can learn from past projects, in order to improve your next project. Find out what this amateur woodworker learned about designing a hall table, and see what he did to improve his next project – another hall table.

BY RYAN SPARREBOOM

In the spring of 2011, good friends of ours moved into a beautiful new home and I decided to build them a housewarming gift. After some deliberation, I settled on a hall table. To me, a hall table is something that can be both useful and artistic in a new home and allows me to express my creative side. The design process for that table followed the process I use for almost all of my woodworking projects: rough sketches, some brief notes, some deep thought, usually followed by a few more rough sketches. After I feel I have a good idea of how I want things to look, the materials I want to use, and some of the key design features, I move to some large paper on my kitchen table for a full-scale drawing.

The first decision to make in designing this table was the materials. I chose birds-eye maple for the table's top because it is

a beautiful feature wood and a favourite of the intended recipients. I prefer to use contrasting woods in my work, and chose roasted curly maple for the base of this table. The roasting process darkens the maple throughout and provides just the kind of contrast I was looking for. The curly figure in the maple can make the piece look a bit more rustic than I was trying to achieve, so I decided to add some cocobolo feet and inlay to the project, and keep some gentle curves in the table so that it still held a classy look. The next step was to decide on some key design features. I wanted the table to have a drawer because it's a good place to put keys and other small items that shouldn't clutter a tabletop. The actual shape of the legs, aprons, and top was a culmination of personal preference and classical style to give the overall table design the look and feel that I thought the recipients would appreciate.

Ask Around

After completing that table, I posted photos and a small write-up of it on the Canadian Woodworking Magazine forum. I often post my projects as a personal learning tool to get valuable feedback and opinions on my work from my peers. With the feedback I received, as





Table #1 – Sparreboom made this hall table as a gift for a friend. When he was asked to build another similar table, he wanted to fine-tune the design with the knowledge he gained from making this table.



Lots of Options – A drawer adds handy storage, but has certain requirements. Sparreboom decided to build the second table without a drawer, allowing him more freedom with the overall design.

well as feedback from the new owners of the table, and some personal thoughts on how it turned out, I can turn around and make my next project even better. Like many woodworkers, improving on my own designs is one of my key goals. While the table was well received by my friends and woodworking peers, I did get some suggestions on how to improve it. By the end of 2011, it was time to build another hall table, and this time I decided to change a few things.

Again, there was the choice of materials. While I really liked the roasted curly maple, it is expensive and I didn't have more of it. I also felt that, to some degree, the curly figure in the base took away from the top – the main feature of the table. I also found out the table was a bit too top heavy, especially with the drawer. In fact, it had been tipped over by my friend's toddler, smashing an ornament that was on top (fortunately, no one was hurt!). After considering all the advice I received, I made a number of changes to the second table:

- Use a heavier wood for the base (Jatoba a.k.a. Brazilian cherry)
- Increase the contrast within the table
- Remove the drawer
- Make the aprons thinner, and thus lighter
- Add curve to the ends of the top
- Redesign the legs to have a lower center of gravity while still keeping a pleasing classy look
- Sometimes less is more when it comes to colour and figure in a piece.

When designing the second table, I again followed my normal practice: sketch, notes, thoughts, more sketches, and a full-size drawing. In addition to the above changes to resolve the top-heaviness issue, I wanted some aesthetic changes as well. It was suggested to me that the square-ended tabletop did not flow well. I agreed, and decided to curve the ends of the top as well. In the first table, I bevelled the underside of each end of the top, which looked good on paper, but once I had it cut on the table top I immediately regretted it, so that would go, as well.

The Apron – An Easy Decision

I have built tables before that have no drawer in them, and I have also come to really like a floating top design. I tossed that idea around for quite some time, hesitating between using that feature or not. Doing so may change the table too much and take it from a “redesign” to a total new design. The decision on this wasn't made until I settled on a shape for the aprons. I decided that without the drawer, the front apron needed a



Full Size – To give him a better idea of the details, Sparreboom made a full-sized drawing. It also gave him something to refer to when making templates.



The Gang – To ensure all the legs were the same size, they were ganged together during final shaping operations.



A Slight Taper – To give the table a lower visual center, a gentle taper was machined into the legs with a sled.

slightly different look. I didn't change it much, but added a second upswept curve and spaced them apart, instead of having one centered upsweep. This also changed



A Nice, Even Top – The birdseye maple top was taken from a single, wide board, in order to keep the grain and colour uniform.

the look of the meeting point between the apron and the legs, giving it a more gradual and unified appearance. After drawing that to full scale, I knew immediately that

the aprons needed one more change: a curve on the top. With a curve on the top of the aprons, the top had to float, so that decision followed with ease.

Shapely Legs

When deciding on the shape of the legs, I really didn't want to change too much. I really liked the shape of the first tables' legs, and so did everyone else. I considered only changing the type of wood used for the feet, but I decided to sketch a few ideas out and see what else I could come up with to add mass lower down. In the end, the change was a subtle thickening of the feet to give it more of a toe, a slight narrowing of the upper portion, and a reverse taper of the entire leg on the side profile. With the foot now the widest part of each leg, I decided not to use a different wood for the feet at all, keeping it all one piece. Before I cut the first piece of wood, I went over all the changes to make sure I was reaching my main objectives; a less tipsy table with some different features but still just as much class and elegance as the first.

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The Build – Part II

I started the build of the second table with the most complex pieces, the legs. For me, doing this helps everything afterwards flow nicely. The entire base of this table started out as a single board of 8/4 Jatoba. After making a template of the leg shape from my full-scale drawing, I cut the leg blanks to rough size. I ensured that I kept one square face at the top of each leg where the long aprons would attach, to ease joinery later on. The curves of the legs were then cut on the band saw. To ensure that all four legs took the exact same size and shape, I clamped them together and gang-sanded them first with the belt sander, then the random orbit sander. You could use spoke shaves or a convex plane if you prefer. To make the legs more bottom-heavy, I made a simple sled for the planer to cut the reverse taper on the side profile. The taper is slight to the eye, but noticeable in balance. With that done, some more final shaping was done with the sander, and then the corners of the legs were rounded over.

I began to create the aprons by resawing the 8/4 Jatoba into thinner pieces. I jointed and planed them flat before laying out the curves that I had drawn up on the full-size sketch. During the drawing of the aprons on the sketch, one of my goals was to keep the curves consistent. To do this, I actually used the template I had created for the legs to mock the curves in the apron. This, combined with the more flowing shape of the top of the legs into the aprons, gave some consistency to the overall look and feel of the table. With the



The Finished Table – Form, proportion and wood species all turned out looking great. It's a classy table that will serve its owner well for years to come.

legs and aprons both shaped, it was time to focus on joining them.

The leg-to-apron joints on this table are fairly simple. For speed and ease, without sacrificing strength, I often choose a multiple dowel joint. Aligned with a jig, the dowel joints are quicker to lay out and machine than integrated mortise and tenon joints, and in my opinion, every bit as strong. I had left a flat face on the leg tops for the front and rear apron joints, but on the small side aprons, the taper of the leg came in to play. The taper only worked out to be about 1.5 degrees, but that meant the side aprons needed to be cut at that same angle and then the dowel joints fitted accordingly. This is achieved without too much difficulty by correctly shimming the dowelling jig, but if you're not comfortable with this, the joint can also be cut before the taper on the leg is made. With the legs and aprons shaped, and the joinery for them in place, it was time to dry fit the table base together.

The Top

I chose a single, wide board of birdseye maple for the top, instead of edge joining two or more boards. I was lucky enough to have access to several 13"-plus wide boards to choose from. The board started at just over an inch thick. I placed it on the table several times before deciding on the final thickness of just over 3/4" for the right proportions. With the top thickened, I cut the top to final width and laid out the curves for the ends. The final dimensions of the top are 13" x 44". To add an elegant touch to the top, I like to use a thin band of inlay around the perimeter, about 1" in

from the edge. Using a simple guide attached to the router base, I routed a 1/8" wide groove around the top. I glued in the inlay strip with wood glue. I ensured ahead of time that my intended inlay material will bend to the radius that I need it to for the curved ends.

I am very careful to cut the inlay to length and at the correct angle to make the corner joints appear seamless. I use a fine chisel to get the joints perfect.

Defy Gravity

To make the top "float," I needed to add supports between the aprons that would hold the top up and be as invisible as possible at the same time. I have found that there is a fine balance between the width of the top and the space between the legs and table top for the top to appear to float while not looking detached. I prefer at least a 1 1/2" overhang on the front and back, and a space above the legs no bigger than the thickness of the top itself. For good balance, the supports should be placed about one fifth of the way in from the ends of the table top. There are several ways that I could have attached the top supports to the aprons, but because the aprons are only 5/8" thick, I chose a stopped sliding dovetail joint for strength.

To make the sliding dovetail joints, I first laid out vertical lines on the inside of the aprons, and then clamped a straight fence to the aprons, perpendicular to the center line of the aprons, in order to guide the router. I then routed the dovetail slot in the aprons, stopping about 3/4" short of the bottom. I routed the mating dovetail



Dovetail Groove – A straight-edge was clamped to the underside of the two aprons so the dovetail grooves could be machined.

tenon on the ends of the supports on the router table. After some fine-tuning, the joint fit perfectly. To attach the top to the supports, I used simple metal tabletop clips.



Once I was satisfied with the look and feel of each part, and how they fit together, it was on to final sanding, assembling, and finishing. I used a mix of mahogany stain and wipe-on poly as my first coat on the base, and wipe-on poly on the top. I like polyurethane for its durability, but it can start to look a bit too plastic-like if put on too thick. I stick to several thin coats on a piece like this, and rub out the finish with paste wax after the last coat has thoroughly dried.

Once it was completed, I stood back and realized that it doesn't take too many changes to come up with a completely new design. I like both of these tables, each one appealing to me differently, but I really enjoyed the design process and taking one piece of furniture and adapting it into another.

RYAN SPARREBOOM
rs_kj@shaw.ca

Ryan enjoys using exotic hardwoods and precision tools to create fine wood-working projects in his garage shop. His family enjoys seeing him when he's not at work and not covered in sawdust, which is rare.



Partially Assembled – First the legs and four aprons were assembled. Once dry, Sparreboom added the dovetailed supports.

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Designers

BY DON WILKINSON

Man has been on this planet for several years now and from his very first day, as he stood around his cave staring at the walls and bored out of his mind, all he has wanted is somewhere to sit so he could comfortably watch television. For a while, rocks worked pretty well, but after someone invented haemorrhoids, many people wanted something better. So furniture designers were invented, which clearly disproves the other career as being the world's oldest profession.

It's been many years since furniture designers were first invented and you'd think that, by now, everything that could be designed had been designed. But you'd be wrong! People keep coming up with new and ever better ways to design bad and ugly furniture.

Many years ago, I was commissioned to build an entire store worth of cabinets, shelving and counters. There were cabinets to put things in that nobody wanted to buy and there were shelves stretching seemingly for miles around the perimeter of the store. There was one immense cabinet specifically designed to fit between two solid concrete pillars. A cabinet designed with the idea in mind that if it didn't fit, well, maybe we could move the pillars. Needless to say, it didn't fit. Also needless to say, (I sincerely hope) I was not the person who designed any of it. No, some bright, college-trained furniture designer, recently graduated from the Toronto School of Hideous and/or Really Stupid Furniture, had designed it along with the other pieces for the store. And not a single piece of cabinet, shelving or counter could work the way this boy had envisioned.



The wrap-around counter designed to fit into one corner beside the front door didn't actually leave any room for the cashier and extended well out across the doorway, leaving no space for people to enter. Luckily, the store had a second entrance so they simply locked the offending door and stuck a display unit in front of it.

Another item of stupidity was a large cabinet specifically that was designed to display every type of battery ever made, but clearly wouldn't be strong enough to maintain its own structural integrity without sagging drastically, and very noticeably, in the center. And that was while empty! I tried to explain this to the store owner and the designer but what did I know? I was just a woodworker. So I built the stupid thing the way he insisted it be built, delivered it, then gleefully watched their faces as their precious cabinet sagged ever lower as they added one battery at a time to the unit. Eventually, in order to make the cabinet somewhat useable, they propped it all up with small pieces of 2 x 4 that the store owner quietly and apologetically asked me for.

The *piece-de-resistance* of the entire fiasco, however, was a multi-shelf cabinet designed with *outside* dimensions of ... now pay attention here: 36" high, 24"

deep, and 52" wide. The *inside* dimensions, according to his precisely drafted blueprints were: 36" high, 24" deep, and 54" wide. Not only hadn't he considered that the material used to build this cabinet might have some actual thickness to it, but he had also managed to design a cabinet that was a full 2" larger on the *inside* than it was on the *outside*. Even M.C. Escher couldn't have managed that trick of spatial impossibility.

By this point, I was as fed up with the designer as he was fed up with me for pointing out his stupidity, so I didn't bother to show him his errors. I just redesigned and built the cabinet the way it should have been designed and built in the first place. He never noticed.

Sometimes it's just better to do what needs to be done and leave people alone in their happiness and extreme ignorance.

DON WILKINSON
YukonWilk@gmail.com



Don is a self taught woodworker who somewhat successfully ran his own custom woodworking shop and school in Whitehorse, Yukon for several years before foolishly moving to Ontario. He has since come to his senses and moved to B.C.

Illustration by: Mike Del Rizzo



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