

Develop Your Own Designs

A step-by-step process unlocks your creativity

BY MICHAEL FORTUNE



For many furniture makers—even those with advanced technical skills—design is the most daunting aspect of the craft. Learning to design can seem intimidating, even mysterious. But there's no magic involved. Anyone with the desire and a little perseverance can be creative. In fact, the overall concept for a piece of furniture can be discovered and its details beautifully resolved by walking through a series of simple steps. When strung together, these steps form a dependable design process. The more you use it, the more intuitive it becomes.

Whether I'm designing a chest, a chair, a bed, or a bench, I follow the same steps. I always generate multiple options to choose from—the more the better. To keep the ideas flowing fast, I focus only on the visual aspect of the pieces at this point and figure out how to build them later. This approach has the great benefit of forcing me to explore new woodworking techniques, which makes the work more fun and adds arrows to my quiver for future designs. Along the way, I discard nothing, so with each project I add to my idea bank, building up a repository of sketches, models, photos, and techniques that I'll draw from for the rest of my life.

Here are the seven basic steps:

1. Identify and analyze—I start my design process by identifying what I want to make—a chair, a cabinet, a built-in bench—and analyzing the hard constraints on the piece: what functions it will serve, what space is available, and the requirements of weight, stability, and traffic around it.

2. Set the goal—I clarify what I want from the piece aesthetically and technically. Do I want a completely new design, or something to match an existing style? Do I want to learn new techniques? Work with specific materials? Is the priority function or appearance? Or are the two equal?

3. Generate ideas—This is the fun part—and it's the heart of the matter. The key is to generate as many ideas as possible, either on paper or in model form. The tools can include transparent paper and a soft pencil for doodling and drawing, and whatever else works for making quick models: wire, foam, MDF, softwood, Popsicle sticks, and straws.

4. Select—Withhold judgment on your ideas for a couple of days. Then give them a careful review and pick one. The trick here is to make a decision and proceed. Remember that you can make any of the other ideas at a later date. If you procrastinate, you don't learn anything.

5. Build—Make a full-size mock-up if you need one, but make it quickly and cheaply. You're looking to refine the proportions of the piece, not work out all the details. Then make a full-size drawing to determine the details of joinery. Proceed to construction of the real piece.

6. Document—While you're building the piece, take photos and make sketches and notes to document the process. Add them to a file with all your design sketches for the piece, along with photographs of the models and mock-ups.

7. Evaluate—When you've built the piece, always review the steps you took and look for ways to make the process more enjoyable and productive. Next time you design, revisit the files for successful pieces to see how their designs developed.

Read on to see how several of my own pieces evolved using this simple step-by-step process.

Michael Fortune has been designing and building furniture since 1974.

Sideboard sprang from scale models

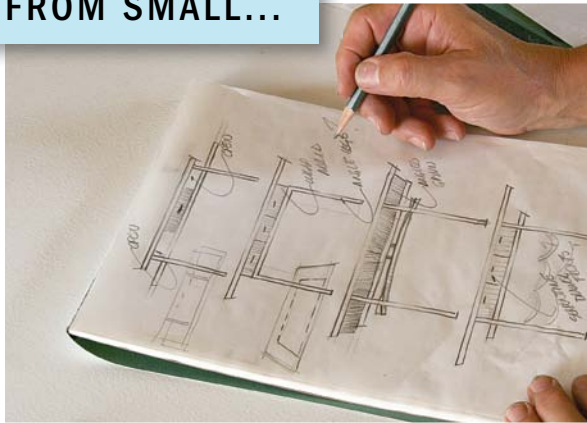
I designed this sideboard for a house from the 1920s with an Arts and Crafts feel to it. I began making sketches with elements that characterized that style: parallel lines, flat planes, right angles. I quickly ended up with boxy forms, so I deconstructed the boxes into Ls and began playing with them on paper.

I always sketch on semi-transparent paper so I can lay one doodle over another and quickly generate variations. I purposely use a thick, soft pencil so the sketches can't get too detailed.

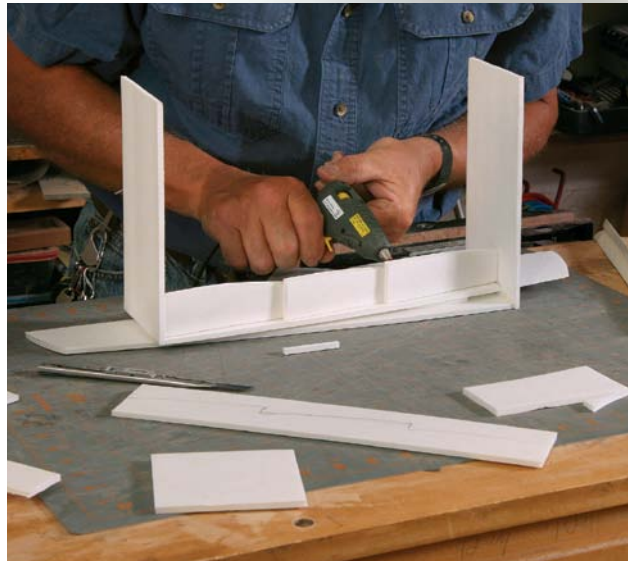
As it turned out, the doodles in my sketchbook didn't allow me to easily explore the flat planar shapes that I wanted, so I switched to models. I used Foamcore, which is inexpensive and simple to work with. Rather than just making interesting shapes that may or may not translate into a practical piece of furniture, I work with $\frac{1}{4}$ -scale models. Foamcore is perfect for this because at $\frac{1}{4}$ in. thick it approximates 1-in.-thick stock or multiples of an inch.



FROM SMALL...



Design journey begins on paper. Fortune starts a project by generating dozens of alternate ideas for the design, working quickly in broad strokes and avoiding details in favor of rough outlines. He uses a heavy pencil and light, transparent paper so he can easily trace an idea he likes and alter it.



Foamcore makes fast models. Fortune often brings drawings for case pieces and tables to life in Foamcore. With a mat knife and a hot-glue gun, a model goes together in minutes, enabling him to see a range of ideas in three dimensions.



The creator is also the critic. To open the channels of creativity, Fortune makes a flood of drawings and models for each project. He photographs each model, waits a few days to gain some objectivity, and then evaluates the models one by one. The cutout figure provides a sense of scale.



CUT WITHOUT CUTTING



When he wants to explore alternate shapes on a mock-up, Fortune often uses black tape (or black felt-tipped marker, for small areas) to create the illusion of negative space. Here, he used tape to see how curved tapers on the legs and top would look.

...TO FULL-SIZE

Does the idea hold up full-size? After selecting the design he likes best in model form, Fortune builds a full-scale mock-up. For this sideboard he made a mock-up in flakeboard. A solid-colored blanket allows him to see the shapes more clearly.

I avoid making decisions too quickly. Instead, I want to generate a volume of shapes to choose from. For that reason I never destroy one model to make another. I also don't worry about how I am going to make whatever is emerging in model form. Figuring out how to make a piece I'm excited about is part of the fun.

I always photograph the models. Then, after letting a few days pass, I review the pictures on my laptop. Two things typically happen with a bit of time passing. An idea that initially appeared strong will drop out of favor, and an idea that seemed so-so will propel me in an interesting direction.

Because I work quickly and loosely, ideas always come up that aren't appropriate for a particular piece. But I don't discard them—they can often be developed for a different project at a later date. I've used ideas 25 years later—all because I've kept a good record. The design session for this sideboard, in fact, also produced the idea for the piece on the back cover.

Eventually, as I look at the models, a preference for a particular design begins to emerge. That's when I'll move to building a full-size mock-up. It's at the mock-up stage that I refine the proportions. On this sideboard, I knew from the beginning that the maximum width was 14 in. and the height would be about 33 in. Length was the element that I could play with. So when I'd built a flakeboard mock-up, I began sliding the two parts of it together and apart, all the while keeping my eye on the space created between the legs. When the legs were close together, the table appeared heavy; as I slid them apart, the whole piece seemed lighter and the overlap, a main design feature, was emphasized.

To this point I'd avoided thinking about details so that I could focus on the overall shapes and proportions of the piece. But

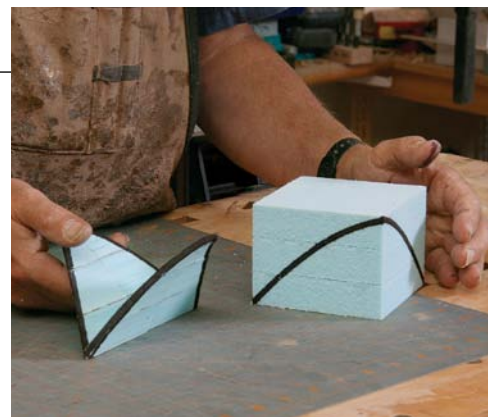


Fitting it out full size. After shifting the two halves of the mock-up in and out until he found the amount of overhang he liked, Fortune used a scrap of $\frac{1}{4}$ -in. MDF, quickly bandsawn to shape, to represent drawer fronts. He used a felt-tipped marker to draw reveals between the drawers.

now the details began to emerge on the mock-up. I noticed that it was easy to catch your foot on the straight-sided legs as you walked close by. The solution there was to taper the ends toward the floor. To try a few different tapers, I applied black tape on the parts that I imagined cutting away. This creates the illusion of negative space and allows you to "see" a shape before cutting it out. Then I mocked up the drawer fronts in $\frac{1}{4}$ -in. MDF.

When I was pleased with the mock-up, I resolved all the construction details on a full-size working drawing. As I made the drawing, I had to think through each aspect of the piece, resolving all the joinery and detailing. That done, I could size all the parts and cut the joinery with confidence.

Coffee table came from a cube



Drawing in 3-D. Fortune discovered an interesting shape by connecting the corners of a foam cube with curving lines. He carefully cut along the lines on the bandsaw and loved the butterfly form he found inside.

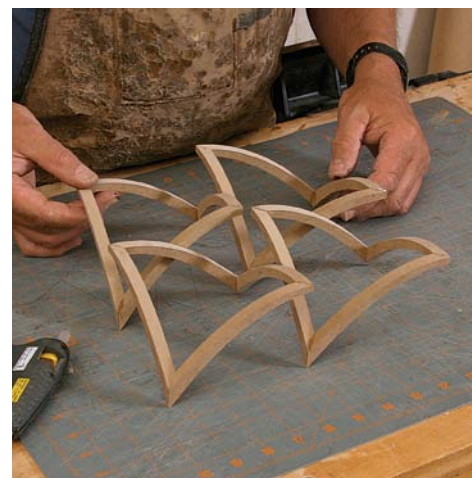
Another example of my design process, which resulted in one of my favorite pieces of furniture, began with a block of rigid foam and a felt-tipped marker, went through MDF models, and led to a mock-up in pine.

Having some parameters imposed by a client or a site often makes the designer's job easier. But in the case of this table it was all up to me. There were very few functional requirements, and I could use any materials or style I chose. I just needed to design an interesting base to hold up a glass top.

When I'm drawing a difficult shape, I sometimes start by defining the space the piece will fill by drawing a cube (or a rectangular solid). Then I make my sketch within the cube. In this case, I took that technique from the drawing board to the bandsaw. I cut some solid geometric shapes out of foam, then drew lines with a marker right on the shapes. I discovered that if I connected the opposing corners of a cube with a curved line I got an interesting wing shape. I carefully cut that out of the foam block.

Then, to see what the shape would look like as frames rather than planes, I made models in $\frac{1}{4}$ -in. MDF. I made a big batch of them and hot-glued them together in various configurations. When I had an arrangement I liked, I moved to a full-scale mock-up in pine. There I worked out a stepped detail that provided excellent shadows and highlights.

Over the years, I've made these tables many times in a variety of woods. Better still, I've used the stepped detail in completely different objects. So the time I spent in the design process has been rewarded many times over.



A little MDF goes a long way. Fortune cut short, curved pieces from a small scrap of $\frac{1}{4}$ -in. MDF and hot-glued them together to make these models. He made extras and tried various groupings until he found the linked pairing he settled on.



Full scale for detail. Rather than fussing with fine detail on a model, Fortune switched to a full-scale mock-up in pine to explore a stepped arrangement he had in mind for the table.

Some designs go straight to mock-up

Much of my furniture is time-consuming to make. But in designing this blanket chest, which was part of a suite of dorm-room furniture, I wanted to work with simple shapes that would be quick and easy to produce.

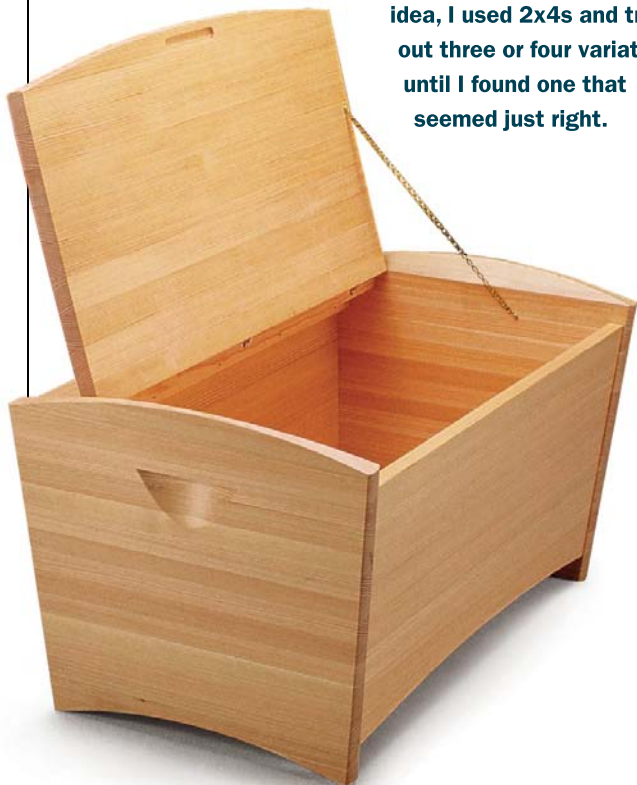
The big wall of books in my office is a reliable spur to my design process. For this chest, some quick browsing there revealed several furniture styles that I could draw inspiration from: Pennsylvania Dutch, Québécois, and Mission. With books around me and ideas beginning to percolate, I began sketching.

Rectilinear shapes are easy to make, but they aren't very interesting. So I played with angling the ends and sides of the chest, creating a slight hopper shape and avoiding the mass-produced feeling of a squared-off piece. Because the chest's shape was so straightforward, when I had a drawing I liked I skipped the model phase and went directly to making a full size mock-up. I built it in about half an hour using 1-in. insulation foam, which approximated the thickness I was after and was very easy to cut, shape, and join.

With the mock-up together, I decided to curve the bottom edges of the chest. Using black tape, I tried out various arcs. I also tested a variety of handles, making them out of pine and hot-gluing them to the mock-up. In the end, I chose a recessed handle, which seemed to fit best with the design. I used a crescent of black tape to see what it would look like.

The trickiest thing to work out was the treatment at the top of the end panels. I felt that some sort of bevel on the inside edge of the ends combined with a curve at the top could create a very interesting detail without complex

machining. To explore the idea, I used 2x4s and tried out three or four variations until I found one that seemed just right.



Skipping right to full scale. Confident in his concept for his blanket chest, Fortune went from a rough sketch directly to a mock-up. Sheets of 1-in. rigid insulation foam, easily cut with a snap-off utility knife, shaped with sandpaper, and joined with hot glue, provided the perfect building material for the mock-up.



Finding the right flare. To compare a few different versions of the detail at the top of the ends of the chest, Fortune mocked up his ideas in pine. He cut off the top of one end of the chest so he could see the new ideas in place.