Decks *of* Distinction

By Gary Marsh

USE CURVES, LEVEL CHANGES, AND BUILT-INS TO MAKE DECKS THAT ARE MORE THAN JUST WOOD PLATFORMS

Jay Graham

Level changes and built-ins make this deck more interesting and more functional. Its sweeping curves help integrate it with the landscaping.

As a carpenter, I decided to specialize in decks 12 years ago because they weren't getting the attention I thought they deserved in the upscale communities in which I worked. Twelve years later as a contractor I'm still designing and building decks for a living with my crew of four.

Although my market area is ideal — warm climate, a lot of disposable income, and an appreciation for design and craftsmanship — decks and porches are getting increased attention in many areas. And just as clients have become more sophisticated about the design of their homes, they are beginning to expect more than just a wood rectangle bolted to the back of their house when it comes to decks.

Design

I always spend the first few minutes with a client listening to their needs and ideas. How they plan to use the deck should have a lot to do with its final form. We start with basics: location, views, sun versus shade, how many people it should seat, special needs or functions, etc.

One advantage I bring to this session is that I don't have any preconceived ideas of what form the deck will take. My goal is to make it responsive to their needs, and integrate it with the house. I try to avoid the temptation to overdesign just to show what I can do. Simple clean lines are the most successful.

But I also talk with them about the elements that I can add to the deck that make it safer, more useful, and more interesting. Here are some of them:

Access. Most of my decks include French or sliding doors from the house. We often end up replacing the existing door or cutting in new ones. We don't want the clients to feel that their view or path to the deck is restricted from inside the house.

Level changes. As a rule, I create an area at least 3 or 4 feet wide outside doorways before lowering the deck level. If possible, this area should continue the finished floor level of the house to visually tie the two spaces together.

You have to find a balance here. A large, single-level deck is boring, but too many levels can be busy and provide little usable space. Typically, I will lower the main deck from the entry area by no more than three risers with a run of 2 to 3 feet. This creates a comfortable flow from one level to the next, and it usually means you can avoid a handrail.

My risers are typically 5 inches or 7 inches in height. This is simple convenience — I build stackable "boxes" with 2x4s or 2x6s and run 2x6 decking on top.

I keep my stairways at least 36 inches wide; 42 or 48 inches is better. In any of these cases you need to cut three stringers, so a wider stairway just means a bit more material.

Benches and planters. People seem to enjoy built-in benches or conversation pits with wide (20 to 22 inch) seats. This is an excellent place to use curves, which allow groups of people to sit and talk together without creating the "bleacher" look.

If the project includes a retaining wall behind the deck, it's sometimes worth adjusting grade slightly to make the retainer 3 feet high. This will give you something solid to connect the bench and a standard-height back to. I often cut fancy wood corbels to support the bench, but almost any knee brace will do. Plantings behind the wall or bench help soften the hard lines and create a very inviting area.

In some settings, however, a bench back looks too heavy or breaks up a view. In this case, I recommend a free-floating, backless bench that isn't connected to rails or a retaining wall. A seat anywhere from 20 to 24 inches wide will provide enough space for someone to sit down and lean back with their weight on their arms behind them. But you should make your customer aware that this trades comfort for aesthetics.

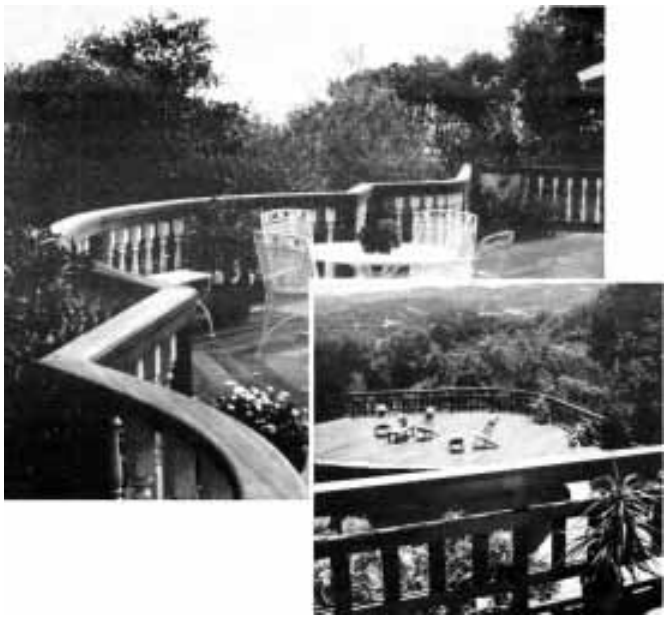


Figure 1. *With a little imagination you can develop distinctive railing profiles. This client wanted a formal, but not traditional, feeling on a long narrow deck. When there's a view to take advantage of, the author likes to leave a 6-inch space between the cap and the top rail (inset).*

Ernest Braun

Figure 2. *The three levels of deck and built-in seating help integrate this spa with the deck. The top level sits 18 inches below the tub lip to help users get in and out safely.*

On either kind of bench you'll want to use select lumber — I use clear, vertical-grain pieces. Otherwise your customers will remember you by the splinters they pick up as they slide over next to someone on the bench.

Another built-in feature that helps break up lines and brings some greenery onto the deck is planters. These can tuck in nicely on one or both sides of stairs, or they can flank conversation areas.

Railings. I pay close attention to the railing and how it affects the view, especially when sitting in a chair. And whenever I can eliminate this barrier, I do. Tempered, 3/16-inch glass panels in a wood framework are effective if the client is willing to put up with cleaning them every so often. Another approach is to drop the deck level away from the house so that the top of the railing is lower than the sight line from the dining room or living room view.

There is no end to railing details if you're imaginative (see Figure 1), but it pays to keep them clean and simple or you'll detract from the rest of the project. For instance, customers are often amazed at what a 3/4-inch roundover bit and a router can do to make the cap look good (the range is actually 5/8 inch to 1 1/2 inches). Also, make sure the railing blends with the existing house. Many times I will use the same pattern siding for the railing skin; this integrates the two nicely.

Two other concerns that go hand-in-hand are railing strength and code compliance. I typically don't mortise rails into the posts — I toenail them — but I take great pains to secure my posts so they're rock solid. Other horizontals and verticals in the design can also contribute to overall strength. The spacing of these is dictated by code — it can't exceed 6 inches.

With either an open design or a solid railing, I use that 6-inch maximum space for clearance off the deck and under the cap. This makes sweeping the deck a lot easier, and makes the railing feel lighter up where it's in your vision.

Spas and tubs. Perhaps 20 percent of my projects include hot tubs or spas. The challenge is to keep them from looking like mushrooms that just broke through the deck. The best way to minimize their impact is with multiple stepped levels and seating, and this is another place where curves work very well (see Figure 2).

Typically, I create a landing 18 inches down from the top of the tub as an entry point. This avoids making the owner climb 3 feet to the top of the tub only to climb back down. I also like to provide seating flush to the tub's edge on at least two sides. I avoid sinking the tub flush with the deck surface; it makes for a difficult entry and an unsafe situation for pets and kids.

Curves. Homes from the '50s, '60s, and '70s relied mostly on straight lines and right angles for shape and definition. A curved deck can often be used effectively to soften some of these hard lines. Decks link the house to the yard and landscaping, where most of the shapes are rounded and curving.

But you can overdo it. Too many curves become confusing and will look out of place. They're also expensive: Even with larger radii and cooperative material, curves typically triple the labor involved. Start with a curved bench, and maybe duplicate this same curve out at the edge of the deck. That's usually enough.

Structure

Most of the decks I design and build are on steep hillside locations within a few miles of a major earthquake fault. As a result, I'm concerned with building a substructure that is both strong and decent looking from below.

I try to minimize the number of structural posts, and to place them where they won't block the view from the lower levels of the house. I also use 5/8-inch or larger galvanized threaded rod and turnbuckles for cross bracing if possible.

The total design load on these decks is 60 pounds per square foot — it's 40 pounds for a house. My posts and beams are all pressure-treated #1 select structural douglas fir. All framing is fastened with bolts or 16d screw-drive, hot-dipped galvanized nails.

I like to run my joists on 24-inch centers. Although this is much closer than required for 2x decking, a typical complaint from clients about their existing deck is how spongy it feels. If I'm running the decking diagonally, I lay out on 16-inch centers; this also works out to a span of about 24 inches.

Construction

A big advantage of building in this area is the availability of redwood. This lumber is extremely well suited for decks because of its dimensional stability and natural resistance to decay. But it must also be harvested in a manner that protects it for the future.

For my planking, benches, fascia, and railings I use a grade called *clear green.* The description is apt — it has no knots but it's neither air-dried nor kiln-dried. It's also a lot cheaper than KD, and it's all heartwood. I select out as much vertical grain as I can. I also try to buy my lumber ahead of time and sticker it to keep joints from opening up later when the wood dries completely.

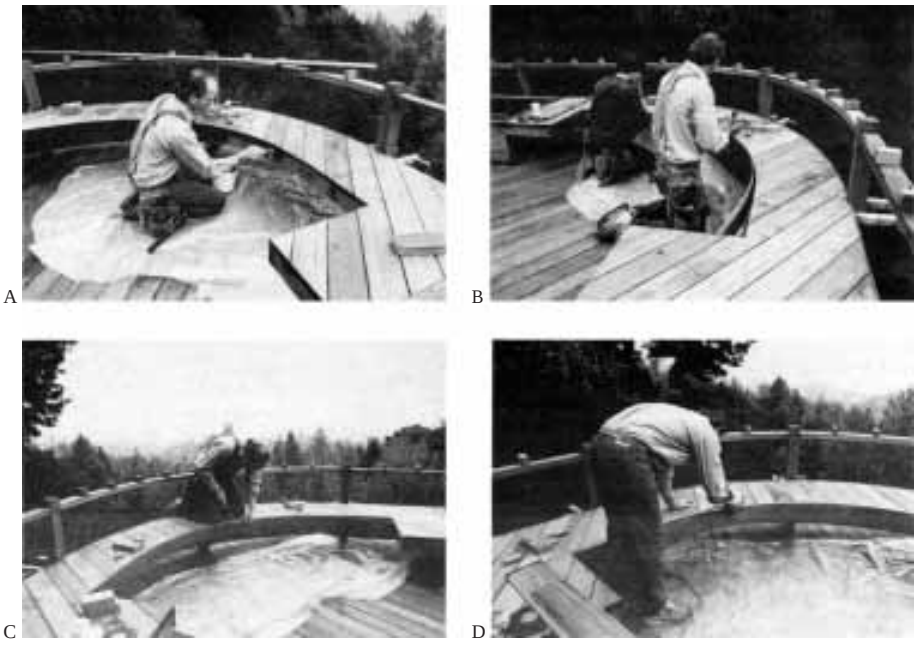
Something I bring to the site that's a little unusual is a covered trailer full of tools: a transit, portable planer and jointer, bandsaw, table saw, chop saw, a 3hp router with a 3-inch straight pilot bit, etc. (see Figure 3). This may sound a little excessive, but as soon as you put curves into a design, it becomes worth hauling these tools around.

Posts. For a deck to feel safe and last as long as it should, the railing posts have to be very solidly secured. Typically, deck builders bolt them to the rim (band) joist. We set them inside the rim joist instead, and block behind so that we can bolt this whole assembly together with 1/2-inch galvanized through-bolts. These are countersunk in the outside face of the rim joist to keep a flush surface for the redwood fascia that finishes this area off.

The importance of a well-fastened ledger at the house is obvious. I always use #1 pressure-treated douglas fir in the same dimension as the joists, and flash with 1 1/2-inch Z metal. If the deck is flush with the top of the interi-

Figure 3. *Building curved decks requires a lot of equipment, including a bandsaw for cutting caps and rails, and a planer for reducing the thickness of the fascia. The author hauls tools and hardware to jobs in a covered trailer, and then rolls them into place on sleds with castors.*

THROWING THEM A CURVE



Curved built-ins like this bench with flanking planters require clear lumber that moves very little once it's in place. At the finishing stages, the author (A) spreads resorcinol on a 3/8-inch sub-fascia that smooths out the joist ends and blocking behind it; (B) gets help in bending into place a clear, vertical-grain 1x8 that has been previously dry-fitted to ensure it makes the bend; and (C) nails it off with color-coated, stainless-steel, 6d ringshank nails. Sanding with belt and finish sanders (D) completes the bench.

I use both inside and outside curves in my deck designs. To make the wood conform to the curves I rely on the resiliency of clear, vertical-grain redwood — and a planer to reduce its thickness if necessary. My techniques are based on carpentry, not furniture making — no steambending or complicated joinery.

I'm fortunate to live in a climate that doesn't suffer temperature extremes, and to be using wood that is flexible and very dimensionally stable. The remarkable thing about redwood is not so much that I can get it to do these things, but that it stays put over the years with very little cupping or shrinkage. Still, building with curves is a challenge.

For one thing, there is no room for slop — the framing has to be perfectly plumb and level to work at all. For instance, I trim out all vertical faces such as joist ends with 1x redwood fascia. If these surfaces aren't plumb, as you push the board into the belly of the curve, the free end will begin to wander away from level. If you correct this by pushing up or down on the end of the board then the curve dishes out and you can't nail it tightly to the framing.

Joists and decking. I cantilever the joists 2 to 3 feet beyond the support beams to allow me to cut the joists to the desired radius right in place. I use a line of blocking over the beam to ensure the joists are sitting absolutely plumb.

To establish where to cut the joints, I find my center point, drive a nail, and pull the radius over the joist tops using a light chain and pencil. Once I've trimmed the joists, I cut angled blocking to fit between their ends. Again, these blocks must be installed dead plumb.

On tight curves where I know I will have to plane down my fascia material, I run a sub-fascia of "bender board" over the blocking and joist ends to provide a smoother base. Bender board is 3/8-inch-thick redwood sold around here for edging in landscaping. Finally, I run the decking, leaving it slightly long so I can redraw the radius and trim it to the curve.

Fascia. You won't know if you need to plane the material down until you've dry-fitted it. This will take at least two of you, and you have to be careful — the energy that's released when a board snaps is impressive.

This trial-and-error approach may sound strange, but boards vary in their amount of spring and react differently when bent. For instance, some will begin to "pop" their grain along the edge, creating an ever widening splinter.

In general, though, I can push a clear, green redwood 1x to about a 7-foot radius and have it stay there without splitting or popping the grain loose. If I plane as much as 1/4 inch off, I can push closer to 6 feet. But we carefully select these boards, using only vertical grain.

When we're ready to install a curved fascia, we spread resorcinol liberally with a brush on the sub-fascia, bend the board in place, and hold it there with handscrews while it's being nailed (see photos above).

Rails. Blocking and bolting my 4x4 posts within the structure before we lay the decking means I can place them very accurately and lock them in. This allows me to cut flat top and bottom rails simply by recreating the radius again with chain and pencil on a flat surface. If your design calls for rails that run on edge, you'll have to laminate several planed-down pieces together to get the thickness you need.

Railing caps can be milled like rails using a bandsaw or router. But if you use a router, be aware of changing grain directions to avoid tear-outs.

Working with curves is a slow process; even slower than you might think. For the curved bench and planters shown in the accompanying photos I allowed three days. As a rule of thumb, I multiply my labor figure by three for a curved section of deck. Even if you have some experience with curves, give yourself plenty of time; working for free isn't part of "free enterprise."

— *G.M.*

or floor, I like to replace the rim blocking of the house with 4-inch material so that the ledger can be lagged-bolted or through-bolted to these blocks.

We pour a concrete landing for any stairs that make contact with the ground below the deck. The landing should include a pressure-treated plate for the stair stringers, and cast-in hardware connections for the newel posts.

Decking. We nail the 2x6 decking with 16d, galvanized screw-drive nails. This keeps the ends from lifting as time goes on. We drive most of these nails with a Halstead nail gun with the pressure set to sink the nails approximately 1/16 inch. At board ends, however, we typically drill pilot holes and hand drive the nails.

We run most of our decking diagonally, and use simple butt joints in long runs. An 1/8 inch is left between deck boards to allow air circulation and room for expansion and shrinkage through the seasons. If you leave a gap any larger, you'll get a lot of complaints from clients with high heels.

On seating areas, where nail heads can blister when they've been in the sun all day, we either toenail the edges of the boards, or face-nail with 16d galvanized finish nails and then set them slightly. We drive these at opposite angles to avoid future uplift.

Fascia. I frame all exposed faces with 1x redwood fascia material. This produces a finished look, covering decking end grain and other framing. We use 6d stainless-steel, ring-shank nails for fascia and other vertical surfaces — everything else I've tried has streaked over time. These nails are colored a reddish-brown so they can hardly be seen; the impact is felt in the pocketbook — they run over $7.00 a pound. I kid the guys on my crew that they owe me a quarter every time one slips between their fingers.

Railings. I try to maintain a rotating supply of cap material that's bone dry to minimize separating seams once the railing is installed. I bisect all angles with a miter, and use a 45-degree lap joint for long runs.

Finish. After completing the project and allowing the deck to dry out for three or four weeks, we wash it with an oxalic acid solution. Then it's ready for stain or a clear finish (but *never* a topcoat like paint or a boat finish).

My preference with redwood is a penetrating oil. I've used every proprietary formulation and witches' brew on the market, but I've come back to a two-to-one mixture of linseed oil and turpentine. We apply it with a sponge applicator, and wipe it down well to avoid getting tacky spots.

If the client wants a semi-transparent stain, I show them a test sample so they can see the color reaction with the wood. If the deck is going to get heavy traffic, I steer them away from semi-transparent stains because of the "trail" this will leave over time where the stain wears through. ■

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