Better Decks = Higher Profits

Premium materials, production building methods, and custom touches make you more money

by Jim Craig

My company has been building custom sun decks and porches in northern Virginia for the past 17 years. In that time, we've developed uniform production methods and selected premium materials that enable us to sell more than 120 projects every year.

Details and custom options not only sell decks but also provide opportunities for increased profit — typically 15 percent to 50 percent higher than for our basic specs. We offer many levels of sophistication, from basic railing systems to enclosed gazebos, decorative pergolas, hot tubs,

stone-masonry patios and walkways, built-in storage and planter boxes, and more. Nearly every option can be quickly estimated by the square or linear foot, enabling us to value-engineer the project during the sales process. I have the unit prices memorized, which encourages the homeowner to come to a quick decision and speeds the process of getting a signed contract.

Whether we're subcontracting for a builder or working directly with the homeowner, I always consider how the deck will complement the appearance and improve the function of the home. Many homeowners have trouble visualizing an unbuilt project from sketches or plans, so I've developed a digital presentation portfolio for my laptop that contains images of more than 500 of our projects. Looking over those images often helps customers focus on the types of solutions that might work best for them. The photos also illustrate the importance of matching the style of the deck to that of the home, and show how a well-designed outdoor leisure space can unite the house with the landscape.

This approach seems to work well — our closing rate in this region's high-end market is better than 50 percent, and after giving a presentation I often find that the budget has taken a lower priority in the overall plan.

Dollars for Details

You don't make money by building the deck shown on the Yes You Can TV channel. Details sell decks, so I charge for the details as separate line items.

For example, the posts in our standard railing system are visibly bolted to the exposed face of the band joist, but we also offer an optional post detail that embeds their bases in the deck surface (**Figure 1**). The

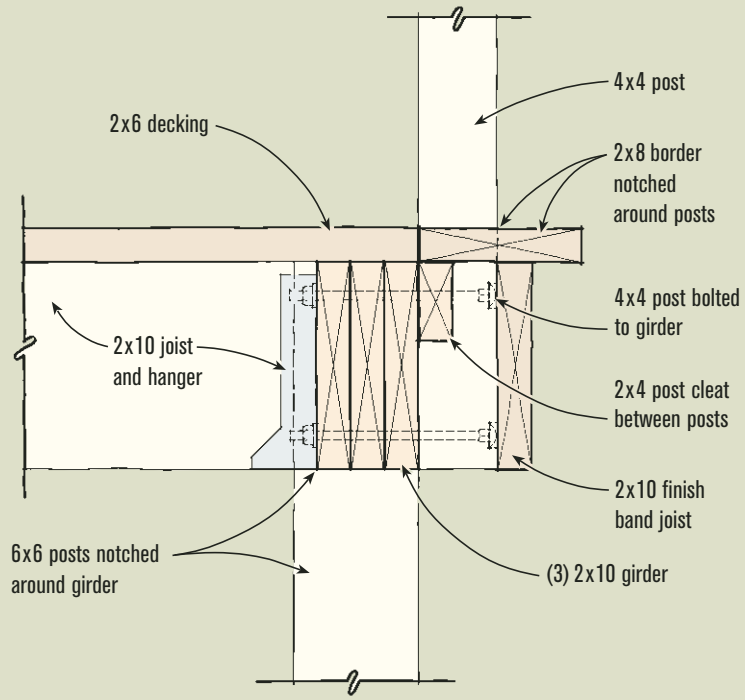

Figure 1. In an optional upgrade to the standard bolt-on post system, the deck boards are cut flush with the girder, and 2x4 cleats are nailed between the posts (bottom left). A 2x10 finish band joist is then fastened to the faces of the posts, followed by a 2x8 laid flat and notched around the posts (top). The embedded posts have a strong visual connection with the deck, while the overhang at the band joist creates an attractive shadow line (bottom right).

Figure 2. The author's base-priced deck uses a square-baluster-and-rail system, but a broad range of additional styles are available for a variable upcharge, which is calculated by the linear foot. The Madison Colonial (above) is a modest upgrade, while the ornate Chippendale railing (right) is a premium-priced option.

square-foot cost of our basic deck is based on the externally mounted posts. If the customer wants to upgrade to the embedded posts, we charge an additional $20 per linear foot of railing. If the customer selects our 6x6 cedar post option, which includes a decorative finial cap, chamfered corners, and a base molding, we charge $180 per post.

We also offer a broad range of railing options, from the upscale Chippendale style to the relatively modest Madison Colonial version (**Figure 2**). The latter isn't much more difficult to assemble than the base-priced square-baluster-and-rail system, but it provides a higher profit opportunity. If your average markup is, say, 35 percent, adding higher-priced options such as these can easily bump it to 50 percent or more.

Let there be light. In recent years, local building departments have begun to require safety lighting for exterior stairs. This hasn't posed any problems for us, because we have always offered and recommended a lighting option (**Figure 3**). We use low-voltage Hadco sconce and

Figure 3. Built-in lighting adds after-dark atmosphere and improves safety. Low-voltage sconces are installed in the deck posts (below), and step lights in the stair risers illuminate the treads (far right).

step lights (Hadco, 717/359-7131, www.hadcolighting.com) that we build into the stair risers and mount on the rail posts. This makes the deck a much more pleasant place to be after dark, and it's a huge selling point for us, as well as an important source of added profit.

Design

To be truly functional, an outdoor deck should be no smaller than 450 square feet, with a minimum depth of 12 feet. We try to keep lumber waste to a minimum by sizing our decks in even 2-foot increments, but we don't hesitate to deviate from that if it will result in a better-proportioned space.

Principal activities. In planning a deck, we consider the three activities that decks are most often used for — socializing, barbecuing, and eating — and provide a distinct area for each. The socializing area should comfortably accommodate a few chairs, a lounger or two, and maybe an umbrella table. The minimum area I allow for this is 12x12 feet. An eating area, which will include a larger table and at least four chairs, also requires a minimum of 12x12 feet (**Figure 4**). The grill area requires at least 50 square feet. Anything smaller than these basic requirements compromises the comfortable enjoyment of the space.

Let it flow. It's important to place the deck stairs where traffic between the house and yard won't pass directly through any of those three areas. In most cases, placing stairs at an outside deck corner will create a diagonal flow across the deck, resulting in an awkward division of otherwise usable space. It's best to keep steps as close to the entry door as possible. If elements of the house or landscape make that difficult, I center the steps on the deck. A nominal 4-foot-wide walkway across the middle of a 16x28-foot deck will still provide comfortable 12x16-foot areas to either side.

Figure 4. The three primary uses of a deck are socializing, cooking, and eating. Each activity should have its own space; comfortable socializing and dining areas require at least 150 square feet each.

Figure 5. Enclosing the base of a deck with paneling or lattice provides a ground-hugging look and prevents it from appearing spindly. Where an elevated deck is located above a walkout basement, substantial support posts help provide a solid feel.

Location, location, location. An attached deck built in the wrong place is destined to go unused. Placing the deck up against the home's breakfast and family areas makes it appealing and easy to use. Ideally, the location will allow indoor and outdoor activity and entertaining to flow seamlessly together.

Not always on the sunny side. The best side of the house for a deck is not always the sunniest side, and sun is not always the owner's objective.

A screened-in area on a deck provides a pleasant, shady outdoor entertaining area, free from bothersome insects. It's best to attach the screened area to the house and provide direct access from indoors. An attached screened porch also creates the illusion of greater living space.

Mature trees can be a nice source of shade, but they also have some drawbacks. A tree-shaded deck soon gets a stained and tired appearance as sap and pollen deposits take their toll. Where this is likely to be a problem, I recommend a darker decking color to help conceal any discoloration and reduce cleaning maintenance.

On the other hand, a dark surface on a sunny deck can become uncomfortably warm underfoot. In that case, I recommend a lighter-colored surface. Composite decking lumber is available in various shades to help accommodate those situations.

Hugging the ground. Because leggy decks with exposed posts tend to look unfinished and less secure, we keep our decks as low to the ground as possible. If the landscape falls away from the building, forcing an elevated ground-floor deck, a skirt enclosure or latticework helps to visually anchor the deck. If the deck will be located above a walkout basement — especially one that provides finished living space — enclosing the base usually isn't an option. We sometimes extend the outdoor leisure space to both levels by installing a stone patio or ground-level platform below the main deck level and connecting the levels by steps, landings, and walkways (**Figure 5, page 4**). Again, the design goal is to ensure that the deck completely integrates the house and landscape.

Paint and stain. A glaring design defect of the average deck is that it's built of pressure-treated lumber and simply left to weather. Meanwhile, the house to which it's attached has painted trim, siding, and other architectural embellishments. From the

Figure 6. The basic frame of the deck is assembled on temporary posts placed where they won't interfere with the permanent posts (above). The site for each footing is determined with a plumb bob, and the holes are dug by hand (right). Once the concrete piers have been finished flush with the grade and drilled to accept an expansion bolt, the posts are fastened to post anchors with a palm nailer (far right).

start, the deck looks like a crude alien growth, or a burr hitching a ride on a helpless host. Extending the house trim color to the deck's perimeter, step risers, and railing system helps to integrate deck and house, creating a more refined look. We apply two coats of oil-based stain to all exposed wood surfaces. Few builders actually enjoy painting, and it certainly complicates the building schedule, but it adds to our profit; plus, it leads to referrals because it really sets our decks apart.

Materials Matter

Composite decking is our standard surface, and of all the options Trex is our favorite product. Because composites are perceived as a vast improvement over common pressure-treated decking, this choice sets up the basic expectation that we offer a better-quality product than other deck builders in our area. Specifying premium materials also allows us to increase our markup per square foot. For framing material, we use .40 pressure-treated No. 2 lumber, including double 2x10 or 2x12 girders, 6x6 structural posts, and 2x10 joists.

Self-cutting ceramic-coated screws speed assembly of railing systems and trim pieces. The reversibility of the screws allows us to fit many of the components, then disassemble them for painting.

I save a lot of money by purchasing all of our standard hardware in bulk — including nails, screws, bolts, joist hangers, and post bases — and maintaining a steady inventory. We buy our millwork, post caps, lighting fixtures, screen doors, stain, paint, and even skylights the same way. At the beginning of each week, our eight field crews stock up on supplies at our warehouse before heading off to their sites. That way, there's no time wasted on long trips to the lumberyard for small but essential items.

Figure 7. Running the deck boards diagonally eliminates unsightly butt joints. The layout is planned so that no individual board will be longer than 20 feet (top). Joists are spaced on 1-foot centers to provide a stiff surface underfoot. Where adjacent diagonal runs meet, an inlet strip, fastened to blocking between joists (above), provides a pleasing transition.

Construction Details

Before we break ground for the footings, we assemble the deck framing on temporary support posts (**Figure 6, page 5**). This allows us to use a plumb bob to accurately position the anchor bolts for the permanent posts, which are supported by 18-inch-diameter concrete piers.

The piers themselves are poured directly into hand-dug holes that have been widened at the bottom to increase the bearing surface. (The rocky, clay-bound soil in our region provides the only form needed.) The piers are filled flush with the ground surface, making them inconspicuous. Although the code allows buried lumber posts on concrete pads placed below the frost line, I've seen plenty of rotted posts pulled from the ground — even pressure-treated posts — after only 15 years in service.

Framing. Whenever decking boards deflect underfoot, a deck can seem unpleasantly flimsy. To ensure a solid feel, we usually frame our decks with 2x10 joists on 12-inch centers.

We typically run our decking diago-

nally. Trex is a dense, flexible material. Although you can special order it in virtually any length, it becomes impractical to handle in lengths over 20 feet. Butt joints in decking are ugly, so I purposely break the deck surface into pattern sections limited by the maximum plank length and separated by inlet strips — full-width 2x6s that all the planks in an area die into (**Figure 7, page 6**).

A 2x10 finish band wraps the perimeter of the deck framing and conceals the joist end-nails.

Working with Trex. Because Trex doesn't have the warping tendency of solid lumber, heavy fastening isn't needed. Originally, our specs called for the decking to be screw-fastened on alternating sides of each board, one screw per joist, to minimize the pattern of the fasteners. But last year, the county stepped in and required double fastening at every joist, so that's now our standard method.

A Quik Drive screw gun automatically sets proprietary square-drive, ceramic-coated trim-head screws below the surface (**Figure 8**). This leaves a little eruption of material, or "mushrooming," around the hole. While one worker screws the decking, another follows behind and hammers the mushrooms flush, effectively concealing the screw heads. To create a more finished appearance, we also use a router to radius the edges of all butt joints and any place where the decking changes direction.

Figure 8. The decking is fastened with trim-head screws, which are buried slightly below the surface of the composite decking. Each screw creates a small "mushroom" that is hammered flat to conceal the screw head.

Solid wood decking. We offer solid-wood decking as a higher-priced (and more profitable) upgrade. On those jobs, we use ipe, a tropical hardwood, and fasten it with Eb-Ty concealed connectors (Eb-Ty, 888/438-3289, www.ebty.com). The Eb-Ty connector is an oval-shaped plastic wafer designed to fit in a standard biscuit slot cut into the edge of the plank. We save some serious time by ordering the 5/4x6 ipe planks premilled with a running groove on both edges, replacing the biscuit cutter entirely (**Figure 9**). But installing ipe still takes longer, because each connector must be individually screwed to the joist beneath.

Railing posts. We make most of our rail posts from 4x4 cedar, spaced no

Figure 9. Tropical hardwood decking is fastened with the Eb-Ty connector system, which uses a slot-mounted plastic biscuit. Rather than cutting individual slots with a biscuit jointer, the author increases productivity by ordering deck boards with premilled grooves.

Figure 10. A "hanger nail" driven into a precut post at the level of the deck surface provides temporary support while the post is tack-nailed in place before bolting (above). To provide a simpler, stronger installation, posts are paired at either side of angle transitions and corners. The 4-inch gap between posts corresponds to the standard baluster spacing (right).

more than 5 feet apart. We occasionally use pressure-treated posts as a budget concession, but only after warning the customer to expect splits and checks as the lumber dries out.

To make post installation as efficient as possible, we cut the 4x4s to a standard 45 1/2-inch length before squaring a line across each at the level of the deck surface. We then drive a hanger nail partway into the post, just above the line (**Figure 10**). This nail helps hold the post at the proper height while it's plumbed and temporarily toe-nailed in place. Once all the posts have been positioned in this way, each one is drilled for a pair of 1/2-inch carriage bolts spaced on either side of the centerline and as far apart vertically as the joist depth will allow.

We place a full post at either side of every corner and transitional angle, leaving a gap between them approximately as wide as the maximum 4-inch gap between balusters. This is structurally stronger than relying on a single post, and it gives a distinctive and substantial look to the railing system.

Railing assembly. We like to limit railing sections to maximum 5-foot lengths. Longer segments allow too much lateral deflection under loading and may also require awkward-looking intermediate support between deck and subrail to prevent sagging. After bolting the posts in place, we measure between sections and assemble a section of railing to fit. Our most popular railing systems include a top and bottom railing separated by the balusters.

Kids like to climb up on the horizontal subrail of a baluster railing to peer over the top. But all that hopping up and down soon separates the subrail from the balusters. To counteract that, we screw the center and end balusters through the top and bottom rails. That's much more effective than hoping kids won't be kids. The remaining balusters are secured with finish nails, which leave smaller, easily filled holes.

We always fill fastener holes, and sand and stain the railing systems. If the customer elects to use pressure-treated railing components, I recommend a darker finish color to better conceal the inevitable cracks and checks in the lumber. Lighter colors only highlight the defects. ❖

Editor's note: *This article is reprinted from the June 2003 issue of* JLC The Journal of Light Construction. *At that time, author Jim Craig was the owner of Craig Sundecks & Porches in Manassas, Va.*

No attempt has been made to update pricing to account for inflation. Also, no mention is made of fasteners and framing connectors rated for use with the new generation of ACQ-treated lumber. — A.E.