



One-Stop Woodshop

Sometimes it makes sense to have one company handle all the woodwork for a project, from fabrication to installation

BY STEVEN BACZEK

In the not-so-distant past, building a house was much simpler. Contractors were generally carpenters who worked with one or two helpers to cover most of the tasks needed to complete the building. The same crew that framed the house installed plaster and did the trimwork too—the responsibility for the entire building was largely on one crew.

As production-building methods took hold, crews became more and more specialized and building products came from supply houses instead of being made on-site. On a typical job these days, the finish work is broken down into several dedicated disciplines: One crew installs kitchen cabinets and bathroom vanities, another crew hangs interior doors, a separate crew installs trim, and so forth. While this is often the fastest and least-expensive approach, consistent quality of workmanship and materials, as well as coordination, often

becomes a challenge relative to the complexity and expectations of the project.

On a recent gut remodel, my client wanted the look of clear-finish Douglas fir and mahogany installed with top-quality craftsmanship for all the interior woodwork. With those expectations in mind, the builder and I closely scrutinized the conventional approach to finish work. We could hire a subcontractor for each of the interior finishing tasks and shop around for door and cabinetry and custom millwork. But with different companies supplying those things, we were concerned about maintaining consistency in the grain, color, and finish of the wood. The clients also wanted the woodwork to have a unified, custom look, which would be difficult to produce with lots of different contractors. Beyond the materials themselves, we also worried about coordinating and timing the installation of the work. How



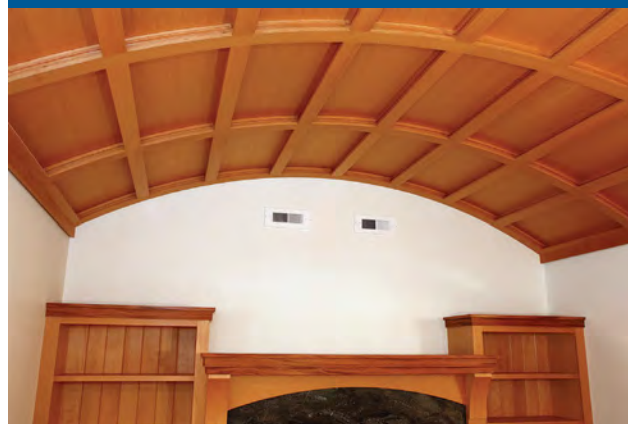
CURVED COFFERED CEILING

The crew laminated the curved panels and built this ceiling in five sections in the shop, and then installed the sections on the living-room ceiling.

could we ensure an exceptional level of craftsmanship and consistency throughout the house?

Hire a woodshop that does it all

After working through these questions with the builder and client, our solution was to have a single millwork shop handle all the interior woodwork. One shop would be responsible for sourcing and milling the wood; building and finishing all the doors, paneling, cabinetry, and trim; and installing it all in the home. The builder had previously worked with Traditional Wood Works (TWW) out of Berwick, Maine, and after a meeting with the builder, the shop owner, the shop manager, and myself, TWW seemed to be a good solution to our concerns. We discussed the parameters of the project and agreed on a strategy that would work for everyone. At that point we'd all have a



CUSTOM PROCESS FOR A CUSTOM OUTCOME



Having one woodshop responsible for assembling and installing all the doors allowed for a process that resulted in a durable assembly, minimized exposed fasteners, and matched grain and finish throughout the house. The install starts, as usual, with shimming and plumbing the door jambs.



HIDDEN ATTACHMENT

To minimize visible fasteners, the crew drives screws through a shallow dado in the jamb. Stops fit into the dado to cover up the screws.



STOP INSTALL

The stop strips, with rabbets along the edges, glue into the dadoes in the door jambs to conceal the attachment screw.

stake in the project, with each of us relying on the talents of the other team members for its success.

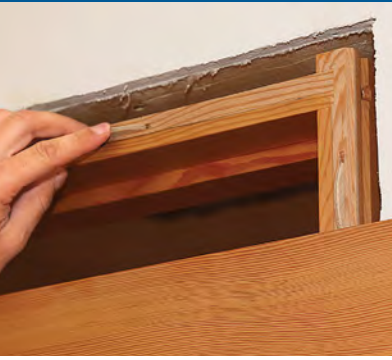
TWW offers complete woodworking services. The same team that fabricates everything in the shop installs what they build on-site. This approach covered our aesthetic concerns, while providing a single source of responsibility and accountability for the work.

The strategy for executing the finish work in this manner begins with me, as the architect. I guide the client through each design decision. With the client's approval, I develop the details and then give that information to the builder. After approving my drawings, the builder sends them to the millwork shop. The shop then generates precisely detailed drawings that are used to build and install each component. This process helps us manage expectations, timing, and of course, costs.

Cost-effectiveness comes with scale

As with most projects I work on, the goal is never to make things cheap, but rather to use the most cost-effective methods to achieve the desired result. With this project, we could have shopped around for less expensive materials, and then just hoped the look and finish matched. But with single-source millwork, all the wood used for the interior finish can be purchased at the same time from the same wood lot. The trimwork made from that wood then has a consistent appearance—from baseboard and wainscot to doors and built-ins.

The interior doors in this project are a good example of that way of thinking. Well-made Douglas-fir doors are available from many different manufacturers. But going that route would mean sacrificing control over consistency, as well as limiting the potential to customize the look of the doors. On top of those factors, installing and trimming



BISCUIT TRIM

The crew cut slots in the trim and the jambs for biscuit joinery earlier in the process. Here they insert biscuits into the slots for attaching the trim. Note that the outside edge of the jambs were left unfinished to facilitate the gluing process.

NO HOLES, NO FILLER
After applying glue to both surfaces, the crew clamps the trim into place without leaving fastener holes to putty.



INVISIBLE PINS

Tiny pins that are nearly invisible hold the stop strip in place while the glue sets.



REATTACHING THE HARDWARE

Each door has custom-fit hinges and latches, so the crew simply inserts the hardware back into the mortises and drives the screws.



RAIN-GLASS DOOR

A few of the 36 interior doors custom-built in the shop include translucent rain-glass panels. The crew prebuilt the jamb assemblies and casing kits in addition to the doors themselves.

the doors would be additional considerations. Working with TWW for everything eliminated all of those concerns.

When questioned about the cost-effectiveness of this strategy, the shop owner gave me this simple answer: “If you ask me to build one or two interior doors, I can’t compete with the cost of commercially manufactured doors. But give me all 36 interior doors, and now I can be competitive. Throw in the trim and installation, and the cost-effectiveness improves further, and so on.”

In other words, this approach becomes more cost competitive as the scale of the project increases, while streamlining the process by combining responsibility for the manufacturing with the installation of all the finish work. A single woodshop can handle each of the tasks individually for a project, but the more they’re asked cover, the more efficient and cost-effective the process becomes.

Custom meets production

This one-shop solution allowed us to customize the look and change the parameters of these interior doors. Instead of the conventional 1³/₈-in. thickness, we upgraded to 1³/₄ in. for a heavier, more solid feel. We also widened the top rails to 5¹/₄ in. and the bottom rails to 7¹/₄ in. These changes would have raised the costs exponentially for a typical door manufacturer, but with one millwork shop making all the doors, it was a simple and easy adjustment to the production process.

Despite being mass-produced, each of the 36 doors was targeted for a specific opening in the home. Each door was mounted in jambs made from the same fir, and the hinges and locksets were fitted to each door in the shop. The shop also made a trim kit for each door from the same wood. At the job site, the crew pocket-screwed the trim assemblies together and then biscuit-slotted both the trim and

the jamb assemblies. The assembled trim kits and the jambs were then stacked or racked awaiting installation. Before delivery to the job site, each piece was sanded and given a coat of clear finish. This coat of finish protects the wood during shipping and installation. Once the installation was complete, the crew applied another coat of finish, finalizing the process on-site.

This project included a laundry list of custom features: a barrel-vaulted coffered ceiling, wood-paneled divider walls, wainscot, pass-through pocket doors, and stairs and stair parts, along with many built-in cabinets and components—and all that in addition to the doors and trim. With all these moving parts, it was imperative that everything be manufactured, brought to the site, and installed in the right order. Again, TWW took the responsibility for coordination and timing out of our hands.

When the work is done in the conventional manner, the builder has to be constantly vigilant to make sure that things are done in the right order to prevent damage or having to redo work. With one shop responsible for all the finish work, everything is done in the proper sequence. For example, the crew installed ceiling finishes (coffers and paneling) first, so that those rooms could be used for storing and staging other material such as doors and trim kits. With one company carrying all that responsibility, the more efficiently they work, the better their financial rewards.

Installation starts at the shop

I have some experience and knowledge of building and woodworking, but I was happy to rely on the expertise and experience of TWW for the installation. The curved coffered ceiling would have been an interesting challenge for any crew, but the team had the benefit of prefabricating the ceiling sections in their shop. The same crew then raised and installed the sections on-site.

After I gave them the dimensions and basic design, the shop did working drawings and the crew built the ceiling in five sections. They used Festool Dominoes to connect and precisely align the sections as they were raised into place. Having built the actual sections, the crew had direct knowledge of exactly how the ceiling would go together, resulting in a smooth, flawless, and efficient installation.

The crew had a particularly innovative approach to installing and trimming the doors with the goal of minimizing exposed fasteners in the natural wood finish. Their process begins in the shop. After fabricating and labeling the doors, jambs, and trim kits, everything is stacked neatly on the job site to await installation. During fabrication, the stops for the side jambs are purposely left off, with wide, shallow dadoes plowed into the center of each jamb.

For installation, crew members set the designated jamb assembly in the opening and shim it level and plumb. When satisfied with the fit, they drill holes through the center dado and screw the jamb to the rough frame. Next, the crew typically installs the trim, inserting biscuits and clamping the trim to the jambs. Note that the outer edges of the jambs were unfinished during assembly so glue could be used. Additional fasteners are driven as needed to draw the jambs into any uneven places in the wall. Plinth blocks at the bottoms of the jambs provide microadjustment to fill in the spaces to the floor.

After reattaching the door to the jambs, the crew installs finished stops on the side jambs. Those stops have rabbeted edges that fit into the dadoes on the side jambs. Glue and pins hold the stops in place. Using these methods, the doors go in quickly and efficiently, and in

For this project, the architect and client worked out the trim, cabinetry, and other millwork details in a Craftsman style with traditional Douglas fir that the woodshop sourced, milled, and used to fabricate every piece.



PASS-THROUGH POCKET DOORS

Pocket doors open to reveal a pass-through from the kitchen into the dining room. The crew built the doors and mounted the original stained-glass panels, and also mounted the doors and trimmed out the opening. Vertical fir paneling graces the adjacent walls of the dining room.

most cases, there is almost no work to be done before they receive their final coat of finish.

Using a single woodshop worked exceptionally well for this project, and I learned a lot working with this team. While you may experience success using this strategy with a smaller project—say a library or an extensive kitchen renovation—the economy of scale makes single-source woodworking an even better choice for a whole-house remodel or new construction. Ultimately, it always comes down to choosing the right team and being open to a collaborative effort to solve problems and share information for the best outcome on any project. □

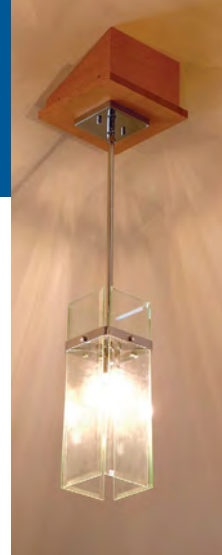
Steven Baczek is an architect from Reading, Mass., who specializes in high-performance homes. Photos by Roe Osborn, except where noted.

CRAFTSMAN STYLE



PINWHEEL PANELED CEILING

In the dining room, the crew installed fir ceiling panels in a pinwheel pattern. In addition to the window trim, they also custom-built wooden valances to conceal the window-shade hardware.



NO DETAIL TOO SMALL

These small, angled fir brackets allow the level mounting brackets for these pendant lights to fit against the cathedral ceiling.



CRAFTSMAN CORBELS

Flanked by built-in bookcases, Douglas-fir corbels support a mahogany mantel.



CUSTOM STAIRS

Every element in this dividing wall and stairway located just inside the entry to the home was custom-made in the shop, including the handrail and tapered balusters.



HORIZONTAL WAINSCOT

In the primary bedroom, the crew installed horizontal Douglas-fir wainscot around the window on the exterior wall.