

Building a Grand Veranda

A New Jersey design/build team re-creates a large, comfortable porch with 19th-century details built to last into the 21st century and beyond

BY KEVIN WILKES

Our clients' home was a 19th-century three-story manor near the banks of the Delaware and Raritan canal in central New Jersey. Built for the owner of a nearby rubber factory, the house had triple-wythe exterior brick walls 12 in. thick. The house also boasted a large porch that wrapped around three sides.

In its second century, the house began to show its age and needed significant repairs. In the 1960s, the porch succumbed to rot and decay, and was removed. When our clients bought the house, much-needed interior work kept the porch project on the back burner. But images of leisurely summer evenings dining on the porch overlooking the canal with rockers creaking finally inspired them to rebuild the porch (photo facing page).

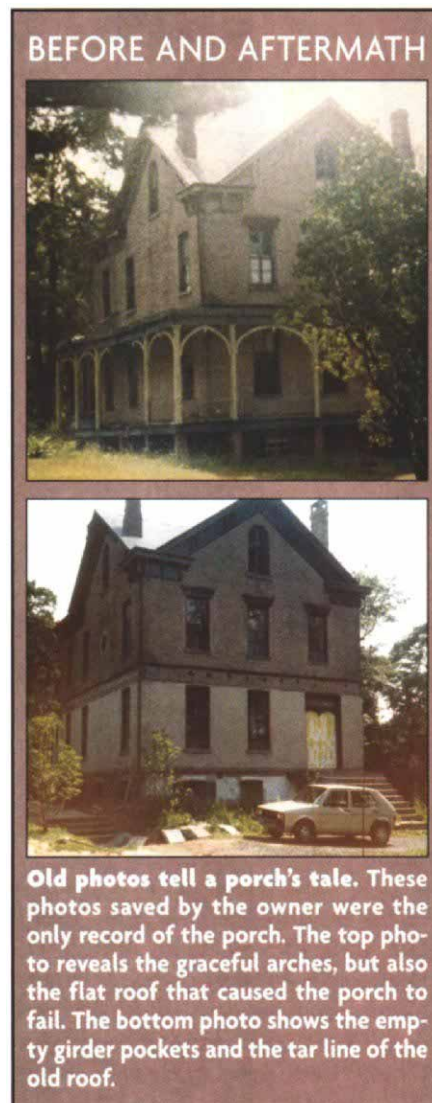
Rediscovering history

The only record of the original porch was a black-and-white photograph, faded and dog-eared, that the owners had saved while waiting to rebuild the porch (top photo). It was difficult to make out all the original detailing from the photograph, but we could see the flat roof as well as the gentle arches curving sweetly across each bay.

In addition to the photo, we found further clues on the existing exterior walls of the house (bottom photo). The brick was corbeled out to create a drip edge, a detail that gave us the finish-floor height. Additionally, vacant girder pockets that once held the porch floor and ceiling joists sat like pockmarks in the brick wall. In the ground, remnants of piers indicated the porch dimensions and the column rhythms, and the long black line that scarred the brick wall beneath the second-floor windows indicated where the porch roof had been sealed to the house with tar.

Porch becomes a veranda

Armed with these details, our crew here at Princeton Design Guild began to redesign



the porch to create a generous, comforting edge to the severe-looking three-story brick wall. More than just porch, we designed a veranda 8 ft. deep and more than 160 ft. long.

The dining room, living room, family room and kitchen all open onto the veranda from three sides of the house. This new corridor around the perimeter of the house gives each

of these spaces a generous new anteroom to the exterior world, creating new and flexible traffic routes from the outside.

The west side of the porch, which faces the canal, is great for afternoon rocking in the setting sun (photo p. 109). The southwest corner, where the house jogs back, creates an open outdoor dining area. A wide, welcoming staircase leads to a formal entrance on the north side, while the east side provides a private play area for the kids.

Piers made of chimney block

We started by digging and pouring 22 footings. Piers that support the porch were built on top of the footings and tied into the rebar cast into each footing (drawing bottom right, p. 108). Because the porch columns above the floor had to line up directly over the piers, we had to be extremely precise when locating the piers.

Each pier was built of 16-in. chimney block. As we stacked the block, we tied together four columns of rebar that thread up the center cavity (where the flue would normally have been). We then filled the core of each pier with concrete.

At the top of each pier, we added a block to the front face, which allowed us to hide the double 2x10 treated girders that span from each pier to the girder pockets in the brick wall of the house. The pockets, which were made for 19th-century wood, had to be modified and recut to accommodate the wood of the 1990s. We then ran 2x8 treated floor joists parallel to the outside walls on top of the girders 16 in. o. c. The 1x4 tongue-and-groove mahogany flooring was installed directly on top of the joists.

We gave the girders a slight pitch ($\frac{1}{8}$ in. per ft.) away from the house wall. Although plans called for a full roof over the porch, I was concerned that blowing rain or snow could end up on the floor. The pitch ensured that any water would drain away safely.



The porch makes the house. Without the porch, the three-story brick walls made this house look stark and barren. The porch provides a graceful skirt around three sides, turning barren into beautiful.

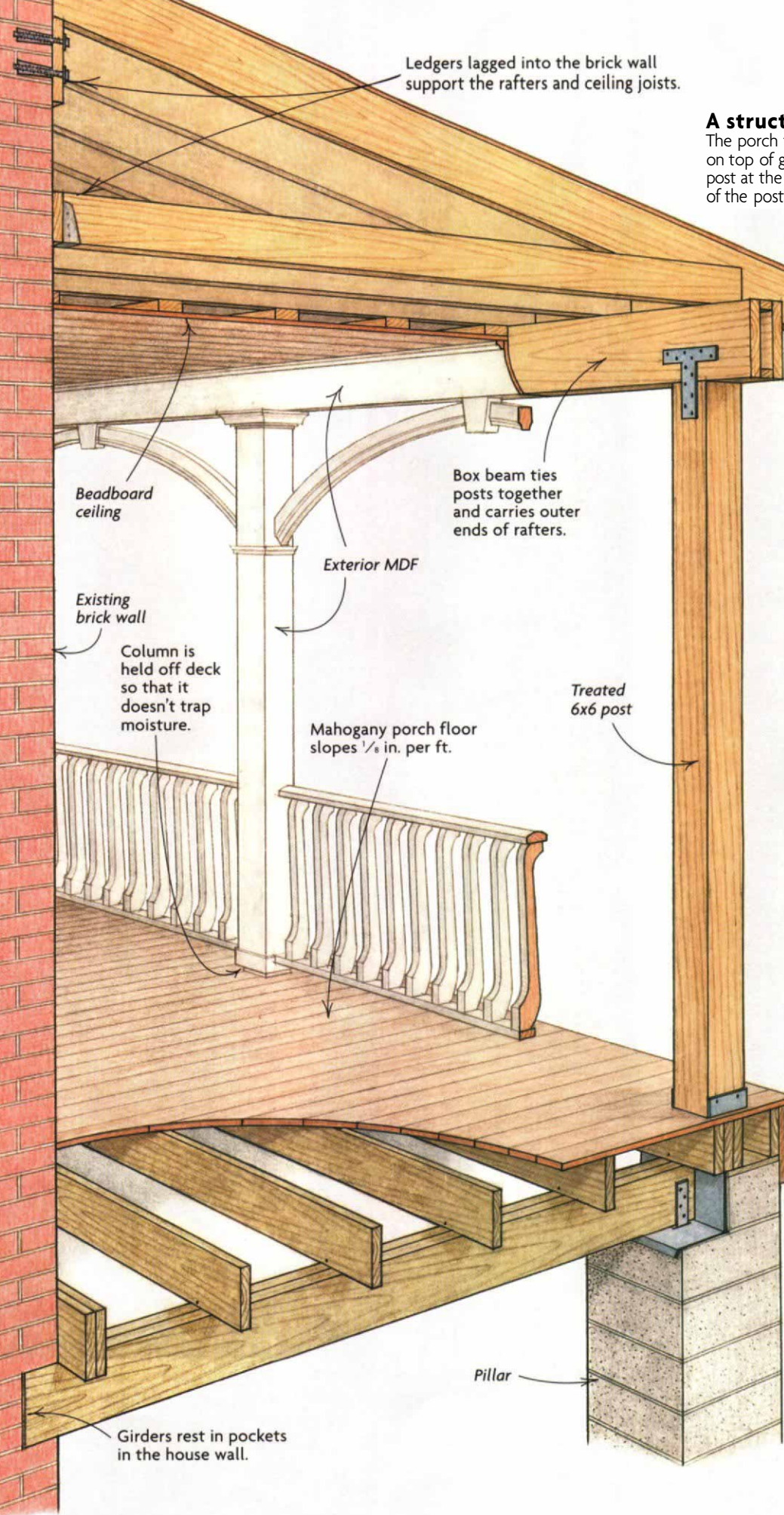
The flooring was run perpendicular to the house wall so that any water runs off parallel to the seams, not across them. We sealed the floor and let it cure for two days before setting the 20 6x6 treated posts that form the core of each column. Each post is screwed to a base bolted into solid blocking below. We braced the posts plumb and then connected

them with a box beam (drawing left, p. 108), T-straps strengthen the intersection of post and box beam. These posts and box beams set the basic supporting structure of the porch roof.

New roof with a pitch

The roof was the final structural part of the porch to build. I suspect that problems with

the flat roof over the original porch led to its demise. In the new design, we changed the roof to a 3-in-12 shed roof that would drain water easily. On the house side, the rafters were installed on a ledger epoxy-bolted to the brick wall, with the box beam supporting the other ends of the rafters. We extended the eaves to a depth of 3 ft. to allow better



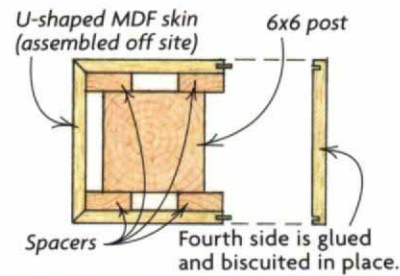
Ledgers lagged into the brick wall support the rafters and ceiling joists.

A structural slice through the veranda

The porch floor is framed with pressure-treated 2x8 joists on top of girders. Solid blocking supports a 6x6 treated post at the core of each column. A box beam runs on top of the posts and supports the outer edge of the roof.

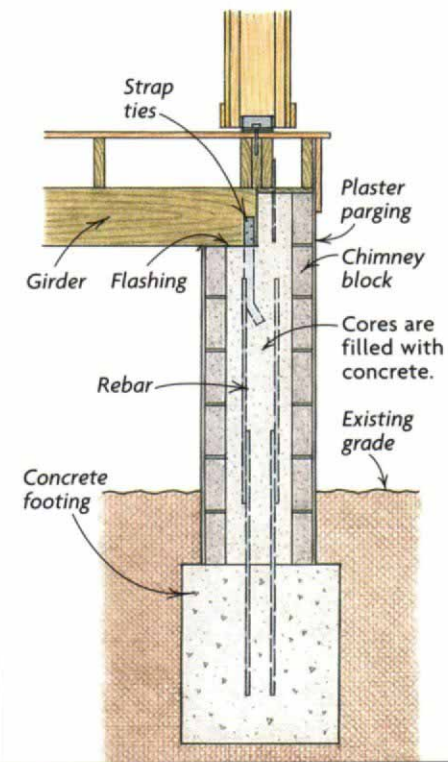
Turning posts into columns.

To give the posts the visual weight that they need for such a large porch, each one is wrapped in exterior MDF skin, turning the posts into 10x10s.



Chimney-block pillars hold up the porch.

The perimeter of the porch is supported on 20 pillars. First, concrete footings are poured. Then 16-in. chimney block is stacked with rebar in the hollow cores. The cores are filled with concrete, and the outside of the block is parged with plaster.



Drawings: Vince Babak

rain protection for the tops of the columns and to emphasize the ornamental aspect of the roof edge. Each rafter terminates in an S-curve that tapers to a wedge. This shape echoes the wooden brackets on the gables of the main house.

The roof sheathing went on quickly, and we covered the lower edge with ice-shield membrane and 30-lb. felt paper the rest of the way up. The roof was finished with three-tab asphalt shingles. We sealed the new roof to the building by scoring the brick around the perimeter and inserting copper counterflashing. A beadboard ceiling finished off the roof from below.

Adding the dressing

With the porch structure basically complete, we turned our attention to the columns, arches and railings. We didn't want the new porch to suffer the same fate as the old, so each 6x6 post was wrapped with 3/4-in. exterior medium-density fiberboard (MDF) that would be the first line of defense against rot (drawing top right, facing page). This MDF skin also turned the posts into 10x10 columns that had the visual weight and heft needed for this size porch.

We built the MDF columns in our shop, assembling three sides in a U-shape that was then slipped around the posts. The final face was biscuited and glued in place to complete the columns. The MDF was sealed on both sides and was held slightly off the porch floor to stop moisture from being trapped.

The tops and bottoms of the columns were finished off with mahogany moldings. Next, we installed the prefabricated arches and keystones between the columns. The arches were made from three layers of mahogany laminated together. A computer-controlled router cut the decorative profiles in each arch. The keystones, which are solely decorative, were made in two halves that lock over and around the top of each arch.

The porch railings were part custom, part stock. We purchased S-shaped Victorian clear-cedar balusters from a nearby railing-parts company. We designed our own railing cap, a wide, gently curved mahogany piece with stepped edges. The railing sheds water but doesn't offer a place for people to put cups.

We used the same railing detail on all three sets of stairs. On each set of stairs, we installed an additional pipe handrail that follows the wood railing, making the stairs code-compliant and easier to climb. □

Kevin Wilkes is the founder of Princeton Design Guild, a design/build firm in Princeton, NJ. Photos by Roe A. Osborn, except where noted.



Elegant arches flank an outdoor corridor. The porch provides access to rooms inside the house while creating a spot for a leisurely swing in the hammock on a sunny afternoon.