New Columns For an Old Porch

Matching classic millwork with composite columns and PVC trim

by Emanuel Silva

Living in the Boston area, I work on many houses with traditional exterior wood millwork, which at the time these homes were built was typically milled from eastern white pine. I love the way it looks, but I'm often asked to repair or replace damaged trim with a material that won't rot and that requires much less maintenance. That was the case recently for a pair of porch columns on a 1930s home. With plans to sell their house within a few years, the homeowners had retained me previously to repair or replace a number of other exterior details on it (see "Porch Stair Makeover," March 2014), and the front porch was the next item on their to-do list.

Wood and Masonry Don't Mix

The existing turned columns seemed to be in good shape—until I took a closer look. The bottoms of the columns were crushed, and the square wood bases that the columns sat on were rotted beyond repair. Also, the porch was missing bricks, and some of the remaining ones were damaged. The first order of business was to temporarily support the porch roof and remove the columns, and then call on a mason to repair the brickwork.

It was then I discovered that water had damaged the porch structure above the columns as well. The crown molding used to finish the fascia on the eaves doubled as a gutter. Though the top of the mold-

Figure 1. The original beams—which were actually framed like short knee walls and clad with board sheathing—had water damage, so the author reframed them with PT lumber and clad the new beams with PVC trim. Then he prefabricated U-shaped PVC soffit/fascia assemblies and slipped them into place.

ing was capped with metal flashing where it wrapped around the porch, it looked like water had still managed to collect there and leak into the short box beams that sat on top of the columns and supported the porch roof framing.

To fix the problem, I first removed the old beams—which had been framed like short knee walls and clad with board sheathing. I used PT lumber to frame new "knee wall" beams and clad them with PVC trim. Next, I assembled U-shaped PVC soffit-fascia assemblies and slipped them into place (**Figure 1**).

Structural Composite Columns

The pair of 8-foot-tall PermaCast columns (hbgcolumns.com) that I used on this project are stocked by my local lumberyard. These are load-bearing columns cast from a proprietary composite material similar to fiberglass. To match the existing columns, I bought 10-inch-diameter Tuscan columns, which taper slightly to a diameter of about 9¼ inches at the top (non-tapered columns are also available). Matching PermaCast bases and capitals, the flashing caps, and the installation kit brought my total cost per column to about $175.

While the new columns are well-made and closely match the existing ones, they have one small flaw: an ornamental ring that I think is a couple of inches too close to the top of the column. My solution is to lower the position of the ring by adding a couple of inches to the top of the column with a PVC extension. This patch becomes invisible once it's covered by the capital.

I started by gluing together 1-foot-square sections of ¾-inch-thick PVC trim to make 1½-inch-thick stock. Then I used a jigsaw to cut out a pair of round plugs that matched the inside diameter of the top of the columns. I fastened the plugs to the columns with screws (**Figure 2**).

Next, I cut a pair of slightly larger plugs to match the outside diameter of the columns and act as column extensions. Because these extensions needed

Figure 2. The author extended the columns by first inserting a plug made from a double layer of ¾-inch-thick PVC into the top of each column (above left). The plug serves as an attachment point for another, slightly larger PVC plug that's sized to match the outside diameter of the column and routed with a channel to fit into the flashing cap (above right). The column extensions effectively lower the position of the column's decorative trim rings.

to fit into the flashing cap (which prevents water and debris from getting into the column), I routed out a channel and center hole to match the flashing cap profile. Then I screwed the extensions to the plugs with stainless steel screws.

Installation

After shimming the porch roof assembly so that it was level, I located the column centers and used a retractable Tajima plumb bob to transfer the centers down to the brick porch. Since the floor was fairly level, I measured the distances between the porch and the eaves at each column location and marked the lengths on the columns.

To mark cut lines that were square to the base of the columns, I rolled up a length of 4-inch-wide aluminum coil stock and wrapped it around the column to use as a straightedge. The manufacturer says that PermaCast columns can be cut with a carbide blade in a circular saw, but I find that the resulting edge is pretty rough. Instead, I make these cuts using a 4½-inch angle grinder equipped with a diamond masonry blade, which results in a smoother and more controllable cut (**Figure 3**) .

Figure 3. A 4½-inch angle grinder equipped with a diamond masonry blade was used to cut the columns to length.

Figure 4. The author used stainless steel bolts and nuts instead of the supplied screws to fasten the installation clips to the column bases.

The installation kits that came with the columns included a pair of galvanized metal installation clips, along with screws to connect the clips to the columns. Because I was concerned about the screws eventually corroding or working loose, I substituted stainless steel bolts and nuts. That allowed me to bolt rather than screw the clips to the bases of the columns (**Figure 4**).

Before I fit the columns in place, I jacked up the porch roof assembly slightly so that they would slide easily into position. After screwing the flashing caps to the underside of the beams (**Figure 5**), I inserted the columns, then removed the shims and temporary supports so that the roof assembly was fully supported by the columns. In this installation, I wasn't too worried about wind uplift, so I didn't reinforce the connection to the roof framing with additional clips or long structural screws.

When I was satisfied that the columns were plumb, I drilled pilot holes into the brickwork, then fastened the brackets to the porch with 5/16-inch-diameter by 2 3/8-inch-long Tapcon masonry screws (**Figure 6**).

Finishing Up

To block moisture and insects, I filled the gaps between the column bases and the uneven masonry with a generous bead of OSI Quad Max, an extremely flexible window and door sealant. Then I applied a glop of sealant at each corner and set the column bases in place, tweaking the bases slightly until they looked square and level. I also glued the capitals to the flashing caps with the same sealant, using masking tape to hold the capitals in place until the sealant cured (**Figure 7**).

The columns were pre-primed, so once they were installed, all that was left to do was to apply a couple of coats of acrylic latex paint on the new millwork. ❖

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Figure 5. The top of the column fit into a flashing cap that was screwed to the underside of the beam.

Figure 6. The bases of the columns were secured to the porch with 5/16-inch-diameter by 2 3/8-inch-long Tapcon masonry screws driven through the installation clips and into holes drilled into the brickwork.

Figure 7. After gluing the capitals to the flashing caps with OSI Quad Max sealant, the author used masking tape to hold the capitals in place until the sealant cured.