

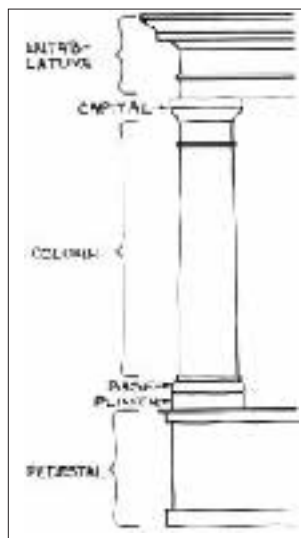
Installing Wood Columns

by John Leeke



You'd expect to see rotting wood in the bases of columns that are centuries old. But I was recently on a project in Chattanooga, Tenn., where I had to replace columns that were only 27 years old. Decay had started to show up 15 years ago. Faulty installation caused the column bases to rot prematurely.

You can slap columns in place and forget about them. But sooner or later—probably sooner—you'll be reminded that a little more care with installation would have saved lots of trouble. Here are a few of the techniques I've developed for installing columns that will last. These methods are good for hollow columns up to about 15 feet tall.



Proper installation of wood columns begins with knowing the different parts of a column.

Preparation

Repair the porch deck and pedestal structure as well as the entablature above the porch. Then you're ready for final column installation. Keep new columns and restored columns in a cool dry place until they are installed.

The two keys to effective column installation are ventilation and even loading. Proper ventilation reduces moisture build-up—the cause of decay. Leveling the base and scribing the shaft assure even loading.

Leveling Base and Plinth

To begin installation, set the plinth in its approximate position, and see if it is level. Most porch decks slope away from the house for drainage. To make a level surface for the shaft to

stand on, you must plane away part of the plinth or round base. I usually plane off the bottom side of the round base, which is less noticeable than reshaping the plinth (see Figure 1). Never carve out a depression on the top of the base or plinth; the depression will collect water. Use a plane rather than a chisel to ensure flatness.

When the base is approximately level, cut the shaft roughly to length by trimming it at the top. The length

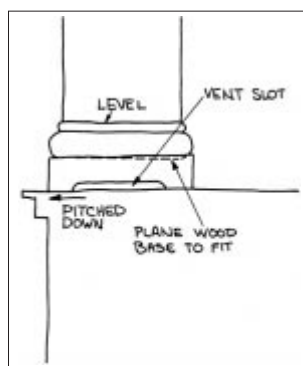


Figure 1. Leveling the base of the column ensures that loads from the roof will be evenly distributed. Otherwise, one side of the column should be carrying most of the weight.

should be one inch less than the distance from the base to the bottom of the entablature. Set the shaft in place on the base.

Even loading of the shaft around its perimeter is very important. If the shaft rocks back and forth, the base or plinth surfaces are not flat and should be trued. Trim the base until the shaft does not rock and points to its final position on the entablature above.

Ventilation

Ventilation from the bottom of the column to the top is very important. Without ventilation, columns rot.

Venting at the bottom is fairly straightforward. Correctly designed plinths and bases have hollow interiors. Cast aluminum plinths come with slots on all four bottom edges. You may have to cut grooves in the bottoms of wood plinths yourself.

Venting the top is more difficult. Vent straight up through the capital and soffit if the interior of the entablature is hollow and well vented. It usually isn't, but there are two alternatives. Drill a hole from the middle of the bottom of the capital through to the top, where it is protected from the weather inside the porch. Or, drill holes in the neck of the shaft on the side facing the house. This method does not look as good, but it does not

interrupt the flashing over the capital. Vent holes should be screened or filled with small round louvers (see Figure 2).

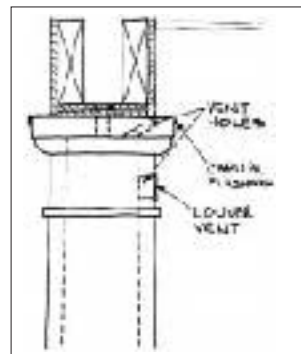


Figure 2. Ventilate the interior of the column in one of the three locations shown. Screen the vent holes with small louvers.

Scribing the Shaft

Scribing the shaft is a five-step process. Using this procedure assures even loading at the top of the shaft. For this example I'll assume the entablature is held 1/8 inch above its final position with temporary supports, and the capital is 2 inches thick.

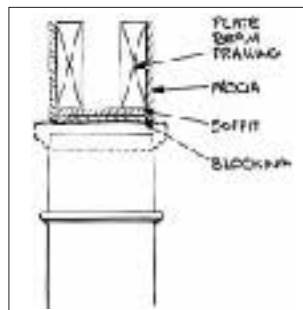


Figure 3. Blocking is used to improve load transfer between the roof and the capital.

1) Fill the slightly recessed space at the soffit with solid wood blocking. This transfers the load from above directly to the capital and keeps the edge of the fascia boards from being crushed (see Figure 3).

2) Screw a truly flat piece of 3/4-inch plywood to the bottom of the blocking, and set the shaft in position on top of the base and plinth.

3) Holding one leg of the dividers

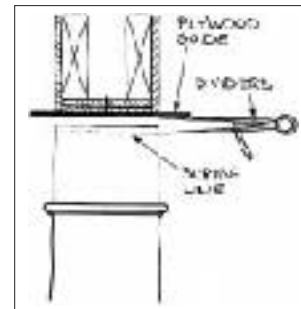


Figure 4. Set the dividers and scribe the top of the column to make space for the capital.

against the plywood, scribe a line on the neck of the shaft with dividers (see Figure 4). Set the dividers to the thickness of the capital, plus the thickness of the plywood, plus the distance the entablature is above its final position (1 3/8 inches in this example).

4) Mark the relative position of the shaft, base, plinth, and deck with reference marks. Later on, this will help you position them.

5) Take the shaft down and cut off the neck to the scribed line.

Remember there is a limit to how much the shaft can be cut off without spoiling the proportions of the column.

Flashing

The next step is to raise the column and fit the capital in place. Before doing that, you must fashion a flashing to fit over the top of the capital.

Flash capitals with copper or lead-coated copper turned down over all four edges. Don't skip this part of the work because you think copper is too expensive. The relatively small amounts of metal needed don't cost much. I have replaced columns, at a cost of several hundred dollars each, that could have been saved if the contractor had used three dollars worth of copper flashing in the beginning.

Earlier in the sequence, you would have flashed the bottoms of columns. Flash the bottoms of shafts, bases, or plinths resting directly on masonry with lead plates 1/4- to 3/4-inch thick. Leave gaps between the plates for ventilation slots. Space the gaps so staves are fully supported at the joints. Cut the plates slightly larger than you need, and trim them with the shaft using a woodworking gouge or chisel when installation is complete.

Painting

The main purpose of exterior paint is to prevent water from penetrating the wood. However, paint also functions as an important path for water vapor to escape from the interior of the column.

Heavy paint build-up blocks vapor from escaping and should be removed. This is not a popular recommendation. But, it is especially important if the paint is cracked or already peeling down to bare wood. Peeling paint may mean moisture levels in the wood are too high.

Water vapor passes more or less easily through different types of paint. Latex paint lets vapor pass freely. The more common alkyd-resin paints are less permeable.

Humidity levels vary throughout the country. Columns in the South, where humidity levels are high, need a very permeable coating to allow the vapor to move out of the column. Use a primer with two coats of latex.

Areas like New England have only moderate humidity. Columns here can get adequate vapor transmission with alkyd-resin paint formulated to have low permeability. An alkyd-resin paint offers better protection from the weather. Use a primer with two coats of alkyd-resin paint in New England.

With careful paint selection in the beginning, you can reduce maintenance and add years to the life of your columns. The best restoration is prevention. ■

John Leeke, of Sanford, Maine, restores and maintains historic buildings. He also consults with contractors, architects, and owners working on older buildings.

Editor's Note: John Leeke is preparing a series of information sheets and booklets on building restoration, called "Practical Restoration Reports." For a listing of reports and prices, contact John at 2947 Country Club Road, #2, Sanford, ME 04073.