

Renovating Old Porches

Common problems can be solved with simple repairs

by George Nash

The porch is as much a part of the iconography of the American house as the fireplace. Although porches are psychologically part of a house's living space, they're physically outside the domain of the house. Thus their routine maintenance is often neglected until repair or demolition is unavoidable. This is unfortunate, because with proper construction and upkeep, a porch should last as long as the house. Water destroys porches; the greater exposure of a porch to rain and snow demands special protective features. The drawing at right shows some typical trouble spots that can lead to structural damage.

From the top down—The well-built porch begins with a tight roof, properly flashed to the sidewall. Because of the relatively shallow pitch, which encourages snow and ice buildup, porch roofs are more susceptible to leakage and the effects of wind-driven rain. Early porches were often roofed with tin sheets, soldered at the seams; unless the metal was kept painted, it eventually rusted. Asphalt coatings not only have the unfortunate effect of hastening corrosion, they also dry out and leak fairly quickly. And leaks in porch roofs soon cause structural decay. Sagging, warped or water-stained ceiling boards are a telltale sign of a chronic leak.

Today, half-lap mineral-surfaced roll roofing applied over an adhesive butyl membrane is cheaper and easier to use than metal. Fiberglass-asphalt shingles could also be used over the same membrane, even on roofs with slopes lower than 4 in. -12. Organic felt shingles, however, would rot as they soaked up the moisture inevitably trapped between their undersides and the waterproof membrane.

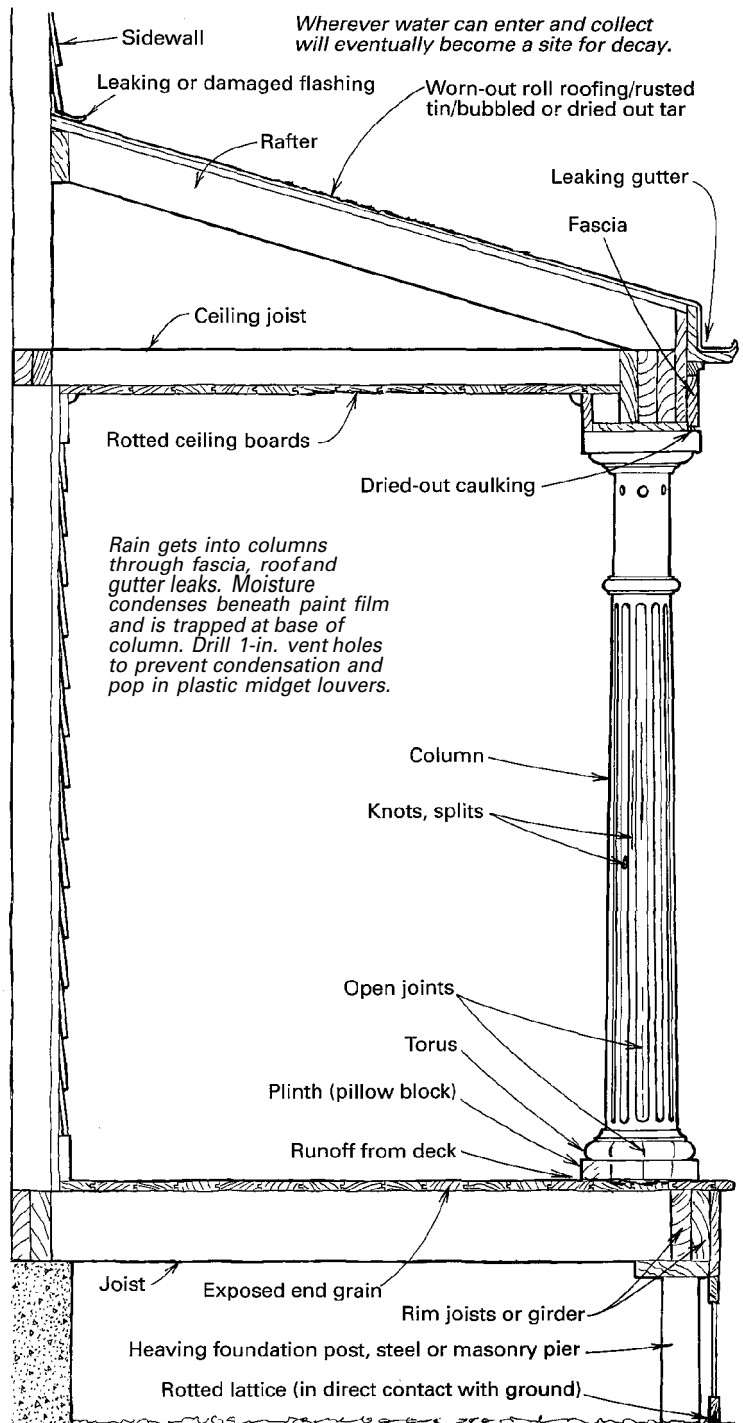
Join the porch roof to the sidewall with copper or galvanized enamel-coated steel flashing. This flashing must extend up under the siding and down over the last course of roofing. Embed its bottom edge in flashing cement. More than any other part of the house, gutters are a mandatory feature of porch roofs, because rainwater should not be allowed to splash against the porch skirts, foundation posts and steps.

Floorboards and framing—The floorboards, so open to weather, are likely to be at least partially rotten. This decay can often infect the underlying framing. The bottoms of the posts or columns and rails and balusters are also likely victims of weather and neglect. Wherever a joint has opened up or end grain is left exposed, there is an opportunity for water to seep in and for decay fungi to begin their insidious work.

Replace rotten framing with pressure-treated lumber. Don't forget to pitch the joists so that the porch floor can drain. Because the flooring joints must follow the direction of the water flow, the floor joists must run perpendicular to the width of the porch. A slope of $\frac{1}{8}$ in. per foot is sufficient. Use stringlines to establish level and straight lines for the sills and the joists. These will also show the amount of correction needed to straighten sags and bows in existing framing caused by settled or lifted foundation posts or structural failure. An automobile screw jack will provide all the lift you'll need.

Cut any decayed flooring back to sound wood over the middle of the nearest joist and replace it with similar stock. The traditional material for porch decks is 1x4 clear-grain Douglas fir or yellow pine T&G flooring. Soak each board in a trough filled with wood preservative for at least three minutes, and let it dry for two days before you paint it. Use two coats of oil-based porch-and-deck enamel on both sides and all edges. When installing the flooring, seal each tongue-and-groove joint with caulk as the pieces are installed. This tedious step will greatly reduce water penetration and paint

Porch trouble spots



failure. The exposed ends of the flooring boards must be protected from water exposure by nailing a bullnose molding over them. Apply a second coat of enamel to the finished deck.

If the existing floor framing is still relatively sound, treated joists can be sistered alongside partially decayed old wood. Joists can rot along their bottom edges if they are too close to the ground—8 in. is the minimum recommended clearance.

Columns and posts—Fortunately for the porch restorer, the typical ornamental turned-wood porch post has a squared section at top and bottom. Replacing these rotten areas with a prosthetic section requires a lot less skill than duplicating the carved portions. Mate the section to sound old wood with a dowel pin. Should complete replacement be necessary, lumberyards stock turned hemlock and pressure-treated posts. Salvage yards specializing in architectural antiques are another source if the standard patterns are not a good enough match. Failing this, an exact replacement can be custom-turned at a woodworking shop.

Once the paint peels, hollow round columns start to split. These splits admit water, as does the exposed end grain at the column base and any open joints between elements of the capital. Water can then collect in the interior of the column and cause rot. These surfaces should be stripped, sanded, sealed with preservative and then primed, caulked and given two top coats of latex paint (latex films are slightly more permeable than oil and will thus permit some vapor migration from the interior of the column). Hollow columns will last a lot longer if vented. Drill several 1-in. holes in an inconspicuous part of the column just below the capital, away from the prevailing wind. Cover the openings with pop-in plastic midjet louvers. Drill a hole up through the floorboards and column base from underneath the porch to allow trapped water to drain. Otherwise, drill ¼-in. weep holes around the base of the column, just above its plinth block (the square base upon which the column sits).

Because water is easily trapped under them and sucked into the cracks between their joints, the plinth block and the torus (an ornamental wood disk between plinth and column proper) will almost always rot first. A common mistake is to fashion replacements from a solid block of wood, which leaves too much end grain exposed. Using pressure-treated stock makes this less of a problem, although even here, a section of mitered molding on each side of the plinth will prolong the life of the paint. If the rot has progressed an inch or so up into the column base, shorten the column and increase the depth of the plinth or add another torus. This is one place where epoxy consolidation (the process whereby the rotted wood fibers are filled with a stiffening resin) is easier and probably more economical than the highly skilled shopwork demanded by the repair of severely deteriorated columns. For one thing, the work can be done on site.

Railings and skirts—Because of their many joints, balusters and railings are especially prone to decay. A lot of future repair can be prevented by ensuring that the railings are properly supported by blocking inserted between the bottom rail and the deck every 3 ft. or 4 ft. This prevents the rails from sagging under stress and the joints from opening. Periodic caulking and repainting will preserve ordinary wood for a long time. If the railing needs replacement, use pressure-treated lumber and turnings.

The same is true of the lattice panels that skirt the porch bottom. Because of their intimate contact with the ground and shrubbery, they are usually the first part of the porch to rot. Prefabricated pressure-treated lattice has simplified repairs; the panels are easily sandwiched between treated boards. In regions where the ground freezes, always leave about 2 in. of clearance under the bottom edge of the panel. Otherwise, frost heave could destroy the panel or even lift the porch. Don't replace the lattice with solid panels, as this would impede ventilation.

Steps and foundations—Steps are another problem area whose prospects have been greatly improved by pressure-treated wood. At the very least, the undercarriage and riser boards should be cut from treated stock even if the treads are made with ordinary fir or yellow pine. Very often the problem with a porch is not so much rotten framing as it is unstable foundation supports. Porch sills and posts often rest on rocks or concrete blocks set directly on the ground. Sometimes they are carried by steel pipes driven into the earth. The seasonal lift and settlement of such foundations can sometimes rack a porch so badly that it starts to tear loose from the house.

The solution is a footing that extends below the frost line. Although poured concrete piers still enjoy wide use, pressure-treated posts set into the ground are becoming a popular alternative because of their labor-saving features. They're certainly easier to cut or shim than concrete. Because the ground be-

neath a porch is seldom protected by snow cover, frost penetration will be deeper there than normal. Post holes should therefore be dug 1 ft. deeper than the standard frost depth.

Another solution, which is particularly effective in wet soil, is to excavate a trench along the entire porch perimeter and set precast footing blocks on a layer of crushed stone. Lay perforated drain pipe and provide an outlet at grade as for a standard perimeter drain system. Backfill with more crushed stone around the bases of the porch support posts and then with gravel to grade. Ideally, the porch drainage can be connected to the rest of the foundation drainage system.

Otherwise, an 80-lb. sack of concrete mix yields about a cubic foot of concrete, which is enough to make footing pads for two posts when poured into the hole (dig it at least twice as wide as the post). Let the concrete harden a day or two before setting any posts.

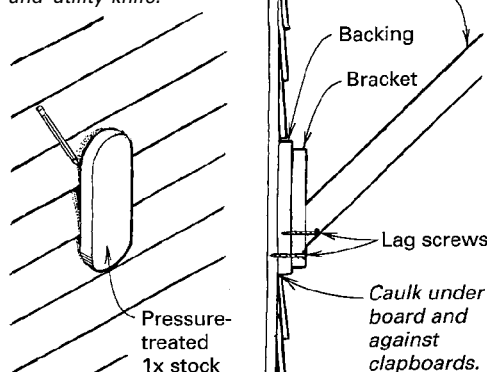
Backing up the details—One detail often overlooked is the need for some sort of backing board between the roof brace (or bracket) and the siding. Scribe and cut away the siding so that this piece (use pressure-treated stock) can lay flat against the sheathing. Backers (drawings left) should always be used under anything that would otherwise be mounted directly against the siding, such as light fixtures and rail or baluster supports. Otherwise water and debris can collect behind the fixture or seep into splits opened by its fasteners and rot the siding. Bevel the top edge of such trim boards to shed water. Backers also provide a much firmer attachment for porch railings. It's also not unusual for porch railings to terminate at a turned post sawn in half and set directly against the wall over a trim board. If this board has rotted, or worse, was omitted, the new one should be made of treated wood.

*George Nash is a writer and former renovation contractor. This article was excerpted from his book *Renovating Old Houses*, recently published by The Taunton Press.*

Support bracket and backing board for stoop roof

7. Scribe backing-board profile on siding and cut out clapboards using fine-toothed saw and utility knife.

2. Screw backing board into sheathing (try to catch stud if possible).



Step flashing cut into clapboards is a very important detail.

