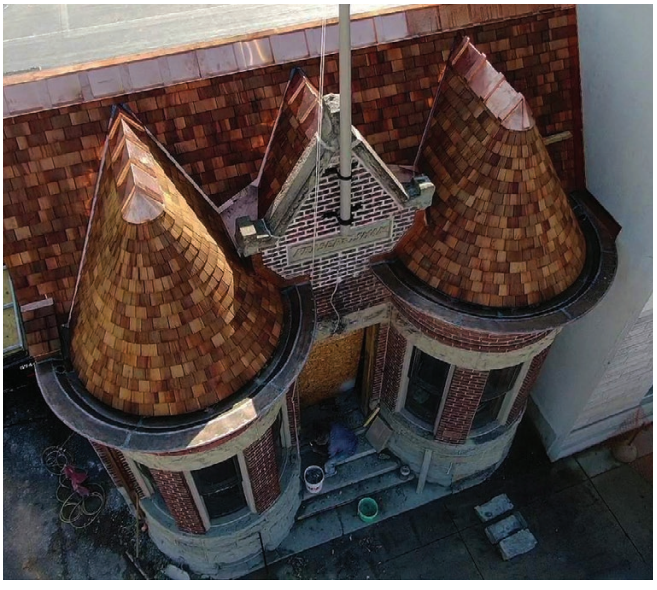
A Twin-Turret Roof Restoration

BY DARIN KUNS



Last year, my company restored an unusual roof on a 19th-century building in Fowler, Ind. The original thick cedar roof shingles had been coated with countless layers of paint in a poor effort to increase their life span, and most of the flashings had deteriorated, leading to considerable rot in the sheathing and some of the framing beneath it. After setting up staging around the building and stripping the roof, we turned our attention to correcting some problematic details in the original design and repairing the rotted areas.

Most of the building's roof is a single plane that slopes to the back from a steep, Mansard-style front. Twin turret roofs grow out of the base of this steep roof plane and tie back to it higher up with short, level ridges at their peaks. Centrally located between the turrets is a small masonry dormer with a brick gable end that serves as the base for a wood flag pole and a limestone plaque identifying the law firm that originally occupied the building.

Gable intersections. The way the sloping sides of the turret roofs intersect with the sloping sides of the masonry dormer creates an awkward drainage area that had been sheathed over, cricket style, to drain water out through soldered-metal drainage holes on each side of the small gable. Debris collected in these holes, causing water to back up behind the gable, which resulted in rot in the corners.

We didn't have a lot of leeway to rework the brick to open up the drainage near the central gable, but we were able to considerably improve the situation and stave off future rot.

After fixing all the rotted areas, we flashed everything in with ice-barrier membrane, running it up high to tie in shingle-style with membrane running down the valleys at the turret intersections. We then wrapped the area in a self-adhering underlayment. Installing the ice membrane and underlayment was a painstaking exercise in advanced origami, with overlapping courses woven across the front of the turrets.

Copper work. The first line of defense over the underlying protective layers was thousands of dollars' worth of copper flashing. We had to get approval from Indiana Landmarks to use copper because the original flashings were lead or terne metal. All the new copper work, including the turret valleys, downspouts, circular gutters, and ribbed ridge capping, was fabricated off site. The main work for our crew was templating all the sections with 1/2-inch plywood. Once fabricated, the sections were soldered on site. The crickets behind the central gable were lined with copper that was soldered to the valleys and two extended spouts, creating a watertight assembly that could drain well. Beneath the spouts, we completed the copper work with step flashings and counterflashing that tied in with the wide copper gutters encircling the turrets.

Sidewall intersection. The other awkward detail we had to correct was where the building abutted a larger commercial building. The intersection had been formed by a buildup of brick that had been poorly flashed to the roof and, over the years, it had been coated with stucco and roofing tar to try to seal the connection. We took the brickwork down below the level of the roof deck and sheathed over the brick so we could properly step flash and counterflash with a reglet let into the intersecting wall. At the base, the reglet tied in and was soldered to the copper gutters, effectively eliminating the trapped corner that had originally impeded drainage (see photo 3, opposite).

Shingle work. We special-ordered extra-long and thick cedar shingles and hand-dipped each one in a tub of Woodlife, a borate-based wood preservative, before installing it. For the turret shingles, we cut each side at a shallow angle so they could be installed tight at the butt end without overlapping at the top end. A story pole, with a metal hook that we fashioned at the top to allow us to rotate the pole around the curved fronts, helped us keep the coursing straight.

The result was both appealing and durable and should safeguard this unique building for the next century.

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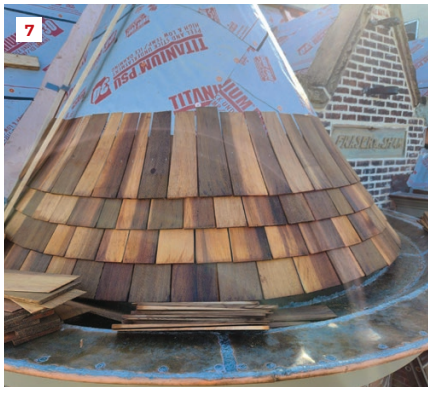
Photos by Darin Kuns and Ross Filbrun of D-K Construction

Existing conditions. Elastomeric paint had been smeared over the shingles, valleys, gutters, and ridge caps in a poor attempt to increase the life of roof **(1)**. A view between the central gable and one turret shows the cricket, which drained out a small hole beneath the central gable's limestone cap **(2)**. A brick ledge at the intersection of the roof plane and the adjacent building had been a difficult place to flash well and, where it died into the gutter at the base of one turret, it created a trap for leaves and other debris that impeded drainage **(3)**.

Reroof. The author's crew removed the brick ledge, sheathing over this area **(4)**. A view of one turret after the roof had been stripped shows the ridge that ties the top of the turret back to the Mansard-type roof plane **(5)**. After installing ice-barrier membrane, self-adhering underlayment, and copper flashing, the crew began installing shingles on the turrets using a story pole that hooked over the top of the turret so it could be rotated around the front to keep the shingle courses even **(6)**.



The author special-ordered extra-long, thick shingles that the crew cut at an angle on each side **(7)**. Before being installed, each shingle was hand-dipped into a tub of a borate-based wood preservative. This photo **(8)** shows the step flashing at the intersection of one turret and the central brick gable. Note the extended copper spout below the limestone capping. A view of the completed roof **(9)** shows the ribbed ridge caps and soldered copper gutter assembly.