



# Backyard Living in a New Jersey Brownstone

**A small urban backyard gains valuable outdoor living space thanks to a pedestal-supported rooftop deck**

by Rob Corbo

Normally, I don't like to turn away work, but it took me only five minutes to turn down the deck project that architect Brian Marsh, of Mowery Marsh, in Hoboken, N.J., was describing. The deck he wanted to replace sat on top of a seven-year-old one-story addition in Hoboken that leaked like a sieve, thanks to a faulty roof and problems with the grade around its foundation. Not only that, his design for the new deck included a pedestal system we were

not familiar with. And besides, we had plenty of work ... or so I thought.

Two months later, our schedule had opened up and I was reviewing another project with Marsh when I asked about the deck. He told me that he was still looking for a contractor, explaining that he had found a roofer to remove the original deck and roof, check the roof leak with a temporary membrane, and remove the damaged interior drywall on the ceiling and walls of the addition. But the

deck work that remained was out of the roofer's skill set. Why not, I thought, since we had the time, and the weather was right. The pedestal system would be a welcome new challenge.

## Prepping the Roof

We began by installing a curb, made up of four layers of 2x10 SPF framing, around the perimeter of the deck (**Figure 1**). We fastened the first layer directly on top of the temporary roof membrane, bedding



**Figure 1.** Working on top of the temporary roofing membrane, project manager Danny DoCouto began by installing the first of four layers of 2x10 SPF around the perimeter of the roof to create a curb (A). Because the curb establishes the final elevation for the rooftop deck, great care was taken to shim the second 2x10 layer so that it would be absolutely flat and level in every direction (B). Once the 6-inch-high curb was completed, a roofing contractor installed tapered insulation panels to provide drainage,  $\frac{3}{4}$ -inch CDX plywood underlayment, and then two layers of torch-down modified bitumen roofing membrane (C). The curb is capped with  $\frac{5}{4}$ x12 ipe that's face-screwed to the curb with countersunk stainless steel fasteners. To help make the assembly watertight, the ipe is bedded in sealant (D).

it in construction adhesive and screwing it to the roof framing with 4 $\frac{1}{2}$ -inch HeadLok structural screws. To make sure the curb would be perfectly level when we installed the roof deck, we carefully shimmed the second 2x10 layer as we fastened it to the first, again with HeadLok screws. Adding two more 2x10 layers to the assembly brought it up to the proper elevation—determined by the threshold of the door leading out onto the deck—

while providing solid support for the rail posts that would later be fastened to the curb.

To provide drainage, our roofing subcontractor installed tapered roof insulation panels, pitched toward a single opening that we left in the curb. Then he installed a layer of  $\frac{3}{4}$ -inch plywood over the insulation panels, to provide a solid base for two layers of torch-down modified bitumen roofing membrane.

The membrane laps up and over the curb, as well as a few inches up the two brownstone walls flanking the deck.

Finally, we installed a  $\frac{5}{4}$ x12 ipe cap over the lapped membrane on top of the curb around the perimeter of the deck. We bedded the cap in plenty of roofing tar, then screwed the cap to the curb framing with 2 $\frac{1}{2}$ -inch stainless steel screws driven through countersunk holes, which we later filled with plugs.





**Figure 2.** The 2-foot-by-4-foot ipe deck panels are flush with the top of the ipe curb and are supported by Bison Versadjust pedestals located at the corners and midpoints of the panels (A). To account for the slope of the roof, the author used different sizes of pedestals, each with a range of adjustment. The pedestals have angled bases that can be rotated to provide a perfectly flat surface to support the deck panels (B). During installation, spirit levels were used to level the deck panels, while tabs fitted to the tops of the pedestals provided the proper spacing between panels (C).

### Pedestals Support Ipe Panels

While we were unfamiliar with the Bison Versadjust pedestals that we used on this project, they proved to be pretty easy to install (**Figure 2**). These height-adjustable polypropylene pedestals come in different sizes and have an eccentric disk in the base that can be rotated to account for roof pitches of up to 5 degrees (about 1 in 12). Because of a 4½-inch difference in roof height from the door threshold to the drain scupper, we ordered pedestals

in four sizes: nine V1 pedestals, with a height range of 2¼ to 2¾ inches; 11 V2 pedestals (2¾ to 3¾ inches); five V3 pedestals (3¾ to 5¾ inches); and 10 LO low-height pedestals (1¼ to 2 inches). We also ordered various base levelers, shims, and accessories recommended by the supplier.

The height of each pedestal can be adjusted during installation, by turning its threaded shaft, to keep the ipe decking panels level with the curb cap and with each other. We used the curb cap to estab-

lish the overall level line for the deck, and occasionally used our laser to verify that we were maintaining that level as we installed the panels. Mostly, though, we simply placed a spirit level across the tops of the pedestals as we set them, fine-tuning their height as needed.

The pedestals can support different types of decking tiles, panels, and even stone pavers, but on this project they

continued on page 34



**Figure 3.** The PT base for the nearly full-width bench rests on sleepers, which are separated from the membrane roofing with strips of thick plastic (A). No fasteners could be used to anchor the bench to the wall behind it, which belonged to the neighboring brownstone residence (B). The bench was finished with 1x6 ipe (C) and fitted with lighting fixtures (D).

supported nominally-sized 2-foot-by-4-foot ipe deck panels (also sourced from Bison), at the center and four corners of each of the panels. The panels simply sit on the supports, which have upright tabs that maintain proper spacing between panels. Because the panels are heavy—about 50 pounds each—and because the deck location is not particularly windy,

we opted not to use the optional plastic disks that can be screwed into the pedestal centers to lock the panels into place. We also wanted the homeowners to be able to easily lift the panels as needed for clearing out leaves and other debris.

### Ipe Bench

The plans included a generously sized

ipe bench along one edge of the deck. We framed the bench with PT lumber, setting the frame on 2x6 sleepers, which rested on top of protective 10-mil plastic placed in turn over the roofing membrane (Figure 3). Because the wall it's placed against belongs to the neighboring brownstone, we couldn't anchor the bench to the wall, but it's virtually





**Figure 4.** The stair stringers were cut from 2x12 mahogany, while the risers, treads, and trim were crafted from 1x4 ipe.

tip-proof, thanks to its weight and low center of gravity. The bench is finished with 1x6 ipe and fitted with light fixtures controlled by a switch near the door and powered through conduit that runs underneath the deck panels for the electrical supply.

While we sized the perimeter curb cap to minimize cutting of the panels, we still had to do some trimming around the

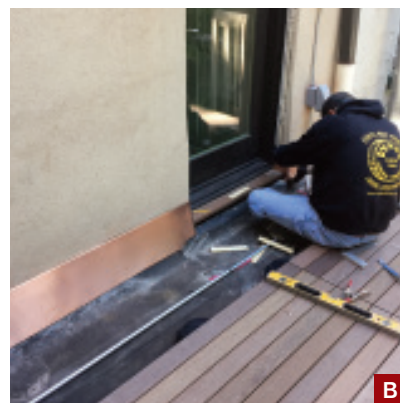
bench, as well as around a drain leader from the roof. But it's pretty easy to resize the panels, since individual boards can be unscrewed from the cleats, resized as needed (we cut them with a jigsaw), and then reattached.

### **Stairs and Rail**

Because we had already contracted with a company called Custom Stair Builders

(in Kenilworth, N.J.) to build stairs for a couple of other jobs, we hired it to cut the mahogany stringers for these stairs, as well (**Figure 4**). At \$590 for materials and labor, the stringers weren't cheap, but they were perfect.

Once the stringers were delivered, project manager Danny DoCouto anchored them to the deck frame and the new concrete landing pad that we had poured in



**Figure 5.** Water runs off the deck through a large scupper in the curb and drains through a custom-fabricated leader head. The powder-coated aluminum deck railing is also custom-fabricated (A). Note the conduit for electrical wiring that runs underneath the deck panels, past a new door that was part of this project, to the bench lighting (B). The new rooftop deck creates a comfortable backyard outdoor living space, a valuable commodity in urban New Jersey (C).

the backyard. Following the architect's plans, DoCouto then finished the stairs on site with ipe treads, risers, and trim.

Meanwhile, a rail fabricator from Decorative Iron Works, of Patterson, N.J., carefully took measurements for the custom powder-coated aluminum deck and stair rails, which he fabricated in his shop and later installed. The rail system is finished with Feeney cable rail and fittings (**Figure 5**).

### Finishing Up

We also replaced the door leading to the deck. The original door had a rectangular transom window above, with a wide header separating the two units. We needed to raise the door slightly

to accommodate the slightly higher deck (the result of improving the roof drainage with additional pitch). But by ordering a combination door-transom window unit (from Marvin) that eliminated the header, we were able to nudge the door up in the opening without extensive reframing. The door is set on a new concrete threshold that we cast in place, then carefully integrated with the roof membrane and copper wall counterflashing.

The ends of the ipe deck panels were factory-sealed with wax, but we applied a sealer to any cuts that we had to make in the field. And once the deck, stairs, and bench were built, we applied Penofin penetrating oil finish to all wood surfaces.

### Cost

We purchased 26 Bison Versadjust pedestals on this project and ended up using 22 of them. We also ordered 24 panels, working with a local distributor who produced a materials takeoff based on the architect's plans. The total cost for the pedestals, panels, installation accessories, and shipping and delivery for the 15-foot-by-16-foot deck was \$4,730.

Don't you know, "when it rains, it pours." Within two months of finishing the deck, I was reviewing two more projects with pedestal decks incorporated in the plans. ♦

*Rob Corbo is a contractor in Elizabeth, N.J. Photos are by the author.*