

# Re-creating architectural history at Harvard University

*Using original 19th century drawings, architects restored the Memorial Hall tower at Harvard University, to replicate the design created during its first erection in the 1870s*

by Tammy Mastroberte



Combining North Country Unfading Black, Unfading Red, and Unfading Green slate with buff-colored sandstone, the Memorial Hall tower at Harvard University was restored to its original 1870s appearance.

Despite numerous renovations over more than a century, the Memorial Hall steeple at Harvard University has not only survived time, but had endured fire damage as well. When first built in the 1870s it featured a slate siding,

and in time ornamental copper was eventually added. It remained this way until 1956, when the majority of the steeple was done in copper.

However, this same year, it suffered severe fire damage, and it was not until August 1999, that it received

its final facelift. Chosen to face the challenge was the architects of Childs Bertman Tseckares in Boston, MA. Their job not only included the actual reconstruction, but they also had to choose which past design pattern to follow.



With its copper roof, slate siding and sandstone pinnacles, architects and installers worked from early drawings to capture the original architect's intent.

"Five years ago, the firm did a study to find the steeple that was most appropriate to the building's architecture, and we chose the second design," said architect Jim McBain. "We modeled it after the second edition, with slate, copper and sandstone on the bell area, but we used a steel frame instead of the original wood."

With the overall goal of replicating the second steeple's appearance, the architects and preservationists researched both structural and siding materials as well as their finishes. According to Dr. Judith E. Selwyn of Preservation Technology Associates in Boston, MA, by looking at the remainder of the building and reviewing an extensive historical report, the intent of the original architect was discovered and followed.

### Matching components

With the exception of its copper rooftop and ornamental accent pieces, the majority of the tower is clad in polychrome stripes of slate. Adding up to almost 70 squares of roofing material, these sidewalls consist of North Country Unfading Black, Unfading Red and Unfading Green slate.

"We felt that the new fading green would fade to irregular colors, and would not replicate the original intent,"



According to Dr. Judith E. Selwyn of Preservation Technology Associates in Boston, MA, the sandstone pieces with minor damage were tooled back to a new surface.



If more severe damage was found, the stone was patched or replaced.

said Selwyn. "The rest of the building still has polychrome slate roofs from 128 years ago, and we used photographs of what the building looked like to determine the colors we needed."

Also keeping with the past design, the buff-colored sandstone pinnacles were repaired and replaced where necessary. "We replaced 50 or 60 stones," said Selwyn. "The ones with more minor damage were tooled back to a new surface, which left them slightly recessed. But if they were damaged more than that, they were patched or replaced."

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Approximately 50 or 60 stones were replaced during the restoration of the sandstone pinnacles.

Another aspect considered was the stone finish. While taking the original design into account, the new design presents a slightly modified version. "Some of the material has a smooth or sawn face, and while some of the original stone has vertical tooling, we did not do that on all of the new stone because of both cost and time," said Selwyn. "Since you see the tower at quite a distance, you can't see the details of it."

### An identical installation

In addition to the surface appearance, the project also required that the stone and copper to be installed had to meet historic specifications. "The aspects of layout and details made it a difficult installation," said John Marcone, project manager at Gilbert and Becker Co. in Boston, MA. "Because we were duplicating what was initially there, we had to work from the early drawings."

According to Marcone, the slate was laid as shingle siding, and the

pieces were 8 x 16 inches, with some cut to a point. "The slate was installed using copper nails," he said. "We used two nails on the top of each slate, and because of the way they were hung, you can't notice them. With the shingle effect, the nails are not exposed."

Gilbert and Becker Co. was also in charge of installing the copper roof and detailing. According to Marcone, the roof was flat-seamed and soldered,

and the detailing was cut-to-size and bent. Installing both the slate and the copper simultaneously, the job took approximately three and a half months to complete.

Now finished, the initial historical goal has been reached, according to Selwyn. "It's terrific," she said. "In a lot of ways, it looks like it has been there all along, and it is sufficiently high, so it is visible from great distances." □

### Memorial Hall at Harvard University Boston, MA

*Architect:* Childs Bertman Tseckares, Boston, MA

*Preservationist:* Preservation Technology Associates, Boston, MA

*Contractor:* Shawmut Design and Construction, Boston, MA

*Harvard Project Manager:* Elizabeth Randall

*Stone Suppliers:* New England Slate, Pittsford, VT (Unfading Black and Unfading Red slate); Vermont Structural Slate Co., Fair Haven, VT (Unfading Green slate); Maritime Canstone, Halifax, Nova Scotia (buff-colored sandstone)

*Installers:* Gilbert and Becker Co., Boston, MA (slate); Phoenix Bay State Construction Co., Boston, MA (sandstone)