

# Upgrading A Princeton Landmark



The renovation and restoration of Blair & Buyers Residence Hall at Princeton University provided the building with 21st century features, while preserving its historic character

*by Michael Reis*

## **Blair & Buyers Hall Renovation/Restoration, Princeton, NJ**

**Renovation/Restoration Architect:** Einhom Yaffee Prescott, Architecture & Engineering, P.C., New York

**Masonry Contractor:** Elite Masonry Restoration, Princeton, NJ

**Stone Supplier:** Vickery Stone Co.

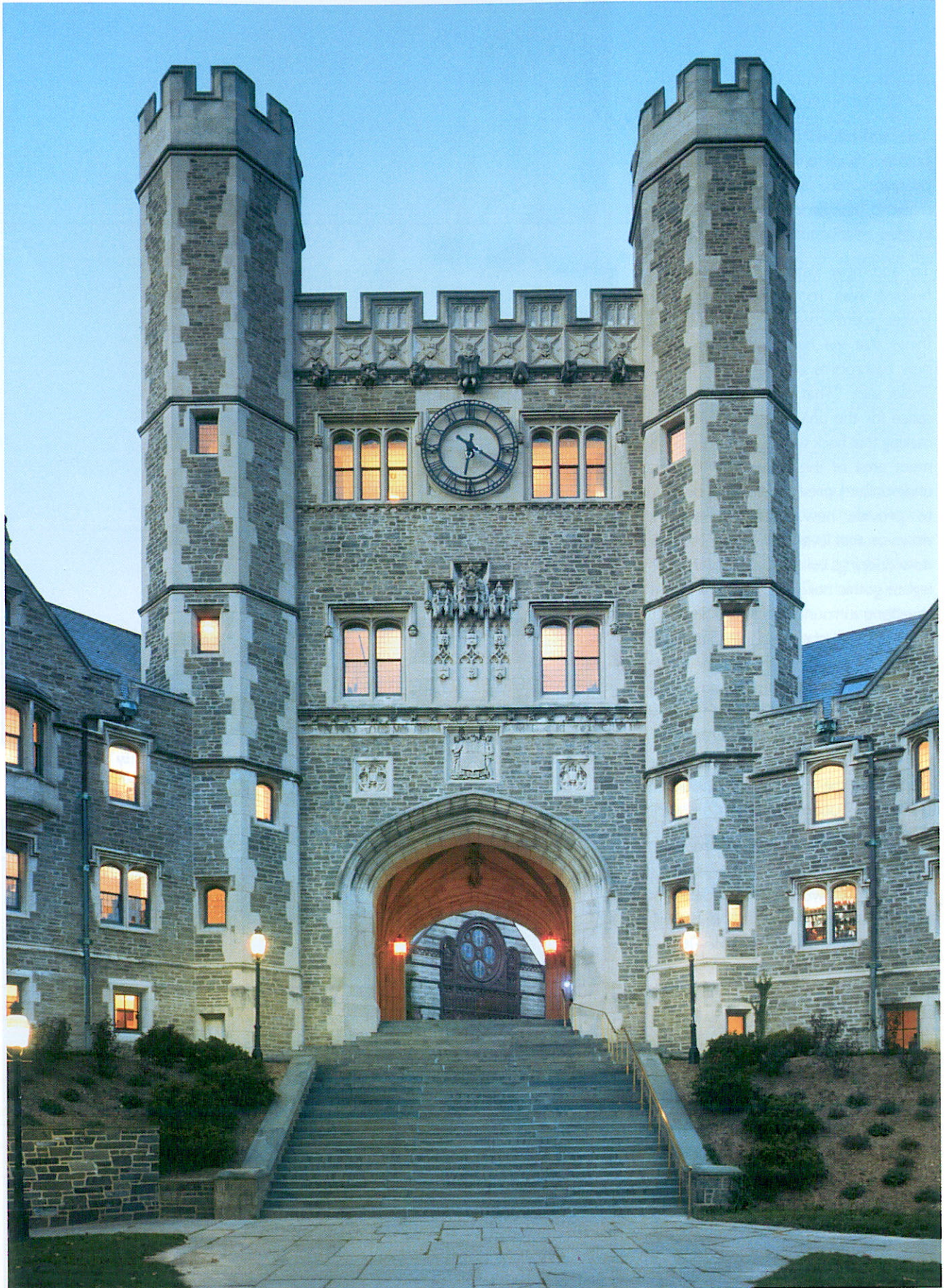
The campus of Princeton University is a living model of stone architecture. Not only do its historic buildings offer a broad cross section of stone materials from around the country, but they also feature a level of stone detailing not commonly found in today's architecture. With this in mind, renovation and restoration work on the campus requires an extremely high degree of precision and attention to detail. This was the case for the renovation and restoration of Blair & Buyers Residence Hall, which was recently completed by Einhom Yaffee Prescott, Architecture & Engineering, P.C. (EYP), a firm with offices in Albany, NY, New York City, Boston and Washington, DC.

Constructed in 1896, the building was the first Collegiate Gothic residence hall built on the Princeton campus. Comprised of Wissahickon schist, Indiana limestone and bluestone, the building was designed to be a major campus entryway. In fact, students once entered the campus by climbing Blair Hall's long flight of bluestone steps and passing through its large limestone archway.

After a century of use, however, the building's 75,000-square-foot interior was showing signs of wear, and while the majority of the exterior stonework was sound, the slate roof was in need of replacement. EYP's role on the project was to address these issues and imple-

ment several upgrades for the building, including the following areas: plumbing, electrical and data systems; a fire suppression system; bathroom and common spaces; accessibility issues; and life safety concerns. Overall, the project encompassed a four-year program to completely renovate the building at a cost of over \$15 million.

"When we got there, it had been serving as an undergraduate dorm for over 100 years, and as you can well imagine, 100 years of student use was incredibly jarring on a building like that," explained Mark Thaler, Historic Preservation Principal with EYP. "The stonework was generally in good condition, however.



Originally built in 1896, Blair & Buyers Hall was designed to be the major gateway to the campus of Princeton University. The building recently underwent a four-year, \$15-million renovation and restoration effort directed by Einhorn Yaffee Prescott, Architecture & Engineering, P.C.

The stonework that we needed to [address] was to incorporate the new program inside the building and still maintain the historic appearance of the building relative to its original style."

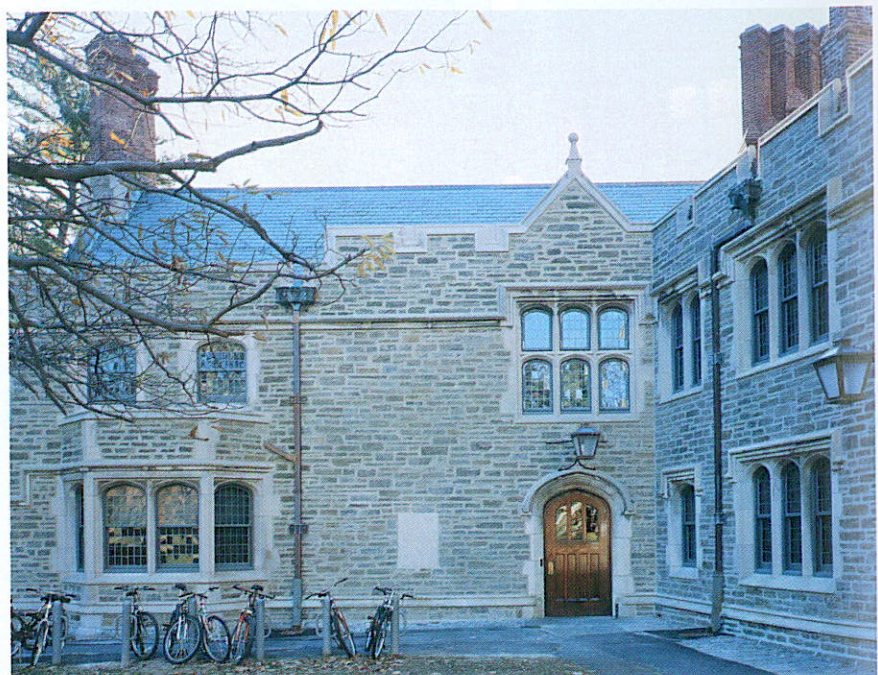
To add new bathroom facilities, the building was reconfigured, and new spaces were created. "One of the things that we had to do was create new bathrooms on the upper floors," Thaler said. "That created a loss of bed space for the university, so the way of making that back was to utilize the basement area of the building, which was underutilized previously. We decided to provide new student bedrooms down on that level and create new window openings on the facade of this collegiate gothic building. We added new limestone surrounds that were similar to the design of the few that had been there. Even though the rooms inside are very modern, the exterior is very traditional." The existing floor level of the basement was lowered by 18 inches, and new window openings were punched in the south facade to create bright new student rooms.

The changes to the building required some re-positioning of the exterior stonework as well as the addition of new stone in some areas. "We actually moved some [Indiana limestone] tracery that was there, and provided new tracery for other windows," Thaler said. A total of 28 new casement windows were set within tooled limestone surrounds.

According to Thaler, the new Indiana limestone to match the existing stone was readily available, and it was precisely tooled to match the original tooling. "The carved work was really a dead-on match for the work done in 1896," he said. "I would say that the new stone window surrounds were technically the most demanding to match the tooling of the original stonework."



To create more student housing, the existing floor level of the basement was lowered by 18 inches, and new window openings were punched in the south facade to create bright new student rooms. In all, a total of 28 new casement window surrounds were set within tooled limestone surrounds.



The majority of the exterior is comprised of Wissahickon schist — which is quarried in the nearby Philadelphia area — with Indiana limestone trim, window tracery and door surrounds.



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*A critical aspect of the project was to ensure that the new stonework would be completely imperceptible from the existing 100-year-old stonework.*



*For the new student areas at the lower levels, the existing stone foundation was exposed to make it a feature element.*

Creating access for the disabled also required modifications to the original stone facades. Two new elevators were installed, one which provides access to the towers and long wing of the building and another to service the shorter wing. The first elevator required that an existing entry door with an Indiana limestone surround be modified. The floor area inside the entry was lowered to match the exterior grade, and new-tooled limestone surrounds were created to extend the doorway architrave.

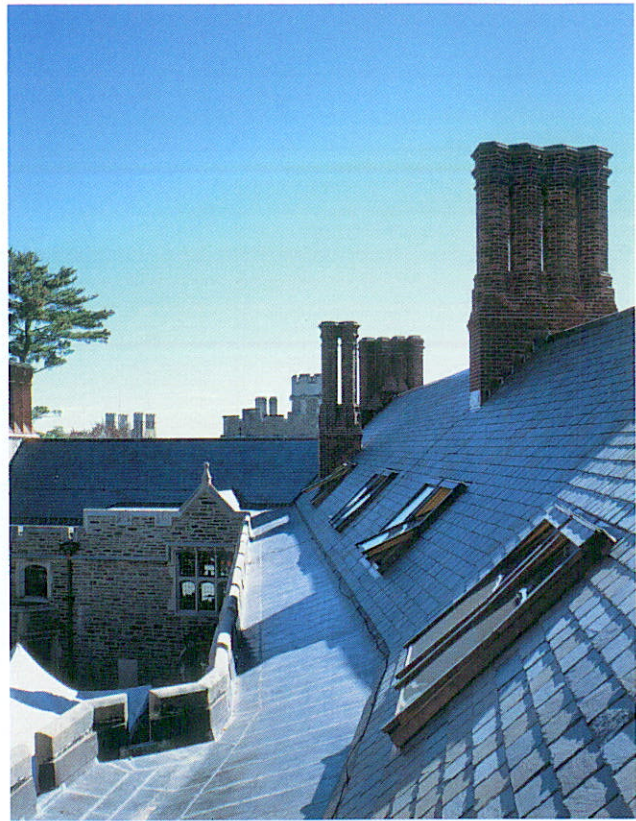
The second elevator required the creation of new carved limestone window surrounds and coping stones, and new schist had to be installed to infill former window openings. The schist used as infill was salvaged from other areas of the building. "We were lucky," Thaler said. "Because of the new openings we were making for windows, we had enough to use as infill in other areas." To perfectly replicate the existing stonework, the masons from Elite Masonry Restoration even used a lime mortar, as opposed to a Portland cement variety.

The second elevator also required raising the limestone crenellated parapet that runs along the roof battlement. "The difference between the old and the new is imperceptible to all but the architects and construction workers who worked on it," according to the architects.

Other exterior work included the installation of new roof windows, rebuilding 11 out of 14 ornate brick chimneys with new bluestone chimney caps, the creation of a fire stair in bluestone, epoxy repair of cracked limestone trim and selective cleaning and repointing of the stone. Also, a new roof of semi-weathering gray/green slate was installed along with new copper flashings and downspouts.



The foundation stone — as well as the brickwork — was all cleaned, repaired and repointed.



A new roof of semi-weathering gray/green slate was installed along with new copper flashings and downspouts. Also, the project specified the re-building of ornate brick chimneys with new bluestone chimney caps.

The renovation and restoration of Blair & Buyers Hall also included interior stonework. "One of the things that we really thought was important about the feel of the building was the stonework," Thaler said. "So when we created new [interior] areas, we used the natural stonework that was already there as part of the foundation. We exposed it and really made it a feature. Some of the stone was buried because we had lowered the floor. And the rest of the wall was covered by a parging, so we removed the parging and repointed the stone and the brick bearing wall above it." In this area, the walls were pointed with a lime-rich mortar, with some Portland cement added to the mixture.

Additional stonework includes bluestone paving for the interior, which continues the paving treatment of the adjacent walkways. Thaler pointed out that

the use of bluestone for the interior required some insight by the university administration. "There are always budget constraints and initial cost restraints, but because Princeton University looks at things with a larger view, we were able to make it happen," he said.

Prior to construction, the new and modified stonework was carefully evaluated to be sure that the original design would remain intact. "We did some mock-up work, especially in the basement corridors and areas where you were going to be right up against [the stone]," Thaler said. "There were also numerous samples and mock-ups of areas to be repointed as well as window tracery."

During the project, EYP had a representative on the site for two days each week, supervising all aspects of the project, including the masonry. "The masons on the job were a good firm,

and they responded pretty well," Thaler said. "Also, Jon Hlafter is head of planning department at Princeton. He has really been the person in charge of the campus grounds, and he has been the protector of the feel of the campus. I think it was a given going in that the feeling and spirit of Blair Hall was going to remain throughout."

Now the project is complete, it has been very well received, and it was the recipient of a Tucker Architectural Award for excellence in stonework. "It got rave reviews," the architect said, adding that EYP was subsequently asked to work on several other projects on the Princeton campus. "The nicest reaction is from the college itself. They have been really thrilled with the project. It has a great feel to it, because the [new work] really respected the original." ■

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