



CAPITOL IDEA

A multimillion-dollar restoration of the Wisconsin State Capitol means out with the new and in with the old

By Morgan Luciana Danner, *Production/Web Editor*

Instrumental in the birth of the skyscraper, the late New York City architect George B Post designed a more ornate type of building in 190d that has remained a monument to him and to classic design. His Wisconsin State Capitol in Madison was designed to be built in stages because of financial limitations and the necessity of housing the government during construction. The interior also has changed as the building meets the needs of a growing state. Now, some 14 years and \$141 million into its most extensive renovation ever, the Badger State capitol has recaptured virtually all of the glory that it once had in its heyday.

"Certainly, the rotunda is 100 percent restoration," says Anne Biebel of Madison-based Isthmus Architecture, the project's architectural historian.

Adds Daniel Stephans, project manager for the State of Wisconsin, "The goal of the project was to preserve or restore public areas and to renovate the private office areas with respect to all of the original building fabric."

The exterior composed entirely of white Bethel Vermont granite and including stone ornaments and statues, balustrades, columns, walls and stair treads, underwent a sponge bath during mid-2001. That summer, tiny polyurethane sponges impregnated with grit that was no harder than the stone were shot by pneumatic pressure at the granite. The bath was necessary- to exfoliate the stone, which was returning to its natural clay state, according to James Schumacher, senior project manager with contractor J.P Cullen & Sons, Madison.

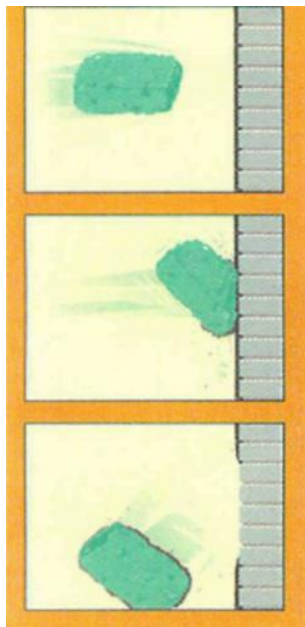
Attempting to determine the proper meth-

A rich example of Beaux Arts architecture, the Wisconsin State Capitol in Madison contains four wings in which grand staircases do not obstruct the view of the ground floor or first-floor rotunda. Every square foot of the building underwent a transformation, requiring painstaking matching of white oak and wood stain. *Photos: Nels Akerlund*



The capitol exterior is clad in white Bethel Vermont granite, which has been returned to its former state.

Conventional abrasive bonded into sponge media



In sponge blasting, stone ornaments, statues, balustrades, columns, walls, stair treads and the dome were bombarded with tiny sponges shot pneumatically. They flatten on impact and grab the dirt before falling. Source: Sponge-Jet INC

od to clean the exterior, The building team Tested blasting with water, baking soda, carbon dioxide and sponges in the summers of 1999 and 2000." The goal was not necessarily to clean the building, [but] to conserve the stone so that it would not continue to exfoliate.' explains Schumacher sandblasting would have cut into the stone, and blasting with baking soda, carbon dioxide and water beads left a mess. So sponge particles provided by Eliot, Maine-based Sponge-Jet Inc. were used. They flatten on impact, exposing bonded abrasives and dislodging contaminants from the granite. After dropping from the surface, the sponges resume their original shape. A vacuum system recovers the sponges, transports them to a machine that removes contaminants and then reloads them for nearly continuous blasting

Process new to U.S. conservation

Although the sponge blasting technique has been used since the early 1990s for cleaning the interior of tanks and paint booths, as well as the fuel cells of airplanes, its employment in cleaning the capitol was among the earliest for building conservation efforts in the United States, the technique has been used in Europe, however. "Now that its been done [here], it's going 10 be done a lot." Schumacher predicts.

Construction technology has changed greatly since the early 1900s, when the state Capitol was constructed without expansion joints. Over the years, responding to temperature fluctuations, the stone cladding materials expanded and contracted, creating their own expansion joints. The building team addressed

those areas to allow for the free movement of the building materials, alter monitoring them to see how sunlight heats up particular areas which then cool. "We actually installed soft joints in those locations." Schumacher says.

As office areas were rehabilitated, building materials that were unneeded where they were, such as stone and wood, were used elsewhere in the building.

Most of the floors were marble, which was removed for asbestos abatement. In the public areas, every piece was tagged, marked and went back to its original location. If it could not be salvaged, the state had replacement marble from other buildings that had been razed around the state; some from prisons and some from schools. "We were very fortunate when that happened," says Charles Quagliana, who began this job as project manager for the state and finished as project architect for Isthmus. Of note, marble partitions in bathrooms had to be moved to allow for ADA compatibility. Quagliana credits the masons for making stonecutting appear as easy as cutting plywood "These guys were just artists. They made it look relatively simple." he says.

A search for materials

Finding the much rarer white oak, as well as matching the new with the old. Proved to be a real challenge, says Schumacher New mill-work knives were created to match the trim.

The original wood was stripped, restained and finished, requiring painstaking matching of existing white oak with new white oak the rule was to restore, and where renovated, reuse," says Stephans.

Doing so was not always easy. As Schumacher explains, old wood accepts stain differently from new wood in the color, depth and grain. So an artist's touch was necessary.

Finding clay tile that matched the size of the original wall tile also was difficult. While those tiles were popular in the early part of the 20th century, Today only a couple of manufacturers offer the product. Getting that type of tile was important, because it is really lightweight and fireproof, says Quagliana.

By the time the project was completed last September, every square foot of the building had been touched by hand. "What I have most of is paperwork," says Stephans, "We went very fast, paper to follow."

BDC