



Umstead Hotel

Research Triangle Park, NC

Project Spotlight: July 2006



LOCATION:
Research Triangle Park
Cary, NC

ARCHITECT:
Three Architecture,
in collaboration with
the David Allen Company

**GENERAL
CONTRACTOR:**
Hunt Construction

TILE CONTRACTOR:
David Allen Company

STONE SUPPLIER:
David Allen Company

**TILE INSTALLATION
SYSTEM:**
LATICRETE International, Inc.
Bethany, CT

LATICRETE DISTRIBUTOR:
Best Tile of North Carolina

LATAPOXY 310 instead for Umstead Hotel

BY Eric Carson

Research Triangle Park, founded in 1959, is now the largest research park in the world. Located at the epicenter of Durham, Raleigh and Chapel Hill in the Research Triangle area of North Carolina, the 8 x 2 mile strip is home to 140 companies which collectively employ over 45,000 people. Often compared to California's Silicon Valley, the park is one of the most prominent high-tech scientific research and development centers in the United States.

Named for its geographic location between Duke University, North Carolina State University and the University of North Carolina at Chapel Hill, "The Triangle" boasts the most affluent and educated populace in the Southeastern United States. The largest IBM operation in the world is located within the seven acre pine forest, and the park has also hosted software giant SAS (Statistical Analysis System) since 1976.

SAS was co-founded by Jim Goodnight, the current CEO, but lately it's been his wife Ann's name that's been splashing all the headlines. That's because the Umstead Hotel, owned and developed by Ann, is slated to open in January 2007.

Located in Cary, the heart of The Triangle, the Umstead Hotel is an aspiring five-star hotel on 12 acres of land with an adjoining three-acre lake that could cost as much as \$75 million to complete. With 150 oversized rooms, a 14,000 square foot spa, 10,200 square feet of meeting space, a banquet-style ballroom and world-class restaurant featuring Modern American cuisine, it's not hard to see why.

But before the guests could unpack and enjoy the casually elegant amenities, there were a few major challenges to consider in the construction process. The original idea of securing the exterior stone façade with a traditional mechanical hanger system proved too time consuming for the quickly

approaching grand opening, and with irregularities found in the concrete retaining walls that would serve as the substrate further complicating the installation, Three Architecture, in collaboration with the David Allen Company, decided to switch to an epoxy-based system. Three Architecture, which prominently lists LATICRETE International's products in their specifications binder, knew exactly who to turn to. And LATICRETE had the right product ready and waiting: LATAPOXY 310® Stone Adhesive.

LATAPOXY 310 Stone Adhesive is a two-component, high strength construction epoxy adhesive for spot bonding large format tile and stone on vertical surfaces, for either interior or approved exterior applications. LATAPOXY 310 offers major advantages over mechanical anchoring, plaster and wire, and the thin-set method of veneer installation, the first of which is speed of installation. The increased productivity and lower labor costs have been greatly enhanced by LATICRETE's development of the LATAPOXY 310 Cordless Mixer, which is an exclusive dual component mixer that quickly and easily dispenses LATAPOXY 310 Stone Adhesive onto ceramic tile, porcelain and stone veneers. Hundreds of square feet can be installed per day with less effort and greater success with this system. LATAPOXY 310 also allows for quick and easy plumb adjustments while the stone is in place to compensate for uneven walls and thickness variations in the stone, which was a major concern in the Umstead Hotel installation.

LATAPOXY 310 Stone Adhesive with the 310 Cordless Mixer seemed like the perfect solution for Three Architecture, the David Allen Company and the Umstead Hotel, but Ann Goodnight and her development group needed a little more convincing. Not a problem, enter Edward Hearn and the engineering firm of GeoTechnologies, Inc.



Under Hearn's direction, GeoTechnologies performed a load test to determine if LATAPOXY 310 was capable of securing the 20" x 30" panels of limestone as the exterior façade of the Umstead Hotel. The result of Hearn's study was a resounding "yes." In fact, Hearn terminated the test in process, not because LATAPOXY 310 was about to give, rather, because everything around it was.

"We got up to about 5,000 pounds of pull force and did not pull the panel of the wall," Hearn said. "But we were getting close to the capacity for the nuts and the screws that we were using and had to terminate the test."

For testing purposes, a 20" x 30" panel of limestone was drilled in the center of the panel on six inch centers, with a six-inch long high-strength bolt and a 1 inch diameter washer placed through the back of the panel protruding out the front. Six spots of LATICRETE 310 Stone Adhesive with an average diameter of 3.5 inches were evenly spaced on the back of the panel, which was attached to the concrete retaining wall. After incremental raises in pressure, the calibrator was finally set at 4,970 pounds, and even then the panel did not fail or show any signs of movement under the tension. The conclusion: LATAPOXY 310 was indeed the right product to secure the limestone panels to the retaining walls of the Umstead Hotel.

"We did some testing with regards to resistance," said Dan Hammond of Three Architecture, "and LATAPOXY 310 was actually much stronger than the original design. And it sped up the installation. This was not a cost savings move. It was really due to time constraints more than anything."

With LATAPOXY 310 Stone Adhesive now in the fold, the David Allen Company was ready to begin the process of adhering the limestone panels to the six story structure. The Umstead Hotel is a combination of glass, composite metal, aluminum and limestone panels designed to offer a clean, modern and sophisticated look, and the varying thicknesses of the limestone panels enhanced this image by creating the perception for onlookers that the panels are somehow waving in and out. The David Allen Company enjoyed the speed of installation that LATAPOXY 310 provided, but the benefits of this system trickled down through the entire exterior construction process.

"The 310 Cordless Mixer worked great for us," said Harry Baulch, David Allen's project manager at the Umstead Hotel. "It was definitely the appropriate solution. It provided us a lot of flexibility to deal with the day-to-day issues on the jobsite. Our crew could take breaks without having to throw out the epoxy in the mixing nozzle, and it accelerated the process to the point that it allowed another trade access to their work site at an earlier date. That was really the driving factor. We were able to accomplish more with the same crew in a much shorter period of time."

It's only fitting that the Umstead Hotel, located in the heart of Research Triangle Park, the scientific center of what popular culture has coined the "New South," was only realized through scientific research. And that LATICRETE International, a company with over 50 years of commitment to researching and developing innovative solutions for ceramic tile and stone installation systems — passed the test with flying colors.





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50 years
of innovation

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