SCIENCE. SERVICE. SOLUTIONS.

CARLISLE COATINGS & WATERPROOFING

PROJECT PROFILE

University of Tennesse, Knoxville, TN

Old World Architecture Meets New World Technology

The Student Health Center at the University of Tennessee at Knoxville has come a long way since it was first built in 1971. Then, 20,000 students attended the University. The campus health clinic was a 16,000-square-foot building that dispensed antibiotics and treated typical student ailments – sprains, seasonal bouts of the flu and mononucleosis, and issues related to reproductive health.

Today, enrollment at UT Knoxville has nearly doubled. As the student population has grown, so too has its health care needs. Contemporary students face more complex issues like eating disorders, alcohol and drug abuse, and a growing number of psychological issues. Across the country, prevention is the primary goal of modern student health services.

A newly constructed 109,242-square-foot Student Health Center is helping UT Knoxville meet its preventive medicine goal. Scheduled to open Fall Semester 2011, the LEED® accredited building consolidates into a single facility physical and mental health services with the health education-related Safety, Environment and Education Center (SEE Center). It provides outpatient health services and information for the students, staff and administration. The two-story building features 30 exam rooms, ten doctors' offices, ten nurses' stations, a laboratory, pharmacy, x-ray suite, urgent care facilities, physical therapy center, women's clinic, allergy clinic and a counseling center staffed by 29 counselors.

Design work for the $14-million multi-purpose health care facility began in 2008. Early on, preventive medicine was also a consideration as it related to the building's upkeep. Questions were raised not only about how the building would be used but also how it would be maintained. With more than 100 existing buildings on campus, a top priority was that the Student Health Center be maintenance free, particularly when it came to waterproofing. Deborah Brooks, a partner with Knoxville-based Brooks and Associates, said the design committee was looking for products that could "live the life" of the building. At UT, that could be 50 years or more.

So how does a waterproofing system newcomer like CCW's MiraPLY get specified for a building that is expected to last a half century? Ultimately, it came down to the Carlisle name and convincing key decision makers that MiraPLY was the best possible answer if building longevity was a key consideration.

Carlisle Coatings & Waterproofing's MiraPLY product combines the flexibility and puncture resistance of thermoplastic polyolefin (TPO) with the superior concrete bonding properties of butyl alloy adhesive to create a watertight membrane that will stand the test of time. The end product is lightweight, flexible, resists UV exposure and comes with a factory-applied tape for lap areas. Five years in the making, MiraPLY was designed with commercial positive and blind side waterproofing applications in mind. CCW backs MiraPLY with a 20-year-warranty, relying on the successful use of both technologies for 33 years.

University of Tennessee at a glance

Location:
Knoxville, TN

General Contractor:
Blaine Construction Corporation

Carlisle Coatings & Waterproofing Contractor:
ABG Waterproofing

Carlisle Coatings & Waterproofing Products:

- MiraPly™
- MiraPly-H
- LiquiFiber™

Carlisle Coatings & Waterproofing
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When the Student Health Center was ready for waterproofing in April 2010, Kevin Riggs, Senior Project Manager for Blaine Construction Corporation, was concerned about two things: the safety of his crew and keeping the job on schedule. A particularly rainy season had put the job behind schedule so he needed a product that was quick and easy to install. In addition, he wanted to avoid the potential hazards inherent when working with heat-welded seams.

"We didn't like the product that was originally specified because the PVC had to be heat-welded at all seams," Riggs said. "I wanted a safer product. I had not worked with MiraPLY before but had read some product literature. Otis Cantwell, the waterproofing contractor, convinced me it was a good and safe product. He told me it was installed just like other sheet-applied membranes. That convinced me to ask the design team to take a look at MiraPLY as an alternative."

The design team was skeptical but later convinced when they realized MiraPLY would be installed in an area designed to remain unoccupied space. It also helped that MiraPLY had a 20-year warranty and had been installed successfully at the Tampa International Airport and the Davis Street Arts Magnate.

"Without the warranty, I don't think they would have approved it," Riggs said.

With a CCW training advisor onsite, ABG Waterproofing completed nearly 5,000 square feet of below-grade slab waterproofing, including two elevator pits and one steam entry pit. They placed sheets of MiraPLY-H over penetrations by tracing the shapes, cutting them out, and then sealing them using CCW mastic and LiquiFiber products.

LiquiFiber is a web-like mat made from glass strands and a water-soluble binder to easily conform to difficult details. To complete the process, ABG rolled each seam to ensure each penetration was completely waterproof.

"We learned that you have to roll the seams good and tight," said Bob McCoy, a supervisor with ABG Waterproofing. "You can't skip that step."

Extreme heat and humidity made installation a challenge, especially in the elevator pit.

"The biggest challenge was the blindside waterproofing we did in the elevator pit," said McCoy. "Most of the standard cast was in place and on walls where MiraPLY was placed directly, we didn't have any problems. We did have a few problems putting it down on the slab underneath the pit. It was hot and we had a hard time with the butyl tape release paper sticking to itself."

Calls to CCW technical support helped solve the tape problem – installers were advised to keep the tape in coolers. "I understand it [the tape] has been fine-tuned and this doesn't happen anymore," said McCoy.

"With expert technical field support that also included several jobsite visits," said Riggs, "the installation went smoothly." Now, more than a year later, he remains satisfied with the product's performance.

"In the end, MiraPLY saved us two to three weeks' time," said Riggs. "ABG did a good job installing it. We will use it again."

"The combination of the TPO and butyl make it a unique product," said McCoy. "In my mind, MiraPLY's biggest advantage is that it is a dual system. If one system fails, the other is there to back it up. When you put that quality of product on a building, it's there forever."

And that's just the kind of preventive medicine the design team had in mind when envisioning products that could "live the life" of the building. Thanks to its thoughtful design and solid construction, the class of 2061 is likely still to be seeking healthcare at the UT Knoxville Student Health Center.

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