

SarnaProof

PROJECT PROFILE

Luce Field House
New London, CT

**Project:**

Luce Field House
New London, CT

Building Owner:

Connecticut College

Architect:

Dilullo Associates Inc.

Roofing Contractor:

Capeway Roofing Systems

Roofing System:

Adhered system, G410, 60 mil
membrane in custom tan color

Project Size:

60,000 sq. ft.

Completed:

August 2004

A Great College is More than Its Books

Connecticut College is a small liberal arts college in New London, Connecticut. Originally made famous as the women's college host of the American Dance Festival, the College became co-ed in the 1970's. To attract male students, it built several state-of-the art athletic facilities, nearly all with hyperbolic paraboloid roof structures. The brainchild of well known architect Daniel Tully, these buildings allow for huge structural freespans with few interior support posts. As a result, they became a popular choice for college athletic buildings, particularly in the Northeast.

The Luce Field House was built in 1983 and expanded in 1991 to include two indoor courts and a rowing tank. Now over 20 years old, the Luce Field House is still one of the most important facilities for athletic life on campus. As a Division 3 school that does not offer athletic scholarships, Connecticut College counts on

its high-quality facilities to attract talented scholar athletes to the College. However, in 2003, the rolled asphalt roof on the field house was failing terribly. Leaks were reported throughout the building. The ability to keep water out of this important structure was critical. While a new roof would consume most of the College's maintenance budget, Manager of Planning, Design and Construction for the College, Stephen George, was concerned that they would lose the building if drastic action wasn't taken immediately.

Time For a Very Different Approach

On the down side, the Luce Field House clearly needed a new roof. On the upside, because the college has a number of these structures, they had some experience on how best to proceed. The buildings which incorporated rolled asphalt as the roofing material, were failing. Moreover, discussions with facilities directors at other institutions with hyperbolic paraboloid structures told Connecticut College that the

rolled asphalt roofing systems were not working on their buildings either.

The College had used a single ply roofing system from Sarnafil when it built its most recent athletic facility, the Natatorium, in 1992. The Natatorium is another building with a hyperbolic paraboloid roof and the roofing contractor, Capeway Roofing, had done an excellent job on the installation. The roof has performed wonderfully and is poised to continue performing for many years to come.

Sarnafil Rises to the Top

Once the College determined that it wanted to proceed with a membrane instead of asphalt, the question became which vendor to do business with. The College puts all projects of this scope out to a competitive bid. However, there are factors beyond price that are critical in the decision-making process. The College contacted 4 or 5 contractors representing several different roofing manufacturers. Rubber (EPDM) was eliminated as a potential roofing material from the start because of its black color, and the roof color is an important design element for the college.

Before making a selection, Steve George wanted to know more about the manufacturing process. "This can be a particularly nasty business, from an environmental standpoint. It is very important to the College that our buildings are constructed in an environmentally friendly way, whenever possible. I was particularly intrigued that this business could be based in Massachusetts, where restrictions are strict. I went to visit Sarnafil and came away very impressed. They are really the only ones still making their own membranes. From a technological standpoint, they are state of the art."

In the end, Capeway Roofing was selected

to install the Sarnafil roof. "Capeway really went the extra mile to work with us," said George. "Moreover," he continued, "because Sarnafil offered the option of using a custom color, we chose a light brown, to match the shingles on Dayton Arena next door."



Complex roof lines presented a roofing challenge.

According to project architect, Dan Dilullo, the roof's original camel color had evolved into a patchy black through various roof repairs. He worked closely with Sarnafil, Capeway Roofing and the College to find a shade of brown that could be match the new sheet metal and wood trim on the building.

This is No Ordinary Roof

Architect Daniel Tully describes his roof structures as being something like a Pringles® potato chip. Curving both in and out, they are framed with laminated plywood and very complex to construct. Re-roofing them is no simple task. However, Capeway Roofing was uniquely qualified to handle this difficult re-roof project. Joe Calheta, the owner of Capeway Roofing, personally supervised the Connecticut

College Natatorium project in 1992, and agreed to supervise the renovation of the Luce Field House roof.

The reconstruction began with removal of the rolled asphalt roof and replacement of laminated panels that had disintegrated as a result of the original roof failure. Safety was an enormous concern – both to the contractor and the College. Because the slope of the roof panels is very steep in places, and the substrate slippery, walking on the roof could be quite dangerous. As additional protection, a fence was built around the perimeter of the building before construction began to guarantee a safe roof installation.

The biggest challenge for Capeway Roofing was in roofing this complex structure to ensure a watertight application. The support system resulted in a number of different levels in the roof substrate. Layers of insulation were used to create a flat surface for the membrane. "Because of the unusual roof configuration, it was easy for the seams in the membranes to look crooked," said Dilullo. "I gave Capeway a guide to help them fit the roof neatly. Each of the sheets of membrane were painstakingly trimmed by hand by the crew to ensure a perfect fit before it was installed. Luckily Capeway Roofing has worked on a number of roofs like this in the past, and they clearly knew what they were doing."

And what does Dilullo like best about the finished product? The appearance of the new roof system. "This roof really changed the color scheme of the building and returned it to its original glory. The school mascot is a camel, so it's only fitting that the most identifiable part of the building should be its camel color roof."

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