A BNP PUBLICATION

MAY 2003

Roofing Contractor

The Premier Magazine for Commercial and Residential Roofing and Insulation

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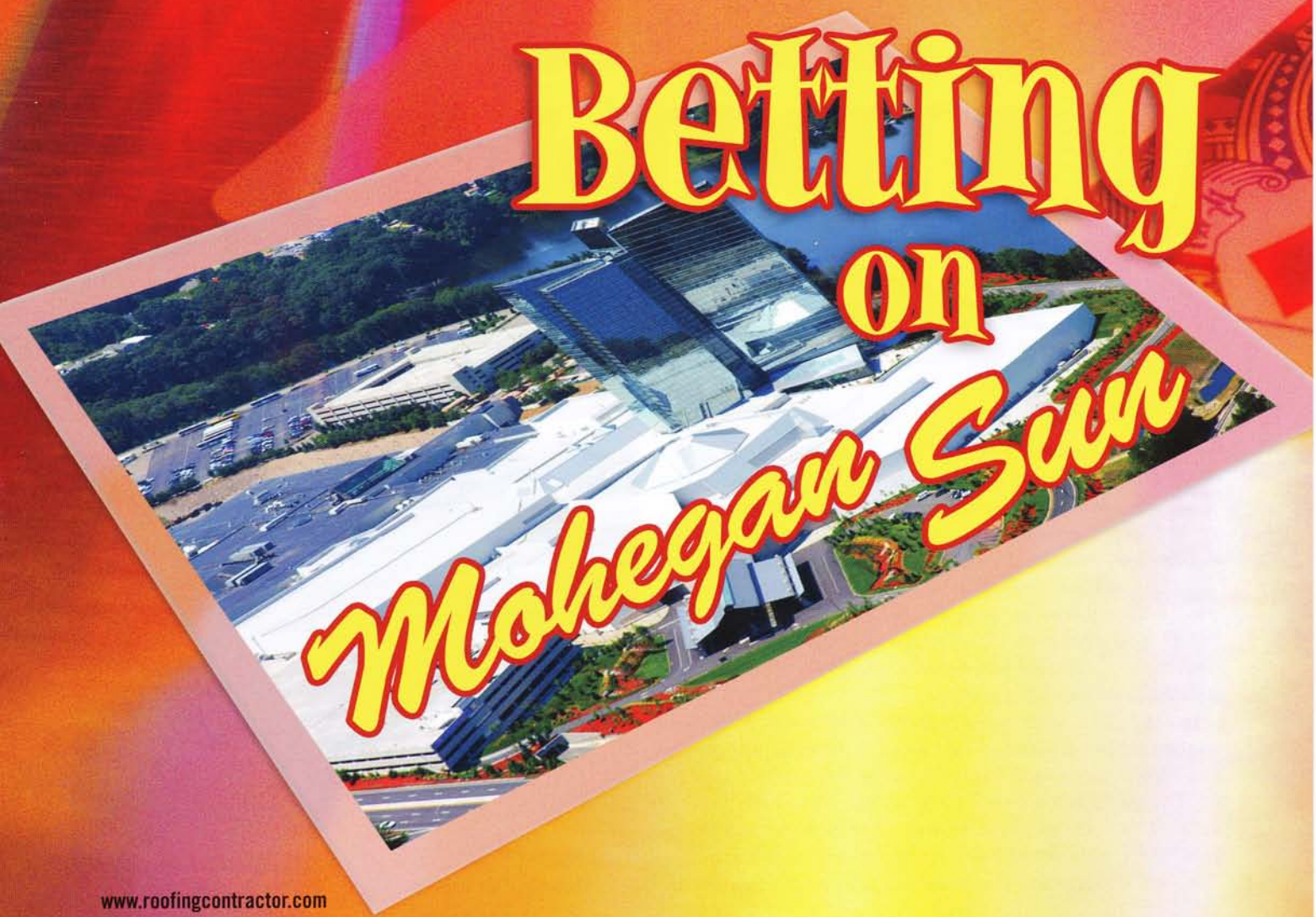
pg. 5



Betting on Mohegan Sun

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PROJECT UPDATE:

WET INSULATION MEETS ITS MATCH

by Josephine A. DeLorenzo

In April 2001, *Roofing Contractor* reported on a project completed at Iowa State University. To recap, the university's Scheman Center, which comprises several meeting rooms, an auditorium, an art gallery and an atrium/reception area, was built in the late '60s. The original coal-tar pitch roof prematurely failed. It was hastily replaced using copper cap metal, chunks of which had a tendency to blow off when it was windy. Requiring constant repairs, this roof was replaced about 19 years ago with mechanically fastened Hypalon.

In May 2000, an infrared moisture survey was performed on the roof and it revealed four areas of potential wet insulation. Core cuts verified that these areas were indeed saturated. The wet areas covered 1,780 square feet of the 63,062-square-foot roof, or approximately 3 percent. By the fall of 2000, there were active leaks and many fasteners had pulled loose. On windy days, you could actually see the roof flutter.

Core cuts were made in two of the previously identified wet areas.

wCore cuts show dry insulation.

Central States Roofing, Ames, Iowa, won the bid to do the reroof job. The company had done other work for the university and had the right experience. Mark Hanson, president of Central States, told us that over the course of the last seven years, his company had done in excess of 6,000 squares with the new generation of thermoplastics. Central States does all types of commercial roofing — 95 percent single-ply and 5 percent BUR. About 65 percent of its projects are reroofs; the rest are new construction.

The 675-square Scheman Center job was specified with white thermoplastic CPA from 2001 Co., Waterbury, Conn. The 2001 system, as we reviewed in the previous article, is a vented roofing system. In a standard system, high winds can create an inequality in pressure, resulting in a billowing effect. A vented roofing system uses one-way valves to let air pressure out, but not in. The membrane is air-sealed to the deck with the valves placed on the perimeter.

Cuts were made through the new membrane, existing Hypalon membrane and insulation, down to the vapor barrier.

According to Tim Fogue, project designer for ISU's Facilities Planning and Management department, the 2001 system had been used on other buildings at the university that had old built-up roofs — complete with asbestos. The 2001 system was a good choice because it allowed the university to avoid the high cost of a tear-off. As for the Scheman Center in particular, "The building is in use 16 to 18 hours a day — it's a revenue generator," says Fogue. "We wanted the least disruptive system."

As *Roofing Contractor* reported two years ago, the job to reroof the Scheman Center was relatively straightforward and went off without a hitch. In July 2002, about 20 months after the work was completed, Chuck Beyer of Beyer Roofing Sales, 2001 Company's local representative, requested that core cuts be made in two of the previously identified wet roof areas. Cuts were made through the new membrane, existing Hypalon membrane and insulation, down to the vapor barrier over the existing deck.

"The insulation consisted of 1½ inches of perlite and ½-inch wood fiberboard directly below a Hypalon membrane," says Fogue. "The vapor barrier appeared to be a modified asphalt membrane consistent with a modified base sheet. Upon observation, and as can be seen in the photographs, the insulation was completely dry."

Is Fogue convinced that it was the roofing system that caused the insulation to dry out? The answer, in a word, is yes. "Considering the location of the vapor barrier over the existing deck below the insulation, the drying out of the wet insulation could only have happened upward and be directly attributed to the roofing system."

Beyer agrees. "The fact that there is a vapor barrier on top of the metal deck attests to the system's ability to dry out an existing roof," he says. He attributes the success to the method of installation. "By creating air seals and installing one-way valves in the location of the wind vortex, we create low pressure under our membrane. This allows the water trapped to turn to vapor, rise to the bottom surface of the membrane with the air molecules, and then be sucked out the valves as wind blows over the roof."

Perhaps more importantly, "This drying ability is not a years-down-the-road proposition," Beyer continues. "As can be shown at the Scheman Center, from the time of installation until we performed core cuts 20 months later, the roof could have dried long before the core cuts were performed." RC

For more information, call Chuck Beyer at Beyer Roofing Sales, 641.357.8194. Company, P.O. Box 2557, Waterbury CT 06723-2557 1-800-537-7663

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August 15, 2002

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Re: Scheman Building Moisture Survey Results

To Whom it may concern:

In May of 2000, an infrared moisture survey was performed on the Scheman Building roof at Iowa State University, a few months before a new "2001 Company" vented, thermoplastic roof system was installed in the fall of 2000. The infrared scan identified four areas of potential wet insulation. Core cuts verified that these areas were indeed saturated.

In July of 2002, at the request of Chuck Beyer, Beyer Roofing Sales, 2001 Company area representative, core cuts were made in two of the previously identified wet roof areas. Cuts were made through the new membrane, existing Hypalon membrane, and insulation down to the vapor barrier over the existing deck.

The insulation consisted of 1.1/2" of perlite and ½" wood fiberboard directly below a Hypalon membrane. The vapor barrier appeared to be a modified asphalt membrane consistent with a modified base sheet. Upon observation and as can be seen in the enclosed photographs, the insulation was completely dry.

Considering the location of the vapor barrier over the existing deck below the insulation the drying out of the wet insulation could only have happened upward and be directly contributed to the 2001 system.

Sincerely,

Timothy G. Fogue
Project Designer

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