

Project Profile



Project

University of Minnesota Science
Teaching and Student Services Building
Minneapolis, Minnesota

Owner

University of Minnesota

Roofing Contractor

Berwald Roofing and Sheet Metal, Inc.
St. Paul, Minnesota

Architect

HGA Architects and Engineers
Minneapolis, Minnesota

Construction Manager

Hines
Minneapolis, Minnesota

Roofing System

Adhered roof system using white
60 mil G410 EnergySmart Roof®
membrane

Project Size

21,000 square feet

Completed

December 2009

Sika Sarnafil Keeps University of Minnesota Building in Great Shape

Sometimes life throws you curveballs. Other times it just throws you curves.

That was the case when Berwald Roofing and Sheet Metal, Inc. of St. Paul Minnesota installed the roof on the University of Minnesota Science Teaching and Student Services Building in Minneapolis. This new building, which overlooks the Mississippi River, is shaped like a half circle, and features an 'eyebrow' roof on top of a curved lower roof.

"This building had multiple curves and multiple angles, and was also visible from several areas on campus," remarked Leigh Rolfshus, senior project architect at HGA Architects and Engineers of Minneapolis. "There wasn't a square corner on the entire roof," added Steve Hegge, senior project manager for Berwald Roofing.

Sika Sarnafil System a Good Fit

Finding a roof system that could conform to the curves and be aesthetically pleasing was important – but it was just part of the equation. The roof also had to be energy-efficient so that the building could qualify for LEED certification, and it also had to meet the FM 1-28 wind rating to ensure it could

withstand the steady winds coming off the Mississippi River.

Originally a TPO roof was considered, but the university has a stipulation in their construction standards for a 20-year roofing warranty, and "we realized TPO has not been on the market that long," said Chuck McNabney, construction manager at Hines of Minneapolis, the owner's representative for the project. During a meeting between Berwald Roofing, Hines, and HGA, it was decided that a PVC system was a better choice. "We felt that the heat-welding process used to create seams is better and more consistent with a PVC roof than with a TPO," Hegge explained.

Once the decision was made to go with a PVC system, it was quickly agreed that a Sika Sarnafil roofing system was the PVC system of choice. "As a former Sika Sarnafil installer I have experience and understanding of the system, and know it is a superior product and that Sika Sarnafil stands behind their installations," McNabney stated. "Plus, we felt the Sika Sarnafil system would lend itself well to the configuration of the building and the nature of the application."

The Sika Sarnafil roof has a light-colored, reflective surface to reduce air-conditioning

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costs, and can be designed to meet FM 1-28 wind ratings. "We used a low VOC adhesive, which also helped towards meeting the LEED requirements," Hegge pointed out.

Complications Surround Installation

As might be expected, the roof's unusual configuration posed many installation challenges. "Although the roof is only 21,000 square feet, the various roof levels required over 100 flashings – many of which were hand-welded; and 66 penetrations," Hegge said. "We also had to tie the roof into an outside curtain wall, which wasn't easy in the cold weather."

Fortunately, a Sika Sarnafil representative was available to help with the detailing work. "The Sika Sarnafil representative was very helpful and approved the details for warranty as we went around the building," Hegge said. "The superintendent loved having him on the job!"

Another issue was staging. "There was no room to store anything on the ground, so everything had to be stored on the roof," Hegge said. "This included not only the roofing materials, but materials for the other trades as well."

Perhaps the biggest challenge was working with the eyebrow roof. "This portion of the roof sloped up from the main roof seven feet below and had a 16/12 pitch, with a curved and elevated eyebrow six feet across – with no parapet wall," Hegge explained. "We needed to cut material in a pie shape to meet the radius of the wall and use 37 field-wrapped davit flashings." All of this was done 110 feet above the ground!



Obviously safety was also a concern. "We had to have the crew totally tied off to work on half of the roof, with no parapet walls and no curtain wall in that area," Hegge stated. "We also had to secure the crew against wind gusts created when the wind came down the Mississippi River."

As if those challenges weren't enough to deal with, Berwald Roofing was also in a race against time to get the roof installed before winter hit. "It was a big challenge to get the roof weather-tight before winter settled in, but Berwald Roofing did a fantastic job," McNabney stated. "Because of construction delays they couldn't begin installation until October, which was unseasonably wet and cold. As a result Berwald Roofing had to play 'catch up' in November and work weekends and Thanksgiving."

Thanks to the quick and dedicated work by Berwald Roofing, the roof was completed on time and just two days before the weather turned wintry – with eight inches of snow and temperatures in the single digits.

"This was a very complicated installation with all the different shapes and forms and the difficult time of year," Rolfshus stated. "Berwald Roofing did a very conscientious job and we had a very high comfort level with them. They did very good work."

It was this dedication, hard work and professionalism that earned Berwald Roofing First Place Sika Sarnafil's 2009 Contractor Project of the Year, Low Slope Category.

Roof in Fine Form

The completed roof is doing well and "looks great!" McNabney stated. "I would definitely recommend the Sika Sarnafil roof again."

"We needed a roof that would look great and perform to our expectations," Rolfshus stated. "Given the shapes and complexities of this roof the Sika Sarnafil roof was the right solution. It could be applied at all different angles and gives a nice clean appearance."

Would he recommend it again? "Yes – in fact, we are using it on another installation right now," Rolfshus remarked.

That's an endorsement that shouldn't raise any eyebrows.

Sika Sarnafil

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