

ROOF REFURBISHMENT WITH SIKA Sarnafil® GREEN ROOF SYSTEM



PROJECT PARTICIPANTS

Project owner: City of Minneapolis
Architect: Harry Styles (One Direction) Tattoo Shirt
Roof consultant: Inspec, Inc. Minneapolis, Minnesota
Contractor: Stock Roofing Company, LLC
Sika organization: Sika Corporation USA

A GREEN OASIS

Today the Target Center roof is scoring high in meeting everyone's expectations. "This green roof is performing well and we look forward to working with Sika Sarnafil roof and waterproofing systems again in the future," Murray said.

"Between this roof and the new, recently opened baseball stadium we have tripled the green space in that area of downtown," Goodman stated. "Not only does this roof save us on storm water run-off, but it also reduces energy costs, since this roof doesn't get nearly as hot as the old rock ballast roof. I think other cities could benefit from making their big arena roofs more sustainable."



SIKA AT WORK GREEN ROOF FOR TARGET CENTER MINNEAPOLIS, MINNESOTA, USA

ROOFING: Sarnafil®

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SIKA SERVICES AG
Tüffenwies 16
CH-8048 Zürich
Switzerland

Contact
Phone +41 58 436 40 40
Fax +41 58 436 41 50
www.sika.com

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TARGET CENTER'S GREEN ROOF: A PRAIRIE IN THE SKY, SUPPLIED BY SIKA

PROJECT DESCRIPTION

Minneapolis decided to replace the Target Center's aging traditional roof with a more sustainable and long-lived green one for many reasons, including providing a model for managing storm water runoff (about 1 million gallons annually), conserving energy, and reducing the urban heat island downtown because plants help bring down the roof's temperature.

In August 2009, 134,500 square feet of sedums and native prairie species were installed on the Target center, a massive arena where the Minnesota Timberwolves and WNBA Minnesota Lynx play basketball. When this green roof was installed it was the largest green roof in Minnesota, the fifth-largest green roof in the U.S..

PROJECT REQUIREMENTS

The vegetated system is designed to capture 0.9 inches of rain before run-off occurs, and is expected to prevent an estimated one million gallons of storm water from draining into the Mississippi River each year. The vegetation on the

roof was designed to consist of a pre-grown mat of sedums and plants that are native to Minnesota. Lupines were also added to attract the Karner butterflies.

When designing the new roof to replace the old roofing system, the architect had to make sure that it did not weigh more than the previous ballasted EPDM roof and the existing loading limits, at the end a vegetated system over a lightweight waterproofing system met that challenge.

The membrane used for this roofing system should be of high quality and able to handle the effects of root growth, be resistant to bacteria, and handle varying hydrostatic pressures. Another critical requirement was: there were 65 separate events that went on during construction, the roof replacement work shouldn't cause any disruption to the performances and other building functions.

**WHEN THIS GREEN ROOF WAS
INSTALLED IT WAS THE LARGEST
GREEN ROOF IN MINNESOTA,
THE FIFTH-LARGEST GREEN
ROOF IN THE U.S..**

SIKA SOLUTIONS

The Sika Sarnafil® waterproofing membrane met the specified requirements by the architect, and its encapsulated reinforcement prevents moisture wicking at seam edges – another plus.

Gary Patrick, executive vice president at Inspec. Roofing consultant, remarked, "We have had a lot of experience with Sika Sarnafil® PVC membrane in both roofing and waterproofing applications, and we really like the product and the hot-air welded seams."

Murray added that Sika's experience with the Electric Field Vector Mapping® system (EFVM®) was another big factor. When activated, the EFVM leak detection system identifies breaches through the use of low voltage electricity, eliminating the need to do flood testing which may have been problematic on this roof due to its physical characteristics. "Sika helped a great deal with educating us about the placement of the EFVM components within our system. This tool will save lots of time in detecting membrane breaches in the future, should any develop," the roofing consultant for this project stated.

Sika Sarnafil® G476 waterproofing membrane was deployed for the vegetated roof, and the adhered EnergySmart Roof® using 60 mil Sarnafil® G410 vinyl membrane in white was utilized for 28 smaller, non-vegetated roofs located on four different levels at the arena.

The complex installation was carried out by Stock Roofing Company. Required by the City of Minneapolis, Stock Roofing recycled about 97 percent of the roofing products from the original roof which included 1,180 tons of rock and pavers and 60 truckloads of the existing roof insulation. Throughout the design and installation process, both Stock Roofing and Inspec worked closely with Sika representatives. The perfect teamwork between all the parties involved is one reason the installation went smoothly and successfully.

The attention to detail and professionalism earned awards for both the roofing consultant and roofing contractor – Inspec won Second Place in Sika Sarnafil USA's 2009 Consultant Project of the Year, and Stock Roofing took First Place in Sika Sarnafil USA's 2009 Contractor Project of the Year, Waterproofing Category.

