



SIKA AT WORK

HARVARD BUSINESS SCHOOL'S  
MCARTHUR HALL/MCCOLLUM CENTER  
BOSTON, MASSACHUSETTS

GREEN ROOF SYSTEM USING ADHERED  
60 MIL Sarnafil® G 410 MEMBRANE IN WHITE

**Sarnafil**

**BUILDING TRUST**



# SARNAFIL ROOF YIELDS ENERGY SAVINGS, WATERPROOFING AND RADISHES

It figures that someone at Harvard Business School (HBS) would know how to get the best return on its investment when it comes to roofs. That's why HBS aimed high and replaced a small, existing green (vegetated) roof with a much larger one that would cover 11,000-square feet of a multi-tiered roof shared by McArthur Hall and the McCollum Center in Boston. This new roof keeps the buildings watertight and grows a diverse meadow including herbs and vegetables like calendula, fennel, wild carrots and radishes – of which 400 pounds of daikon radishes were harvested and served in the school's dining halls the first year. The team continues to experiment with other wild vegetable crops such as garlic, beets, watermelons and winter squash.

"The existing roof had reached the end of its life, so we saw this as a great opportunity to do something more elaborate than a typical sedum green roof," said Julia Musso, assistant manager of energy and sustainability at HBS. "The new green roof is more like a meadow with tall plants, and can be seen by three or four other buildings, which made it a great location for a green roof." She added that HBS installs green roofs because they help reach stormwater management goals, reduce the Heat Island Effect, and act as a building insulator. "Green roofs also provide a habitat for wildlife and our campus beehives, and by yielding organic produce for our dining halls, they create awareness and interest across the HBS community. It's a new and innovative way to utilize space on our campus, and we're seeing a lot of interest from students and staff to eat more locally," she remarked.

## SELECTING THE RIGHT INGREDIENTS

The first task was selecting the right materials for the new roof

membrane that would act as the waterproofing layer. It was decided to use the Sarnafil G 410 EnergySmart Roof Membrane, due to its track record and reputation. "The Sarnafil system is the best system you could possibly put down," said John Marcone, vice president and project manager at Gilbert & Becker Co., Inc., of Dorchester, Massachusetts, the roofing contractor.

"We like working with Sika Roofing because we are one of the few certified installers for any overburden on a Sarnafil membrane, and so we can offer a single-source warranty," stated Richie Harvey, design and project manager at Recover Green Roofs, LLC, of Somerville, Massachusetts. "Not only is it a high-quality membrane, but when you use the Sarnafil membrane you don't need a root barrier."

To meet structural weight restrictions and provide maximum growth potential, Recover worked with Omni Ecosystems of Chicago to become the Northeast's first certified installer of Omni's lightweight, comprehensive green roof system, making the McArthur Hall/McCollum Center project the first of its kind in the Northeast.

## SETTING THE TABLE

The installation of the new green roof began with removal of the existing green roof, during which Recover recycled all the growing media, saved drainage components for other projects and dug up and boxed existing plants for Harvard to use for a campus-wide plant giveaway. Then the existing EPDM roof membrane was removed, and Gilbert & Becker installed a fully adhered vapor barrier to the concrete deck, followed by some tapered insulation and a cover board. After this, the Sarnafil PVC membrane was fully adhered.

## PROJECT

McArthur Hall/McCollum Center  
at Harvard Business School  
Boston, Massachusetts

## OWNER

Harvard Business School

## GREEN ROOF CONTRACTOR

Recover Green Roofs, LLC  
Somerville, Massachusetts

## ROOFING CONTRACTOR

Gilbert & Becker Co., Inc.  
Dorchester, Massachusetts

## GENERAL CONTRACTOR

Lee Kennedy Co., Inc.  
Quincy, Massachusetts

## ROOFING SYSTEM

Green Roof System using adhered  
60 mil Sarnafil G 410 membrane in White

## PROJECT SIZE

11,000 square feet

## COMPLETED

August, 2016





“The biggest challenge we had during the installation was the set up,” Marcone stated. “We had to utilize a crane, which required moving it down busy Soldiers Field Road in Boston. We ended up working with the state police to close down the road and have a police escort help us get the crane where it needed to be.”

Other challenges included the tight, six-week time frame, coordination with the mason on through-wall flashing details and the set-up of safety measures, including installing safety railings along the perimeter. Fortunately, a Sika Roofing representative was on site regularly to help with details and make sure everything was done correctly and on schedule.

“The Sika Roofing representatives were great,” said Paul Leonard, project executive at Lee Kennedy Company, Inc., of Quincy, Massachusetts, the general contractor on the project. “They came out during preconstruction to meet with the team and help us identify challenges in advance. As a result, we completed the job two weeks ahead of schedule.”

“We had a few situations where the roof did not have the required flashing height, but the Sika Roofing representatives came up with a way to install the flashing and still keep the warranty,” added Kevin Ruby, former project manager at HBS.

#### **PREPARING THE FEAST**

Once the roofing membrane was in place, Recover went to work installing the green roof on top. Due to crane restrictions at the site, Recover developed a conveyance method that moved stone from a hopper to various locations on the roof. “We also designed a creative irrigation plan that would hold down the light media blend and efficiently transfer water to seeds and newly planted perennials between the different roof levels,” Harvey said. Omni’s ultra light soil blend of perlite and other organic materials “worked out really well,” Harvey commented.

Perhaps the biggest reason for the success of the project was the teamwork between all parties – including Recover, Gilbert and Becker, HBS, Lee Kennedy and Sika Roofing.

“I can’t speak highly enough about the entire team,” Leonard remarked. “I was also very impressed with Recover Green Roofs. They were very knowledgeable, very accommodating and they were on schedule and on budget.” It was this professionalism that earned Recover Roof first place in the Waterproofing Category of Sika Roofing’s 2016 Project of the Year competition.

#### **ENJOYING THE BOUNTY**

Today the roof is leak-free and producing lots of organic foods for Harvard students and faculty. “During its first year, the roof reaped 400 pounds of radishes,” Musso stated. “We are continuing to experiment with more food plants, like garlic and winter squash, and are looking forward to harvesting more food and herbs from our green roofs.”

“We hope this self-regenerating roof ecosystem causes people to pause,” said Harvey. “Especially when they see ‘rooftop-foraged daikon radishes’ on the menu.”



# HARVARD BUSINESS SCHOOL'S MCARTHUR HALL/MCCOLLUM CENTER



## WHO WE ARE

The commercial roofing industry has relied on thermoplastic single-ply membranes from Sika for more than 50 years to achieve sustainable roofing and waterproofing solutions.

Sika is a globally active specialty chemicals company. Sika supplies the building and construction industry as well as manufacturing industries (automotive, bus, truck, rail, solar and wind power plants, facades). Sika is a leader in processing materials used in sealing, bonding, damping, reinforcing and protecting load-bearing structures. Sika's product lines feature high-quality concrete admixtures, specialty mortars, sealants and adhesives, damping and reinforcing materials, structural strengthening systems, industrial flooring as well as roofing and waterproofing systems.

Our most current General Sales Conditions shall apply.  
Please consult the Product Data Sheet prior to any use and processing.  
ISO 14001: 2004-Compliant



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