



SIKA AT WORK

DUKE ELLINGTON SCHOOL OF THE ARTS
WASHINGTON, D.C.

ADHERED ROOF SYSTEM WITH G 410 80 MIL
FELTBACK MEMBRANE IN WHITE

Sarnafil

BUILDING TRUST



DUKE ELLINGTON SCHOOL GETS STATE-OF-THE-ART SARNAFIL ROOF

Like a touching orchestral jazz piece, the Duke Ellington School of the Arts in Washington, D.C. features many beautiful but diverse components. Built in 1898 and featured in the National Register of Historic Places, this high school recently underwent an \$162,000,000 renovation which expanded the facility from 175,000 to 265,000 square feet and added state-of-the-art performance and classroom spaces. The most notable part of the renovation was a four-story light-filled atrium with a show-stopping, egg-shaped 800-seat theater suspended in the middle of the new space.

The roof itself has 30 distinct roof sections of different elevations, including 20,000 square feet of green roof plantings, 3,000 square feet of 2-inch concrete pavers, and an 1,800 square foot composite decking system on the Educational Terrace. As with most District of Columbia schools, the roof specified for this extensive renovation was the 80 mil Sarnafil G410 membrane. "Sarnafil is an excellent performing membrane," said Miah Dancy, President at Bluefin LLC, the roof consultants on the project. "We knew it would do well even underneath some unique overburden."

"There was some pressure to go with a hot-applied system on some of the roofs, but we wanted to go with Sarnafil because it is not as limited as a hot-applied system, and would allow us to get dried in much faster," stated Dan Waldo, vice president at GCS-SIGAL of Washington, D.C., the design builder.

ALL THAT JAZZ

The roof installation was one of the most challenging that John Maviglia, project executive of roofing contractor HRGM Corporation of Washington, D.C. had ever faced. "There were so many trades, so many roof

levels and types of facades, skylights, storm water requirements," he remarked. In fact, the roof had the most transitions and flashing details HRGM had ever installed, including 160 solar panel support penetrations, and 4,300 linear feet of transitions to EIFS walls, metal panels, cast stone, historic brick, screen wall supports, and edge metal/copings. None of these details had been prepared when HRGM was selected as the roof contractor, so they worked closely with the design team and Sika Sarnafil to create details that met the project's unique needs and complexity.

"What's unique about HRGM is that they wanted to be involved with the design process," Waldo explained. "We brought them in right away to work with us on the details, and then John Maviglia would take the details to Sika Sarnafil to have them blessed."

IMPROVISATION WAS KEY

HRGM had to improvise and use creative problem solving on several areas of the roof. The first was getting the roof and the mechanical sections to drain properly. The project's storm water management plan required that a significant portion of the roof drain to the front of the building -- but the multitude of new penetrations, obstacles, and mechanical units/ductwork complicated this task. There was limited space to accommodate the oversized mechanical system, which also required continuous duct supports that were 30" wide by 8" tall over 4,250 square feet of roof across multiple elevation changes and slopes. "Developing the cricket system for these roofs was not something that could be done from a desk. It needed to be worked out -- obstruction by obstruction -- in the field, in real time," Maviglia said. Since there wasn't a coordinated layout drawing, HRGM performed careful quality control

PROJECT

Duke Ellington School of the Arts
Washington, D.C.

OWNER

District of Columbia Public
Schools/Department of General Services

ROOFING CONTRACTOR

HRGM Corporation
Washington, D.C.

ROOFING CONSULTANT

Bluefin, LLC
Crofton, Maryland

DESIGN BUILDER

GCS-SIGAL
Washington, D.C.

ROOFING SYSTEM

Adhered Roof System with G 410 80 mil
feltback membrane in White

PROJECT SIZE

72,000 square feet

COMPLETED

August 2017





checks at each point to ensure that the area around each obstruction achieved drainage. HRGM also had to restore and reconfigure the half-round, built-in gutter at the front of the building, without making visible changes to the facade. This was accomplished by end-damming select sections of the rebuilt gutter, lining the full gutter with Sarnafil 80 mil membrane, and resloping the adjacent roof sections using carefully aligned crickets and insulation fill.

"John Maviglia's group did a great job with creative cricketing and in identifying and strategizing how to move water to gutters and downspouts," Gabe Oliver, vice president at GCS-SIGAL stated.

SARNAFIL PRODUCTS PROVE TO BE RIGHT INSTRUMENTS

Integrating the new part of the building with the existing, historic front of the building was another challenge. The front "bar" had a flat roof with a new balustrade and a historic built-in cornice gutter. Since the balustrade is inset from the gutter, it needed to be installed on elevated supports to allow water to pass through. These supports are visible from the street, so HRGM made creative use of Sarnafil's PVC membrane-fabricated outside corners, carefully applying them to each support to make sure the balustrade looks crisp from all angles.

On places where HRGM had less than three inches of clearance to do flashing and couldn't use a hand welder, like on the "egg" roof, they decided to use Sarnafil Liquid Flashing. "It's a great product -- very unique and fast paced," Maviglia said. "It was very beneficial in this scenario."

"We love working with HRGM because they deal with challenges very well," Dancy commented. "If they were given a deadline by the general contractor they wouldn't push back but would figure out how to get it done. They will do whatever it takes to get the job done."

It was this professionalism that earned HRGM first place in the Sustainability Category of Sika Roofing's 2017 Project of the Year competition.

RAVE REVIEWS ALL AROUND

Today the roof -- and its installation -- are getting rave reviews. "This is the most complicated roof we've done with HRGM and the roof is doing very well," Waldo said. Added Oliver, "I'd definitely use the Sarnafil membrane again, especially if it was being installed by HRGM."

"This roof doesn't just prevent rain from getting into the building, but is a fully formed part of the building's design, vision and programming," Maviglia commented. "It is an outstanding example of the creativity, craftsmanship, technical expertise, and collaboration that are increasingly required for 21st century buildings."

Especially those that want to make beautiful music.



DUKE ELLINGTON SCHOOL OF THE ARTS



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



ENERGY STAR® for roofing products is only valid in the United States
ENERGY STAR is a trademark of the U.S. EPA.
LEED® is a trademark of the U.S. Green Building Council.
Green Globes® is a trademark of the Green Building Initiative

SIKA CORPORATION • ROOFING
100 Dan Road • Canton, MA 02021 • USA
Tel: 781-828-5400 • Fax: 781-828-5365
usa.sarnafil.sika.com

Sarnafil

BUILDING TRUST

