

Project Profile



Project

Rowland Institute
Cambridge, Massachusetts

Roofing and Waterproofing Contractor

W.S. Aiken Roofing, Inc.
Chelsea, Massachusetts

Green Contractor

Apex Green Roofs, Inc.
Somerville, Massachusetts

Roofing System

Inverted Roof Membrane
Assembly, using Sarnafil®
Peel & Stick G476
membrane

Project Size

35,000 square feet

Completed

April 2009

Sika Sarnafil Helps Rowland Institute with “Higher” Learning

The term “higher learning” usually refers to education after high school, but at the Rowland Institute, it might mean learning in an experimental “lab” that is 20 feet above street level.

This “lab” is the Institute’s new vegetative or “green” roof. “The Rowland Institute has always been focused on energy savings and sustainability, and is looking to reduce greenhouse gases by 30 percent by 2016,” said Scott Bevis, facility manager at the Rowland Institute. So when the Institute’s 30-year-old roof needed replacing, a green roof was considered because it benefits the environment by reducing storm water runoff, adding insulation to the roof, improving air quality, and reducing noise pollution.

In addition, since the Rowland Institute is a lab and research facility for experimental sciences such as chemistry, physics, and biology, a green roof was also a way to study the plants and growing media in vegetative roofs. “The Institute desired an outdoor environment for conducting experiments on living plants,” said Mark Swansburg, operations manager at W.S. Aiken Roofing, Inc. of Chelsea, MA.

Going Green All the Way

The original roof, which included 25 individual roof areas, was an IRMA (Inverted Roof Membrane Assembly) roofing system using a Sika Sarnafil membrane. When the roof reached the end of its serviceable life, the Rowland Institute looked to replace it with different roofing systems, such as EPDM, but found these systems to be more expensive. “Plus, the original IRMA system with the Sika Sarnafil system served us well,” Bevis remarked. “We expected it to last only 15 years but it gave us 30 years of service.”

As the Rowland Institute’s long-time roofing contractor partner, Aiken was also involved in the decision to use the Sika Sarnafil system. “The Sika Sarnafil product has a long-standing track record, and we are always confident that the product will perform to our expectations,” said Swansburg. Another advantage to using the Sika Sarnafil system was that Sika Sarnafil agreed to recycle the old roofing membrane as part of their industry-first commercial single-ply membrane recycling program at no additional cost. “We encourage recycling and so this was very important,” Bevis said. “And since the recycling of the old roofs

through Sika Sarnafil saved us (W.S. Aiken) from tipping fees, the recycling really did not cost us or the building owner anything,” Swansburg added.

Since the Sarnafil G476 membrane that was going to be used on the new IRMA roof could also support a vegetative roof, the Rowland Institute decided this was a good opportunity to experiment with a green roof. “We liked the idea that we could try a vegetative roof on a section or two of the new roof,” Bevis said. “Then, if we like the way the green roof performs, we can replace the ballast on other portions of the roof with a vegetative system.”

The section of the roof that was selected to be a green roof had originally held planters to provide a nice view to the occupants of surrounding, higher, buildings. “That was our version of a green roof then,” Bevis joked. “To me this made it a natural place to experiment with a green roof.”

Mastering Difficult Installation Challenges

The multi-layers of the new roof, its numerous inaccessible overhangs and balconies, and tight location posed many challenges to the Aiken crew. The Institute’s location in bustling Cambridge meant there were limited places to set up dumpsters and staging areas. “The loading dock provided the only on-site staging area, so demolition and debris had to be carted off-site daily,” said Swansburg. “We also had to take special care in planning and scheduling the next load of materials to go up.”

Recycling the materials of the old roof, Swansburg explained, involved removing and stacking the old insulation and taking it to a recycling center, as well as preparing the old Sika Sarnafil membrane for recycling. In addition, the original stone ballast was saved and then reused on most sections of the roof.

“Recycling adds another step to the process,



but it is the right thing to do,” Swansburg stated. “It also helped that the Sika Sarnafil representatives were very, very supportive in what we were doing, and were very excited to meet these eco-friendly practices.”

On the green roof section Aiken Roofing installed the Sika Sarnafil Peel & Stick membrane to a concrete deck, followed by reusable polystyrene insulation. A vegetative system was then added by Apex Green Roofs, Inc. of Somerville, MA. This included a fabric to retain water and protect the membrane, a drainage layer made of recycled plastic, another layer of fabric to keep the soil out of the drainage layer, and three and one-half inches of growth media and the sedum plugs.

“We’ve worked with Sika Sarnafil quite a bit and really enjoy installing our green roofs above that type of waterproofing,” said Dustin Brackney, a partner at Apex. “One of the biggest benefits of the Sika Sarnafil membrane is that it eliminates the need for a root barrier.”

“We had a really good working arrangement with Apex,” said Swansburg. “They worked closely with the Rowland Institute to pick the different species of sedum they wanted to use, and delivered a turn-key system.” Swansburg pointed out that the soil layer was engineered for maximum absorption of up to 65 percent, thereby “protecting the highly

sensitive ecology of the nearby Charles River basin.”

“We love dealing with Aiken – they take a lot of pride in working with sustainable technology and Swansburg has a lot of passion for green roofs.” Brackney said. “Every roof we’ve put down with them has been a smooth process. In fact, this was one of the easiest installations ever!”

“Aiken’s work was very good, which is why we continue to work with them,” said Bevis. It was this dedication and professionalism that earned W. S. Aiken First Place in Sika Sarnafil’s 2009 Project of the Year, Sustainability Category.

A Growing Interest

Today the roof is performing well, according to Bevis, and fulfilling its role as an experimental “lab” to test vegetative roofs as a viable, environmentally friendly option. “Sika Sarnafil has been a great partner in helping the Rowland Institute in it’s commitment to sustainability,” he said. “Sika Sarnafil will be the first company we look at if we do any similar projects in the future.”

Swansburg added, “Thanks to the teamwork of Aiken, Apex, Sika Sarnafil, and the Rowland Institute, this facility now boasts a state-of-the-art system to conduct research, facilitating the development of further green building technologies for the benefit of all.”

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