

Project Profile



Project

Global Institute of Sustainability
Tempe, Arizona

Owner

Arizona State University

Roofing Architect / Consultant

APMI, Inc.
Scottsdale, Arizona

Manufacturing Representative

Section 7 Marketing
Phoenix, Arizona

Roofing Contractor

Progressive Roofing, Inc.
Phoenix, Arizona

Roofing System

Adhered Roof System, using
white 72 mil Sarnafil® G410
feltback membrane in
EnergySmart Roof® system

Project Size

12,000 square feet

Completed

July 2008

Global Institute of Sustainability Selects Sarnafil Roof System

When your mission is to emphasize energy efficiency and sustainability, then your building envelope had better reflect this. That is especially true for the Global Institute of Sustainability (GIOS) at Arizona State University (ASU). Not only does the Institute “catalyze and advance interdisciplinary research and education on environmental, economic, and social sustainability,” but it is also located directly across the street from the office of one of its biggest champions, ASU president Michael Crow.

“The president wanted to be able to literally point out his office window to an example of a ‘green’ building,” said Tony Siros, principal of APMI, Inc. of Scottsdale, Arizona, architects for the roofing project.

Previously, the GIOS building was home to ASU’s College of Nursing and Healthcare Innovation and was “very energy inefficient, with an asphalt modified bitumen with a white surface roof, a breezeway, and air balance that was all out of whack,” said Bob Backus, carpentry supervisor at ASU’s Facilities Management Department. “The building was totally renovated inside and out to become a showcase for sustainability,” he

explained, adding that the roof was also part of this renovation. “We selected the Sika Sarnafil EnergySmart Roof because of its energy savings and future sustainability. The fact that the Sika Sarnafil roofing membrane could also be recycled was also a plus.”

A Cool and Flexible Roof

Sika Sarnafil’s white reflective roof membrane reduces the amount of solar heat being absorbed by the building, thereby reducing energy consumption. It also slows the reaction of smog-forming pollutants and assists in abating the urban heat island effect. Urban heat island refers to developed areas that are hotter than nearby rural areas, due, in part, to the heat-absorbing black or dark colored materials used in the city, such as roofs and pavement.

“The effect of urban heat islands is a big issue in Arizona,” said Tom Ulrich, manufacturer representative for Sika Sarnafil and president of Section 7 Marketing. “Over the last 30 years the nighttime temperature of Arizona has risen dramatically — which is directly related to the heat island effect.” Because white roofs reflect — rather than absorb — the sun’s heat, they reduce the heat island effect.



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In addition to its energy conservation attributes, Siros also liked the Sika Sarnafil roofing system because of its ease of installation.

"I've had a lot of experience with this system and find it is very easy to install and detail, especially compared to systems like Built-Up Roofing (BUR)," he explained. "It is easy to flash and the hot-air welded seams make it easy to zip it up watertight."

A Complicated Installation

One of the biggest challenges of installing the new roof was minimizing disruption to the building occupants and neighbors. "Most of the work had to be done during off-hours for the protection of the students," said Mark Bagnoli, project manager for Progressive Roofing, Inc. of Phoenix. "We had to bring in special lighting so we could work at night."

Siros added, "Progressive Roofing did a good job of keeping the building operational during the installation. This meant mechanical equipment on the rooftop had to be removed and replaced in a very short period of time, so Progressive Roofing had to work quickly to install the membrane while the equipment was removed and then quickly flash around the equipment when it was replaced."

Special safety precautions also had to be



Wind turbines line the front edge of the GIOS roof and solar panels are planned at a later date. The EnergySmart Roof system installed by Progressive Roofing is energy-efficient, will last for decades and can be recycled at the end of its normal lifespan.

taken because of the lack of a parapet. "This is a four-story building," Bagnoli stated. "We had to run safety cable all around the perimeter with cables crisscrossing the roof."

Removal of the existing BUR revealed another problem. "When we tore off the old roof we discovered there were two layers of roofing, and a lot of damage was done to the lightweight concrete deck," Bagnoli explained. Urich added, "It was like chopped up plaster – very dusty and not a real hard concrete."

Once the concrete was smoothed out there was still the problem of how to attach the insulation to the rough surface. "We paid a great deal of attention to this issue and Sika Sarnafil representatives were involved as well," said Siros. "We ended up fully adhering the insulation to the deck, then fully adhering the roofing membrane to the polyisoboard insulation." The two layers of the Sarnatherm insulation

increased the R-value from less than 13 to 30, another energy savings.

A Sustainable and Durable Roof

By all accounts, the Sika Sarnafil roof is performing as expected. "The roof is holding up very well," Bagnoli stated. "In fact, we had a record wind storm come through here in August, 2008 that knocked down more than 100 trees in the area. Throughout the storm the roof remained intact. The Sika Sarnafil roofing system is an excellent product"

Backus is also pleased with the roof. "I was previously sold on Built-Up Roofs, but now I believe the Sika Sarnafil roofing system is the way to go in the future," he explained. "It is more practical because of its energy efficiency and sustainability. I guess the times they are a changing."

Currently the roof is topped with wind turbines and future plans call for solar panels to also be put in place on the roof. These features, combined with the durability and sustainability of the Sika Sarnafil system, make the GIOS roof one that energy-conscious Crow can point to with pride for many, many years.



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