Project Profile

Project
University Pediatric Hospital — New Tower Expansion
Rio Piedras, Puerto Rico

Owner
University of Puerto Rico Pediatric Hospital

Roofing Contractor
R & T Roofing Contractor Corp.
Toa Baja, Puerto Rico

Roofing Consultant
Architectural Systems, Inc. — Division 7 Roofing and Waterproofing
San Juan, Puerto Rico

Architect
CMA Architects and Engineers LLP
Guaynabo, Puerto Rico

Roofing System
Adhered EnergySmart Roof® using 72 mil Sarnafil® G410 membrane in white

Project Size
21,032 square feet

Completed
May 2010

Sika Sarnafil Roof Fills Tall Order for Hospital's New Tower

In addition to housing Puerto Rico's first integrated Burn Center for children, the new tower of the University Pediatric Hospital in Rio Piedras, Puerto Rico also features a 28-patient emergency care unit with four treatment/procedure rooms, an ambulatory nine-bed outpatient cancer unit clinic, and 22-bed inpatient rooms, of which two beds are linked to a centralized monitoring station for neurological studies.

The integrated Burn Center itself features a six-bed unit, including two acute patient treatment rooms with controlled temperature and air-lock controlled spaces, and four intermediate/recovery rooms for minor burn patients. The Burn Center also has a hydrotherapy treatment section and an occupational therapy area.

To protect the patients and sophisticated equipment contained in the building, it was imperative that the roof of the new tower provide years of watertight service. Yet that wasn't the only requirement for the new roof. All buildings in Puerto Rico are situated in "Hurricane Alley," so the roof had to meet wind uplift requirements for a basic wind speed of 145 miles per hour in accordance with the ASCE 7 standard. The roof also had to meet LEED® (Leadership in Energy and Environmental Design) reflectivity and emissivity requirements for cool roofs. Finally, since the new tower roof was visible from other buildings, the building owners also wanted it to be attractive.

The way the roof was installed was an important consideration. The new tower was close to another hospital structure "so we were concerned about safety issues," said Angel Pantoja, senior architect of CMA Architects and Engineers of Guaynabo, Puerto Rico. "We didn't want any roofs that had asphalt materials or which involved torching generating fumes of any kind during installation."

Fortunately, there was one roofing system that fit this tall order: Sika Sarnafil's EnergySmart Roof®. This single-ply system utilizes a thermoplastic membrane, allowing the sheets to be fused or welded together using hot air. The result is a continuous, monolithic sheet of membrane.

This Sika Sarnafil roofing system also

Sika® Sarnafil®

features a reflective, light-colored surface that reduces air-conditioning costs and contributes one or more points towards LEED certification. It has proven experience in high-wind areas and can be applied with low-VOC adhesives without the odors and fumes that come with some other adhesives or installation methods.

EnergySmart Roof

Sika Sarnafil's EnergySmart Roof is available in white, tan, light grey or patina green reflective, lacquer coated surfaces. These surfaces have been proven to reduce the amount of energy required to maintain comfort in an air-conditioned building by decreasing heat flow through the building envelope. "Cool roofing systems" like the EnergySmart Roof can save money, improve occupant comfort, increase a roof's longevity, and reliably protect a building and its contents.

Sika Sarnafil was the first single-ply membrane manufacturer to label roofing products under the Environmental Protection Agency's (EPA) ENERGY STAR® Roof Products program. This program is a voluntary partnership between the EPA and a select group of roof product manufacturers. The focus of the program is to promote the environmental and economic benefits of reflective roofing.

A Safe, Smooth Installation

"The hospital wanted a system where the installation could be very transparent and not disruptive to the inhabitants of the nearby hospital building," said John Cortes, manufacturer representative for Sika Sarnafil and principal of Architectural Systems, Inc. – Division 7 Roofing and Waterproofing of San Juan, Puerto Rico. "The hospital did look at modified bitumen systems because that's what they've installed in the past, but those systems are much trickier to install in situations such as this because they involve torching."

R & T Roofing Contractor Corp. of Toa Baja, Puerto Rico was selected to install the roof

of the new tower. "We've had a lot of experience installing Sika Sarnafil systems and have always had excellent results, said Gilberto Rodriguez, president and owner of R & T Roofing. "Sika Sarnafil makes an excellent system and has a great, long-standing reputation."

One of the biggest challenges R & T Roofing faced was installing the new roof during a year of record rainfall in the San Juan area and Puerto Rico in general. "Fortunately, they were using 10 foot by 80 foot sheets of membrane in most areas of the roof, which let them waterproof large sections in a short period of time," stated Cortes.

Another concern was the very cramped and small space of the new roof, which not only adjoined another hospital building but was in a very congested, urban area. "Everything had to be organized with the delivery of the membrane and the use of the crane to get the membrane to the roof each morning," Cortes explained.

Both Pantoja and Rodriguez credit Cortes for his role in making the installation go so smoothly. "Cortes was involved with everything – he was like a tour guide on this project," Pantoja said. "The support from him was excellent. As a specifier, designer and architects of record we rely on experts to service and execute the roofing installation in a manner that ensures that the quality of product and installation is not compromised. High importance buildings such as this particular hospital required a proven high performance, long-term, low maintenance solution."

Rodriguez added, "Cortes helped a lot with the field coordination between R & T Roofing and Sika Sarnafil."

"This turned out to be a great installation," Cortes remarked. "R & T Roofing did extremely well under the weather and restricted space conditions."

New Roof Performs Up to Expectations

Today the roof of the new tower is performing very well. "The owners love it," Cortes said. "They had been used to using modified bitumen roofs or built-up roofs, so they have been very pleasantly surprised and impressed with the Sika Sarnafil system."

They aren't the only ones. "This is the first time I've used the Sika Sarnafil roofing system, and I'm very satisfied with the product and the support I've received," Pantoja remarked. "I am now specifying Sika Sarnafil for other projects because of its performance and the energy savings of this light-colored, reflective roof."

Sika® Sarnafil®

Sika Sarnafil
A Division of Sika Corporation
100 Dan Road
Canton, MA 02021
Telephone: 1-800-451-2504
Telefax: 781-828-5365
usa.sarnafil.sika.com

Sika Sarnafil
A Business Unit of Sika Canada Inc.
6820 Davand Drive, Unit 2
Mississauga, Ontario L5T 1J5
Telephone: 905-670-2222
Telefax: 905-670-5278
can.sika.com

0M/0412