Project Profile

Project
Morgan Processing
and Distribution Center
New York, New York

Owner
United States Postal Service

Roofing Contractor
J.P. Patti Company, Inc.
A Tecta America Company
Saddle Brook, New Jersey

General Contractor
Turner Construction
New York, New York

Architect
URS Corporation
Wayne, New Jersey

Roofing System
Loose laid system using 80 mil (in the field) and 60 mil (walls and curb flashings) G410 EnergySmart Roof® membrane, TectaGreen™ overburden

Project Size
109,000 square feet

Completed
March 2009

Sika Sarnafil Puts its Stamp on NYC's Largest Green Roof

The environment is important to the United States Postal Service. Not only does it vow to deliver the mail in all types of environs, but the USPS is also always looking for ways to protect the environment by using sustainable building practices. One impressive example of this is the USPS' first green roof, which is on the Morgan Processing and Distribution Center (P&DC) in mid-town Manhattan.

At 109,000 square feet, the Morgan P&DC green roof is the largest in New York City, and is expected to reduce the annual stormwater discharge by 51percent. The roof also uses reflective concrete utility pavers and roof ballast, which, together with the green roof, will keep the building from absorbing the sun's heat in the summer. According to the USPS, the green roof is expected to save the USPS $30,000 yearly on heating and cooling costs.

The new roof also serves another purpose – it provides a green oasis that Morgan Building employees can visit during their breaks. "When you are walking down the main walk areas of the green roof with its trees and plantings, you feel like you are in a nice, well-kept neighborhood park," said Gordon Hastings, chief estimator at J.P. Patti Company, Inc. of Saddle Brook, New Jersey, installers of the roof membrane and green roof system.

A Cost-Effective Solution that Delivers

Shalini Mohan, AIA, vice president at URS Corporation of Wayne, New Jersey, the architect and the construction managers of the project, said that once the USPS decided to go with a green roof to replace its failing built-up roof, the first task was finding a roofing system that would meet the USPS budgetary and ROI requirements. "We looked at a lot of different roofing systems, but many were discarded because of the cost," she explained. "I am often teased about using Sika Sarnafil systems because they are considered to be a top-drawer system, but I like working with the company and knew they would help us with a design."

Added Hastings, "The Sika Sarnafil representatives did a great job in helping us come up with value engineering options for the roof. It ended up being a great team effort."

Mohan was also pleased that they were able to install the new roof without tearing off most of the existing asphalt BUR. "We used

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infrared monitoring to check for moisture, and were able to retain most of the old roof, which eliminated waste and was also a big plus for the environment," she explained.

The final specification called for removing the loose aggregate surfacing, concrete walkway pavers and five areas of insulation that had been determined to be wet via infrared scan. The aggregate surfacing was later used as a fill base for a new parking lot and the pavers were re-used on another roof at the facility.

Gypsum roof board and the Sarnafil® membrane were then installed over three-inch polystyrene insulation. A Sarnafil protection sheet was installed over the membrane to protect it from construction traffic and various green roof components. Following that, 33,600 square feet of the roof was covered with river-washed gravel, 12,700 square feet was covered with 24" x 24" x 2" concrete pavers, and 55,250 square feet was covered with a drainage layer and a water retention mat. Four to eight inches of green roof soil media and sedum/ grasses were installed on top.

Neither Traffic, nor Logistics, nor Tight Scheduling….

It's not easy to install such a large green roof under normal conditions, but this roof was also located on a facility that was to remain operational 24 hours a day, and which was located on the New York side of the Lincoln tunnel.

"The traffic from the tunnel swings by the building, which created logistical problems and required closing off one lane on the street," Hastings explained. "As a result, we could only get the crane in there on Saturdays and Sundays and had to hoist up all the material we would need for the week during those two days. It was very difficult to coordinate the material delivery and debris disposal during such a narrow window of time." These materials included more than 3,600 pavers, 468 tons of one-inch river-washed gravel ballast, 927 cubic yards of soil, and truckloads of plants and trees.

Working on a government building that was in operation around the clock was also a challenge. "Scheduling the work and ensuring the safety of the facility's employees and the general public was a major concern," Hastings said. "We also had to work under tight security conditions."

Despite all these challenges, J.P. Patti was able to complete the project in a timely manner and under budget. "J.P. Patti is one of those companies where you can give them a project and walk away knowing everything will be done correctly," Mohan stated. "There was a real comfort factor in working with them – they did a great job."

"J.P. Patti is one of Tecta's operating units," said Angie Durhman, green roof manager at Tecta America. "They kept the owner's best interest in mind at all times, and it was a great to work with them on this project."

It was this professionalism and attention to detail that earned J.P. Patti Company Second Place in Sika Sarnafil's 2009 Contractor Project of the Year, Waterproofing Category.

A Source of Pride

Today the green roof is "doing very well," according to Mohan. "This was our first green roof project, and we take a lot of pride in the way it came out. The employees absolutely love it and often come to the roof to eat their lunches. In fact, I like to walk the roof myself at least once a week."

Hastings added, "The roof looks fabulous and is performing well. We are very happy with it."

"I applaud the USPS for investing in a sustainable roof that achieves many benefits for them. I wish more people could see the roof," Durhman remarked. "It is ADA-compliant, has minimal maintenance needs, and is relatively self-sustaining. Plus," she added, "it's a great ecological addition to NYC."

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