Project Profile

Project
DSC Logistics Warehouse
Colonial Heights, VA

Owner
DSC Logistics

Roofing Consultant
Conley Group
Dallas, TX

Roofing Contractor
Supreme Systems, Inc.
Dallas, TX

Roofing System
Sarnafast Mechanically Attached System, using white, 60 mil EnergySmart Roof® membrane

Project Size
707,000 square feet

Completed
May 2003

Emergency Re-Roof Needed

Deep in the heart of Virginia, near the site Robert E. Lee used as his headquarters during the Civil War, sits an inconspicuous warehouse. Although the warehouse is hidden from view by a thick forest of surrounding trees, the building's valuable contents were not well protected by its relatively new but leaking roof.

Extensive repairs had already been made on the roof system, but the building's leakage problems continued. The six-year-old TPO roof membrane experienced advanced oxidation and loss of thickness of the exposed membrane surface to the point that pin holes appeared around the reinforcement scrim.

Literally millions of pin holes threatened to ruin the building's contents. The owner, DSC Logistics, decided to completely re-roof the building — and do it quickly.

Sika Sarnafil Offers Cost-Effective Solution

"We bid three different roofing systems to help the owner assess the cost and construction schedules for the replacement systems," said Bill Conley, president of Conley Group, the roofing consultant on the project.

"We have had a long and successful working relationship with Sika Sarnafil, and we're pleased that their system was selected during the bid analysis process. The mechanically attached PVC membrane can be quickly installed and is extremely durable. The lower cost of installation and long service life make the Sika Sarnafil system both cost-effective and reliable for the owner."

Hurricane Winds Present a Concern

Although the DSC Logistics warehouse does not sit in the 110 mile-per-hour coastal wind zone, it is close enough to cause concern over the possibility of hurricane-force winds damaging the roof and the building's valuable contents.

The Conley Group conferred with Sika Sarnafil's technical department regarding systems that would meet the criteria for withstanding high wind loading. Considered in the evaluation were such parameters as roof height and width, substrate and deck conditions, as well as the building's geographic location.

Sika® Sarnafil®

Armed with the right technical information, the Conley Group specified Sika Sarnafil's 10-foot wide EnergySmart Roof® membrane, mechanically attached to the roof using the "Sarnafast" system.

"We didn't want to take any chances," said Conley. "We designed the system for an FM I-120 wind uplift rating, which meant we upgraded fastener attachments, perimeter attachments as well as the membrane thickness and seaming procedures just to be sure we had a roof system that would be completely reliable, even in this high wind exposure area."

Wider Roll Speeds Installation

With a roof surface of over 700,000 square feet, Supreme Systems, Inc., the Sika Sarnafil "Elite" roofing applicator chosen for the installation, had to work quickly to ensure the building's contents were protected each step of the way.

Bitter cold winter weather, extensive snow and ice accumulations along with rain made progress difficult at times, but Supreme Systems worked hard to completely tear off the TPO membrane and install the Sarnafast system.

"We were racing against a failing membrane," said Lincoln Hill, project manager at Supreme Systems. "We needed to get the roof replaced quickly, so we were glad we were using Sika Sarnafil's 10-foot-wide membrane. The wider rolls saved us a lot of time and labor — we were able to complete the job in a fraction of the time."

After only six years, the steel fasteners used to secure the former TPO membrane were rusted due to water infiltration through thousands of tiny pin holes that had been developed.

Advanced oxidation and loss of thickness of the exposed TPO membrane surface caused thousands of tiny pin holes to appear around the reinforcement scrim. To speed the installation process, grey caulking was used to cover many of the pin holes before the Sarnafil membrane was installed. The yellow lines were used to mark areas of the TPO that were leaking.

Protection Complete

"The roof is fantastic," said Bill Meath, general manager at DSC Logistics. "I know it's well made and expertly installed — Sika Sarnafil was definitely the best product for the job. The individuals who installed it were very professional and efficient, and I am confident our new roof system will provide the building and its contents with complete protection for decades to come."

Hurricane Isabel No Match for Sika Sarnafil Roof

On September 18, 2003 – less than four months after the new roof was installed — Hurricane Isabel passed over the DSC Logistics warehouse. "Despite continuous winds of between 50 and 75 miles per hour, and gusts of up to 90 miles per hour, the Sika Sarnafil roof system on our building held strong," said Bill Meath, the building's general manager. "There was no damage to the roof whatsoever."

Power was knocked out to the facility for a short period of time and several large trees near the property were uprooted. "It would be hard to believe a storm of this magnitude had come through the area if you only saw this roof," said Hank Matthews, a Sika Sarnafil technical representative who inspected the roof after the storm had passed. "Many buildings along Isabel's path didn't fare nearly as well."

The aftermath of Hurricane Isabel is seen in the Colonial Heights, Virginia area in September, 2003.

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