



Sustainable Project

PUERTO RICO CONVENTION CENTER
SAN JUAN, PUERTO RICO

Tremco Team Solves Confounding Leak Issues for Showplace Convention Center

The gorgeous Puerto Rico Convention Center (PRCC) can accommodate up to 25,000 visitors and is easily the Caribbean's largest, most technologically advanced facility. This jewel features a roof made of a structural tubular steel frame and a multitude of glass panels shaped into a sweeping, wave-like structure. However, it was plagued with a common yet confounding problem: constant leaks.

Tropical Climate Tough on Building Components

The unique roof was suffering in the tropical climate, which can see summer temperatures as high as 115° F, autumn hurricanes and torrential spring rains. This combination of the elements and movement inherent in the system affected glazing seals along the framework as well as near the hurricane clips. Glazing seal failures were evident by the resulting leaks throughout conditioned areas and terrace sections of the facility.

A combination of failed previous repair strategies and obstructions in the internal water management system rafters and purlins compounded the problem and caused continuous interior leaks, not just when it rained. Management's last resort was placing indoor plants beneath leaky areas to collect the water. Needless to say, those responsible for the facility, building management company SMG and the Puerto Rico Convention District Authority, were eager for a real and lasting solution.

Complete Analysis and Team Approach Yield Long-Term Solution

Local Tremco Roofing building envelope roof consultant Frankie Mirandes was contacted to do what previous contractors could not: fix the leaks once and for all. After the initial visit, he realized that a team was needed to dissect the leaking problems and develop a solution. Besides Mirandes himself, the team of experts consisted of Tremco Roofing roof consultant Jim Lohmann, RRC, and representatives of Tremco Commercial Sealants & Waterproofing (CS&W), WTI (Weatherproofing Technologies, Inc., a subsidiary of Tremco Incorporated) and Tremco Certified Contractor National Building Contractors (NBC) of Conyers, GA.



A unique view of the beautiful roof



Installing the simple seal



CS&W extrusion during installation

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The team spent three days analyzing the facility's construction to thoroughly understand the constant leaking. With a clear view of the problem, they then assembled the long term solution. Tremco CS&W has a long history of successful glazing and glazing restoration work, and a fully compatible line of gaskets, extrusions, tapes and silicone sealants. WTI provides ongoing roofing services as well as single-source general contracting to manage all facets of facility restoration projects. Together the team created a long term restoration strategy for glazing and weatherproofing restoration.

Custom Restoration System

The Tremco team considered a multitude of factors including further weather damage during repair and greater risk of disruptions to the ongoing operations of the facility. Since most of the issues were associated with poor flashing details of the external gutter, failure of the original sealant and previous repairs to the horizontal purlins, the focus was placed on specifically addressing those areas.

The strategy that offered the most reliable, durable, aesthetically pleasing solution with least impact to the building at the lowest possible cost was to remove and replace the sealant applications on the horizontal purlins. The existing wet seal on vertical rafters was also removed and replaced without removing the compression bar and internal obstructions, and with only selective snap cap removal. The external gutters would be secured and have a counterflashing installed over the existing termination. The downspout outlets on the storm water drainage system would be properly flashed to ensure that those items were functioning properly.

To address the glazing restoration of the skylight framework, design engineers from the Tremco CS&W Glazing Solutions group created a custom restoration system comprising Tremco Simple Seal extrusion, a custom silicone overlay extrusion, and Spectrem 1 Silicone Sealant.

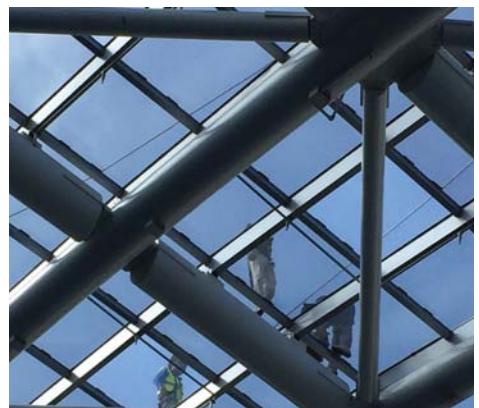
In addition to the glazing restoration, the gutter was inspected and any open weld joints in the gutter itself repaired. The terminations at the tubular steel were secured with stainless steel fasteners, then the termination was three coursed with sealant and mesh. Finally, a surface-mounted counterflashing was installed over the top of the existing termination to the tubular steel.

Ongoing Maintenance Program Ensures Quality

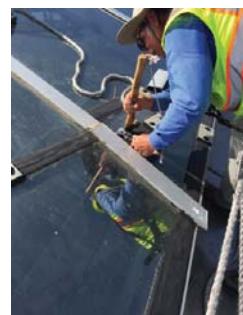
The work was completed within 94 continuous work days without extended interruption to the convention center's activities or any weather issues impacting repairs. This ambitious schedule generated considerable labor savings as the efficiencies of so many consecutive work days allowed the applicators to complete more than 800 lineal feet of the gasket overlay system per day.

By working with Tremco and its team, the PRCC was able to bundle all work into one package for single-source procurement on the project.

Now with a dry, leak-free and weathertight facility, the PRCC is protecting its investment with a TremCare program. This pro-active maintenance and asset management program delivered by WTI General Services helps to ensure the longevity and performance of the installation. This gem of a facility is now as dry and weathertight as it is beautiful — and will stay that way for many years to come.



Looking out through the facility's top



Removing old snap caps and sealants



Aligning snap caps is necessary for proper extrusion installation



A stunning building, night or day, rain or shine

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