

TREMCO'S LEAK FREE BUILDING ENVELOPE SOLUTIONS PROJECT PROFILE

University of Texas Southwestern Medical Center, Dallas, Texas

CHALLENGE

In late 2017, less than three years after University of Texas Southwestern Medical Center's Clements University Hospital in Dallas was dedicated, the system broke ground on a significant expansion, which would add a third tower to the existing building. The new tower will house employees, patients, and services related to neuroscience programs associated with the Peter O'Donnell Jr. Brain Institute.

As part of the project, Houston-based glazing firm Dynamic Glass was contracted to fabricate and install roughly 110,000 square feet of glass, about 80,000 square feet of it being pre-fabricated ribbon windows and the remainder unitized curtainwall as well as some stick-built areas.

During a page-turn meeting early in the project, the consultant expressed concern related to a transition of the curtain wall system assembly to the precast panel. Realizing that there may be a gap for air flow at this transition, as shown in the architectural drawings, the consultant wanted the Dynamic Glass shop drawings to incorporate an extra measure of protection to seal any gaps below the sill track.



Prefabrication of the ribbon windows expedited this project, as completed window systems were manufactured in a plant and then craned into place.

"The consultant's concerns pertained mainly to air flow and the possibility of condensation through the gap transferring to the inside of the building," explains Dynamic Glass Senior Project Manager Edward Longard. "Any air infiltration there could lead to condensation on the sill member."

The curtain wall design included prefabricated ribbon windows going into pre-cast punched openings with an embed in place. Longard elaborates, "There was a legitimate gap in scope. Typically, the architect would have drawn something in the detail that they wanted, instead of deciding later down the road and requiring us to come up with a solution."

SOLUTION

To address these concerns, Dynamic Glass worked with the consultant to incorporate a solution that would cover the air gap. It would need to adhere to and be compatible with the silicone sealant and be easy to install. Options included a mill finish break metal or extruded silicone bridge.

The team then turned to local Tremco glazing specialist Ken Krieger to find the best solution. “Whenever we get an architectural detail that includes any sort of waterproofing element that is different than we’ve seen before, we reach out to Ken... He is solution-oriented instead of coming back with more problems,” says Longard.

“He’s an expert on waterproofing so we don’t have to be,”

Edward Longard on Tremco Glazing Specialist Ken Krieger

Ultimately, the solution for this detail was Tremco’s Spectrem® Simple Seal silicone extruded sheet in a 3” width, adhered with silicone sealant to the precast panel on one side and the metal panel connection on the other.

“While we could have gone with a break metal there, Simple Seal was the most physically flexible and the easiest product for us to use. We were able to easily cut it to length...You run your sealant lines and then you just bed it down, and you’re ready to install the sill track on top of it,” Longard states.



Spectrem® Simple Seal is delivered in rolls for easy mobility and application.

Simple Seal also provides an additional level of quality assurance. “Because of its flexibility compared to metal, when you are bedding it into the sealant, you can physically touch it and feel that it’s adhered below; you can tell if there is a spot that it isn’t continuous, in which case, you can just peel the extrusion back, add silicone, and push it back down. With break metal, you’re almost blind sealing and trusting that you put enough sealant in every area so that it adheres.”

To validate performance of the solution, on-site water penetration resistance tests were conducted by a third-party testing agency in accordance with AAMA 502, using a spray rack on the outside and a chamber pulling negative pressure on the inside. The fenestration system passed all four chamber tests with no water penetration observed.

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