



CRISIS AVERTED

What laid behind the walls of the four-story, wood-framed Silverton Condominiums in Silver Spring, Md., was the stuff of nightmares for building owners and contractors everywhere.

It started off as a simple sealant replacement job, but quickly turned more serious when an unassuming facade revealed potentially catastrophic structural damage of the Silverton Condos in Silver Spring, Md.

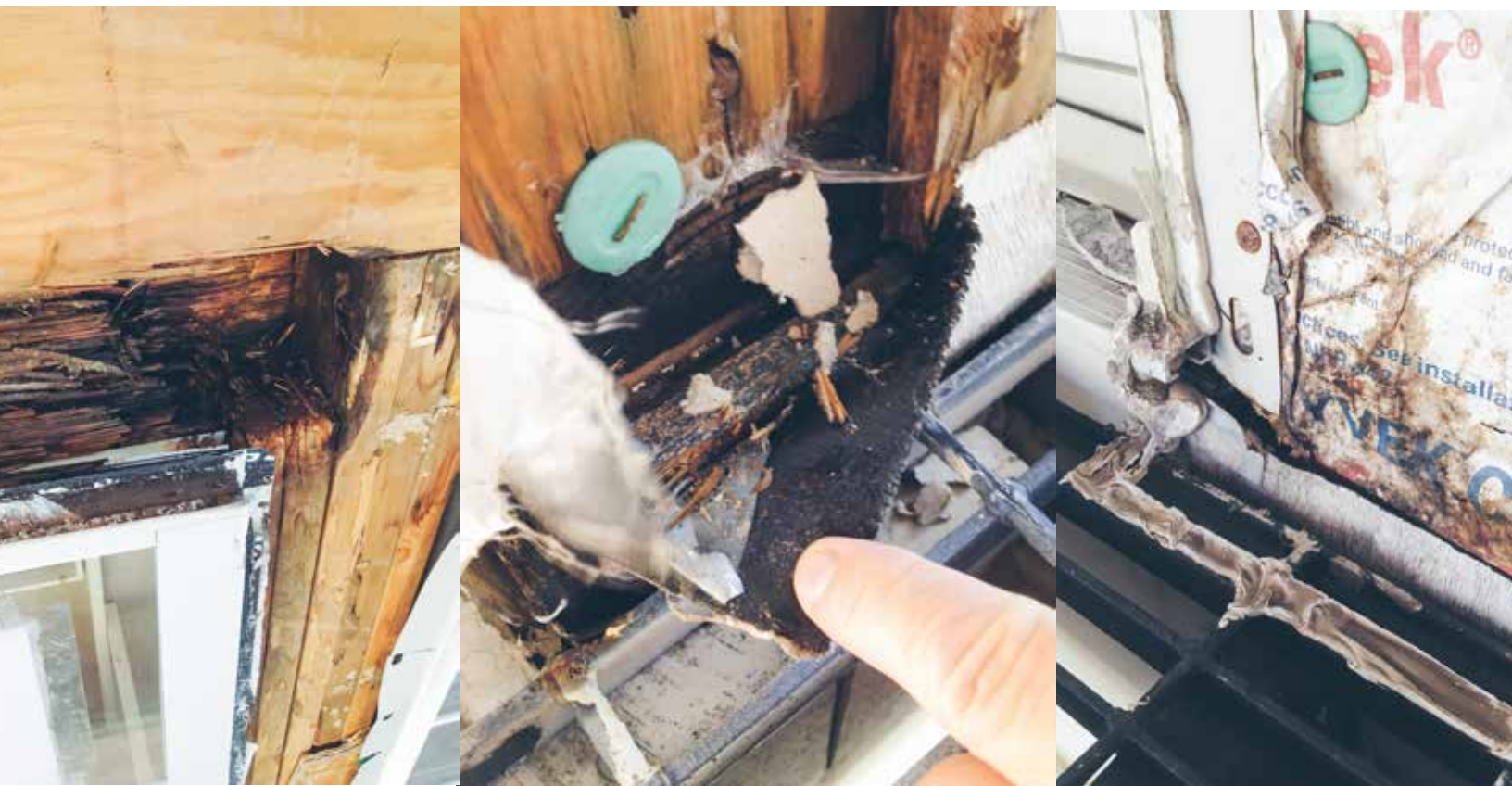
Built in 2007, the condos began showing signs of leaking issues in the winter of 2013. The building owner brought Facility Engineering Associates (FEA) on site to assess leaks on the structure's east/west corner that frequently takes on significant amounts of wind-driven rain. Over six years, the recurring weather event coupled with the condos' French balcony doors eventually resulted in visible leaking to tenants.

"With leaks being the only outward sign something was wrong, the client believed the caulking simply needed to be replaced," said Steven Bentz, the engineering consultant on the project with FEA. "But after an initial visual inspection, we recognized suspect conditions with cladding and general construction, and recommended that a contractor be brought in to open up the skin." FEA tapped Maryland-based

contractor Standard Restoration and Waterproofing (SRW) to help tackle the project. With FEA's worst-case scenario scope of work in hand, SRW arrived on site, erected a pipe frame scaffold and installed interior, insulated partitions to reduce weather exposure and create a suitable investigation and demo/work zone.

"From experience, we had accounted for a good deal of what we found behind the skin in our initial scope to SRW," Bentz said. "However, the magnitude of structural deterioration was greater than anticipated on a building just six years old. Usually that level of damage is seen on structures 10 to 15 years old. To see it on a building that age was pretty dramatic."

The damage behind the wall components and cement board panels included severely deteriorated plywood sheathing, 2'x8' window and door headers, corner structural framing posts, and built-up joists throughout the three-unit corner tier — all damage concealed by the cladding material on the outside.



SRW President Dave Etchison said the situation encountered at Silverton is not uncommon to see, and yet no less unnerving, considering what might have happened had it gone unchecked. "There were large, multiple structural wood framing members that had been essentially reduced to cardboard. Unfortunately we see this type of deterioration frequently. In fact, we make a living going behind people and repairing what wasn't done right the first time — which is ultimately the long-term impacting issue," he said.

The perfect storm

Where waterproofing began its downward spiral at Silverton was with a cladding system that did not allow water to sufficiently drain or evaporate. Water that drove through the non-permeable system by way of open gaps in the exterior cement panels then found its way to a faulty water-resistive barrier. With nowhere to go, the water saturated the wood structural components with every weather cycle for what ended up being six years too long.

After a complete assessment of the deterioration, including measurements and up-close reviews of components, the project team determined that the damage spanned from the bottom of the second floor to the underside of the fourth, with isolated locations around the window assemblies.

The right way

Given the extent of damage, yet despite additional costs and extended timelines, the entire Silverton project team agreed that a structural restoration was the best and only way to proceed, considering the health and safety of the public and the building's tenants. A new project plan was then created to protect all parties involved from the unpredictable conditions in the walls.

"The good news for the client was that in the process of getting an initial price from SRW, we carried an allowance based on our previous experience with jobs such as this," Bentz said.

"Luckily for the owner, the revised scope and price was covered by that allowance and no change orders were needed."

The expanded scope of work now included shoring and temporary support needed to remove and replace deteriorated wood framing



with newly designed structural members and connectors, removal and re-installation of existing windows and replacement of the building's French doors with sliding glass ones. Finally, a complete building envelope approach was taken with the application of a new and vastly improved air and water barrier system to prevent any more leaks at the buildings east/west corridor condo units.

High expectations were set for PROSOCO's R-Guard Cat 5 air and water barrier system. It needed to meet all detailing requirements to encapsulate the corner assembly, and be capable of being applied quickly to potentially wet substrates, as well as during a variety of weather events.

With the durable, elastomeric flashing material installed and the project completed, the building's new wood components were now protected from any water trying to get into the exterior cladding components.

"Waterproofing materials are evolving and we've been excited to use the Cat 5 system," said Etchison. "It's an extremely user-friendly product that provides a huge advantage to the installer who now doesn't have to be concerned with

applying materials to a damp surface. Using products with silyl-terminated polymer technology simply eliminates a lot of commonly made errors. Plus, the fact these products do not have weather restrictions for application is a big deal in terms of a project timeline.”

While the east/west corridor of the Silverton Condominium project was the focus of this job, an integral part of the completion of the building envelope retrofit came from PROSOCO. Its FastFlash product, a detailing compound that’s part of the Cat 5 system, was used as a liquid flashing membrane to fill exterior wall openings and terminate the membrane of adjacent wall components on the other façades of the building.

The project team at Silverton completed the job in February of 2014, and to date, no additional leaks have been reported.



PRODUCT SPOTLIGHT: CAT 5 SYSTEM

Can be applied to damp substrates

Vapor-permeable to allow vapor and moisture to escape the building envelope

99% solids to expand and contract with all rough opening components

Solvent-free, isocyanate-free, phthalate-free

Easy to gun, spread, tool and roller-apply

Complies with all VOC regulations

Red List-free

Silverton Condominiums

TYPE Rehab

LOCATION Silver Spring, Maryland

AGE Six years old

SIZE Four stories

BUILDING CONSULTANT Facility Engineering Associates

WATERPROOFING CONTRACTOR Standard Restoration & Waterproofing Co.

