Sealant and Waterproofing Association of Canada

BULLETIN

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A Spotlight On **Project Success**

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President's Message

I am pleased to open the page on the first edition of the SWA Bulletin. We are always seeking new and engaging ways to connect with our members and this is another step towards that mission. Ahead, you'll find in-depth profiles on the "Dig Down at Toronto's Union Station," the first project to win SWA's Trillium Award, as well as a profile of an impressive waterproofing initiative at TTC's Yorkdale Station.

This intro also happens to be my first official message as president of SWA. I was honoured to be appointed by the Board back in November at the SWA's Annual General Meeting in Niagara Falls and am excited to now be working with SWA and its members in tackling the industry's biggest challenges and opportunities.

And, as I'm sure you're all aware, there are plenty of challenges to go around. Even with the pandemic on the retreat, SWA members are now dealing with a "perfect storm" of supply chain issues that are causing uncertainties and tensions all their own. We're not the only sector facing these obstacles, but we need solutions tailored to our specific corner of the construction industry. To that end, SWA enlisted an economist to better understand these challenges and the impact of inflation on our market. We also invited this expert to share his insights and economic outlook for the construction industry during our seminar on April 5, 2022.

I'm a big believer in sharing knowledge and expertise. That's why I'm looking forward to getting back to in-person meetings and events where we can all shake hands and collaborate in a more productive way. Don't get me wrong, virtual meetings and remote teamwork served us well, but it's time to add real-world networking back into the mix.

Of course, it's not like we haven't been busy. As the government made clear soon after the arrival of COVID-19, the services that SWA members provide are considered essential. The work you're doing provides a tremendous amount of value to the community at large, and it's encouraging to know that the government believes the same.

We all have some work to do in the post-pandemic. For me, it's drawing on my 20 years in the industry to serve you all as president. For everyone at SWA, it's providing members with the knowledge, training, and networking opportunities to excel in their own roles. As for you, the Association is always looking for event speakers, consultants, or an extra pair of hands to help with our initiatives. This sector showed how well it can rise to a challenge as one during the pandemic. Now, let's keep that momentum going.

Stay safe,

Jeremy Horst
SWA President & Principal of Building Science and Restoration Read Jones Christoffersen Ltd. (RJC)

SWA
Sealant and Waterproofing Association of Canada

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70 Leek Crescent,
Richmond Hill, Ontario L4B 1H1
(Tel) 416-499-4000
info@swao.com • www.swao.com

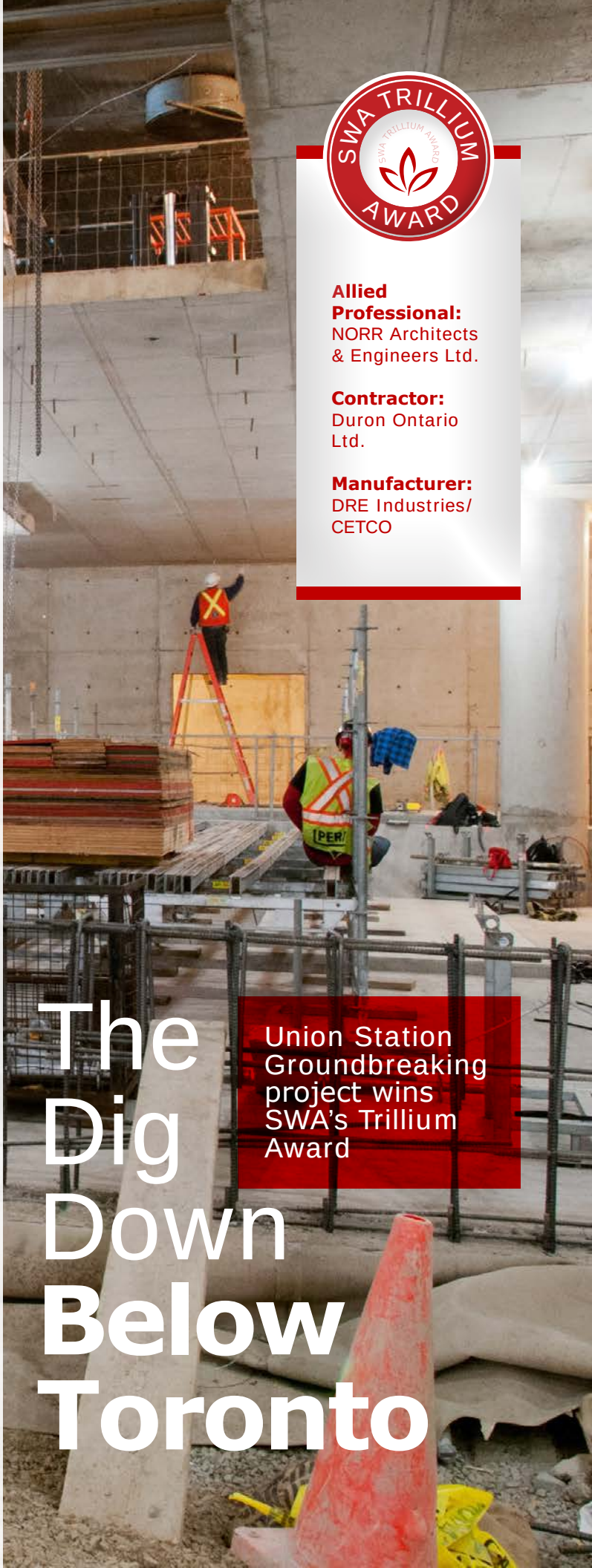
Producer:
Hellcat Creative

Writer/Editor:
Matthew Bradford
mirbradford@gmail.com

Design:
George Conidis
geocdesign.com

The Dig Down **Below Toronto**

Union Station Groundbreaking project wins SWA's Trillium Award



Allied Professional: NORR Architects & Engineers Ltd.

Contractor: Duron Ontario Ltd.

Manufacturer: DRE Industries/ CETCO

Extensive teamwork and deep expertise made "The Dig Down Below Toronto Union Station" a solid choice for SWA's first Trillium Award. The landmark project saw NORR Limited unite a team of industry-leading contractors and waterproofing professionals to revitalize Canada's busiest transportation hub.

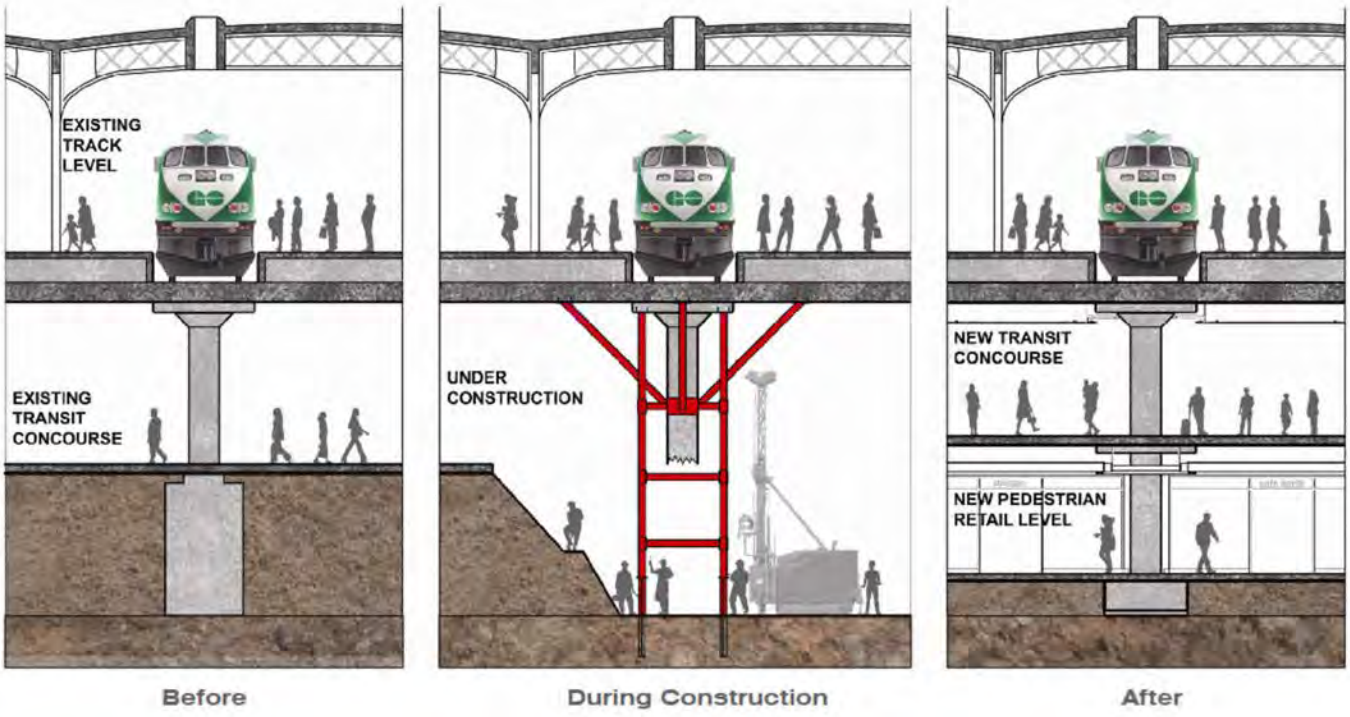
"It was a monumental ask," recalls Silvio Baldassarra, Chairman of the Board with NORR. "The City of Toronto had bought Union Station six years earlier and was looking for a partner who could take over the complete restoration of the station."

The City's goals were three-fold: rehabilitate the heritage building, create a commercial retail destination, and – perhaps most importantly – enable the station to better serve the millions of annual passengers who passed through its gates.

"At the time, Union Station was seeing up to 65 million people come through it annually, and the City was expecting that volume to grow up to 130 million by 2030," Baldassarra explains. "The station wasn't built to accommodate that many passengers and it needed someone to find an economical way of moving more people without impacting this heritage site."

It was a monolithic task on a sensitive site. At first, the challenge fell to Union Pearson Group, which spent years attempting to find an economical solution before stepping back. Soon after, the City approached NORR to get the project back on track.

"There were a lot of smart architects and engineers that came before us with various ideas, but after those proved unfeasible, we knew we needed a different approach," says Baldassarra. "That's when we came to the City and said, 'What if we could perform the restoration and create this commercial space not by touching the heritage building but by digging down?"



We were inspired by what they'd done at Grand Central Station in New York," he adds, "It had never been done before in Canada or even anywhere in the world at this level, but we were confident we could pull it off."

Breaking ground

It was the most technically innovative architecture and engineering solution ever to be implemented at its scale in Canada. And while it took some convincing, NORR's decades of experience, industry reputation, and success with similar initiatives at the Toronto Pearson International Airport won the City's approval.

NORR's dig-down strategy involved excavating additional space 13 feet below the station basement to create two floors offering 110,000 sq. ft. of new passenger concourse space. The work needed to be done while maintaining full station services and without negatively impacting any of the heritage assets.

"That meant supporting the building above while we cut columns, which from a structural point of view was no small challenge," says Hassan Saffarini, Principal at NORR. "It's one thing to support something vertically, but it's another to support something while you have the constant breaking force of a train coming in, stopping, and leaving regularly through the day."

This was one of the many logistical challenges that put NORR's expertise to the test. Another was selecting and installing a waterproofing membrane for the new underground space that could withstand the site's demanding soil conditions and provide long-term performance.

"That's where we came in," says Marla Cosburn, President of DRE Industries. "NORR was looking for a highly durable membrane that could guarantee longevity, and they selected CETCO's CoreFlex 60 system, which is our highest-end waterproofing product."

CETCO's system was selected for numerous factors, including its dual membrane properties (60 mils welded membrane and active layer), extremely low permeability, and comprehensive warranty.

"Given Union Station's importance as the

biggest transportation hub in Canada, and the high-end use of the second basement, we sought the most reliable waterproofing system," notes Saffarini, explaining, "The basement slab and foundation walls are within the water table level in parts of the station and installation had to be made as blindside waterproofing, and CETCO CoreFlex 60 was the right solution. And together with the high quality control during construction, it also ensured a watertight retail mall and concourse."

"It was a complex and demanding project, so we were quite pleased that they felt our product was the right one for the job," adds Cosburn.

A Canadian-first installation

A specialized membrane requires specialized skills. To that end, Duron Ontario Ltd. was selected to install the CoreFlex 60, conducting what would become the largest heat-welded waterproofing system installation in the country.

"This system required an approved and skilled applicator," says Elisa Gorniak, Manager of Waterproofing with Duron's Roofing & Mastic Department. "For example, it required heat welding of every single seam and penetration using heat guns at a very specific heat level and rate to ensure everything welded together to form a continuous bond."

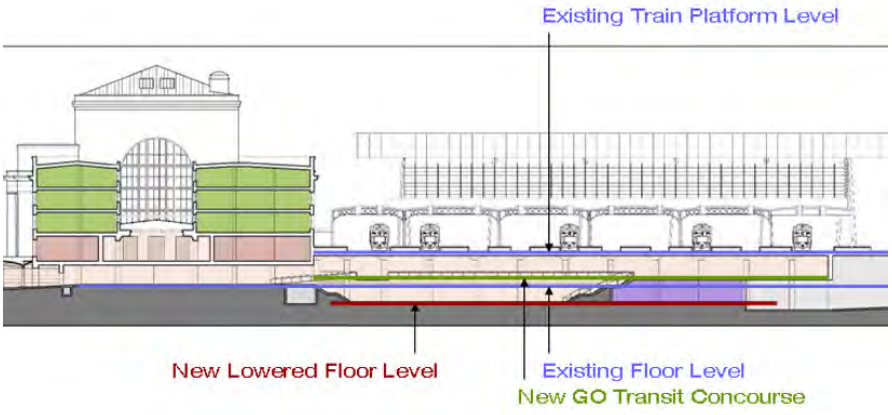
To ensure success, NORR and Duron worked in close collaboration with CETCO's CAD department during the design phase to develop over 100 project-specific details (e.g., penetrations, tiebacks, various column footings, pipe penetrations, and pipe banks).

As Saffarini reports, "DRE Industries went over several options at the early stages of the design development. And once the right solution was selected, DRE and CETCO provided extensive detailing to ensure continuity of waterproofing,"

"In many cases, site challenges required that these details be adapted to meet such unique conditions," he continues, "and this collaboration continued through the construction stage."

With designs locked down, the first challenge for the entire team was to transport the waterproofing material and equipment into the underground site. After granular was placed and the site was prepped, Duron worked alongside crews to install the CoreFlex 60 membrane over graded clear stone.

To say the job was complex would be an understatement. The work involved booting and clamping thousands of penetrations using various details, and fastening and welding the CoreFlex 60 to the wall in an offset seam to create a fully-welded membrane.



"The seaming of the system was extremely important, as any weak area risks letting the water in, and that simply was not an option," says Gorniak.

In addition to ensuring a continuous membrane throughout the site's complicated layout, the crew also facilitated a watertight termination to a cast-in-place tunnel. After waterproofing was complete, a layer of Voltex (a thick bentonite-like carpet) was then laid on top for protection.

Sealing the deal

Union Station's revitalization has been a long time coming. Thanks to the collaborative efforts of NORR, Duron, and DRE, it is now home to the additional commercial and commuter space it needs to be ready for future travellers.

"We added an incredible amount of area to the station that reinvents it and makes it a real process or a transportation processor that will be flawless for the next 50 years," says Baldassarra. "One thing we're all proud of is the fact we met the City's goals without changing the look of this beautiful heritage building. We believe the station's original architect would be proud that we paid respect to their vision."

Certainly, working on the Union Station Revitalization has been a hallmark experience for all involved. That includes Cosburn and her team at DRE Industries, who says the team's success is owed largely to a united approach.

"There were just so many moving parts over multiple years, and all were taking place in this critical space below a busy station," she says. "Without the constant communication and cohesion between the team, we wouldn't have been able to make this a success."

"It's definitely a historic endeavor and a very high-profile project," adds Gorniak. "It's one of the most important and iconic buildings in the city, so to be involved in this project and be included in the Trillium Award win was very special."

MEMBERS IN ACTION

Allied Professional:
WSP

Contractor:
Beverly Caulking & Duron Construction

Manufacturer:
Tremco

Waterproofing TTC's Yorkdale Station

Innovation on display at busy Toronto hub

It was lofty work at a Toronto Transit Commission's (TTC) subway stop that put several SWA partners in the industry's spotlight. In September 2021, Tremco and Beverly Caulking joined Duron Ontario to remediate Yorkdale Station's skylight, a project that required an innovative approach and airtight collaboration to come out on top.

"The skylights were experiencing severe leakages and we were challenged to come up with a creative solution to repair the leakages while minimizing the disruption within the subway," notes Rino Dupont, Regional Manager at Tremco Commercial Sealants & Waterproofing and SWA Board member.

An initial diagnosis by Tremco revealed that the mullions connecting the skylight's panes of glass had been leaking for some time. And while one strategy was to pull out each piece of glace and replace every gasket, doing so would have exceeded the client's time and budget constraints.

"Doing it piece by piece was just too costly and timely, so we needed another solution that could be done quicker and still offer a durable, leak-free air/water/vapour barrier," explains Steve Peso, Technical Account Manager at Tremco Commercial Sealants & Waterproofing.

After consultations between all partners, that solution was to perform a custom installation of Tremco's Spectrem Simple Seal, an extruded silicone sheet. This task fell to Beverly Caulking, which took the reigns in installing Simple Seal and sealing all joints, penetrations, and terminations in the skylight and vertical glazing system above and around the subway platform. "We had to ensure all joints and penetrations have new seals to provide a continuous barrier against

water infiltration," says Bruce Mallory, Senior Operations Manager with Beverly Caulking, adding, "Where existing joints or penetrations could not be sealed using silicone strips, we replaced the existing joint seal."

Beverly Caulking is no stranger to installing Simple Seal, having completed numerous projects using the advanced silicone strip in the past, such as on a 17-storey condominium in Windsor. Nevertheless, says Mallory, "This project provided us with an opportunity to repair a large skylight with leaks without the arduous job of removing all of the existing sealant, glazing pressure plates, and thousands of screws. Doing so eliminated the potential of damaging an aging structure and saving the client a considerable amount of money in the process."

A peak challenge

It was a "simple" solution under less-than-simple conditions. To work fast and with minimal disruptions, the Yorkdale Skylight Remediation team was restricted to working at night. The project also occurred throughout the pandemic, requiring rigid safety guidelines for all workers.

"There were a lot of COVID protocols in place. The fact that the two people we had on a boom performing the work didn't have to pull any glass meant we didn't need as many

people working in that smaller space," reflects Peso.

Reliable material delivery also played a role in the project's success. Says Mallory, "From the beginning, when we put our bid together, [Tremco] committed to provide us with the custom specialized silicone strips and silicone sealants we required for this project in a timely manner, and they stuck to that."

"That gave us peace of mind knowing we could satisfy our client's deadlines and provide them a manufacturer's long-term warranty," he adds.

While harsh weather conditions recently put the skylight remediation on hold, there are plans to get the project back on track this spring. In the meantime, all stakeholders are looking forward to wrapping up an initiative that will keep TTC's passengers dry.

"It's a 20-year system," adds Peso. "Very little can happen unless you have an issue with the mullions themselves, the structure is impacted, or the glass breaks. Other than that, there's no possibility that this should leak."

WELCOME
NEW MEMBERS

REGISTON
BUILDING RESTORATION LTD.

SBA Inc.

WELLDONE INC.
CONTRACTING COMPANY

UPCOMING
EVENTS


SWA's March 4th, 2022 Ski Day at Osler Bluff Ski Club

May 3	Product Expo / Scarborough Town Centre
June 1	Trillium Award Submissions Open for 2022
July 12	Golf Tournament / King's Riding Golf Club
August TBD	Fishing Derby / Location TBD
August 19	Deadline for Trillium Award Submissions
October 6	Luncheon Seminar / Location TBD
November 3	Annual General Meeting / Location TBD

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