



Sealant and Waterproofing  
Association of Canada

# BULLETIN

SPRING/SUMMER 2024, EDITION 5

**Members  
in Action:**

**Tunnel  
Work at  
UOFT**

Also in this issue:

**2023  
Trillium  
Awards &  
Awards of  
Merit**

**SWA's  
Vegetative  
Roofing  
Seminar**

**SWA  
News &  
Events**

# President's Message



I am honoured and excited to address you as president of the Sealant and Waterproofing Association of Canada. As we enter a new era for our industry, I am also proud to witness the remarkable progress our association has made in establishing itself as Canada's foremost authority in the sealant and waterproofing sector. Our Association is growing year over year, and this is a testament to everyone's commitment to providing value for each other and the industry at large.

SWA is built on the pillars of education, leadership, and networking, and we continue to excel at delivering on these fronts. Collectively, we have cultivated an environment that fosters the exchange of knowledge, the development of best practices, and the building of invaluable professional connections. In this journey, we are not just an association; we are a community dedicated to advancing Canada's sealant and waterproofing industry.

This issue follows another winter of fun SWA events, which included a day on the slopes at Osler Bluff and the inaugural hockey game at Collingwood Arena. Of course, we are also fresh from the Waterproofing Product Expo at the Scarborough Town Centre in April, which boasted a record-breaking 16 exhibitors showcasing the thriving innovation and dynamism on display throughout our industry.

Up next, the 2024 Fishing Derby (June 2024) and the highly anticipated golf tournament at Wooden Sticks (July 9th, 2024) will be key in bringing our members even closer. These events provide not only friendly competition but also a chance for industry professionals to forge lasting connections.

Speaking of noteworthy events, we've dedicated a large portion of this Bulletin to showcasing the latest

SWA Trillium Award winners and Award of Merit recipients. These projects exemplify the pinnacle of collaboration and excellence within our community and underscore the positive outcomes that result from teamwork, dedication, and shared expertise. I am particularly proud to announce we received a record number of submissions for the 2023 Trillium Awards, signifying a growing recognition for these prestigious accolades.

Finally, as we navigate the ever-evolving landscape of the sealant and waterproofing industry, let us embrace the opportunities that lie ahead. Together, we will continue to drive progress, set new standards, and push the boundaries of what our industry can achieve. The Sealant and Waterproofing Association of Canada is not merely an organization; it is a dynamic force shaping the future of our trades.

I am grateful to each member for their unwavering commitment to our shared goals. Let us march forward with optimism, unity, and a collective vision for a future where our association is synonymous with trust, knowledge, and excellence.

Wishing you all continued success and prosperity,

Jeremy Horst  
SWA President

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Sealant and Waterproofing Association of Canada

## BULLETIN

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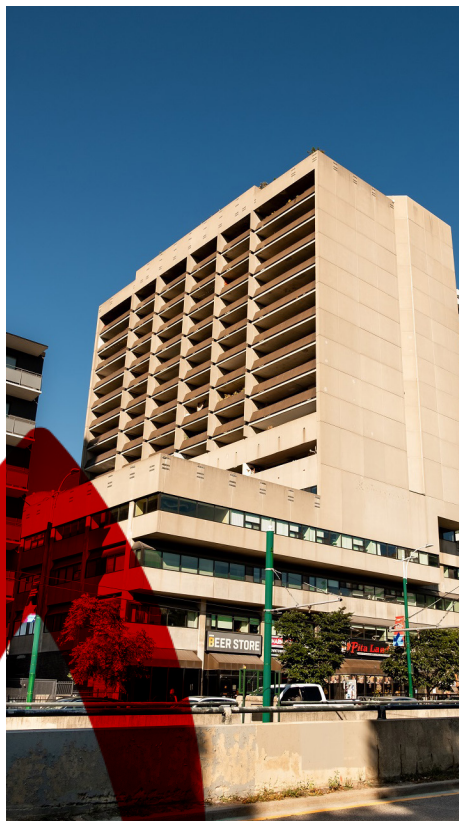
 

**BUILDING TRUST**  
CONSTRUIRE LA CONFIANCE



2023

SWA TRILLIUM AWARDS



*The 2023 Trillium Awards spotlight the outstanding work of SWA's members throughout the industry. Congratulations to this year's nominees for their successful projects and the following winners for their exceptional achievements.*



**WINNER:  
NEW CONSTRUCTION**  
**Ontario Court  
of Justice**



**Manufacturer:**  
DRE Industries/  
CETCO

**Consultant:**  
NORR Architects  
and Engineers

**Contractor:**  
Bothwell-  
Accurate Co Inc.

**B**othwell-Accurate Co Inc. and its project partners received top honours during the 2023 Trillium Awards for their work on the new Ontario Court of Justice. In collaboration with NORR Architects and Engineers, Renzo Piano Building Workshop, and DRE Industries/CETCO, the team created a state-of-the-art facility to host six criminal courts under one roof.

Located at 10 Armoury Street, the new facility features 63 courtrooms, ten conference settlement rooms, and other key courthouse features (e.g., prisoner holding facilities, in-custody transport services, security provisions). In addition to being designed as the most accessible courthouse in Ontario, the new Ontario Court of Justice is an energy-efficient and eye-catching addition to the neighbourhood, featuring a 20-metre-tall atrium enclosed by a transparent glazed façade, a two-story landscaped courtyard, a roof with photovoltaic panels, and displays of archaeological discoveries made during the construction.

## A winning verdict

Significant planning and project coordination were required to meet the high waterproofing requirements. As the team's award submission explains: "Due to the below grade spaces housing critical occupied space for judges' quarters, judges' parking, holding cells, and mechanical and electrical rooms. NORR Architects not only needed a quality below grade waterproofing product but also support throughout the design phase as well as skilled installers."

Bothwell-Accurate proved to be a fitting partner for the task. As for waterproofing material, NORR selected CoreFlex 60 for its "many outstanding physical characteristics," including the material's durability, dual membrane properties of a 60 mils welded membrane, meaningful warranty, and other beneficial traits.

“The reliability of the CoreFlex 60 was well understood by the consultant team based on past projects,” the submission notes. “The strong level of product and installation that was supported by the manufacturer permitted the design team to collaboratively solve difficult detail conditions for the application. Moreover, the extensive experience using the product locally promised that a high-calibre of workmanship in the application was possible.”

## A complex case

With over 70 project-specific details provided, the Ontario Court of Justice project presented the team with several challenging considerations. These included the fact that the building shared a wall with an adjacent property, requiring blind side termination to accommodate the limited space between the two buildings and meeting requirements like boxed out tiebacks, concrete pump support box outs, multiple penetrations, and contour airshafts.

“The contour air shafts were particularly challenging due to the irregular and non-linear shape,” says the team. “Unlike straight walls or flat surfaces, the shafts’ curvature



and varying dimensions required customized waterproofing solutions that could adapt to the changing contours.”

Ensuring effective drainage was also a key consideration. The design of the waterproofing system had to account for proper water management within the curved or sloped surface of the contour air shaft.

Reflecting on the project as a whole, the team states: “Waterproofing for this project required a combination of specialized design, customized materials, meticulous execution, and adaptability to the unique conditions of the project.”

## All rise

It was truly a collaborative effort that brought the Ontario Court of Justice to life. That includes Bothwell-Accurate’s precision and quality craftsmanship, DRE/CETCO’s renowned waterproofing solutions and expertise, NORR’s innovative and inspired design, and the dedication of the construction trades.

“Their skilled teams navigated the challenges posed by the complex design of the Courthouse,” says the team. “Through careful planning and precise implementation, Bothwell-Accurate ensured that every corner of the courthouse was fortified against potential water damage, contributing to the facility’s long-term resilience; while NORR Architects played a vital role in envisioning the New Toronto Courthouse’s aesthetic and functional aspects.”

Together, submission notes, “the collaborative efforts of DRE/CETCO, Bothwell-Accurate, and NORR Architects yielded a triumph of architectural and engineering prowess, delivering the Ontario Court of Justice as a testament to innovation, durability, and a commitment to excellence in design and construction.”



**Manufacturer:**  
Tremco  
Commercial  
Sealants and  
Waterproofing

**Consultant:**  
MTE Consultants

**Contractor:**  
Heritage  
Restoration Inc.



**WINNER:**  
EXISTING BUILDING  
LARGE PROJECT

## Carl Zehr Square at Kitchener City Hall

**I**t was a collaborative effort to revitalize a Kitchener hub that gave Heritage Restoration Inc., Tremco Commercial Sealants and Waterproofing, and MTE Consultants a deserved spotlight. The team worked in unison to rejuvenate Carl Zehr Square at Kitchener City Call, capping an important part of the region’s “City Hall Outdoor Spaces Rehabilitation Project.”

“As the main square of the city, hosting community events throughout the year and daily pedestrian traffic, the goals of this project were beautification and protection of the deck and parking garage below,” the team’s Trillium submission explains.

The project took place from February 2020 to December 2022. It included the full restoration of Carl Zehr Square’s podium deck and seasonal amenities, including the wintertime ice-skating rink and summertime fountain, which sit above an underground parking garage. Key tasks included removing the site’s existing pavers, planters, and water feature components; addressing leaks and concrete

repairs; and removing existing waterproofing and overburden before installing a new, more durable and long-term waterproofing solution.

“With the parking garage and vehicles underneath the Kitchener City Hall, the watertightness of the resulting solution, despite the weight and movement on top of it, was of utmost concern, especially given the premature failure of the original hot rubberized asphalt membrane,” explains the team.

With this in mind, the team selected Tremco’s Dual Waterproofing System (DWS), comprised of the cold-applied TREMproof 250GC polyurethane membrane and TREMproof TRA sheeting, as it was shown to be an ideal fit for the project given the site’s intricate detailing, pedestrian traffic, weight, and submerged conditions. Tremco’s Epoxy Primer was also applied as a bond breaker in areas where it was difficult to completely remove the existing asphaltic membrane to ensure proper compatibility and adhesion between any remaining asphaltic residue and



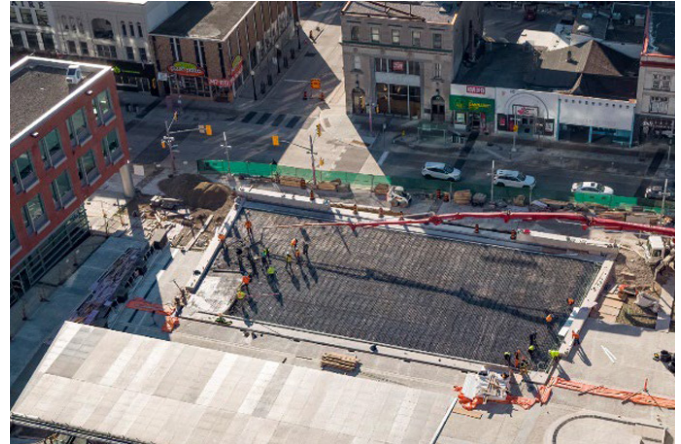
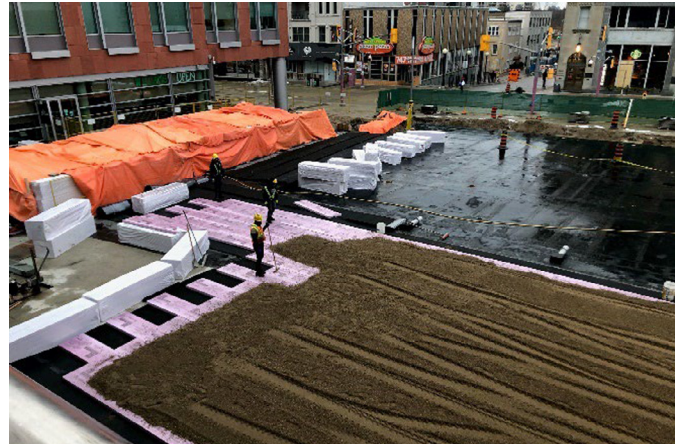
## No cut-and-dry project

The waterproofing system's design for Carl Zehr Square's new had to overcome many unique challenges. As such, the team says, "The restoration contractor, Heritage Restoration Inc. (HRI), worked diligently with MTE Consultants and Tremco, the waterproofing manufacturer, to provide suitable solutions for each situation."

One of the project's more challenging situations, it continues, included working with the convertible ice rink/water feature with penetrations for pipes that served as both the feeds and returns for the fountain elements and cooling systems for the ice rink: "These lines all varied in size, type and in some instances even exhibit movement when systems start or stop. Individual product and design solutions were collaboratively detailed for each component."



The project also required custom details to be drawn from scratch, including those for tie-ins and penetration. As the submission explains: "The convertible ice-skating rink and water feature had a variety of pipes and penetrations, some for the feeds and returns for the fountain during the warmer months, and others for the cooling systems for the ice rink in the winter ... All of this required significant pre-planning and coordination of the plumbing and waterproofing trades."



Equal degrees of coordination were required to convert the podium drainage system to a trench drain-based bi-level system, during which water traps were eliminated, and penetrations were diligently detailed to provide a lasting solution for the Carl Zehr Square event space.

Overall, the submission says: "Given all the nuances of this restoration, the design/build team worked together to create and execute the custom details and waterproofing solutions with the performance and longevity that the city expected with no concerns of leaks or substrate deterioration."

"Now," the team continues, "the Kitchener City Hall and Carl Zehr Square have an attractive, inviting entrance with landscaping, fountain, and ice-skating amenities to engage community members matched with waterproofing protection for decades to come."



**WINNER:  
EXISTING BUILDING  
SMALL PROJECT**

## **720 Spadina- 5th Floor Pool Deck Roof Replacement**



**Manufacturer:**  
Tremco  
Construction  
Products Group

**Consultant:**  
Read Jones  
Christoffersen Ltd

**Contractor:**  
Delta  
Roofing Inc.

**A** lofty pool deck roof replacement was the focus of this award-winning project submission. The project tasked a team comprising Delta Roofing Inc. (contractor), Read Jones Christoffersen Ltd. (consultant), and Tremco Construction Products Group (manufacturer) with replacing the 5th-floor terrace pool deck roof assembly of a 17-storey residential and commercial building at 720 Spadina Avenue in Toronto.

The project was triggered after several localized repair attempts fell short of stopping ongoing leakage that had been reported within the crawl space below due to the presence of discontinuous waterproofing layers. Moreover, the roof membranes had reached the end of their useful service lives, making localized repair programs less effective.

Following these prior efforts, Delta Roofing Inc. and the team were called in to conduct the wholesale removal and replacement of the pool deck roof assembly, including three staircases and the 6th-floor landing, with Tremco's TRA-LRM membrane system and drainage board. Other key elements of the project included:

- Wholesale removal and replacement of the existing brick interlock pavers at the pool deck and 6th-floor landing. The existing bedding sand below the pavers was salvaged.
- Wholesale removal and replacement of the planter roof assembly complete with a new root barrier (existing topsoil and granular fill were stored and reinstated).
- Wholesale removal and replacement of the existing waterproofing membrane in the pool crawl space.
- Wholesale removal and replacement of the roof area drains.
- Localized surface concrete delamination repairs to facilitate the installation of a new roofing membrane.

The existing pool deck roof presented a set of inherent challenges due to previous repair programs and the original building construction, including the installation of two different liquid-applied waterproofing membranes. Further obstacles arose early



into the project when Delta reported that they could not remove the existing liquid-applied waterproofing membranes. This created a potential material compatibility issue for the TRA-LRM membrane system and necessitated extensive testing.

As the submission explains: “Tremco was made aware of this and advised that they did not have any existing adhesion testing data for either of these membranes with the TRA-LRM membrane system. Accordingly, they proposed conducting adhesion testing on-site to determine if Trem-LAR V adhesive would provide adequate adhesion. If it didn’t, Geogard Primer, which is designed to enhance adhesion, was recommended to be installed. In total, six testing strips were installed over the existing liquid-applied membranes.”

After curing for seven days, all Trem-LAR V testing strips exceeded the minimum adhesion strength of 2,160 psf (15 psi), passing adhesion testing. As such, Delta was able to install the TRA-LRM membrane over the existing liquid-applied membranes without having to use Geogard Primer while also complying with the technical specifics and manufacturer installation requirements.

Other challenges for the team included accommodating the lack of sufficient space below existing pavers presented another set of complications, particularly when it came to the compaction of bedding sand and levelling of new pavers.

“The existing pool deck roof has only approximately 1.5” of space for bedding sand,” the team explains. “Compacting a bedding sand layer this thin can damage the drainage board below and result in localized settling of the new pavers. Furthermore, the height of the new pool deck roof had to remain the same in order to match the height of the existing pool curb, which prevented increasing the thickness of the bedding sand layer.”

The decision was made not to salvage the existing bedding sand but instead to explore a reliable and cost-effective alternative. Ultimately, TerraDrain 900, a high-compressive strength drainage board (18,000 psf) for horizontal applications, was selected.

These challenges were eventually overcome thanks to collaboration between all parties. This is detailed in the team’s Trillium Award submission, which explains: “The cohesive working relationship among all parties ensured technical challenges could be resolved efficiently. The technical expertise and due diligence of RJC and Tremco as well as the attention to detail demonstrated by Delta ensured technical challenges throughout construction were resolved efficiently and resulted in a successful project.”

*SWA thanks everyone who submitted their project for the **2023 Trillium Awards** and your commitment to industry excellence.*

# SWA 2023 TRILLIUM AWARDS OF MERIT

The SWA Trillium Award of Merit is given to member projects that demonstrate the industry's talents, ingenuity, and perseverance. Congratulations to the following recipients.

## EXISTING BUILDING: Small Project

423 Avenue  
Road, Toronto



**Allied  
Professional:**  
W. Allen  
Partners Inc

**Contractor:**  
Sure Seal Crack  
Injections Co. Ltd

**Manufacturer:**  
Kelso Abrasives  
and Coatings



**I**t was a collaborative success at a Toronto condominium that brought attention to the team of W. Allen Partners Inc. (WAP), Sure Seal Crack Injection Ltd., and Kelso Abrasives & Coatings Inc. The project occurred at 423 Avenue Road in the City's Summerhill community and required waterproofing the 12-storey condo's parking garage foundation wall, which was leaking into the underground garage storage lockers.

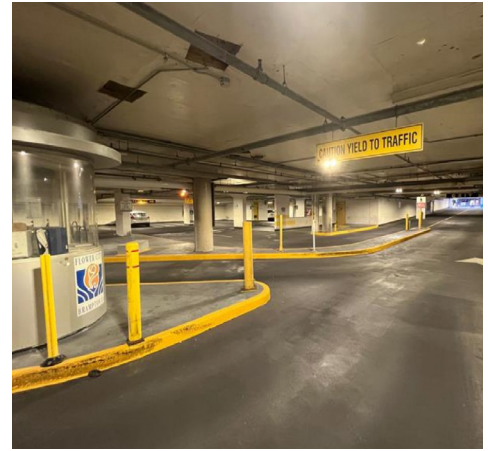
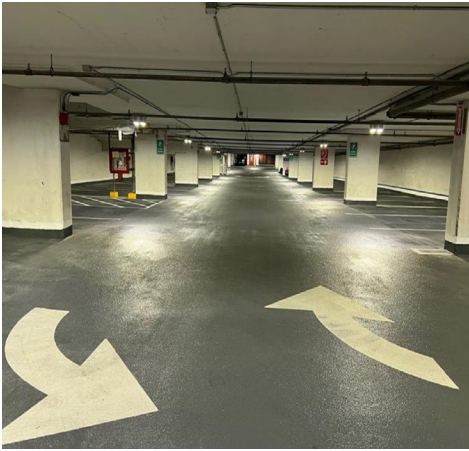
"The previous ramp replacement recommendations allowed for full foundation wall waterproofing from the exterior and exceeded several hundred thousand dollars WAP was retained for a second opinion to provide a strategy to avoid disturbing the ramp that was in good condition," explains Barb Kemp, Principal at W. Allen Partners. "Given the amount of leakage was minimal, and considering the age of the ramp topping that was in good condition, the end project included preserving the ramp by waterproofing the concrete block foundation wall from the interior."

"This scope resulted in minimal resident disruption, diversion of sound materials from landfills, leakage control, all while yielding substantial cost savings," she continues. The team worked in unison to determine a solution that would alleviate water ingress, minimize the project's disruption on condo occupants, control project costs, and achieve a high-quality outcome inside of a short timeline. Part of that solution involved using the CN2000 System by Kelso Abrasives & Coating Inc., a non-toxic and cementitious capillary crystalline waterproofing system, on the interior face of the concrete block foundation wall.

"CN2000 is anticorrosive and can maintain ventilation of the concrete while being impermeable to water, making it ideal for this repair," Kemp explains. "The block was repaired where required, pressure grouted, and cleaned before installing the new waterproofing."

Additional work included replacing a severely damaged section of drywall along a bathroom with a moisture-resistant, smooth-surfaced cement board, removing unused exposed pipes at one area of the foundation wall, and repairing the exposed holes before commencing with waterproofing. Even with these additional repairs, the work was completed in three weeks, less than the original four-week estimated schedule.

"Although this foundation project was small in size, the design, materials, and contracting team saved the client from a large, disruptive, costly ramp replacement Project," says Kemp. "The team is pleased to help a condominium corporation keep to their budget while minimizing the environmental impact by preventing materials from entering landfill sites."



**EXISTING BUILDING:**  
Small Project

Brampton  
City Hall  
Parking Garage  
Rehabilitation



**Allied Professional:**  
Read Jones  
Christofferson  
Ltd.

**Contractor:**  
United Building  
Restoration Ltd.

**Manufacturer:**  
Sika Group

**I**n the summer of 2023, the City of Brampton launched a project to revitalize its iconic City Hall. In addition to work throughout the building, the initiative included a comprehensive rehabilitation of the Hall’s four-level underground parking facility.

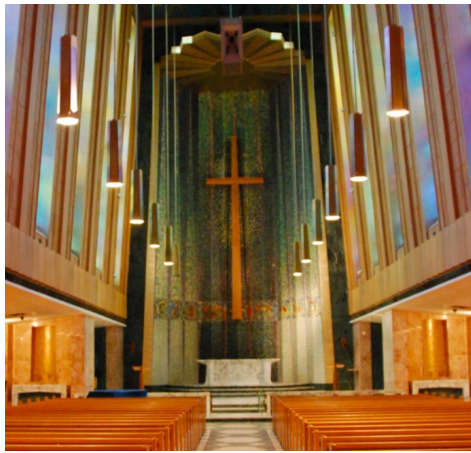
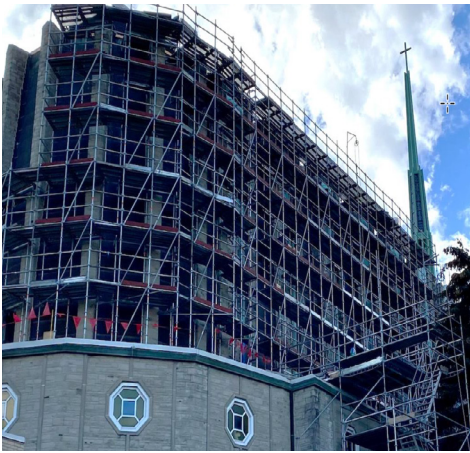
“The primary objective of this project was to address corrosion and age-related deterioration that had taken their toll on the concrete structure, and to replace the aged traffic deck coating throughout the suspended parking levels, as well as various miscellaneous repairs, all crucial for preserving the parking garage’s structural integrity,” explains Arash Farazmand, Project Engineer with RJC.

The team coated a diverse range of traffic exposures, ranging from standard conditions (e.g., parking stalls) to harsher conditions (e.g., garage entrance ramp and turning radius). Sika Group’s coating systems were selected for their proven performance, colour options, and comprehensive warranties. According to Farazmand: “This approach ensured not only functional excellence, but also aesthetic cohesion and coherent quality control, reinforcing the overall success of the rehabilitation project.”

Precise planning and constant communication were key to completing the project within its tight timeline, harmonizing with ongoing projects, mitigating the impact of construction activities on City Hall’s ongoing operations, and overcoming several design challenges. Airtight team collaboration and coordination were also crucial given that the garage could only be closed for a maximum of eight weeks.

“It goes without saying that project achieved remarkable success, seamlessly adhering to the established schedule while causing minimal disruptions to daily operations,” says Farazmand, adding, “The success can be attributed to the strategic approach of executing the work in multiple well-coordinated phases, ensuring that temporary drive aisles were available inside the garage to facilitate uninterrupted traffic movement, and capitalizing on night closures when the garage remained vacant, maximizing productivity during less active hours.”

Overall, he adds, “By working as a team, unforeseen conditions were addressed promptly, resulting in no major project challenges and a very happy client.”



**EXISTING BUILDING:  
Large Project**

Tyndale University



**Allied Professional:**  
W. Allen Partners

**Contractor:**  
Edge Group Ltd.

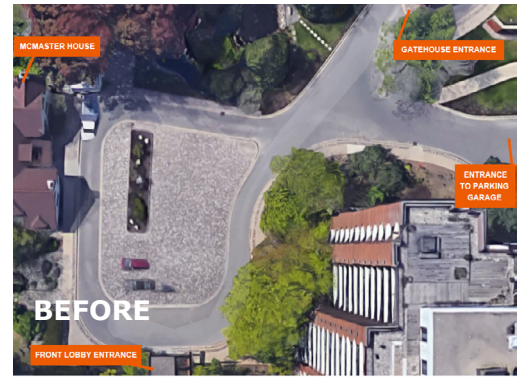
**Manufacturer:**  
IKO Industries

**T**yndale University’s chapel gained a second lease on life thanks to W. Allen Partners (WAP) and its partners. With roof deterioration threatening the chapel’s integrity, the team, led by contractor Edge Group Ltd., performed the full restoration and repair of the chapel envelope using durable and long-lasting products supplied by IKO Industries Ltd. While up top, crews also carried out envelope maintenance items, such as coating the chapel’s steeple, installing new copper dormers, conducting window frame repairs, and performing localized masonry repairs.

“The existing roof structure was autoclaved aerated concrete (AAC), so WAP raised the concern of using expanding hook nails to install asphalt shingles again,” recalls Allen Lyte, Principal at W. Allen Partners Inc. “As a solution, WAP specified new Decra granulated metal shingles Shingle XD by IKO. And to avoid damaging the ACC structure, composite strapping was secured using nylon fasteners, which allowed the plywood and underlayment to be installed in preparation for the metal shingles.

“Many considerations were made to ensure the longevity of the restored roof. For example, the repaired stained glass windows were wrapped with a vapour-permeable waterproofing membrane before cladding and WAP worked closely with the copper installers to maintain the original art deco design of the dormers and window trim. Furthermore, given the AAC sloped roof structure is prone to spalling, sagging, and cracking, a new substrate consisting of composite strapping was installed and secured with AAC-compatible nylon fasteners with plywood installed overtop to limit fastener penetration through the lightweight concrete roof deck.

Extra care was taken to mitigate the noise generated by the chapel’s restoration. A schedule was provided to the contractor to indicate when noise was permitted, and WAP made regular site visits during these designated “quiet times” to ensure they were being upheld. WAP also communicated closely with the project’s contractor, Edge Group Ltd., to ensure the scaffold did not overload the lower roof, while ensuring maximum production. With a focus on worker safety and project excellence, WAP and its project collaborators successfully restored Tyndale University’s iconic chapel.



**EXISTING BUILDING:  
Large Project**

1400 Dixie -  
The Fairways



**Allied Professional:**  
Macdero  
Construction  
(Ontario) Ltd.

**Contractor:**  
Synergy Partners  
Consulting Ltd.

**Manufacturer:**  
Tremco Canada

In February 2020, Macdero Construction (Ontario) Ltd. joined Tremco Canada and Synergy Partners Consulting to conduct extensive revitalization works on the Fairways condominium in Mississauga. The complex comprises two high-rise residential towers, the century-old McMaster House, a gateway-style entryway, and a two-storey parking garage, which sits partially above grade and partially below grade and takes up a larger footprint than the buildings above to form a buried garage roof deck. The team was tasked with revitalizing the condo’s landscape and driveways that connect the site’s buildings, parking garage, and gatehouse. Components of the work included asphalt removal and re-paving, as well as carrying out waterproofing and landscaping replacement for the east garage roof deck.

“One of the biggest design priorities for Synergy and the condo management team, however, was functionally modernizing the access ways to the condominium complex, all while mimicking the original landscape features, without disturbing the McMaster House, which was in the vicinity of the allowable work area,” explains Paul Segatti, Project Manager with Macdero, adding that early stages saw Synergy and Tremco reps visit the site to review waterproofing applications and ensure the utmost quality control practices were taking place.

Tremco’s localized hot-applied waterproofing application was selected to waterproof the condo’s front underground parking garage roof slab. Structural repairs of the interior garage suspended slab were performed before laying the building entrance interlocking. The completed revitalization design has been well received by the residents, showcasing a better flow throughout the property and maintaining the vision to conserve the existing look and feel.

“The project was completed on budget and on schedule, much to the residents’ appreciation,” says Segatti. “It was a challenging project, but Synergy, Macdero, and Tremco always envisioned completing a beautiful final product for the residents of 1400 Dixie Road to enjoy for many years to come.”

**EXISTING BUILDING:  
Large Project**

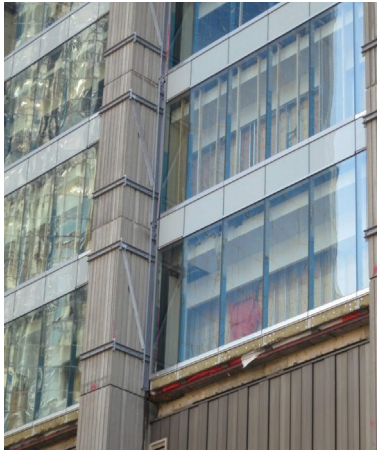
401 Bay Street



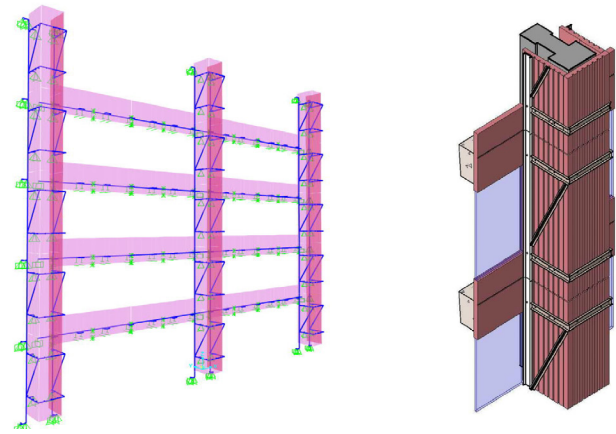
**Allied Professional:**  
WSP

**Contractor:**  
Flynn Group of Companies

**Manufacturer:**  
Tremco Canada



New curtain wall installed between the existing precast clad columns and prior to metal cladding installation.



WSP's exoskeleton design

enabled the installation of a new curtain wall and metal cladding skin from the exterior.”

At first glance, the design of the overcladding appears relatively simple. In reality, numerous nuances were made to the design to accommodate variability of the existing structure, such as existing building shifts, settlement, shortening of columns, or misalignments of the precast panels.

“The team worked together to manage these variations by developing details to provide sufficient tolerance to deal with unexpected site conditions to avoid any one issue from becoming a major roadblock for the project,” says WSP. “This required extensive analysis, careful material selection, coordinated detail development through shop drawings, site testing for verification, and diligent implementation.”

Flynn Canada installed the new curtain wall, and careful tie-in detailing around the exoskeleton and existing cladding was achieved using Tremco ExoAir and Proglaze ETA products. Following installation, the team moved to the building’s interior to remove the existing windows/glazing and create a continuous interface between the new and existing building enclosure.

Working within and around a fully occupied building came with logistical challenges, as did navigating a busy and tight downtown site. Nevertheless, says WSP, the team successfully minimized disruptions and safely facilitated the overclad installation: “The team worked closely together to overcome the challenges of stitching a new overclad into the existing fabric of the building. Ultimately, each challenge was overcome and the project was completed successfully, breathing new life into the building.”

The Simpson Tower at 401 Bay Street in Toronto was the focus of this façade revitalization project. The initiative involved renewing the Tower’s 50-year-old façade to minimize the maintenance and repair of its existing cladding while taking opportunities to enhance the glazing’s energy performance and update the building’s architectural look. At the onset of the project, an extensive study was conducted to gauge the best management strategies for the precast cladding. Ultimately, the team opted to go with overcladding, which created an opportunity for a unique engineering solution designed by WSP.

“The team was challenged with developing an innovative solution to overclad the building, to preserve the existing precast and allow the building to remain fully operational,” WSP noted in its award submission. “This required a team of qualified and experienced subcontractors working collaboratively and completing various mockups to jump-start the construction and eventually implement an innovative solution involving a structural exoskeleton around the existing precast for securement, which



**EXISTING BUILDING:**  
Large Project

Your Average  
Garage



**Allied Professional:**  
WSP Canada Inc.

**Contractor:**  
Macdero  
Construction

**Manufacturer:**  
DRE Industries/  
Evonik

**T**his underground story recounts the rehabilitation of a parking garage at a Toronto Condominium that consisted of two unwaterproofed, reinforced suspended concrete slabs with a cumulative area of 12,200 m<sup>2</sup>.

The project commenced in 2006, when the rehabilitation team worked with the condo board to determine cost-saving alternatives to a partial/full-slab replacement. Over the next several years, WSP tested the efficacy of applying Protectosil CIT to the parking garage slabs to gauge the material's long-term impacts. Several more years passed before the condo's new board re-engaged WSP and Degussa / Evonik to determine if the corrosion-inhibiting sealer remained successful, which testing revealed to be true. Concrete repairs started in 2011 with Dan Michael Construction, during which time Protectosil CIT was applied within topside repair removal areas and to the full slabs' topside following repairs.

Macdero Construction began the second phase nearly a decade later in 2021 after a new condo board re-engaged WSP's team. Work included conducting localized concrete repairs (approximately 5% of slab area), applying a thin elastomeric system, and renewing the aesthetic finishes—all the while ensuring the rehabilitation had minimal impact on the condo's residents.

"As concealed conditions were exposed, Macdero leveraged its experience and worked with WSP to develop cost-effective repair solutions that did not compromise the project outcome," notes WSP in its SWA Trillium Award Submission.

Thanks to WSP's creative engineering solution, the team met the client's requests without needing a full element replacement. Combined, the final construction cost in 2023 dollars for Phases 1 and 2 came to \$4,300,000, excluding taxes, which is millions less than what would have been required for either a top side or slab replacement.

Says WSP, "The final project transformed a deteriorated garage on the brink of major repair and full structural slab replacement into a renewed asset that not only improved residents' day-to-day lives but also returned value to their investment in a sustainable manner."



# Green Ideas: SWA's Vegetative Roofing Seminar



**S**WA members met in Toronto this winter to gain new perspectives on green roofing during the Growing Technologies: Vegetative Roof Systems & Waterproofing luncheon seminar. Held October 5, 2024, at the Vue Event Venue in Toronto, the live-streamed event featured a panel discussion between numerous specialists.

They included Bill Corrigan, Project Manager and Estimator with Ginkgo Sustainability Inc.; Sal Alajek, Project Director and National Technical Lead with WSP Canada Inc.; and Denis Gingras, Regional Sales Manager with Sika Hydrotech.

The presentation covered all aspects of vegetative (green) roofing, including design considerations, material selection, installation best practices, and waterproofing requirements. Presenters also highlighted the benefits of green roofing (e.g., enhanced building value, occupant comfort, environmental impact, etc.) while highlighting best practices, common mistakes, and emerging trends.

“What do we call a green roof?” asked Corrigan. “There are different terms, but the bottom line is a green roof is a specialized system in which all the components are working in sync and synergy with the roofing system and its waterproofing.”

During Alajek’s time at the podium, attendees received a detailed breakdown of green roof design considerations, which included key factors such as a building’s geography,

surrounding structures, and existing rooftop conditions. Time was also spent reviewing the environmental factors (e.g., climate zone, elevation, wind conditions, etc.) and rooftop components (e.g., access to water, leak detection technology, effective waterproofing, etc.) that can contribute to a green roof’s long-term resiliency.

Expert insights were also shared regarding the organic components of a green roof. And indeed, depending on one’s location, intended usage, and desired look, there are numerous plantings and growing mediums to consider given the intended use of the roof, be it to grow food or create an aesthetically pleasing social space.

Of course, it’s one thing to design and build a green roof, but another to ensure its sustainability. To that end, maintenance was a recurring topic throughout the luncheon.

“Maintenance is essential for every green roof because things happen when green roofs are not maintained,” said Corrigan, noting, “Typically, in the first year for an extensive green roof, the frequency of maintenance activity is about six to eight times, and four to six times in subsequent years.”

Denis Gingras capped the conversation by examining successful green roofing projects and not-so-successful installations. He shared several anecdotes of vegetative roofing projects that went sideways and discussed what could have been done to be more successful”

Keep in mind that when you make those vegetated roofs, the vegetated part is the last thing to go down because these are costly mistakes [if not done properly],” he said.

SWA’s luncheon seminar wrapped with a panel Q&A session, after which attendees were free to follow up with the day’s presenters and reconnect with industry colleagues. SWA thanks the day’s presenters and everyone who came out to learn more about this revitalizing rooftop movement.

# Tunnel Work at U of T



**Contractor:**  
Read Jones  
Christoffersen  
Ltd.

**Manufacturer:**  
DRE Industries/  
Koster

**Structural  
Contractors:**  
Edge Group|  
Restorex

Activity is ramping up at the University of Toronto, where crews are revitalizing a central piece of the University's infrastructure. Since 2023, the team of Read Jones Christoffersen Ltd. (RJC), Restorex, Edge Group, and DRE Industries/Koster have been working with the University to repair and reinforce the tunnel system it relies on for the transfer and delivery of heating, cooling, data, and power.

"We've been here for a couple of years already," reports Sohrab Karkhel, Principal of Building Science and Restoration at RJC. "This tunnel supplies the main infrastructure for their campus, and our job has been to ensure it continues doing so for years to come. That includes addressing structural deterioration on the roof slab, walls, and slab on grade, as well as addressing leaks throughout the full length of the tunnel."

The three-kilometre tunnel originates from UofT's central utilities plant and sprawls throughout the entire University campus. It runs underneath several of the campus's historic buildings and iconic locations (e.g.,

Philosopher's Walk) as well as beneath busy surrounding streets and nearby landmarks like the Royal Ontario Museum. As such, says Sohrab, work on the tunnel meant finding an alternative to digging: "Naturally, because of all these limitations, excavation wasn't a viable option for about 90 per cent of the tunnel, which poses some limitations in terms of how we can address the leaks within the tunnel."

An underground river beneath sections of the University's Philosopher's Walk made the project even more interesting. Not only did it create excess moisture within the tunnel, but pressure was being exerted on the foundation wall as the result of water slipping in through the cracks and penetrations throughout the tunnel.

"The presence of the river was unknown before the construction," notes Sohrab. "We knew there was a body of water, but we had no information about how close it was to the tunnel. That was only uncovered once crews started drilling for the injection, and the water was spilling into the tunnel through the wall penetrations."



These logistical challenges notwithstanding, Sohrab reports that Phase 1 of the tunnel rehabilitation has followed a typical restoration gameplan. Work on each section of the tunnel has included marking out the delaminations, chipping them out, prepping and supplementary embedded reinforcement, forming the repair patches, pouring the concrete repair material, and proceeding to the waterproofing component. For optimal outcomes, the team selected Koster Injection Gel S4 and G4 for use on the tunnel's slab soffits and perimeter foundation wall, drilling through the tunnel structure on a 16" x 16" grid pattern and injecting the material from the inside of the tunnel outwards.

"Essentially, we're using the backfill material on the exterior side of the foundation wall as formwork, allowing the waterproofing system to spread," explains Sohrab. "By doing so, we created a second layer of a membrane on the outside without excavating it."

RJC selected the Koster material based on its effectiveness in a past projects and its proven success in infrastructure initiatives across the globe. And indeed, says Marla Cosburn, President of DRE Industries, it proved the right material for this specific job: "Koster injection gels have a long track record of successful installations in tunnel applications where there are failed waterproofing membranes, expansion joints and active water ingress. The Koster curtain injection is ideal for this application as injection from the interior is a far less disruptive option, and the work can be completed without excavation or road closures."

## Prepping for Phase 2

Despite the scope and complexity of this project, RJC and its team are proud to report that the first phase of the four-year initiative has been completed, and crews are beginning work on the next section of the tunnel.

Looking back over the project's first year, Sohrab says the team's success is largely attributed to the communication and collaboration demonstrated by all members from day one: "Teamwork has been extremely important in staying on track and resolving any unforeseen conditions as they were arising."

## NEW MEMBERS



## GETTING TOGETHER

### 2023 SWA Annual General Meeting

The SWA held its 2023 Annual General Meeting on November 2 at the Hare Winery in Niagara on the Lake. Over 90 guests from 40 member companies joined the Association for a wine and cheese tasting followed by the AGM, which was held within the winery's iconic barrel cellar. Special thanks to our sponsors and everyone who came out!



### SWA 15<sup>th</sup> Annual Ski Day

SWA's Ski Day took place on February 9, 2024, at Osler Bluff Ski Club in Collingwood. It followed our first hockey game on February 8, which was also a hit. Thanks to the 60 skiers and 14 hockey players who came out for the good weather and great company.



## UPCOMING EVENTS

**JUNE 12, 2024**

SWA Fishing Derby @ Port Credit Harbour Marina, Mississauga

**JULY 9, 2024**

SWA Golf Day @ Wooden Sticks, Uxbridge

Learn more at <http://www.swacanada.ca/events>

# SWA BOARD OF DIRECTORS

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**Director:** Wayne Gomes, Jamac Sales Group

**Director:** Frankie Savage, Flynn Group

**Director:** Ilia Ghotbi, Tremco CPG

**Director:** Peter Giannopoulos, Jamac Sales Group

# OUTGOING DIRECTORS



Jeremy Horst with outgoing director Bruce Hudson

SWA thanks Bruce Hudson (2015-2023) and Jeff Barbieri (2104-2023) for sharing their expertise and experience with the Board.

**KOSTER**

Curtain Wall Injection Systems

Curtain Wall Injection	Expansion & Control Joints Injection
<ul style="list-style-type: none"><li>• Koster Injection Gel G4 has extremely low viscosity that allows for deep penetration to create a waterproofed barrier</li><li>• Environmentally friendly</li></ul>	<ul style="list-style-type: none"><li>• Koster Injection Gel S4 has an adjustable set time and is used for active water ingress, curtain injection and to seal joints</li><li>• An additive can be used to provide higher flank adhesion and enhanced elongation</li></ul>

Local Representative - Marla Cosburn - DRE Industries  
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