



COMPANY PROFILE

BUILDING ENCLOSURE CAPABILITIES



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WHO WE ARE

Falcon Edge Consulting Corp. (FECC) is an engineering consulting firm that blends technical expertise with extensive hands-on construction experience. Our mission is to deliver practical, effective solutions tailored to our clients' needs across all project phases—investigation, design, and construction.

Established in 2024, FECC is dedicated to enhancing client support and fostering team collaboration, leveraging experience from projects across North America. We bring a unique approach to problem-solving and project coordination, focused on achieving the best possible outcomes.

At FECC, we take a proactive approach to streamline construction processes, reduce change orders, and avoid delays. By integrating seamlessly within project teams, we address challenges quickly and effectively, promoting collaboration and driving project success.



WHAT DOES FALCON EDGE MEAN

The name Falcon Edge reflects our vision, ethics, and dedication to exceptional client service:

- **Precision and Accuracy:** Like a falcon's sharp focus, we deliver precise engineering solutions.
- **Strategic Advantage:** "Edge" highlights our innovative solutions and competitive edge.
- **Vision and Foresight:** We anticipate challenges and provide proactive engineering solutions.
- **Efficiency and Speed:** Inspired by the falcon, we deliver fast, efficient, results-driven services.
- **Trust and Reliability:** Falcons represent strength and trust, values we uphold with our clients.



BUILDING ENCLOSURE ENGINEERING



EXPERTISE

The building enclosure protects you and your building from the exterior. It is a complicated part of the building with many of the important elements hidden so well, people aren't even aware of them. It is a delicate balance between cost, appearance, and performance when designing building enclosure systems. FECC brings extensive experience designing, investigating, repairing, and retrofitting the full building enclosure including roofs, plaza decks, façades and fenestrations, above-grade walls, below-grade walls, transitions, and specialty areas. FECC uses the expertise to develop solutions and help our clients select the best approach for their project.

FECC APPROACH

FECC understands proactive problem solving and coordination is vital to a successful project. By having extensive experience in all aspects of the building enclosure, we are able to design or assist in select the most appropriate products and systems while also addressing the critical transitions between systems. We also take a proactive approach in our design to address constructability issues and future maintenance considerations.

FECC building enclosure engineering services include:

- **Design:** Develop innovative enclosure systems balancing cost, reliability, durability, and constructability.
- **Investigation:** Diagnose and address performance issues, including air and water infiltration, material failures, and thermal concerns.
- **Rehabilitation:** Provide repair solutions to extend the life and improve the performance of existing enclosures.
- **Retrofit:** Provide designs to upgrade existing buildings to be more efficient, more sustainable, and reduce maintenance.
- **Performance Analysis:** Assess thermal, hygrothermal and moisture performance, and system compatibility.
- **Construction Administration:** Monitor progress, oversee performance testing, and provide hands-on support to maintain project quality.



FALCON EDGE CONSULTING



NEW CONSTRUCTION



EXPERTISE

The building enclosure encompasses below-grade elements, exterior walls, fenestrations, and roofing systems. A properly designed enclosure is essential for controlling water, air, vapor, and heat flow while also contributing to energy efficiency and occupant comfort. FECC offers unparalleled experience in new construction projects. We can provide straight-forward, practical, and understandable solutions to the most complicated areas of the building enclosure.

FECC APPROACH

During new construction, being integrated into the design and construction team is crucial. While FECC offers peer review services, waiting until designs are finalized often limits our ability to address issues with durable, long-term solutions. Instead, FECC should actively participate in design decisions and collaborate with contractors to ensure coordinated, successful installations.

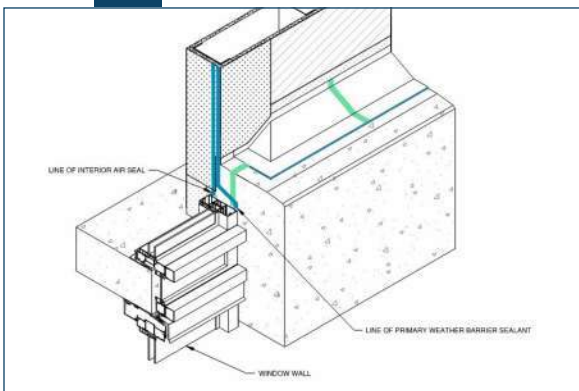
On new construction projects, FECC typically offers the following:

Design Phase Support

- Develop performance requirements for enclosure systems.
- Assist in system selection and integration.
- Peer review construction documents to assess barrier continuity, constructability, and performance.
- Create mockup requirements and testing protocols.
- Conduct thermal bridging analysis, hygrothermal modeling, and thermal modeling.
- Complex transition detailing support and recommendations for coordination during installation.

Construction Phase Support

- Review contractor bids, value-engineering, and substitutions for compliance with performance goals.
- Oversee laboratory and field testing of mockups and installed systems.
- Conduct site observations and provide recommendations to resolve installation or performance issues.
- Review submittals, shop drawings, and final systems to confirm alignment with design intent.



BUILDING ENCLOSURE COMMISSIONING (BECx)

EXPERTISE

Achieving better-performing buildings requires a comprehensive approach to building enclosure design and verification. Whether complying with stringent energy codes, green standards, or pursuing LEED certification, NetZero goals, or other strict performance targets (e.g., extreme temperature, high/low humidity), Building Enclosure Commissioning (BECx) is often essential to meet these objectives. FECC's professionals bring extensive experience across all areas of building enclosure systems, supported by BECxP and CxA-BE certifications, ensuring the required documentation and successful delivery of BECx projects.

FECC APPROACH

Starting the BECx process early in design is essential to integrate performance-enhancing elements and establish QA/QC procedures to validate functionality. Proactive planning is critical for delivering high-performance buildings, as addressing inadequate designs or installations later can be costly, time-intensive, or nearly impossible without extensive rework. Achieving high performance requires focused effort on complex transitions, testing, and ongoing construction coordination.

As part of BECx services, FECC can provide:

Pre-Design and Design Phase Support

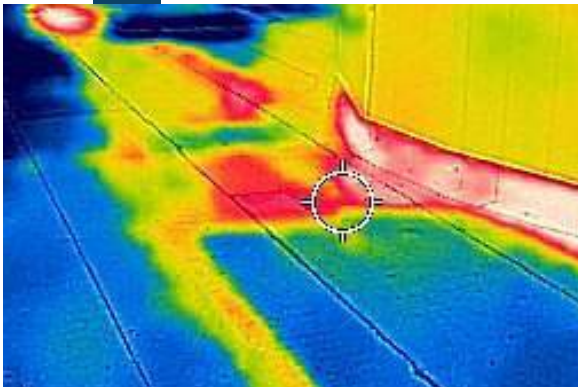
- Review OPR and assist in developing a BOD.
- Peer reviews of design and specifications for performance and continuity of air, water, thermal, and vapor barriers.
- Develop project-specific BECx plans and performance-based specifications.

Construction Phase Support

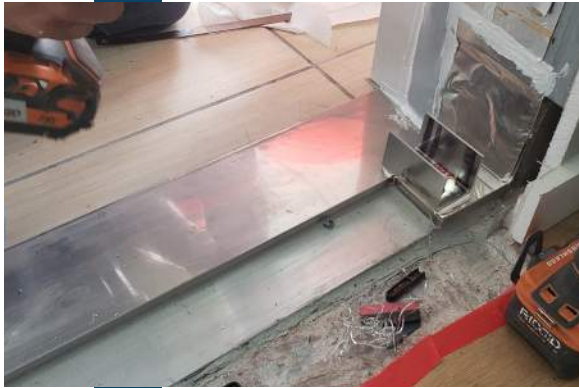
- Review submittals, product substitutions, and shop drawings for alignment with design intent.
- Participate in pre-construction and pre-installation meetings to coordinate work between trades.
- Observe construction and mockup testing to verify compliance.
- Perform on-site functional performance testing, and document issues requiring resolution.

Post-Construction Support

- Provide final system reviews and performance verification.
- Develop maintenance plans and recommendations for long-term performance monitoring.



REPAIR ▢ RETROFIT ▢ REHABILITATION



EXPERTISE

FECC provides comprehensive rehabilitation, repair, and retrofit services to improve the performance, durability, and reliability of existing building enclosures. FECC personnel has worked on leak repairs, deteriorating buildings, complex façades beyond their lifespan, historic structures, and building repurposing projects. We leverage our extensive investigative experience and design expertise to develop tailored solutions that to improve performance and reliability of existing building enclosures while aligning with the project's budget and goals.

FECC APPROACH

FECC uses a large knowledgebase to identify existing materials and systems to better understand how they are intended to perform and how they currently perform. That level of knowledge is required to understand if/how components/systems can be repaired and how they will interact with new materials being installed. Depending on the size, scale, and project goals, FECC can offer a variety of services to support our clients:

Condition Assessments and Forensic Investigations

- Perform detailed inspections to identify deficiencies in systems, materials, design, and construction which may be root causes of enclosure performance problems, including leakage, damage, and deterioration.
- Use testing and diagnostic tools, such as moisture meters and thermal imaging, to locate concealed issues and determine air, water, and thermal barrier effectiveness.

Repair and Retrofit Design

- Develop practical solutions to repair damaged enclosures, improve performance, and/or extend service life.
- Retrofit systems for enhanced energy efficiency and compliance with updated codes and standards.

Construction Administration

- Provide support during the repair phase, including submittal reviews, on-site observations, and issue resolution.
- Monitor quality to ensure that repair and retrofit work meets the intended design and performance criteria.



INVESTIGATION



EXPERTISE

FECC conducts thorough investigations of building enclosures to identify and address performance issues such as water leakage, air infiltration, material degradation, and thermal inefficiencies. Our investigative process combines hands-on inspections, advanced diagnostic tools, and in-depth knowledge of building materials and systems. FECC partners with local subcontractors to provide support to perform destructive testing and repairs to perform the investigations efficiently.

FECC APPROACH

When investigating a building, we need to do what it takes to find the exact cause of the issues being experienced. Sometimes this is a simple air/water test, or it can be a more involved process including openings to trace leak issues. FECC partners with testing agencies and local subcontractors to perform testing and destructive testing efficiently. FECC investigations typically include the following:

Forensic Analysis

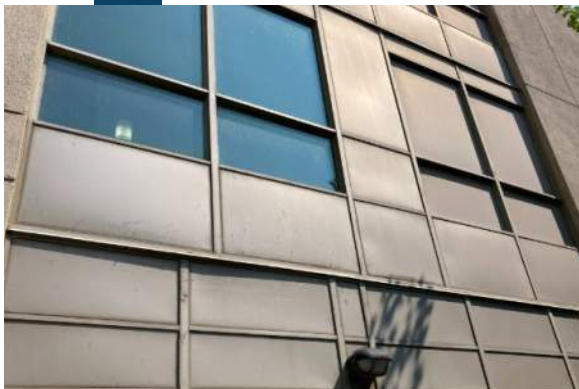
- Visual surveys to evaluate the state of building enclosures.
- Use of non-destructive techniques (e.g., infrared thermography and moisture detection) to uncover concealed issues.
- Determine root causes of performance problems through detailed field investigations and laboratory testing.
- Evaluate the impact of design, materials, workmanship, and maintenance on enclosure performance.

Testing and Diagnostics

- Conduct targeted water and air leakage testing to pinpoint failure paths.
- Analyze samples of building materials to assess degradation and compatibility issues.

Reporting and Recommendations

- Provide clear, illustrated reports summarizing findings, and actionable repair recommendations.
- Develop prioritized repair strategies to align with project goals and budget.



FALCON EDGE CONSULTING



SPECIALTY BUILDINGS



EXPERTISE

FECC's experience working on such a variety of specialty buildings such as museums, studios, natatoriums, archives, cold storage facilities, energy facilities, and healthcare buildings is unmatched in Canada. These specialty buildings present unique challenges due to their demanding target environmental conditions, ambitious operation and performance expectations, unique use of space, and lengthy target lifespans. FECC understands these needs and excels in delivering tailored building enclosure solutions that protect these critical environments while supporting functionality, aesthetics, and long-term durability while still designing within the constraints and methods of the local construction market.

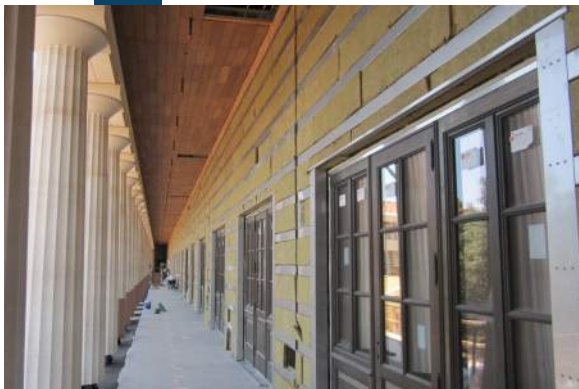
FECC APPROACH

FECC's approach to specialty buildings combines establishing performance goals, a deep understanding of operational demands, and technical ingenuity. We focus on:

- **Proactive Insight:** Drawing from real-world investigations and forensic experience, we predict challenges before they arise and design solutions that last.
- **Environmental Sensitivity:** Every design is tailored to the unique environmental stresses of the building, whether it's maintaining strict humidity levels for museum collections, or accommodating special acoustic and fire-resistive requirements.

We use a number of strategies to address problems specific to the project and its performance requirements:

- Address high-humidity environments prone to condensation and microbial growth, ensuring preservation of building contents and interior conditions.
- Work alongside architects, HVAC consultants, and owners to design enclosure systems that mitigate potential risk through modeling, thermal bridging analysis, and other evaluation tools.
- Provide expertise in materials selection and compatibility to manage extreme environments and prevent future failures.
- Conduct moisture migration analysis, thermal modeling, and specialized field testing to verify performance in challenging conditions.



FALCON EDGE CONSULTING



BELOW-GRADE WATERPROOFING

EXPERTISE

At Falcon Edge Consulting Corp. (FECC), we specialize in below-grade waterproofing solutions that protect buildings and infrastructure from moisture intrusion, hydrostatic pressure, and soil contaminants. We understand the cost of below-grade, but also understand the cost and difficulty to attempt to repair a failed below-grade waterproofing system. Our expertise ensures that your below-grade waterproofing system is robust: with proven experience across more than 200 new construction and repair projects in nearly every climate and site condition, we are able to help identify the appropriate waterproofing system and installation technique, while finding the optimal balance of cost and risk reduction.

FECC APPROACH

FECC has maintained close relationships with waterproofing manufacturers and representatives to ensure that we are familiar with below-grade waterproofing systems available in different markets. This helps us address difficult detailing, transitions to adjacent systems, and prevent chemical compatibility issues.

FECC offers the following below-grade waterproofing services:

- **Design:** We develop comprehensive below-grade waterproofing designs that account for structural elements, constructability, groundwater conditions, and long-term durability.
- **Manufacturer Warranty Inspections:** Our team performs detailed inspections to ensure compliance with manufacturer warranty requirements and identify potential issues early as required to obtain a special warranty.
- **Field Observations:** We conduct observations on-site installation to verify compliance with design specifications and address issues in real time.
- **Repair Designs:** When problems arise, we can investigate, create effective repair strategies that minimize disruption and cost, and perform QA/QC oversight while the repairs are performed.



OAA / PRO-DEMNITY REVIEW



EXPERTISE

FECC provides specialized consulting services for Ontario architects insured by Pro-Demnity Insurance, acting as an IBEC (Independent Building Envelope Consultant). With deep expertise in building enclosure systems and compliance requirements, we are able to help architects comply with Pro-Demnity's Technical Requirements Schedule to maintain ingress of precipitation coverage. FECC has built extensive relationships with major window manufacturers to provide a better understanding of the requirements, and assists in developing project-specific details in that meet Pro-Demnity's guidelines related to performance and water management.



FECC APPROACH

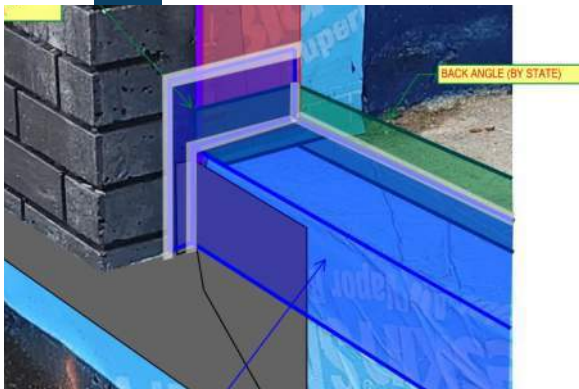
Services related to Pro-Demnity requirements are typically offered in conjunction with our building enclosure consulting services on new construction projects. Since Pro-Demnity's Technical Requirements Schedule now extends to the full building enclosure, the services supplement our typical scope of services where we function as part of the design team:

Design Review and Recommendations

- Evaluate enclosure designs for compliance with Pro-Demnity's Technical Requirements Schedule, including rainscreen principles, drainage provisions, and material compatibility.
- Review designs for precast concrete and window wall systems to confirm alignment with standards such as CSA A440.6 and CPCI guidelines.
- Provide testing and quality assurance guidance for systems, critical details, and transition points.

Construction Phase Consulting

- Review shop drawings and mockups to verify compliance with approved designs.
- Conduct on-site reviews and witness and/or conduct field performance testing to confirm barrier continuity and proper system installation.
- Advise on quality control procedures, including testing of seals, joint designs, and drainage systems.



FAÇADE CONSULTING



EXPERTISE

As urban centers prioritize density and efficiency, designers seek cost-effective solutions to achieve design aesthetics, maximize natural light, and meet performance goals. FECC brings experience across diverse climates and façade systems, including window walls, curtain walls, precast concrete, rainscreens, EIFS, and more. With expertise in materials, methods, and design, we help clients deliver façades that balance functionality, energy efficiency, and architectural vision.

FECC APPROACH

No matter the project type, whether it is new construction, retrofit, or rehabilitation, FECC brings the necessary experience to provide the guidance necessary to meet your goals. Our services can include:

Design Guidance

- Provide tailored details and solutions for curtain walls, window walls, doors, cladding systems, and specialty façade materials consistent with the design intent and performance goals.
- Assist with system selection and integration to achieve water, air, thermal, and vapor barrier continuity.

Performance Analysis

- Conduct thermal, and hygrothermal analysis to optimize façade systems for energy efficiency and durability.
- Evaluate and witness / conduct testing of façade components for air and water infiltration resistance.

Construction and Quality Assurance

- Review shop drawings, mockups, and product substitutions to ensure compliance with design intent and performance specifications.
- Conduct on-site inspections and conduct / witness testing to verify installation quality and address challenges in real time.

Forensic Investigation and Rehabilitation

- Diagnose and resolve issues such as water leakage, material degradation, and attachment failures.
- Develop repair strategies and retrofit solutions for aging or underperforming façades.



FALCON EDGE CONSULTING



EXTERIOR WALL SYSTEMS

EXPERTISE

The building enclosure plays a crucial part in building performance and achieving energy efficiency targets. As energy efficiency targets become more stringent, the exterior walls are becoming more robust to improve thermal performance. Adopting traditional cladding types to these thicker insulated exterior walls varies based on cladding type and project conditions. Since the wall assemblies are significantly different than traditional exterior walls, particularly the alignment between elements within the exterior wall, advanced expertise is required to apply known construction techniques to these assemblies while still effectively managing air leakage, water, and vapour. Using our construction experience and building science expertise, FECC provides specialized consulting for exterior wall systems, ensuring optimal performance and long-term durability.

FECC APPROACH

Similar to our approach to complex façade system, FECC begins the design stage of the project clearly establishing the performance targets for the project. Once the performance targets are known, the process is typically as follows:

- Assist the design team in developing wall assemblies that meet the targets.
- Perform a thermal bridging analysis which can be provided to the energy modeler to verify the building will meet the targets.
- Refine the wall assembly design by selecting the appropriate vapour barrier, air barrier, and water barrier membranes for the assemblies. The proposed design is verified with hygrothermal modeling.
- Assist the architect in developing typical system details for the drawings. These are later supplemented with transition details required for a complete building enclosure design.
- Provide additional design phase, construction phase, and testing and verification services in line with our typical new construction, rehabilitation, and/or repair scope of work.



PLAZA DECKS AND GREEN ROOFS



EXPERTISE

Plazas and vegetative roofs are multi-purpose assemblies that provide a valued appearance and aid in reducing run-off while protecting the building structure and interiors below. Successful plaza and vegetative roofs need to accommodate landscape and hardscape objectives without compromising sound waterproofing design in order to protect the interior spaces below. Designers of plazas and vegetative roofs must achieve aesthetics, waterproofing serviceability, structural movement, and aggressive root growth. FECC offers specialized consulting for plaza decks and green roofs, addressing the unique challenges of these multifunctional systems drawing from our extensive extensive experience designing and consulting on the installation of plaza decks and green roofs across North America.



FECC APPROACH

FECC is typically enlisted to assist with plaza decks and green roofs on new construction projects, or large rehabilitation / retrofit projects. The services are accompanied by a full design and construction phase scope of work. Work specific to the plaza deck and green roof typically includes the following:

Waterproofing Design

- Develop robust waterproofing systems to protect structures beneath plaza decks and green roofs. Incorporate root barriers, drainage layers, and membranes to ensure a long lifespan
- Provide details and direction how to integrate with adjacent waterproofing and enclosure systems.
- Verify the green roof assembly meets wind uplift and required fire resistance ratings.

Installation Review and Testing

- Review mockups and field installations for waterproofing, tie-ins, drainage, and overburden material.
- Witness water testing to validate system performance.



FALCON EDGE CONSULTING



AIR AND WATER TESTING



EXPERTISE

FECC works with partners to provide comprehensive air and water testing services to investigate system failures or to evaluate the performance of new building enclosures, verifying they meet the specified quality and performance standards. Our expertise includes identifying potential weaknesses in building assemblies and validating the integrity of air and water barriers through detailed testing protocols.

FECC APPROACH

Our services provide independent validation of system integrity, ensuring compliance with project specifications and standards. Based on the client, building, and / or project needs, FECC uses our expertise to develop the appropriate testing protocol for the assembly and / or building enclosure. FECC will witness or conduct testing with the aid of testing agencies with whom we have strong relationships. The testing can typically include:

Air Infiltration Testing

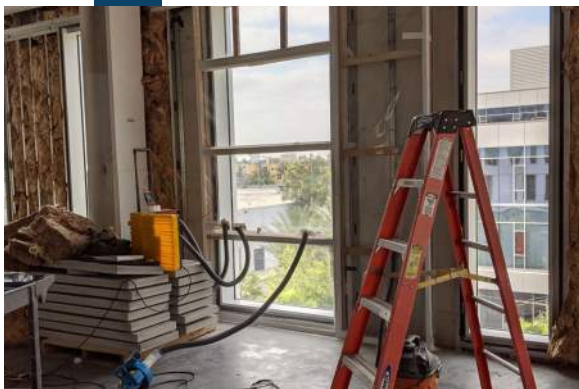
- Test fenestration systems, curtain walls, and individual units for air leakage at critical pressure levels.

Water Penetration Testing

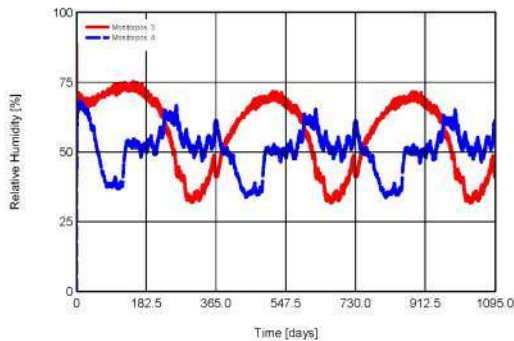
- Perform controlled water penetration tests for walls, windows, and roofs to simulate wind-driven rain and other environmental conditions.
- Use methods such as ASTM E547, ASTM E331, or ASTM E1105 to identify and diagnose leak paths.

Customized Testing Protocols

- Develop project-specific testing strategies tailored to unique building designs and materials.
- Combine traditional testing with modern diagnostic tools like infrared thermography and tracer smoke to enhance accuracy.
- Create a custom test protocol as needed to isolate and trace difficult air and water leaks within existing buildings.



BUILDING SCIENCE AND MODELING



EXPERTISE

FECC approach bridges technical analysis and real-world application by using data-driven design to develop the assemblies necessary to meet performance targets. FECC has leveraged advanced modeling techniques to optimize building enclosure performance for all building types including residential, museums, healthcare, laboratories, natatoriums and more. Our expertise in thermal, hygrothermal, and moisture migration modeling helps project teams predict, assess, and enhance enclosure systems' behavior under real-world conditions, ensuring durability, energy efficiency, and occupant comfort.

FECC APPROACH

The FECC approach will vary based on the project needs. Available FECC services include the following:

Thermal Modeling and Thermal Bridging Analysis

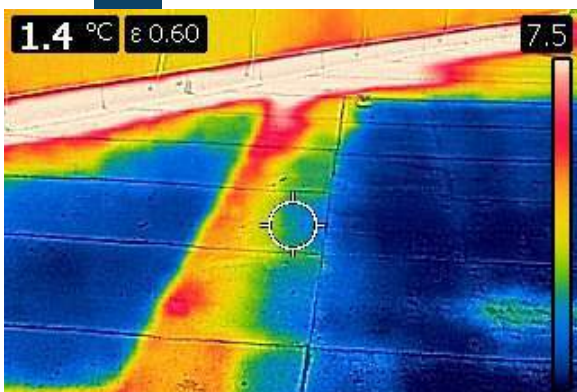
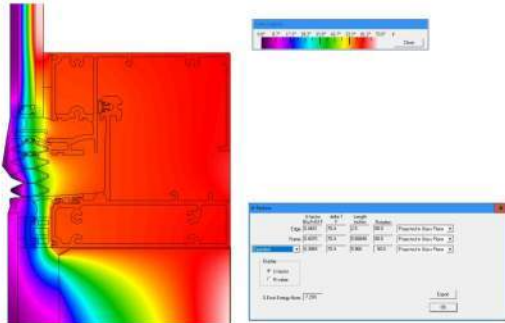
- Analyze temperature profiles, thermal bridging, and insulation performance.
- Evaluate condensation potential and overall thermal efficiency to comply with energy codes and improve system performance.
- Perform overall building thermal bridging analysis to identify the effects of thermal bridging and provide an effective R-value for the exterior walls and / or entire building enclosure.

Moisture Migration and Hygrothermal Analysis

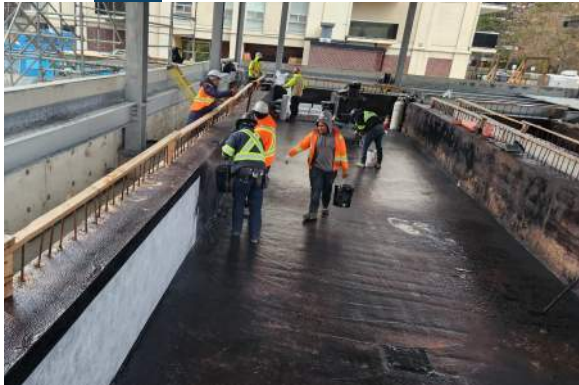
- Conduct transient and steady-state analyses to evaluate heat, air, vapour and water movement to optimize durability within wall and roof assemblies.
- Identify and mitigate risks of condensation, microbial growth, and material degradation.

Design Assistance

- Provide recommendations for assembly designs tailored to specific climates and project conditions.
- Collaborate with project teams to ensure modeling insights inform practical, constructible designs.
- Incorporate modeling results into design documents to guide material selection and detailing.

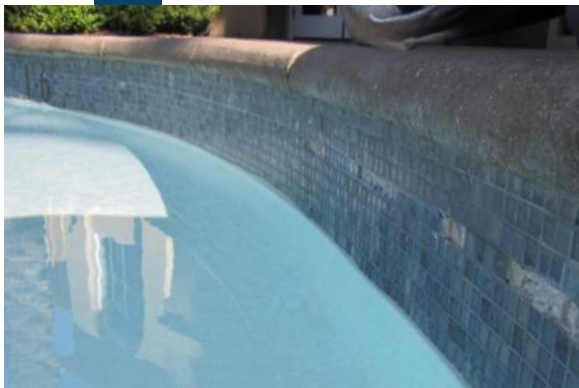


FOUNTAIN AND POOL WATERPROOFING



EXPERTISE

Pools and fountains present unique challenges due to constant exposure to water pressure, harsh chemicals, and environmental conditions. FECC provides specialized consulting for the design and maintenance of waterproofing systems for fountains, pools, and pool vaults whether they occur outdoors or indoors. Our FECC professionals have extensive experience with pools and fountains part of our past multi-family residential and hospitality projects. We also have experience with the more complex fountains and reflecting ponds at local and national sites in North America. Our expertise ensures that these systems remain watertight, durable, and visually appealing.



FECC APPROACH

FECC's approach to fountains and pools emphasizes resilience and long-term reliability. We prioritize durable solutions that account for constant water exposure, freeze-thaw cycles, and the chemicals specific to the water feature. We work to assist in designing and constructing fountains and pools that are not only watertight but also built to stand the test of time, enhancing the beauty of the project through the following:

- Develop robust systems tailored to resist hydrostatic pressure, chemical exposure, and expected environmental conditions.
- Specify materials that maintain watertight integrity while accommodating thermal and structural movement.
- Engage product manufacturers as part of the process to verify detailing, material performance, and application to ensure a warrantable design and installation.
- Assist in designing seamless transitions between waterproofing membranes, drainage systems, and surrounding finishes while also protecting the complex mechanical equipment required for the water feature to function.
- Provide on-site quality assurance during installation of the waterproofing and subsequent materials to verify compliance with design specifications.



DUE DILIGENCE FOR REAL ESTATE

EXPERTISE

FECC supports our trusted clients if they plan to purchase real estate. We support the transactions by providing detailed building enclosure assessments to help buyers, sellers, and investors make informed decisions. Our due diligence services focus on identifying potential risks, evaluating system performance, and recommending practical solutions to enhance value and mitigate potential performance issues and future liabilities.

FECC APPROACH

FECC evaluates enclosures holistically, considering their current condition and future performance needs. We produce reports with clear, actionable insights to inform decision-making and align with stakeholders' objectives. FECC's due diligence services empower real estate professionals to navigate transactions with confidence, ensuring buildings are both reliable and a sound investment.

When assisting our clients, FECC typically does the following:

- Conduct visual and non-destructive evaluations of building enclosures to identify deficiencies and performance issues.
- Use diagnostic tools, such as infrared thermography and moisture meters, to uncover hidden concerns.
- Assess the condition of air, water, and thermal barrier systems and their impact on building performance.
- Deliver comprehensive reports outlining observed conditions, potential risks, and recommendations.
- Highlight areas requiring immediate attention versus long-term maintenance planning.



CONSTRUCTABILITY AND PEER REVIEW

EXPERTISE

FECC provides constructability and peer review services to enhance building enclosure designs for seamless execution and lasting performance. Leveraging our construction expertise, we identify design deficiencies and potential construction challenges. By addressing these early, we help clients refine designs to ensure constructability, durability, and compliance, reducing change orders, delays, testing failures, and rework while improving overall building performance.

FECC APPROACH

The FECC approach to reviews varies significantly based on client and project needs. Ideally, FECC prefers to be engaged when the design documents are fairly well developed, but when there is still time to make the necessary changes prior to construction. FECC services can include the following:

Constructability Reviews

- Evaluate enclosure designs to identify potential installation challenges and propose practical solutions.
- Assess the integration of systems, such as air, water, and thermal barriers, to ensure effective implementation on-site.
- Identify design elements that may lead to delays, rework, or performance issues during construction.
- Suggest modifications to improve construction efficiency and reduce project risks.

Peer Reviews

- Conduct detailed reviews of enclosure designs and specifications to ensure alignment with project goals and performance criteria.
- Provide recommendations to address issues related to material compatibility, detailing, and code compliance.
- Verify the continuity of critical barriers such as air, thermal, water, and moisture.
- Offer technical guidance on system transitions, detailing, and constructability to minimize on-site conflict

