

WARREN KNOWLES, P.Eng.

Expertise & Role

Mr. Knowles focuses his expertise on building science aspects of new construction and existing buildings in both Canada and the United States. His experience includes commercial, institutional and residential building projects. The scope of services provided for these projects typically involves design and field review for new construction projects, as well as investigation, design, construction review and capital planning for existing buildings. He also regularly provides litigation support regarding premature building enclosure failures.

Warren has practical experience with most enclosure systems including glazing, metal panel, stucco, EIFS, masonry, concrete, and membrane systems.

In addition to new and existing building projects, Warren has been involved in several policy, guideline and research initiatives including:

- Development of rehabilitation guides for consultants and property managers
- Development of a study to assess the performance of building enclosure assemblies and details in high rise buildings in the BC Lower Mainland
- Development of a study to assess poured-in-place concrete wall performance
- Development of a national study on window performance problems
- Development of a standard format building enclosure maintenance and renewals manuals
- Development of quality assurance / quality control protocols
- Risk management protocols for insurers and warranty providers.

Warren is a shareholder and Principal of RDH and as such participates in the overall direction and management of the firm.

Education

Bachelor of Applied Science, Civil Engineering
University of Toronto

Memberships & Awards

Association of Professional Engineers & Geoscientists of British Columbia
President, British Columbia Building Envelope Council
Director, National Building Envelope Council
Director, British Columbia Building Envelope Education Foundation
Building Research Consortium
Construction Specifications Canada

Senior Building Science Specialist



Typical Projects

NEW CONSTRUCTION

- Design and construction review, verification, for building enclosures on over 40 high-rise and mid-rise residential buildings with many of the leading developers in British Columbia and the Pacific Northwest.
- Design and construction review, verification and implementation of enclosure assemblies for institutional and commercial buildings including the Cruise Ship Terminal Expansion at Canada Place, Vancouver, BC.
- Risk assessment of building enclosures on behalf of insurers, developers and consultants.



Canada Place Cruise Ship Expansion Project

RENEWALS AND REHABILITATION

- Investigation, design, and construction review for rehabilitation programs to address the enclosure failures on numerous high-rise and low-rise buildings in British Columbia and the Pacific Northwest.
- Investigation, design, and construction review for the renewal of the building enclosures of historic buildings including the Old Main Library, UBC, Vancouver, BC.

CAPITAL PLANNING

- Development of maintenance and renewal programs to ensure the efficient and sustainable performance of both existing and new building enclosure assemblies.

Presentations

Warren regularly presents at seminars and conferences, including:

- Building Envelope Research Symposium, CMHC / HPO High-Rise Study
- Windows – It's In The Details, AIA Seattle
- CMHC Building Envelope Rehabilitation Guides, Presentations to BCBECC, Property Managers and Owners
- AIBC BEEP Modules II & III