

➤➤➤ **MICHAEL WILSON**, M.Eng., P.Eng., BEP

Expertise & Role

Mr. Wilson is a structural engineer with extensive experience in the field of building science, including his graduate thesis “Structural Behaviour and Rainscreen Performance on Brick Veneer Wall Systems”. He has successfully combined academic study of building science theory with 18 years of professional practice.

Michael has co-authored and led several key CMHC sponsored research projects related to Brick Veneer/Steel Stud wall systems:

- “Tests of Full Scale Brick Veneer Steel Stud Walls to Determine Strength and Rain Penetration Characteristics”
- “A report on the Behaviour of Brick Veneer/Tie Systems”

CMHC’s new “Best Practice Guides” contain numerous references to the above reports.

Michael’s project responsibilities are very diversified and include:

- Consulting advice throughout the design process (conceptual, design development and detailed).
- Thermal and structural analysis of building envelope systems.
- Field assessment of existing building envelopes.
- Investigation of deteriorated building envelopes.
- Expert advice and litigation support services.
- Risk assessment & property damage claim support.
- Project management and coordination of design details with various construction trades.
- Review of alternate materials and shop drawings.
- Field review and verification testing.

Michael routinely participates in developing field review requirements and testing procedures, including performance certification field-testing of building envelope components.

Michael is a Principal and Director of RDH and participates in the overall direction and management of the firm. He is also Manager of the Victoria, BC office.

Education

B.Eng., McMaster University, Hamilton
 M.Eng., McMaster University, Hamilton
 BEP, Building Envelope Professional

Memberships & Awards

NSERC Undergraduate Student Research Award 1988, 89
 CMHC Scholarship, Graduate Studies in Housing 1989, 90
 PEO, Licensed Engineer 1991-1996
 APENS, past Licensed Engineer 1994-1996
 APEGBC, Licensed Engineer 1996-current
 APEGBC, Building Envelope Committee, Member
 APEGBC, Consulting Practice Committee, Past Member
 British Columbia Building Envelope Council, Past Director
 Masonry Institute of British Columbia, Past Technical Advisor
 The Masonry Society (TMS), Member
 CSA Technical Committees:
 CSA A370 “Connectors for Masonry”, Vice Chair
 CSA A371 “Masonry Construction for Buildings”, Member
 CSA A179 “Mortar and Grout”, Associate Member

Senior Building Science Specialist



Typical Projects

NEW DEVELOPMENTS – BUILDING ENVELOPE CONSULTING

As the envelope consultant on new developments, Mike has led design and construction review, including verification testing of the building envelope on over 40 high-rise and mid-rise residential buildings with many of the leading developers in British Columbia and the Pacific Northwest.



The Juliet in Victoria

EXISTING BUILDINGS - BUILDING ENVELOPE ASSESSMENTS

Assessment of the performance of existing building envelopes is a significant portion of Michael’s project work.

- Completed the condition assessment and reporting of over 100 residential multi-unit buildings (primarily strata-owned) on Vancouver Island and the Lower Mainland.
- Managed the condition assessment and reporting of over 90 multi-unit residential buildings on Vancouver Island for BC Housing.
- Participated in the assessment and reporting of over 150 multi-unit residential buildings in the Lower Mainland for BC Housing.
- Completed and managed the assessment and/or risk assessment of over 40 Elementary/Secondary Schools on Vancouver Island and in British Columbia for BC Housing.

EXISTING BUILDINGS – ENVELOPE REHABILITATION

- Investigation, design, and construction review for rehabilitation programs to address the enclosure failures on over 50 high-rise and low-rise buildings in British Columbia and the Pacific Northwest.

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Revised balcony design to reduce exposure

HISTORICAL BUILDING ENVELOPE ASSESSMENT

Michael's background in masonry and the performance of historical stone masonry and mortars has led to project work on a number of historically significant structures including:

- Nanaimo Courthouse, Nanaimo, BC
- Empress Hotel, Victoria, BC
- BC Legislature Bldg, Victoria, BC
- Provincial Building, Hollis Street, Halifax, NS
- South Pavilion, Shed 22, Halifax Port Corporation, NS
- Cumming Hall, Nova Scotia Agricultural College, Truro, NS

STRUCTURAL COLLAPSE/FAILURE INVESTIGATIONS

Typically in support of the property damage or construction claim investigation preceding a failure/collapse event, Michael has provide the insurance industry with technical analysis, investigation or cost related advise on projects including:

- Collapse of Horse Riding Arena, Chester, NS
- Roof Collapse, Gottingen Street, Halifax, NS
- Collapsed Steel Highway Bridges, Province of NS
- K-Mart Plaza Shopping Centre, St. John's, NL
- Five-Storey Wood Framed Building, Dartmouth, NS
- Falling Stone Panels, 394 Bloor Street West, Toronto, ON

Guideline & Research Projects

Mike's project experience and background in rainscreen performance were a significant contribution to the following guideline and research projects:

- Best Practice Guide: Wood Frame Envelopes in the Coastal Climate of British Columbia (1998, CMHC). This guideline has become the benchmark for wood frame construction in British Columbia.
- Building Envelope Rehabilitation Guides; one for consultants, and one for property managers and owners (2001, CMHC). These guideline documents contributed to a consistent approach to the evaluation, design and implementation of construction for moisture-damaged buildings.

Expert Support

The legal community recognizes Mike's expertise and experience. He is regularly asked to provide expert reports regarding design and construction related building envelope performance problems. Mike has also appeared in court and been accepted as an expert in the fields of design and construction related to buildings.

Publications

- "SS/BV Walls: Discussion", J.W. Cowie and M.J. Wilson, Progressive Architecture, Cleveland, Ohio, June 1992.

- "Brick Veneer and Steel Studs: Performance Questions", J.W. Cowie and M.J. Wilson, The Journal of Light Construction", Washington, DC, April 1991.
- "Tests of Full Scale Brick Veneer Steel Stud Walls to Determine Strength and Rainscreen Characteristics": R.G. Drysdale and M.J. Wilson, Canada Mortgage and Housing Corporation, 300 pages, Ottawa, 1990.
- "Structural Test results for Full Scale BV/SS Walls" M.J. Wilson and R.G. Drysdale, Fifth North American Masonry Conference, University of Illinois, US, June 3-6, 1990.
- "Influence of Adjustability on the Behaviour of Brick Veneer/Tie Systems", R.G. Drysdale and M.J. Wilson, Fifth Canadian Masonry Symposium, Vancouver, British Columbia, June 1989.
- "A Report on the Behaviour of Brick Veneer/Tie Systems", R.G. Drysdale and M.J. Wilson, Canada Mortgage and Housing Corporation, 300 pages, Ottawa, Ontario, 1989.

Lectures & Presentations

- "Maintenance, Condition Assessments, Renewal Planning and Building Rehabilitation." Condominium Home Owners' Association, 2004-2008.
- "New Zealand - Leaky Condos?" Audio visual presentation to British Columbia Building Envelope Council, Victoria, BC, Nov 2004.
- "Lessons From the North American Experience." The Science Of Building Weathertightness, Weathertight Buildings Steering group, Cladding Institute of New Zealand, Auckland, Mar 26, 2002.
- "4D's, Best Practice and Drying Rates." The Science Of Building Weathertightness, Cladding Institute of New Zealand, Auckland, Mar 25, 2002.
- "Building Envelope Rehabilitation, Creative Design Solution." Audio visual presentation, Managing Moisture in Housing, Building Envelope Symposium, Vancouver, BC, Oct 2, 2001.
- "Component Assemblies to Resist Precipitation and Wind." Instructor during workshop presentation and training, Building Envelope Education Program Module III Field Review and Testing, Jan 18-19, 1999, Vancouver, BC
- "Mandate for Field Review." Audio visual presentation as part of workshop training program, Building Envelope Education Program Module III Field Review and Testing, Victoria, BC. Sept 1999.
- "Case Study: Ocean Park Towers." Audio visual presentation and field trip overview as part of workshop training program, Building Envelope Education Program Module III Field Review and Testing, Victoria, BC, Sept 1999.
- "Coal Harbour Housing Co-Op." Audio visual presentation, Design and Construction of Rainscreen Stucco Wall Assemblies, British Columbia Building Envelope Council Annual Conference, June 1998.
- "Building Envelope Failure Investigations." Audio visual presentation, Ontario Building Envelope Council, April meeting, Ontario Architects Association Building, Apr 8, 1993.