



CALCULATING BUILDING ENVELOPE THERMAL PERFORMANCE: WHAT YOU NEED TO KNOW

- **WHERE ARE CODES HEADED?: 2017 SB-10, 2018 TORONTO GREEN STANDARD, AND 2020 NBC TIERED ENERGY RATING SYSTEM**
- **THERMAL BRIDGING: DETAILING FOR BETTER ENVELOPE AND ENERGY PERFORMANCE**

This 3-hour interactive session is intended to inform building designers, architects and consultants on how to accurately determine building envelope performance in order to comply with current and upcoming energy codes, such as NECB, ASHRAE 90.1, SB-10, and Toronto Green Building Standard. The presentation will cover how common thermal bridges through assemblies impact the overall envelope performance and how to include these impacts in U-value/effective R-value calculations. This includes the impact of not just studs and joists, but also other major thermal bridges such as balcony slabs, parapets and window transitions that are often mistakenly overlooked. The calculation methodology, based on the approach in the Building Envelope Thermal Bridging Guide, will be demonstrated through step by step example questions for a variety of assembly constructions. The end of the session will be dedicated to a whole building example (low-rise multiunit residential building) to be completed collectively by the group.

In order to fully participate in the session questions, it is recommended that attendees bring a laptop or tablet with Excel. A limited number of USB keys will be available at the session, however it is recommended to pre-download the Building Envelope Thermal Bridging Guide V1.1 (Guide and Appendices) as well as the Enhanced Thermal Performance Spreadsheet for Excel for free from the BC Hydro website here: <http://www.bchydro.com/thermalguide> www.bchydro.com/thermalguide



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Working together to educate and provide transparency in the building industry.

HOW TO REGISTER

Space is limited and will be first come, first serve basis. Please confirm your registration for this workshop to Tyler Simpson (tyler.simpson@owenscorning.com).

AGENDA

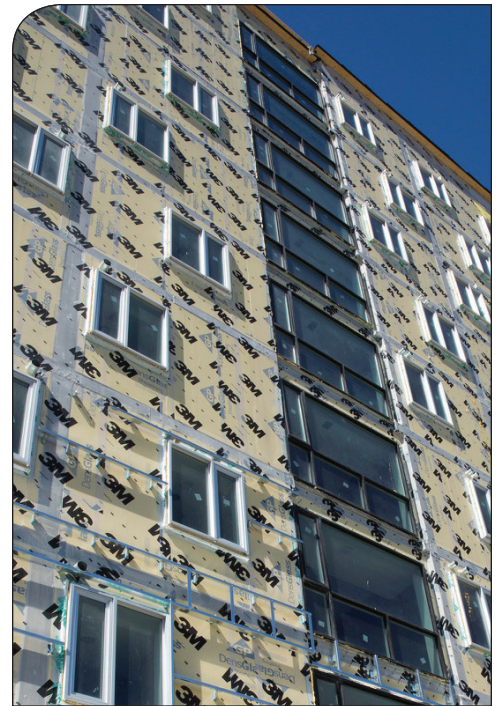
7:30 am	Registration & Light Refreshments	10:00 am	BREAK
8:15 am	Introduction	10:30 am	Example Building #1
8:30 am	2017 SB-10, 2018 Toronto Green Standard, and 2020 NBC Tiered Rating System	10:55 am	Example Building #2 (calculation)
9:05 am	Opaque Envelope Performance	11:40 am	Example Building #2 (review)
9:15 am	Clear Field and Detail Building Assemblies Calculation Methodology	11:50 am	Questions & Answers
9:45 am	Thermal Bridging Resources and Estimations	12:00 pm	LUNCH
		1:00 pm	END

WORKSHOP PRESENTERS

Neil Norris, M.A.Sc., P.Eng., C.P.H.D., - Neil is a building science engineer at Morrison Hershfield (MH) in the Vancouver office with a focus on building envelope thermal modelling and research. During his Master's studies, Neil developed excellent technical knowledge in heat transfer and computational fluid dynamics (CFD) modelling, passive solar design and the creation and operation of experimental testing devices. Neil is currently the technical lead for building component modelling at MH. Neil is responsible for the further development of the thermal analysis methodology used by the Building Performance Analysis group at MH. This is done through a mix of project specific analysis, on-site testing and research in improving building envelope energy efficiency. Neil is also a certified Passive House Designer with the MH Vancouver office and is responsible for providing consultation and implementation of Passive House design strategies for new or retrofit buildings. To round out his practical building envelope experience, Neil also regularly conducts design and field review for new construction projects, as well as warranty, reserve fund studies and renewal work for existing buildings.

Some of the projects in which Neil has participated in or is currently involved with include:

- Research work: Building Envelope Thermal Bridging Guide, ASHRAE Research Project 1365 – "Thermal Performance of Building Envelope Details for Mid- and High-Rise Buildings".
- Thermal performance studies of a large variety of opaque and glazed envelope systems, for organizations such as Dow Corning, Old Castle, Schock and the Canadian Sheet Steel Buildings Institute.
- Thermal performance reports for cladding and clip manufacturers, including Engineered Assemblies Inc., Knight Wall Systems, Nvelope, Cladding Corp and more.
- Thermal analysis of building details for new construction projects, including the National Music



LOCATION

The Boulevard Club
1491 Lake Shore Boulevard West
Toronto, ON M6K 3C2

Please sign-in at registration desk. Photo identification and business card are required. Competitors of Owens Corning and 3M will not be permitted access.

DATE

February 16th, 2017

Each participant will be issued a certificate that totals 3 hours in educational credits.

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