



2020 HALF-DAY WORKSHOP

# BUILDINGSMART for High Performance Buildings

Presented by the British Columbia Building Envelope Council (BCBEC) and BC Housing.

**Tuesday, February 25, 2020**

**7:30 am to 12:30 pm**

**Registration and Breakfast start at 7:00 am**

The Italian Cultural Centre  
3075 Slocan Street, Vancouver, B.C.

Join local and international industry experts as they share the latest research results, case studies, as well as successful design and construction practices. Learn about government initiatives to support more efficient, functional and resilient buildings. This forum will explore practical solutions and opportunities for industry practitioners on:

- cost effective and energy efficient homes
- indoor air quality and thermal comfort
- building envelope systems
- window and roof installation

The workshop will focus on Part 9 and Part 3 residential construction.

This event includes a tradeshow. Sponsorship opportunities are available.

BC Housing: 3.75 CPD Points | AIBC: 4.5 Core LUs | BOABC: 2.0 CPD Points

**Register at [BCBEC.com](https://www.bcbec.com)**



# BUILDINGSMART

## for High Performance Buildings

7:00 am	Registration, Tradeshow and Breakfast Buffet
7:30 am	Opening Remarks and Welcome – BCBECE
7:45 am - 8:25 am	<b>OPENING SESSION</b>  <b>BC Provincial and Washington State Policy Update</b> <b>Andrew Pape Salmon</b>   Building and Safety Standards Branch, Ministry of Municipal Affairs and Housing <b>Chuck Murray</b>   Washington State Department of Commerce, State Energy Office
8:25 am - 9:05 am	<b>SECOND SESSION</b>  <b>Exploring a Path to Cost and Energy Efficient Affordable Housing</b> <b>Mike Steffen</b>   Walsh Construction Co., Oregon State
9:05 - 9:35 am	Tradeshow and Coffee Break
9:35 - 10:05 am	<b>THIRD SESSION</b>  <b>Design Principles for Mitigating Overheating and Improving Indoor Air Quality in Multi-Unit Residential Buildings (MURBs)</b> <b>Lisa Westerhoff and Chris Doel</b>   Integral Group
10:05 - 10:35 am	<b>FOURTH SESSION</b>  <b>The Vented Wood-Frame Roof Conundrum</b> <b>Lorne Ricketts</b>   RDH Building Science Inc. <b>Patrick Roppel</b>   Morrison Hershfield
10:35 - 11:05 am	Tradeshow and Coffee Break
11:05 - 11:50 am	<b>FIFTH SESSION</b>  <b>High Performance Buildings: Case Studies and Tower Renewal Strategies</b> <b>Jason Takerer</b>   CMHC <b>Nina Dmytrenko</b>   CMHC
11:50 - 12:30 pm	<b>SIXTH SESSION</b>  <b>Window Installation in Homes: Just the Facts</b> <b>Murray Frank</b>   Constructive Home Solutions Inc
12:30 pm	Closing Remarks – BCBECE



# PROGRAM + BIOS

## 1 BC Provincial and Washington State Policy Update

The BC Building and Safety Standards Branch and the Washington State Department of Commerce both have active initiatives to improve energy performance in new and existing buildings. Andrew and Chuck will compare their respective approaches to pursue net-zero energy ready construction by 2031/32. Other key initiatives will be highlighted, including the refresh of the BC Building Access Handbook, and increasing the functionality of buildings for people with disabilities.



**Andrew Pape Salmon**

PEng, MEng,  
Executive Director –  
Building and Safety  
Standards Branch, Ministry  
of Municipal Affairs and  
Housing

Andrew is responsible for the Building Act and building regulations such as the BC Building, Plumbing and Fire Codes, including the Energy Step Code, the Homeowner Protection Act, and the Safety Standards Act. His most recent work has focused on building resilience, including seismic safety and climate change vulnerability assessments.



**Chuck Murray**

BA, Senior Energy  
Policy Specialist –  
Washington State  
Department of  
Commerce, State  
Energy Office

Chuck Murray has served the State of Washington for 29 years, providing original field research, project implementation and policy development in the field of energy efficiency. State legislation now requires incremental improvements in energy code stringency, mandatory building energy benchmarking and the first mandatory, statewide adoption of an *Energy Efficiency in Existing Buildings* standard.

## 2 Exploring A Path to Cost and Energy Efficient Affordable Housing

Developing and operating affordable housing presents numerous challenges, including continuously escalating construction costs. This presentation will offer a disciplined and efficient building design approach; one that uses advanced wood framing, as well as more standardization of the typical methods involved with constructing affordable housing.



**Mike Steffen**

AIA, LEED AD –  
Director of Innovation,  
Walsh Construction Co.,  
Oregon State

Mike is an architect, builder and educator with more than 30 years of experience in design and construction of the built environment. Mike's experience as both an architect and builder provide him with a unique and valuable perspective on design and construction challenges, and solutions.

## 3 Design Principles for Mitigating Overheating and Improving Indoor Air Quality in Multi-Unit Residential Buildings (MURBs)

Learn how to prepare buildings for our future climate. Design principles, strategies and practices to reduce the risk of two significant climate-related issues will be shared. The first issue is overheating due to higher average temperatures and increases in extreme temperature events (such as heat waves). The second issue pertains to indoor air quality issues related to increased wildfire events (as well as more localized sources of air pollutants). Case studies will be used to illustrate these strategies.

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**Lisa Westerhoff**

PhD, MA, BA,  
EcoDistricts AP –  
Principal and Team Lead,  
Integral Group

Lisa works with a range of academic, government, and private sector actors to lend her expertise on performance gap issues related to green building, as well as sustainable planning. She holds a PhD in urban sustainability and is proficient in sustainable neighbourhood and green building post-occupancy assessments. Lisa brings considerable experience in municipal climate change planning for emissions reductions and adaptation strategies.



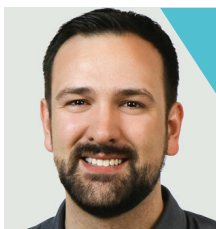
**Chris Doel**

PEng, MEng, CEng,  
MCIBSE, LEED  
Green Associate –  
Principal, Integral Group

For over 15 years Chris has been passionately working with clients to deliver cost effective and sustainable mechanical engineering solutions. He draws on extensive industry experience within the Canadian and European construction market. Chris' areas of expertise include detailed mechanical system design of high-performance buildings, specifically those targeting Passive House.

## 4 The Vented Wood-Frame Roof Conundrum

Low-slope, vented roofs are used pervasively in low to mid-rise wood-frame construction. However, in climates such as the Coastal Pacific Northwest, performance issues are relatively common. This presentation will discuss the results of an ongoing monitoring, testing, and hygrothermal modelling study assessing the performance of these roofs. Guidance will be provided for the construction of new roofs as well as for renewing existing assemblies.



**Lorne Ricketts**

MASc, PEng –  
Principal and Building  
Science Specialist,  
RDH Building Science Inc.

Lorne's work focuses on new construction, investigation, research and education projects. Most commonly he is involved in designing advanced building enclosure systems, hygrothermal and thermal analysis, and testing and monitoring building performance. Lorne works with manufacturers, governments, and industry organization to advance the next generation of building systems.



**Patrick Roppel**

PEng – Principal,  
Building Science Specialist,  
Morrison Hershfield

Patrick is a Building Science Specialist and manages the Building Performance Analysis department at Morrison Hershfield. He has over 15 years of consulting experience related to building science and building envelope energy efficiency. In recent years his work has focused on providing tools and guidance to help building professionals make practical design decisions related to constructability, thermal, structural, energy, and hygrothermal performance.

# PROGRAM + BIOS

## 5 High Performance Buildings: Case Studies and Tower Renewal Strategies

Join representatives from Canada Mortgage and Housing Corporation (CMHC) for this two-part presentation to explore improved strategies for tower retrofits, and to examine key findings from Post-Occupancy Evaluations (POE) of a number of high performance, Part 3 buildings.

The first session will look at costs, technical challenges and solutions with support from a new tower renewal strategy guide. The second session will dig deeper into the results of POEs as they relate to thermal comfort, indoor air quality, cooling challenges and more.

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**Jason Takerer**

MA, Senior Technical  
Researcher, CMHC

Jason oversees research projects with CMHC, and strives to advance affordable, energy efficient and innovative construction practices. He has worked in NRCan's Office of Energy Efficiency, in technical roles with environmental non-profit organizations, and is an experienced high-performance home builder.



**Nina Dmytrenko**

MASc, Technical Researcher,  
CMHC

Nina's research focuses on developing a better understanding of the performance of new and existing housing with respect to energy efficiency and indoor environments. She conducts assessments on the cost-benefits of innovative technologies and practices used to improve housing sustainability.

## 6 Window Installation in Homes: Just the Facts

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