2018 HALF-DAY WORKSHOP

BUILDINGSMART with High Performance Concrete Envelopes

BC HOUSING RESEARCH CENTRE

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

Tuesday, February 27, 2018

8:00 am to 12:00 pm
Registration and Breakfast start at 7:00 am

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

This half-day workshop will focus on concrete envelopes for Part 9 and Part 3 construction. Energy and thermal requirements play an increasingly important role in residential construction. Industry experts will discuss the latest research on how concrete envelopes can help deliver results as well as the most effective ways to meet the new BC Energy Step Code standards. Topics for discussion include precast concrete, sandwich concrete walls, insulating concrete forms, and cast-in-place concrete. Practical examples will be provided to illustrate thermal bridging considerations and to identify compliance paths for meeting the thermal performance requirements. An industry tradeshow will complement the workshop.

Register at BCBEC.com
This event is eligible for professional learning credits.

BRITISH COLUMBIA · BC BEC · Cement Association of Canada · CONCRETEBC · ICFMA INSULATING CONCRETE FORMS MANUFACTURERS ASSOCIATION

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7:00 am	Registration, Tradeshow & Buffet Breakfast
8:00 am	Opening Remarks and Welcome – BCBEC
8:05 – 8:35 am	**SESSION 1**
	Taking Advantage of the Energy Step Code: Insights on Practices and Materials that Deliver Results **Zachary May** | Building and Safety Standards Branch, Ministry of Municipal Affairs and Housing
8:35 – 9:30 am	**SESSION 2**
	Precast Concrete **Brian Hubbs** | RDH Building Science
9:30 – 10:00 am	Tradeshow and Coffee Break
10:00 -10:30 am	**SESSION 3**
	High Performance Precast Concrete Envelopes **Matt Dalkie** | Lafarge Canada Inc.
10:30 - 11:00 am	**SESSION 4**
	The Foundation for a Better Built Home **Bob Deeks** | RDC Fine Homes Inc.
11:00 - 11:55 am	**SESSION 5**
	ICF: The Quiet Giant **Murray Frank** | Constructive Home Solutions Inc.
11:55- 12:00 pm	Closing Remarks – BCBEC

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1 Taking Advantage of the Energy Step Code: Insights on Practices and Materials That Deliver Results

The BC Energy Step Code was introduced in April 2017 as a voluntary compliance option in the BC Building Code. This new performance standard maps out the transition to Net Zero Energy Ready buildings in B.C. over the next 15 years. The standard requires energy modelling and an airtightness test on all buildings, and removes many of the specific requirements for efficiency of products and equipment. This approach increases flexibility and removes barriers to innovation in construction, but also requires greater coordination between project teams.

This presentation will examine the most effective ways of meeting this new performance standard, and how concrete enclosures can help deliver results under the BC Energy Step Code.

Zachary May

Zachary is the acting Director of Policy and Codes Development with the Building and Safety Standards Branch in the Ministry of Municipal Affairs and Housing. He is a member of the Standing Committee for Housing and Small Buildings (Part 9) with the National Research Council and participates in several provincial construction-related committees. At the Building and Safety Standards Branch, Zachary leads a technical team responsible for developing and maintaining the BC Building Code, including the recently adopted BC Energy Step Code.

2 Precast Concrete

Most cladding systems have become more energy efficient through the integration of high performance air barriers, rainscreen moisture management design, and thermal breaks at anchors for continuous insulation. However, conventional precast concrete has remained virtually unchanged in the past 50 years.

Using several case studies, the author will discuss shortcomings, successes, and lessons learned when dealing with precast concrete cladding systems, as well as giving insight for potential future improvements.

Brian Hubbs

Brian is a Managing Principal and Senior Building Science Specialist at RDH Building Science Inc. with more than 25 years' experience as a building science consultant. A practical facade engineer and researcher, Brian has a unique blend of theoretical and hands-on knowledge gained from designing facades for new buildings, as well as completing hundreds of forensic investigations, rehabilitation projects, and research projects. Brian has extensive experience with high-rise facade systems, components, and materials. An engaging and vibrant presenter, he regularly speaks at seminars, conferences, and guest lectures on a range of building science topics.

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3 High Performance Precast Concrete Envelopes

This session will explore the technology used in the construction of precast concrete panels and their use in building envelopes. It will focus on the performance of various types of precast panels, including architectural and sandwich panels. The 2013 Habitat for Humanity Net Zero Duplex project in Edmonton, Alberta, which was the first Net Zero Energy home in Canada, will be used as a case study. Changes in the industry to reduce environmental impacts will also be discussed.

Matt Dalkie

Matt has worked in the cement industry for his entire career, most recently as the Technical Services Engineer for Lafarge Cement. Matt actively supports ready-mix producers in B.C. by fulfilling their primary engineering requirements. He has developed an in-depth understanding of cement and concrete products in relation to sustainable construction. Matt holds a degree in Chemical Technology, is a LEED Accredited Professional in Building Design and Construction, and holds a variety of NRMCA certifications. He is active on CSA Concrete (CSA A23.1/2), Cement (CSA A3000), and lab testing (CSA A283) standards development committees, ACI committees for Concrete Sustainability and Soil Cementing, and is chair of Concrete BC's Technical Committee.

4 The Foundation for a Better Built Home

This presentation will provide an overview of the benefits of using insulating concrete forms (ICF) for foundations. It will cover ease of use and adaptability, energy efficiency, durability, thermal comfort, and moisture mitigation. Practical lessons learned will be discussed from a builder's perspective.

Bob Deeks

Bob is owner and President of RDC Fine Homes Inc. He is an award-winning builder and renovator of both single-family and multi-family residences with a focus on sustainable, healthy, and high-performance construction in Whistler, B.C. Bob is a past president of the Canadian Home Builders' Association of BC (CHBABC), is currently Chair for CHBA's Net Zero Council, a member of the Provincial Step Code Council and the Step Code Metrics Committee, and is a member of the Standing Committee for Housing and Small Buildings for the development of the National Building Code.

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5 ICF: The Quiet Giant

Houses used to achieve thermal comfort by consuming massive amounts of energy. Changes in thinking, the emerging awareness of the impact on the environment and rising home energy costs have all contributed to a gradual shift in research and construction moving towards greater energy efficiency and streamlined construction methods. ICF has proved over almost five decades that it is a legitimate method of durable, simple, and energy-efficient construction. However, for most of that time, wood-frame construction was a cheaper option.

This presentation reveals that the challenges in improving wood-frame construction to a higher level of energy, seismic, and durable performance are pushing the life-cycle cost of wood-frame homes higher and higher, whereas ICF has always delivered at the highest levels and is now competitive on price, too.

Murray Frank

Murray is a leading building science specialist in B.C. He has been instrumental in the development of the understanding of moisture problems, energy performance, and sustainability relating to single-family and multi-unit residential buildings, as well as building envelope concerns relating to commercial, industrial, and institutional projects. The owner of Constructive Home Solutions Inc. for almost 30 years, Murray is an acclaimed educator and has been instrumental in the development and presentation of curriculum for the construction industry.

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