

**Meeting Notes**  
**Building Research Committee (BRC)**  
 Thursday, November 3, 2016 8:30 a.m. to 11:30 a.m.  
**The Italian Cultural Centre Society**  
 3075 Slocan Street  
 Vancouver, BC

Bill McEwen Chair, Masonry Institute of BC  
 Denisa Ionescu, BC Housing  
 Andy Chase, Building and Safety Standards Branch  
 Anton Van Dyk, Centra Construction Group  
 Bernie Hoing, Travelers Canada  
 Bojan Andjelkovic, BC Hydro  
 Brandon Clevenger, JRG Building Engineering  
 Cindy Moran, BC Housing  
 Derek Townson, Building Officials Association of BC  
 Douglas Bennion, Quad-Lock  
 Douglas Watts, Read Jones Christoffersen Ltd  
 Einar Halbig, E3 Eco Group Inc.  
 Fitsum Tariku, BCIT  
 Fred Tai, Simpson Strong-Tie Canada  
 Hamid Heidarali, Hamid Design Build Ltd  
 Henry Touwslager, Touwslager Engineering Ltd  
 Jack Christopher, Aviva Canada  
 Jason Chiu, UBC  
 Jason Jung, ASTTBC  
 Jason Teetaert, SMT Structure Monitoring Technology

Jieying Wang, FPInnovations  
 Julien Schwartz, Morrison Hershfield  
 Lorne Ricketts, RDH Building Science Inc  
 Mark Walters, IBI Group  
 Martin Austin, BC Housing  
 Maureen Connelly, BCIT  
 Murray Frank, Constructive Home Solutions  
 Opreet Kang, Forestry Innovation Investment Ltd  
 Patrick Roppel, Morrison Hershfield  
 Ralph Moore, Aviva Canada  
 Riccardo Desantis, Intertek  
 Richard Kadulski, Richard Kadulski Architect  
 Robert Marshall, CertainTeed Gypsum and Insulation  
 Samer Diabess, LRD & BCBECC President  
 Terry Beck, Kwantlen Polytechnic University  
 Wei Chen, EXP

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**1. Approval of the Agenda / Additional Items**

The minutes from the April 20, 2016 meeting were approved.

**2. Cladding Attachment for High R-Value Walls: Long Screws Through Insulation**

Lorne Ricketts (RDH Building Science) spoke about the updated *R22 + Guide Effective Walls in Wood Frame Construction in British Columbia* which includes an update on cladding attachments. The user friendly guide provides safe conservative requirements and covers different wall assemblies, in addition to a section on how to design walls with outside insulation and the requirements for screw spacing, screw diameter and strength.

### **3. Large Building Airtightness Testing Guide**

Lorne Ricketts also presented on the new *Large Building Airtightness Testing Guide* which has been developed to prepare the building industry for upcoming BCBC and City of Vancouver Energy Step Codes; these new requirements will require the industry to construct buildings with better airtightness. The reference guide will provide the resources to learn about whole building airtightness, by demonstrating various approaches to achieve it; different standards will also be included to allow room for municipal code changes.

### **4. Sound Transmission of Wood-Frame Rain Screen Cavity Wall Assemblies –Research Project Update**

Maureen Connelly, BCIT provided an update on her ongoing research in which Building Enclosure Design Guidelines are investigated to obtain acoustical data on the transmission loss of wood-frame wall types and facades. The three phase study is based on the findings that many BC dwellings do not meet the minimum health and wellness requirements, set by WHO and CMHC, for indoor sound levels of outside traffic noise. The first phase of the study focuses on confirming the acoustical viability of wall assembly details, and to validate models for variant prediction of transmission loss. Phase two focuses on providing transmission loss data for assessment building facades and facade elements, phase three investigates the acoustical performance of the whole building envelope.

### **5. Thermal Resistance and Moisture Storage Properties of In-Service Extruded Polystyrene: A Pilot Study**

Fitsum Tariku, BCIT presented a pilot study in which the main focus is to analyse the level of moisture accumulation in XPS Buildings. Test subjects were exposed to weather stress, thermal stress, UV and mechanical damage, and thermal conductive samples were taken to measure the amount of moisture accumulated. Using a high precision balance the moisture content and the drying time are measured, to determine how a buildings location and moisture exposure correlate to the moisture content of insulation and how it will affect the thermal performance of the building.

### **6. Thermal Bridging Standards, Energy Demand and Construction Implications for Part 3 MURBS**

Patrick Roppel (Morrison Hershfield) presented a comparative analysis between BETB Guide standards and Passive House, by reviewing European Passivhaus, North American Inclinations and BC Construction Practices. The study addresses questions regarding different methodologies for quantifying thermal bridging, identifies key differences between static and dynamic simulation when assessing predicted building performance, identifies key differences in testing protocols for Heat Recovery Ventilators. In addition the study provides design guidance, as well as, examples of how Part 3 Buildings can meet high performance levels similar to Passive House BC.

### **7. Glass Breakage of Glazing Spandrel and Assessing the Benefit of Ventilated Cavities**

Julien Schwartz (Morrison Hershfield) presented on a study based on a recent report which associated glass breakage in vented spandrel to thermal stress. To better understand this occurrence an experimental set-up supplemented through computer modeling was done, as the impact of airflow is currently not well quantified and no field data is available. Single glazed and double glazed units with three different ventilation strategies were examined with the intent to develop detailed computer models that will use calibrated models to assess different designs and identify parameters.

## 8. Forum Discussion

- A participant inquired about how prevalent of a problem is glass breakage? Does it equally occur in both imported and Canadian windows?  
Patrick mentioned glass breakage has been found in Canada, Seattle and Portland, although it is not a frequent occurrence. No difference has been found in whether the windows are domestic or imported.
- A participant inquired if there is a plan to develop a Passive House BETB Guide  
Patrick: The idea is to convert the BETB Guide into an online app, this may also lead to the creation of PH BETB Guide.
- Denisa briefed the committee on current BC Housing research projects and presented an open invitation to BRC members to participate on the steering committees
- Ralph mentioned the upcoming BC Housing Wood Decks and Balconies Guide.
- A participant presents the idea of researching underground parkades, what are the current practices? What are best practices, what can be done better and what effect does nature play? What risks are involved with multi level underground parking?
- Les Yard announced the Building Science and Technology Conference 2017.

## 9. Next BRC Meeting

- Meeting is scheduled for Wednesday, April 19, 2017.