

Meeting Notes
Building Research Committee (BRC)
Tuesday, April 20, 2021, 9:00 a.m. to 11:30 a.m.
Online Meeting

In Attendance:

Denisa Ionescu, BC Housing (Chair)
Arash Azadeh, BC Housing
Alexander McGowan, WSP. Canada Inc.
Andriana Beauchemin, EcoAmmo Sustainable Consulting
Antje Wahl, Forestry Innovation Investment
Barilelo Nghana, BCIT Building Science Centre of Excellence and Western University
Brent Bélanger, CertainTeed Canada
Cara Lozinsky, University of Toronto
Cindy Moran, BC Housing
David Bruce, Pacific Energy Innovation
David Kayll, Morrison Hershfield
Don Munich, Travelers Insurance
Dorian Tung, FP Innovations
Fitsum Tariku, BCIT
Fred Tai, Simpson Strong
Graham Finch, RDH Building Science Inc.
Hamid Ghanbari, EduBuild Solutions
Harshan Radhakrishnan, Engineer and Geoscientists BC
Ivan Lee, Morrison Hershfield

Jason Takerer, CMHC
Jason Teetaert, SMT Research
Jeffrey Mahn,
Jieying Wang, FII Innovation
Katie Hay, Morrison Hershfield
Laurence Matzek, RCABC
Les Yard, Soprema
Linden Holmen
Marianne Touchie, University of Toronto
Michael Lemm, Busque Engineering
Michelle Lee, BC Housing
Murray Frank, Constructive Homes Solutions
Neil Norris, Morrison Hershfield
Patrick Roppel, Evoke Buildings
Remi Charron, BC Housing
Robert Marshall, Certain Teed Saint-Gobain
Robert Sloat, Surety Association of Canada
Scott Williams, Building and Safety Standards Branch
Tom-Pierre Frappé- Sénéclauze, Pembina Institute
Tony Gioventu, CHOA

1. Approval of the Agenda/Additional Items

The meeting was called to order at 9:05 a.m. D. Ionescu welcomed everyone to the meeting on behalf of the BRC followed by a roundtable introduction. The April 20, 2021 meeting agenda was approved.

2. Multi-family Energy Retrofits: Holistic Assessments of Building Performance

Marianne Touchie of the University of Toronto presented the results of a study that analyzed various aspects of energy retrofits and their impact on indoor environment, using resident surveys and in-suite monitoring. Results show there is a need to better understand the relationship between measured conditions and occupant predictions, as well as why the same retrofits in similar buildings, do not yield the same response. Marianne also presented results showing that the life-cycle carbon emissions

reductions from a retrofit outweigh the embodied carbon (39 to 1). Marianne announced an upcoming research that will determine which building features contribute to personal and community wellbeing as well as explore how wellbeing and environmental goals can be achieved concurrently through retrofits.

3. Impacts of Ventilation Cavity Design on the Energy Performance of Rainscreen Wall Assemblies: CFD Study

Barilelo Nghana of the BCIT Building Science Centre of Excellence presented results from a study that investigated the energy performance of different rainscreen design parameters including cladding material type, sheathing membrane emissivity, air gap width and cavity height for a typical hot and cold day. Optimizing the performance for summer or winter could lead to different designs, and an approach at considering the best overall performance was introduced.

4. Meeting Step Code TEDI Targets with Aluminum Window Wall: A Parametric Analysis

Ivan Lee of Morrison Hershfield presented an analysis of how different window-wall systems could be used to achieve upper levels of the Step Code. A common window wall system has proven to be able to achieve Step 3. Designs with more balconies and a higher percent glazing area, can achieve Step 4 if high performance window-wall systems (triple glazed) are used, contain an airtight envelope and a high efficiency HRV. Results show, there is a trade-off between balconies and airtightness, removing balconies allows for lower energy performance of other parameters while still achieving Step 4.

5. Canada's Earth Tower – Prefabricated Mass Timber Façade Competition

Graham Finch of RDH Building Science presented the design submissions that were received as part of The Canada Earth Tower Competition, by Perkins & Will. The objectives are to spur innovation and generate specific, implementation-ready solutions appropriate for use on Canada's Earth Tower, an industry-leading tall wood project anticipated to be up to 40 storeys. The winning team will go on to execute a full-scale 2-storey performance mock-up for examination at a laboratory testing facility.

6. Impact of Clearstory Glazing on Roof Membranes

Patrick Roppel of Evoke Buildings provided a summary of a study that examined how radiation reflected onto the roof from adjacent glazing impacts temperatures after blistering was observed at a project. Both laboratory and simulation results were presented of various design options. The study is ongoing with the next step being an investigation of surface temperatures of a black, grey, white, and gravel roof.

7. Forum Discussion

Participants discussed the presentations.
Meeting closed at 11:40 a.m.

8. Next BRC Meeting

- Meeting is scheduled for November 17, 2021, 9:00 a.m.-11:30 a.m.