

Meeting Notes

Building Research Council (BRC)

Wednesday April 19, 2023, 8:30 a.m. to 12:00 p.m.

The Italian Cultural Centre Society

3075 Slocan Street

Vancouver, BC

In Attendance:

Denisa Ionescu, BC Housing Chair
Alex Blue, Evoke Buildings Engineering
Bo Li, BCIT
Brent Bélanger, Certain Teed Canada
Cindy Moran, BC Housing
Christopher Marleau, RDH
David Bruce, Pacific Energy Innovation
Don Munich, Travelers Canada
Douglas Bennion, Quadlock
Faizan Mithani, BC Housing
Farnaz Fahimi, CMHC
Fitsum Tariku, BCIT
Fred Tai, Simpson Strong-Tie Canada, Limited
Glade Schoenfeld, RJC

Hamid Ghanbari, EduBuild Solutions
James Higgins, RDH
Jason Teetaert, SMT Research
Jean-François Côté, SOPREMA
Kevin So, Travelers
Laurence Matzek, RCABC
Lily Shields-Anderson, UDI
Marcelo Mora, BCIT
Michael Lemm, Busque Engineering
Noah Quastel, BC Lung
Patrick Roppel, Evoke Buildings Engineering
Remi Charron, NYIT

1. Approval of 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 meeting agenda was approved.

2. Applicability of Heat Recovery Ventilator in a Residential House on Musqueam Reserve, Dr. Bo Li, BCIT

Dr. Bo Li presented about a project on the retrofit of an HRV into a home on the Musqueam Reserve. The presentation focused on the initial stages of the project related to the modelling, which included 3D modeling with SketchUp and OpenStudio. The resulting energy model was calibrated with utility data. Results show that the additional airflow introduced by adding an HRV will lead to increased consumption of electricity (2.5%) and natural gas (7.6%). This increased energy consumption can be mitigated by performing airtightness measures on the house in conjunction with the HRV installation.

3. High-Performance Affordable Housing Dashboard, Farnaz Fahimi, CMHC

Farnaz presented results from the next stage of a project presented by Nina Dmytrenko from CMHC at the April 20, 2022, BRC meeting. The project aimed to develop a simple tool to help affordable housing project applicants estimate required energy efficiency measures and cost savings required to meet different performance levels. This new phase looked at costing results of different packages of measures to achieve 25%, 40%, 55% and 80% energy savings relative to NEBC 2017 using BTAP. Simple payback analysis showed around 23 year payback to achieve 80% savings. NPV/ROI calculations are currently being carried out with results coming out shortly.

4. Mechanical Permit and Other Implementation Efforts, Phillip White and Chris Radziminski, City of Vancouver

Philip and Chris presented about the latest efforts to help improve overall performance of buildings through Mechanical Permits, Operating Permits and other efforts to help reduce rainwater flow into

the sewer system. Mechanical Permits arose out of increasing decarbonization efforts and the need to have more quality heat pump installations. Operating Permits for items such as cooling towers, decorative foundations, rainwater reuse systems, etc., have been implemented to help manage the rise in Legionella.

5. Research on Air Quality Impacts from Cooking in Residential Kitchens, Christopher Marleau, RDH Building Science

Christopher discussed previous and ongoing projects where RDH has worked to monitor and improve indoor air quality (IAQ). The presentation made the case for the need for additional research to help quantify and mitigate particulate matter emissions from home cooking. There has been increasing awareness of the IAQ implications of gas cooking appliances, but not much on cooking related emissions. Research is needed to help evaluate the effectiveness of kitchen exhaust fans, recirculating filters, and other solutions as well as to better document the actual health risk to occupants.

6. Forum Discussion

- RDH is doing work to evaluate the performance of double-glazed windows with a low-e coating on the interior window layer. These windows achieve performance levels approaching those of triple glazed without the additional embodied carbon impacts. However, there are still some concerns that the internal layer could be impacted by cleaning with harsh chemicals or abrasive cleaning, which is being evaluated.
- EGBC is doing some work studying Radon, including professional liability issues.
- SMT has expressed concern with the emergence of Blue Roofs where water is retained on the roof to help slow the flow of rainwater to municipal infrastructure. Field testing has been finding a number of challenges when installed.
- BC Lung has been going lots of studies related to Radon over the years, and are now interested in focusing on other emerging IAQ issues.
- BCIT is working with the Musqueam Nation to help develop a net-zero carbon path for their housing infrastructure.
- RDH is looking at a two stage IAQ project related to forest fire smoke by utilizing publicly available monitoring data from PurpleAir. The initial phase of the project would look at online IAQ measurements correlated with Air Quality events, the second phase would follow up with different sensor data locations to better understand what led to good or bad IAQ performance during events.

7. Next BRC Meeting

Next meeting is scheduled for Oct 10, 2023 between 8:30 a.m. – 12:00 p.m.