

Meeting Notes

Building Research Council (BRC)

Tuesday April 15, 2024, 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, BRC Chair Theo Christiaanse, BC Housing Cooper Dawson, BC Housing David Bruce David Harlander, BC Housing Gabriela Mercado, BC Housing Helen Goodland, Scius Hyejoo Koh, Sense Engineering Ian Cullis, Landlord BC James Higgins, RDH Ju Chan Kim, BC Housing Kelly Walsh, Scius Lucas Capretz, JRS Engineering Michael Lemm, Busque Engineering Michelle Lee, BC Housing	Murray Frank, Building it Right Patricia Owen, BC Housing Patrick Roppel, Evoke Buildings Sukh Johal, North Sky Consulting Wesley Narciso, JRS Engineering Richard Kadulski, Richard Kadulski Architect Won Ohm, BCIT Kevin So, Travelers Phalguni Mukhopadhyaya, UVIC David Todtmann, Forestry Innovation Investment
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1. Approval of Agenda/Additional Items

The meeting was called to order at 8.45 a.m. Dr. Denisa Ionescu welcomed everyone to the meeting on behalf of the BRC followed by a roundtable introduction. The meeting agenda was approved. Denisa announced she will be stepping down as BCBE board member and director of the BRC council after ten years of service. Dr. Phalguni Mukhopadhyaya will step into this role.

2. Vienna House Project Research and Innovations

Presentation: Kelly Walsh, SCIUS

Kelly highlighted several features of the Vienna House building. <https://viennahouse.ca/> The courtyard design stimulates community interaction and provides refuge from noise and enables crossflow ventilation in the individual apartments. Active cooling and external shading further ensure the building remains cool. The building is constructed using mass timber CLT for floors, structure, and the elevator shaft. The prefabricated balconies are thermally broken and enabled one-day installation. The walls are panelized to passive house standards and are installed directly from transport, never sitting on site. The project was supported by the BIM process for both clash detection and assets management. This project is the first BIM-delivered residential project in B.C. The discussion afterward focused on the trade-off between low-e windows and external shading, occupant surveys, and sensor experiments that will be used for ongoing building performance measurements.

3. Low Carbon Solutions for Multi-Unit Residential Buildings

Presentation: Patrick Roppel, Evoke Buildings Engineering

Patrick Roppel focused his presentation on the insights from the low carbon solutions for multi-unit residential buildings report (<https://www.bchousing.org/sites/default/files/media/documents/Low-Carbon-Solutions-for-Multi-Unit-Residential-Buildings.pdf>) where both embodied carbon and operational carbon are considered. The report includes extensive appendixes with assumptions, calculations and data. Various analyses were presented considering thermal bridging, type and thickness of insulation, window and door schedules, clipping systems, and structural materials. The discussion following the presentation focused on the building wall assemblies and embodied versus operational carbon.

4. Detailing Guide for Heat Pump Penetrations in Existing Buildings and R22+ Effective Walls in Residential Construction in British Columbia

Presentation: James Higgins, RDH

James walked us through various cross sections that showed how to do these penetrations through several wall assemblies. <https://www.bchousing.org/sites/default/files/media/documents/Detailing-Guide-for-Heat-Pump-Penetrations-in-Existing-Buildings-2025-Update.pdf>

Also he presented the revisions and expansion of the R22 guide including acoustic considerations, embodied carbon, and fire code requirements. This publication will be soon posted replacing the exiting guide <https://www.bchousing.org/publications/IG-R22-Effective-Walls-Residential-Construction.pdf>

5. Digitally Accelerated Standardized Housing (DASH)

Presentation: Helen Goodland, SCIUS

Helen introduced the DASH project with a video showcasing its benefits and purpose. <https://www.acceleratedhousing.ca/>. The project leverages prefabrication using a "kit of parts" approach for 3-6 storey buildings. The generative design platform identifies suitable sites, optimizes configurations, and provides design flexibility, while BIM integration ensures precision, information exchange, and standardized project management. DASH aims to reduce project timelines from five years to three years. Key innovations of the generated buildings are based on the Vienna House, such as the use of Mass Timber CLT and panelized walls. Customizable blueprints comply with BC Housing design standards and the BC Energy Step Code. The project has collaborated with 11 founding manufacturers across Western Canada and is seeking to expand. Several projects are in the pipeline that will use DASH, and parts of the tool are being improved to include mechanical systems. The project has gained national interest in Quebec, Ontario, and New Brunswick. The discussion included questions about incorporating climate risk, whether this project also addresses BC Hydro constraints, and whether there would be a feedback mechanism to integrate learnings from delivered projects.

6. Forum Discussion

Due to time constraints the forum discussion was waived in favor of networking.

7. Next BRC Meeting

Next meeting is scheduled in fall 2025.