



BUILDING *Smart* with AIR AND VAPOUR BARRIERS

2016 Half-Day Workshop



Presented by the British Columbia Building Envelope Council (BCBEC) and the Homeowner Protection Office (HPO), a branch of BC Housing.

Thursday, February 18, 2016

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 the use of air and vapour barriers in single and multi-unit residential buildings. Join a panel of building envelope experts who will share building science principles, design considerations and practical installation details. Speakers will examine challenges and options for improving the durability, safety, comfort and energy efficiency of buildings through the effective use of barrier materials.

This workshop is eligible for Continuing Professional Development (CPD) credits. See page two for details.

Register at BCBEC.com.





BUILDING *Smart* with

AIR AND VAPOUR BARRIERS

2016 Half-Day Workshop

| | | |
|-----------------------------------|---|---|
| Registration and Buffet Breakfast | | 7:00 - 8:00 AM |
| Opening Remarks: BCBECE | | 8:00 - 8:10 AM |
| 1 | First Session | 8:10 - 8:50 AM |
| | Murray Frank <i>Constructive Home Solutions Inc.</i> | Controlling the Flow of Heat and Water |
| 2 | Second Session | 8:50 - 9:40 AM |
| | Richard Kadulski <i>Richard Kadulski Architect</i> | Design and Installation Considerations for Part 9 Buildings |
| Coffee Break | | 9:40 - 10:00 AM |
| 3 | Third Session | 10:00 - 10:50 AM |
| | Patrick Roppel <i>Morrison Hershfield</i> | Design and Installation of Air and Vapour Barriers for Multi-Unit Residential Buildings |
| 4 | Fourth Session | 10:50 - 11:30 AM |
| | Lorne Ricketts <i>RDH Building Science Inc.</i> | Airtightness Testing of Large Buildings: Where We Are and Where We Are Going |
| 5 | Fifth Session | 11:30 - 11:50 AM |
| | All Speakers <i>Moderator: BCBECE representative</i> | Speaker panel discussion |
| Closing Remarks: BCBECE | | 11:50 - 12:00 PM |

This workshop is eligible for Continuing Professional Development (CPD) credits:

3.25 AIBC Core Learning Units

3.5 HPO CPD Points

ASTTBC CPD Activity

3.5 RCI CEHs

3.5 BOABC CPD Points

Program + Bios

1 Controlling the Flow of Heat and Water

The building envelope must control the flow of heat, vapour and water. Three key elements that do a significant amount of work controlling moisture and energy flow through the building envelope are the air barrier, the vapour barrier, and the insulation. The construction industry in Canada has historically relied on polyethylene sheets to provide both airtightness and vapour control, but changes in Building Code and client expectations are resulting in an interest in additional approaches for air and vapour control. Increasing insulation requirements for homes has led builders to explore different wall assemblies, some of which have a higher risk of condensation than conventional practice.

This session explores the complex ways that energy and moisture move through the building enclosure and how insulation, along with air and vapour barriers, play a crucial role in controlling these flows.



Murray Frank,
Constructive Home Solutions Inc.

Murray is recognized as a premier building science specialist in British Columbia. He has been instrumental in the development of the understanding of moisture problems, energy performance and sustainability of single family and multi-unit residential buildings as well as building envelope concerns for commercial, industrial and institutional projects. His combined technical expertise and practical experience help advance the understanding of construction and design issues in the various climates across British Columbia.

2 Design and Installation Considerations for Part 9 Buildings

The Building Code sets out criteria for air barriers and vapour barriers. However, in practice there is a lot of misunderstanding about air and vapour barriers and their application on the job site. This presentation reviews code requirements for air and vapour barriers, including recent changes introduced in section 9.36. It includes a discussion about general design considerations and how these are incorporated into building design. The presentation also examines common air leakage paths and how continuity of the air barrier can be maintained with code compliant details. Examples of exterior wall assemblies will be reviewed. Learn about resources and guides for designers and builders.



Richard Kadulski,
Architect

Richard Kadulski is a Vancouver architect who has specialized in healthy, energy-efficient, solar and climate-sensitive residential design for more than 30 years. He is a current member of the National Research Council of Canada Standing Committee on Housing and Small Buildings (Part 9 of the National Building Code of Canada). Richard is a trainer offering industry and public courses and is the editor of SOLPLAN REVIEW, Canada's journal of energy conservation, building science and building practice, as well as being the author of a number of books. His contributions to the housing industry have been recognized by a number of local, provincial and national awards.

Program + Bios

3 Design and Installation of Air and Vapour Barriers for Multi-Unit Residential Buildings

The design of air and vapour barriers is fairly straightforward for the “perfect” or “universal” wall, where the moisture, air, and vapour barrier are a single membrane installed outboard of the building structure along with exterior insulation. This wall design works for any environmental condition. However, the universal wall is not always practical and there are a few more considerations when the thermal insulation is split and the control layers are separated. Regardless of design, ensuring air barrier continuity is the vital consideration for successful installations of air barriers when performance expectations must be met. This presentation outlines the design and installation considerations ranging from the universal wall to code minimums with regard to the design and installation of air and vapour barriers for multi-unit residential buildings.



Patrick Roppel,
Morrison Hershfield

Patrick manages the Building Performance Analysis Department at Morrison Hershfield. He is a Building Science Specialist with a technical focus on evaluating the performance of building envelope assemblies through testing, monitoring, and numerical simulation. Patrick manages and provides technical oversight on new construction and retrofit projects, investigation and assessment of existing buildings, and building science research.

4 Airtightness Testing of Large Buildings: Where We Are and Where We Are Going

As part of increasingly stringent building energy requirements, mandatory airtightness testing of large buildings has now been implemented in some North American jurisdictions and is being considered for implementation in many others, including B.C. This presentation looks at the current state of large building airtightness based on the results of over 500 tests, and provide lessons learned regarding the successful implementation of airtightness testing as part of the construction and commissioning process.



Lorne Ricketts,
RDH Building Science Inc.

Lorne Ricketts is a buildings science engineer (EIT) with RDH Building Science Inc. in Vancouver. He is actively involved in forensic investigation, building monitoring, new construction, and research projects. Lorne recently led a study on the airtightness of large buildings in North America, the results of which are being used as the basis for updates to provincial and federal energy codes.

5 Speaker Panel Discussion

All Speakers

Notes

Notes

Notes



Homeowner Protection Office
Branch of BC Housing
Technical Research and Education
1701 – 4555 Kingsway
Burnaby, BC V5H 4V8
www.hpo.bc.ca
Telephone: 1-800-407-7757
Email: hpo@hpo.bc.ca