

**MINUTES**  
**Building Research Committee Meeting**  
**Thursday, November 9, 2006 at 9:00 am**  
**Plaza 500 Hotel, 500 West 12<sup>th</sup> Avenue, Vancouver, B.C.**

**In attendance:**

Bob Sloat – Cement Association of Canada (chair)	Chris Kiiveri – HPO (recording)
Hua Ge – BCIT	Jennifer O'Connor - Forintek Canada Corporation
Jan Rasilainen – St Paul Guarantee	Elia Sterling - Theodor Sterling Associates
Anik Teasdale-St-Hilaire – Morrison Hershfield	Bill McEwen – Masonry Institute of BC
Jason Teetaert – Detec Systems	Bob Thompson – BC Building Policy Branch
Allan Dobie – CMHC/BCYRO	John Bell – HPO
Rick McWhinney – Artisan Building Consultants	

**Conference call:**

Silvio Plescia – CMHC National Office

**Regrets:**

Richard Kadulski – AIBC	Steve Olmstead - BCREA
Dave Ricketts – APEGBC	Tony Gioventu – CHOA
Brennan Vollering – Halsall Associates	Ian Theaker – Canada Green Building Council
Brian Delbrueck - CITW	Brian Palmquist – ECO-design.ca
Mark Angelini – Structural Board Association	Mark Lawton – Morrison Hershfield
Russell Cumpstone – Jacques Whitford	Innes Hood – Sheltair Group
George Humphrey - BOABC	

**1. Approval of the agenda/additional items**

The meeting was called to order at 9:05 a.m. B. Sloat welcomed everyone to the meeting on behalf of BCBEAC. The November 9, 2006 BRC meeting agenda was approved with a change to the order of agenda items: Agenda Item #6 - Updates on research projects and Agenda Item #8 - Green Roofs.

**2. Approval of June 13, 2006 Meeting Minutes and agenda.**

The minutes from the June 13, 2006 BRC meeting were approved.

**3. Business arising from previous meeting**

**Commissioning, quality control and quality assurance**

J. Bell said the HPO has created a new webpage on Quality Control, Quality Assurance and Commissioning and requested feedback from BRC members. The webpage could be found at: [www.hpo.bc.ca/Research/R&Eupdate5-04/Quality\\_Control\\_Assurance\\_Commissioning.htm](http://www.hpo.bc.ca/Research/R&Eupdate5-04/Quality_Control_Assurance_Commissioning.htm)

C. Kiiveri said links on the webpage include:

- Reports from Berkeley National Laboratory in Berkeley, California on commissioning single detached residential homes
- CMHC quality assurance and commissioning protocols
- Quality control and assurance on specific building components such as basement systems and air barriers.
- The links focus on residential single-detached and multi-unit buildings.

E. Sterling mentioned ASHRAE documents including ASHRAE 160 – Mould & Moisture Control and ASHRAE 180 – Inspection & Maintenance Standard.

⇒ E-mail suggestions and additional weblinks to [ckiiveri@hpo.bc.ca](mailto:ckiiveri@hpo.bc.ca) on quality control, quality assurance and commissioning residential buildings and systems.

### **LEED Durability Credit**

B. McEwen said the new simplified tables for the LEED durability credit (based on CSA Standard S478) would be released soon.

#### **4. Findings: Field Investigations on the application of ACQ treated wood and use of metal fasteners and connectors in residential construction (handout)**

- J. Bell said the ACQ field investigation study stemmed from observations made by a builder who was noticing premature corrosion occurring on fasteners and connectors used with ACQ treated wood. The HPO contracted John Ruddick, a professor at the University of British Columbia (UBC), to undertake a field investigation of four sites in the Lower Mainland and to report on the preliminary findings of the condition of the connectors and fasteners. The study's findings and recommendations could be found on the HPO website [www.hpo.bc.ca/Research](http://www.hpo.bc.ca/Research).

J. O'Connor reported that it is suspected that ACQ chemicals might not be adequately fixed in the lumber, adding that there is widespread use of unprotected fasteners and connectors – need to make certain that they are galvanized to G185.

J. Rasilainen said the fastener, connector and ACQ companies need to be involved.

B. Thompson said the 2006 BC Building Code (BCBC) requires that all exposed structural elements in locations with a moisture index rating greater than 1.00 to be treated lumber. The ACQ treated lumber and connector/fastener issue was not part of the public review process three years ago. If necessary, an addendum may be issued regarding the use of suitable fasteners and connectors with ACQ.

B. Sloat said there is a degree of urgency for more research, based on the recommendations of the study. The 2006 BCBC will be effective on December 15, 2006, requiring the use of treated wood in exposed locations. CMHC and the HPO need to engage industry on recommendations.

⇒ HPO to arrange a meeting between Forintek, HPO and CMHC to discuss the ACQ field investigations report and next steps for further research.

#### **5. Review of draft Terms of Reference for research in high-rise in-slab ductwork (handout)**

J. Bell said the HPO has undertaken some background research and prepared a draft Terms of Reference on high-rise in-slab ventilation ducts and welcomed feedback from members. J. Rasilainen acknowledges the problem exists and recommendations are needed. B. Sloat said mechanical engineers could provide some feedback and provide examples of older buildings with these systems.

E. Sterling mentioned contractor associations including SMACNA and HRAI could provide input as well. A. Teasdale-St-Hilaire said high indoor humidity conditions occur when a bathroom fan is used as the primary exhaust. Designs are not taking into account the number of bends and the fan size is often inadequate. System specifications and friction losses require further research. S. Plescia asked whether the research would include plenum-type systems, in-slab ducts are predominantly used in B.C. E. Sterling mentioned developers are able to add several floors in a typical high-rise by incorporating in-slab ducts. J. Rasilainen said the Terms of Reference should be circulated to large builders for feedback.

⇒ Circulate the Terms of Reference to mechanical engineers, contractor associations and large developers/builders for feedback. HPO to revise the Terms of Reference and seek funding partners to proceed with this project.

## 6. Updates on recently completed or current research projects CMHC Report

S. Plescia provided an update of CMHC's current research projects.

- **Wind & Rain Impact on Buildings Study**  
Monitoring is currently underway.
- **Windows Best Practice Guide**  
Expected to be completed by next spring.
- **Window/Wall Interface Project**  
Phase 1 of this project is complete. Final reports will be completed by the end of the year and will be released in January 2007. Phase 2 involves the testing details and Phase 3 involves testing non-combustible high-rise construction.
- **Window Installation Course**  
Terms of Reference will be developed in January. BC Ministry of Mines, Energy and Petroleum Resources and Canadian Standards Association have expressed interest in course development and delivery. J. Bell said the HPO would be interested in participating as well.
- **Thermal Performance of Window/Wall Interface**  
The Scope of Work is currently being developed for this project.
- **Water Penetration Characteristics of Wall Assemblies**  
The report is expected in late January. This project involves the effectiveness of various cladding systems to drain water, retain water and assess their drying potential including EIFS and rainscreen claddings.
- **Seismic Performance of Rainscreen Stucco Systems**  
CMHC is looking at a follow-up project to the earthquake testing of rainscreen stucco systems study. J. Bell mentioned a capillary break is required for houses in the 2006 BC Building Code in high moisture index regions.

## **HPO Report**

J. Bell provided an update of HPO R&E projects (handout).

- **Building Smart seminars**  
The fall Building Smart seminars cover the major changes to Part 9 of the 2006 BC Building Code.
- **Builder Insight Bulletins**  
Builder Insight Bulletin #2 - 2006 BC Building Code: Highlights of Changes for Part 9 – Residential Construction is published and also available on the HPO website [www.hpo.bc.ca](http://www.hpo.bc.ca). Other Builder Insight Bulletins currently under development include:
  - Poured-in-Place Concrete Residential Construction: Moisture Management Strategies
  - 2006 BC Building Code: Highlights of Changes Affecting Multi-Unit Residential Construction
  - 2006 BC Energy Efficiency Standards Regulation Changes and the Impact on Residential Construction.
- **Building Envelope Detail Guide for Houses**  
Work on this publication is currently underway.

Several projects will be finalized soon including: Bibliography Update, Indoor Humidity Control study, and the Effects of Green Building Rating Systems on the Durability of Buildings.

## **BCIT Report**

H. Ge provided an update of BCIT's projects including:

- **Wind and Rain Impact on Buildings Study**  
Data collection is currently underway. A total of eight buildings are part of this study which looks at how the buildings' geometry affects the impact of rain on the exterior walls.
- **BCIT Test Hut Facility**  
The construction of test hut facility will begin in early 2007.

## **7. Open forum and discussion**

B. Sloat invited BRC members to discuss new research issues. The following topics were discussed:

### **ICF Construction**

S. Plescia said a report that looks at the effective R-values of ICF construction located in the Waterloo/Kitchener area will be completed soon. There is a need to work with industry to promote better details in ICF construction.

J. Teetaert mentioned that a client would like long-term monitoring performed on an ICF building. Data collection from Detec's moisture monitoring program is showing that rainscreen buildings experience water ingress after a rain event.

B. Sloat would like ICF wall system details included in the HPO's Building Envelope Detail Guide for Houses.

### **BC Building Code, Standards and Building Product Certification**

B. Thompson said the 2006 BC Building Code will be effective December 15, 2006. There has not been a significant adverse reaction to the rainscreen requirements according to the feedback the Building Policy Branch has received from the HPO's Building Smart seminars on the Code changes. A land development issue has arisen with sloped lots where geotechnical engineers are using the BCBC to calculate setbacks in seismic areas.

J. Rasilainen mentioned new building product approvals. There are a number of products that are often specified that do not meet standards, for example window frame extrusions. Warranty provider approval of new building products is based on the Canadian Construction Materials Centre (CCMC) evaluations. S. Plescia mentioned window labels are misleading because not all windows meet the A440 standard and mentioned that a mandatory certification program should be required.

## **8. Green roofs**

J. O'Connor mentioned the weight of green roofs, which would affect the building in a seismic event. A life cycle assessment of green roofs needs to be looked at. Karen Liu from NRC/IRC has joined BCIT's green roof program.

B. Sloat mentioned the LEED-driven SE False Creek development that will incorporate green roofs, which would have implications for warranty providers.

J. Teetaert mentioned green roofs do not necessarily mean the roof on top of the building but can be parkade roofs at grade level with fountains and landscaping. J. Teetaert also mentioned a presentation on green roofs will take place at the BCBECL luncheon on November 30 in Victoria.

J. Bell mentioned durability and maintenance concerns.

⇒ HPO to arrange a meeting in December 2006 at the BCIT Centre for the Advancement of Green Roof Technology to further discuss the issues and concerns related to green roofs.

The meeting adjourned at 11:50 a.m.