

MINUTES
Building Research Committee Meeting
9:00 a.m. to 12:20 p.m., Plaza 500
November 29, 2005

In attendance:

Bob Sloat – Cement Association of Canada (chair)	Chris Kiiveri – HPO (recording)
Hua Ge – BCIT	Brian Palmquist – ECO-design.ca Architecture
Richard Kadulski – AIBC	Mark Lawton – Morrison Hershfield
Golnar Riahi – HAL Industries	Doug Watts – AIBC
Bill McEwen – Masonry Institute of BC	Greg Brewster – Polygon
Allan Dobie – CMHC/BCYRO	Brennan Vollering – Halsall Associates
Ken Farrish – BCBuilding.info	Mark Angelini – Structural Board Association
John Bell – HPO	Innes Hood – Sheltair Group
Ian Theaker – Canada Green Building Council	

Conference call attendees:

Theresa Weston – DuPont	Silvio Plescia – CMHC National Office
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Guests:

Dr. Rosie Hyde – Stantec	Paul Kernan – RDH Building Engineering
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Regrets:

Bob Thompson – Building Policy Branch	Brian Delbrueck – CITW
Bill Billups – CWC	Warren Knowles - BCBECC

1. Introduction

The meeting was called to order at 9:15 a.m. B. Sloat welcomed everyone to the meeting on behalf of BCBECC.

2. Approval of November 29, 2005 agenda and additional items.

The November 29, 2005 BRC meeting agenda and additional items were approved.

3. Approval of May 17, 2005 Meeting Minutes and agenda.

The minutes from the May 17, 2005 BRC meeting were approved.

4. Update on Green Building Initiatives and Research

CMHC/HPO study of the Effects of Green Building Rating Systems on Durability of Buildings and Building Systems

J. Bell provided some background information on the study and introduced Paul Kernan of RDH Building Engineering.

P. Kernan provided an update on the progress of the study:

- Currently, the study is 40% complete
- There are broad commonalities and differences that exist between the various green building programs, some of which include: LEED, BREEAM, BREEAM GreenLeaf, R-2000, and EnerGuide, but focuses on LEED
- The study will explore to what extent these systems are currently being applied in the industry
- The LEED credits that may pose potential problems will be identified
- Interviews will be held with building designers, contractors and building owners to identify any potential problems they may have identified with LEED
- In depth case studies of two buildings will be included in the report. A track record of performance of green buildings currently does not exist. Possible candidates for the case study include “The Silva” residential high-rise building in North Vancouver and “Minto Gardens” residential high-rise building in Toronto.

K. Farrish suggested older R-2000 multi-unit homes that have been constructed in East Vancouver, Whistler and White Rock areas. B. Sloat suggested homes that have been constructed on the old hospital site in Calgary.

Update on CaGBC Task Force on Durable Buildings

I. Theaker provided an update of the Canadian Green Building Council’s Task Force on Durable Buildings. Recommendations include: fill the gaps in the CSA S478 table that the durability credit is based on and make LEED move towards a life-cycle approach, and award additional credits for best practice commissioning, durable interior finishes and durable landscaping. Regional issues need to be taken into account and to introduce additional rating systems. The focus for 2006 is to introduce LEED for commercial interiors and to work on a version of LEED for homes.

I. Theaker said 11 buildings are currently in the process of being certified and only one building is using the durability credit. Insurers are charging increased premiums for insurance coverage on buildings that utilize the LEED durability credit. LEED is considered a checklist and it is being used in ways not originally intended which are some of the issues that have been brought up in the green building study.

⇒ HPO to distribute the report when its available to BRC members

Built Green BC Program (handout)

J. Bell provided an overview of the Built Green BC Program including the following:

- The Built Green BC Program is based on the Built Green Alberta Program and the Built Green Colorado Program in the U.S.
- The Built Green BC has been modified to take into account the wide range of distinct climates and building practices in BC.
- The program is focused on Part 9 buildings and is primarily focused towards builder participation
- The HPO has taken an initiative to investigate the possible addition of a durability credit(s) to Built Green BC checklist and is currently in the process of writing a Terms of Reference.

R. Kadulski said the program is moving at a faster pace than initially anticipated. The Built Green BC program would be a marketing advantage for builders and funding available to interested builders in order to overcome the initial learning curve.

⇒ HPO to distribute the latest version of the Built Green BC checklist, which includes explanatory material and the rationale behind each credit, to BRC members for feedback and comment

Post Occupancy Evaluation Project (handout)

Dr. Rosie Hyde, Director of Research at Stantec (formerly Keen) provided some background information on Post Occupancy Evaluations (POE) and highlights include:

- The primary purpose of POE is to improve design practice for future buildings along with the development of improved guidelines
- The POE project will be piloted on six commercial office buildings and then adapted for use with multi-unit residential buildings
- The POE Tool for multi-unit residential buildings will be placed in the public domain in 2006
- Consultation with the design community will take place to finalize the protocol.

B. Palmquist said given the mandatory 5-year water ingress warranty and annual maintenance reviews there may be an opportunity for synthesis between POE and the maintenance reviews.

5. CMHC Report

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

- **Wind Driven Rain Study**
A project that explores the relationship between climate and rain loads on buildings. The draft of the study is almost complete.
- **Wind and Rain Impact on Buildings Study**
The study would monitor wind and rain impacts on several buildings over a period of several years. Potential partners for this project include BCIT, HPO and CMHC.
- **Windows Best Practice Guide**
The draft version of the report by RDH Building Engineering is expected to be completed spring 2006. Workshops are planned across Canada, giving the opportunity to receive feedback from the industry.
- **Window/Wall Interface Project**
This project explores the management of rainwater penetration and quantification of the amount of water in the system and interfaces. Review of the draft report by the steering committee members will take place in early January 2006.
- **Window Installation Course**
Development of the window installation course is currently on hold. A certification program is currently being developed by the Building Professionals Consortium, which focuses on commercial buildings, but may also include some residential. CHMC may develop some technical requirements and submit them to BPC for their certification program that is planned to commence in the fall 2006.
- **Thermal Performance of Window/Wall Interface**
A National Research Council study testing variables that may have an effect on the window/wall interface such as pressure differentials, A440 testing protocols, different window mounting methods, and different sheathing papers.

- **Water Penetration Characteristics of Wall Assemblies**

A Forintek East study that is testing different wall assemblies to measure the effectiveness of the cladding and drainage cavities, and in addition, different drainage medias will be explored. The study is expected to be completed February 2006.

- **Moisture Content/Mechanical Properties in Wetting Phases of Gypsum**

This Levelton study will be completed shortly. Paper face, water-resistant, fibreglass gypsum boards will be looked at. CD's containing the final report will be made available through CMHC and the HPO. S. Plescia mentioned concerns regarding construction of roof systems with adhered membranes that utilize gypsum board in the assembly and the ability of the gypsum board to resist wind uplift forces.

HPO Report

J. Bell provided an update of HPO R&E projects including:

- **ACQ Treated Wood & Connectors/Fasteners**

The HPO is contracting with John Ruddick, a professor at the University of British Columbia. This project involves visiting sites that have used ACQ treated wood to determine if premature corrosion has occurred in any of the components.

- **Licensed Residential Builder Survey**

The survey is currently underway

- **Ventilation/Humidity Study of Multi-Unit Buildings**

Study to commence shortly

- **Performance of Poured-In-Place Concrete Study**

The report and CMHC Research Highlight are ready to be released. S. Plescia said CMHC is waiting for approval from management before the report is released.

BCIT Report

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

- **BCIT Test Hut**

BCIT has secured \$312,000 in funding with \$250,000 from government sources and \$62,000 coming from other sources. BCIT is planning to hire a consultant to design the facility, which is expected to be up and running in the fall 2006.

- **Bibliography Update**

BCIT is contracted to expand and update the HPO's Annotated Bibliography. The creation of a searchable Internet database is being considered to make the bibliography more accessible.

6. Committee Discussion (Handout – Results of BRC Research Questionnaire):

- Do the research questions identified through the BRC research questionnaire (spring/05) continue to be relevant?
- Have new issues emerged that require research attention?
- What are the top research priorities?

J. Bell mentioned the BRC Research Questionnaire was sent last spring to BRC members in order to identify new and emerging issues that would merit further research. The responses are summarized in the handout provided. Comments and further suggestions are noted below.

M. Lawton said mechanically powered “whisper vents” are being installed in high-rise buildings to make up for a lack of natural ventilation, and in some cities such as Seattle, it is a requirement. There

are a few issues with high-rise residential buildings in Vancouver that would merit further research including:

- Water ingress issues in below-grade foundations and parking structures
- Contaminated soils and the interaction with building materials
- Provision for adequate ventilation in high-rises
- Insulation placed outside of the wall structure

B. Palmquist said Best Practice Guides do not necessarily address issues facing the industry. Some of the problems and issues can be attributed to a lack of quality control during construction, especially in a busy market such as the one B.C. is currently experiencing.

B. Sloat mentioned the construction industry is currently at capacity delivering projects and given the large number of commercial projects that will begin construction shortly, it will be a challenge to find enough qualified people. A survey of buildings currently under construction should be taken.

A. Dobie mentioned that a blower door test has been developed for single detached buildings and a system for testing multi-unit buildings should be developed. S. Plescia said that blower-door testing of multi-unit buildings has been undertaken in the United Kingdom. M. Lawton said that warranty providers require a window leakage test on multi-unit buildings in B.C.

7. Next Steps

B. Sloat said since the BRC meetings are held only twice annually, the discussion could continue via e-mail.

8. Next meeting date – to be announced.

B. Sloat said the next meeting is planned for spring 2006.

The meeting adjourned at 12:20 p.m.