

Green Rehabilitation and
Sustainability Forum



Victoria, BC
November 25, 2008

Greening the BC Building Code

Outline



- **Green Building Overview**
- **Greening the BC Building Code**
 - First Steps
 - Implementation
 - Next Steps
- **Summary of Code Changes**

Green Building: Overview

What is Green Building?



- Green building supports sustainability through the entire lifecycle:
 - locations
 - site
 - bldg exterior
 - bldg interior
 - operational attributes
 - change of use or bldg demolition

Green Building: Overview

What is Green Building?



- Green site development practices focus on:
 - surface water reduction (for example, through porous paving)
 - sewage and greywater systems that support water recycling
 - low- or no-irrigation landscaping and reduced impacts on the local ecology (for example, small building footprints that increase green space and feature less surface parking)

Green Building: Overview

What is Green Building?



- Green building exteriors may include such energy-conserving elements as:
 - orientation of the building to make maximum use of natural light
 - energy-efficient building envelopes, window canopies or light shelves
 - green roofs and efficient, targeted exterior lighting

Green Building: Overview

What is Green Building?



- Building interiors may include green attributes such as:
 - smaller, occupant-controlled heating and lighting zones
 - efficient lighting systems
 - low consumption plumbing fixtures
 - use of non-reactive, low emission building and finishing materials

Green Building: Overview

Why Build Green?



- Many people, in British Columbia and throughout the world, are increasingly concerned about their impact on the environment.
- Energy consumption is an area in which significant improvements can be made.
- Residential space heating and cooling, water heating and the operation of appliances, electronic equipment and lighting account for approximately 17 per cent of secondary energy use in B.C. (Opportunities for Local Government Action on Energy Efficient Buildings, 2006).

Green Building: Overview

Why Build Green?



- Green building practices can:
 - have a positive impact on energy consumption
 - contribute to the comfort and health of building occupants
 - make buildings better places to work and live.

Green Building: Overview

Why Build Green?



- Green building carries economic benefits that offset the costs of planning, designing and building green such as:
 - lower operating costs for energy and water use
 - waste disposal
 - Maintenance
 - higher property values

Green Building: Overview

Green Building is Measurable



- A number of green rating systems have been developed that are used nationally and internationally They include:
 - LEED
 - EnerGuide
 - Green Star
 - Green Globes
 - CASBEE
 - BREAM
 - Built Green
 - others

Green Building: Overview

Green Building is Measurable



- Each of these rating systems depends upon tests and other evidence of the performance of individual design and building elements; for example
 - it is possible to analyze the energy efficiency of a new house by conducting a blower door test

Green Building: Overview

What are Other Provinces and Countries Doing?



- Most governments have focused on mandating green standards for publicly owned or publicly funded buildings.
- Governments in North America and abroad have established voluntary green building standards, along with incentive programs such as:
 - expedited permit processes
 - grants and marketing services to encourage developers to build green

Green Building: Overview

What are Other Provinces and Countries Doing?



- Some jurisdictions, particularly local governments in parts of the United States, have established mandatory green building requirements for all new buildings, including residential buildings.

Green Building: Overview

What are Other Provinces and Countries Doing?



- There appears to be a growing trend toward mandatory green building requirements among governments that previously implemented incentive programs.
- There is also a growing trend toward requirements for privately-owned and residential buildings where previously there had been only requirements for publicly-owned or commercial buildings.

Green Building: Overview

What are Other Provinces and Countries Doing?



- Even where not required to do so, some builders and developers voluntarily seek green certification (for example, Built Green or LEED) for their residential and commercial projects and use this distinction to market their buildings.
- It is challenging to encourage people to build green if they have a limited understanding of what this involves.

Green Building: Overview

What are Other Provinces and Countries Doing?



- It is challenging to encourage people to build green if they have a limited understanding of what this involves.
- Many jurisdictions have launched educational campaigns to create awareness around building green.
- Everyone involved in the process, from designers to consumers needs to understand what building green means and what it involves.

Greening the BC Bldg Code

First Steps



- On April 15, 2008, Minister responsible for Housing Rich Coleman announced that new Bldg Code requirements to increase energy and water efficiency.
- The new requirements would come into effect on September 5, 2008.
- These first steps in Greening the BC Bldg Code support the province's Throne Speech commitments to reduce greenhouse gas emissions related to bldg and construction.

Greening the BC Bldg Code

First Steps



- The new requirements have been developed in consultation with industry, local governments and the public:
 - Energy Efficiency Requirements for Single Family Houses and Smaller Multi-Family Residential, Commercial and Industrial Bldgs
 - Energy Efficiency Requirements for High-Rise Multi-Family Residential Buildings and Larger Industrial, Commercial and Institutional Bldgs
 - Water Efficiency Requirements

Greening the BC Bldg Code Implementation



- The new green requirements in the Code came into effect on September 5, 2008.
- The requirements apply to all new construction and renovations in BC.
- The new requirements apply to building permit applications submitted on or after September 5, 2008.

Greening the BC Bldg Code

Next Steps



- The first steps in Greening the BC Building Code will be followed by additional changes to the Code to reduce the environmental footprint of buildings throughout their lifespan.
- Areas under exploration include greywater recycling, the use of lighting sensors and the reuse of existing buildings, and will involve further consultation with local governments, industry and the public.

Summary of Code Changes

A new Part 10

- A new Part 10 has been added to the Bldg Code that reflects the two new added objectives of water and energy efficiency.



Summary of Code Changes

Part 9



- The Part 9 thermal insulation table has been relocated to Part 10 and its scope expanded to include four storey (in building height) residential buildings. The table has further been amended by:
 - eliminating the allowance to use R14 instead of R20 insulation for natural gas-heated buildings in the Lower Mainland, and
 - increasing the attic space insulation from RSI 7.7 to RSI 9.0 in the colder areas of the province (4500 and greater degree days).

Summary of Code Changes

Part 9



- Achievement of an EnerGuide Rating System rating of 77 is an acceptable solution that provides an alternative to compliance with the insulation table for residential buildings.
- Non-residential Part 9 buildings must now provide thermal insulation in wall, roof and suspended floor assemblies. The amount of insulation is derived from ASHRAE 90.1–2004.

Summary of Code Changes

Primarily Part 3

- All other buildings (primarily Part 3) must comply with the ASHRAE 90.1-2004 standard.



Summary of Code Changes

Water Conserving Plumbing Regulation



- The requirements of the existing Water Conservation Plumbing Regulation have been relocated to Part 10 of the Building Code and are now applicable province-wide.

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Thank you!