



Codes, Standards, and Rating Systems for Residential Buildings

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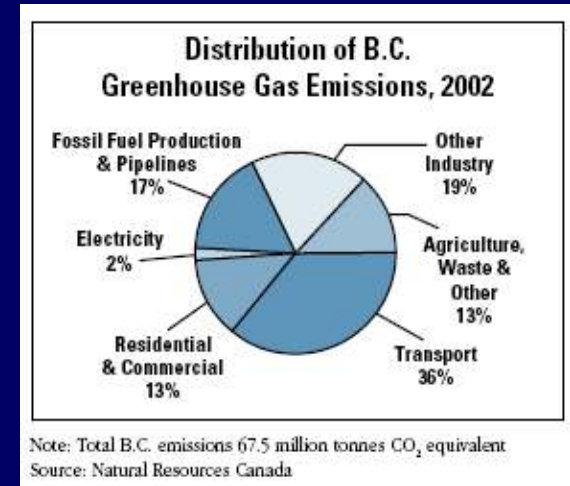
Presented to:

**GVRD's Residential Green Building/Development
Workshop: Tools for Local Governments**

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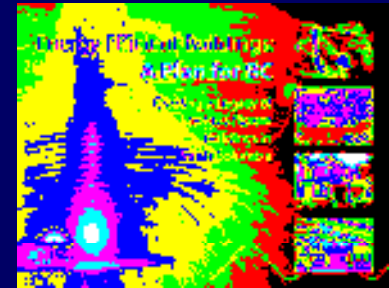
The Impact of Buildings

- Residential & commercial buildings account for:
 - 27% of energy use in Canada
 - 13% of GHG emissions in BC
 - 40% of raw materials
 - 30 – 40% of landfill waste
 - 12% of fresh water



Provincial Building Targets

- Energy Efficient Building Targets by 2010
 - Energuide 80 for new houses
 - 25% better than MNECB for new commercial
 - 17% reduction in 12% of existing houses
 - 14% reduction in 20% of existing commercial
- New Green Building Code
 - Energy targets + water, materials, and IAQ



Existing Codes

- Federal & BC Energy Efficiency Acts
 - Regulates efficiency of equipment
 - Furnaces, air conditioners, windows, appliances
- BC Building Code
 - Part 9 residential buildings have insulation requirements for walls and roofs
- Water Conservation Plumbing Regulation
 - Regulates toilet water consumption in selected areas of the province



Residential Standards & Rating Systems

Standards and rating systems:

- Form the basis of most environmental policies
- Simplify policy development
- Provide consistency for developers



Energuide for Houses/ecoENERGY

- Home rating system developed by NRCan
- Applicable to new and existing houses and low-rise multi-family (existing homes program now called ecoENERGY)
- 1 – 100 rating, scale not linear
- Typical existing homes range from 58 to 68
- Typical new homes range from 71 – 76
- Only considers energy



R2000

- Highest level of home construction
- Equivalent to Energuide 80 or higher
- Emphasis on energy and indoor air quality
- Requires a R2000 certified builder
- Rigorous construction standards and verification process



Built Green BC

- Industry driven program for new houses and low-rise MF by Canadian Home Builders Assoc.
- Energy focused, but includes water, waste, materials, IAQ, and business practices
- Includes both environmental points and an Energuide rating
 - Bronze – Energuide 72
 - Silver – Energuide 75
 - Gold – Energuide 77



LEED-NC

- Developed by USGBC, run in Canada by CaGBC
- Applies to commercial and high-rise MF
- Includes site selection, water, materials, and IAQ, as well as energy
- Does not include appliances
- Minimum energy standard based on CBIP or 90.1-1999
- Certification cost \$3,500 - \$16,000



Certified
Silver
Gold
Platinum

LEED for Homes

- Being run as a pilot by USGBC in the US
- Expected US launch summer 2007
- Applies to houses and low-rise MF
- Energy standard is Energy Star Homes
- Certification cost \$500 - \$3,000 US



REAP

- Developed by UBC and mandatory for development on UBC endowment lands
- Based on LEED-NC, but intended for multi-family
- Simplified compliance and reporting



Residential Green Building Rating Systems						
		BuiltGreen	Energide for Houses	R-2000	REAP	LEED for Homes
Current Status in BC		Available across BC to CHBA members	Available across BC	Available across BC to certified R2000 builders	Available across BC	Currently only available as a pilot in the US.
Applicability	Existing Buildings	X	✓	X	X	X
	New Buildings	✓	✓	✓	✓	✓
	Houses	✓	✓	✓	X	✓
	Low-rise Multi-family	✓	✓	✓	✓	✓
	High-rise Multi-family	X	X	X	✓	X
Includes Requirments for:	Sites	X	X	X	✓	✓
	Water Efficiency	✓	X	✓	✓	✓
	Energy Efficiency	✓	✓	✓	✓	✓
	Materials & Resources	✓	X	X	✓	✓
	Indoor Environmental Quality	✓	X	✓	✓	✓
3rd Party Verification Required		✓	✓	✓	X	✓
Rating Levels Achievable		Bronze, Silver, Gold	1 - 100	R2000 certified	Basic, Bronze, Silver, Gold, Platinum	Certified, Silver, Gold, Platinum
Cost for Registration		- \$350 builder training + \$250/year - Each house registration \$200 + ~\$200 for up front evaluation	\$200 + ~\$200 for up front evaluation		No cost	\$500 - \$3,000US per home
Example Adoption Location		District of Saanich	Bowen Island		UBC	
Notes		Uses Energide rating for energy component	For existing houses, required for ecoENERGY Retrofit program	Energy rating equivalent to Energide 80 or higher	Based on LEED-NC	Program launch expected summer 2007
Website		www.chbabc.org/content.php?id=504	www.oe.nrcan.gc.ca/residential/personal/new-homes/upgrade-packages/energide-service.cfm?attr=4	www.oe.nrcan.gc.ca/residential/personal/new-homes/r-2000/About-r-2000.cfm?attr=4	www.planning.ubc.ca/colonus/reap.html	www.usgbc.org/DisplayPage.aspx?CMSPageID=147

Community Energy Association

Helping Communities Benefit From Energy Opportunities

Partners





Thank you

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