



To: General Purposes Committee

Date: December 6, 2007

From: John Irving, P.Eng.
Director, Building Approvals

File:

Re: Provincial Green Building Code Initiative – Public Consultation

Staff Recommendation

- 1) That support for the proposed energy efficiency Green Building Code initiatives be given in writing to the Province; and
- 2) That the support for a dual-flush toilet regulation be reiterated in writing to the Province.

for: John Irving, P.Eng.
Director, Building Approvals
(4140)

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ROUTED TO:	CONCURRENCE		CONCURRENCE OF GENERAL MANAGER		
REVIEWED BY TAG	YES <input checked="" type="checkbox"/> <i>vdw</i>	NO <input type="checkbox"/>	REVIEWED BY CAO	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
	<i>vdw</i>		<i>ACTING</i>		

Staff Report

Origin

An update report on the Modernization Strategy and Green Building Code initiatives was provided by staff at the Planning Committee meeting of September 6, 2007. That Planning Committee and subsequent Council adopted a motion to send a letter indicating support for the goals of the Green Building Code initiative to the Honourable Rich Coleman, Minister of Forests and Range and Minister Responsible for Housing under the Mayor's signature. This letter was sent on September 12, 2007 (see Attachment 1).

Background

On February 13, 2007, the Province announced in the Throne Speech the development of a unified BC Green Building Code by early 2008 as part of an ongoing commitment to reduce greenhouse gas emissions related to buildings and construction. The Green Building Code would be created by adding amendments and regulations to the existing 2006 BC Building Code.

The Provincial Building Policy Branch has now identified the specific proposals for legislative changes to the BC Building Code and has initiated public consultation on those proposals. The City was invited to comment on the proposals through this consultation process in a letter from Minister Coleman dated November 15, 2007 (see Attachment 2).

There are three proposals for changes to the BC Building Code as follows:

1. Energy Efficiency Requirements for Single Family Houses and Smaller Multi-Family Residential, Commercial and Industrial Buildings,
2. Energy Efficiency Requirements for High-Rise Multi-Family Residential Buildings and Larger Industrial, Commercial and Institutional Buildings, and
3. Water-Efficiency Requirements.

The deadline for submitting comments is December 21, 2007.

Analysis

Energy Efficiency

The first two proposed changes to the code are essentially requirements for improved heat insulation in all buildings. A detailed analysis of the proposed code changes 1 and 2 and their estimated impacts is provided in Attachment 4.

To meet the new code requirements, several construction options are possible. For smaller wood frame structures (houses, townhouses) a 2"x6" stud wall system or improved insulation could be used. For larger non-wood frame structures, increased airtight performance of glazing and

increased HVAC efficiency could be used. In all cases, the increase to construction costs are estimated to range between 0.3% to 1.3%, while estimated energy cost savings and greenhouse gas emission reductions range from 12% to 30%.

These code changes will impact new buildings only and will not be applied to existing buildings or heritage buildings.

Water Efficiency

The single proposal under water efficiency is to make the existing water conservation regulation requirement for 6-litre toilets applicable to the whole province. Currently, this requirement is only effective in the GVRD (including Richmond), the CRD, and a few other municipalities. As the City currently enforces this regulation, there is no impact to the City with this proposed change.

On January 27, 2006, the Mayor wrote to Minister Coleman (see Attachment 3) indicating Council's support for adopting a dual-flush toilet requirement and requesting that the Province consider this change. Dual-flush toilets provide an additional 26% water savings over 6-litre toilets. Given that the proposed code changes are entrenching the 6-litre toilet requirement, it is recommended that support for the dual-flush toilet regulation be reiterated.

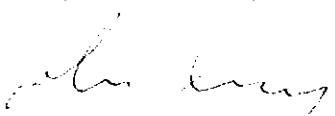
Financial Impact

None. Minor requirements for staff training and communications will be addressed within existing budgets.

Conclusion

The currently proposed Green Building Code changes are a step in the right direction that will have minimal impact to the City and the development community while creating real savings in energy usage. The Province has indicated the proposed changes could be adopted in April, 2008, after which further Green Building Code changes will be researched and developed.

It is recommended that Council indicate support for the proposed changes while reiterating support for moving to a dual-flush toilet regulation. The deadline for submitting comments is December 21, 2007.



John Irving, P.Eng.
Director, Building Approvals
(4140)

attach.(4)



CITY OF RICHMOND

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MALCOLM BRODIE
 MAYOR

September 12, 2007

Honourable Rich Coleman
 Minister of Forests and Range and Minister Responsible for Housing
 P.O. Box 9049, Stn Prov Govt
 Victoria, BC V8W 9E2

Dear Minister Coleman:

Re: Modernization Strategy and Green Building Code Initiatives

I would like to commend your Ministry for the excellent leadership and vision demonstrated in tackling building regulation issues. The City of Richmond fully supports the greater goals of the Modernization Strategy and Green Building Code initiatives and we look forward to improvements in the areas of risk management, safety, innovation, skills, and sustainability.

To ensure the success of these initiatives, we strongly believe that local governments need to be relieved from the constraints of joint and several liability. Joint and several liability forces local governments to be more conservative in building regulation practices as it transfers risk from key beneficiaries (developers and builders) to local taxpayers. It is difficult for us to envision how more innovation and flexibility can be introduced to the building regulation system without addressing joint and several liability.

We specific regard to third party code enforcement issues being considered under the Modernization Strategy, we fully support the development of new regulatory tools and options. The development of a standardized certified professional program or province-wide building regulatory agency could prove very beneficial to many communities. However, it is critical that local governments retain the power to decide what level of code enforcement services they will provide and which regulatory tools are applied.

Thank you for your efforts and we look forward to continued consultation and dialogue on these initiatives prior to any legislative changes.

Yours truly,

Malcolm D. Brodie
 Mayor



Attachment 2



November 15, 2007

Greetings,

It is my pleasure to update you on the Province of British Columbia's initiative to 'green' the B.C. Building Code. As announced in the Throne Speech earlier this year, the 'greening' of B.C.'s Building Code is a key component of the Province's commitment to take immediate action to combat climate change.

Following discussions with representatives from industry and local government, the Province is proposing updates to the B.C. Building Code that will reduce the impact of buildings and construction on the environment. These proposals focus on improving sustainability through increased energy and water efficiency.

It is important that we hear from you. I invite you to comment on these proposals by visiting the provincial government's web site at <http://www.housing.gov.bc.ca/building/> and clicking on the 'Greening of the BC Building Code' button. Please submit your comments by **December 21, 2007**.

These proposals are the first steps in 'greening' the B.C. Building Code. We are also exploring other areas including reusing existing buildings, smart metering, more environmentally friendly use of construction materials and resources, and improving indoor air quality. We will be consulting on these future proposals at a later date.

We look forward to hearing your comments on these initial proposals. If you have any questions regarding the public review, please contact my ministry at (250) 336-9011 or by email at green.code@gov.bc.ca. Together we can work to ensure a sustainable future that meets the needs of British Columbians for generations to come.

Sincerely yours,

Rich Coleman
Minister

Ministry of
Forests and Range
and Minister Responsible
for Housing

Office of the
Minister

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MALCOLM BRODIE
 MAYOR

January 26, 2007

The Honourable Rich Coleman
 Minister of Forests and Range
 and Minister Responsible for Housing
 PO Box 9049 Stn Prov Govt
 Victoria BC V8W 9E2

Dear Minister Coleman:

Re: Water Conservation Plumbing Regulation – Dual Flush Toilets

At the January 22, 2007 Council Meeting, Richmond City Council adopted a resolution in support of moving towards a dual flush toilet regulation.

We understand the provincial government amended the Water Conservation Plumbing Regulation in September 2005 to make 6-litre toilets mandatory in the GVRD and other jurisdictions. We believe this was a significant and positive step to improve water conservation, however the use of dual flush toilets can produce an additional 25% water savings over 6-litre toilets.

The purpose of this letter is to request that, when considering changes to the BC Building Code or the Water Conservation Plumbing Regulation, the province consider establishing dual flush toilets as the new minimum requirement.

We trust that the Provincial government will be able to carry forward this important initiative in the near future.

Yours truly,

Malcolm D. Brodie
 Mayor

pc: GVRD Municipalities
 Richard Taylor, Executive Director, UBCM

Attachment 4

Building Type	Current Code Requirements	Proposed Green Code Changes	Construction Impact	Building Cost/Benefit	Additional work to the City	Financial Impact to the City
<p>Single family houses and row houses up to 600m² of floor space and up to 3 storey</p> <p>Type 1</p>	<p>a) Prescriptive minimum thermal resistance of insulation RSI values for wall, roof, etc.,</p> <p>or,</p> <p>b) Computer modeling to estimate energy consumption to determine insulation RSI values.</p>	<p>a) Increase the prescriptive minimum thermal resistance of insulation RSI values,</p> <p>or,</p> <p>b) Computer modeling to estimate energy consumption to determine insulation RSI values,</p> <p>or,</p> <p>c) EnerGuide for new houses rating of 77.1</p>	<p>a) Requires R20 frame wall insulation. It is achieved through increase of wood stud size from 2"x 4" to 2"x 6" construction or by adding 1" polystyrene insulation sheathing to the outside of the 2"x 4" assembly.</p> <p>b) Potentially no change in framing system, but increase insulation elsewhere, ie: attic space, foundation, etc.</p> <p>c) Potentially no change in framing system, but using high efficiency HVAC system, innovative building materials, water conservation and other components.</p>	<p>Increase construction cost of 0.14% to 1.3%.</p> <p>Energy cost saving 12% to 26% (cost recovered in 7 to 9 1/2 yrs)</p> <p>Reduce green house gas emission by 15% to 22% from current code.</p>	<p>None</p>	<p>None³</p>
<p>Non-Residential buildings up to 600m² of floor space and up to 3 storey</p> <p>Type 2</p>	<p>No minimum insulation requirements.</p>	<p>Prescriptive minimum thermal resistance of insulation RSI values.</p>	<p>No changes in structural framed member. Additional construction requirement to attach insulation to structure members.</p>	<p>Similar to Type 1</p>	<p>Minimal⁵</p>	<p>None</p>

Building Type	Current Code Requirements	Proposed Green Code Changes	Construction Impact	Building Cost/Benefit	Additional work to the City	Financial Impact to the City
<p>Type 3 4 Storeys of residential occupancy</p>	<p>P. Eng designed, constructed and installed in conformance with good engineering practice such as using ASHRAE 2 Standards, HRAI Digest, NFPA Standards, etc.</p>	<p>a) Prescriptive minimum thermal resistance of insulation RSI values, or, Type 1 b) and c)</p>	<p>Same as Type 1 a), b) and c).</p>	<p>Same as Type 1</p>	<p>Minimal⁵</p>	<p>None</p>
<p>Type 4 All others</p>	<p>Same as Type 3</p>	<p>P. Eng designed, constructed and installed in conformance with 2004 Energy Standard for Buildings (ASHRAE 90.1 2004)</p>	<p>Improvement in the following areas: > air tightness in glazing > heat recovery requirements HVAC > service water heating > power - focusing on voltage drop > lighting - overall design > other equipment - focusing on motors</p>	<p>Increase construction cost of \$1.67/m² to \$6.59/m². 20% to 30% energy saving.</p>	<p>None</p>	<p>None⁴</p>

¹ EnerGuide for New Houses (EGNH) is a performance based standard for energy efficiency. British Columbia houses currently perform at between EGNH 69 and 78.

² ASHRAE American Society of Heating, Refrigeration and Air Conditioning Engineers. Most buildings are built in accordance with ASHRAE 90.1 2001.
Note: Heritage buildings defined in the Building Code are exempt from the requirements in this proposal.

³ Training required for staff to learn about processes and requirements for EnerGuide for New Houses Rating of 77.

⁴ Training required for staff to learn new requirements in ASHRAE 90.1 2004.

⁵ Plan Checkers/Building Inspectors require to ensure new prescriptive requirements on plans and construction stages.