The New 5- and 6-Storey Wood Mid-Rise Building Opportunity

CANADA'S NATIONAL MODEL CONSTRUCTION CODES

National Model Construction Codes are developed and maintained by the Canadian Commission on Building and Fire Codes (CCBFC). This independent committee of volunteers includes technical, engineering and building materials experts and was established by the National Research Council (NRC).

The model codes include the National Building Code, the National Fire Code, the National Plumbing Code and the National Energy Code. The Codes are published by the NRC as models for use by provinces and territories for building and fire regulations. These can be adopted as is, amended, and/or supplemented to suit regional needs, and then published as provincial or territorial Codes.

Requirements for the specification of structural wood products and wood building systems are set out in the National Building Code of Canada (NBCC) which is concerned with health, safety, accessibility and the protection of buildings from fire or structural damage. The Code applies mainly to new construction, but also involves elements of demolition, relocation, renovation and change of building use.

National Building Codes in Canada are reviewed every five years but no changes are made unless there is assurance that the health and safety of Canadians is protected. The current NBCC, which was published in 2010, is undergoing its five-year review.

The Model Code Review Process and Wood Mid-Rise Construction

The CCBFC has taken a closer look at requirements in the 2010 National Building and Fire Codes of Canada that currently limit the height of wood buildings to no more than four storeys.[1] The initiative was undertaken as a result of code change requests from the province of British Columbia and the Canadian Wood Council (CWC) asking that the current height limits for combustible construction be increased. Doing so would move the National Model Construction Codes towards harmonization with various code development initiatives and market access policies being established in jurisdictions across the country.

[1] Construction Innovation (NRC Canada newsletter), Volume 17, No. 4, December 2012

The Sail Building, Wesbrook, University of British Columbia, Vancouver, B.C. Photo: Sukh Johal, used by permission of Wood WORKS! BC

A joint task group encompassing several CCBFC standing committees was established in 2011, led by the Standing Committee on Fire Protection, to review current requirements and make recommendations. Four specific areas were examined:

- fire protection (building elements);
- emergency response (fire code requirements);
- building and plumbing services; and
- structural and earthquake design.

Proposed changes to increase the height and area limits to six storeys for buildings constructed of combustible materials are under development for the National Model Construction Codes.

The task group determined that height and area limits for buildings constructed of combustible materials could safely be increased to six storeys by either introducing new, or modifying existing, protective measures. These proposed changes would apply to residential and office-type buildings. They would also include mixed-type occupancies where buildings may have office, residential, mercantile, assembly, low hazard or storage/garage-type tenants.

To address emergency responder concerns, provisions to allow greater access for firefighting have been proposed, such as ensuring that a minimum of 25% of the building perimeter be directly accessible by fire responders. Other requirements would include mandatory sprinklers (conforming to NFPA-13) throughout the building; a fire-resistance rating of not less than one hour for floor and roof assemblies as well as mezzanines; and non-combustible cladding on roofs that are inaccessible to fire hoses. The building could also only be occupied once fire safety features were fully enabled. Further proposed changes dealing with structural and earthquake design, such as changes to seismic force resisting systems, are also being developed.

The policy implications of the proposed changes, including enforcement issues, were discussed with provinces and territories during the summer of 2013. Proposed changes were then submitted for public review in the fall of 2013. Comments or issues resulting from both reviews will be considered, in order, by (1) the Joint Task Group on Combustible Construction, (2) related CCBFC Standing Committees and (3) the CCBFC itself starting in February 2014 and finishing in the fall of 2014. Final changes, if approved by the CCBFC in 2014, will be incorporated in the 2015 editions of the National Building and Fire Codes of Canada.

For additional information on Canada's National Model Construction Codes visit: http://www.nationalcodes.nrc.gc.ca/eng/index.html.

CWC Involvement in Building Codes and Standards – the Regulatory System

CWC is active in a technical capacity in all areas of the regulatory system. This includes:

Building Codes – CWC participates extensively in the process of developing building codes in Canada and contributes to committees which are balanced and limited to approximately 25 members. Alternative building material representatives (including steel and concrete) sit on the same committees with CWC.

Design Standards – Each producer of structural materials develops engineering design standards that provide information on how to use their products in buildings. CWC holds the Secretariat for Canada's wood design standard (CSA O86 "Engineering Design in Wood"), providing both technical expertise and administrative support for its development. Design standards such as CSA 086 and additional elements relating to fire, whole building science, and sustainability (among others), become reference material for building codes and hence must be both transparent and detailed.

Product Standards – CWC is involved in the development of Canadian, U.S. and international standards for its wood building product producers.

Test Standards – CWC is involved in developing Canadian, U.S. and international test standards in areas that affect wood products, such as fire performance.

The **Canadian Wood Council** (CWC) is the national association representing manufacturers of Canadian wood products used in construction. CWC is a strong advocate for the use of Life Cycle Assessment and communication about environmental attributes through the use of Environmental Product Declarations. Visit us at www.cwc.ca.

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