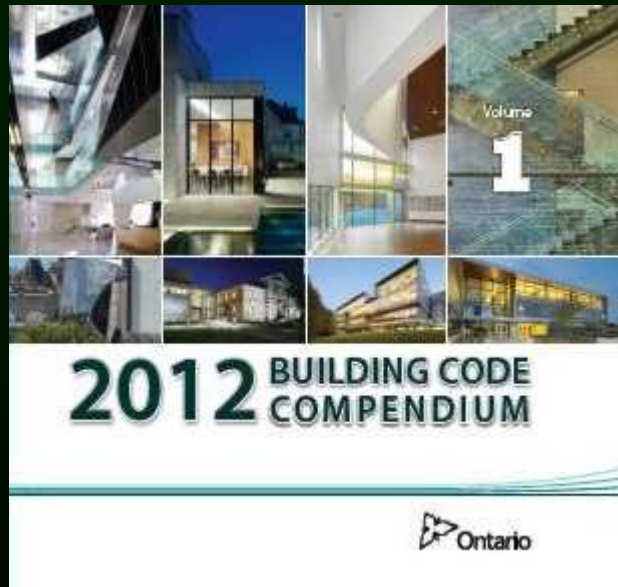


2012

Ontario Building Code Update



Presented to

NORR

Dec. 10, 2013

Alek Antoniuk, OAA

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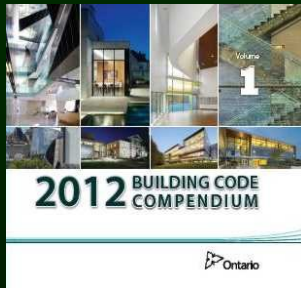
Agenda

- Selected highlights of changes in the 2012 Ontario Building Code related to larger (Pt. 3) buildings
- O. Reg. 151/13 – Retirement Homes
- 2015 National Building Code
- Mid-rise combustible construction
- Accessibility
- Trends in code development

2012 Ontario Building Code

- The Ontario Building Code is a Regulation made pursuant to The Building Code Act
- Ontario Regulation 332/12:
 - was filed on November 2, 2012
 - comes into effect on January 1, 2014
- O. Reg. 332/12 is freely available on the e-Laws web site at:
www.e-laws.gov.on.ca

Buying the Building Code



- Official 2 Volume 2012 Building Code Compendium

www.publications.serviceontario.ca



- Ontario Building Code 2012 by Orderline *(no Supplementary Standards included)*

<http://www.orderline.com>



- “e-version” of the Building Code Compendium

COMING REAL SOON!

**Selected highlights
of changes in the
2012 Ontario Building Code
related to larger (Pt. 3)
buildings**

What's changed in the 2012 Code ?

- The Ministry of Municipal Affairs & Housing posted 15 slide decks detailing the significant changes
 - See: www.mah.gov.on.ca/Page10300.aspx
- Over 20,000 editorial and technical changes were made
 - available in Word format
 - See: www.codenews.ca



New Terminology: *fire stop*

- New term: “*fire stop*”
- 2006 Building Code referred to: “fire stop system” in Div. B, Subsection 3.1.9.
- Associated with fire separations



Fire stop means a system consisting of a material, component and means of support, used to fill gaps between *fire separations* or between *fire separations* and other assemblies, or used around items that wholly or partially penetrate a *fire separation*.

New Terminology: *fire block*

- New term: “*fire block*”
- 2006 Building Code referred to: fire stops in concealed spaces in Div. B, Subsection 3.1.11.
- Associated with concealed spaces

Fire block means a material, component or system that restricts the spread of fire within a concealed space or from a concealed space to an adjacent space.



Smoke Alarms

- Every sleeping room shall be provided with a smoke alarm – See Div. B, Sentence 3.2.4.22.(3).
- Battery backup for smoke alarm to provide 7 days monitoring + 4 minutes alarm power – See Div. B, Sentence 3.2.4.22.(5).
- Smoke detectors in suites of residential occupancy permitted in lieu of smoke alarms - See Div. B, Sentence 3.2.4.22.(5).

EXIT SIGNS



- ISO 3864-1 / ISO 7010 Green Pictogram Exit Signs – See Div. B, Article 3.4.5.1.

Photoluminescent Exit Signs

- Photoluminescent and self-luminous exit signs are now permitted – See Div. B, Sentence 3.4.5.1.(5)
- Not permitted in high buildings within the scope of Subsection 3.2.6.
- Required to:
 - conform to CAN/ULC-S572
 - be continuously illuminated, if reliant on external energy source
 - be listed



Concentration of Unprotected Openings

- New requirement applies to unsprinklered buildings, where the limiting distance is 2 m. or less
- Limits maximum area of individual unprotected openings
- Limits horizontal and vertical distances between individual unprotected openings
- See Div. B., Sentences 3.2.3.1.(5) – (7) and Table 3.2.3.1.A.

Water Conservation



- 4.8 LPF or dual 4.1/6.0 LPF flush water closets in residential occupancies
- 7.6 L/min. high efficiency shower heads in residential occupancies
- 1.9 LPF urinals in all occupancies
- Permit drainless composting toilets in all areas



Water Re-use

Div. B, Article 7.1.5.3.	Treated Rainwater	Treated Greywater / Storm Sewage
Clothes Washers		
Laundry Trays		
Mop Sinks		
Bedpan Washers		
Hose Bibs		
Flushing W.C.s / Urinals		
Priming Traps		
Subsoil Irrigation		

Energy Efficiency Design



- Beginning on January 1, 2017, energy efficiency levels of “Part 3 + non-residential Part 9” buildings are increased by 13% over the current Building Code levels – See Div. B, Article 12.2.1.2.
- “Part 3 + non-residential Part 9” buildings are deemed to meet the new carbon dioxide equivalent and peak electric demand requirements of Div. B, Section 12.2., if they conform to SB-10, “Energy Efficiency Requirements”
– See Div. B, Subsections 12.2.2. + 12.2.3.
- The City of Toronto has set higher energy performance requirements in its Toronto Green Standard, effective on January 1, 2014 (15% higher than current OBC for “Tier 1”)



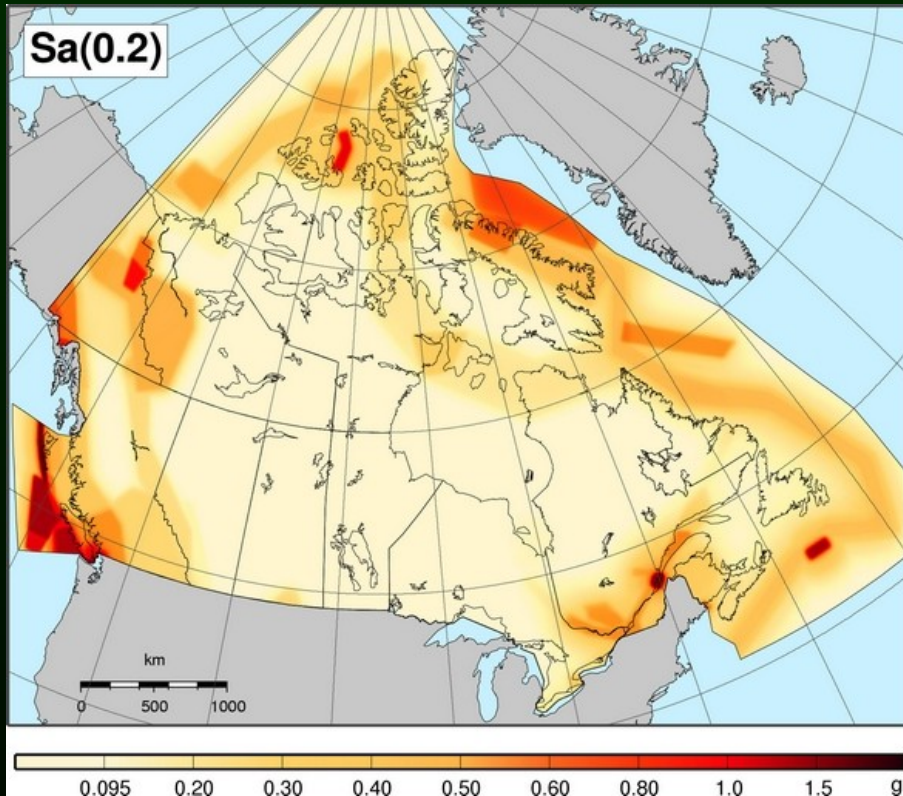
Live Loads Due to Use & Occupancy

- Revised structural design loads for:
 - Cranes (new Table 4.1.3.2.B.)
 - Areas in grandstands, arenas, stadia, churches, lecture halls, theatres with fixed seats with backs loading reduced to 2.9 kPa – See Div. B, Table 4.1.5.3.
 - Distributed and concentrated garage loads now based on gross vehicle weight
 - 3.0 kN/m horizontal guard loading now applies to all viewing stands without fixed seats

Wind Loads

- Exposure factor, c_e , for rough terrain:
 - 20x building height (10x in 2006 OBC)
 - Div. B, Sentence 4.1.7.1.(5)
- Dynamic effects of wind:
 - Exclusion from dynamic approach for 60 m. building height (120 m. in 2006 OBC)
 - Div. B, Sentence 4.1.7.2.(1)

Earthquake Design



Spectral acceleration for a period of 0.2 seconds at a probability of 2%/50 years for firm ground conditions (NBCC soil class C)

- Peak ground acceleration values and 0.2 second spectral acceleration values have been generally reduced for Ontario – See Seismic Data in Supplementary Standard SB-1

Wind and Earthquake Design

- Other design requirements are detailed in:
 - The link to the Div. B, Part 4 detailed description at:
<http://www.mah.gov.on.ca/Page10300.aspx>
 - The Word file comparison document between the 2006 and the 2012 Regulations, available at:
www.codenews.ca
- Note: Structural components associated with the building envelope in ALL buildings, including post-disaster building, are to be designed for earthquake loads – *NBC emergency revision to Div. B, Sentence 5.2.2.1.(2) and its Appendix Note*

O. Reg. 151/13
Retirement Homes

O. Reg. 151/13 – Retirement Homes

- What is it?
 - An amendment to the 2012 OBC “to enhance fire safety in occupancies housing vulnerable Ontarians”
- In January 2009, 4 residents died in a fire at the Muskoka Heights Retirement Residence, which did not have sprinklers
- In September 2012, the Office of the Fire Marshal’s Technical Advisory Committee recommended changes to the OFC and OBC

O. Reg. 151/13 – Retirement Homes

- In May 2013, the recommendations of the Technical Advisory Committee were implemented by amending the Fire and Building Codes by filing regulations 150/13 and 151/13
- O. Reg. 151/13 comes into effect on Jan. 1, 2014, at the same time as the 2012 OBC
- O. Reg. 151/13 is available on the e-Laws web site
- **Note:** *As of Dec. 10, 2013, this amendment has not been published in the current 2012 Building Code Compendium*



O. Reg. 151/13 – Retirement Homes

- Sprinkler systems for retirement homes regulated under the *Retirement Homes Act, 2010*
 - See: New Div. B, Sentence 3.2.2.47.(5) &
 - See: New Article 9.10.8.4. Automatic Sprinkler Systems
- Fire alarm signal notification to Fire Department
 - See: Div. B, Sentence 3.2.4.8.(1)
- Minimum 20 min water supply for NFPA 13D sprinkler systems
 - See: New Div. B, **Sentence 3.2.5.13.(8)**
- Voice communication system required for building containing a retirement home, depending on height
 - See: New Div. B, **Sentence 3.2.6.8.(1)**

O. Reg. 151/13

Existing Buildings

- Performance level is deemed to be reduced upon a change of Use to a retirement home
- Minimum upgrades required by Part 11:
 - Sprinkler system
 - Voice communication system, depending on height
 - Door closers on suite doors or sleeping room doors
- Change of Use Permit required to change use to a retirement home
 - See: Div. C, Clause 1.3.1.4.(1)(f)

O. Reg. 151/13 – Revised Definitions

- Existing definition of Care occupancy :

Care occupancy (Group B, Division 3) means an *occupancy* in which persons receive special or supervisory care because of cognitive or physical limitations, but does not include a *dwelling unit*.

- Revised definition of Care occupancy:

Care occupancy (Group B, Division 3) means an *occupancy* in which special care is provided by a facility, directly through its staff or indirectly through another provider, to residents of the facility,

(a) who require special care because of cognitive or physical limitations, and

(b) who, as a result of those limitations, would be incapable of evacuating the *occupancy*, if necessary, without the assistance of another person.



O. Reg. 151/13 – Harmonized Definitions

- **Existing 2006 OBC definition of Residential occupancy :**

Residential occupancy means an occupancy or use of a building or part of a building by persons for whom sleeping accommodation is provided but who are not harboured or detained there to receive medical care or treatment or who not involuntarily detained.

- **2010 NBC definition of Residential occupancy :**

Residential occupancy means the occupancy or use of a building or part thereof by persons for whom sleeping accommodation is provided but who are not harboured for the purpose of receiving care or treatment and are not involuntarily detained.

- **New OBC definition of Residential occupancy:**

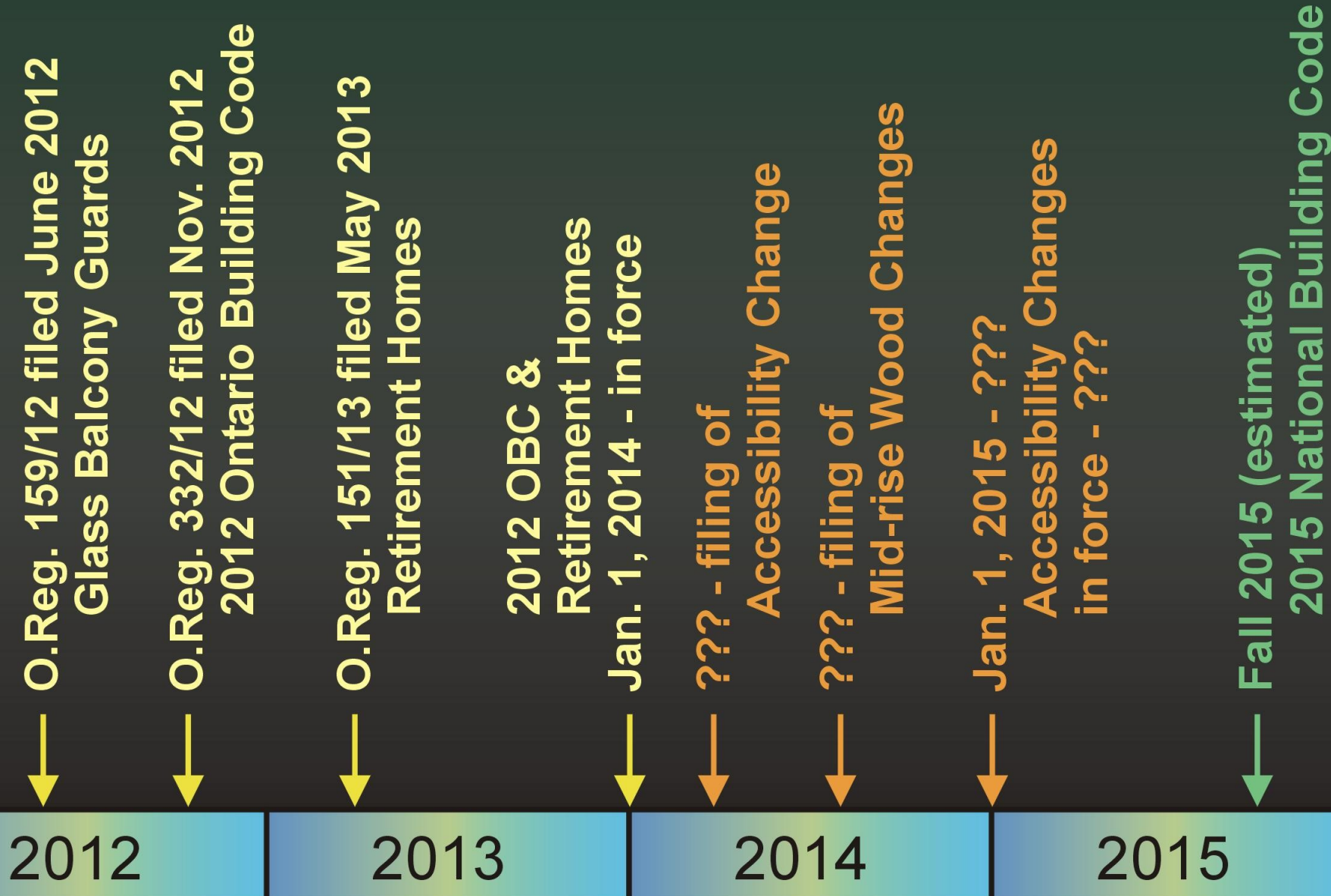
Residential occupancy means an occupancy in which sleeping accommodation is provided to residents who are not harboured for the purpose of receiving special care or treatment and are not involuntarily detained.

How's that for harmonization!



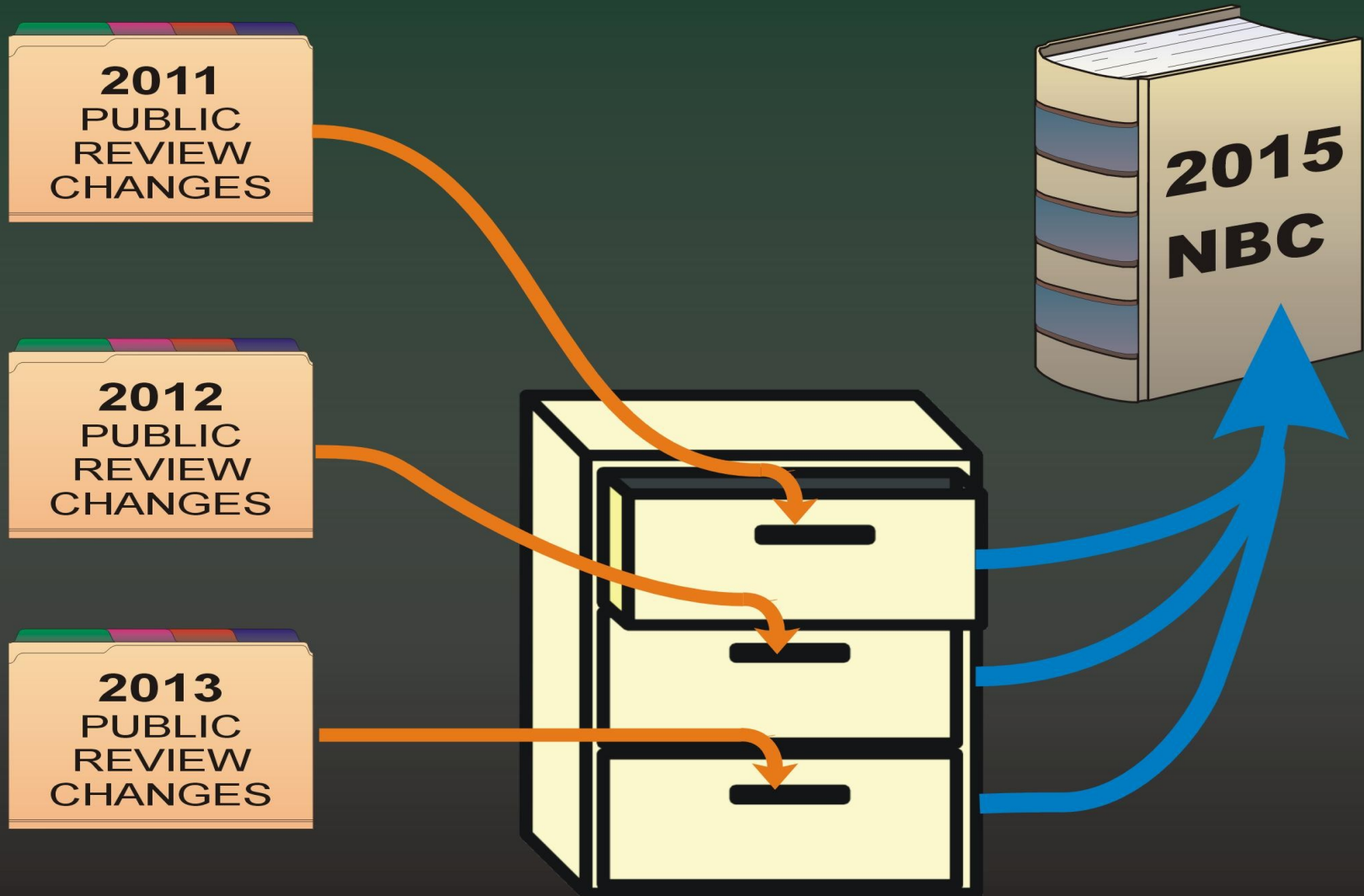
Summary
.... so far

What's Next in the Pipeline ...?



2015 National Codes

2015 NBC/NPC Review Process



2013 National Codes Public Review

- The CCBFC is holding a public review of proposed changes to:
 - National Building Code of Canada 2010 (NBC)
 - National Fire Code of Canada 2010 (NFC)
 - National Plumbing Code of Canada 2010 (NPC)
 - National Energy Code of Canada for Buildings 2011 (NECB)
- The review started on Oct. 15 and ends on Dec. 23, 2013
- Proposed changes are posted at:

http://www.nationalcodes.nrc.gc.ca/eng/public_review/2013/proposed_changes.html

2013 National Codes Public Review

- Significant proposed changes:
 - Mid-rise combustible construction
 - Expand component additive method
 - Enhance accessibility
 - Earthquake / Wind / Snow Design revisions
 - Curtain walls, window walls, storefronts and glazed architectural structures
 - Add ASTM E-1300 "Standard Practice for Determining Load Resistance of Glass in Buildings"
 - Loads on guards
 - Stairs, ramps, handrails and guards configuration

Mid-rise Combustible Construction

The government has not announced any mid-rise combustible building changes to the Building Code

Mid-rise Combustible Construction

- The British Columbia Building Code was amended in 2009 to permit mid-rise 6-storey residential combustible construction
- Ontario conducted a public consultation in February-April 2011 to permit mid-rise wood construction, with Group C, D, and E major occupancies
- Ontario did not proceed with Building Code changes due to opposition from the fire services and concrete and steel interests

CCBFC Joint Task Group

- In 2011, a CCBFC joint task group started a review of current NBC requirements that limit the height of wood buildings to no more than four storeys
- Four specific areas were examined:
 - fire protection (building elements)
 - emergency response (fire code requirements)
 - building and plumbing services
 - structural and earthquake design
- 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 and/or modifying various protective measures.

2013 NBC Public Review

- Approximately 40 changes have been proposed to increase the permitted use of combustible construction up to six storeys for Group C and D major occupancies.
- The changes include new or revised provisions in Parts 3, 4, and 5 of the NBC dealing with fire and life safety, structural and earthquake design, and building envelope, as well as changes to Section 5.6. of the NBC dealing with the protection of buildings under construction, alteration and demolition.
- Buildings can include mixed-type occupancies where lower levels may be office, residential, mercantile, assembly, low hazard or storage garage-type occupancies, depending on whether top floors are Group C or Group D occupancy.

2013 NBC Public Review

- NBC proposals include:
 - Greater access for firefighting
 - Mandatory sprinklers conforming to NFPA-13
 - Fire-resistance rating of not less than one hour for floor and roof assemblies as well as mezzanines
 - Limitations on building area, based on # of streets
 - Non-combustible cladding on roofs that are inaccessible to fire hoses
 - Restrict occupancy of the building only after all fire safety features are fully enabled
 - Structural and earthquake design

Accessibility

The government has not announced any accessibility changes to the Building Code

Accessibility in the OBC

- Accessibility for Ontarians with Disabilities Act (AODA) was enacted in 2005
- A 20-year time horizon (2005 – 2025) was set for accessibility standards implementation
- Standards have been developed through Standards Development Committees (SDC) in 5 areas:
 - Customer service
 - Employment
 - Information and communications
 - Transportation
 - Design of public spaces

Accessibility in the OBC

- In July 2010, the Built Environment SDC submitted its final proposed Accessible Built Environment Standard to the government
- The Building Code is the regulatory vehicle for accessibility standards for buildings
- A public consultation was held on certain proposed accessibility amendments to the Building Code in Dec. 2012 – Mar. 2013

Accessibility in the OBC

- Consultation paper can be viewed at:
<http://www.mah.gov.on.ca/AssetFactory.aspx?did=10044>
- The proposed amendments were reviewed by a Technical Advisory Committee in May 2013
- The government has not announced any accessibility changes to the Building Code

Accessibility in the OBC

- Key Areas of the Consultation were:
 - Renovation
 - Barrier-Free Path of Travel (Common Access and Circulation)
 - Vertical Access (Elevators)
 - Visitable Suites in Multi-Unit Residential Buildings
 - Adaptable Design and Construction
 - Visual Fire Alarms
 - Washrooms
 - Use of Educational and Resource Materials
 - Other Technical and Administrative Changes

Accessibility in the OBC

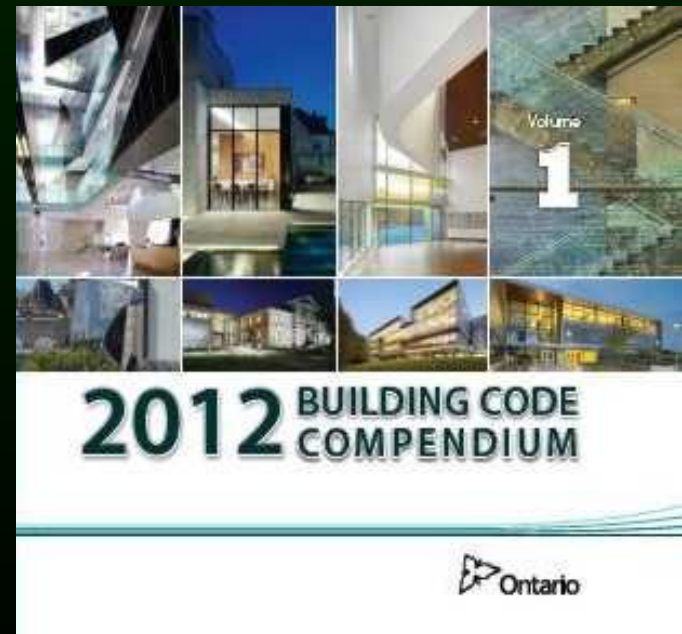
- Other Areas of the Consultation were:
 - Other Technical Matters not related to Accessibility:
 - Emissions Standards for Wood Burning Appliances
 - Industry Standards for Exterior Insulation and Finish Systems
 - Updated Standards for Heating, Cooling, and Ventilation Design

The Building Code



Ministry of
Consumer and
Commercial Relations
Ontario

Trends in Code Development



Trends in Code Development

- Devolution of Building Code training to George Brown College
 - “This marks a change in how government delivers Building Code training”
 - George Brown College is now responsible for training courses and self-study manuals
- Next: Devolution of Qualification & Registration?
 - New annual fees for BCIN renewals

Trends in Code Development

- Restricted Public Consultation, eg:
 - OFM TAC developed and reviewed retirement home proposals in 2012-2013 with limited designer input
 - Restricted MMAH TAC meeting with no further public consultation on mid-rise combustible buildings in October, 2013
- Trend to “confidential stakeholder meetings”

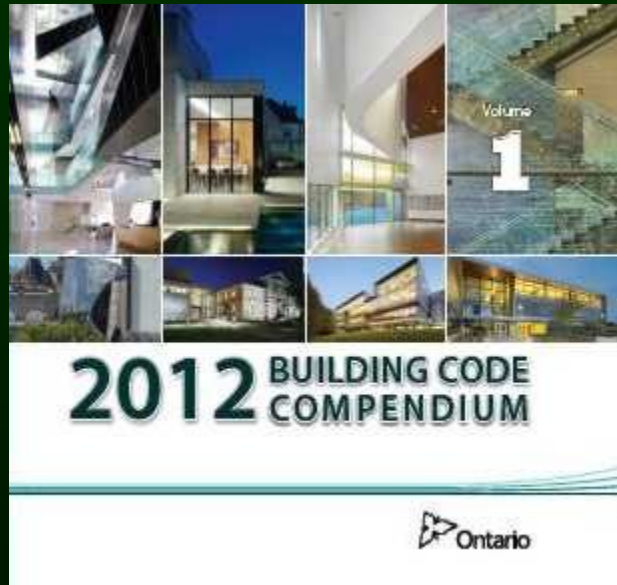
Trends in Code Development

- Limited Building Code advisory services:
 - NRC Canadian Codes Centre (CCC) staff provide opinions on the requirements in the National Model Construction Codes only to regulatory officials (building, plumbing and fire officials responsible for enforcing the codes)
 - Ontario's Building and Development Branch is a part of MMAH's Municipal Services Division, which is oriented to providing services primarily to its client municipalities
 - Municipalities have time constraints on plan review services for the purpose of permit issuance

Trends in Code Development

- The role of the Building and Development Branch has changed
- Reluctance of MMAH to issue Binding Interpretations by the Minister – see Section 28.1 of the *Building Code Act*
- Can designers rely on unbiased Building Code advice from municipalities?
 - Municipal priorities include risk management
 - Municipal priorities are not likely aligned with the owner's and designer's priorities
- Code interpretation varies among municipalities
- Barriers to access the Building Code Commission
- Need for Building Code Consultants

2012 Ontario Building Code Update



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