Outline

• National Research Council (NRC)
• Canadian Way!
• National Building Code (NBC)
$853.3 Million Budget 2015-2016
Over 3,500 employees
Operating in every province in Canada
Unique facilities—national assets
Global reach
100 years of Innovation
# NRC Construction—since 1947

<table>
<thead>
<tr>
<th>Building Envelope &amp; Materials</th>
<th>Civil Engineering &amp; Infrastructure</th>
<th>Intelligent Building Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Safety</td>
<td>Building Regulations</td>
<td>Technical &amp; Testing Services</td>
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</tbody>
</table>
National collaboration

- Over 75 years of collaboration and partnership between
  - Provinces and Territories
  - National Research Council (NRC)
  - Canadian Commission on Building and Fire Codes (CCBFC)
What it translates to

• Open & transparent National Model Codes development
• Regulatory impact analysis for all changes
• Research and evidence-based codes
• Consensus-based decision making
• Bilingual documents
Canadian way!

- History!
  - 1937
  - First edition of the National Building Code: 1941
Today’s codes & guides

- 50+ Codes published since 1941
- 2015 latest editions of 4 codes
- Paper & electronic format
- 3 Guides, supplements and commentaries
  - User's Guide—NBC 2015, Structural Commentaries
  - Illustrated Guide—Part 9 NBC 2010, Housing and Small Buildings
Division A
- Objectives, application (legislative)

Division B
- Acceptable solutions (technical)
  - For example—NBC includes
    - Parts 3 to 8 for large buildings (fire protection, structural design, envelope, HVAC, plumbing)
    - Part 9 for housing and small buildings
  - Alternative solutions

Division C – Administrative requirements
U.S. vs. Canada

- International Building Code (IBC)
- International Residential Code (IRC)
- International Fire Code (IFC)
- NFPA Codes
  - 1: Fire Code
  - 5000: Building Construction and Safety Code
- Etc…

- Check the edition of the enforced National Model Codes
  - Municipality
  - Province or Territory
Codes Development System

- Independence
- Balance
- Consensus
- Expertise
- Evidence
- Neutrality
- Legislative authority
- Policy goals
9 Standing Committees
- HVAC and Plumbing (SC-HP)
- Energy Efficiency in Buildings (SC-EEB)
- Earthquake Design (SC-ED)
- Environmental Separation (SC-ES)
- Fire Protection (SC-FP)
- Hazardous Materials and Activities (SC-HMA)
- Housing and Small Buildings (SC-HSB)
- Structural Design (SC-SD)
- Use and Egress (SC-UE)

40 + Task Groups and Working Groups
CCBFC committees & interactions

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**40 + Task Groups and Working Groups**

TPPACC  
Joint Task Groups  
Policy Advice

CCBFC executive committee
CCBFC committees & interactions

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PTPACC

Joint Task Groups

Policy Advice

CCBFC

Executive Committee

TGs/WGS

SC-HP

SC-EEB

SC-FP

SC-HSB

SC-UE

SC-ED

SC-ES

SC-HMA

SC-SD

40 + Task Groups and Working Groups
### Some Codes Canada activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average number of Technical Enquiries per year</td>
<td>350</td>
</tr>
<tr>
<td>Average number of proposed changes per cycle</td>
<td>750</td>
</tr>
<tr>
<td>Average number of public review comments</td>
<td>770</td>
</tr>
<tr>
<td>Average daily web accesses (prior to 2014)</td>
<td>10,000+</td>
</tr>
<tr>
<td>Construction Innovation subscribers</td>
<td>23,000+</td>
</tr>
<tr>
<td>Committee members (individuals)</td>
<td>~400</td>
</tr>
<tr>
<td>Committee members (committee seats)</td>
<td>~1100</td>
</tr>
<tr>
<td>Annual face-to-face meetings</td>
<td>40+</td>
</tr>
<tr>
<td>Annual teleconference meetings</td>
<td>150+</td>
</tr>
</tbody>
</table>
Code Development Process
Step 1.

- Define or validate what the problem is
- What is the issue or need that this proposal will address?
Step 2.

- Proposed changes criteria
  - Within scope and objectives of code?
  - Need to be regulated?
  - Minimum level of performance?
  - Enforceable & measurable?
  - Satisfies cost-benefit analysis?
Code change request (1077)

- Problem → Lack of maintenance
- Request:
  - Inventory
  - Annual inspection
  - Documentation
Outcome

- Fire safety plan documentation
- Unknown damage to a fire separation with fire spread
Code change requests

› 17 CCRs
› Problem → Fire performance of fire separations with fire stops
› Request:
  - Align NBC requirements with current industry practice
Outcome

- Forward the review to a Task/Working Group
- Next meeting of the Standing Committee on Fire Protection in spring 2018
- Target publication is NBC 2020
Code change request (1173)

› Problem → Fire stop not always readily available on construction site/in building

› Request:
  - ASTM Standard E2174, “Standard Practice for On-Site Inspection of Installed Firestops”
Outcome

- Agreed to work on the issue
- Consider:
  - Potential conflicts with current referenced standard (CAN/ULC-S115 standard)
  - Reach advise on how to address inspection methods
New definitions (2010)

- Introduced new definitions for fire stop and fire block
Rating of fire stop (2010)

- CAN/ULC-S115, “Fire Tests of Fire Stop Systems”
Applications clarification (2010)

Water distribution

Water closet

Polypropylene pipes
Electrical outlet boxes (2015)

- Penetration by outlet boxes
- CAN/ULC-S112.2, “Fire Test of Ceiling Firestop Flap Assemblies”
Fire block (2015)

- Qualification of fire block materials:
  - ASTM D5456, “Evaluation of Structural Composite Lumber Products”

- Midrise combustible construction and horizontal concealed spaces
Summary—2010 Changes

• New definitions for fire stop and fire block
• Qualification of penetration protection requirements
• Relaxations for penetrations in fire separations
Summary—2015 Changes

• Clarification for the protection of outlet boxes
• New standard for the design requirement of fire stop flaps
• New wood products accepted as fire block materials
• Fire block required in horizontal concealed spaces for 5- and 6-storey combustible buildings
What’s up next?

• Fire Stop Best Practices Guide update
• Continuity of fire separation
• Combustible DWV¹ piping penetrations
• NEW requests for change (FCIA)

¹ DWV: Drain-waste-vent
Key messages

- Over 75 years of collaboration & partnership
- Many external contacts
- Provinces/Territories choose to adopt the National Model Codes
- Harmonized codes across the country
Thank you!
http://www.nationalcodes.ca

https://www.linkedin.com/company/national-research-council

@NRC_CNRC

http://www.nrc-cnrc.gc.ca/ci-ic/