



Ontario Building Code

By Dan Q. Xu, P.Eng

Why building code?

Constitution Law

Building Code Act

Building Code

Standards



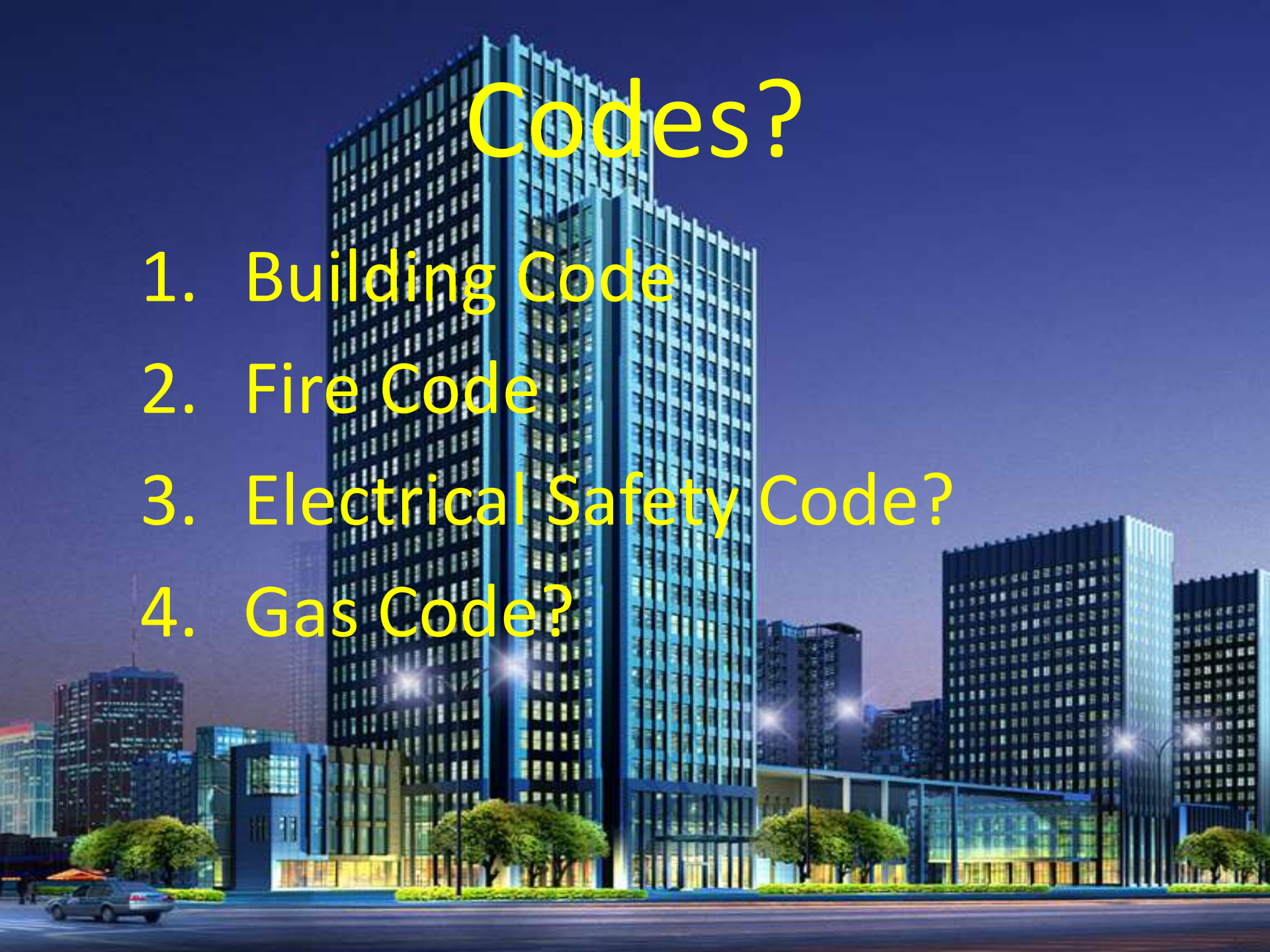
Building Code Act



- Roles
 - Designer
 - Chief Building Official
 - Inspector
 - Code agent
 - Contractor
- Permit procedure
- Legal Process

Codes?

1. Building Code
2. Fire Code
3. Electrical Safety Code?
4. Gas Code?



Which Code?

- International Building Code
- National Building Code
- Ontario Building Code



1983

1986

1990

1997

2006



1963



Pros and Cons



- Know why
- Easy to be approved
- Be professional
- More opportunities
- Stable job
- Designation



- Not too sure
- Permit rejection
- More questions from municipality and client
- Loss reputation
- More time and \$\$\$

Building

- An structure containing wall, roof and floor or any of them
- More than 10 square meters
- Plumbing
- Sewage system
- Designated structure





Objectives

- Safety
- Health
- Accessibility
- Protection
- Resource conservation



Framework of OBC

- **Volume 1**
 - Division A
 - Division B
 - Division C
- **Volume 2**
 - Appendix A and Appendix B
 - SA-1 Objectives and fundamental statements
 - SB-1 to SB-12
 - SC-3 Code of conduct of registered code agencies

V1 Division A

Part 1 Compliance and General

Part 2 Objectives

Part 3 Functional Statements



V1 Division B (*acceptable solutions*)

Part 1 Compliance and General

Part 2 Reserved

Part 3 Fire protection, Occupant Safety and Accessibility

Part 4 Structural Design

Part 5 Environmental Separation

Part 6 HVAC

Part 7 Plumbing

Part 8 Sewage System

Part 9 House and Small Buildings

Part 10 Change of Use

Part 11 Renovations

Part 12 Resource Conservation

Part 3 VS Part 9

Part 3

- Big Buildings
- Higher hazard
- Refer to part 4 for structure design
- More restrictive
- Architect or engineer

Part 9

- Small buildings
- Low hazard
- Simplified in structure design
- Less restrictive
- BCIN only

Essentials



Part 3

- Building fire safety
- Safety with in floor area
- Exit
- Vertical transportation
- Service facilities
- Health requirement
- Barrier-free Design
- Portable classrooms



Part 3

- Self-service storage Buildings
- Public Pools
- Public spas
- Rapid translate stations
- Tents and air-supported structure
- Signs
- Shelf and rack storage system



Part 9 Housing and Small Buildings

- Material, systems and equipment
- Structural requirement
- Design area and space and door ways
- Glass
- Windows, doors and skylight
- Stairs, ramps and handrails and Guards
- Means of egress
- Fire protection
- Sound control



Part 9 Housing and Small Buildings

- Excavation
- Footing and foundation
- Columns
- Masonry walls
- Wood frame construction
- Roofing
- Building envelope
- Plumbing
- HVAC
- Others



Part 6 HVAC

- Ventilation
- Air duct system
- Heating appliances
- Refrigerating system
- Piping and heating cooling systems



Part 7 Plumbing

- Material and equipment
- Piping
- Drainage Systems
- Venting Systems
- Portable Water System
- Non Portable Water System



V1 Division C

Part 1 General

Part 2 Alternative Solutions, Disputes, Rulings
and interpretations

Part 3 Qualifications

Part 4 Transition, Revocation and
Commencement



BCIN Qualification

- Building code identification number (BCIN)
- Totally 12 qualifications
- Take one exam may be get more than one certificates
- Every exam around \$105
- No pre-education requirement
- Multi-time exam is permitted

Qualifications

1. House
2. Small buildings
3. Large buildings
4. Complex buildings
5. Plumbing-house
6. Plumbing-all buildings
7. HVAC-house
8. Building services
9. Building structural
10. On-site sewage
11. Detection, lighting and power
12. Fire protection



Bonus Topics

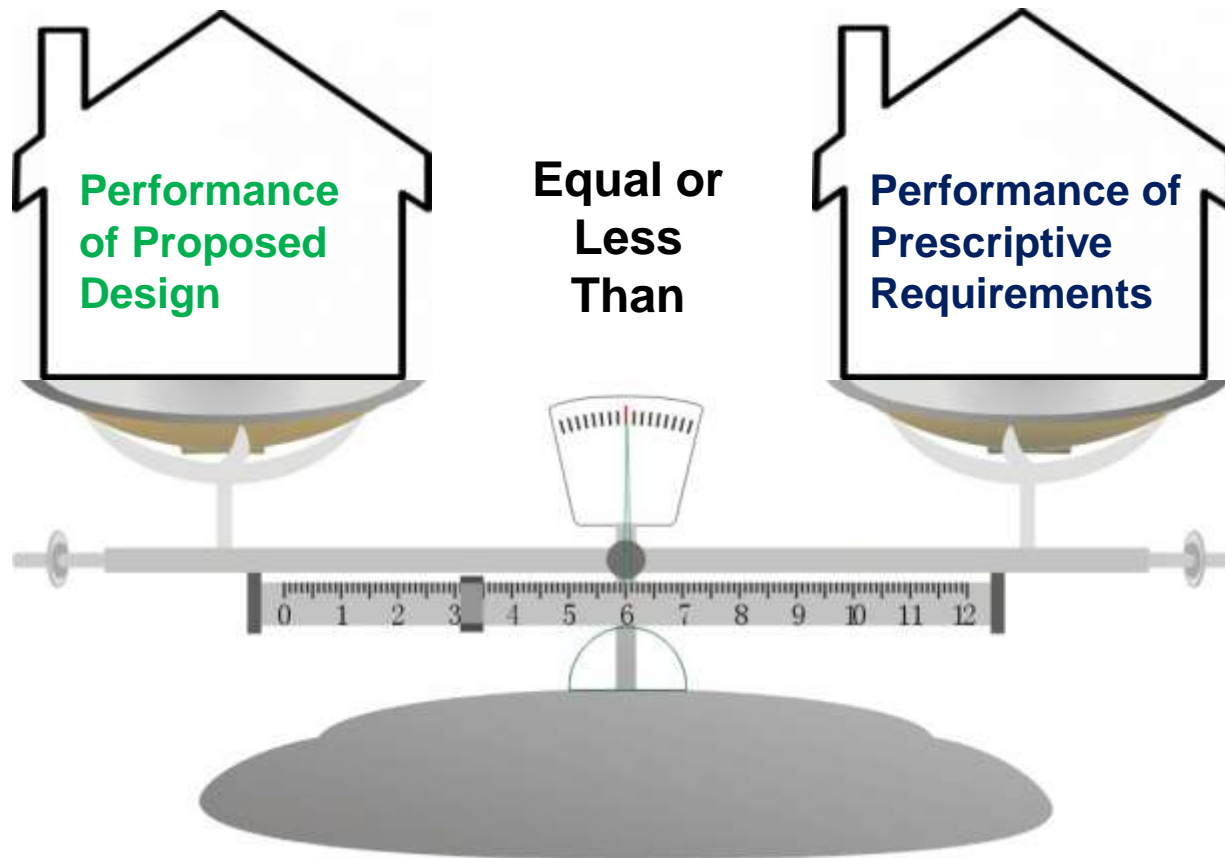
- In-floor Heating System
- Commercial Kitchen Exhaust System
- Geo Thermo System
- Energy Efficiency



Performance Method

Annual Energy Use based
on Proposed Design

Annual Energy Use based on
Prescriptive Requirements



Energy Efficiency Compliance Paths



Compliance
Path Start
(12.2.1.2. of Div.B)

Part 9 Residential
(12.2.1.2.(3) of Div. B)

All Other Buildings
(12.2.1.2.(2) of Div.B)

EnerGuide
80

SB-12
(1.1.1.2 of SB-12)

SB-10
(1.1.1.3 of Div.1)

Prescriptive
Compliance
Path
(2.1.1 of SB-12)

Under prescriptive
compliance path,
there are specific
requirements for
additions to existing
buildings. Refer to
2.1.1.10 of SB-12

Performance
Compliance
(A-2.1.2.1 of SB-12)

Other Methods
(A-2.1.3.1 of
SB-12)

Part 3 and Part 9 Non-
Residential Buildings
(1.1.2.1 of SB-10 Div.3)

Prescriptive Path
Part 9 Non-Residential
No Elect. Space Heating
(SB-10 Div. 4)

The following software may be
used:
•Hot 2000 Ver. 9.34c or newer
•Energuide Referenced Software
•Recent Accredited Software

Energy Star
Prescriptive
path

Energy Star
Performance
path

Exceed 25%
of MNECB
1997

MNECB
2011

Exceed 5%
of ASHRAE
90.1-2010

Prescriptive
Path. Meet
ASHRAE
90.1-2010 &
SB-10 Div.3
Chapter2

End of
Compliance Path

Note: 1. This flow chart is based on current building code. There may be new changes in the future.

2. Every prescriptive path has its own area limitations of wall fenestrations and skylights. Please refer to building code for details

Date: April 18, 2012

Current issues and future trend


- Professional Engineers Act, Architects Act and Building Code Act
- Davison C, Part 1
Design and general review 
- New Building Code



Table 1.2.1.1.⁽⁴⁾
Design and General Review
Forming Part of Sentence 1.2.1.1.(1)

<i>Building Classification by Major Occupancy</i>	<i>Building Description</i>	Design and General Review by:
<i>Assembly occupancy only</i>	<i>Every building</i>	<i>Architect and professional engineer⁽¹⁾</i>
<i>Assembly occupancy and any other major occupancy except industrial</i>	<i>Every building</i>	<i>Architect and professional engineer⁽¹⁾</i>
<i>Care or detention occupancy only</i>	<i>Every building</i>	<i>Architect and professional engineer⁽¹⁾</i>
<i>Care or detention occupancy and any other major occupancy except industrial</i>	<i>Every building</i>	<i>Architect and professional engineer⁽¹⁾</i>
<i>Residential occupancy only</i>	<i>Every building that exceeds 3 storeys in building height</i>	<i>Architect and professional engineer⁽¹⁾</i>
	<i>Every building that exceeds 600 m² in gross area and that contains a residential occupancy other than a dwelling unit or dwelling units</i>	<i>Architect⁽²⁾</i>
<i>Residential occupancy only</i>	<i>Every building that exceeds 600 m² in gross area and contains a dwelling unit above another dwelling unit</i>	<i>Architect⁽²⁾</i>
	<i>Every building that exceeds 600 m² in building area contains 3 or more dwelling units and has no dwelling unit above another dwelling unit</i>	<i>Architect⁽²⁾</i>
<i>Residential occupancy and any other major occupancy except industrial, assembly or care or detention occupancy</i>	<i>Every building that exceeds 600 m² in gross area or 3 storeys in building height</i>	<i>Architect and professional engineer⁽¹⁾</i>
<i>Business and personal services occupancy only</i>	<i>Every building that exceeds 600 m² in gross area or 3 storeys in building height</i>	<i>Architect and professional engineer⁽¹⁾</i>
<i>Business and personal services occupancy and any other major occupancy except industrial, assembly or care or detention occupancy</i>	<i>Every building that exceeds 600 m² in gross area or 3 storeys in building height</i>	<i>Architect and professional engineer⁽¹⁾</i>
<i>Mercantile occupancy only</i>	<i>Every building that exceeds 600 m² in gross area or 3 storeys in building height</i>	<i>Architect and professional engineer⁽¹⁾</i>

New Building Code

- Fire Safety
 - Fire alarm
 - Fire block
- Objective
 - Electrical grid capacity
 - Protecting atmospheric quality
 - Protecting water and soil quality
- Accessibility January 1st of 2015
- Energy efficiency start from Jan.1st of 2017
 - 15% for part 9 residential
 - 13% for other buildings



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