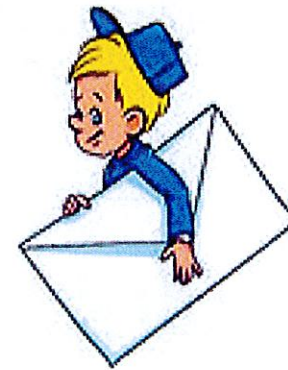




Ontario Building Code Changes 2017 and beyond

Don't shoot the messenger



Agenda

**AMENDMENTS TO THE 2012 BUILDING CODE EFFECTIVE
JANUARY 2017**

**PROPOSED INTERIM AMENDMENTS TO THE 2012 BUILDING CODE EFFECTIVE
JULY 2017**

**PROPOSED INTERIM AMENDMENTS TO THE 2012 BUILDING CODE EFFECTIVE
JANUARY 2018**

**NEW EDITION OF THE BUILDING CODE PROPOSED IN-EFFECT DATE
JANUARY 2019**

Building Code Changes

- Releasing a new edition of the Building Code helps to:
 - Provide Ontarians the highest standards of building safety
 - Promote economic competitiveness in the construction sector
 - Support broader general goals and objectives
- A new edition of the Code is released approximately every five years
 - Timing is generally linked to the release of the mNBC
 - The NRC released the 2015 model National Building Code in January 2016
- Proposed Building Code changes result from three broad areas:
 - Harmonizing with the model National Building Code and National Plumbing Code
 - Ontario-Specific Code Change Proposals Submitted by Stakeholders
 - Government Policy Priorities

**AMENDMENTS TO
THE 2012 BUILDING CODE EFFECTIVE
JANUARY 1ST 2017**

SB 12

Energy Efficiency

Ontario Building Code Changes as of January 1st 2017
Permits applied for after January 1st 2017

SB 12

Energy Efficiency

- The overall coefficient of heat transfer of glazing has added a 1.2 and a 1.0 value to match the tables
- Add windows in doors and sidelights in the calculation for %

(8) Except as permitted in Sentences 3.1.1.11.(3), where the ratio of the gross area of windows, **sidelights**, skylights, **glazing in doors** and sliding glass doors to the gross area of peripheral walls measured from grade to the top of the upper most ceiling is more than 17% but not more than 22%, the *building* shall comply with a compliance package selected from Tables 3.1.1.2.A to 3.1.1.2.C, Tables 3.1.1.3.A to 3.1.1.3.C and Table 3.1.1.11 and the *overall coefficient of heat transfer* of the *fenestration* shall be upgraded to

- 1.6 where 1.8 is required by the selected compliance package or permitted by Article 3.1.1.4.,
- 1.4 where 1.6 is required by the selected compliance package or permitted by Article 3.1.1.4.,
- **1.2 where 1.4 is required by the selected compliance package or permitted by Article 3.1.1.4., and**
- **1.0 where 1.2 is required by the selected compliance package or permitted by Article 3.1.1.4..**

SB 12

Energy Efficiency

- Wall and ceilings between a garage shall be treated as an outside wall, even if the garage is heated
- Rim joist must have the same insulation value as the above grade walls

SB 12

Energy Efficiency

Where space heating is supplied by a solid fuel-burning appliance or an earth energy system, the compliance package is permitted to comply with tables....

A building is permitted to be designed in conformance with any of the compliance packages available for the climate zone that the building is located in, if the primary heating of the building is supplied by:

- (a) A wood burning appliance
- (b) An earth Energy System
- (c) An air or water source heat pump that does not use electric resistance as a back-up heat source

In the compliance packages the requirement for space heating equipment would not apply.

System will still need a design

SB 12

Energy Efficiency

Where an ICF wall assembly is installed as an above and below grade wall assembly that has a min R10 on the interior surface of the concrete and a min R10 on the exterior surface of the concrete wall, the ICF wall is deemed to comply with the thermal values set out in the walls in the compliance packages in the table [3.1.1.2A](#)

(Appendix A)

An ICF wall as stated above is permitted to be used in lieu of basement walls that require insulation value of R20 or less

Prescriptive Compliance

Reduced number of Prescriptive compliance packages from 13 to 6

Table 3.1.1.2.A (IP)
ZONE 1 - Compliance Packages for Space Heating Equipment with AFUE ≥ 92%
 Forming Part of Sentence 3.1.1.2.(1)

Component	Thermal Values ⁽⁸⁾	Compliance Package					
		A 1	A 2	A 3	A 4	A 5	A 6
Ceiling with Attic Space	Min. Nominal R ⁽¹⁾	60	60	50	60	50	60
	Max. U ⁽²⁾	0.017	0.017	0.020	0.017	0.020	0.017
	Min. Effective R ⁽²⁾	59.22	59.22	49.23	59.22	49.23	59.22
Ceiling Without Attic Space	Min. Nominal R ⁽¹⁾	31	31	31	31	31	31
	Max. U ⁽²⁾	0.036	0.036	0.036	0.036	0.036	0.036
	Min. Effective R ⁽²⁾	27.65	27.65	27.65	27.65	27.65	27.65
Exposed Floor	Min. Nominal R ⁽¹⁾	31	31	35	31	35	31
	Max. U ⁽³⁾	0.034	0.034	0.031	0.034	0.031	0.034
	Min. Effective R ⁽³⁾	29.80	29.80	32.02	29.80	32.02	29.80
Walls Above Grade	Min. Nominal R ⁽¹⁾	22	19 + 5 ci	14 + 7.5 ci	22 + 5 ci	19 + 5 ci	22 + 5 ci
	Max. U ⁽³⁾	0.059	0.049	0.054	0.047	0.049	0.047
	Min. Effective R ⁽³⁾	17.03	20.32	18.62	21.40	20.32	21.40
Basement Walls ⁽⁴⁾	Min. Nominal R ⁽¹⁾	20 ci	12 + 10 ci	20 ci	20 ci	12 + 5 ci	20 ci
	Max. U ⁽⁴⁾	0.047	0.048	0.047	0.047	0.063	0.047
	Min. Effective R ⁽⁴⁾	21.12	20.84	21.12	21.12	15.96	21.12
Below Grade Slab Entire Surface > 600 mm Below Grade	Min. Nominal R ⁽¹⁾	-	-	-	-	-	-
	Max. U ⁽⁴⁾	-	-	-	-	-	-
	Min. Effective R ⁽⁴⁾	-	-	-	-	-	-
Heated Slab or Slab ≤ 600 mm Below Grade	Min. Nominal R ⁽¹⁾	10	10	10	10	10	10
	Max. U ⁽⁴⁾	0.090	0.090	0.090	0.090	0.090	0.090
	Min. Effective R ⁽⁴⁾	11.13	11.13	11.13	11.13	11.13	11.13
Edge of Below Grade Slab ≤ 600 mm Below Grade	Min. Nominal R ⁽¹⁾	10	10	10	10	10	10
Windows and Sliding Glass Doors	Max. U ⁽⁵⁾	0.28	0.28	0.25	0.28	0.28	0.28
	Energy Rating	25	25	29	25	25	25
Skylights	Max. U ⁽⁵⁾	0.49	0.49	0.49	0.49	0.49	0.49
Space Heating Equipment	Min. AFUE	96%	96%	94%	96%	94%	92%
HRV	Min. SRE	75%	75%	81%	75%	70%	65%
Domestic Water Heater ⁽⁷⁾	Min. EF	0.8	0.7	0.67	0.67	0.8	0.8
Column 1	2	3	4	5	6	7	8

Table 3.1.1.2.B (IP)
ZONE 1 - Compliance Packages for Space Heating Equipment with $84\% \leq AFUE < 92\%$
 Forming Part of Sentence 3.1.1.2.(2)

Component	Thermal Values ⁽⁶⁾	Compliance Package					
		B 1	B 2	B 3	B 4	B 5	B 6
Ceiling with Attic Space	Min. Nominal R ⁽¹⁾	50	50	50	60 + HH	50	60
	Max. U ⁽²⁾	0.020	0.020	0.020	0.016	0.020	0.017
	Min. Effective R ⁽²⁾	49.23	49.23	49.23	59.90	49.23	59.22
Ceiling Without Attic Space	Min. Nominal R ⁽¹⁾	31	31	31	31	31	31
	Max. U ⁽²⁾	0.036	0.036	0.036	0.036	0.036	0.036
	Min. Effective R ⁽²⁾	27.65	27.65	27.65	27.65	27.65	27.65
Exposed Floor	Min. Nominal R ⁽¹⁾	35	35	35	31	35	31
	Max. U ⁽²⁾	0.031	0.031	0.031	0.034	0.031	0.034
	Min. Effective R ⁽²⁾	32.02	32.02	32.02	29.80	32.02	29.80
Walls Above Grade	Min. Nominal R ⁽¹⁾	22 + 5 ci	22 + 5 ci	22 + 7.5 ci	22 + 7.5 ci	19 + 10 ci	19 + 10 ci
	Max. U ⁽²⁾	0.047	0.047	0.042	0.042	0.040	0.040
	Min. Effective R ⁽²⁾	21.40	21.40	23.90	23.90	25.32	25.32
Basement Walls ⁽⁶⁾	Min. Nominal R ⁽¹⁾	20 ci	12 + 10 ci	20 ci	12 + 10 ci	20 ci	20 ci
	Max. U ⁽⁴⁾	0.047	0.048	0.047	0.048	0.047	0.047
	Min. Effective R ⁽⁴⁾	21.12	20.84	21.12	20.84	21.12	21.12
Below Grade Slab Entire Surface > 600 mm Below Grade	Min. Nominal R ⁽¹⁾	-	-	-	-	-	10
	Max. U ⁽⁴⁾	-	-	-	-	-	0.090
	Min. Effective R ⁽⁴⁾	-	-	-	-	-	11.13
Heated Slab or Slab ≤ 600 mm Below Grade	Min. Nominal R ⁽¹⁾	10	10	10	10	10	10
	Max. U ⁽⁴⁾	0.090	0.090	0.090	0.090	0.090	0.090
	Min. Effective R ⁽⁴⁾	11.13	11.13	11.13	11.13	11.13	11.13
Edge of Below Grade Slab ≤ 600 mm Below Grade	Min. Nominal R ⁽¹⁾	10	10	10	10	10	10
Windows and Sliding Glass	Max. U ⁽⁵⁾	0.28	0.25	0.25	0.21	0.25	0.21
	Energy Rating	25	29	29	34	29	34
Skylights	Max. U ⁽⁵⁾	0.49	0.49	0.49	0.49	0.49	0.49
Space Heating Equipment	Min. AFUE	90%	90%	87%	87%	84%	84%
HRV	SRE	75%	70%	70%	75%	75%	81%
Domestic Water Heater ⁽⁷⁾	Min. EF	0.66	0.62	0.66	-	0.66	-
Column 1	2	3	4	5	6	7	8

Notes to Table 3.1.1.2.B (IP):

The following definitions apply: HH = 10 inch high heel

Nominal and effective R values are expressed in $(h \cdot ft^2 \cdot F) / Btu$. U-Values are expressed in $Btu / (h \cdot ft^2 \cdot F)$.

1. The values listed are minimum Nominal RSI-values for the thermal insulation component only.
2. U-Value and effective R value shall include entire ceiling assembly components, from interior air film to vented space air film above insulation.
3. U-Value and effective R value shall include entire exposed floor or above grade wall assembly components, from interior air film to exterior air film.
4. U-Value and effective R value shall include entire basement wall or slab assembly components and interior air film.
5. U-Value is the *overall coefficient of heat transfer* for a window assembly, sliding glass door assembly or skylight assembly expressed in $Btu / (h \cdot ft^2 \cdot F)$.
6. In the case of *basement wall assemblies*, where R20 ci is required R12 + 10 ci is permitted to be used or vice versa; or where R12 + 5 ci is required, R15 ci is permitted to be used or vice versa.
7. If an EF of a water tank is not indicated in a compliance package, there is no EF requirement for water tank for that specific compliance package.
8. Nominal and effective R values are expressed in $(h \cdot ft^2 \cdot F) / Btu$. U-Values are expressed in $Btu / (h \cdot ft^2 \cdot F)$.

Table 3.1.1.2.C (IP)

ZONE 1 - Compliance Packages for Electric Space Heating

Forming Part of Sentence 3.1.1.2.(3)

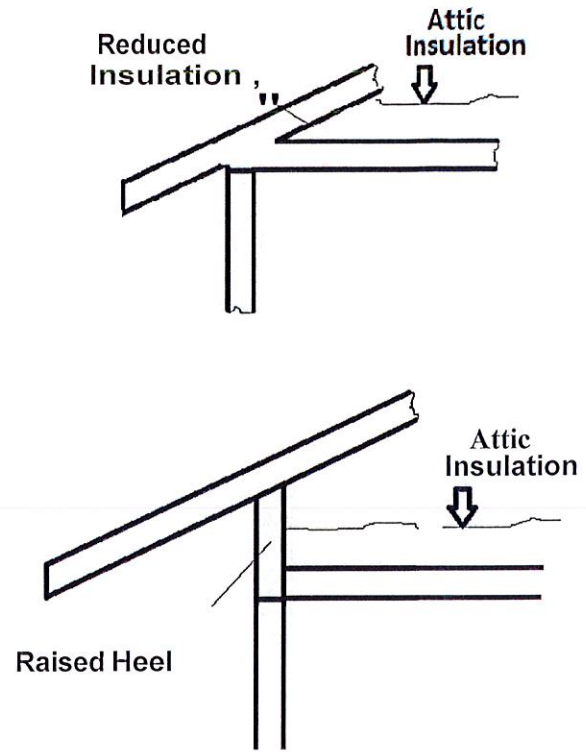
Component	Thermal Values ⁽⁸⁾	Compliance Package			
		C 1	C 2	C 3	C 4
Ceiling with Attic Space	Min. Nominal R ⁽¹⁾	60 + HH	60 + HH	50	60 + HH
	Max. U ⁽²⁾	0.016	0.016	0.020	0.016
	Min. Effective R ⁽²⁾	59.90	59.90	49.23	49.23
Ceiling Without Attic Space	Min. Nominal R ⁽¹⁾	31	31	31	31
	Max. U ⁽²⁾	0.036	0.036	0.036	0.036
	Min. Effective R ⁽²⁾	27.65	27.65	27.65	27.65
Exposed Floor	Min. Nominal R ⁽¹⁾	31	31	35	31
	Max. U ⁽³⁾	0.034	0.034	0.031	0.034
	Min. Effective R ⁽³⁾	29.80	29.80	32.02	29.80
Walls Above Grade	Min. Nominal R ⁽¹⁾	19 + 10 ci	22 + 10 ci	22 + 10 ci	22 + 7.5 ci
	Max. U ⁽³⁾	0.040	0.038	0.038	0.042
	Min. Effective R ⁽³⁾	25.32	26.40	26.40	23.90
Basement Walls ⁽⁶⁾	Min. Nominal R ⁽¹⁾	20 + 8 ci	20 ci	20 ci	20 ci
	Max. U ⁽⁴⁾	0.044	0.047	0.047	0.047
	Min. Effective R ⁽⁴⁾	22.71	21.12	21.12	21.12
Below Grade Slab Entire Surface > 600 mm Below Grade	Min. Nominal R ⁽¹⁾	7.5	-	-	-
	Max. U ⁽⁴⁾	0.116	-	-	-
	Min. Effective R ⁽⁴⁾	8.63	-	-	-
Heated Slab or Slab ≤ 600 mm Below Grade	Min. Nominal R ⁽¹⁾	10	10	10	10
	Max. U ⁽⁴⁾	0.090	0.090	0.090	0.090
	Min. Effective R ⁽⁴⁾	11.13	11.13	11.13	11.13
Edge of Below Grade Slab ≤ 600 mm Below Grade	Min. Nominal R ⁽¹⁾	10	10	10	10
Windows and Sliding Glass Doors	Max. U ⁽⁵⁾	0.25	0.21	0.21	0.28
	Energy Rating	29	34	34	25
Skylights	Max. U ⁽⁵⁾	0.49	0.49	0.49	0.49
Space Heating Equipment	Min.	-	-	-	ASHP: 7.1 HSPF
HRV	Min. SRE	81%	75%	81%	55%
Domestic Water Heater ⁽⁷⁾	Min. EF	-	-	-	-
Column 1	2	3	4	5	6

Notes to Table 3.1.1.2.C (IP):

The following definitions applies: HH = 10 inch high heel

- (1) The values listed are minimum Nominal R values for the thermal insulation component only.
- (2) U-Value and effective R value shall include entire ceiling assembly components, from interior air film to vented space air film above insulation.
- (3) U-Value and effective R value shall include entire exposed floor or above grade wall assembly components, from interior air film to exterior air film.
- (4) U-Value and effective R value shall include entire basement wall or slab assembly components and interior air film.
- (5) U-Value is the *overall coefficient of heat transfer* for a window assembly, sliding glass door assembly or skylight assembly expressed in $\text{Btu}/(\text{h}\cdot\text{ft}^2\cdot\text{F})$.
- (6) In the case of *basement wall assemblies*, where R20 ci is required R12 + 10 ci is permitted to be used or vice versa; or where R12 + 5 ci is required, R15 ci is permitted to be used or vice versa.
- (7) If an EF of a water tank is not indicated in a compliance package, there is no EF requirement for water tank for that specific compliance package.
- (8) Nominal and effective R values are expressed in $(\text{h}\cdot\text{ft}^2\cdot\text{F})/\text{Btu}$. U-Values are expressed in $\text{Btu}/(\text{h}\cdot\text{ft}^2\cdot\text{F})$.

Where 10" H.H is required near the eaves the available space on the inner surface of the wall below the roof venting space shall be fully insulated

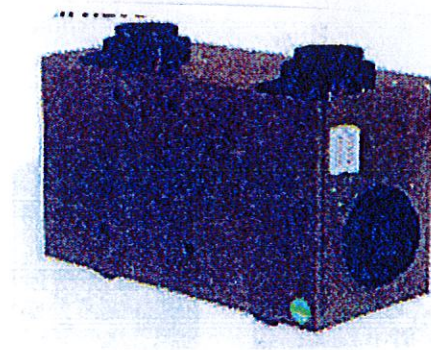
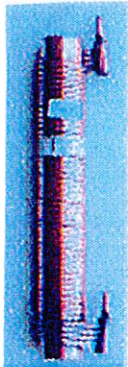


SB 12

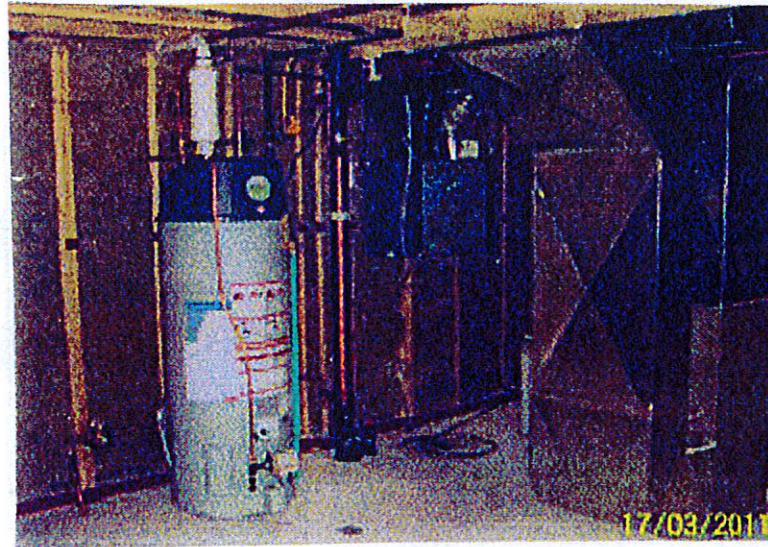
Energy Efficiency

All new homes designed
under the Prescriptive path will have:

- An HRV or an ERV installed
- A Drain water heat recovery unit

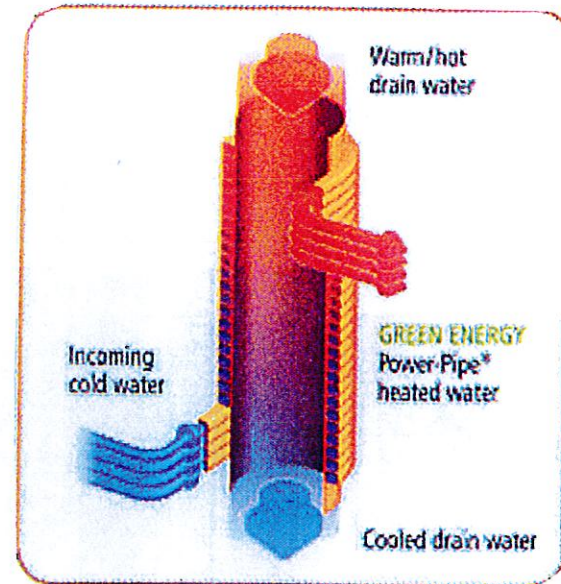


Drain water heat recovery unit

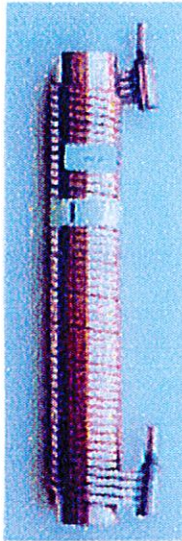


Drain water heat recovery unit

- Center Section:
 - open pipe
 - large solids can pass easily
- Surface Tension:
 - as water falls down a vertical drain pipe, it clings to the inner surface



Drain water heat recovery unit



- Installed to receive drain water from all showers OR from at least two where there are more than two
- Shall be installed in an up right position
- Cold water inlet is at the bottom of the unit
- Downstream of a water softener if installed
- In a conditioned space

Not required

- If there are no showers installed
- And if no story or crawl space beneath any shower
- ❖ If the design of the drainage system will make it impracticable to install or contravenes the OBC or manufactures specifications

Drain water heat recovery unit

Efficiency Must be >42%

POWER-PIPE
DRAIN WATER HEAT RECOVERY SYSTEMS
Model: R3-42
Performance at 9.5L/min (2.5GPM)
Serial: A16C810A-451
Insp by FS

Efficiency	42.5%
Pressure Loss	11.5kPa / 1.7psi

Certified to CSA B55.1-12 Issued: 07/2012

UL LISTED
CLASSIFIED
11BY POWER-PIPE

JWRAS
Approval #120858

ETL
Intertek
WV 17007

Classified with its accessories with
CSA B55.2-12 (NSF/ANSI 372
<19-06485> <01-06895>)

Inner Pipe: Type DWV (ASTM B208)
Outer Coil: Type I (ASTM B68)
For use with: waste and potable water
Maximum design pressure: Coil 160 psi
Pipe: vented

Developed and Manufactured by
RenewABILITY ENERGY INC.
www.RenewABILITY.com

Patents Pending & Patents
EU: 1723375
Canada: 2802285
US: T068985

Must comply to CSA B55.2

Table 3.1.1.11. (IP)
Thermal Performance Requirements for Additions to Existing Buildings⁽³⁾
Forming Part of Sentence 3.1.1.11.(2)

Component	Thermal Values ⁽⁷⁾	Compliance Package		
		Zone 1	Zone 2	Electric Space Heating
		Less than 5000 Degree Days	5000 or more Degree Days	Zones 1 and 2
Ceiling with Attic Space	Min. Nominal R ⁽¹⁾	60	60	60
	Max. U ⁽²⁾	0.017	0.017	0.017
	Min. Effective R ⁽²⁾	59.22	59.22	59.22
Ceiling Without Attic Space	Min. Nominal R ⁽¹⁾	31	31	31
	Max. U ⁽²⁾	0.036	0.036	0.036
	Min. Effective R ⁽²⁾	27.65	27.65	27.65
Exposed Floor	Min. Nominal R ⁽¹⁾	31	31	31
	Max. U ⁽³⁾	0.034	0.034	0.034
	Min. Effective R ⁽³⁾	29.80	29.80	29.80
Walls Above Grade	Min. Nominal R ⁽¹⁾	19 + 5 ci	22 + 7.5 ci	22 + 10 ci
	Max. U ⁽⁴⁾	0.049	0.042	0.038
	Min. Effective R ⁽³⁾	20.32	23.90	26.40
Basement Walls ⁽⁶⁾	Min. Nominal R ⁽¹⁾	20 ci	20 ci	20 ci
	Max. U ⁽⁴⁾	0.047	0.047	0.047
	Min. Effective R ⁽⁴⁾	21.12	21.12	21.12
Heated Slab or Slab ≤ 600 mm Below Grade	Min. Nominal R ⁽¹⁾	10	10	10
	Max. U ⁽⁴⁾	0.090	0.090	0.090
	Min. Effective R ⁽⁴⁾	11.13	11.13	11.13
Edge of Below Grade Slab ≤ 600 mm Below Grade	Min. Nominal R ⁽¹⁾	10	10	10
Windows and Sliding Glass Doors	Max. U ⁽⁶⁾	0.28	0.25	0.25
	Energy Rating	25	29	29
Column 1	2	3	4	5

Notes to Table 3.1.1.11:

- (1) The values listed are minimum Nominal R values for the thermal insulation component only.
- (2) U-Value and effective R value shall include entire ceiling assembly components, from interior air film to vented space air film above insulation.
- (3) U-Value and effective R value shall include entire exposed floor or above grade wall assembly components, from interior air film to exterior air film.
- (4) U-Value and effective R value shall include entire *basement* wall or slab assembly components and interior air film.
- (5) U-Value is the *overall coefficient of heat transfer* for a window assembly, sliding glass door assembly or skylight assembly expressed in Btu/(h•ft²•F).
- (6) In the case of *basement* wall assemblies, where R20 ci is required R12 + 10 ci is permitted to be used or vice versa; or where R1 2+ 5 ci is required, R15 ci is permitted to be used or vice versa.
- (7) Nominal and effective R values are expressed in (h•ft²•F)/Btu. U-Values are expressed in Btu/(h•ft²•F).

Performance Compliance

3.1.2. Performance Compliance

1. Required Performance Level (See Appendix A.)

(1)The performance level shall be measured based on the simulated annual energy use of the *building*.

(2)For the purpose of this Subsection, reference *building* means a *building* that is identical to the proposed *building*, except that it is designed to meet the requirements and performance level of an applicable compliance package in Subsection 3.1.1. on the basis of

- (a) zone location,
- (b) energy source, and
- (c) equipment efficiency.

(3)The simulated annual energy use of the proposed *building* shall not be greater than the simulated annual energy use of the reference *building*.

(4)The simulated annual energy use of the proposed *building* and the reference *building* shall be calculated in accordance with Table 3.1.2.1.

(3) For the purpose of calculations required in Sentence (4),

- (a) the simulation software used shall be a recognized annual energy use simulation software,
- (b) the climatic data used shall be the local climatic data,
- (c) the equivalent domestic water loads, appliance loads and other plug-in loads shall be assumed for both the proposed *building* and the reference *building*, and
- (d) the same software and climatic conditions shall be used for both the proposed *building* and the reference *buildings*.

(6)Where the overall thermal performance of the proposed *building* envelope is less than the envelope performance of the compliance package that is compared against it, the reduction in the performance level of the *building* envelope shall not be more than 25%.

(7)The annual energy use simulation of the reference *building* shall be in accordance with Subsection 3.1.1. of this Supplementary Standard, Part 12 and other applicable parts of the *Building Code*.

Table 3.1.2.1.
Specification for the Reference and Proposed Building Design
 Forming Part of Sentence 3.1.2.1.(4)

Building Component	Reference Building Design	Proposed Building Design
<i>Building Envelope</i>	Dimensions and orientation: same as proposed design. <i>Fenestration</i> to wall ratio: same as proposed up to 22%, (where 17% ratio \leq 22%, U-Value is required to be upgraded as per 3.1.1.1. (8)) where the proposed <i>fenestration</i> to wall ratio exceeds 22%, the <i>fenestration</i> area of the reference <i>building</i> shall be reduced proportionally along each exposure until the 22% is met. RSI Values or U-Values and ER values: as per applicable compliance package required in section 3.1.1.	As proposed (See Sentences 3.1.2.1.(5) to (8)).
Construction Type	Above Grade: Wood Frame spacing: 406 mm o.c. for wall studs, 406 mm o.c. for exposed floors joists, roof joists, and roof rafters, and 610 mm o.c. for roof trusses. Below grade: Concrete with interior insulation.	As proposed.
Air Leakage Rate	Detached dwelling: 3.0 ach, NLA 2.12cm ² /m ² , or NLR 1.32 l/s/m ² Attached dwellings: 3.5 ach, NLA 2.27 cm ² /m ² , or NLR 1.44 L/s/m ² (See Appendix A).	Same as reference, or tested air leakage rate, that is measured in accordance with Sentence 3.1.1.4.(2).
On-site Renewable Energy	None. ⁽¹⁾	As proposed.
Ventilation	HRV operating continuously at principle exhaust flow rate and with SRE as per applicable compliance package required in Section 3.1.1.	As proposed.
Drain Water Heat Recovery	Drain water heat recovery units as per Article 3.1.1.12.	As proposed.
Heating System and Service Water Heating	Fuel or energy type: Same as proposed ⁽²⁾ Equipment: Furnace and water tank. Efficiency: As per applicable compliance package required in Section 3.1.1. Where it is not specified, as per applicable provincial regulations.	As proposed.
Plumbing	Complies with Part 7 of the <i>Building Code</i> .	As proposed but must comply with Part 7 of the <i>Building Code</i> or exceed.

Cooling System, if proposed ⁽³⁾	Energy type: Electric. Equipment: Same as proposed. Efficiency: As per applicable provincial regulations.	As proposed.
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Building Component	Reference Building Design	Proposed Building Design
Operating Conditions / Default Values	Except as indicated in this Subsection and the <i>Building Code</i> , for the purpose of annual energy use simulations, the same operating conditions and default values shall be used for the reference <i>building</i> and the proposed <i>building</i> . ⁽⁴⁾	
All Components, Inputs for assemblies, workmanship, etc.	For both the reference <i>building</i> and the proposed <i>building</i> , input methodologies shall be the same and consistent with each other, e.g. use <ul style="list-style-type: none"> • Either user defined or build-up inputs for <i>building</i> envelope assemblies, • The same insulation installation quality; and • The same air tightness for the ductwork. 	
Internal gains, electrical loads, other components and characteristics that are not described in this Subsection and Subsection 3.1.1.	The same values or systems shall be used for both the reference <i>building</i> and the proposed <i>building</i> .	
Column 1	2	

Notes to Table 3.1.2.1.:

- (1) Except where principle heating fuel is wood or wood products.
- (2) For the purpose of annual energy use simulations, where an air or water source heat pump, or an earth energy system is proposed, the fuel or energy source of the reference *building* system is permitted to be the same as the supplementary (back up) energy source of the proposed heat pump system.
- (3) Where cooling is proposed, annual energy use simulations shall include cooling system.
- (4) Operating conditions consistent with Section 4.6 of NRCan's EnerGuide Rating System Version 15.2 may be used.

Annual Energy Use Software: For the purpose of calculating the annual energy use of a proposed design and a design based on a selected compliance package, the following software may be used:

- HOT2000 version 10.51 or later versions
- other software referenced by the EnerGuide Rating System
- Passive house software such as
 - WUFI Passive
 - Passive House Planning Package
- RESNET accredited Home Energy Rating System (HERS) software, such as:
 - ICF International Beacon Residential Version 2-80-3
 - Ekotrope, HERS Module v2.0
 - EnergyGauge® USA Version 5.0
 - REM/Rate v14.6.2

The performance path uses energy simulation software to benchmark the reference house against the proposed house. The anticipated energy saving from a DWHR unit (which are difficult to quantify) must be covered off in the design but there is no mandatory requirement for one provided the energy targets are met. The same goes for an HRV although with it being tied into air balancing and building depressurization I wouldn't suggest eliminating it.

Annual Energy Use Software: For the purpose of calculating the annual energy use of a proposed design and a design based on a selected compliance package, the following software may be used:

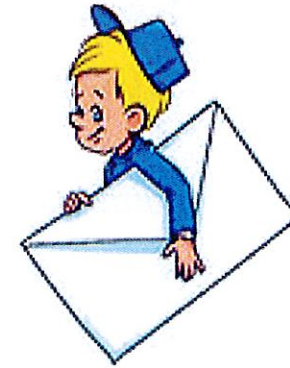
- HOT2000 version 10.51 or later versions
- other software referenced by the EnerGuide Rating System
- Passive house software such as
 - WUFI Passive
 - Passive House Planning Package
- RESNET accredited Home Energy Rating System (HERS) software, such as:
 - ICF International Beacon Residential Version 2-80-3
 - Ekotrope, HERS Module v2.0
 - EnergyGauge® USA Version 5.0
 - REM/Rate v14.6.2

3.1.3. Other Acceptable Compliance Methods

1. Other Acceptable Compliance Methods (See Appendix A.)

- (1) A *building* shall be deemed to be in compliance with the requirements of Subsection 3.1.1.
 - (a) Provided that the same performance level is achieved through the technical requirements of NRCan, “Energy Star for New Homes Standard Version 12.6. or,
 - (b) The *building* meets the NRCan, “2012 R2000 Standard.”

Don't shoot the messenger



**PROPOSED INTERIM AMENDMENTS
TO THE 2012 BUILDING CODE
JULY 2017**

PROPOSED INTERIM AMENDMENTS TO THE 2012 BUILDING CODE

Long-Term Affordable Housing Strategy

Ontario released an update to the Long-Term Affordable
Housing Strategy on March 14, 2016

- It focuses on linking two important and connected issues that result in precarious housing for vulnerable people: the available amount of housing stock, and access to affordable units
- Proposed interim amendments to the 2012 edition of the Building Code will:
 - increase affordable housing by making it less costly to build secondary suites
 - establish a specific occupancy classification and construction standards for retirement homes 3.2.2 classification

Two-Unit Houses

- Currently, the Building Code has residential construction requirements that recognize differences between single-unit houses versus buildings with two to four units or greater than four units

- Requirements for each of these residential housing types become progressively more stringent the greater the number of residential units in a building
 - Under current requirements, new homes built with a secondary suite are buildings that contain between two to four units, which have higher requirements than a single-unit house
 - Current Building Code requirements for newly built houses with secondary suites are also typically higher than the requirements that apply when an existing single-unit house is converted into a house with a secondary suite under Part 11 OBC

Examples – Exiting

- Heating
- Ventilation
- Fire separations

New building do not qualify for part 11 compliance alternatives

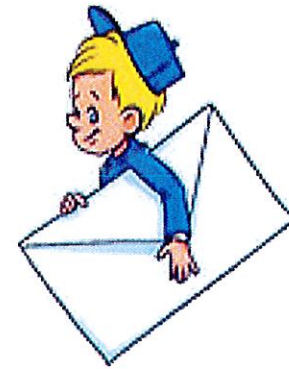
Potential Building Code Changes- Two-Unit Houses

- To increase the affordability of newly built houses with secondary suites, MMA is considering amendments to the requirements that would apply when constructing newly built houses with second units. These requirements would include:
 - Requiring a 30-minute fire separation between two units (vs. 45 – 1h)
 - Requiring interconnected and hard-wired smoke alarms within the units (e.g., common laundry rooms and shared exits)
 - Permitting installation of either combined or independent HVAC systems

Interim Building Code Amendments-Retirement Homes

- Proposed amendments would establish a **new occupancy classification** with specific construction standards for **retirement homes** (as defined in the Retirement Homes Act) as a **residential “C” occupancy**
- Proposed requirements include:
 - Establishing construction requirements (i.e., limits of combustible construction) and requiring sprinklering
 - Permitting 1 or 2 stage fire alarm systems, depending on size and height of the building
 - Allowing for reduced corridor width and suite door sizes
 - Permitting non-masonry/concrete firewalls
 - Requiring fire separated areas of refuge on floors containing a dwelling unit

Don't shoot the messenger



**PROPOSED INTERIM AMENDMENTS
TO THE 2012 BUILDING CODE
January 2018**

Electric Vehicle Charging Stations

9.34.1.6. Electric Vehicle Charging Stations

- (1) Where vehicle parking spaces are provided within a *building*, except for multi-unit apartment *buildings*, the *building* shall be designed so that not less than 20% of the parking spaces are equipped with electric vehicle supply equipment in accordance with the installation requirements in Section 86 of the Ontario Electrical Safety Code.
- (2) The remaining parking spaces described in sentence (1) shall be equipped with provisions to allow for the future installation of electric vehicle supply equipment in accordance with the installation requirements in Section 86 of the Ontario Electrical Safety Code.
- (3) **Every garage, carport or driveway serving a house** shall be equipped with a 240V/50amp. receptacle for the purpose of installing electric vehicle supply equipment necessary to support charging an electric vehicle, in accordance with the installation requirements in Section 86 of the Ontario Electrical Safety Code.

Water pipe sizing

- The proposed change would revise Sentence 7.6.3.4.(5) and add a new Sentence (6) to permit a building occupied by one dwelling unit to be served by a minimum $\frac{3}{4}$ inch water supply piping located in the basement or lower level by extending it to the base of every hot and cold water riser that serves a maximum of one bathroom group and to the last water supply branch serving any basement bathroom group, fixture or hose bib.

Leaching Chambers

8.7.2.3. Leaching Chambers

(1) *Leaching chambers* are permitted for use in conjunction with absorption trench, shallow buried trench, filter bed and Type A dispersal bed systems.

(2) *Leaching chambers* that are permitted for use in conjunction with sewage systems referenced in Sentence (1) are listed in Table 8.7.2.3.

(3) *Leaching chambers* shall be certified in accordance with the requirements of IAPMO PS 63 “Plastic Leaching Chambers”.

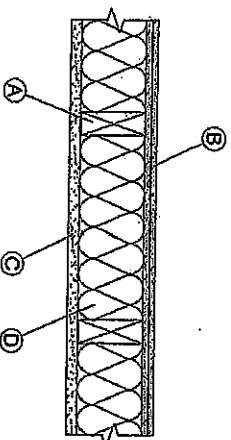
Leaching Chamber	Minimum Width (mm)	Minimum Height (mm)	Minimum Volume (L/m)
Type A	380	279	62.1
Type B	570	300	93.1

- A 2"x4" [38x89 mm] wood studs 24" [610 mm] o.c.
- ONE SIDE**
- B 5/8" [15.9 mm] SilentX® QuickCut™ applied with 1-1/4" [32 mm] type W screws 12" [300 mm] o.c.
- OPPOSITE SIDE**
- C 5/8" [15.9 mm] CertainTeed Type X applied with 1-1/4" [32 mm] type W screws 12" [300 mm] o.c.
- All joints staggered.
- D 3-1/2" [90 mm] CertainTeed Thermal & Acoustical Fiber Glass Insulation or equivalent.

Source: https://www.certainteed.com/resources/CTG_2856_SFXQC_Assembly_Guide.pdf

STC RATING
51
OL 15-0503

FIRE RATING
1 hr.
UL/CUL U309
ULC W313
GA WP 3246



NEW ONTARIO BUILDING CODE AMENDMENTS ALLOW FOR AFFORDABLE TWO-UNIT HOUSES, SMART SOLUTIONS

With continued housing market demand and high prices in some areas, new home owners in Ontario are looking for options for affordability. The rising cost of new home ownership is making it extremely difficult, if not impossible, for many to purchase a single-detached home, creating an increase in demand for rental units and properties with income potential.

As of July 1, 2017, Ontario Building Code (OBC)

amendments came into effect in Ontario to increase the affordability of two-unit houses. For those building or purchasing a new home with a second unit or considering adding a unit to a house, it's important to know the requirements for fire protection and sound control. Please note that there are other important requirements for two-unit houses, including interconnected early warning devices, exiting and HVAC.

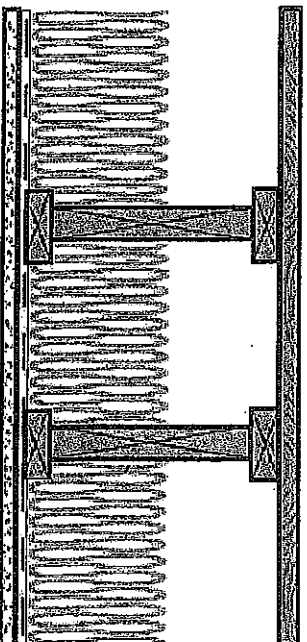
The OBC amendments permit houses with two units to be built of combustible construction, requiring a minimum 45-minute fire separation, between two units and a sound control rating of a minimum STC 50.

Along with the benefits for new home owners in terms of affordability, two-unit houses benefit the broader community in numerous ways. They support changing demographics by providing more housing options for extended families or elderly parents, or for a live-in caregiver. Two-unit houses also make more efficient use of the new and existing housing stock and can provide a growth to the construction industry by creating jobs.

When it comes to realizing all of these benefits, careful consideration of building materials and assemblies is a must — not only to meet the new codes, but to provide safety protection, well-being and peace of mind of the home owner and tenant.

Fire Protection and Sound Control

The OBC refers to fire separations for passive fire protection, which is typically fire-rated gypsum drywall on wood or steel studs. Insulation should be included for enhanced sound control. Several solutions are possible, including assemblies in the look-up tables in the Code, tested assemblies and the component additive method (CAM). Several fire- and sound-tested assemblies are available for the ceiling floor assembly of the lower unit of a two-unit house. The following table includes different wood joist depths that achieve a minimum 45-minute fire rating and an STC exceeding 50.



Joist Depth (mm)	Test ID	STC
241	T1F-96-073a	52
835	T1F-96-075a	53
457 (waterboard not OSB)	T1F-96-077a	53
457	T1F-96-101a	53

Source: <https://www.cmhc-schl.gc.ca/odpub/pdf/62585.pdf>

New Edition of the Building Code
Proposed in-effect date:
January 2019

New Edition of the Building Code
Proposed in-effect date:
January 2019

Soil Gas Control

PROPOSED CODE CHANGE

Revise Article 9.13.4.1. as follows:

9.13.4.1. ~~Soil Gas Control~~ Application

(1) This Subsection applies to

- (a) wall, roof and floor assemblies separating *conditioned space* from the ground, and
- (b) the rough-in to allow the future protection of *conditioned space* that is separated from the ground by a wall, roof or floor assembly. ~~Where methane or radon gases are known to be a problem, construction shall comply with the requirements for soil gas control in MMAH Supplementary Standard SB-9, "Requirements for Soil Gas Control".~~

**New Edition of the Building Code
Proposed in-effect date:
January 2019**

RATIONALE FOR CHANGE

Problem/General Background

The proposed clause provides building departments with Code language that can be used to enforce radon requirements. Furthermore, the addition of this clause will harmonize the Ontario Building Code with similar language currently used in of the model National Building Code of Canada 2015.

A 2012 study completed by Health Canada (Health Canada Publication H144-2/2012E, “Cross-Canada Survey of Radon Concentration in Homes – Final Report”) showed 13 of 36 Health Regions in Ontario had more than 10% of the homes test above the 200 Bq/m³ level. Overall, 8.2% of the homes tested across Ontario had radon levels exceeding 200 Bq/m³.

New Edition of the Building Code
Proposed in-effect date:
January 2019

9.13.4.2. ~~Required Soil Gas Control~~ **Protection from Soil Gas Ingress**

(1) Except as provided in Sentence (2), all wall, roof and floor assemblies in contact with the ground shall be protected by an air barrier system conforming to Subsection 9.25.3. ~~constructed to resist the leakage of soil gas from the ground into the building.~~

(2) Construction to resist leakage of soil gas into the *building* is not required for, garages and unenclosed portions of buildings.

~~(a) garages and unenclosed portions of buildings,~~

~~(b) buildings constructed in areas where it can be demonstrated that soil gas does not constitute a hazard, or~~

~~(c) buildings that contain a single dwelling unit and are constructed to provide for subfloor depressurization in accordance with MMAH Supplementary Standard SB-9, "Requirements for Soil Gas Control".~~

New Edition of the Building Code
Proposed in-effect date:
January 2019

9.13.4.2. ~~Required Soil Gas Control~~ **Protection from Soil Gas Ingress**

(3) Unless the space between the *air barrier system* and the ground is designed to be accessible for the future installation of a subfloor depressurization system, *dwelling units* and buildings containing *residential occupancies* shall be provided with the rough-in for a subfloor depressurization system conforming to Subsection 3.2, of MMAH Supplementary Standard SB-9, “Requirements for soil gas control”. ~~Where *soil* gas control is required, a *soil* gas barrier shall be installed at walls and roofs in contact with the ground according to MMAH Supplementary Standard SB-9, “Requirements for Soil Gas Control”.~~

(4) Where buildings are used for occupancies other than those described in Sentence (3), protection from radon ingress and the means to address high radon concentrations in the future shall conform to

(a) MMAH Supplementary Standard SB-9, “Requirements for Soil Gas Control”, or

(b) Part 5 and Part 6. ~~Where *soil* gas control is required, it shall consist of one of the following at floors in contact with the ground:~~

~~(c) a *soil* gas barrier installed according to MMAH Supplementary Standard SB-9, “Requirements for Soil Gas Control”, or~~

~~(d) where the *building* contains a single *dwelling unit* only, a subfloor depressurization system installed according to MMAH Supplementary Standard SB-9, “Requirements for Soil Gas Control”.~~

New Edition of the Building Code
Proposed in-effect date:
January 2019

7.8.1.1. Drain Water Heat Recovery Requirements CSA B55.2, “Drain Water Heat Recovery Units”.

(1) Except as permitted in Sentence (2), drain water heat recovery units shall be installed in dwelling units within the scope of Part 9. to receive drain water from all showers or at least two showers where there are two or more showers in a dwelling unit. (See Appendix A.)

(2) Sentence (1) does not to apply to dwelling units in which:

- (a) there are no showers; or
- (b) the shower is located on top of the floors-on-ground construction .
- (c) there are no storeys beneath any of the showers in the dwelling unit.

(6) A drain water heat recovery unit shall be installed

- (a) in an upright position that does not diverge more than 5 degrees from the vertical,
- (b) in a position such that the cold water inlet connection is at the bottom of the unit,
- (c) downstream of a water softener where a water softener is installed, and
- (d) in a conditioned space or on the warm side of the dewpoint of the wall assembly.

New Edition of the Building Code
Proposed in-effect date:
January 2019

Section 9.8. Stairs, Ramps, Handrails and Guards

Dimensions for Runs for Rectangular Treads

Rectangular Treads

Run, mm

max.

355 (13.97)

min.

255 (10.039)

The depth of a rectangular tread shall be not less than its *run* and not more than its *run* plus 25 mm.

New Edition of the Building Code
Proposed in-effect date:
January 2019

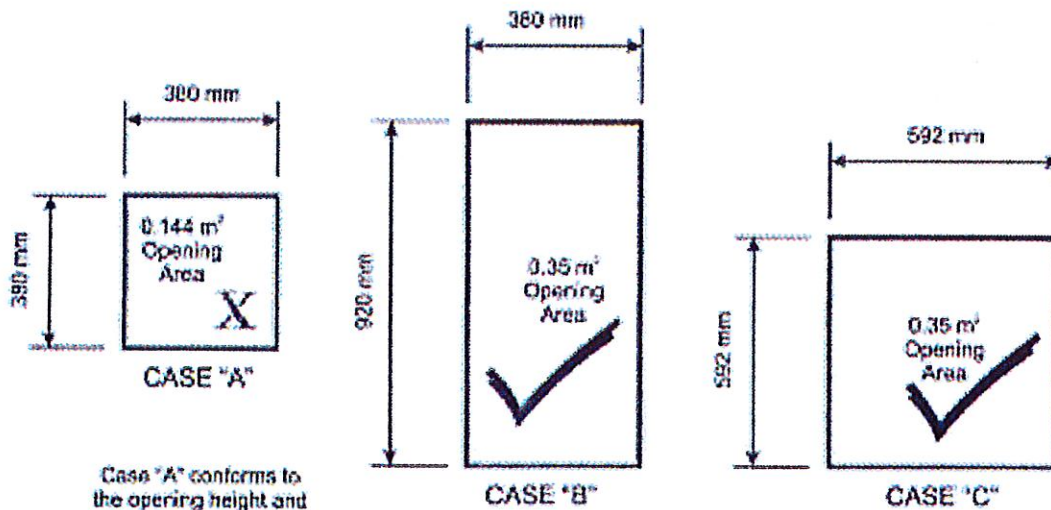
9.9.10. Egress from Bedrooms Floor Levels

9.9.10.1. Egress Windows or Doors for Bedrooms Floor Levels

- Revise Sentence 9.9.10.1.(1) as follows:
- **(1)** Except where a door on the same floor level ~~as the bedroom~~ provides direct access to the exterior, every floor level ~~containing a bedroom~~ including *basement areas* in a *suite* shall be provided with at least one outside window that,
 - (a) is openable from the inside without the use of tools,
 - (b) provides an individual, unobstructed open portion having a minimum area of 0.35 m² with no dimension less than 380 mm, and
 - (c) maintains the required opening described in Clause (b) without the need for additional support.

(See Appendix A.)

New Edition of the Building Code
Proposed in-effect date:
January 2019



Case "A" conforms to the opening height and width requirements but does not conform to the opening area requirements

Cases "B" and "C" conform to the opening height, width, and area requirements

New Edition of the Building Code
Proposed in-effect date:
January 2019

The proposed change would require professional design for foundation underpinning of an existing building.

PROPOSED CODE CHANGE

(1) A *foundation* shall be designed by a **Professional Engineer** where,

(a) the *foundations* of a *building* are to be *constructed* below the level of the footings of an adjacent *building* and within the angle of repose of the soil, as drawn from the bottom of the footings, or

(b) underpinning is intended.

New Edition of the Building Code
Proposed in-effect date:
January 2019

1.3.5. Notices and Inspections

1.3.5.1. Prescribed Notices

(1) This Article sets out the notices that are required under section 10.2 of the Act.

(2) The person to whom a permit under section 8 of the Act is issued shall notify the *chief building official* or, where a *registered code agency* is appointed under the Act in respect of the *construction* to which the notice relates, the *registered code agency* of,

(b) readiness to place concrete for Part 9 buildings foundation walls required to be reinforced with rebar

New Edition of the Building Code
Proposed in-effect date:
January 2019

The proposed change would require that a person who designs a new house be a registered BCIN designer under the Building Code (or architect or professional engineer) and would require that a person who designs the conversion of a house from one unit to two units be a registered BCIN designer under the Building Code (or an architect or professional engineer).

New Edition of the Building Code
Proposed in-effect date:
January 2019

(3) A person is exempt from the requirement to comply with the qualifications in Sentence (1), if his or her *design activities* relate only to,

(a) *design activities* in respect of which a person described in Clause 3.2.4.7.(1)(c) or who has the qualifications required under Sentence (1) will review and take responsibility,

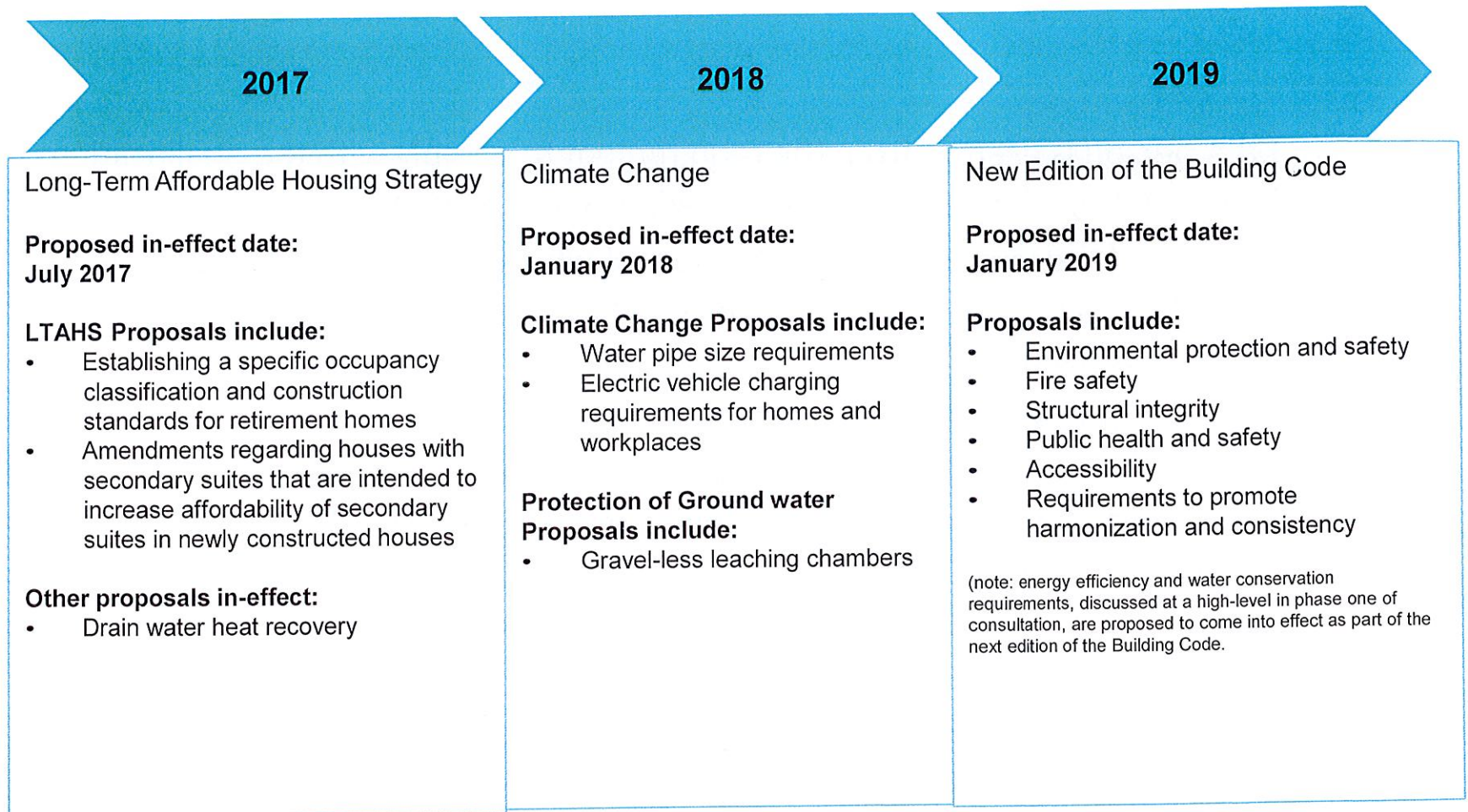
~~(b) construction of,~~

~~(i) a detached house, semi-detached house, townhouse or row house owned by the person and containing not more than two *dwelling units* in each house, or~~

~~(ii) an ancillary *building* that serves a *building* described in Sub clause (i),~~

(b) construction of a house owned by the person where the construction is limited to the extension, alteration or repair of a house that does not involve the creation of a second dwelling unit.

Proposed In-Effect Dates – Phase One



Don't shoot the messenger



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Questions