Secondary Suites and the National Model Codes

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Outline

- Definition
- Construction criteria
- Provincial and territorial variances

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2

This presentation will examine the following :

- What is a secondary suite?
- How does the NBC define secondary suites?
- What are the principles that govern the construction of secondary suites in the NBC?

3

Background

Secondary suites also referred to as accessory apartments/suites or granny suites, are smaller dwelling units often retrofitted into existing single-family house. There are more than 20 names in each official language in Canada. Just to name a few in English: granny, in-law, garden or secondary suite, accessory apartment, unit, suite or dwelling, etc.

Before 2010, this type of housing was not addressed in the NBC. Part 9 regulated secondary suites using same criteria as for duplexes, semi-detached dwelling units or multi-unit buildings. Compared to a single-family dwelling, building code provisions that were applicable to theses suites often imposed additional requirements.

A number of provincial codes and municipal jurisdictions have requirements that apply specifically to the secondary suites but there is little consistency among them.

Achieving goals

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4

The goal was to develop a set of requirements to accommodate this type of housing to provide uniformity that would reduce non-conforming construction of secondary suites at a reasonable cost AND without compromising the health and safety of the occupants.

How could this be achieved?

5

The 6 principles

1. Part 9
2. Size limitation
3. Relaxation of fire separation
4. Smoke-tight barriers
5. Fire detection
6. Sound, heat and ventilation

By establishing principles that would guide the development of the technical requirements.

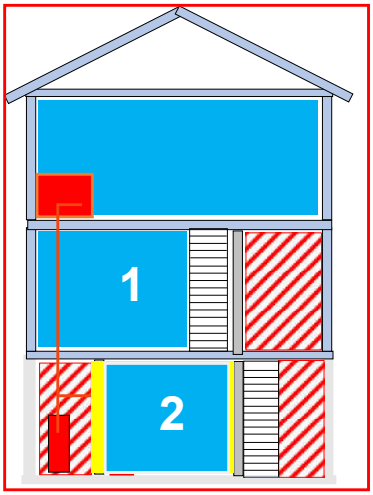
- Add a concept of *secondary suite* throughout part 9. (Requirements will be incorporated into the same Sentences/Articles as for single-dwelling units or multi-unit buildings.
- Limit the size of secondary suites.
- Relax fire separation requirements.
- Achieve fire separation by means of smoke-tight barriers.
- Address fire detection.
- Address sound, heat and ventilation requirements.

Finally, to wrap up any issues on the concept of secondary suites, introduce a new definition clarifying the meaning of the term and facilitating the application and proper interpretation and enforcement of the requirements.

6

Definition

- A *secondary suite* is a dwelling unit located in a building or portion of a building of residential occupancy
  - single real estate entity
  - ≤ 2 dwelling units
  - common spaces
  - prescribed floor area

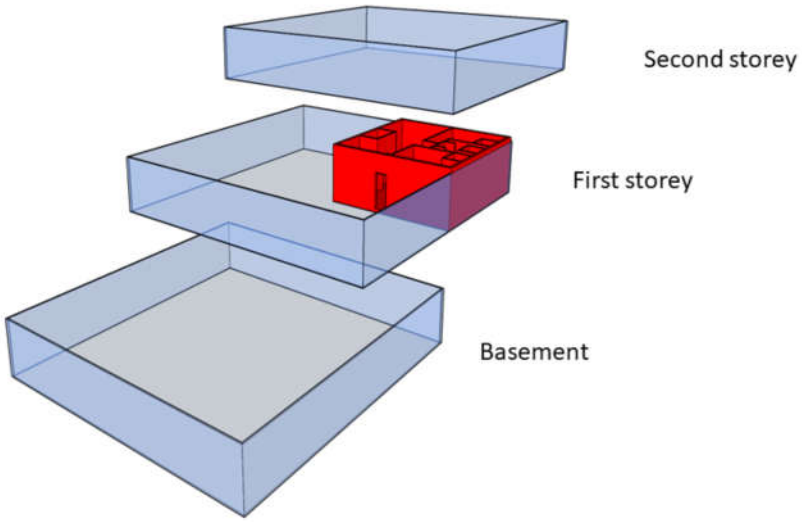


Secondary suite is a self-contained dwelling unit with a prescribed floor area located in a building or portion of a building of only residential occupancy that contains only one other dwelling unit and common spaces, and where both dwelling units constitute a single real estate entity.

In other words, a *secondary suite* means:

- an independent dwelling unit with a limited floor area (unit no. 2 on the slide)
- within an existing dwelling unit, commonly called a *house* both the main and secondary suite are under a single real estate entity, meaning they constitute one property (this is the red box around the building)

Additional clarification on the definition



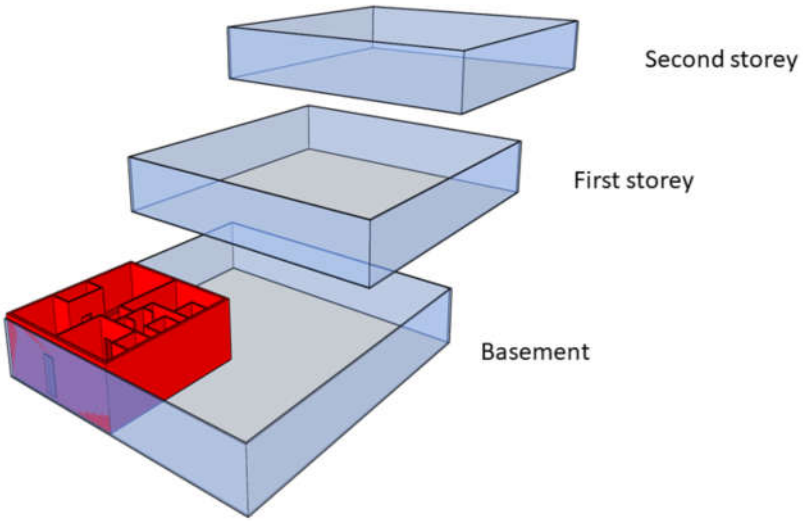
An Explanatory Note further expands on the definition clarifying that secondary suite:

- may have more than one storey, be on the same level as the principal suite in the house

Click

8

Location below

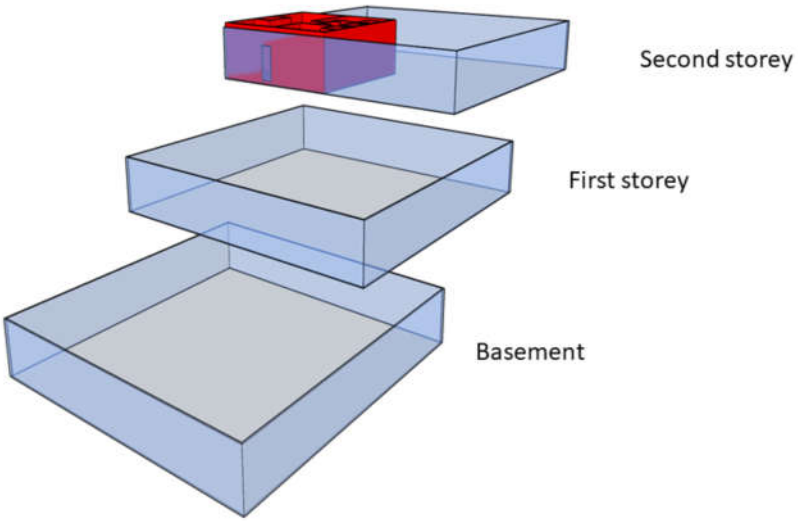


- or below

Click

9

Location above

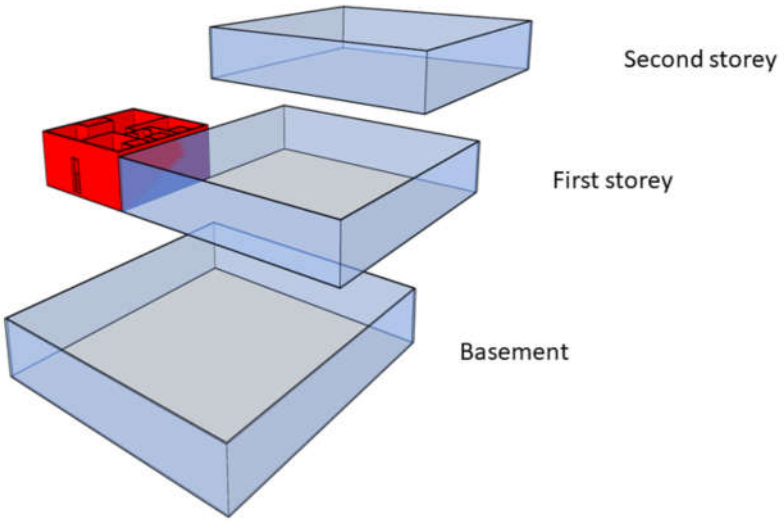


- or above the principal suite in the house

Click

10

Location beside

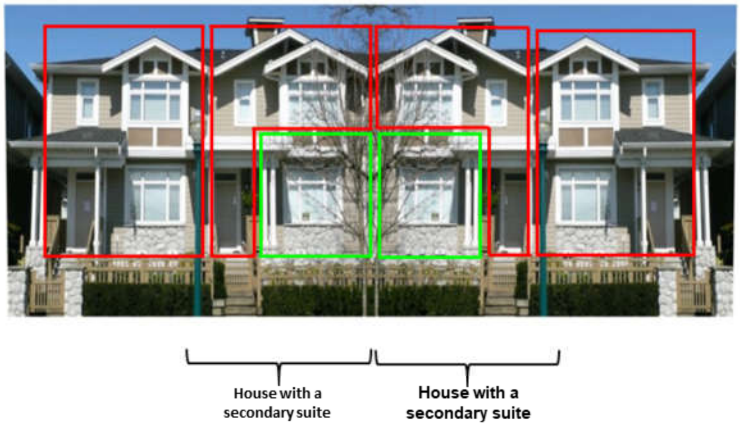


Could also be attached to the main house, right!

Click

11

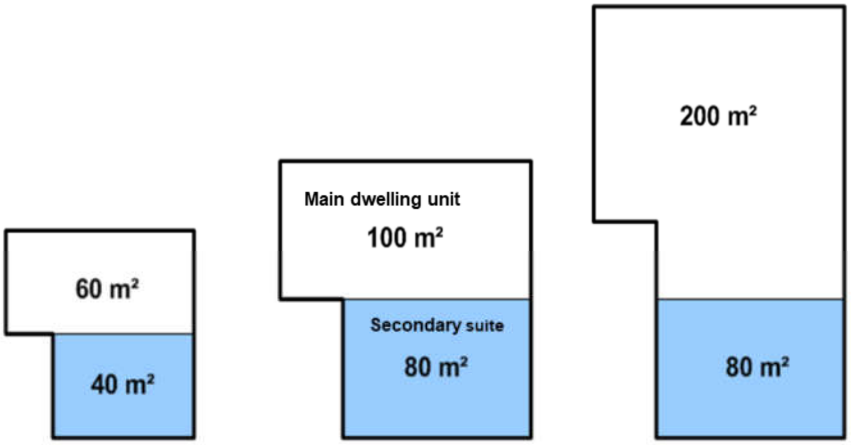
What about attached houses?



Secondary suite may be added or constructed in individual detached houses, semi-detached houses or freehold row houses.

12

Why limited floor area



Criteria 1:	$\frac{40}{60} \leq 80\%$	$\frac{80}{100} \leq 80\%$	$\frac{80}{200} \leq 80\%$
Criteria 2:	$40\ m^2 \leq 80\ m^2$	$80\ m^2 \leq 80\ m^2$	$80\ m^2 \leq 80\ m^2$

A maximum floor area was set to:

- define this type of housing based on the assumption that the inclusion of a secondary suite in a house will not increase occupant load or fire load beyond the loads generally found in single-dwelling units with a finished basement
- be consistent with current practice already in use in various provinces and municipalities
- accommodate the construction of secondary suites at reasonable cost

13

The 3 categories

The series of changes regulating secondary suites in the NBC determined:

- which requirements for single houses are also adequate for a house with a secondary suite
- when relaxation is acceptable
- when increased requirement is justified
- when trade offs to the existing requirements are justified

This exercise led to classify the requirements into 3 categories:

1. Requirements applying to a single house apply to a house with a secondary suite (including their common spaces). This means that a house with a secondary suite is treated the same as any single house (dwelling unit).
2. Requirements that apply to an apartment building apply to a house with a secondary suite (including their common spaces). This means that a house with a secondary suite (including their common spaces) is treated the same as any other multi-unit apartment buildings.
3. Requirements that apply to a house with a secondary suite or to the secondary suite itself (including their common spaces) **are lower or higher** in performance than what should normally be applied **OR** the requirements are achieved using **other means** (trade offs).

You will see in the next slides examples from each of these categories. I said examples, because the purpose here is not to list all the changes but rather to explain the nature of the requirements.

14

As a single dwelling unit

1. Requirements for single-dwelling units apply to houses with secondary suite

This principle applies where there is no increase in fire and occupant load in a house with a secondary suite in comparison with a single house.

It is assumed that the level of hazard in a house containing secondary suites is the same as the level of hazard found in a single-dwelling unit to justify application of more stringent requirements.

It was determined that for the majority of construction elements, requirements that apply to houses with secondary suite fall under this category.

Examples of construction elements include but not limited to

- stairs, ramps, guards, handrails
- spatial separation and construction of exposing building face
- structure and building envelope
- main entrance
- door size, doorway opening height and width
- minimum dimensions in exits and access to exits

- exemption from exit sign requirements, etc.

15

As a multi-unit building

2. Requirements that apply to a multi-unit building apply to a house with a secondary suite.

The second category is where it was determined that for certain construction elements in a house with secondary suite, the requirements remain the same as in a multi-unit building. This principle applies where the level of hazard for dwelling units in a house containing a secondary suite is comparable to the level of hazard in a traditional building with two or more dwelling units to justify the application of same requirements .

For example, to limit the spread of fire from one dwelling unit to another dwelling unit (protection of fire compartments) and to meet the minimum health and safety objectives, we need to

- provide separate plumbing facilities and separate HVAC systems
- protect soffits and protect openings in means of egress

<u>HVAC systems to serve only one suite:</u>

Due to the hazard of the smoke spread presented by ducted systems, air duct distribution system serving one of the dwelling units in a house with secondary suite shall not be interconnected with other parts of the house (the other suite and the common spaces).

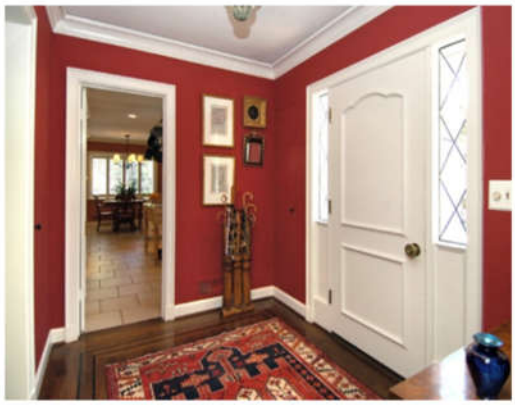
<u>Protection of soffit :</u>

In a multi-unit apartment building, fire might spread from one unit to an adjacent one through soffits. The risk is addressed by a minimum distance to vents, firestops in the attic or by installing fire resistant soffits.

Note: A multi-unit building could be an apartment building, a duplex or a stacked townhouse.

16

Somewhere in between



3. Treat house with secondary suite somewhere in between single-dwelling unit and multi-unit building

The third category is where it was determined that for certain construction elements in a house with secondary suite, the requirements are somewhere between a single-dwelling unit and a multi-unit building.

This principle applies where

- the requirements could be lower or higher in performance than what should normally be applied to single-dwelling units or an apartment building
- trade-off using other means that have equivalent performance level is permitted

The two dwelling units forming part of a house with a secondary suite are allowed to share a common exit. This is a relaxation in comparison to what the NBC 2005 requirements would have required in a similar situation.

This relaxation is allowed provided

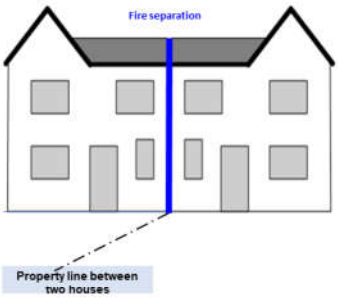
- a smoke-tight barrier is installed between the exit and each dwelling unit
- each dwelling unit has it own egress door
- the entrance doors are of solid-core wood doors, 45 mm thick

Installation of common non-ducted heating systems is permitted. Non-ducted heating systems, such as electric radiant and hydronic heating system for houses containing a secondary suite, is not sufficiently different from single-dwelling units to justify requiring that two separate heating systems be installed. However, individual temperature controls should be installed in each suites and common area.

Note : Without this relaxation, heating system should normally be designed and installed to Part 6 (multi-unit apartment buildings).

17

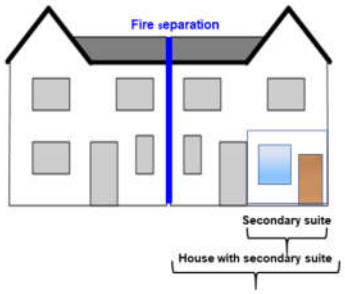
Party wall



In the NBC, there is an exemption (a relaxation) for a party wall on a property line to be constructed as a fire wall provided it is constructed as a fire separation (1 h FRR) where the party wall separates two dwelling units with no dwelling unit above another.

18

New exceptions for party wall

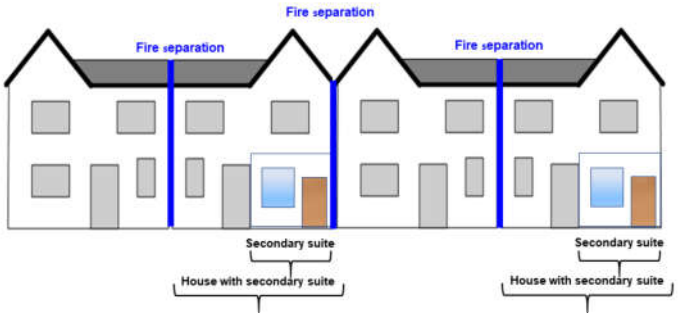


In the 2010 Code, two additional exceptions (exemptions) were added to accommodate the construction of houses with secondary suites.

The new provisions exempt a party wall to be constructed as a fire wall where the party wall separates:

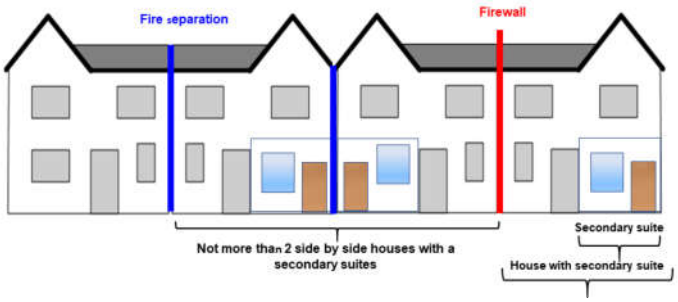
- a dwelling unit and one house with a secondary suite and their common spaces

Party wall as fire separation



20

Party wall as firewall

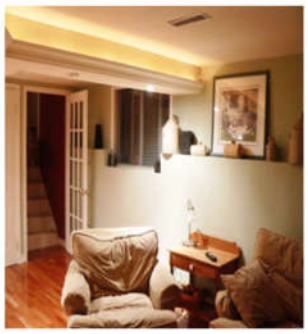


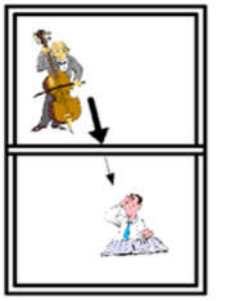
This is based on the assumption that in row houses, the level of fire risk with respect to more than two houses with secondary suites located side-by-side could be higher (higher occupant load) than just two normal houses.

This limitation restricts secondary suites into row houses. In fact, in buildings with more than 2 houses with secondary suites, a party wall shall be constructed as a firewall to create separate buildings, each having not more than two adjacent houses with a secondary suites

21

Additional relaxations



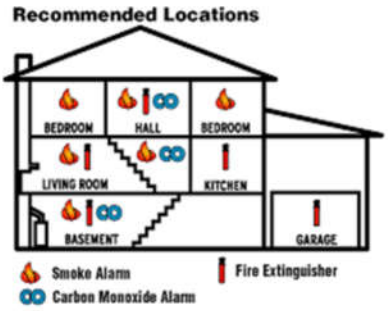


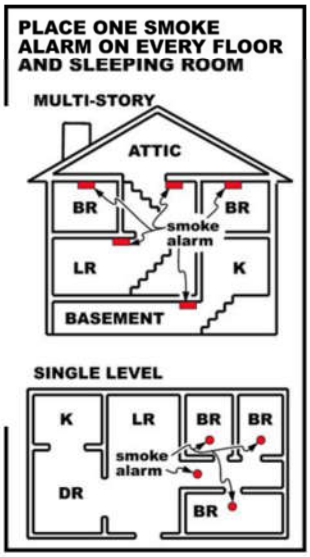
The existing requirements for clear heights in spaces and control of sound transmission could be difficult to comply with, when constructing a secondary suite in an existing building.

Also because of the smoke spread hazard presented by ventilation systems and the cost of installing separate ventilation systems, an exception is proposed to the requirement for ventilation of exits, public corridors and ancillary spaces serving houses with secondary suites.

22

Smoke alarms



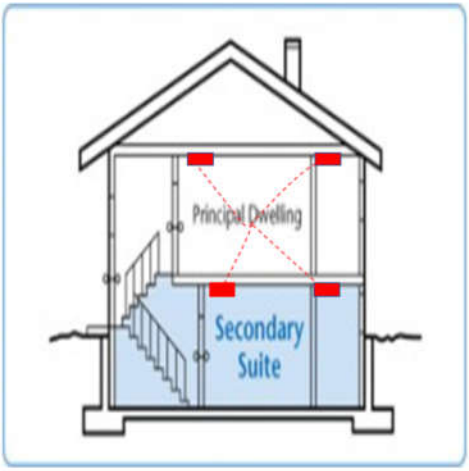


Knowing that smoke distribution is more immediate hazard than fire spread, the installation of hard wired smoke alarms and CO detectors in both units and the common areas give an early warning to the occupants to escape in case of fire.

In addition to the existing requirement to install smoke alarms in all dwelling units, on each floor level, in each storey including basement and between sleeping rooms and remainder of storey, smoke alarms are also required to be installed in each sleeping rooms and in ancillary spaces and common spaces of a house with a secondary suite.

23

Interconnection of smoke alarms



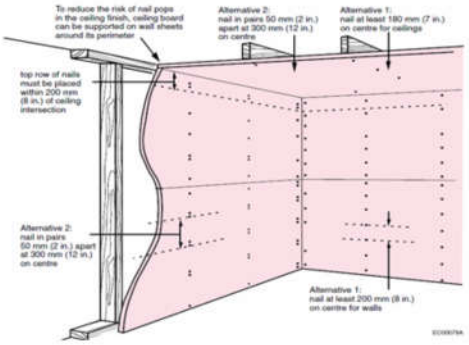
Smoke alarm in a house with a secondary suite shall be wired so that the activation of any one smoke alarm causes all smoke alarms in the house with secondary suite to sound.

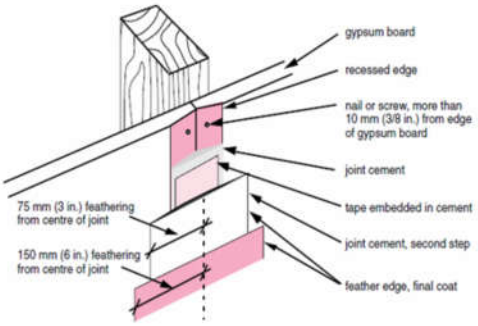
Where CO alarms are installed in a house with a secondary suite including their common spaces, the CO alarms shall be wired so that the activation of any one CO alarm causes all CO alarms within the house with a secondary suite including their common spaces to sound.

Finally, in order to limit the probability that persons in any part of the house with secondary suite will not promptly notified of smoke and carbon monoxide presence in the air, interconnected of smoke and CO alarms between dwelling units will provide a simple back-up safety.

24

Trade-offs





As we mentioned previously, NBC regulates secondary suites using same criteria as for duplexes and semi-detached dwelling units. The level of fire safety hazard with respect to houses containing a secondary suite is not sufficiently similar to the level of hazard with respect to traditional buildings with two dwelling units to justify in certain cases the same level of protection.

It was determined that wall and floor/ceiling framing assemblies contained within dwelling units and house with secondary suites need not be constructed as fire separation. Requiring a FRR for wall and floor/ceiling framing between dwelling units in a house containing a secondary suite is unnecessary stringent.

As a trade off to the 45 min FFR that would otherwise be applicable to structural members, the change requires that a continuous smoke-tight barrier be provided to the floor/ceiling framing between dwelling units or between dwelling units and other spaces, (suite to suite, suite to corridor rated separations, floor separations, separated mechanical room).

Note that smoke-tight barrier provides some resistance to fire (15min).

While providing less than 30 min FRR, this change maintains fire protection between the two suites, limit the spread of fire from one dwelling unit to another and limits the probability that a floor between dwelling units will collapse before the occupant can escape.

Some variances from provinces and territories

- British Columbia (New Section!)
- Alberta (9)
- Quebec (32)

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Alberta

- Interconnection of smoke alarms limited to wired connection
- Expanded the application
  - Required handrails
  - Openings and glazed openings in exposing building face
  - Construction of exposing building face

→ No floor area limits

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Quebec

- Limited the application
  - Doorway opening sizes
  - Continuity of handrails
  - Loads on stairs and ramps
  - Principal entrances
  - → Smoke-tight barriers
  - → Party wall and fire separation vs. firewall
- → No floor area limits

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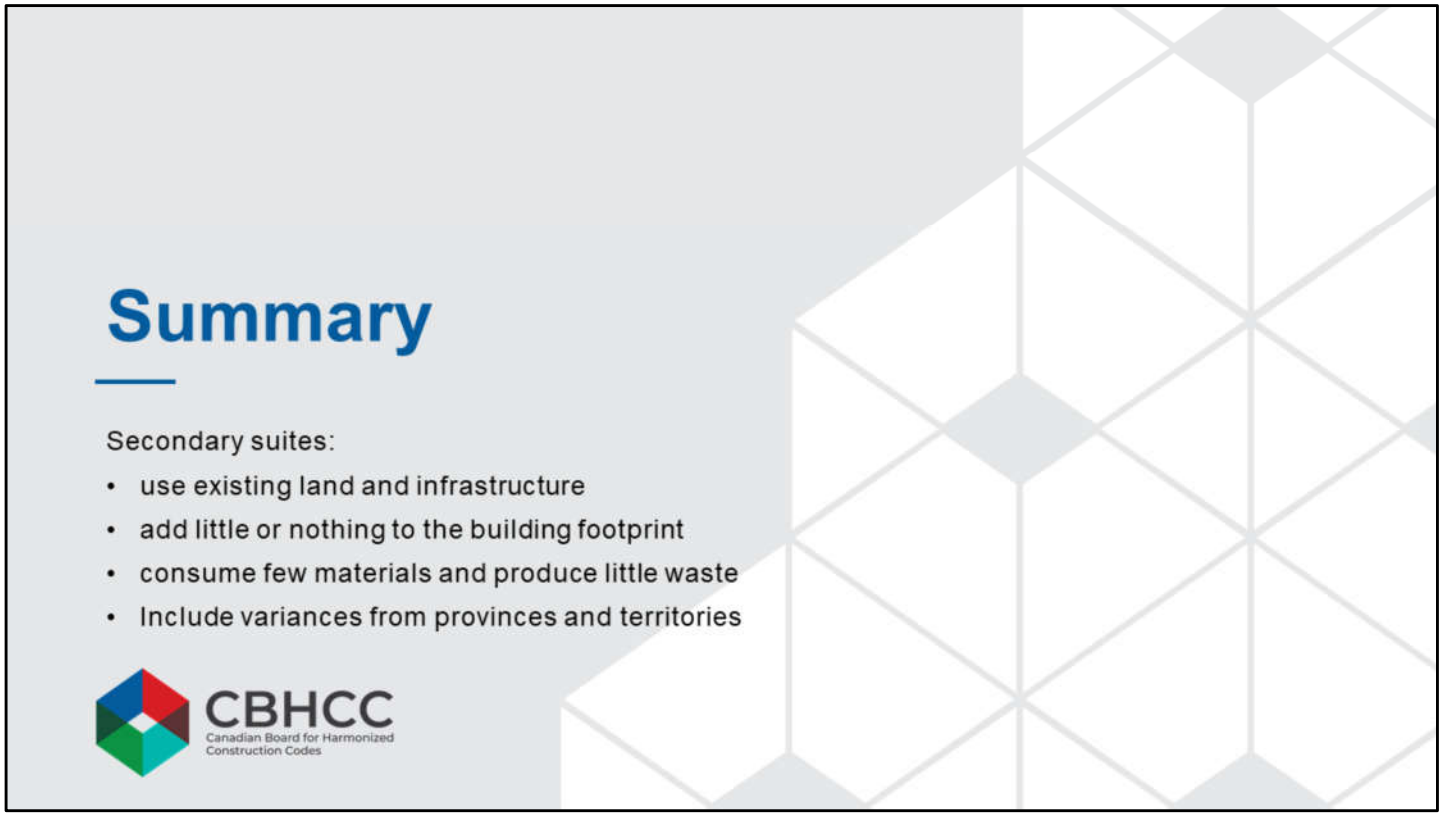

Approximately 90% of the construction requirements for house with a secondary suite are the same requirements for the construction of a single-dwelling unit.

Thank you very much for attending this presentation.

Free code documents, including the 2020 edition of the National Model Codes, the final report of the Joint Task Group, and links to attend public meetings for TGs working on AEB are available on the NRC website.