

PROPOSED CHANGE: Secondary Suites

CHANGE NUMBER: BCBC2018-R201-SS

CODE REFERENCE: British Columbia Building Code 2018 - Part 9 of Division A and Part 9 of Division B

DESCRIPTION OF THE PROPOSED AMENDMENT:

Harmonize with national building code requirements related to secondary suites, increase options for the design and construction of new secondary suites, and increase the building types where secondary suites may be constructed.

PROBLEM/BACKGROUND/RATIONALE FOR CHANGE:

The Province of British Columbia (BC) is working to remove barriers to secondary housing forms including secondary suites. Mid-cycle revisions to the British Columbia Building Code 2018 (BCBC) are proposed to increase options for the design and construction of new secondary suites in buildings.

The BCBC introduced requirements for secondary suites in November 1995, prior to the NBC's development of secondary suite requirements. Since 1995, the BCBC's secondary suite requirements have not been substantially updated. There are some differences between the BCBC and the NBC requirements, including the level of performance for specific systems and functions. In addition, some existing requirements that present a barrier to the construction of new secondary suites are proposed to be removed and replaced with alternate compensatory measures.

The proposed changes aim to increase harmonization between the BCBC and the NBC while maintaining an appropriate level of health and safety and offering more acceptable solutions to increase the construction of new secondary suites in more building types.

JUSTIFICATION/EXPLANATION:

Part 9 of the NBC contains comparable requirements to Section 9.37. of the BCBC to accommodate the construction of secondary suites at a reasonable cost without compromising the health and safety of the occupants. The proposed changes were developed based on the five principles that guided NBC development:

1. **Reduction in Performance Acceptable** where existing requirements are onerous to implement in existing buildings and are not attributed to fire safety;
2. **Requirements for Single Dwelling Units Apply to Houses with a Secondary Suite** where risk is not increased due to the possibility of a higher occupant load in a house with a secondary suite;
3. **Trade-Offs Allowed** where existing requirements are costly to implement, and equivalent performance levels can be reached by other means;
4. **No Change Required** where existing requirements would not normally apply to houses or are necessary to achieve minimum acceptable performance levels for life safety; and
5. **Increase in Performance Required** where existing requirements are attributed to safety and are not considered to provide a minimum acceptable level of performance for the additional risk resulting from the possibility of a higher occupant load or increased hazard presented by adding a secondary suite.

2018 PROPOSED BRITISH COLUMBIA BUILDING CODE LANGUAGE:

Preamble:

References to the BCBC are to the 2018 edition including Revision 1. References to the NBC are to the 2015 edition. Only the content required for context of the proposed changes is reproduced in this document.

This proposed change arranges provisions differently than previous editions of the BCBC, based on whether they are justifiable for buildings of new construction and additions to existing buildings, or if they are justified only for alterations to existing buildings. Additional consideration is extended to existing buildings where bringing the existing building into compliance with current requirements could be extremely cost-prohibitive and therefore could be greater hardship to the market in prohibiting the secondary suite than there would be in permitting a separate level of performance. The proposed changes harmonize with the organization and approach of the NBC which includes provisions for secondary suites throughout Part 9; BC's unique Section 9.37. is not proposed to be continued.

Alternate compliance methods for alterations to existing buildings are contained in a separate table and are not available to buildings of new construction or additions to existing buildings where there is no hardship in complying with the current requirements for design and construction.

The proposed changes to the BCBC are not intended as evaluation metrics or retroactive construction requirements for existing and occupied secondary suites. The BCBC regulates the activity of design and construction which includes alterations and additions to existing buildings and is not intended to be applied retroactively to existing buildings.

Legend

- The content shown in black is as it appears in the BCBC 2018 including Revision 1.
- Mark-ups consist of underlined content which is proposed new content and content with a ~~striketrough~~ which it proposed to be deleted. Content that appears underlined in the BCBC 2018 including Revision 1 is not underlined in this reproduction for clarity.
- Mark-ups in **blue** represent NBC 2015 content. ***Unless otherwise stated, only the NBC content proposed for adoption is shown.***
- Mark-ups in **green** represent new proposed changes to merge BC's provisions with the NBC provisions or to introduce new provisions. ('Provisions' include requirements as well as permissions.)
- Commentary is included in **boxes** and does not form part of the proposed changes to the language of the Code. Commentary is for convenience only.

Division A Compliance, Objectives and Functional Statements

Part 1 Compliance

Section 1.1. General

1.1.1. Application of this Code

1.1.1.1. Application of this Code

6) For the design and construction of *alterations* to existing buildings to add a *secondary suite*, not including the design and construction of new additions or new buildings, the Alternate Compliance Methods for Alterations to Existing Buildings to Add a Secondary Suite in Table 1.1.1.1.(6) may be substituted for requirements contained elsewhere in this Code. (See Note A-1.1.1.1.(6).)

Table 1.1.1.1.(6) is a consolidation of acceptable solutions given in the National Building Code as well as the current BC Building Code intended for application to existing buildings where there could be practical and/or financial hardship as an effect of applying new construction requirements to existing buildings, such as existing ceiling height constraints. These solutions are permitted to offer more design solutions for projects in order to reduce the likelihood of deconstruction and such hardships that could result in projects to construct secondary suites being abandoned or be done out of compliance.

These alternative methods are not to be applied to buildings of new construction; it is only to be applied where there are existing assemblies that act as practical barriers to compliance with the BC Building Code.

Table 1.1.1.1.(6) <u>Alternate Compliance Methods for Alterations to Existing Buildings to Add a Secondary Suite</u> <u>Forming Part of Sentence 1.1.1.1.(6)</u>	
<u>Code Requirement in Division B</u>	<u>Alternate Compliance Method (References to Division B)</u>
<u>Ceiling Heights of Rooms or Spaces</u> <u>Sentence 9.5.3.1. and Table 9.5.3.1.</u> <u>Ceiling height shall be not less than 2.1 m over the minimum area required in Table 9.5.3.1.</u>	<u>Except as required by Sentence 9.9.3.4.(3), the minimum ceiling heights in a <i>secondary suite</i> over the required minimum area as indicated in Table 9.5.3.1. shall be not less than 1.95 m. It shall be possible to travel from the required area of one room to the required areas of all other rooms within the <i>secondary suite</i> without reduction of the ceiling height to less than 1.95 m.</u> <u>Except as required by Sentence 9.9.3.4.(3), the minimum clear height under beams and ducting, including where located over stairs, in a <i>secondary suite</i> shall be not less than 1.85 m.</u>
<u>Doorway Opening Sizes</u> <u>Sentence 9.5.5.1.(1) and Table 9.5.5.1.</u> <u>Doorway openings shall be designed to accommodate swing-type and folding doors not less than 1 980 mm high.</u>	<u>Except for <i>exit</i> doors and for doors serving <i>public corridors</i> and <i>exit</i> corridors that serve a house with a <i>secondary suite</i>, doorway openings within a <i>secondary suite</i> shall be designed to accommodate swing-type and folding doors not less than 1 890 mm high.</u>
<u>Height over Stairs</u> <u>Sentence 9.8.2.2.(3)</u> <u>The clear height over stairs shall be not less than 1 950 mm.</u>	<u>Except for stairs in a <i>public corridor</i> or <i>exit</i> corridor that serve a house with a <i>secondary suite</i>, the clear height over stairs that are located under existing beams and existing ducting in a house with a <i>secondary suite</i> shall be not less than 1 850 mm.</u>
<u>Openings Near Unenclosed Exterior Exit Stairs and Ramps</u> <u>Sentence 9.9.4.4.(1)</u> <u><i>Unprotected openings</i> in exterior walls that are within 3 m horizontally and less than 10 m below or less than 5 m above an unenclosed exterior <i>exit</i> stair or ramp of house with a <i>secondary suite</i> shall be protected where the unenclosed exterior <i>exit</i> stair or ramp provides the only means of egress from a suite and is exposed to fire from <i>unprotected openings</i> in the exterior walls of another dwelling unit, ancillary space or common space.</u>	<u>Protection of the <i>unprotected openings</i> as described in Sentence 9.9.4.4.(1) is not required when all <i>smoke alarms</i> within a house with a <i>secondary suite</i> are of photo-electric type and interconnected as described in Clause 9.10.19.5.(2)(a).</u>
<u>Openings Near Exit Doors</u> <u>Sentence 9.9.4.6.(1)</u> <u>Where an exterior <i>exit</i> door in one <i>fire compartment</i> is within 3 m horizontally of an <i>unprotected opening</i> in</u>	<u>Protection of the <i>unprotected openings</i> as described in Sentence 9.9.4.6.(1) is not required when all <i>smoke alarms</i> within a house with a <i>secondary suite</i> are of</u>

another <i>fire compartment</i> and the exterior walls of these <i>fire compartments</i> intersect at an exterior angle of less than 135°, the opening shall be protected.	<u>photo-electric type and interconnected as described in Clause 9.10.19.5.(2)(a) of Division B.</u>
Fire-Resistance and Fire-Protection Ratings Sentence 9.10.3.1.(3) <u>In a house with a <i>secondary suite</i>, where a minimum <i>fire-resistance rating</i> of 30 min is permitted, it is permitted to use wood-frame construction where stud and joist spaces are filled with absorptive material, resilient metal channel spaced 400 or 600 mm o.c. is on one side and not less than 12.7 mm thick gypsum board is installed on ceilings and on both sides of walls.</u>	<u>Adding resilient metal channel spaced 400 or 600 mm o.c. and an additional layer of not less than 12.7 mm gypsum board to one side of an existing finished wall assembly that has not less than 12.7 mm gypsum board on each side or an existing finished floor-ceiling assembly that has not less than 12.7 mm gypsum on the ceiling side is permitted to be used where a 30 min <i>fire-resistance rating</i> is required.</u>
Fire-Resistance Ratings for Walls, Columns and Arches Sentence 9.10.8.3.(1) <u><i>Loadbearing</i> walls, columns and arches in the <i>storey</i> immediately below a floor or roof assembly shall have a <i>fire-resistance rating</i> of not less than that required for the supported floor or roof assembly.</u>	<u>Except for heavy timber elements and those of masonry or concrete construction, light frame walls, columns, arches and beams as well as <i>loadbearing</i> steel elements that support floors between <i>dwelling units</i> in a house with a <i>secondary suite</i> including their common spaces shall be protected by not less than 12.7 mm thick gypsum board.</u>
Sound Transmission Sentence 9.11.1.1.(2) <u>Each <i>dwelling unit</i> shall be separated from every other space in a house with a <i>secondary suite</i> in which noise may be transmitted by construction having joist and stud spaces filled with sound-absorbing material, resilient channel on one side of the separation, and 12.7 mm thick gypsum board on ceilings and on both sides of walls, or by either construction providing an STC rating of not less than 43, or by using a separating assembly and adjoining construction providing an ASTC rating of not less than 40.</u>	<u>The assemblies and adjoining constructions that separate the <i>dwelling units</i> in a house with a <i>secondary suite</i> including their common spaces need not comply with Clause 9.11.1.1.(2)(a) where resilient metal channel spaced 400 or 600 mm o.c. and an additional layer of not less than 12.7 mm gypsum board is added to one side of an existing finished assembly.</u>

A-1.1.1.1.(6) Alternate Compliance Methods for Alterations to Existing Buildings to Add a Secondary Suite.

The requirements in Division B for the construction of secondary suites was written primarily for new construction and provides for a performance level that is higher than what may exist in existing buildings. To apply present Code provisions to existing buildings, as for heritage buildings is in many cases impractical. The Table of Alternate Compliance Methods for Alterations to Existing Buildings to Add a Secondary Suite was developed to provide alternate methods, when dealing with existing construction, without compromising the objectives of the Code. Table 1.1.1.1.(6) may be considered when assessing an existing additional dwelling unit located in a single family dwelling building (house), however is not intended to be applied as a retroactive code to these existing units, nor be applied to buildings of new construction where there are no existing assemblies to act as practical barriers to compliance with Division B of this Code. Figure A-1.1.1.1.(6) illustrates the application of Table 1.1.1.1.(6) to existing buildings.

Table 1.1.1.1.(6) is not mandatory and an owner may choose

- to apply acceptable solutions in Division B,
- to apply alternative solutions under Clause 1.2.1.1.(1)(b),
- to apply alternate compliance methods in Table 1.1.1.1.(6), or
- to combine these options.

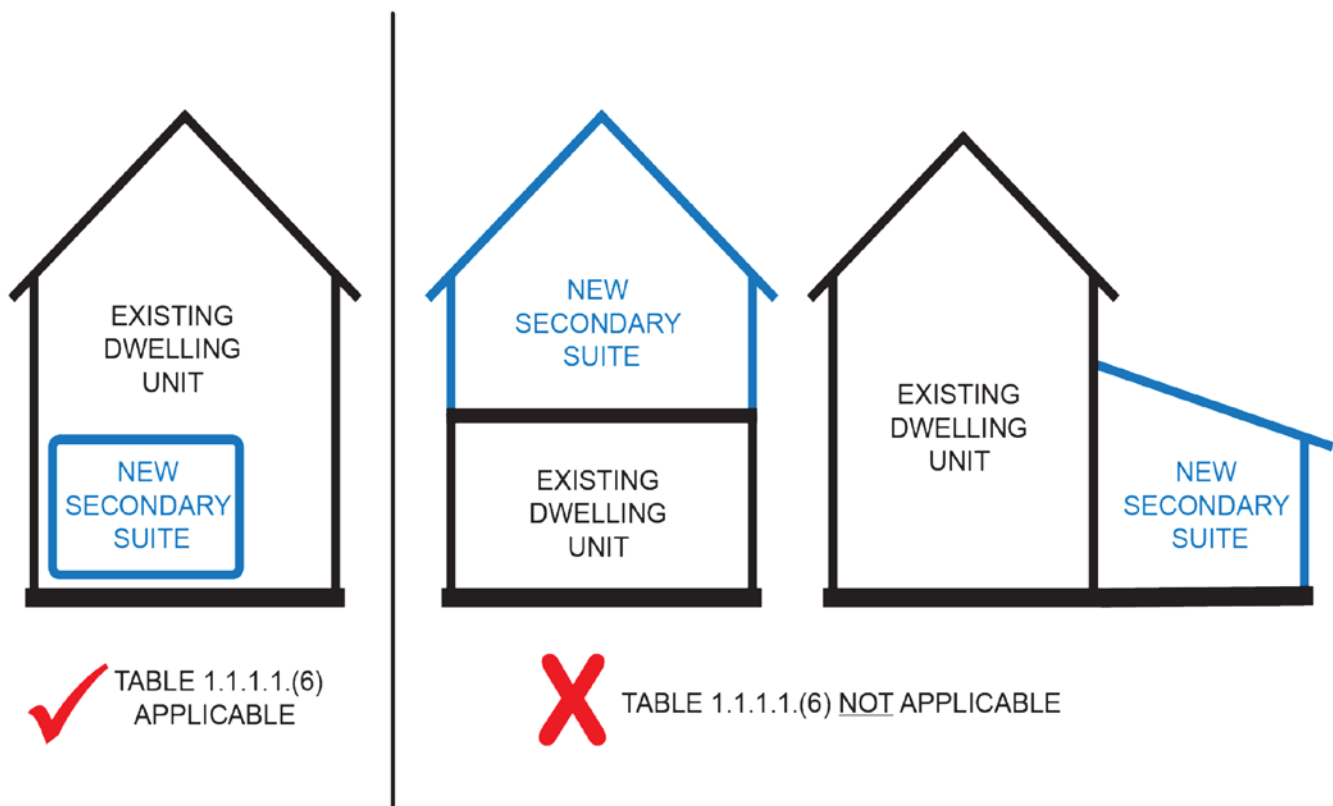


Figure A-1.1.1.1.(6)
Application of Alternative Compliance Methods in Table 1.1.1.1.(6)

Section 1.4. Terms and Abbreviations

1.4.1. Definitions of Words and Phrases

1.4.1.2. Defined Terms

1) The words and terms in italics in this Code shall have the following meanings:

Secondary suite means a self-contained dwelling unit

- having a total floor space of not more than 90m² in area,
- having a floor space less than 40% of the habitable space of the building,
- located within a building or portion of a building
 - completely separated from other parts of the building by a vertical fire separation that has a fire-resistance rating of not less than 1 h and extends from the ground or lowermost assembly continuously through or adjacent to all storeys and spaces including service spaces of the separated portions,
 - of only residential occupancy that contains containing only one other dwelling unit and common spaces, and
 - where both dwelling units constitute
- located in and part of a building which is a single real estate entity.

(See Note A-1.4.1.2.(1) A-9.37.1.1. of Division B.)

A-1.4.1.2.(1) Defined Terms.

Secondary Suite

A secondary suite is a self-contained dwelling unit of a prescribed maximum total floor area that is part of a house building containing not more than two dwelling units (including the secondary suite) and any common

spaces such as common storage, common service rooms, common laundry facilities or common areas used for egress. Secondary suites are typically created within an existing single dwelling building (house) unit—commonly called a “house”—either constructed as an addition or an alteration to an existing house or incorporated during the construction of a new house. A secondary suite may have more than one storey and may be on the same level as the principal dwelling unit of the house or be above or below it.

Examples of buildings where secondary suites are permitted include individual detached houses, or where the secondary suite is located in a portion of a building, semi-detached houses (half of a double and also known as a side-by-side duplex) and freehold row houses where a vertical fire separation separates the portion from the remainder of the building.

Where a building has multiple vertically separated occupancies, the secondary suite can only be created in a vertically separated portion of the building that is of residential occupancy. A vertical fire separation that extends continuously through all crawlspaces, storeys and attic spaces of the building is required to vertically separate portions of a building. Apartment buildings have more than two dwelling units above and below others that share a horizontal assembly and are therefore not permitted to have secondary suites. Figure A-1.4.1.2.(1)-C shows building types where secondary suites are permitted as well as building types where other dwelling units or other occupancies are located above or below such that secondary suites are not permitted.

DU: DWELLING UNIT
SS: SECONDARY SUITE
[dashed line]: SINGLE REAL ESTATE ENTITY
[hatched line]: FIRE SEPARATION

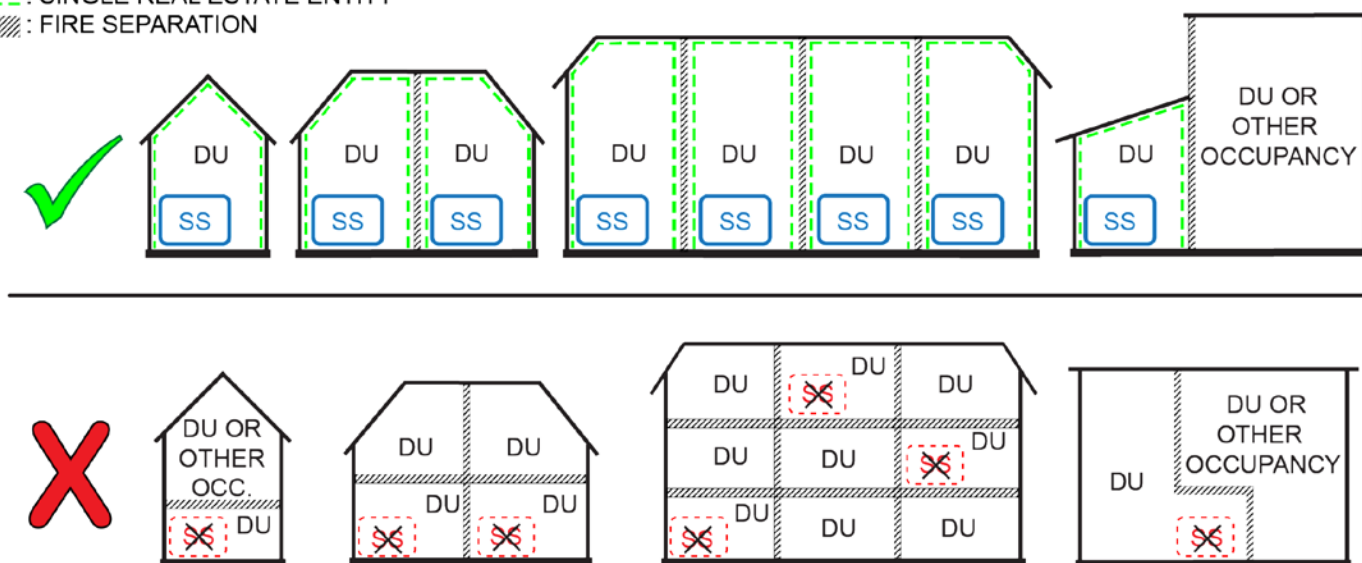


Figure A-1.4.1.2.(1)-C

Building Types where Secondary Suites are Permitted

Neither the secondary suite nor the other dwelling unit in a house with a secondary suite can be strata-titled or otherwise subdivided from the remainder of the house under provincial or territorial legislation. This means that both dwelling units in the house are registered under the same title.

Secondary suites are also referred to as “accessory suites” or “secondary units” by various jurisdictions.

The NBC uses the term ‘houses with secondary suites’ to describe a housing unit that consists of two dwelling units and their common and ancillary spaces, with one of the dwelling units as the secondary suite. Each housing unit is vertically separated from other parts of the building with a fire separation with not less than a 45-minute fire-resistance rating if not more than 1 storey in building height or a 1 hour fire-resistance rating if more than 1 storey in

building height. The vertically separated parts of the building may contain dwelling units such as in a semi-detached house or a row house or may contain a major occupancy other than residential. Secondary suites are not permitted in buildings with horizontally-separated dwelling units such as up/down duplexes and apartment buildings with dwelling units above and below others.

It is proposed to discontinue the prescribed floor space amounts and percentage distribution. Floor space amounts and distribution for secondary suites do not relate to a Code objective and it cannot be assumed that the owner occupies one of the dwelling units, nor that the occupant of the dwelling unit has any control over the secondary suite or its occupants. The *Local Government Act* provides authority to local governments to regulate the use of land and buildings as well as the density of the use of land and buildings, which includes establishing limitations on floor space and the number of units permitted on a lot. Overlapping jurisdiction create confusion.

Requirements for secondary suites to include a greater occupant load have been revised to reduce the probability that a person may be exposed to an unacceptable risk. Consideration of openable windows in lieu of a second and separate means of egress is proposed and coordinates with egress from dwelling units in Subsection 9.9.9.

As an alternative to floor area limits as a mechanism to limit occupants, it is proposed to instead provide acceptable solutions such as protection from fire on emergency egress facilities that allow for a reasonable number of occupants.

This proposed change to floor space may impact local government land use bylaws. Many land use bylaws will require revision if local governments decide to utilize new permissions in the BCBC and permit secondary suites in more buildings and building types. Local governments are in the best position to determine and implement land use and floor space permissions and limitations based on comprehensive community planning.

Division B Acceptable Solutions

Part 9 Housing and Small Buildings

Section 9.1. General

9.1.2. Reserved ~~Limits on Floor Area~~

~~9.1.2.1. Floor Area Limits for Secondary Suites~~

- ~~1) The total floor area of all storeys of a secondary suite shall be not more than the lesser of~~
- ~~a) 80% of the total floor area of all storeys of the other dwelling unit, excluding the garage floor area and common spaces serving both dwelling units, and~~
 - ~~b) 80 m².~~

This Subsection is where the NBC establishes the floor area and distribution limits for houses with secondary suites. The NBC areas and percentage distribution are different from those in the BCBC and shown for reference but are not proposed for adoption.

The design and construction requirements applied to secondary suites achieve an acceptable level of performance that is not contingent on the floor area of the secondary suite or the distribution of floor area within the house.

The NBC intent statements related to Sentence 9.1.2.1.(1) are:

- To limit the probability that too large a floor area in secondary suites [i.e. more than 80 m²] will increase the occupant load or fire load beyond the loads generally found in a single dwelling unit with a finished basement,

which could lead to delays in the evacuation or movement of persons to a safe place, which could lead to harm to persons.

- To limit the probability that too large a floor area in secondary suites [i.e. more than 80 m²] will increase the occupant load or fire load beyond the loads generally found in a single dwelling unit with a finished basement, which could lead to fire emergency response operations being delayed or ineffective, which could lead to delays in the evacuation or movement of persons to a safe place, which could lead to harm to persons.

These risks of hazard are addressed by requiring fire separations and smoke alarms to manage the fuel load and facilitate a timely response. The fire separation requirements consider the fuel loads and occupant loads in each dwelling unit. Floor area and percentage distribution could be a practical barrier to the construction of new secondary suites. That barrier can be removed as result of construction requirements that achieve the objectives of the Code.

The *Local Government Act* provides authority to local governments to regulate the use of land and buildings as well as the density of the use of land and buildings, which includes establishing limitations on floor space and the number of units permitted on a lot. Overlapping jurisdiction creates confusion.

Section 9.5. Design of Areas and Spaces

9.5.3. Ceiling Heights

9.5.3.1. Ceiling Heights of Rooms or Spaces

(See Note A-9.5.3.1.)

A-9.5.3.1. Ceiling Heights and Clear Heights. Figure A-9.5.3.1. shows ceiling heights in relation to clear heights and also clear heights over stairs described in Article 9.8.2.2.

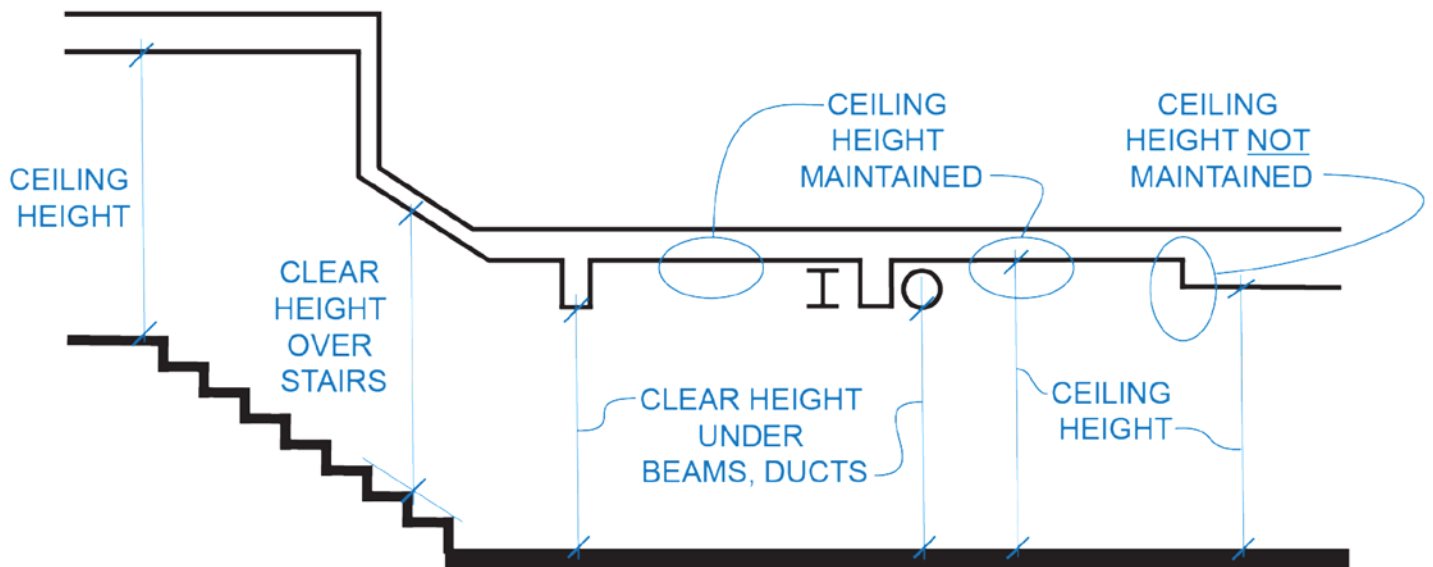


Figure A-9.5.3.1.
Ceiling Heights and Clear Heights

1) The ceiling heights and clear heights in rooms or spaces in *residential occupancies* shall conform to Table 9.5.3.1.

2) Reserved.

3) Reserved.

4) Areas in rooms or spaces over which ceiling height and clear height are not less than the minimum specified in Table 9.5.3.1. shall be contiguous with the entry or entries to those rooms or spaces.

It is proposed that buildings of new construction and additions to existing buildings provide the same ceiling and clear heights as required for all other residential occupancies. The BCBC contains a relaxation for ceiling and clear heights, and it is proposed that such a relaxation be permitted for alterations to existing buildings only where raising the building to provide the required ceiling and clear heights would be cost-prohibitive. Article 9.5.3.1. will apply to secondary suites in buildings of new construction and those built as additions to existing buildings.

9.5.5. Doorway Sizes

9.5.5.1. Doorway Opening Sizes

1) Except as provided in Articles 9.5.5.3., 9.9.6.2. and 9.9.6.3., doorway openings within *dwelling units* [and within houses with a secondary suite including their common spaces](#) shall be designed to accommodate at least the door sizes given in Table 9.5.5.1. for swing-type and folding doors.

2) Reserved.

**Table 9.5.5.1.
Size of Doors**

Forming Part of Sentence 9.5.5.1.(1)

At Entrance To:	Minimum Width, mm	Minimum Height, mm
<i>Dwelling unit</i> or house with a secondary suite including common spaces (required entrance)	810	1 980
Vestibule or entrance hall		
Stairs to a floor level that contains a finished space		
All doors in at least one line of passage from the exterior to the <i>basement</i>	810	1 980
Utility rooms		
Walk-in closet	610	1 980
Bathroom, water-closet room, shower room ⁽¹⁾	610	1 980
Rooms located off hallways that are permitted to be 710 mm wide	610	1 980
Rooms not mentioned above, exterior balconies	760	1 980

Notes to Table 9.5.5.1.:

⁽¹⁾ See Article 9.5.5.3.

The NBC permits doors within secondary suites to be not less than 1 890 mm high in instances where the ceiling height is permitted to be reduced. It is proposed that such a permission be applicable only to alterations to existing buildings similar to the permission for the reduced ceiling height. Article 9.5.5.1. will apply to secondary suites in buildings of new construction and those built as additions to existing buildings.

Section 9.8. Stairs, Ramps, Handrails and Guards

9.8.1. Application

9.8.1.2. Stairs, Ramps, Landings, Handrails and Guards in Garages

1) Where stairs, ramps, landings, handrails or *guards* are installed in garages that serve a single *dwelling unit* or a house with a secondary suite including their common spaces, the garage shall be considered to be part of the *dwelling unit* and the requirements for stairs, ramps, landings, handrails and *guards* within *dwelling units* shall apply.

9.8.2.1. Stair Width

1) Except as provided in Sentence (2), required *exit* stairs and public stairs serving *buildings* of *residential occupancy* shall have a width of not less than 900 mm.

2) *Exit* stairs serving a single *dwelling unit* or a house with a secondary suite including their common spaces shall have a width of not less than 860 mm.

3) Required *exit* stairs and public stairs serving *buildings* of other than *residential occupancy* shall have a width of not less than the greater of

a) 900 mm, or

b) 8 mm per person based on the *occupant load* limits specified in Table 3.1.17.1.

4) At least one stair between each floor level within a *dwelling unit*, and exterior stairs serving a single *dwelling unit* except required *exit* stairs, shall have a width of not less than 860 mm.

9.8.2.2. Height over Stairs

1) The clear height over stairs shall be measured vertically, over the clear width of the stair, from a straight line tangent to the tread and landing nosings to the lowest point above. (See Note A-3.4.3.4. and Note A-9.5.3.1.)

2) Except as provided in Sentence (3), the clear height over stairs shall not be less than 2 050 mm.

3) The clear height over stairs serving a single *dwelling unit* or a house with a secondary suite including their common spaces shall not be less than 1 950 mm.

4) Reserved.

Sentence 9.8.2.2.(4) permits the clear height over stairs that are located under beams and ducting in *secondary suites* to be not be less than 1 850 mm. It is proposed that such a permission be applicable only to alterations to existing buildings similar to the permission for the reduced ceiling height. Sentence 9.8.2.2.(3) will apply to secondary suites in buildings of new construction and those built as additions to existing buildings.

9.8.3. Stair Configurations

9.8.3.1. Permitted Configurations

(See Note A-9.8.4.)

1) Except as provided by Sentence (2), stairs in *buildings* other than dwelling units and houses with a secondary suite, including their common spaces, shall consist of

a) straight *flights*, or

b) except as provided in Sentence (4), curved *flights*.

2) Stairs within *dwelling units* and houses with a secondary suite, including their common spaces, shall consist of

a) straight *flights*,

b) except as provided in Sentence (4), curved *flights*,

- c) reserved,
- d) except as provided in Sentence (3), flights with rectangular treads and winders, or
- e) reserved.

3) Only one set of winders described in Article 9.8.4.6. shall be permitted between floor levels.

4) Curved *flights* in *exits* shall comply with Sentence 3.4.6.9.(2).

5) All *tapered treads* within a *flight* shall turn in the same direction.

9.8.4. Step Dimensions

(See Note A-9.8.4.)

9.8.4.1. Dimensions for Risers

(See Note A-9.8.4.)

1) Except for stairs serving areas only used as *service rooms* or *service spaces*, the rise, which is measured as the vertical nosing-to-nosing distance, shall comply with Table 9.8.4.1.

Table 9.8.4.1.
Rise for Rectangular Treads and Tapered Treads (Including Winders)
Forming Part of Sentence 9.8.4.1.(1)

Stair Type	Rectangular Treads and Taper Treads (Including Winders)	
	Rise, mm	
	Max.	Min.
Private ⁽¹⁾	200	125
Public ⁽²⁾	180	125

Notes to Table 9.8.4.1.:

⁽¹⁾ Private stairs are exterior and interior stairs that serve ~~single dwelling units or that serve garages that serve single dwelling units.~~

[a\) single dwelling units.](#)

[b\) houses with a secondary suite including their common spaces, or](#)

[c\) garages that serve a\) or b\).](#)

⁽²⁾ Public stairs are all stairs not described as service stairs or private stairs.

9.8.4.2. Dimensions for Rectangular Treads

(See Note A-9.8.4.)

1) Except for stairs serving areas only used as *service rooms* or *service spaces*, the run shall comply with Table 9.8.4.2.

Table 9.8.4.2.
Run for Rectangular Treads
Forming Part of Sentence 9.8.4.2.(1)

Stair Type	Rectangular Treads	
	Run, mm	
	Max.	Min.
Private ⁽¹⁾	355	255
Public ⁽²⁾	No limit	280

Notes to Table 9.8.4.2.:

(1) Private stairs are exterior and interior stairs that serve ~~single dwelling units or that serve garages that serve single dwelling units.~~

a) single dwelling units,

b) houses with a secondary suite including their common spaces, or

c) garages that serve a) or b).

(2) Public stairs are all stairs not described as service stairs or private stairs.

9.8.5. Ramps

9.8.5.2. Ramp Width

(See also Article 9.9.3.2.)

1) Except as provided in Sentence (2), ramps shall be not less than 1 100 mm wide.

2) Ramps serving a single *dwelling unit* or a house with a secondary suite including their common spaces shall be not less than 860 mm wide.

The NBC permits a ramp that serves both dwelling units in a house with a secondary suite to receive the permission for the reduced width for a single dwelling unit. The BCBC does not provide this exemption. It is proposed to adopt this permission for new construction of secondary suites.

9.8.5.3. Height over Ramps

1) Except as permitted by Sentence (2), the ~~The~~ clear height over ramps shall be not less than 2 050 mm.

2) The clear height over ramps serving a single dwelling unit or a house with a secondary suite including their common spaces shall be not less than 1 950 mm.

The NBC permits a ramp that serves single dwelling units as well as both dwelling units in a house with a secondary suite to receive the permission for the reduced clear height (for a single dwelling unit). The BCBC does not provide this exemption for secondary suites nor for single dwelling units. It is proposed to adopt this permission for new construction of single dwelling units and also for houses with a secondary suite.

9.8.6. Landings

9.8.6.2. Required Landings

3) A landing may be omitted at the top of an exterior *flight* serving a secondary entrance to a single *dwelling unit* or a house with a secondary suite including their common spaces, provided

a) the stair does not contain more than 3 risers,

b) the principal door is a sliding door or swings away from the stair, and

c) only a storm or screen door, if any, swings over the stair and is equipped with hardware to hold it open.

4) A landing may be omitted at the bottom of an exterior stair or ramp provided there is no obstruction, such as a gate or door, within the lesser of the width of the stair or ramp or

a) 900 mm for stairs or ramps serving a single *dwelling unit* or a house with a secondary suite including their common spaces, and

b) 1 100 mm for stairs or ramps not described in Clause (a) ~~serving a single dwelling unit~~.

The proposed change to Sentence (3) is to adopt an NBC permission to omit a landing at the top of an exterior flight. The proposed change to Sentence (4) is an adaptation of the BCBC permission that landings need not be longer than 900 mm. This proposed change continues the BCBC permission to exterior ramps (new) and stairs that, if the bottom of the stair is sufficiently clear of obstruction, the space need not be constructed as a landing.

Landings are required to have a slope no greater than 1 in 50 (required by Article 9.8.6.1.) and must have a clear height (required by Article 9.8.6.4.). These requirements do not apply to the spaces at the bottom of exterior stairs and ramps described in Sentence (4).

9.8.6.4. Height over Landings

- 1) Except as permitted by Sentence (2), the clear height over landings shall be not less than 2 050 mm.
- 2) The clear height over landings serving a single *dwelling unit* [or a house with a secondary suite including their common spaces](#) shall be not less than 1 950 mm.

9.8.7. Handrails

The BCBC applies Subsection 9.8.7. to houses with a secondary suite.

9.8.7.1. Required Handrails

- 1) Except as provided in Sentences (2) to (4), handrails shall be installed on stairs and ramps in accordance with Table 9.8.7.1.

Table 9.8.7.1.
Number of Sides of Stair or Ramp Required to Have a Handrail
Forming Part of Sentence 9.8.7.1.(1)

Location of Stair or Ramp	Handrails Serving Stairs			Handrails Serving Ramps	
	Stairs < 1 100 mm Wide		Stairs ≥ 1 100 mm Wide	Ramps < 1 100 mm Wide	Ramps ≥ 1 100 mm Wide
	Straight	Curved	All	Straight or Curved	All
	Number of Sides Required to Have a Handrail				
Within a <i>dwelling unit</i> or a house with a <i>secondary suite</i>	1	1	1	1	2
All other locations ⁽¹⁾	1	2	2	2	2

Notes to Table 9.8.7.1.:

⁽¹⁾ See Sentences 9.8.7.1.(2), (3) and (4) for exceptions.

- 2) Except where a stair or ramp serves not more than two *dwelling units*, at least one handrail shall be located not more than 750 mm from the natural path of travel on the stair or ramp. (See Note A-9.8.7.1.(2).)

- 3) Handrails are not required for stairs and ramps serving a single *dwelling unit* [or a house with a secondary suite including their common spaces](#), where

- a) interior stairs have not more than 2 risers,
- b) exterior stairs have not more than 3 risers, or
- c) ramps rise not more than 400 mm.

4) Only one handrail is required on exterior stairs having more than 3 risers provided such stairs serve not more than one *dwelling unit* or a house with a secondary suite including their common spaces.

5) Except for stairs with winders, where a *flight* of stairs within a *dwelling unit* or a house with a secondary suite including their common spaces consists of *tapered treads*, one handrail shall be installed along the narrow end of the treads.

9.8.7.2. Continuity of Handrails

(See Note A-9.8.7.2.)

1) Except as provided in Sentence (3), required handrails shall be continuously graspable throughout the length of
a) ramps, and
b) *flights* of stairs, from the bottom riser to the top riser.

2) Except for stairs or ramps serving a single *dwelling unit* or a house with a secondary suite including their common spaces, at least one required handrail shall be continuous throughout the length of the stair or ramp, including at the landing except where interrupted by doorways. (See Note A-3.4.6.5.(10).)

3) For stairs or ramps serving a single *dwelling unit* or a house with a *secondary suite* including their common spaces, a handrail is permitted to start from a newel post or volute installed on the bottom tread.

9.8.7.3. Termination of Handrails

1) Handrails shall be terminated in a manner that will not obstruct pedestrian travel or create a hazard. (See Note A-9.8.7.3.(1).)

2) Except for stairs and ramps serving only one *dwelling unit* or a house with a secondary suite including their common spaces, at least one handrail at the sides of a stair or ramp shall extend horizontally not less than 300 mm beyond the top and bottom of each *flight* or ramp. (See Note A-9.8.7.3.(2).)

9.8.7.7. Design and Attachment of Handrails

(See Note A-9.8.7.7.)

1) Handrails and their supports shall be designed and constructed to withstand the following loads, which need not be considered to act simultaneously:

- a) a concentrated load of not less than 0.9 kN applied at any point and in any direction for all handrails, and
- b) for handrails other than those serving a single *dwelling unit*, a uniform load of not less than 0.7 kN/m.

2) Where exterior or interior handrails serving a single *dwelling unit* or a house with a secondary suite including their common spaces are attached to wood studs or blocking, the attachment shall be deemed to comply with Sentence (1), where

- a) the attachment points are spaced not more than 1.2 m apart measured on the horizontal plane,
- b) the first attachment point at either end is located no more than 300 mm from the end of the handrail, and
- c) the fasteners consist of not less than 2 No. 8 wood screws at each point, penetrating not less than 32 mm into solid wood.

9.8.8. Guards

The BCBC applies Subsection 9.8.8. to houses with a secondary suite.
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9.8.8.1. Required Guards

(See Note A-9.8.8.1.)

7) In dwelling units [and houses with a secondary suite including their common spaces](#), glazing installed over stairs, ramps and landings that extends to less than 900 mm above the surface of the treads, ramp or landing shall be

a) protected by *guards*, in accordance with this Subsection, or

b) non-openable and designed to withstand the specified lateral loads for balcony *guards* as provided in Article 4.1.5.14.

9.8.8.2. Loads on Guards

(See Note A-9.8.8.2.)

1) Except as provided in Sentences (2) and (4), *guards* shall be designed to resist the specified loads prescribed in Table 9.8.8.2.

Table 9.8.8.2.
Specified Loads for Guards
Forming Part of Sentence 9.8.8.2.(1)

Location of <i>Guard</i>	Minimum Specified Loads		
	Horizontal Load Applied Inward or Outward at any Point at the Minimum Required Height of the <i>Guard</i>	Horizontal Load Applied Outward on Elements Within the <i>Guard</i> , Including Solid Panels and Balusters	Evenly Distributed Vertical Load Applied at the Top of the <i>Guard</i>
<i>Guards</i> within dwelling units and exterior <i>guards</i> serving not more than 2 dwelling units	0.5 kN/m OR concentrated load of 1.0 kN applied at any point ⁽¹⁾	0.5 kN applied over a maximum width of 300 mm and a height of 300 mm ⁽²⁾	1.5 kN/m
<i>Guards</i> serving access ways to equipment platforms and similar areas where the gathering of many people is improbable	Concentrated load of 1.0 kN applied at any point	Concentrated load of 0.5 kN applied over an area of 100 mm by 100 mm located at any point on the element or elements so as to produce the most critical effect	1.5 kN/m
All other <i>guards</i>	0.75 kN/m OR concentrated load of 1.0 kN applied at any point ⁽¹⁾	Concentrated load of 0.5 kN applied over an area of 100 mm by 100 mm located at any point on the element or elements so as to produce the most critical effect	1.5 kN/m

Notes to Table 9.8.8.2.:

⁽¹⁾ The load that creates the most critical condition shall apply.

⁽²⁾ See Sentence (2).

2) For *guards* within dwelling units [and within houses with a secondary suite including their common spaces](#) and for exterior *guards* serving not more than 2 dwelling units, where the width and spacing of balusters are such that 3 balusters can be engaged by a load imposed over a 300 mm width, the load shall be imposed so as to engage 3 balusters.

3) None of the loads specified in Table 9.8.8.2. need be considered to act simultaneously.

4) For *guards* within dwelling units [and within houses with a secondary suite including their common spaces](#) and for exterior *guards* serving not more than 2 dwelling units, Table 9.8.8.2. need not apply where the *guard* construction used has been demonstrated to provide effective performance.

9.8.8.3. Height of Guards

(See Note A-9.8.8.3.)

- 1) Except as provided in Sentences (2) to (4), all *guards* shall be not less than 1 070 mm high.
- 2) All *guards* within *dwelling units* or within houses with a secondary suite including their common spaces shall be not less than 900 mm high.
- 3) Exterior *guards* serving not more than one *dwelling unit* or a house with a secondary suite including their common spaces shall be not less than 900 mm high where the walking surface served by the *guard* is not more than 1 800 mm above the finished ground level.
- 4) *Guards* for *flights* of steps, except in required *exit* stairs, shall be not less than 900 mm high.
- 5) The height of *guards* for *flights* of steps shall be measured vertically from the top of the *guard* to a line drawn through the tread nosing served by the *guard*.

9.8.9. Construction

9.8.9.1. Loads on Stairs and Ramps

- 1) Except as specified in Articles 9.8.9.4. and 9.8.9.5., stairs and ramps shall be designed for strength and rigidity under uniform loading criteria to support specified loads of
 - a) 1.9 kPa for stairs and ramps serving not more than one *dwelling unit* or a house with a secondary suite including their common spaces, and
 - b) 4.8 kPa for other stairs and ramps.

9.8.9.4. Wooden Stair Stringers

- 1) Wooden stair stringers shall
 - a) have a minimum effective depth of 90 mm, measured perpendicularly to the bottom of the stringer at the point of minimum cross-section, and an overall depth of not less than 235 mm,
 - b) be supported and secured top and bottom,
 - c) be not less than 25 mm actual thickness if supported along their length and 38 mm actual thickness if unsupported along their length, and
 - d) except as permitted in Sentence (2), be spaced not more than 900 mm o.c. in stairs serving not more than one *dwelling unit* or a house with a secondary suite including their common spaces, and 600 mm o.c. in other stairs.
- 2) For stairs serving not more than one *dwelling unit* or a house with a secondary suite including their common spaces, where risers support the front portion of the tread, the space between stringers shall be not more than 1 200 mm.

9.8.9.6. Finish for Treads and Landings

- 1) The finish for treads and landings of interior stairs in *dwelling units*, other than stairs to unfinished *basements*, shall consist of hardwood, vertical grain softwood, resilient flooring or other material providing equivalent performance.
- 2) Treads and landings of interior and exterior stairs and ramps, other than those within *dwelling units* or within houses with a secondary suite including their common spaces, shall have a slip-resistant finish or be provided with slip-resistant strips that extend not more than 1 mm above the surface.

Section 9.9. Means of Egress

9.9.2. Types and Purpose of Exits

9.9.2.4. Principal Entrances

1) Except for doors serving a single *dwelling unit* or a house with a secondary suite including their common spaces, at least one door at every principal entrance to a *building* providing access from the exterior at ground level shall be designed in accordance with the requirements for *exits*.

9.9.3. Dimensions of Means of Egress

9.9.3.1. Application

1) Except as required by Sentences 9.9.3.3.(2) and 9.9.3.4.(3), this ~~This~~ Subsection applies to every *means of egress* except

a) *exits* that serve not more than one *dwelling unit* or a house with a secondary suite including their common spaces, and

b) *access to exits* within *dwelling units* and within houses with a secondary suite including their common spaces.

9.9.3.3. Width of Corridors

1) The width of every *public corridor*, corridor used by the public, and *exit corridor* shall be not less than 1 100 mm. (See also Subsection 9.9.5. for obstructions in corridors.)

2) The width of every *public corridor* and *exit corridor* that serves a house with a *secondary suite* including their common spaces shall be not less than 860 mm.

The BCBC does not exempt public corridors or exit corridors serving houses with secondary suites from providing a minimum clear width even though the NBC does. It is proposed to continue BC's minimum requirement of 860 mm for clear width.

The NRC publication "Guidelines for Application of Part 3 of the National Building Code of Canada to Existing Buildings" identifies 'minimum width of public corridors' as 'very important to life safety' with regards to ease of egress and also as 'highly difficult' with regards to modifying an existing building.

9.9.3.4. Clear Height

1) Except for stairways, doorways and *storage garages*, the minimum clear height in *exits* and *access to exits* shall be 2.1 m. (See Article 9.8.2.2. for stairs, Article 9.8.5.3. for ramps, Article 9.8.6.4. for landings and Article 9.9.6.2. for doorways.)

2) The clear height in *exits* and *access to exists* in *storage garages* shall be not less than 2 m.

3) The clear height in every *public corridor* and *exit corridor* that serves a house with a *secondary suite* including their common spaces shall be not less than 2 m.

The BCBC requires the minimum height of rooms and spaces (does not differentiate between ceiling height and clear height) to be 2.0 m. The BCBC does not specifically state what ceiling or clear height is required outside the suite

where there might be a shared public corridor or exit corridor. It is proposed to apply BC's '2.0 m' height to shared means of egress in houses with a secondary suite.

The NRC publication "Guidelines for Application of Part 3 of the National Building Code of Canada to Existing Buildings" identifies 'headroom clearance in access to exit' as 'very important to life safety' with regards to ease of egress and also as 'highly difficult' with regards to modifying an existing building.

9.9.4. Fire Protection of Exits

9.9.4.1. Application

1) Except as provided in Articles 9.9.4.4. and 9.9.4.6., this Subsection applies to the fire protection of all *exits* except *exits* serving not more than one *dwelling unit*.

9.9.4.2. Fire Separations for Exits

1) Except as provided in Sentences (2) and (5) and Article 9.9.8.5., every *exit* other than an exterior doorway shall be separated from each adjacent *floor area* or from another *exit*

a) where there is a floor assembly above the *floor area*, by a *fire separation* having a *fire-resistance rating* not less than that required for the floor assembly above the *floor area* (see Article 9.10.9.10.), and

b) where there is no floor assembly above the *floor area*, by a *fire separation* having a *fire-resistance rating* not less than the greater of

i) that required by Subsection 9.10.8. for the floor assembly below, or

ii) 45 min.

2) ~~Reserved. Where an *exit* is located in a house with a *secondary suite* including their common spaces, the *exit* shall be separated from adjacent *floor areas* with a *fire separation* protected by a continuous smoke-tight barrier of not less than 12.7 mm thick gypsum board installed on~~

~~a) both sides of walls separating the *exit* from the remainder of the *building*, and~~

~~b) the underside of floor ceiling framing separating the *exit* from the remainder of the *building*.~~

~~a) having a *fire-resistance rating* not less than 15 min where all *smoke alarms* within the house are of photo-electric type and interconnected as described in Clause 9.10.19.5.(2)(a),~~

~~b) having a *fire-resistance rating* not less than 30 min when a additional *smoke alarms* of photo-electric type are installed and interconnected as described in Clause 9.10.19.5.(2)(b),~~

~~c) having a *fire-resistance rating* not less than 45 min when *smoke alarms* are not installed and interconnected as described in Clauses (a) or (b), or~~

~~d) that is not required to have a *fire-resistance rating* if the *building* is sprinklered.~~

~~(See Sentence 9.10.9.3.(2) for closures.)~~

3) A *fire separation* common to 2 *exits* shall ~~be smoke-tight and~~ not be pierced by doorways, duct work, piping or any other opening that may affect the continuity of the separation.

4) A *fire separation* that separates an *exit* from the remainder of the *building* shall have no openings except those for electrical wiring, *noncombustible* conduit and *noncombustible* piping that serve only the *exit*, and for standpipes, sprinkler piping, *exit* doorways and wired glass and glass block permitted in Article 9.9.4.3.

5) The requirements in Sentences (1) and (2) do not apply to an exterior *exit* passageway provided the passageway has not less than 50% of its exterior sides open to the outdoors and is served by an *exit* stair at each end of the passageway.

The BCBC requires new construction of secondary suites to be separated from the other dwelling unit with a fire separation. Fire separations retard the effects of fire to limit the probability that the building or adjacent buildings are exposed to unacceptable risk of damage due to fire or explosion impacting areas beyond the point of origin.

The NBC content regarding a smoke-tight barrier is shown with a ~~strike through~~ as it is not proposed for application to new construction. A smoke-tight barrier does not provide protection from damage due to fire or explosion, though such protection is required for all other dwelling units in residential occupancies. There are several options in the Code for constructing fire separations at the time of new construction including the option of a membrane-only fire separation. Further, there are provisions for dealing with penetrations of fire separations that are familiar to industry. Generally, construction of a membrane-only fire separation will be quite similar in detail and cost to construction of a smoke-tight barrier but will provide adequate protection from damage due to fire or explosion.

This proposed change adds an additional option for a fire separation with a 15 min fire-resistance rating where all smoke alarms within the houses are interconnected.

9.9.4.4. Openings Near Unenclosed Exterior Exit Stairs and Ramps

- 1) Unprotected openings** in exterior walls of the *building* shall be protected with wired glass in fixed steel frames or glass block conforming to Articles 9.10.13.5. and 9.10.13.7., where
- a) an unenclosed exterior *exit* stair or ramp provides the only *means of egress* from a *suite* and is exposed to fire from *unprotected openings* in the exterior walls of
 - i) another *fire compartment*, or
 - ii) another *dwelling unit*, [ancillary space or common space in a house with a secondary suite](#), and
 - b) *unprotected openings* in the exterior walls of the *building* are within 3 m horizontally and less than 10 m below or less than 5 m above the *exit* stair or ramp.

[F05-OS1.5]

Intent(s)

Intent 1. To limit the probability that fire will spread from a fire compartment, dwelling unit, ancillary space or common space in a house containing a secondary suite through unprotected openings in exterior building walls to an exterior exit stair or ramp, which could lead to delays in the evacuation or movement of persons to a safe place, which could lead to harm to persons.

Intent 2. To expand the application of Articles 9.10.13.5. and 9.10.13.7. to include wired glass and glass blocks in unprotected openings in exterior walls under certain conditions.

9.9.4.6. Openings Near Exit Doors

- 1) Where** an exterior *exit* door in one *fire compartment* is within 3 m horizontally of an *unprotected opening* in another *fire compartment* and the exterior walls of these *fire compartments* intersect at an exterior angle of less than 135°, the opening shall be protected with
- a) wired glass in fixed steel frames conforming to Article 9.10.13.5., or
 - b) glass block conforming to Article 9.10.13.7.

The BCBC revises NBC Sentence 9.9.4.6.(1) for clarity. The NBC specifically requires this protection for houses with secondary suites, but this is captured with the BCBC application to fire compartments. There is no technical change.

9.9.5. Obstructions and Hazards in Means of Egress

9.9.5.9. Ancillary Rooms

1) ~~Except in houses with a secondary suite, ancillary~~ Ancillary rooms such as storage rooms, washrooms, toilet rooms, laundry rooms and *service rooms* shall not open directly into an exit.

The BCBC does not permit ancillary rooms to open into required exits. The intents are:

- To limit the probability that a fire involving certain rooms will spread into an exit, which could lead to delays in the evacuation or movement of persons to a safe place, which could lead to harm to persons.
- To limit the probability that a fire involving certain rooms will spread into an exit, which could lead to fire emergency response operations being delayed or ineffective, which could lead to delays in the evacuation or movement of persons to a safe place, which could lead to harm to persons.
- To limit the probability that a malfunction of an appliance in certain rooms [causing the release of harmful fumes or gases, for example] will lead to hazardous conditions in exits, which could lead to delays in the evacuation or movement of persons to a safe place in an emergency situation, which could lead to harm to persons.

It is proposed to remove limits on occupant load (by means of floor area limits) in a house with a secondary suite, and therefor risks identified that could contribute to delays in the evacuation or movement of persons to a safe place in an emergency situation are to be limited. There is no change proposed (to permitted obstructions and hazards in means of egress).

9.9.6. Doors in a Means of Egress

The BCBC requires every exit door and door that opens into or located within a public corridor or other facility that provides access to exit in houses with a secondary suite to have a minimum height and width as well as be permitted to swing in either direction. The BCBC provisions are proposed as shown throughout Subsection 9.9.6.

9.9.6.1. Obstructions by Doors

1) Except as provided in Sentence (4), obstructions created by doors shall be limited in accordance with Sentences (2) and (3)

- a) at *exit* doors,
- b) at doors that open into or are located within a *public corridor*, and
- c) at doors that open into or are located within another facility that provides *access to exit* from a *suite*.

2) When fully open, doors described in Sentence (1) shall not decrease the required *exit* width by more than

- a) 100 mm in *exit* corridors, and
- b) 50 mm for other *exit* facilities.

3) The swing of doors described in Sentence (1) shall not reduce the width of the path of travel to less than

- a) the required *exit* width in *exit* corridors and passageways, and
- b) 750 mm on *exit* stairs or landings.

4) Doors serving a single *dwelling unit* ~~or a house with a secondary suite~~ need not comply with Sentences (2) and (3).

The BCBC limits the obstruction of doors to the widths of exit corridors, facilities, passageways, stairs and landings in a house with a secondary suite. As a consequence of interconnecting smoke and CO alarms, it is possible (and anticipated) that occupants of both dwelling units pass through those shared egress facilities at the same time. Where it is expected that shared egress facilities are used by occupants of multiple suites at the same time, obstructions are

to be limited. (In other building types where alarms are not interconnected, occupants of separate dwelling units may pass through at different times.)

The intents are:

- To limit the probability that doors and their jambs will protrude an excessive distance into the width of corridors and other facilities, which could lead to persons contacting or colliding with the protrusions, which could lead to harm to persons.
- To limit the probability that doors and their jambs will protrude an excessive distance into the width of exits, which could lead to an insufficient exit width to permit efficient egress in an emergency situation, which could lead to delays in the evacuation or movement of persons to a safe place, which could lead to harm to persons.
- To supersede the requirements of Sentence 9.9.3.2.(1) and Sentence 9.9.5.4.(1), which would otherwise prohibit obstructions in exits, and permit exit doors to cause a reduction in the width of exits, on the basis that the reduction in width is limited and should not negatively affect exit usage.
- To limit the probability that the swing of doors will substantially reduce the width of corridors and other facilities, which could lead to persons contacting or colliding with the protrusions, which could lead to harm to persons.
- To limit the probability that the swing of doors will substantially reduce the width of exits, which could lead to an insufficient exit width to permit efficient egress in an emergency situation, which could lead to delays in the evacuation or movement of persons to a safe place, which could lead to harm to persons.
- To supersede the requirements of Sentence 9.9.5.4.(1), which would otherwise prohibit obstructions in exits, and permit doors to cause a reduction in the width of exits, on the basis that the reduction in width is limited and should not negatively affect exit usage.

It is proposed to remove limits on occupant load (by means of floor area limits) in a house with a secondary suite, and therefor risks identified that could contribute to delays in the evacuation or movement of persons to a safe place in an emergency situation are to be limited. There is no change proposed (to permitted obstructions by doors).

9.9.6.2. Clear Opening Height at Doorways

1) Except as provided in Sentences (2) ~~to (4) and (3)~~, the clear opening height of doorways shall be not less than 2 030 mm high at

- a) *exit* doors,
- b) doors that open into or are located within a *public corridor*, and
- c) doors that open into or are located within another facility that provides *access to exit* from a *suite*.

2) The clear opening height under door closers and other devices in doorways described in Sentence (1) shall be not less than 1 980 mm.

3) Doorways serving only a single *dwelling unit* ~~or a house with a secondary suite~~ need not comply with Sentences (1) and (2). ~~(See also Article 9.5.5.1.)~~

4) Except as permitted by Sentence (3), the clear opening height of doorways described in Sentence (1) serving a house with a secondary suite including their common spaces shall be not less than 1 980 mm high.

9.9.6.3. Clear Opening Width at Doorways

1) Except as provided in Sentence (4), the clear opening width of doorways shall comply with Sentence (2) at

- a) *exit* doors, and
- b) doors that open into or are located within a *public corridor* or other facility that provides *access to exit* from a *suite*.

2) Doorways described in Sentence (1) shall be

- a) not less than 800 mm wide where there is only one door leaf,
- b) not less than 800 mm wide where multiple-leaf doors are installed with only one active leaf having a latching mechanism described in Article 9.9.6.7., and
- c) not less than 1 210 mm wide where multiple-leaf doors are installed with two active leaves.

3) In doorways described in Sentence (1) that have multiple-leaf doors installed,

- a) no active leaf shall be less than 810 mm wide where only one leaf is active, and
- b) no single leaf shall be less than 610 mm wide where two leaves are active.

4) Doorways serving only a single *dwelling unit* ~~or a house with a secondary suite~~ need not comply with Sentence (2). (See also Article 9.5.5.1.)

9.9.6.5. Direction of Door Swing

1) Except for doors serving a single *dwelling unit* ~~or a house with a secondary suite~~ including their common spaces, exit doors that are required to swing shall swing in the direction of *exit* travel.

2) Doors that open onto a corridor or other facility that provides *access to exit* from a room or *suite* having an *occupant load* of more than 60 persons shall swing on the vertical axis in the direction of *exit* travel.

3) Doors that divide a corridor that is not wholly contained within a *suite* shall swing in the direction of *exit* travel.

4) Where a pair of doors is installed in a corridor that provides *access to exit* in both directions, the doors shall

- a) swing in opposite directions, with the door on the right-hand side swinging in the direction of *exit* travel, or
- b) swing in both directions.

9.9.6.6. Nearness of Doors to Stairs

1) Except as provided in Sentence (2), the distance between a stair riser and the leading edge of a door during its swing, except for doors serving a single *dwelling unit* ~~or a house with a secondary suite~~, shall be not less than 300 mm.

The BCBC limits the nearness doors to stairs in a means of egress in a house with a secondary suite. There is no requirement for doors that only serve one of the dwelling units in a house with a secondary suite.

As a consequence of interconnecting smoke and CO alarms, it is possible (and anticipated) that occupants of both dwelling units pass through those shared egress facilities at the same time. Where it is expected that shared egress facilities are used by occupants of multiple suites at the same time, obstructions are to be limited. (In other building types where alarms are not interconnected, occupants of separate dwelling units may pass through at different times.)

The intents are:

- To limit the probability that a person will step through the door and down onto a step in an emergency situation, which could lead to the person falling and obstructing other persons using the exit, which could lead to delays in the evacuation or movement of persons to a safe place, which could lead to harm to persons.
- To limit the probability that there will not be enough space on the landing to stand while opening the door, which could lead to delays in the evacuation or movement of persons to a safe place, which could lead to harm to persons.

It is proposed to remove limits on occupant load (by means of floor area limits) in a house with a secondary suite, and therefor risks identified that could contribute to delays in the evacuation or movement of persons to a safe place in an emergency situation are to be limited. There is no change proposed (to nearness of doors to stairs).

2) Where there is a danger of blockage from ice or snow, an *exit* door, including doors serving a single *dwelling unit*, may open onto not more than one step, provided the riser of such a step does not exceed 150 mm.

9.9.6.7. Door Latching, Locking and Opening Mechanisms

1) Principal entrance doors, *exit* doors and doors to *suites*, including exterior doors of *dwelling units*, and other doors in an *access to exit* shall

a) be openable from the inside or in travelling to an *exit* without requiring keys, special devices or specialized knowledge of the door-opening mechanism, or

b) be controlled by electromagnetic locking mechanisms in accordance with Sentence 3.4.6.16.(4).

2) Except for doors serving a single *dwelling unit* or a house with a secondary suite including their common spaces, and doors to accessory *buildings* and to garages serving a single *dwelling unit*, door release hardware on doors in a *means of egress* shall be operable with one hand and the door shall be openable with not more than one releasing operation. (See also Sentence 3.8.3.6.(4) and Note A-3.3.1.13.(4).)

3) Door release hardware on doors in a *means of egress* shall be installed not more than 1 200 mm above the finished floor.

4) Except for hotels and motels, a door opening onto a *public corridor* that provides *access to exit* from *suites* shall be designed not to lock automatically if it is equipped with an automatic self-closing device. (See Note A-3.3.4.5.(1).)

9.9.6.8. Effort Required to Open

1) Every *exit* door, except doors serving a single *dwelling unit* or a house with a secondary suite including their common spaces, shall be designed and installed so that when the latch is released the door will open in the direction of *exit* travel under a force of not more than 90 N applied to the door release hardware. (See Sentence 3.8.3.6.(8) for door opening forces in an *accessible* path of travel.)

9.9.9. Egress from Dwelling Units

The BCBC permits a window in lieu of a second and separate means of egress for a house with secondary suites. The BCBC does not mention balconies or sprinklered buildings which would typically warrant the same (or greater) considerations as openable windows.

9.9.9.2. Two Separate Exits

1) Except as provided in Sentence (2) and Sentence 9.9.7.3.(1) ~~and except for dwelling units in a house with a secondary suite~~, where an egress door from a *dwelling unit* opens onto a *public corridor* or exterior passageway it shall be possible from the location where the egress door opens onto the corridor or exterior passageway to go in opposite directions to 2 separate *exits* unless the *dwelling unit* has a second and separate *means of egress*.

2) For dwelling units in a house with secondary suite, it need not be possible to go in more than one direction to an exit from the location where the egress door opens onto the public corridor or exterior passageway if the building is sprinklered or if each dwelling unit has separate and direct access from each storey to

- a) a balcony, or
- b) an openable window conforming to Clauses 9.9.9.1.(2)(a) and (b).

Area limits and floor area percentage are not proposed to be continued as a mechanism to limit bedrooms and occupant load. This provision refers to the requirements for bedroom and combination bedroom egress.

9.9.9.3. Shared Egress Facilities

1) Except as provided in Sentences (2) and (3), for dwelling units in a house with a secondary suite, a dwelling unit shall be provided with a second and separate *means of egress* where an egress door from the *dwelling unit* opens onto

- a) an *exit* stairway serving more than one *suite*,
- b) a *public corridor*
 - i) serving more than one *suite*, and
 - ii) served by a single *exit*,
- c) an exterior passageway
 - i) serving more than one *suite*,
 - ii) served by a single *exit* stairway or ramp, and
 - iii) more than 1.5 m above adjacent ground level, or
- d) a balcony
 - i) serving more than one *suite*,
 - ii) served by a single *exit* stairway or ramp, and
 - iii) more than 1.5 m above adjacent ground level.

2) Where a dwelling unit is located above another dwelling unit or common space in a house with a secondary suite, the upper dwelling unit shall be provided with a second and separate means of egress where an egress door from that dwelling unit opens onto an exterior passageway that

- a) has a floor assembly with a fire-resistance rating less than 45 min,
- b) is served by a single exit stairway or ramp, and
- c) is located more than 1.5 m above adjacent ground level.

3) For dwelling units in a house with a secondary suite where an egress door from either dwelling unit opens onto a shared egress facility served by a single exit stairway or ramp, other than as described in Sentence (2), a second and separate means of egress need not be provided if the building is sprinklered or if the dwelling units have separate and direct access from each storey to

- a) a balcony, or
- b) an openable window conforming to Clauses 9.9.9.1.(2)(a) and (b).

9.9.11. Signs

9.9.11.1. Application

1) This Subsection applies to all *exits* except those serving not more than one *dwelling unit* or a house with a secondary suite including their common spaces.

The BCBC only exempted houses with secondary suites from the requirement for exit signs. The NBC exempts houses with secondary suites from Subsection 9.9.11., which includes requirements for signs for obstructions of exits, stairs and ramps and floor numbering. (A house with a secondary suite may contain a common space which could be a required exit.)

9.9.12. Lighting

9.9.12.1. Application

1) This Subsection applies to the lighting of all *means of egress* except those within *dwelling units* or a house with a secondary suite including their common spaces.

The NBC exempts a house with a secondary suite from Subsection 9.9.12., the BCBC does not provide an exemption. (A house with a secondary suite may contain a common space which could be a required means of egress, but which could have lighting controls available to occupants of both dwelling units.)

9.10.3. Ratings

9.10.3.1. Fire-Resistance and Fire-Protection Ratings

1) Except as permitted in Sentences (2) and (3), where ~~Where~~ a fire-resistance rating or a fire-protection rating is required by this Section for an element of a building, such rating shall be determined in conformance with

- a) the test methods described in Part 3,
- b) the calculation method presented in Appendix D, or
- c) the constructions specifications presented in Tables 9.10.3.1.-A and 9.10.3.1.-B.

2) In a house with a secondary suite including their common spaces, where a minimum fire-resistance rating of 15 min is permitted, the construction described in Clause 9.11.1.1.(2)(a) is permitted to be used.

3) In a house with a secondary suite including their common spaces, where a minimum fire-resistance rating of 30 min is permitted, it is permitted to use construction having

- a) walls are framed with wood studs,
 - b) joist spaces are filled with wet-blown cellulose fibres conforming to CAN/ULC-S703, "Cellulose Fibre Insulation for Buildings," having a density of not less than 50 kg/m³ to a minimum depth of 90 mm on the underside of the subfloor and the sides of the structural members,
 - c) stud spaces of
 - i) non-loadbearing assemblies are filled with insulation of cellulose fibres conforming to CAN/ULC-S702, "Mineral Fibre Thermal Insulation for Buildings," having a density of not less than 50 kg/m³, and
 - ii) loadbearing assemblies are filled with sound-absorbing material, filled with preformed insulation of rock or slag fibres conforming to CAN/ULC-S703, "Cellulose Fibre Insulation for Buildings," having a mass per unit area of not less than 1.22 kg/m² of wall surface
 - d) a resilient channel on one side of the fire separation spaced 400 or 600 mm o.c., and
 - e) not less than 12.7 mm thick gypsum board on ceilings and on both sides of walls.
- (See also Clause 9.11.1.1.(2)(a).)

The construction specifications permitted by Sentences (2) and (3) coordinate with the construction specifications prescribed in Clause 9.11.1.1.(2)(a) which provide acceptable protection from airborne noise in a house with a secondary suite. Depending on the interconnection of smoke alarms in the house which determines the fire-resistance rating required for the fire separation, there are prescriptive construction specifications provided that satisfy both the fire protection and noise protection objectives. These are additional construction options to demonstrating compliance with Clauses 9.10.3.1.(1)(a), (b) or (c) and Clauses 9.11.1.1.(2)(b) or (c).

9.10.8. Fire Resistance and Combustibility in Relation to Occupancy, Height and Supported Elements

9.10.8.3. Fire-Resistance Ratings for Walls, Columns and Arches

1) Except as otherwise provided in this Subsection, all *loadbearing* walls, columns and arches in the *storey* immediately below a floor or roof assembly shall have a *fire-resistance rating* of not less than that required for the supported floor or roof assembly.

2) Reserved. ~~Light frame walls, columns, arches and beams as well as loadbearing steel elements that support floors between dwelling units in a house with a secondary suite including their common spaces shall be protected by not less than 12.7 mm thick gypsum board. (See Note A-9.10.8.3.(2).)~~

~~A-9.10.8.3.(2) Light frame Construction. Light frame walls, columns, arches and beams do not include heavy timber elements or masonry or concrete construction.~~

The BCBC provides no exemption to the fire-resistance rating required for supporting elements. It is proposed that 12.7 mm gypsum be provided as an alternative compliance method in Table 1.1.1.1.(6) in Division A.

9.10.8.8. Floors of Exterior Passageways

1) Except as provided in Sentences (2) and (3), the floor assembly of every exterior passageway used as part of a *means of egress* shall have a *fire-resistance rating* of not less than 45 min or be of *noncombustible construction*.

2) No *fire-resistance rating* is required for floors of exterior passageways serving *buildings* of Group D, E or F *major occupancy* that are not more than 2 *storeys* in *building height*.

3) No *fire-resistance rating* is required for floors of exterior passageways serving

~~a) a house with a secondary suite, or~~

~~b) a single dwelling unit where no suite is located above or below the dwelling unit (see also Sentence 9.9.9.3.(2)).~~

The BCBC provides no exemption to the fire-resistance rating required for floors of exterior passageways serving a house with a secondary suite where one suite is located above or below another dwelling unit.

9.10.8.10. Application to Houses

1) Table 9.10.8.1. does not apply to

a) a *dwelling unit* that has no other *dwelling unit* above or below it,

b) ~~reserved, houses with a secondary suite including their common spaces, where the floor framing is protected on the underside by a continuous smoke tight barrier of not less than 12.7 mm thick gypsum board, or~~

c) a *dwelling unit* that is not above or below another *major occupancy*.

A house with a secondary suite to have fire separations as well as smoke alarms to provide sufficient time for occupants to escape in the event of a fire, and to permit firefighting to commence before excessive fire damage occurs. (Fire-rated assemblies are to be supported by fire-rated construction except where an alternative compliance method is permitted in Table 1.1.1.1.(6) of Division A.)

Sentence 9.10.8.10.(1) does not waive the requirements of Sentence 9.10.8.3.(1) that where a floor or roof assembly is required to have a fire-resistance rating, the loadbearing supporting assemblies shall have at least the same fire-resistance rating.

9.10.9. Fire Separations ~~and Smoke-tight Barriers~~ between Rooms and Spaces within Buildings

No changes to the BCBC content are proposed in Subsections 9.10.9. or 9.10.10., however NBC content is shown for reference.

Smoke-tight barriers do not function to limit the spread of fire within a building. Unless smoke-tight barriers are continuous around the entire unit, they may not necessarily prevent the spread of smoke or smells from one unit to the other as well as a properly constructed fire separation. (Smoke-tight barriers installed only on demising assemblies are not continuous around the unit.) Fire separations limit the probability of fire spread beyond the suite of origin. BC has historically required fire separations between secondary suites and the other dwelling unit in new construction and it is not proposed that protection from fire spread be reduced.

9.10.9.1. Application

1) This Subsection applies to

~~a) fire separations required between rooms and spaces in buildings, and~~
~~b) smoke-tight barriers required in houses with a secondary suite including their common spaces.~~ except between rooms and spaces within a *dwelling unit*.

9.10.9.2. Continuous Barrier

1) Except as permitted in Article 9.10.9.3., a wall or floor assembly required to be a *fire separation* shall be constructed as a continuous barrier against the spread of fire and retard the passage of smoke.

2) Reserved. ~~Except as permitted in Article 9.10.9.3., a wall or floor assembly required to be a smoke-tight barrier shall be constructed as a continuous barrier against the spread of smoke.~~

3) The continuity of a *fire separation* ~~or smoke-tight barrier~~ shall be maintained where it abuts another *fire separation* ~~or smoke-tight barrier~~, a floor, a ceiling, a roof, or an exterior wall assembly. (See Note ~~Notes A-9.10.9.2.(3) and A-3.1.8.3.(4).~~)

~~A-9.10.9.2.(3) Continuity of Smoke-Tight Barrier. The continuity of a smoke-tight barrier where it abuts another smoke-tight barrier, a floor, a ceiling or a wall assembly, is maintained by filling all openings at the juncture of the assemblies with a material that will ensure the integrity of the smoke-tight barrier at that location.~~

4) ~~Reserved. All gypsum board joints in the assemblies described in Sentence Sentences (1) and (2) shall conform to CSA A82.31-M, "Gypsum Board Application," and penetrations in these assemblies shall be sealed using flexible sealant or tape to maintain the integrity of the smoke-tight barrier over the entire surface.~~

9.10.9.3. Openings to be Protected with Closures

1) Except as permitted in Articles 9.10.9.5., 9.10.9.6. and 9.10.9.7., openings in required *fire separations* shall be protected with *closures* conforming to Subsection 9.10.13.

2) Reserved. ~~Doors in smoke-tight barriers shall~~

~~a) be solid-core, wood doors at least 45 mm thick, and~~

~~b) have a self-closing device.~~

~~(See Note A-9.10.9.3.(2).)~~

~~A 9.10.9.3.(2) Openings in Smoke Tight Barriers to be Protected with Closures.~~ Doors described in Sentence 9.10.9.3.(2) are deemed to provide a minimum 20 min fire-protection rating, which is considered an acceptable level of protection against the spread of fire in a house with a secondary suite. They are not required to be marked to identify conformance to CAN/ULC-S113, "Wood Core Doors Meeting the Performance Required by CAN/ULC-S104 for Twenty Minute Fire Rated Closure Assemblies," as is the case for solid-core doors installed in fire separations.

9.10.9.4. Floor Assemblies

- 1) Except as permitted in Sentences (2) to (4), all floor assemblies shall be constructed as *fire separations*.
- 2) Floor assemblies contained within *dwelling units* ~~and within houses with a secondary suite~~ need not be constructed as *fire separations*.
- 3) Floor assemblies for which no *fire-resistance rating* is required by Subsection 9.10.8. and floors of *mezzanines* not required to be counted as *storeys* in Articles 9.10.4.1. and 9.10.4.2. need not be constructed as *fire separations*.
- 4) Where a crawl space is not required by Article 9.10.8.9. to be constructed as a *basement*, the floor above it need not be constructed as a *fire separation*.

9.10.9.6. Penetrations of Fire Separations

14) In a houses with a secondary suite including their common spaces, ducts penetrating fire separations need not be equipped with fire dampers in conformance with Article 3.1.8.9. provided they are noncombustible with all openings in the duct system serving only one fire compartment.

It is proposed to continue the BCBC permission to omit fire dampers provided the duct is noncombustible and only passes through another fire compartment but does not serve more than one fire compartment.

The proposed change to Sentence 9.32.3.2.(5) points to this new proposed Sentence (14).

9.10.9.14. Separation of Residential Suites

- 1) Except as provided in Sentences (2), and (3) ~~and (4)~~ and Article 9.10.21.2., *suites* in *residential occupancies* shall be separated from adjacent rooms and *suites* by a *fire separation* having a *fire-resistance rating* of not less than 45 min.
- 2) Sleeping rooms in boarding and lodging houses where sleeping accommodation is provided for not more than 8 boarders or lodgers need not be separated from the remainder of the *floor area* as required in Sentence (1) where the sleeping rooms form part of the proprietor's residence and do not contain cooking facilities.
- 3) Except as provided in Sentence (4), dwelling ~~Dwelling~~ *units* that contain 2 or more *storeys* including *basements* as well as houses with a secondary suite including their common spaces shall be separated from the remainder of the *building* by a *fire separation* having a *fire-resistance rating* of not less than 1 h.
(See Note A-3.3.4.4.(1).)

It is proposed that the minimum fire-resistance rating for fire separations that separate houses with secondary suites be not less than 1 h. This only affects single-storey semi-detached or row houses with secondary suites. This supports the proposal to permit secondary suites in row houses.

The NRC publication "Guidelines for Application of Part 3 of the National Building Code of Canada to Existing Buildings" identifies 'separation of residential suites' as 'very important to life safety' with regards to ease of egress and control of fire, and 'very important to property safety, and also as 'highly difficult' with regards to modifying an existing building.

- ~~4) Reserved. Walls and floor-ceiling framing in a house with a secondary suite, that separate dwelling units shall be separated from each other or dwelling units and from ancillary spaces and common spaces need not comply with Sentence (1), where the walls and floor-ceiling framing are protected by a continuous smoke-tight barrier of not less than 12.7 mm thick gypsum board installed on~~
- ~~a) both sides of walls, and~~
 - ~~b) the underside of floor-ceiling framing.~~
- ~~(See Sentence 9.10.9.3.(2) for closures.) with a fire separation~~
- ~~a) having a fire-resistance rating not less than 15 min when all smoke alarms within the house are of photo-electric type and interconnected as described in Clause 9.10.19.5.(2)(a) (see also Sentence 9.10.3.1.(2)),~~
 - ~~b) having a fire-resistance rating not less than 30 min when a additional smoke alarms of photo-electric type are installed and interconnected as described in Clause 9.10.19.5.(2)(b) (see also Sentence 9.10.3.1.(3)),~~
 - ~~c) having a fire-resistance rating not less than 45 min when smoke alarms are not installed and interconnected as described in Clauses (a) or (b), or~~
 - ~~d) that is not required to have a fire-resistance rating if the building is sprinklered.~~

9.10.9.15. Separation of Public Corridors

- 1) Except as provided in Sentences (2), and (3) and (4), public corridors shall be separated from the remainder of the building by a fire separation having not less than a 45 min fire-resistance rating.
- 2) In other than residential occupancies, no fire-resistance rating is required for fire separations between a public corridor and the remainder of the building if
- a) the floor area is sprinklered,
 - b) the sprinkler system is electrically supervised in conformance with Sentence 3.2.4.9.(3), and
 - c) the operation of the sprinkler system will cause a signal to be transmitted to the fire department in conformance with Sentence 3.2.4.7.(4).
- 3) In other than residential occupancies, no fire separation is required between a public corridor and the remainder of the building if
- a) the floor area is sprinklered,
 - b) the sprinkler system is electrically supervised in conformance with Sentence 3.2.4.9.(3),
 - c) the operation of the sprinkler system will cause a signal to be transmitted to the fire department in conformance with Sentence 3.2.4.7.(4), and
 - d) the corridor exceeds 5 m in width.
- ~~4) Reserved. Where a A public corridor is located in a house with a secondary suite, a continuous smoke-tight barrier of not less than 12.7 mm thick gypsum board shall be installed on:~~
- ~~a) both sides of walls separating the corridor shall be separated from the remainder of the spaces in the house building, and~~
 - ~~b) the underside of floor-ceiling framing separating the corridor from the remainder of the building.~~
- ~~(See Sentence 9.10.9.3.(2) for closures.) with a fire separation~~
- ~~a) having a fire-resistance rating not less than 15 min when all smoke alarms within the house are of photo-electric type and interconnected as described in Clause 9.10.19.5.(2)(a) (see also Sentence 9.10.3.1.(2)),~~

- b) having a fire-resistance rating not less than 30 min when an additional smoke alarms of photo-electric type are installed and interconnected as described in Clause 9.10.19.5.(2)(b) (see also Sentence 9.10.3.1.(3)).
- c) having a fire-resistance rating not less than 45 min when smoke alarms are not installed and interconnected as described in Clauses (a) or (b), or
- d) that is not required to have a fire-resistance rating if the building is sprinklered.

The NRC publication “Guidelines for Application of Part 3 of the National Building Code of Canada to Existing Buildings” identifies ‘separation of public corridors’ as ‘very important to life safety’ with regards to ease of egress and control of fire, and ‘very important to property safety, and also as ‘highly difficult’ with regards to modifying an existing building.

9.10.10. Service Rooms

9.10.10.4. Location of Fuel-Fired Appliances

- 1) Except as provided in Sentences (2) and (3) and Article 9.10.10.5., fuel-fired *appliances* shall be located in a *service room* separated from the remainder of the *building* by a *fire separation* having not less than a 1 h *fire-resistance rating*.
- 2) Except as required in the *appliance* installation standards referenced in Sentences 6.2.1.5.(1), 9.33.5.2.(1) and 9.33.5.3.(1), fuel-fired *space-heating appliances*, *space-cooling appliances*, *service water heaters* and *laundry appliances* need not be separated from the remainder of the *building* as required in Sentence (1),
 - a) where the *appliances* serve
 - i) not more than one room or *suite*, or
 - ii) a *building* with a *building area* of not more than 400 m² and a *building height* of not more than 2 storeys., or
 - b) where the *appliances*
 - i) serve a house with a *secondary suite* including their common spaces, and
 - ii) are located in a *service room* separated from the *dwelling units* or their common spaces by a *fire separation* having a *fire-resistance rating* not less than the *fire-resistance rating* required for the *fire separation* between the *dwelling units* or common spaces. ~~where both sides of any wall assemblies and the underside of any floor-ceiling framing separating this room from both dwelling units or their common spaces are protected by a continuous smoke tight barrier consisting of not less than 12.7 mm thick gypsum board.~~
- 3) Sentence (1) does not apply to fireplaces and cooking *appliances*.

9.10.11. Firewalls

9.10.11.2. Firewalls Not Required

- 1) ~~Except as stated in Sentence (2), a~~ A *party wall* on a property line of a *building* of residential occupancy need not be constructed as a *firewall*, provided it is constructed as a *fire separation* having not less than a 1 h *fire-resistance rating*, where the *party wall* separates
 - a) two *dwelling units* where there is no *dwelling unit* above another *dwelling unit*,
 - b) a *dwelling unit* and a house with a *secondary suite* including their common spaces, or
 - c) two houses with a *secondary suite* including their common spaces. ~~In a *building* of residential occupancy in which there is no *dwelling unit* above another *dwelling unit*, a *party wall* on a property line between *dwelling units* need not be constructed as a *firewall* provided it is constructed as a *fire separation* having a *fire resistance rating* of not less than a 1 h.~~

2) Reserved. ~~Where a building of residential occupancy contains more than 2 houses, a party wall that separates any 2 adjacent houses with a secondary suite from the rest of the building shall be constructed as a firewall to create separate buildings each containing no more than 2 adjacent houses with a secondary suite.~~

3) The wall described in Sentence (1) shall provide continuous protection from the top of the footings to the underside of the roof deck.

4) Any space between the top of the wall described in Sentence (1) and the roof deck shall be tightly filled with mineral wool or *noncombustible* material.

It is proposed that secondary suites be permitted in houses that are joined to other houses with a continuous vertical fire separation with not less than a 1 h fire-resistance rating. This is permitted in the NBC for semi-detached houses (two side by side houses each with or without a secondary suite) and to a certain extent, row houses.

The NBC contains a condition on row houses that where two houses with secondary suites are joined, that the two must be separated from the remainder of the building by a firewall so that no building contains more than two adjacent houses with secondary suites. This is not proposed as part of this code change as it potentially creates an unequal market advantage for row houses between firewalls to be 'first to construct' secondary suites, leaving others unable to do the same. Further, the intent for separating these homes is provided for in other ways:

- Secondary suites are limited to buildings designed and constructed under Part 9 meaning they are limited in height and area,
- Each house with a secondary suite has separate egress from other dwelling units or from other houses with a secondary suite,
- Secondary suites are not permitted in houses where dwelling units that can be separate real estate entities are above or below the house with a secondary suite,
- It is proposed to continue the BCBC requirement for fire separations between dwelling units in houses with a secondary suite which reduce the probability that a fire will spread beyond the suite of origin, which also serves to protect adjacent fire compartments, and
- There is other governing legislation in BC such as the *Architects Act* that may apply.

The permitted reductions in fire-resistance rating of the fire separation between dwelling units in a house with a secondary suite do not override the requirement for a party wall (which is a fire separation with not less than a 1 h fire-resistance rating) between houses. A party wall that separates a dwelling unit or common space of a house with a secondary suite from an adjacent house must extend from the top of the footings to the underside of the roof deck and be constructed as a fire separation having not less than a 1 h fire-resistance rating, regardless of the permissions given when interconnected smoke alarms or sprinklers are provided in a house with a secondary suite.

9.10.12. Prevention of Fire Spread at Exterior Walls and between Storeys

9.10.12.3. Exterior Walls Meeting at an Angle

1) Except as provided in Article 9.9.4.5., where exterior walls of a *building* meet at an external angle of 135° or less, the horizontal distance from an *unprotected opening* in one exterior wall to an *unprotected opening* in the other exterior wall shall be not less than 1.2 m, where these openings are

- a) in different *fire compartments*, or
- b) in different *dwelling units*, ancillary spaces or common spaces in a house with a secondary suite.

2) ~~Except as provided in Sentence (3), the~~ The exterior wall of each *fire compartment* referred to in Sentence (1) within the 1.2 m distance shall have a *fire-resistance rating* not less than that required for the interior vertical *fire separation* between the compartment and the remainder of the *building*.

~~3) Where interior walls between dwelling units, ancillary spaces or common spaces in a house with a secondary suite are not constructed as fire separations, the exterior wall of each dwelling unit, ancillary space or common space referred to in Sentence (1) within the 1.2 m distance shall be finished on the interior with not less than 12.7 mm thick gypsum board.~~

9.10.12.4. Protection of Soffits

1) This Article applies to the portion of any soffit enclosing a projection that is

- a) less than 2.5 m vertically above a window or door, and
- b) less than 1.2 m from either side of the window or door.

(See Note A-9.10.12.4.(1).)

2) Except as provided in Sentences (4) and (5), the construction described in Sentence (1) shall have no *unprotected openings* and shall be protected in accordance with Sentence (3), where the soffit encloses

- a) a common *attic or roof space* that spans more than 2 *suites* of *residential occupancy* and projects beyond the exterior wall of the *building*,
- b) a floor space where an upper *storey* projects beyond the exterior wall of a lower *storey* and
 - i) a *fire separation* is required at the floor between the two, ~~or~~
 - ii) ~~reserved the floor separates dwelling units from each other or a dwelling unit from an ancillary space or a common space in a house with a secondary suite,~~ or
- c) a floor space where an upper *storey* projects beyond the exterior wall of a lower *storey*, and the projection is continuous across
 - i) a vertical *fire separation* separating two *suites*, ~~or~~
 - ii) ~~reserved a wall separating dwelling units from each other or a dwelling unit from an ancillary space or a common space in a house with a secondary suite.~~

The BCBC requires dwelling units as well as ancillary or common spaces in a house with a secondary suite to be separated with a fire separation. There is no change proposed to Article 9.10.12.4. but the NBC content is shown for information.

3) Protection required by Sentence (2) shall be provided by

- a) *noncombustible* material having a minimum thickness of 0.38 mm and a melting point not below 650°C,
- b) not less than 12.7 mm thick gypsum soffit board or gypsum board installed according to CSA A82.31-M, "Gypsum Board Application,"
- c) not less than 11 mm thick plywood,
- d) not less than 12.5 mm thick OSB or waferboard, or
- e) not less than 11 mm thick lumber.

(See Note A-9.10.12.4.(3).)

4) In the case of a soffit described in Sentence (1) that is at the edge of an *attic or roof space* and completely separated from the remainder of that *attic or roof space* by *fire blocks*, the requirements in Sentence (2) do not apply.

5) Where all *suites* spanned by a common *attic or roof space* or situated above or below the projecting floor are *sprinklered*, the requirements of Sentence (2) do not apply, provided that all rooms, including closets and bathrooms, having openings in the wall beneath the soffit are *sprinklered*, notwithstanding any exceptions in the sprinkler standards referenced in Article 3.2.5.12.

9.10.15. Spatial Separation Between Houses

9.10.15.1. Application

1) This Subsection applies to

a) *buildings* that contain only *dwelling units* and have no *dwelling unit* above another *dwelling unit*, ~~and~~

b) *houses with a secondary suite including their common spaces*, ~~and~~

c) *accessory buildings* that serve a *building* described in ~~Clauses~~ *Clause* (a) ~~and~~ (b).

(See Note A-9.10.15.1.(1).)

A-9.10.15.1.(1) Application of Subsection 9.10.15. The buildings to which Subsection 9.10.15. applies include:

- traditional individual detached houses with or without a secondary suite,
- semi-detached houses (~~side by side~~ *doubles*) where each house may contain a secondary suite,
- row houses, where any house may contain a secondary suite (see Sentence 9.10.11.2.(1)), and
- stacked dwelling units, ~~but only~~ where one of them is a secondary suite.

Subsection 9.10.15. does not apply to stacked townhouses, stacked duplexes or stacked dwelling units that are not within a house with a secondary suite.

9.10.19. Smoke Alarms

9.10.19.1. Required Smoke Alarms

1) Except as permitted by Article 9.10.19.8., *smoke alarms* conforming to CAN/ULC-S531, "Standard for Smoke Alarms," shall be installed in

a) each *dwelling unit*, ~~and~~

b) each sleeping room not within a *dwelling unit*, and

c) ~~reserved~~ *ancillary spaces and common spaces not in dwelling units in a house with a secondary suite*.

9.10.19.5. Interconnection of Smoke Alarms

1) Where more than one *smoke alarm* is required in a *dwelling unit*, the *smoke alarms* shall be interconnected ~~wired~~ so that the actuation ~~activation~~ of one alarm will cause all alarms within the *dwelling unit* to sound.

The proposed change to Sentence (1) is not specific to secondary suites, but it is specific to the permission for wireless technology. This change coordinates with the proposed change to accept wireless technology for interconnecting smoke alarms in houses with secondary suites.

2) ~~Reserved.~~ Except as provided in Sentence (3), In *Smoke alarms in a house with a secondary suite including their common spaces*

a) all *smoke alarms* shall be of photo-electric type and interconnected ~~wired~~ so that the actuation ~~activation~~ of any one *smoke alarm* causes all *smoke alarms* within the house with a *secondary suite* including their common spaces to sound when the *fire separations* described in Articles 9.9.4.2., 9.10.9.14. and 9.10.9.15. have a *fire-resistance rating* not less than 15 min (see also Sentence 9.10.3.1.(2)), or

b) an additional *smoke alarm* of photo-electric type shall be installed in each *dwelling unit* and common space and be interconnected so that the actuation of one *smoke alarm* will cause the additional *smoke alarms* in the other *dwelling unit*, *dwelling units* or common spaces to sound when the *fire separations* described in Articles 9.9.4.2., 9.10.9.14. and 9.10.9.15. have a *fire-resistance rating* not less than 30 min (see also Sentence 9.10.3.1.(3)).

3) Additional *smoke alarms* and interconnection of *smoke alarms* between *dwelling units* and common spaces in a house with a *secondary suite* is not required if

- a) the *fire separations* described in Articles 9.10.9.14. and 9.10.9.15. have a *fire-resistance rating* not less than 45 min, or
b) the *building is sprinklered*.

The BCBC does not require all smoke alarms in a house with a secondary suite to be interconnected. It is proposed that an option for a lesser fire-resistance rating be available when every alarm in the entire house sounds when one is actuated. Full interconnection provides the earliest warning to all occupants, which facilitates the earliest evacuation and earliest possibility of fire department intervention.

It is proposed to continue the BCBC permission for a 30 min fire-resistance rating when additional smoke alarms are provided in each dwelling unit. This is expanded to include common spaces. It is also proposed to continue the BCBC permission for no additional smoke alarms and no interconnection on the conditions that the fire separations have a 45 min fire-resistance rating or that the building is sprinklered.

It is proposed that all interconnected smoke alarms be the photo-electric type which is considered less prone to nuisance alarms than other types. It is also proposed that interconnection not be limited to being wired, allowing interconnection using wireless technology. (Smoke alarms must still be wired to the building's electrical power, but interconnected smoke alarms need not be wired together.)

It is also proposed to use the term 'actuation' in place of 'activation' to align with language in Sentence 3.2.4.20.(1).

9.10.20. Firefighting

It is proposed to adopt the NBC exemptions for access panels and basement access for houses with secondary suites.

9.10.20.1. Windows or Access Panels Required

1) Except as provided in Sentence (3), a window or access panel providing an opening not less than 1 100 mm high and 550 mm wide and having a sill height of not more than 900 mm above the floor shall be provided on the second and third *storeys* of every *building* in at least one wall facing on a *street* if such *storeys* are not *sprinklered*.

2) Access panels required in Sentence (1) shall be readily openable from both inside and outside or be glazed with plain glass.

3) Access panels required in Sentence (1) need not be provided in

- a) *buildings* containing only *dwelling units* where there is no *dwelling unit* above another *dwelling unit*, or
b) ~~reserved.~~ houses with a secondary suite including their common spaces.

9.10.20.2. Access to Basements

1) Except for basements in houses with a secondary suite or *basements* serving not more than one *dwelling unit*, each unsprinklered *basement* exceeding 25 m in length or width shall be provided with direct access to the outdoors to at least one *street*.

2) Access required in Sentence (1) may be provided by a door, window or other means that provides an opening not less than 1 100 mm high and 550 mm wide, the sill height of which shall not be more than 900 mm above the floor.

3) Access required in Sentence (1) may also be provided by an interior stair accessible from the outdoors.

Section 9.11. Sound Transmission

(See Note A-9.11.)

9.11.1. Protection from Airborne Noise

9.11.1.1. Required Protection

1) Except as provided in ~~Sentence~~ Sentences (2) and (3), a *dwelling unit* shall be separated from every other space in a *building* in which noise may be generated by

a) a separating assembly and adjoining constructions, which together provide an *apparent sound transmission class* (ASTC) rating of not less than 47, or

b) a separating assembly providing a *sound transmission class* (STC) rating of not less than 50 and adjoining constructions that conform to Article 9.11.1.4.

(See Note A-9.11.1.4.)

2) ~~Reserved.~~ Where a house contains a secondary suite, each dwelling unit shall be separated from every other space in the house in which noise may be transmitted by

a) construction having

i) whose joist spaces are filled with sound-absorbing material of not less than 150 mm nominal thickness,

ii) whose stud spaces are filled with sound-absorbing material,

iii) having a resilient channel on one side of the separation spaced 400 or 600 mm o.c., and

iv) having not less than 12.7 mm thick gypsum board on ceilings and on both sides of walls, or

b) construction providing an STC rating of not less than 43, or

c) a separating assembly and adjoining constructions, which together provide an ASTC rating of not less than 40.

(See also Sentence 9.10.3.1.(2) and Note A-9.11.1.1.(2).)

A-9.11.1.1.(2) Sound Transmission in Houses with a Secondary Suite. Controlling sound transmission between dwelling units is important to the occupants' health and well-being. Although this may be difficult to achieve in an existing building, it is nevertheless necessary that a minimum level of sound transmission protection be provided between the dwelling units in a house with a secondary suite. A somewhat reduced level of performance is acceptable in the case of secondary suites because the occupants of the house containing a secondary suite are only affected by the sound of one other unit and, in many cases, it is the owner of the house who will decide on the desired level of protection. Sound resistance can be improved by selecting furnishings and finishings that absorb sound such as carpet.

3) Construction separating a *dwelling unit* from an elevator shaft or refuse chute shall have an STC rating of not less than 55.

It is proposed to adopt the NBC requirement for sound control between dwelling units and common spaces in a house with a secondary suite. Sentence (2) is not an exemption from sound control between adjacent houses such as semi-detached houses and row houses.

Section 9.32. Ventilation

9.32.1. General

9.32.1.1. Application

1) This Section applies to the ventilation of rooms and spaces in *residential occupancies* by natural ventilation and to self-contained mechanical ventilation systems serving only

- a) one dwelling unit-, or
- b) a house with a secondary suite including their common spaces.

2) Mechanical ventilation systems other than self-contained systems serving a single *dwelling unit* or a house with a secondary suite including their common spaces shall conform to Part 6.

3) A storage garage for more than 5 motor vehicles shall be ventilated in accordance with Part 6.

4) Systems used for ventilation shall conform to the energy efficiency requirements in Section 9.36.

9.32.1.2. Required Ventilation

1) Every *dwelling unit* ~~residential occupancy~~ shall incorporate

- a) provisions for non-heating-season ventilation in accordance with Subsection 9.32.2., and
- b) except as required by Sentences (2) and (3), if supplied with electrical power ~~and a heating system,~~ provisions for heating-season ventilation in accordance with Subsection 9.32.3.

2) ~~Reserved.~~ A self-contained heating-season ventilation system serving a single dwelling unit or a house with a secondary suite including their common spaces shall comply with Subsection 9.32.3. (See Note A-9.32.1.2.(2).)

A-9.32.1.2.(2) Application of Subsection 9.32.3. and Ventilation of Houses Containing a Secondary Suite.

Ventilation for Smoke Control

The control of smoke transfer between dwelling units in a house with a secondary suite, or between the dwelling units and other spaces in the house, is a critical safety issue. Although providing a second ventilation system to serve the two dwelling units is expensive – and potentially difficult in an existing building – it is necessary to achieving a minimum acceptable level of fire safety.

Alternative solutions to providing separate ventilation systems for the dwelling units must address smoke control. Although smoke dampers restrict the spread of smoke by automatically closing in the event of a fire, their installation in a ventilation system that serves both dwelling units in a house with a secondary suite is not considered to be a workable solution because they are very expensive, require regular inspection and maintenance, and must be reset after every activation.

Ventilation for Air Exchange

The provision of a ventilation system for the purpose of maintaining acceptable indoor air quality is a critical health issue. However, Sentence 9.32.1.2.(3) allows exits and public corridors in houses with a secondary suite to be unventilated. Lack of active ventilation of these spaces is considered acceptable because occupants do not spend long periods of time there and because exits are somewhat naturally ventilated when doors are opened.

Considering the cost of installing separate ventilation systems, Sentence 9.32.1.2.(4) also exempts ancillary spaces in houses with a secondary suite from the requirement to be ventilated, provided that Ventilation System Supply Air ~~make-up air~~ is supplied in accordance with Article 9.32.3.4. 9.32.3.8.

3) ~~Reserved.~~ In houses that contain a secondary suite including their common spaces, heating-season ventilation need not be provided for

- a) exits,
 - b) public corridors, and
 - c) ancillary spaces that are not within a dwelling unit, except as provided in Sentence (4).
- (See Note A-9.32.1.2.(2).)

4) ~~Reserved.~~ Where ancillary spaces described in Clause (3)(c) contain exhaust devices, these spaces shall be provided with make-up air in accordance with Article 9.32.3.8.

The BCBC allows houses with secondary suites to share heating and ventilation duct systems provided they are designed and installed to prevent the circulation of smoke upon a signal from a duct-type smoke detector. It is proposed to continue this permission to allow options for systems in houses with a secondary suite.

9.32.3. Heating-Season Mechanical Ventilation

(See Note A-9.32.3.)

9.32.3.1. Required Ventilation

1) Every *dwelling unit* that is supplied with electrical power shall be provided with a mechanical ventilation system that conforms to The heating-season ventilation required by Clause 9.32.1.2.(1)(b) shall be provided by a mechanical ventilation system complying with

a) good practice such as that described in CAN/CSA-F326-M, “Residential Mechanical Ventilation Systems,” or

b) for dwelling units with 5 or fewer bedrooms, the balance of this Subsection, or

c) reserved for ducted mechanical ventilation systems serving more than one dwelling unit in a house with a secondary suite including their common spaces, the mechanical ventilation system shall comply with this Subsection or Part 6.

(See Note A-9.32.3.1.(1).)

A-9.32.3.1.(1) Required Ventilation.

Performance Approach [Clause 9.32.3.1.(1)(a)]

CAN/CSA-F326-M, “Residential Mechanical Ventilation Systems,” is a comprehensive performance standard. It gives experienced ventilation system designers the flexibility to design a variety of residential ventilation systems that satisfy those requirements.

Prescriptive Approach [Clause 9.32.3.1.(1)(b)]

The prescriptively described systems are intended to provide a level of performance approaching that provided by systems complying with CAN/CSA-F326-M, “Residential Mechanical Ventilation Systems.” They are included in the British Columbia Building Code NBC for use by those less experienced in ventilation system design. Code users who do not find these prescriptively described systems satisfactory for their purposes, or who find them too restrictive, are free to use any other type of ventilation system that satisfies the performance requirements of CAN/CSA-F326-M.

CAN/CSA-F326-M applies only to ventilation systems serving single-family dwellings that are self-contained. CAN/CSA-F326-M does not apply to ventilation systems serving both dwelling units in a house with a secondary suite.

The BCBC does not provide Part 6 as an option for mechanical ventilation system design under Subsection 9.32.3. The NBC does, which offers an additional compliance path for the design of a single system serving a house with a secondary suite.

9.32.3.2. Design and Installation

4) In a house with a secondary suite including their common spaces, where a heating or ventilation system serves more than a single dwelling unit, the system shall be designed and installed to prevent the circulation of smoke upon a signal from a duct-type smoke detector. (See Note A-9.32.3.2.(4).)

A-9.32.3.2.(4) Duct Systems Serving More Than One Space. Sentence 9.32.3.2.(4) requires heating or ventilation duct systems that serve any space in addition to a single dwelling unit to prevent the circulation of smoke upon a signal from a duct-type smoke detector. A duct system that serves a dwelling unit and a common space must be designed and installed to prevent the circulation of smoke.

It is proposed to continue the BCBC permission for heating or ventilation systems to be shared between dwelling units and common spaces in a house with a secondary suite providing the systems prevent the circulation of smoke upon the signal from a duct-type smoke detector.

The proposed change to Sentence 9.33.1.1.(3) points to this new proposed Sentence (4).

5) Except as provided in Sentence 9.10.9.6.(14), ducts penetrating fire separations shall be equipped with fire dampers in conformance with Article 3.1.8.9.

It is proposed to continue the requirement that ducts penetrating fire separations be equipped with fire dampers, and also continue the BCBC permission to omit fire dampers provided the duct is noncombustible and only passes through another fire compartment but does not serve more than one fire compartment.

The proposed change to Sentence 9.33.1.1.(3) points to this new proposed Sentence (5).

9.32.3.4. Ventilation System Supply Air

(See Note A-9.32.3.4.)

These proposed changes to Article 9.32.3.4. are to extend the NBC requirement for outdoor makeup air to ancillary spaces in a house with a secondary suite that contains an exhaust device and where the house contains a fuel-fired space-heating or water-heating appliance that is not direct- or mechanically vented.

The language used to describe ancillary spaces containing an exhaust device is taken from NBC Division B Clause 9.32.3.8.(1)(b). The BCBC has a variation to Section 9.32., so some modifications are necessary in order to apply the NBC provision in the BCBC context.

1) Except as provided in Sentence (6), a principal ventilation system shall mechanically provide supply air in accordance with Sentence (2), (3), (4) or (5).

2) Where the principal ventilation system is a ducted forced-air heating system, the ducted forced-air heating system shall

a) provide supply air through the ducting to

i) each bedroom, **and**

ii) each floor level without a bedroom, **and**

iii) **ancillary spaces that contain an exhaust device, where the space is not within a dwelling unit in a house with a secondary suite and where the house with a secondary suite contains a fuel-fired space-heating appliance or fuel-fired water-heating appliance of other than direct-vented or mechanically vented types.**

b) draw supply air from an outdoor inlet that is connected to the cabinet containing the furnace air circulating fan required by Clause (d) by ducting that measures, from that cabinet to the point at which the ducting intersects the return air plenum,

i) between 3 m and 4.5 m in length, or

ii) if a flow control device is used, not more than 4.5 m in length,

c) draw supply air through ducting that is

i) rigid ducting with an equivalent diameter of at least 100 mm, or

ii) flexible ducting with an equivalent diameter of at least 125 mm, and

d) have a furnace air circulating fan set to run continuously.

3) Where the principal ventilation system is a ducted forced-air heating system used in combination with a heat-recovery ventilator,

a) the ducted forced-air heating system shall conform to Clauses (2)(a), (c) and (d),

b) the heat-recovery ventilator shall draw supply air from an outdoor inlet into the return air plenum of the ducted forced-air heating system, and

c) the heat-recovery ventilator shall draw exhaust air, through dedicated ducting,

i) from one or more indoor inlets, at least one of which is located at least 2 m above the floor of the uppermost floor level, and

ii) at the capacity rating of the heat-recovery ventilator, which shall be no less than the air-flow rate specified in Table 9.32.3.5.

4) Where the principal ventilation system is a heat-recovery ventilator, the heat-recovery ventilator shall

a) provide supply air through dedicated ducting to

i) each bedroom, ~~and~~

ii) each floor level without a bedroom,

iii) each ancillary space described in Subclause (2)(a)(iii), and

b) draw exhaust air, through dedicated ducting,

i) from one or more indoor inlets, at least one of which is located at least 2 m above the floor of the uppermost floor level, and

ii) at the capacity rating of the heat-recovery ventilator, which shall be no less than the air-flow rate specified in Table 9.32.3.5.

5) Where the principal ventilation system is a ducted central-recirculation ventilation system, the ducted central-recirculation ventilation system shall

a) draw supply air from an outdoor inlet connected upstream of the fan, ~~and~~

b) draw air from

i) each bedroom and deliver it to a common area, or

ii) a common area and deliver it to each bedroom, ~~and~~

c) deliver air to each ancillary space described in Subclause (2)(a)(iii).

6) A principal ventilation system need not conform to Sentence (1) if the principal ventilation system

a) services a *dwelling unit* that

i) is located where the January design temperature, on a 2.5% basis determined in conformance with Article 1.1.3.1., is greater than -20°C ,

ii) has only 1 *storey* and a *floor area* of less than 168 m² within the *building* envelope (see Note A-9.32.3.4.(6)(a)(ii)),

iii) does not have a ducted forced-air heating system, and

iv) except for a *secondary suite*, is not located in a *building* conforming to Subsection 9.36.6. or 10.2.3., and

b) provides supply air passively from outdoors through dedicated inlets that

i) are located in each bedroom, ~~and~~ at least one common area and each ancillary space described in Subclause (2)(a)(iii),

ii) are located at least 1 800 mm above the floor, and

iii) have an unobstructed vent area of not less than 25 cm².

9.32.4. Additional Protection Against Depressurization

This proposed change to Subsection 9.32.4. extends the application of additional protection against depressurization to houses with secondary suites where a vented appliance that is subject to back drafting may be located in a common or ancillary space that is not within one of the dwelling units.

9.32.4.1. Protection Requirements

1) Additional make-up air for the actual *appliance* exhaust rate shall be provided for any *appliance* that discharges air to the exterior at an installed rate exceeding 0.5 air changes per hour when it is located within a *dwelling unit* or house with a secondary suite that contains a vented *appliance* that is subject to back drafting (Naturally Aspirating Fuel Fired Vented Appliance).

(See Note A-9.32.4.1.)

2) Where additional make-up air is required for *appliances* described in Sentence (1), it shall be provided by a supply fan rated to deliver outdoor air at the rate of the installed exhaust *appliance*.

3) The supply fan as required in Sentence (2) shall be interconnected with the exhaust fan for which make-up air is required.

4) The outdoor air required by Sentence (3) shall be

a) tempered to at least 1°C before being introduced to a normally unoccupied area of the *dwelling unit* or house with a secondary suite including their common spaces, or

b) tempered to at least 12°C before being introduced to occupied areas either by passive transfer grille or directly from outside.

9.32.4.2. Carbon Monoxide Alarms

(See Note A-9.32.4.2.)

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

Sentences 9.32.4.2.(1) through (6) establish when carbon monoxide (CO) alarms are required and no changes to those requirements are proposed. NBC Sentence (7) discusses interconnection which is not required currently by the BCBC.

It is proposed to adopt the NBC requirement that CO alarms in a house with a secondary suite be interconnected, however it is also proposed that the option for interconnection using wireless technology also be given.

It is also proposed to use the term 'actuation' in place of 'activation' to align with other proposed changes and existing language in Sentence 3.2.4.20.(1).

Section 9.33. Heating and Air-conditioning

9.33.1. General

9.33.1.1. Application

1) This Section applies to the design and installation of

a) heating systems, including requirements for combustion air, and air-conditioning systems serving only one *dwelling unit*, and

b) radiant heating systems in houses with a secondary suite including their common spaces.

2) The design and installation of heating systems, including requirements for combustion air, and air-conditioning systems other than those described in Sentence (1) shall conform to Part 6. (See Note A-9.33.1.1.(2) and Subsection 9.10.10.)

3) ~~Reserved.~~ Air-duct distribution systems serving one of the dwelling units in a house with a secondary suite are designed and installed to prevent the circulation of smoke in accordance with Sentence 9.32.3.2.(4) and equipped with fire dampers in accordance with Sentence 9.32.3.2.(5), the air duct distribution system shall not be directly interconnected with other parts of the house.

4) Systems used for heating and air-conditioning shall conform to the energy efficiency requirements in Section 9.36.

9.33.3. Design Temperatures

9.33.3.1. Indoor Design Temperatures

1) At the outside winter design temperature, required heating facilities shall be capable of maintaining an indoor air temperature of not less than

- a) 22°C in all living spaces,
- b) 18°C in unfinished basements,
- c) ~~reserved~~ 18°C in common service rooms, ancillary spaces and exits in houses with a secondary suite, and
- d) 15°C in heated crawl spaces.

9.33.4. General Requirements for Heating and Air-conditioning Systems

9.33.4.3. ~~Reserved~~ Heating System Control

1) Where a single heating system serves a house with a secondary suite, individual temperature controls shall be provided in each dwelling unit served by the system. (See Note A-9.33.4.3.(1).)

A-9.33.4.3.(1) Heating System Controls. Where a single heating system serves two dwelling units and common spaces in a house with a secondary suite, it must be possible for the occupants to control the temperature in their own suites. Sentence 9.33.4.3.(1), which applies only to electric, fuel-fired or unitary heaters and hydronic heating systems, specifies that separate temperature controls must be provided in each dwelling unit in a house with a secondary suite; however, the controls for shared spaces may be located in those spaces or in one of the suites.

9.33.4.4. Access

1) Equipment forming part of a heating or air-conditioning system, with the exception of embedded pipes or ducts, shall be installed with provision for access for inspection, maintenance, repair and cleaning.

2) Where a heating or air-conditioning system serves more than one dwelling unit in a house with a secondary suite including their common spaces, access required by Sentence (1) from more than one dwelling unit, common space or ancillary space is not required.

New Sentence 9.33.4.4.(2) is proposed to clarify that, since a house with a secondary suite is limited to a single real estate entity, only a single point of access for inspection, maintenance, repairs and cleaning is required. Inspection,

maintenance, repairs and cleaning are to be coordinated with the owner who may or may not be an occupant of the building.

Section 9.34. Electrical Facilities

9.34.2. Lighting Outlets

9.34.2.3. Stairways

- 1) Every stairway shall be lighted.
- 2) Except as provided in Sentence (3), 3-way wall switches located at the head and foot of every stairway shall be provided to control at least one lighting outlet with fixture for stairways with 4 or more risers in *dwelling units* [and houses with a secondary suite including their common spaces](#).
- 3) The stairway lighting for *basements* that do not contain finished space or lead to an outside entrance or built-in garage and which serve not more than one *dwelling unit* is permitted to be controlled by a single switch located at the head of the stairs.

Section 9.36. Energy Efficiency

No changes are proposed to Section 9.36. in regard to secondary suites, however provisions that specifically mention secondary suites are shown for reference.

9.36.1. General

9.36.1.3. Compliance and Application

- 3) Subsections 9.36.5. and 9.36.6. apply only to
 - a) houses with or without a *secondary suite*, and
 - b) *buildings* containing only *dwelling units* and common spaces whose total *floor area* does not exceed 20% of the total *floor area* of the *building*.(See Note A-9.36.1.3.(3).)

9.36.5.4. Calculation Methods

- 4) The energy model calculations shall account for the loads due to heat gains from occupants, lighting and miscellaneous equipment using the default schedule provided in Table 9.36.5.4. for every day of the year and such loads shall be
 - a) multiplied by the following adjustment factors, as applicable:
 - i) 1 for a house with or without a *secondary suite*,
 - ii) 0.625 for each *suite* in a residential *building* containing 2 *suites*,
 - iii) 0.606 for each *suite* in a residential *building* containing 3 *suites*, or
 - iv) 0.598 for each *suite* in a residential *building* containing more than 3 *suites*, and
 - b) increased for each hour by 3.58 W per square metre of *floor area* in common spaces, if applicable.

Table 9.36.5.4.
Default Schedule for Internal Heat Gain Loads⁽¹⁾
Forming Part of Sentence 9.36.5.4.(4)

Average Load, in W, Before Noon											
12 a.m.	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.
786	552	549	523	521	547	634	726	847	880	906	986
Average Load, in W, After Noon											
12 p.m.	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.	9 p.m.	10 p.m.	11 p.m.
992	934	898	911	924	1 089	1 410	1 588	1 568	1 483	1 194	952

Notes to Table 9.36.5.4.:

- (1) The schedule indicates at what time of day the heat gains from internal loads and hot water draws are present; it does not account for heat gains from exterior lighting and from lighting of unconditioned spaces.

9.36.5.8. Service Water Heating System Calculations

6) The energy model calculations shall take into account the service water heating use schedule presented in Table 9.36.5.8. using a load of

- a) 225 L/ day for houses with or without a *secondary suite*, or
b) 140 L/day per *dwelling unit* for other types of residential *buildings*.

Table 9.36.5.8.
Default Schedule of Service Water Heating Use
Forming Part of Sentence 9.36.5.8.(6)

Type of Small Residential Building	Distribution of Hourly Draws on Service Water Heating, L/h											
Houses with or without a <i>secondary suite</i> (225 L/day/house)	12 a.m.	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.
	0	0	0	0	0	0	0	5	20	30	55	27.5
	12 p.m.	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.	9 p.m.	10 p.m.	11 p.m.
	7.5	2.5	5	12.5	22.5	15	15	5	2.5	0	0	0
<i>Dwelling units</i> in other types of residential <i>buildings</i> (140 L/day/ <i>dwelling unit</i>)	12 a.m.	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.
	0	0	0	0	0	0	0	3.1	12.4	18.7	34.2	17.1
	12 p.m.	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.	9 p.m.	10 p.m.	11 p.m.
	4.7	1.6	3.1	7.8	14	9.3	9.3	3.1	1.6	0	0	0