CITY OF VANCOUVER

REPORT

Report Date: March 30, 2021
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VanRIMS No.: 08-2020-20
Meeting Date: April 13, 2021
Submit comments to Council

TO: Vancouver City Council

FROM: Chief Building Official and City Electrician

SUBJECT: Housekeeping, Clarification, and Miscellaneous Changes to the Building By-law and the Electrical By-law

RECOMMENDATION

A. THAT Council approve, in principle, various housekeeping, and miscellaneous changes to the Building By-law No. 12511 as set out in this report and as general attached in Appendix A to take effect on June 1, 2021, except that some amendments will come into force and effect and take effect on January 1, 2022;

FURTHER THAT Council instruct the Director of Legal Services to bring forward the necessary by-law amendments for enactment by Council, generally as outlined in Appendix A.

B. THAT Council approve, in principle, various housekeeping amendments to the fee schedule in the Electrical By-law No. 5563, as attached in Appendix B, to take effect on June 1, 2021;

FURTHER THAT Council instruct the Director of Legal Services to bring forward the necessary by-law amendments for enactment by Council, generally as outlined in Appendix B.

REPORT SUMMARY

This report recommends amendment of the existing provisions of the City of Vancouver Building By-law and the Electrical By-law as follows:

- Housekeeping and clarifying changes to streamline and facilitate the use of the Building By-law.

- Miscellaneous changes to simply the application of the Building By-law.
- Housekeeping changes to the Electrical By-law schedule of fees to correct errors in internal references and a formatting error.
- Administrative changes to the Electrical By-law schedule of fees to provide more granularity in the assessment of fees for staff time for certain inspections or reviews.

The details of the proposed amendments to the Building and Electrical By-laws are provided in Appendices A and B of this report.

COUNCIL AUTHORITY/PREVIOUS DECISIONS

On July 19, 2019, Council enacted the Building By-law No. 12511 regulating the construction of buildings and related matters in the City of Vancouver.

This was enacted under the authority granted by Section 306 of the *Vancouver Charter*, permitting Council to make By-laws to regulate the construction of buildings, and under Section 306(w), by which Council may adopt by reference in whole or in part and with any change Council considers appropriate, any code relating to fire safety or energy conservation or affecting the construction, alteration, or demolition of buildings.

On July 13, 1982, Council enacted Electrical By-law No. 5563 to regulate electrical works within the City of Vancouver.

This is enacted under Section 314 of the *Vancouver Charter*, and Section 312(2) under an administrative agreement with the Province pursuant to Section 5(3) of the *Safety Standards Act*. The City is authorized to administer all or part of the Act to maintain and enhance public safety, consistency of the Act, and be responsive to client needs.

On March 10, 2020, to improve the stringency of carbon pollution and energy efficiency requirements of residential buildings 3 storeys and under, Council approved a 2 tonne carbon pollution cap for new single family and duplex dwellings of greater than 325 m^2 in area.

CITY MANAGER'S/GENERAL MANAGER'S COMMENTS

The Acting City Manager recommends approval of the foregoing.

REPORT

Background/Context

Under the authority of the *Vancouver Charter*, Council has enacted the Building By-law which adopted the *2018 British Columbia Building Code* (BCBC) as the base document used in developing the Building By-law and includes “Unique to Vancouver” provisions reflective of local concerns and objectives. This model of adoption and amendment is consistent with the model used by the province in developing the BCBC, which is in turn derived from the *National Building Code of Canada* (NBCC) and the inclusion of specific provincial enactments to form the BCBC.

Further to this, and in parallel with building construction regulations, Council has enacted an Electrical By-law to ensure that local electrical safety objectives are being satisfied. The core document adopted through this regulation is the 22nd edition of *Canadian Electrical Code.*

This mechanism of adoption and amendment allows Vancouver to focus it resources on responding to local concerns, and provide leadership in establishing construction policy related to changes in development objectives, and construction methods and technologies.

Strategic Analysis

The “Unique to Vancouver” (UTV) amendments that form the proposed amendments to the Building and Electrical By-laws are provided in Appendices A and B, and are generally summarized in the paragraphs below. It is the intention that the proposed series of amendments support Vancouver’s leadership position in life and fire safety, health, equity, and environmental stewardship.

Building By-law

The proposed changes to the Building By-law may be grouped into two broad areas:

1. Housekeeping changes – related to the clarification of existing requirements, administrative changes, and text errata.
2. Miscellaneous changes – intended to relax existing requirements, simplify the application of the by-law, and address areas of ambiguity.

City staff in conjunction with industry have identified suitable clarification and errata amendments to the text of the Building By-law included in Appendix A. These proposed amendments are located throughout the Building By-law and are generally consistent with existing Council direction or administrative in nature, and clarify the intended manner by which the existing by-law text is to be interpreted.

It is further noted that the overall concept of increased clarity and simplification presented in this set of proposed changes is both consistent and well aligned with the ongoing Regulation Redesign project presently being undertaken by Planning, Urban Design and Sustainability.

Administrative Changes

As of February 5th, 2021, the *Engineers and Geoscientists Act* was replaced with the *Professional Governance Act*. This legislation directly affects the Building By-law and construction industry relies upon a professional reliance model in which registered professionals provide oversight of design and construction. The definitions in the Building By-law have therefore been updated accordingly to reflect this change in related provincial law.

Further to this, administrative changes are proposed to replace existing male-gendered terms with non-gendered equivalents to the greatest extent possible. This includes terms such as the use of “maintenance holes” (formerly manholes), and elimination of the word “journeyman” in favour of non-discriminatory language.

Miscellaneous Changes and Clarifications

Key miscellaneous changes include revisions to provide relaxation to simplify the application of the Code, reduce barriers to compliance, or promote better alignment with reference standards or provincial regulations.

The table following provides a summary of the substantive updates.

Area	Summary of Key Changes
Elevators	Clarify the intended location of smoke detecting devices required by the Elevator Code.
Radio Antenna	Endorsement of the good practice standard for radio antenna system consistent with the national approach.
Roof Access	Relaxation of formal fire department access to private residential roof decks for buildings of up to 4 storey in height.
Wood Frame Construction	Reduction of fire separation requirements in stairs serving certain mixed occupancy constructions.
Fire Department Access	Simplification of the text and the extension of the fire department access path requirements by roughly 30% to reflect the impacts of increasing densification.
	Creation of a lower barrier option for fire department access paths for smaller buildings including 1 and 2 family residences.
Accessibility	Update to clarify relaxation for existing areas need to be assessed for each suite and recognizing that suites may contain mezzanines or intermediary floors not otherwise covered by the BCBC requirements.
	Clarification of confusing requirements related to adaptable dwelling units washroom, and guidelines for future provision of low barrier showers.
Existing Construction	Minor clarification with respect to the applicable scope of alternative compliance measures for existing stairs.
	Expanded alternative compliance options for existing building spatial conditions
Energy Efficiency	Alignment of maximum energy use intensity values with revised provincial step code outcomes.
	Enhanced the visibility of the 2 tonne GHG cap for large single family houses of 325 m^2 or larger by stating this explicitly in the By-law in addition to the reference in the existing modelling standard.
	Revisions residential gas fireplace allowance to be consistent across all lower density housing regardless of the path of compliance chosen.
Public Health Protection (Plumbing and Mechanical Systems)	Improved readability to *Legionella* protection measures by simplifying text, inserting a new explanatory note, updating an existing explanatory note, clarifying a definition and refining requirements, in response to industry feedback.
	Clarifications to the administration of operating permits and the responsibilities of building owners, owners of certain mechanical systems, authorized representatives, and third-party laboratories regarding cooling towers, decorative water features, building water treatment systems, once-through cooling equipment, and non-potable water systems.
	Harmonisation with an update approved by Council to the Water Works By-law.

Electrical By-law

Proposed updates to the Electrical By-law are administrative only, and limited to amendments to the fee schedule to correct errors in internal references and formatting error, as well as the introduction of greater granularity in the breakdown of the fee for staff time for certain inspections or reviews into quarter hour increments for supplementary services, which allows the fees to more accurately reflect the true cost of work and reduce the financial impact on permit holders.

Implications/Related Issues/Risk

The proposed amendments are minor in nature and are primarily intended to clarify or simplify the application of existing by-law provisions. Certain new miscellaneous provisions to the Building By-law introduce new options for compliance and are intended to ensure that building construction are consistent with the City's overall objectives for resiliency, inclusion, and sustainability. These are within the norms established by corresponding provincial construction requirements, and risks to the construction industry therefore considered minimal.

Financial

There are no expected financial implications. Administration of these amendments will be carried out by current City staff as part of existing processes.

Environmental

The proposed updates to the provision of the Building By-law include the implementation of the 2 tonne GHG cap for large houses of 325 m^2 or more in area previously approved on March 10, 2020, in support of Big Move 4 of the Climate Emergency Response report.

Legal

The proposed housekeeping, clarity, and miscellaneous amendments fall within the authority granted to the City under the *Vancouver Charter* including under Section 306. This permits Council to enact any change Council considers appropriate, or vary from any adopted code related to fire safety or energy conservation or affecting the construction, alteration, or demolition of buildings.

Proposed electrical fee schedule updates fall within the authority granted to the City under Section 314(1) and its administrative agreement with the Province.

CONCLUSION

This report presents proposed housekeeping, clarifying, and miscellaneous changes to the Building By-law and the Electrical By-law. The acceptance of the proposed updates will provide needed clarity and simplification of existing requirements, and foster greater alignment with changing provincial regulations in the Building By-law.

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DRAFT

Note: A By-law will be prepared generally in accordance with the provisions listed below, subject to change and refinement prior to posting.

BY-LAW NO.

A By-law to amend Building By-law No. 12511
Regarding 2021 Housekeeping and Miscellaneous Amendments

THE COUNCIL OF THE CITY OF VANCOUVER, in public meeting, enacts as follows:

1. This By-law amends the indicated provisions of Building By-law 12511.

2. In Book I, Division A, Article 1.4.1.2., Council:

(a) strikes out:

"***Journeyman plumber*** means a person, other than an *apprentice*, who holds a certificate issued pursuant to the provisions of the Industry Training Authority Act of British Columbia authorizing the person to engage in the plumbing trade.";

(b) adds in correct alphabetical order:

"***Plumber*** means a person, other than an *apprentice*, who holds a certificate issued pursuant to the provisions of the Industry Training Authority Act of British Columbia authorizing the person to engage in the plumbing trade.";

(c) strikes out:

"***Designated Structural Engineer (Struct. Eng*.)** means a person who is registered or licensed to practice as a professional engineer under the Engineers and Geoscientists Act of British Columbia, and a person who is designated by the Association of Professional Engineers and Geoscientists of British Columbia as a Designated Structural Engineer.",

and substitutes:

"***Designated Structural Engineer (Struct. Eng***.) means a person who is registered or licensed to practice as a professional engineer under the Engineers and Geoscientists Regulations pursuant to the Professional Governance Act of British Columbia, and a person who is designated by the Association of Professional Engineers and Geoscientists of British Columbia as a Designated Structural Engineer."; and

(d) strikes out:

"***Registered professional*** means

- a person who is registered or licensed to practise as an architect under the Architects Act, or
- a person who is registered or licensed to practise as a professional engineer under the Engineers and Geoscientists Act.",

and substitutes:

"***Registered professional*** means
- a person who is registered or licensed to practise as an architect under the Architects Act, or
- a person who is registered or licensed to practise as a professional engineer under the Engineers and Geoscientists Regulations pursuant to the Professional Governance Act of British Columbia.".

3. In Book I, Division A, Article 2.1.1.1., Council strikes out Sentence (1) and substitutes:

"**1)** This Part applies to all *buildings* covered in this By-law except for *existing buildings*. (See Article 1.1.1.1.) ".

4. In Book I, Division A, Sentence 3.2.1.1.(1), Council strikes out the line associated with functional statement [F30] and substitutes:

"**F30** To minimize the risk of injury to persons as a result of tripping, slipping, falling, contact, assault, drowning or collision.".

5. In Book I, Division B, Article 1.3.1.2., in Table 1.3.1.2. after the row associated with "TWC 1995", Council adds the following new row:

"

UL	ANSI/CAN/UL 2524 - 2019	Standard For Safety In-building 2-Way Emergency Radio Communication Enhancement Systems	3.2.5.20.(4) A-3.2.5.20.

".

6. In Book I, Division B, Article 3.1.2.8., Council strikes out "(See also Article 3.3.2.17.)".

7. In Book I, Division B, Article 3.1.2.8., Council strikes out Table 3.1.2.8. and substitutes:
"

Table 3.1.2.8.
Major Occupancy* Classification and Fire Safety Requirements for *Child Care Facilities
Forming part of Sentence 3.1.2.5.(3)

Age of *Children* (months)	**Number of *Children***	***Major Occupancy* Permitted**	**Sprinklers**	**Fire Alarm**	**Smoke Detection[(2)] and CO Alarms**	***Fire Separation* from Remainder of Building**	**Emergency Lighting**
< 30	> 8	A2	***Building***	Required	Required	2 h	Required
	3 – 8	C	*Suite* Only	Required	Required	2 h	Required
		C[(1)]	*Suite* Only	Not Required	Required	No	Required
≥ 30	> 8	A2	***Building***	Required	Required	1 h	Required
	3 – 8	C	*Suite* Only	Required	Required	1 h	Required
		C[(1)]	Not Required	Not Required	Required	No	Required

Notes to Table 3.1.2.8.:
[(1)] Applies to residential *buildings* with no more than 2 principal *dwelling units* or *row houses*
[(2)] Smoke detection shall include smoke detectors where the building is provided with a fire alarm system, and smoke alarms where required by Article 3.2.4.20.

".

8. In Book I, Division B, Article 3.1.3.6., Council strikes out Clause (6)(g) and substitutes:

"g) the penetrations between the horizontal f*ire separation* in Clause (d) shall be FT rated,".

9. In Book I, Division B, Article 3.2.1., Council strikes out Article 3.2.1.7. and substitutes:

"**3.2.1.7. Fire Containment in Combustible Buildings**

1) All Group C *major occupancies* in a *building* of *combustible construction* greater than 2 *storeys* in *building height* shall be separated from all other *major occupancies* except as prohibited in Article 3.1.3.2. and except as permitted in Sentences (2) and (3), by a *fire separation* with at least a 2 h *fire-resistance rating* constructed of
a) concrete,
b) masonry, or
c) in a *sprinklered building*, *encapsulated mass timber construction* complying with Subsection 3.1.18.

2) The *fire-resistance rating* required in Sentence (1) is permitted to be 1.5 h for a *storage garage*.

3) The *fire separation* of every *exit*, elevator and vertical service shaft that penetrates a concrete, masonry, or encapsulated mass timber construction floor assembly as required in Sentence (1) shall be separated from the remainder of the *building* by a *fire separation* having a *fire-resistance rating* determined by Sentences (1) or (2) for
a) the floor assembly above the *storey*, or

b) the floor assembly below the *storey*, if there is no floor assembly above.

4) Where a *building* of *combustible construction* or *encapsulated mass timber construction* greater than 2 *storeys* in *building height* contains an *occupancy* other than Group C or Group D on the second or third *storey* that is required to be constructed in accordance with Sentences 3.2.2.48EMTC.(4), 3.2.2.50.(5), 3.2.2.57EMTC.(3), or 3.2.2.58.(4), the *building* shall

a) be *sprinklered*,

b) be divided into at least two horizontal *fire compartments* on each *storey* containing a *major occupancy* other than Group C or Group D which

i) are not more than 1000 m^2 in area, and

ii) are constructed as *fire separations* with at least a 2 h *fire-resistance rating* or of *encapsulated mass timber construction*,

c) have *exit* stairs serving *storeys* above the third *storey* constructed as *fire separations* with at least a 2 h *fire-resistance rating* on levels containing a Group A or Group E major occupancy constructed in accordance with Sentences 3.2.2.48EMTC.(4), 3.2.2.50.(5), 3.2.2.57EMTC.(3), or 3.2.2.58.(4), and

d) have each *fire compartment* required by Clause (b) served by at least one *exit* stair.

(See Note A-3.2.1.7.(4))".

10. In Book I, Division B, Article 3.2.4.8., Council strikes out Sentence 3.2.4.8.(8) and substitutes:

"**8)** If a fire alarm system is required in a *building* of *residential occupancy* containing *row housing* or residential blocks where the egress of the *dwelling units* conforms to Sentence 3.3.4.4.(3) or Clause 9.9.9.1.(1)(b), and the *building* is no more than 4 *storeys* above the adjacent ground or storage garage, the *building* shall be provided with

a) a single electrically supervised fire alarm system for the entire *building*,

b) at least one sprinkler zone for each block of *row housing* or each residential block,

c) a *sprinkler system* which is monitored by the fire alarm system and an off-site monitoring service,

d) a strobe light located outside the principal entrance of each *dwelling unit* and connected to an internal smoke alarm within the *dwelling unit*, and

e) an exterior audible signal activated by the fire alarm system.".

11. In Book I, Division B, Article 3.2.4.11., Council strikes out Clause 3.2.4.11.(1)(h) and substitutes:

"h) each *floor area* in front of the elevator or elevators.".

12. In Book I, Division B, Article 3.2.4.19., in Sentence 3.2.4.19.(6), Council strikes out "Sentence 3.8.2.12.(5)" and substitutes "Sentences 3.8.2.12.(5) and 3.8.5.7.(4)".

13. In Book I, Division B, Article 3.2.4.22., Council:

(a) strikes out Sentence (5) and substitutes the following:

"**5)** Except where a radio antenna system conforming to Sentence 3.2.5.20.(1) is installed, emergency telephones shall be installed and located in each *floor area*

near *exit* stair shafts for the 2-way communication system referred to in Clause (1)(a).”; and

(b) strikes out Sentence (11).

14. In Book I, Division B, Article 3.2.5.3., Council:

(a) in Sentence 3.2.5.3.(1), strikes out “On” and substitutes “Except as permitted by Sentence (2), on”; and

(b) adds the following new Sentence in the correct numerical order:

“**2)** A *building* of residential occupancy not more than 4 *storeys* in *building height* need not be provided with direct access from the *floor areas* immediately below, provided
a) the slope of the roof is less than 1 in 4,
b) there is no common patio, balcony, or deck area, and
c) *dwelling units* are provided with direct stair access from f*loor areas* immediately below.”.

15. In Book I, Division B, Council strikes out Article 3.2.5.5., and substitutes:

“**3.2.5.5. Location of Access Routes and Paths of Travel**
(See Note A-3.2.5.5.)

1) Except as provided by Sentences (2) and (3), access routes required by Article 3.2.5.4. shall be located so that
a) the principal entrance is no less than 3 m and no more than 15 m from the closest portion of the access route, measured horizontally along the path of travel from the access route to the principal entrance (see Note A-3.2.5.5.(2)(a).), and
b) every access opening required by Articles 3.2.5.1. and 3.2.5.2. are located not less than 3 m and not more than 15 m from the closest portion of the access route, measured horizontally to the face of the *building*.
(See Note A-3.2.5.5.(1).)

2) Paths of travel for firefighters shall not be more than 45 m to the principal *suite* entry for
a) a *building* or portion of a *building*, of *residential occupancy* containing *dwelling units* with *means of egress* conforming with Article 3.3.4.4. provided directly to the exterior at adjacent grade, or
b) non-residential portions of a *building*, which are cut off from and have no internal access to the remainder of the *building*. (See Note A-3.2.5.5.(3)(b).)

3) The path of travel for firefighters to the main entry of a *dwelling unit* permitted by Clause (2)(a) may be increased to
a) 65 m where
i) *dwelling units* are separated from adjacent *floor areas* by a *fire separation* with at least 1 h *fire-resistance rating*,
ii) the *building sprinkler system* is designed to the NFPA 13, except that the *sprinkler system* may be designed to the hydraulic design criteria and sprinkler coverage requirements of NFPA 13R where the building would otherwise be permitted to be NFPA 13D,
iii) a strobe light is installed outside the principal entrance of the *dwelling unit*, and is connected to an internal *smoke alarm* within the *dwelling unit*,

iv) *sprinkler systems* are monitored by a fire alarm system or residential fire warning system and by an off-site monitoring service,
v) lighting and emergency lighting is provided along the path of travel for firefighters with a minimum illumination level of 1 lx, and average illumination of not less than 10 lx, and
vi) the *building* is provided with a fire alarm system and graphic annunciator,

b) 90 m where
i) the requirements of Subclauses (a)(i) to (a)(vi) are met,
ii) no principal *dwelling unit* or its *ancillary residential unit* is located above another *dwelling unit*,
iii) a 64 mm diameter fire department hose connection is located adjacent to the path of travel for firefighters located not more than 45 m measured from the hose connection to the principal entrance of each of the dwelling units,
iv) the location of the fire department hose connections required by Subclause (c)(ii) is indicated on the fire alarm system graphic annunciator, and
v) the *building* is *sprinklered* to NFPA 13.

4) The access route from the hydrant location to the *building* location or the principal entrance of the *building* as described in Sentences (5) and (6), shall be no more than 90 m. (See Note A-3.2.5.5.(4).)

5) Where the access route runs continuously across the face of a *building*, the length of the access route shall be measured by measuring the shortest distance between a line drawn perpendicular to the access route and through the hydrant and a line drawn perpendicular to the access route and through the principal entrance of the *building*.
(See Note A-3.2.5.5.(5).)

6) Where the access route terminates before the principal entrance of a *building*, the length of the access route shall be measured by measuring from a line drawn perpendicular to the access route and through the hydrant straight along the access route to its terminus and thereafter along the actual path of travel to the principal entrance. (See Note A-3.2.5.5.(6).)".

16. In Article 3.2.5.20 of Book I, Division B, Council:

(a) strikes out Sentence (2) and substitutes:

"**2)** A radio antenna system shall not be required for
a) government *buildings* requiring security against transfer of signals inside and outside of *buildings*,
b) where, in the opinion of the *Chief Building Official*, in consultation with the Fire Chief, radio signals compromise the intended use of the *building*, and
c) *buildings* of *residential occupancy* only with no more than two principal *dwelling units*."; and

(b) adds the following new Sentence in the correct numerical order:

"**4)** A radio antenna system shall comply with ANSI/CAN/UL 2524 "Standard For Safety In-building 2-Way Emergency Radio Communication Enhancement Systems."".

17. In Book I, Division B, Article 3.2.6.4., Council:

(a) strikes out Sentence (5) and substitutes:

"**5)** The automatic emergency recall provided in accordance with Sentence (1) shall be activated by *smoke detectors* installed in
a) each *floor area* in front of the elevator(s),
b) the elevator hoistway,
c) the elevator machine room, or
d) any room containing elevator control equipment."; and

(b) adds the following new Sentence in the correct numerical order:

"**8)** *Smoke detectors* installed in an elevator lobby to comply with Clause 3.2.6.4.(5)(a) shall be located such that the detector is not more than its rated detection distance from the elevator doors that it serves.".

18. In Book I, Division B, Article 3.2.7.9., Council strikes out Clause (1)(a) and substitutes:

"a) every elevator serving *storeys* above the *first storey* in a *building* that is more than 18 m high measured between *grade* and the floor level of the top *storey* other than a *building* complying with Sentence 3.2.6.1.(2), and every elevator for firefighters in conformance with Sentence (2),".

19. In Book I, Division B, Article 3.3.1.3., Council strikes out Sentence (12) and substitutes:

"**12)** Except as permitted by this Section and by Sentence 3.4.2.1.(2), at the point where a doorway referred to in Sentence (11) opens onto a *public corridor* or exterior passageway, it shall be possible to go in opposite directions to each of 2 separate *exits*.".

20. In Book I, Division B, Article 3.4.6.6., Council strikes out Sentence (7) and substitutes:

"**7)** Except for *guards* conforming to Article 3.3.5.10., *guards* shall be designed so that no member, attachment or opening located between 140 mm and 900 mm above the level being protected by the *guard* facilitates climbing. (See Note A-9.8.8.6.(1).)".

21. In Book I, Division B, Article 3.4.6.16., Council strikes out Clause (4)(k) and substitutes:

"k) where they are installed on doors providing emergency crossover access to *floor areas* from *exit* stairs directly into a public corridor, or publicly accessed *floor area acceptable* to the *Chief Building Official*, and in accordance with Sentence 3.4.6.18.(2),
i) the locking device releases immediately upon the operation of a manual station for the fire alarm system located on the wall on the *exit* stair side not more than 600 mm from the door, and
ii) a legible sign with the words "re-entry door unlocked by fire alarm" written in letters at least 25 mm high with a stroke of at least 5 mm is permanently mounted on the door on the *exit* stair side.".

22. In Book I, Division B, Article 3.4.6.18, Council strikes out Sentence (2) and substitutes:

"**2)** Doors referred to in Sentence (1) are permitted to be equipped with electromagnetic locks, provided they open directly into a public corridor or publicly accessed *floor area acceptable* to the *Chief Building Official*, and comply with Sentences 3.4.6.16.(4) and (5).".

23. In Book I, Division B, Article 3.8.2.1., Council strikes out Clause (1)(f) and substitutes:

"f) a portion of the *storey* next above or below the *accessible storey* in a *suite* of not more than two *storeys,* provided the portion of the *storey* next above or below the *accessible storey*
   i) is less than 600 m^2 in *floor area*,
   ii) contains only facilities that are also contained on the *accessible storey*, and
   iii) does not contain an *assembly major occupancy* with an area more than 100 m^2, and
   iv) is not served by a passenger-elevating device connecting the *storey* next above or below the *accessible storey* (See Note A-3.8.2.1.(1)(f) and (g).), and".

24. In Book I, Division B, Council strikes out Article 3.8.5.5., and substitutes:

"**3.8.5.5. Adaptable Dwelling Unit Bathrooms**
(See Note A-3.8.5.5.)

1) One bathroom in an *adaptable dwelling unit* that includes a floor level exceeding 40 m^2 shall
   a) have a washbasin.
   b) have a toilet,
   c) have either a bathtub, shower, or be configured to accommodate the future installation of a low barrier shower and shall be constructed with
      i) the addition of structural reinforcement of framed construction to accommodate the subsequent change in load, or the removal or reduction of the capacity of structural elements to facilitate the future installation of a low barrier shower,
      ii) pre-plumbing of a drain connection the greatest extent permitted by this Code of to facilitate the future installation of a low barrier shower where it passes through a concrete floor or floor topping, or
      iii) alternative measures to the satisfaction of the *Chief Building Official* where it can be demonstrated that the future installation of a low barrier shower can be installed without substantial changes to the *building* structure or layout, and
   d) be arranged so as to provide a minimum clear floor space of 750 mm by 1200 mm in front of a washbasin, toilet, bathtub or shower required by Clause (c),
   e) be located on
      i) the principal floor exceeding 40 m^2 contain living space with level access to an entry at the adjacent ground level, or
      ii) a floor provided with features that in the opinion of the *Chief Building Official* can readily be modified to facilitate future use by persons with limited mobility (see Note A-3.8.5.5.(1)).

2) Walls adjacent to the water closet and bathtub or shower shall accommodate the future installation of grab bars conforming to
   a) Clauses 3.8.3.11.(1)(e) and (f) for water closets, and
   b) Clause 3.8.3.16.(1)(f) for showers or 3.8.3.17.(1)(f) for bathtubs.

(See Note A-3.8.5.5.(2).)

3) All bath and shower controls in *adaptable dwelling units* shall be
   i) easily accessible from an open floor space or offset which does not require entry into the shower to operate, and
   ii) equipped with lever-type controls or hardware that does not require a tight grasp or twisting action of the wrist.

4) All washbasins in *adaptable dwelling units* shall be equipped with lever-type faucets or hardware that does not require a tight grasp or twisting action of the wrist.".

25. In Book I, Division B, Council strikes out Article 3.8.5.7., and substitutes:

"**3.8.5.7. Controls, Switches, Outlets and Signalling Devices**

1) Controls and switches in an *adaptable dwelling unit* intended for regular occupant use, including electrical, telephone, cable and data outlets shall be mounted 455 mm to 1 200 mm above the floor, except where
   a) in the opinion of the *Chief Building Official*, a different height is necessary to accommodate appliances or equipment, or
   b) otherwise required for safety or other regulatory enactments.

2) Controls for the operation of *building* services or safety devices, electrical switches, thermostats and intercoms in a *adaptable dwelling unit* shall be located no more than 1 200 mm above the finished floor, except where, in the opinion of the *Chief Building Official*, a different height is necessary for safety reasons.

3) At least one electrical receptacle shall be provided in the vicinity of the stair required by Sentence 3.8.5.4.(3).

4) Except as permitted by Sentence (5), each *adaptable dwelling unit* shall be provided with special outlet boxes and cover plates as described in Sentence 3.2.4.19.(6). (See also Sentence 3.2.4.19.(7).)

5) Where a building is provided with an addressable fire alarm system, a special outlet box described in Sentence (4) is not required provided that
   a) the dwelling unit has been designed with fire alarm signaling devices located in accordance with Clause 3.2.4.19.(6)(c), and
   b) the fire alarm system and the signaling devices in clause (a) can accommodate the future replacement of audible signaling devices with combination audible visual signaling devices.".

26. In Book I, Division B, Article 3.10.1.1., in Table 3.10.1.1., Council:

(a) adds the following new rows in the correct numerical order:

"

3.1.2.8. Child Care Facilities	
(1)	(b) [F02,F03,F05-OS1.2,OS1.3] Applies to sprinklers.
	[F11-OS1.5] Applies to fire alarm.
	[F11-OS1.5] Applies to smoke and CO alarm.
	[F03, F10-OS1.5] Applies to fire separations from the remainder of the building.
	[F10-OS1.5] Applies to emergency lighting.

"; and

(b) strikes out the rows for Sentence (2) of Article 3.3.5.3. and substitutes:

"

(2)	[F06-OS1.5,OS1.2] Applies to the separation of entrances to *basements* and to rooms containing *building* services from the remainder of the *building*.
	[F06-OP1.2] Applies to the separation of entrances from the remainder of the *building*.
	[F05-OS1.5] [F06-OS1.2,OS1.5] Applies to the separation of *exits* from the remainder of the *building*.
	[F06-OP1.2] Applies to the separation of *exits* from the remainder of the *building*.

".

27. In the Notes to Part 3 in Book I, Division B, in Note A-3.2.5.20., Council strikes out "INTERCONNECTION" in the heading and substitutes "CONNECTION".

28. In the Notes to Part 3 in Book I, Division B, in Note A-3.8.3.1.(2), Council:

(a) strikes out "**Accessiblity**" in the title and substitutes "**Accessibility**"; and

(b) strikes out "Articles 3.8.1.1. to 3.8.2.3." and substitutes "Articles 3.8.2.1. to 3.8.2.3.".

29. In the Notes to Part 3 in Book I, Division B, Council adds the following new Note in the correct numerical order:

"**A-3.8.3.1.(2)(d)** The provision for providing reinforcement in wall assemblies adjacent to the toilet and bathtub is intended to assist with future installation of grab bars adjacent to toilets and bathtubs. It is often difficult to add this reinforcement in walls after construction is complete. Therefore solid reinforcement must be installed in the walls adjacent to toilets and bathtubs. The requirements of 3.8.3.11.(1)(e), 3.8.3.16.(1)(f) and 3.8.3.17.(1)(f) may serve as good practice (see note A-3.8.5.5).".

30. In the Notes to Part 3 in Book I, Division B, Council adds the following new Note in the correct numerical order:

"**A-3.8.3.1.(2)(i)** The provision for providing a 750 mm by 1 200 mm clear space in the washroom is to allow direct entry into the washroom and reverse exiting without the need for a 1 500 mm turning circle. Washroom fixtures should be located so as to permit side or end-on transfer from a wheelchair without undue difficulty. The location of bathtub or shower controls should be offset or otherwise located so as to facilitate easy reach from an open floor space. Ideally, the entire space in front of a tub or should be clear of obstructions (see also CSA-B651, Section 6.5)

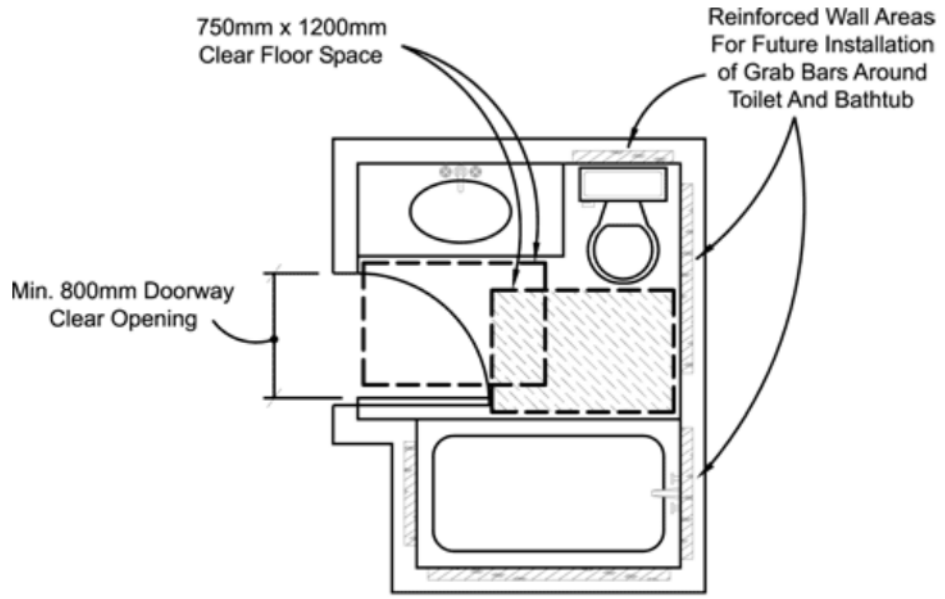

Figure A-3.8.3.1.(2)(i)-A
Signs indicating accessible facilities

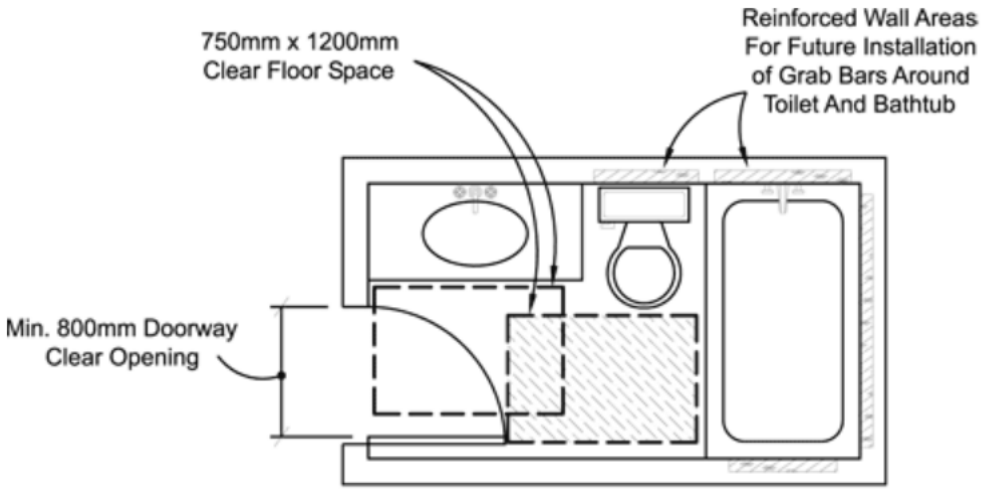

Figure A-3.8.3.1.(2)(i)-B
Signs indicating accessible facilities

".

31. In the Notes to Part 3 in Book I, Division B, Council adds the following new Note in the correct numerical order:

"**A-3.8.5.5.(1) Location of Adaptable Dwelling Unit Bathrooms.** One of the fundamental objectives of the Adaptable Dwelling Unit provisions is to allow for the future installation of a three piece bathroom on the principal floor of each unit with features facilitating use for a persons with a range of abilities. Consequently, the requirements of Article 3.8.5.5.(1) are intended to ensure that sufficient space is allocated at the outset so that the principal floor of the dwelling unit can accommodate a future three piece bathroom and space for the effective use of its fixtures that allows for the flexible use of

the living space most readily providing access to the exterior for persons with varying degrees of mobility.

In the event that the specific design constraints of the ground floor does not allow for the effective inclusion of a bathroom, the Chief Building Official may permit the allocation of space for the piece washroom on another floor. Similarly, a minimum 40 m^2 floor area has been established to account for the decreasing efficiency in space use and impact on livability in smaller units.

Chief Building Official's Interim Position on the design of spaces for the future accommodation of low barrier showers (October 20, 2020):

1. That the triggering requirement for the adaptable bathroom would be based upon an assessment of the size of the livable floor space of a suite on a floor by floor basis, meaning that:
    a. at least one adaptable bathroom in each suite is required where any livable floor space exceeds 40 sq. m.,
    b. the determination of livable floor space is based upon that portion of the floor area of a given storey of the building which is intended for daily use containing kitchen, living, or dining facilities,
    c. that the adaptable washroom should be provided on the principal living space with ground floor access, on a floor area that is 40 sq. m. or more in order to perform its intended function, and
    d. the current extent of the adaptable bathroom requirements for 3.8.5.5. require either a 3 piece bathroom set, or a sink and toilet plus suitable provision for future installation of a low barrier shower.
2. The underlying general intent of the adaptable bathroom provisions of 3.8.5.5. are to require a dedicated bathroom space ready for future adaptation to accommodate an occupant whose may have physical needs have changes such that they differ from what the present arrangement can accommodate at a minimal cost to the owner.
3. Where an owner opts to forego a 3 piece bathroom, a proposal for a two piece adaptable washroom generally complying with Article 3.8.5.5. shall include the following:
    a. a washbasin and toilet
    b. the pre-allocation of a dedicated space for the installation of a low barrier shower which:
        i. is a dedicated separate space that is not currently a part of the 2 piece bathroom, (such as a 3'X3' / 3'X 4' / 3'X5' / 5'x2.5' bathtub size),
        ii. may include storage space or similar non-essential space,
        iii. may not include the current washer and dryer location, service rooms or spaces,
        iv. shall have suitable structural support to accommodate the future installation of the low barrier shower and surrounds, and
        v. where the floor is concrete or has a concrete topping, it shall be constructed to accommodate for the future installation of the shower that does not require extensive demolition or cutting of the concrete.
    c. a minimum clear floor space of 750mm X 1200mm for maneuvering shall be provided in front of the washbasin, toilet, and the dedicated bathtub / shower space.
        i. The clear floor space is to be designed to allow sufficient maneuvering room for the occupant to readily transition to and from the future low barrier shower from dedicated separate space without unusual effort.

ii. The minimum clear floor space may not overlapping the sink, toilet, or the dedicated space for the lower barrier shower

d. The washroom fixtures shall not be overlap nor shall they overlap the dedicated space.

e. Preplumbing shall be required to support the future installation of a low barrier shower:
   i. with domestic cold and hot water,
   ii. with a drain intended for the future installation of a low barrier shower, and
   iii. without requiring extensive or costly modification to a facilitate the future installation of the low barrier shower.

f. The design drawings shall indicate the location and extents of the dedicated space for the low barrier shower, and indicate the location of all pre-plumbing roughed-in at the dedicated separate space on the initial permit application drawings.".

32. In the Notes to Part 3 in Book I, Division B, in Note A-3.8.5.5.(3), Council strikes out "**A-3.8.5.5.(3)**" and substitutes "**A-3.8.5.5.(2)**".

33. In Book I, Division B, Table 6.10.1.1., in the rows under 6.2.1.1., Council strikes out "(a) to (c) and (e) to (i) [F40,41,F50,F51,F54,F63-OH1.1]" and substitutes "(a) to (c) and (e) to (j) [F40,F41,F50,F51,F52,F54,F63-OH1.1]".

34. In the Notes to Part 6 in Book I, Division B, in Note A-6.2.1.1., Council strikes out ""Recognition, Evaluation and Control of Legionella in Building Water Systems" (American Industrial Hygiene Association, 2015)." and substitutes ""Recognition, Evaluation and Control of *Legionella* in Building Water Systems (Second Edition)" (American Industrial Hygiene Association, 2020).".

35. In Book I, Division B, Article 9.6.1.4., Council strikes out Sentence (1) and substitutes:

"**9.6.1.4. Types of Glass and Protection of Glass**

1) Glass sidelights and windows located within 915 mm of doors, and greater than 500 mm wide, glass in storm doors and glass in sliding doors within or at every entrance to a *dwelling unit* and in public areas shall be
   a) safety glass of the tempered or laminated type conforming to CAN/CGSB-12.1-M, "Tempered or Laminated Safety Glass," or
   b) wired glass conforming to CAN/CGSB-12.11-M, "Wired Safety Glass."".

36. In Book I, Division B, Council strikes out Article 9.10.11.2. and substitutes:

"**9.10.11.2. Firewalls Not Required**

1) 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 principal *dwelling units* where there is no *dwelling unit* above another principal *dwelling unit* and its associated *ancillary residential units*.
   b) **deleted**,
   c) **deleted**.

2) **Reserved**.
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.".

37. In Book I, Division B, Article 9.10.20.3., Council:

1. strikes out Sentence (1) and substitutes:

"**1)** Except as permitted by Sentence (8), access for fire department vehicles and fire fighters path of travel shall be provided to each principal entrance of a *building* in accordance with Articles 3.2.5.4., 3.2.5.5. and 3.2.5.6. (See Notes A-9.10.20.3.(1) and A-3.2.5.6.(1).)";

2. strikes out Sentence (3) and substitutes:

"**3)** Despite the provisions of Sentence (1), an unobstructed path of travel for firefighters shall be provided to an *ancillary residential building* and the path of travel shall
a) lead continuously from the *street* to the *lane*,
b) have a travel distance of no more than 45 m from the *street* to the principal entrance of the *ancillary residential building*,
c) be at least 900 mm wide,
d) have an overhead clearance of at least 2 m, and
e) consist of concrete, asphalt, or similar material.";

(c) strikes out Sentence (7) and substitutes:

"**7)** Two adjacent parcels may have a single shared path of travel for firefighters over the common property line and the adjacent specified area to access both, provided
1. each parcel contains or is designed to contain an *ancillary residential building*,
2. each parcel is subject to a covenant registered on title which prohibits construction upon or obstruction of the common property line and of a specified area adjacent to the property line, and
3. the path of travel meets the requirements of Sentences (3), (4) and (5).";
and

(d) strikes out Sentence (8) and substitutes:

"**8)** In a residential *building* within the scope of Division A, Article 1.3.3.3., containing not more than 2 principal *dwelling units*, access routes are permitted to be located so that the path of travel for firefighters to the principal entrance of each *dwelling unit* or ancillary *floor area* is no less than
a) 45 m,
b) 65 m where
i) the *building* is provided with *sprinklers* designed in accordance with NFPA 13, except that the *sprinkler system* may be designed to the hydraulic design criteria and sprinkler coverage requirements of NFPA

13R where the building would otherwise be permitted to be NFPA 13D,

ii) despite the requirements of Subclause (b)(i) a fire department connection is not required,

iii) the *sprinkler system* is connected to internal smoke alarms within the *dwelling unit*, provided with an exterior audible alarm, and off-site monitoring, and

iv) a strobe light is installed outside the principal entrance of the *dwelling unit*, and is connected to an internal *smoke alarm* within the *dwelling unit*, or

c) 90 m where

i) no principal *dwelling unit* or its *ancillary residential unit* is located above another *dwelling unit*,

ii) the *building sprinkler system* is designed to the NFPA 13,

iii) despite the requirements of Subclause (c)(ii) a fire department connection is not required,

iv) the *sprinkler system* is connected to internal smoke alarms within the dwelling unit, provided with an exterior audible alarm, and off-site monitoring,

v) a strobe light is installed outside the principal entrance of the *dwelling unit*, and is connected to an internal *smoke alarm* within the *dwelling unit*,

vi) an access path of at least 1.2 m wide is provided from each principal *dwelling unit* entry to the street, and

vii) lighting and emergency lighting is provided along the path of travel for firefighters with a minimum illumination level of 1 lx, and average illumination of not less than 10 lx.".

38. In the Notes to Part 9 in Book I, Division B, in Note A-9.37.2.15, Council adds the following new paragraph to the end of the note:

"This 'deemed to comply' approach replaces the large variety of assemblies that could otherwise be constructed in conformance with Articles 9.10.8.11. and 9.11.1.1. (or their Part 3 and Part 5 equivalents). Where an owner provides assemblies constructed in accordance with the normal residential suite separation requirements, it can readily be seen that the intent of the provisions of 9.37.2.15. have been satisfied.".

39. In Book I, Division B, Article 10.2.2.6.. Council strikes out Table 10.2.2.6. and substitutes:

"

Table 10.2.2.6.
Minimum Effective Thermal Resistance of Assemblies in Buildings of Group C Major Occupancy
Forming part of Sentences 10.2.2.6.(1)

Building Assembly	**Assembly Minimum RSI Value (m^2K/W)**
Attic Space(1)	8.5
Roof Joist Assemblies for residential *buildings* with not more than 2 principal *dwelling units* (Cathedral Ceilings/Flat Roofs)	4.3

Roof Assemblies for residential *buildings* in excess of 2 principal *dwelling units* (Cathedral Ceilings / Flat Roofs)	5.28
Walls (including frame crawl space walls)(2)	3.85
Foundation Walls	3.85
Box and Rim Joists	3.85
Concrete or Masonry Walls (other than foundation walls)	3.85
Suspended Floors (framed)	4.2
Suspended Floors (concrete slab)	4.2
Concrete Slabs on Ground at, above, or below grade (insulation under all slab area and around edge of slab)	2.5
Radiant Heating Suspended Floor Assembly Over Heated Area (insulation between heated floor and heated area below)(3)	2.5
Concrete Balconies, Eyebrows, and Exposed Slab Edge (wrapped or using manufacturer thermal break in structure)	0.42

Notes to Table 10.2.2.6.:
(1)The thermal resistance rating of attic space insulation may be reduced to value required for frame walls for a distance of 1200 mm from the exterior wall. A minimum nominal RSI of 3.52 m^2K/W is required above the top plate in the attic space .
(2) Headers and lintels: cavities between structural members are to be fully insulated, except where a framing plan provided by the builder, architect, designer, or engineer indicates that full-depth solid headers are structurally required.
(3) Not applicable when heating elements or piping are located within a concrete topping on a suspended floor assembly or within an internally heated suspended slab.

".

40. In Book 1, Division B, Article 10.2.2.7., Council strikes out Sentence (3) and substitutes:

"**3)** The thermal transmittance of factory-assembled fenestration products within the scope of existing certification programs shall be indicated by labels applied to the products at the manufacturing location. The thermal transmittance of fenestration products that are site-assembled, imported, or otherwise outside the scope of existing certification programs shall be suitably documented.
(See Note A-10.2.2.7.(3).)".

41. In Book I, Division B, Clause 10.2.2.17.(3)(e), Council strikes out "Table 9.32.3.3.A" and substitutes "Table 9.32.3.5.".

42. In Book I, Division B, Council strikes out Article 10.2.2.20. and substitutes:

"**10.2.2.20. Passive House Planning Package (PHPP), EnerGuide, or Other Energy Documentation**

1) In a *building* required to comply with this Article, at the time of *permit* application, and at the time of final inspection, the owner shall provide to the *Chief Building Official acceptable* documentation, in the form of
a) a PHPP file from a Certified Passive House Consultant or Designer,
b) an EnerGuide Rating System Audit, or

c) equivalent energy modelling documentation *acceptable* to the *Chief Building Official*.

2) In a *building* required to comply with this article, at the time of mid-construction inspection, the owner shall provide to the *Chief Building Official acceptable* documentation, in the form of

a) a mid-construction checklist, and

b) a blower door test result that achieves an *acceptable* level of performance.

3) In a *building* required to comply with this Article, that contains more than 325 m^2 of *conditioned* space, and does not consist of more than one principal *dwelling unit*, the owner shall provide a calculation utilizing the EnerGuide rating system to demonstrate that the proposed home has a greenhouse gas (GHG) footprint that is no more than two (2) metric tonnes annually (see Note A-10.2.2.20.(3)).".

43. In the Notes to Part 10 in Book I, Division B, in Note A-10.2.2.7., Council:

(a) strikes out the words "**General Requirements for Labels On Factory-Glazed Products**" and substitutes "**General Requirements for Labels On Factory-Assembled Fenestration Products**";

(b) strikes out the words "Compliance is demonstrated by means of verifier labels, affixed to factory-glazed products" and substitutes "Compliance is demonstrated by means of verifier labels, affixed to factory-assembled fenestration products";

(c) strikes out the words "• site glazed windows, doors," and substitutes "• site–assembled windows, doors,"; and

(d) strikes out the words "• factory glazed curtainwalls and window wall assemblies." and substitutes "• factory**-**assembled curtainwalls and window wall assemblies.".

44. In the Notes to Part 10 in Book I, Division B, Council adds the following new note in the correct numerical order:

"**A-10.2.2.20.(3) Modelling Guidelines for Large Homes.** For a building required to comply with the greenhouse gas (GHG) limit, the total annual GHG footprint shall be calculated using approved modelling software and modelling criteria provided in the "Modelling Guidelines for Large Homes." "**.**

45. In Book I, Division B, Article 11.2.1.4., Council:

(a) in Sentence (1), adds "solely" after "an *alteration* or *addition* to a";

(b) in Table 11.2.1.4.(1)-A:

i) in Table note (3), strikes out "9.10.14" and substitutes "9.10.14", and

ii) in Table note (6), strikes out "flow chart #2", and substitutes "flow chart #3";

(c) in Table 11.2.1.4.(1)-B:

i. in Table note (3), strikes out "Exits" and substitutes "*Exits*", and

ii. in Table note (7), strikes out “flow chart #2”, and substitutes “flow chart #3”;

(d) in Table 11.2.1.4.(1)-C, in Table note (6), strikes out “flow chart #2”, and substitutes “flow chart #3”; and

(e) in Table 11.2.1.4.(2):

i) in the title, strikes out “Clause 11.2.1.2.9)d)” and substitutes “Clause 11.2.1.2.(9)(d))”, and

ii) adds “Forming part of Sentence 11.2.1.4.(2)” under the title.

46. In Book I, Division B, Article 11.3.1.2., in Sentence (5), Council adds “or *means of egress*” after “Where the *exits*”.

47. In Book I, Division B, Subsection 11.3.5., Council adds “and Means of Egress” after “Alternative for Exits” in the heading.

48. In Book I, Division B, Article 11.3.5.1., Council strikes out Sentence (1) and substitutes:

“**1)** Except as permitted in Articles 11.3.5.2. through 11.3.5.4. and in Subsection 11.3.6., every *floor area* or other space shall be served with *exits* in conformance with Section 3.4.”.

49. In Book I, Division B, Article 11.3.5.4., Council:

(a) adds “in a Means of Egress” after “Existing Stairs” in the heading; and

(b) in sentence (1), strikes out “Existing egress stairs with rectangular treads in straight flights, other than those serving seating areas” and substitutes “Existing stairs in an *exit* or a *means of egress* with rectangular treads in straight flights, other than those serving seating areas”.

50. In Book I, Division B, Article 11.4.3.1., Council strikes out Table 11.4.3.1., and substitutes the following

“

Table 11.4.3.1.
Fire Safety Requirements for Ancillary Residential Suite Conversions
Forming Part of Article 11.4.3.1.

Item	**Item Details**	**Alternative Compliance Measure**
Spatial Separation	Existing windows and doors	Original openings may remain and new openings to conform to Part 9
	New windows in existing openings	Where new windows are provided in existing openings required to be protected by Subsections 3.2.3. or 9.10.14., existing openings may be protected in conformance with Article 11.3.3.4.

Fire Containment within a Principal *Dwelling Unit*	Separation between a principal *dwelling unit* and its contained *ancillary residential units*	Existing lath and plaster in good condition or 13 mm gypsum wall board on wood studs at maximum 450 mm on centre may be used where the interior wall finish is in place prior to the construction of an *ancillary residential suite*. New walls are to be 16 mm (5/8") type 'X' GWB or 12.5 mm (½") Type 'C' GWB on wood or steel studs at maximum 600 mm on centre. the stud cavity is to be filled with minimum 90 mm (3 ½") mineral wool insulation. Caulk joints where floor and ceiling meet wall GWB. Use resilient acoustic channels where possible.
	Ducts common to both units through *suite* separations	*Fire dampers* not required if sheet metal ducting extends a minimum of 1800 mm (6'-0") beyond the suite separation and the opening is firecaulked. Acoustic insulation is to be used within the common duct extending a minimum of 1500 mm (60") from either side of the suite separation.
	Plumbing and sprinkler plastic piping that penetrate *fire separations*	Shall be tightly fitted, cast in place, or caulked as per product listing.
	Suite entry doors between the principal *dwelling unit* and its contained *ancillary residential unit*	Existing solid core doors and frames with or without wired glass in good condition. Doors to be provided with positive latching hardware and self-closing devices.
Resistance to Forced Entry	Solid Blocking	Solid blocking may be omitted for doors described in Sentence 9.7.5.2.(9) where the interior wall finish adjacent the door is in place prior to the construction of an *ancillary residential unit*.
Exits	Egress from each *dwelling unit*	In combination with the Egress Windows requirement of Sentence 9.9.10.1., at least one conforming *exit* is required from the principal dwelling and one from the *ancillary residential suite.*
	Windows and doors adjacent to *exits*	No requirements where the *suite* is *sprinklered,* provided with a *closure* or provided with intervening construction extending out by at least 600 mm.
Fire Department Access	Access Path	Existing path designated for fire department is permitted to be minimum 860 mm
Flame Spread Rating	*Exits*	≤150
	Remainder of *building*	No requirement
Sprinklers		Sprinklers are not required provided the value of the alteration is less than or equal to 50% of the replacement(1) value of the *existing building*.

Heating Systems	Furnace room enclosure	No separation required but provide proper combustion air and required clearances from all equipment (2)
Smoke Alarms	Entire *building*	Interconnected *smoke alarms* to be intalled on each storey including basements, in each sleeping room and in a location between the sleeping room and the remainder of the storey and if the sleeping room is served by a hallway, the smoke alarm to be located in the hallway. Installed by permanent connections to an electrical circuit in conformance with Subsection 9.10.19. Division B. Provided with battery backup and manual silencing devices which will silence the alarm in conformance with Article 9.10.19.6. of Division B. Carbon Monoxide detectors to be provided in accordance with the 9.32.4.2.(3)
Stairs and Handrails	Entire *building*	Existing stairs to comply with Section 9.8, excepting the following dimensions: tread depth 235-355 mm, rise 125-200 mm and run 210-355 mm, unless considered to present an *unsafe condition* as determined by the *Chief Building Official*. All existing stairs to have at least one handrail in conformance with Subsection 9.8.7
Guardrail Protection	Entire *building*	Existing *guards* may be retained provided they are structurally sound, non-climbable and ≥900 mm high.
Existing Headroom	Entire *building*	May be reduced to 1 950 mm over 80% of the *suite* area and all egress routes. The minimum clear height under the remaining *suite floor area* shall be not less than 1 850 mm, except *public corridors* and *exits* which shall be not less than 2 000 mm.
	Doorways Opening Sizes	Other than, *exit* doors, and doors serving *public corridors* and *exit* corridors that serve principle *dwelling units* in a *building* containined an *ancillary residential units,* doorway openings shall be designed to accommodate swing-type and folding doors not less than 1 980 mm high, except doorway openings within an *ancillary residential unit* which may be reduced to not less than 1 890 mm high.
Unsafe Conditions	Entire *building*	Any condition within or around the *building* which could cause undue hazard or risk to persons to be corrected as directed by the *Chief Building Official*.
Sound Separation	Between the principal *dwelling unit* and its contained *ancillary residential unit*	Not required where the interior wall finish is in place prior to the construction of an ancillary residential suite. Fill cavity spaces of *suite* separation with mineral wool in walls and floor assemblies of new construction.

Notes to Table 11.4.3.1.:
(1) See Note A-11.2.1.4.(3)(a).
(2) The Gas Code places restrictions on locating gas furnaces adjacent to sleeping rooms or bathrooms.
(3) See Note A-11.4.3.1.(1) Interconnected Smoke Alarms and Carbon Monoxide Detectors

".

51. In Book I, Division B, Article 11.5.1.1., in Table 11.5.1.1., Council strikes out the row for Sentence 10, and substitutes:

"

10	**Spatial Separation** Subsection 3.2.3.; The area of *unprotected opening* shall not exceed the limits in Tables 3.2.3.1.A to 3.2.3.1.-E	The area of existing *unprotected opening* is not limited provided: (a) the *limiting distance* is a minimum 1 m, (b) the *building* has a supervised *sprinkler system* in conformance with Article 3.2.4.9, and c) the *sprinkler system* is designed to notify the fire department in conformance with Article 3.2.4.7.
	Spatial Separation Subsection 9.10.14.; Subsection 9.10.15. The area of *unprotected opening* in an unsprinklered *building* shall not exceed the limits in Tables 9.10.14.4.-A or 9.10.15.4.	The area of existing *unprotected opening* on a *building* face is not limited provided: (a) the existing *unprotected openings* on that face are protected with close spaced sprinklers per clause 3.2.3.13.(5), and (b) the close spaced sprinklers shall be designed to notify the fire department in conformance with Sentence 3.2.4.7.

".

52. In Book I, Division B, Article 11.6.2.1., Council:

(a) in Clause 11.6.2.1(1)(b), strikes out "3.8.3.19.(1)(d) or (e)" and substitutes "11.3.7.1.(1)(d) or (e)"; and

(b) in Clause 11.6.2.1(1)(i), strikes out "Article 3.8.3.19.(1)(d) or (e)" and substitutes "Sentence 11.3.7.1.(1)".

53. In Book I, Division B, Article 11.7.1.3., Council strikes out:

"**11.7.1.3. Residential Buildings of 4 Storeys or More, Commercial Buildings, and Mixed-Use Residential Buildings**",

and substitutes:

"**11.7.1.3. Residential Buildings of 4 Storeys or More, and Commercial Buildings (including Hotels and Motels)**".

54. In Note A-11.2.1.2. of Division B, under the Heading "**ADDITION PROJECTS** (Flow Chart No. 3)", Council strikes out the first paragraph and substitutes:

"Horizontal Addition – Horizontal additions include both "minor" and "major" horizontal additions. A minor horizontal addition is any expansion of a floor area beyond the extents of the existing floor area in which it is located by not more than 25 per cent of the existing building area, or by not more than 500 m^2 in aggregate floor area. A major horizontal addition is any expansion of a floor area beyond the extents of the existing floor area that exceeds the limits permitted by a minor horizontal addition. Any construction that creates new floor area, by in-fillings ~~s~~ existing roof~~,~~ or deck areas, or ~~is~~ creates new superimposed floor area over existing building structure or floor area is not considered a horizontal addition.".

55. In Book I, Division B, Appendix C, Council strikes out Table C-3 and substitutes:

"

Table C-3
Seismic Design Data for Selected Locations in Vancouver

Location	Seismic Data							
	S_a(0.2)	**S_a(0.5)**	**S_a(1.0)**	**S_a(2.0)**	**S_a(5.0)**	**S_a(10.0)**	**PGA**	**PGV**
Burnaby (General)(1)	0.673	0.386	0.236	0.076	0.027	0.333	0.500	0.768
North Vancouver(1)	0.699	0.399	0.243	0.077	0.027	0.345	0.518	0.794
Richmond(1)	0.885	0.787	0.443	0.266	0.083	0.029	0.383	0.578
Vancouver (City Hall)	0.848	0.751	0.425	0.257	0.080	0.029	0.369	0.553
Vancouver (Granville & 41 Ave)	0.863	0.765	0.432	0.261	0.081	0.029	0.375	0.563

Notes to Table C-3:
(1) Data for regions immediately adjoining Vancouver provided here for context.

".

56. In Books I and II, Division C, Schedule of Fees, in PART A – BUILDING, item 2(o), Council strikes out "with mitigating features".

57. In Book II, Division A, Sentence 1.2.3.1.(1), Council:

(a) in Clause (a):
  i. strikes out "tradesman's" and substitutes "trades", and
  ii. strikes out "plumber" and substitutes "*plumber*"; and

(b) in Clause (b), strikes out "*journeyman*".

58. In Book II, Division A, Article 1.4.1.2., Council strikes out the definition for *Cooling tower* and substitutes:

"***Cooling tower*** means a direct (open circuit) cooling tower, indirect (closed circuit) cooling tower, evaporative condenser, adiabatic cooler which recirculates non-evaporated water, or fluid cooler that is part of a recirculated *water system* incorporated

into a building's cooling, industrial process, refrigeration, or energy production system, and may comprise one or more cooling tower cells.".

59. In Book II, Division A, Article 1.4.1.2., Council:

(a) strikes out:

"***Journeyman plumber*** means a person, other than an *apprentice*, who holds a certificate issued pursuant to the provisions of the Industry Training Authority Act of British Columbia authorizing the person to engage in the plumbing trade."; and

(b) adds in correct alphabetical order:

"***Plumber*** means a person, other than an *apprentice*, who holds a certificate issued pursuant to the provisions of the Industry Training Authority Act of British Columbia authorizing the person to engage in the plumbing trade.".

60. In Book II, Division A, Article 1.4.1.2., in the definition of Plumbing Contractor, Council strikes out "plumber" wherever it appears and substitutes "*plumber*".

61. In Book II, Division B, Article 1.3.1.2., Council adds a new row to Table 1.3.1.2. in the correct alphabetical order, as follows:

"

ASHRAE	Guideline 12-2020	Managing the Risk of Legionellosis Associated with Building Water Systems	A-2.2.11.6

".

62. In Book II, Division B, Part 2, Council strikes out "manhole" wherever it appears and substitutes "maintenance hole".

63. In Book II, Division B, Council strikes out Sentence 2.2.1.7.(3) and substitutes:

"**3)** The owner of a *cooling tower* or a *decorative water feature* shall ensure that the laboratory conducting *Legionella pneumophila* testing for the *cooling tower* or *decorative water feature* has agreed to give immediate notice to the owner, the *Chief Building Official*, and the local medical health officer if the result exceeds a standard set out in Table 2.2.11.6. or 2.2.11.7. that requires such notice to be given.".

64. In Book II, Division B, Council adds a new Article 2.2.1.8. in the correct numerical order as follows:

"**2.2.1.8. Maintenance Logs**

1) When a maintenance log is required by Book II (Plumbing Systems) of this By-law, it shall include
a) the address and location of the equipment, device, apparatus, or system,

b) the *operating permit* number assigned to the equipment, device, apparatus, or system,
c) emergency contact information and the name and contact information of the owner of the equipment, device, apparatus, or system,
d) the location of any safety data sheets,
e) the location of the operating manual for the equipment, device, apparatus, or system and, as applicable, the location of the water management plan,
f) except when included with the operating manual, a single line schematic plan of the equipment, device, apparatus, or system, reflective of the current configuration, and including water sampling locations,
g) details of any changes or alterations made to the equipment, device, apparatus, or system at any time,
h) a record of inspections and any maintenance performed within the last 24 months,
i) a record of operational disruptions within the last 24 months and the corrective actions taken,
j) if water treatment chemicals are used, a record of the chemical treatments applied and dosages within the last 24 months,
k) a record of all water quality results from analyses performed within the last 24 months, and
l) if *Legionella pneumophila* tests are conducted, the name of the person and company collecting the sample and the name of the company conducting the laboratory test.

2) A maintenance log described in Sentence (1) shall be
a) kept on site with the corresponding equipment, device, apparatus, or system,
b) maintained in an electronic or paper-based format, and
c) made available on such request to the *Chief Building Official*.".

65. In Book II, Division B, Clause 2.2.10.6.(7)(a), Council strikes out "Group B within Table 3.1.2.1. of Division B of Book I (General) of this By-law, or" and substitutes "Group B *occupancy* by Part 3 of Division B of Book I (General) of this By-law, or".

66. In Book II, Division B, Sentence 2.2.10.17.(1), Council:

(a) strikes out Clause (1)(a) and substitutes:

"a) an *operating permit* shall be obtained, and the owner of the water treatment device or apparatus shall comply with the requirements of this Sentence,";

(b) in Clause (1)(b), strikes out ", and" and substitutes "," at the end of the clause;

(c) in Clause (1)(c), strikes out "." and substitutes ", and" at the end of the clause; and

(d) adds a new Clause (1)(d) in the correct alphabetical order as follows:

"d) a maintenance log conforming to Article 2.2.1.8. shall be maintained for each water treatment device or apparatus.".

67. In Book II, Division B, Sentence 2.2.10.17.(2), Council strikes out “Clauses (1)(a), (b) and (c)” and substitutes “Clauses (1)(a), (b), (c), and (d)”.

68. In Book II, Division B, Clause 2.2.11.4.(1)(f), Council strikes out “ponds, waterways,”.

69. In Book II, Division B, Council strikes out Clause 2.2.11.4.(2)(a) and substitutes:

“a) an *operating permit* shall be obtained, and the owner of the *once through cooling equipment* shall comply with the requirements of this Sentence,”.

70. In Book II, Division B, Article 2.2.11.6., Council strikes out “(See Article 6.3.2.15. of Division B of Book I (General) of this By-law.)“ and substitutes “(See Note A-2.2.11.6. and Article 6.3.2.15. of Division B of Book I (General) of this By-law.)”.

71. In Book II, Division B, Council strikes out Sentence 2.2.11.6.(1) and substitutes:

“**1)** An *operating permit* shall be obtained for the installation of a *cooling tower*, or the retention of an existing *cooling tower*, and the owner of the *cooling tower* shall comply with the requirements of this Article.”.

72. In Book II, Division B, Council strikes out Sentences 2.2.11.6.(5) and (6) and substitutes:

“**5)** A maintenance log conforming to Article 2.2.1.8. shall be maintained for each *cooling tower* and, if a laboratory result fails to meet a standard defined in Table 2.2.11.6., the maintenance log shall also include a description of the extent of the deviation from the standard, the corrective action taken, a record of any required notification, and the outcome of the corrective action, including all applicable dates and times.

6) Deleted.”.

73. In Book II, Division B, Article 2.2.11.6., in Table 2.2.11.6., Council strikes out the column “Required Response” and substitutes:

“

Required Response
1. Within 24 hours, give notice to the *Chief Building Official* and a) shut down the *cooling tower* system and perform offline cleaning and disinfection, or b) perform online remedial treatment(2) and within 7 days shut down the *cooling tower* system and perform offline cleaning and disinfection; and 2. No less than 48 hours and no more than 5 days after cleaning and disinfection, perform a *Legionella pneumophila* culture test(1) .
1. Immediately, give notice(4) to the *Chief Building Official*, the medical health officer and the *owner*; 2. Immediately, the laboratory(3) shall also give notice(4) to the owner of the *cooling tower*, the *Chief Building Official* and the medical health officer; 3. Immediately, implement measures that will eliminate water dispersion by aerosol from the affected *cooling tower* system and then perform offline cleaning and disinfection of the system before putting the system back into service; and

4. No less than 48 hours and no more than 5 days after cleaning and disinfection, perform a *Legionella pneumophila* culture test(1) .

".

74. In the Notes to Part 2 in Book II, Division B, Council adds, in correct numerical order, a new Note as follows:

"**A-2.2.11.6. *Cooling tower* start-up and shut-down.** It is not the intention that the undefined terms "start-up" and "shut down" within Clause (4)(a), Clause (7)(c), Clause (9)(b) or Sentence (10) be interpreted to include a brief shutdown for the purposes of physical cleaning, system maintenance or inspection, or a "Standby (wet)" mode of *cooling tower* operation as defined by ASHRAE Guideline 12-2020. Operating a *cooling tower* in a "Standby (wet)" mode should include maintaining the water treatment program and circulating water to control biological growth, as described in ASHRAE Guideline 12-2020.".

75. In Book II, Division B, Council strikes out Sentence 2.2.11.7.(1) and substitutes:

"**1)** Except for a *decorative water feature* in a *building* used exclusively for *residential occupancy* containing no more than 4 principal *dwelling units*, an *operating permit* shall be obtained for the installation of a *decorative water feature*, or the retention of an existing *decorative water feature*, and the owner of the *decorative water feature* shall comply with the requirements of this Article.".

76. In Book II, Division B, Council strikes out Clause 2.2.11.7.(2)(b) and substitutes:

"b) an advisory that the *decorative water feature* is not intended for human access, located around the perimeter of, or near an obvious access point to, the *decorative water feature*, using graphical symbols or words written in letters at least 100 mm high.".

77. In Book II, Division B, Council strikes out Sentences 2.2.11.7.(5) and (6) and substitutes:

"**5)** A maintenance log conforming to Article 2.2.1.8. shall be maintained for each *decorative water feature* and, if a laboratory result fails to meet a standard defined in Table 2.2.11.7., the maintenance log shall also include a description of the extent of the deviation from the standard, the corrective action taken, a record of any required notification, and the outcome of the corrective action, including all applicable dates and times.

6) Deleted.".

78. In Book II, Division B, Article 2.2.11.7., in Table 2.2.11.7., Council strikes out the column "Required Response" and substitutes:

"

Required Response
1. Within 24 hours, give notice to the *Chief Building Official*, shut down the *decorative water feature* and perform offline cleaning and disinfection; and 2. No less than 48 hours and no more than 5 days after cleaning and disinfection, perform a *Legionella pneumophila* culture test(1) .
1. Immediately, give notice(3) to the *Chief Building* Official, the medical health officer and the *owner*; 2. Immediately, the laboratory(2) shall also give notice(3) to the owner of the *decorative water feature*, the *Chief Building Official* and the medical health officer; 3. Immediately, implement measures that will eliminate water dispersion by aerosol from the affected *decorative water feature* and then perform offline cleaning and disinfection of the system before putting the feature back into service; and 4. No less than 48 hours and no more than 5 days after cleaning and disinfection, perform a *Legionella pneumophila* culture test(1) .

".

79. In Book II, Division B, Sentence 2.6.1.12.(1), Council strikes out "of" and substitutes "not lower than".

80. In Book II, Division B, Council strikes out Sentence 2.7.4.1.(1) and substitutes:
"**1)** An *operating permit* shall be obtained, and the owner of the *alternate water source system* shall comply with the requirements of this Subsection.".

81. In Book II, Division B, Article 2.7.4.1., in Table 2.7.4.1., Council strikes out the column "Required Response" and substitutes:

"

Required Response
1. Immediately, supply the *alternate water source system* with *potable* water only; 2. Within 24 hours, give notice to the *Chief Building Official* and the *owner*; and 3. Within 5 days, but no less than 48 hours after any cleaning or disinfection, perform an *E. coli test*(1) and, if the water quality standard for *Legionella pneumophila* had been exceeded, a *Legionella pneumophila* culture test(1).

".

82. In Book II, Division B, Article 2.7.4.1., Council adds the following new Sentences in the correct numerical order:

"**8)** A maintenance log shall be maintained in accordance with Sentence 2.7.8.2.(3).

9) An *alternate water source system* commissioned after January 1, 2019 shall comply with the requirements of Article 2.7.5.2.".

83. In Book II, Division B, Council strikes out Sentence 2.7.5.3.(1) and substitutes:

"**1)** An *operating permit* shall be obtained, and the owner of the *alternate water source system* shall comply with the requirements of this Subsection.".

84. In Book II, Division B, Article 2.7.7.3., in Table 2.7.7.3., Council strikes out the column "Required Response" and substitutes:

"

Required Response
Take the appropriate corrective action as set out in the operating manual.
1. Immediately, supply the *alternate water source system* with *potable* water only; 2. Within 24 hours, give notice to the *Chief Building Official* and the *owner*; 3. Take the appropriate corrective action as set out in the operating manual; and 4. Within 5 days, but no less than 48 hours after any cleaning or disinfection, perform an *E. coli test*(1) and, if the water quality standard for *Legionella pneumophila* had been exceeded, a *Legionella pneumophila* culture test(1).

".

85. In Book II, Division B, in Sentence 2.7.8.1.(1), Council strikes out "stamped" and substitutes "sealed".

86. In Book II, Division B, Article 2.7.8.1., Council adds a new Sentence (2):

"**2)** The operating manual described in Sentence (1) shall be made available on such request to the *Chief Building Official*."

87. In Book II, Division B, Council strikes out Sentence 2.7.8.2.(3) and substitutes:

"**3)** A maintenance log conforming to Article 2.2.1.8. shall be maintained, and shall also include
a) the documentation required by Sentence 2.7.7.1.(3), and
b) if a water quality test fails to meet a standard defined in Table 2.7.7.1., a description of the extent of the deviation from the standard, the corrective action taken, a record of any required notification, and the outcome of the corrective action, including all applicable dates and times.".

88. In Book II, Division B, Council strikes out Article 2.7.8.3.

89. In Book II, Division B, Article 2.8.1.1., in Table 2.8.1.1., Council:

(a) in 2.2.10.17. Water Treatment Systems, adds a new fourth row to the rows for Sentence (1) as follows:

"

	[F40,F41,F43,F46,F70,F80,F81,F82-OS3.4,OH2.1,OH2.2,OH2.3,OH2.4,OH5,OP5,OE1.2]

";

(b) in 2.2.10.17. Water Treatment Systems, adds a new fourth row to the rows for Sentence (2) as follows:

"

	[F40,F41,F43,F46,F70,F80,F81,F82-OS3.4,OH2.1,OH2.2,OH2.3,OH2.4,OH5,OP5,OE1.2]

"; and

(c) strikes out the entire entry for 2.7.8.3. Request for Operating Manual or Maintenance Log.

90. In Book II, Division C, Council strikes out Articles 1.6.9.3., 1.6.9.4., and 1.6.9.5., and substitutes:

"1.6.9.3. Application Requirements for New Operating Permits and Renewals

1) To obtain or renew an *operating permit*, the owner of the equipment, device, apparatus, or system, or their authorized representative, shall file an application in writing in the form prescribed by the *Chief Building Official*.
2) The application for a new *operating permit* or the renewal of an *operating permit* shall be accompanied by the *operating permit* fees and any documentation required by the *Chief Building Official* to verify that the requirements of this By-law are being met.
3) Except as provided in Sentence (4), *operating permits* are valid for a one year period, and shall be renewed on an annual basis.
4) *Operating permits* for *once through cooling equipment* will be valid for a period deemed appropriate by the *Chief Building Official* or *City Engineer*, and if valid for a one year period, shall be renewed on an annual basis.

1.6.9.4. Conditions on Operating Permits

1) The *Chief Building Official* may impose conditions on *operating permits* including, but not limited to, conditions regarding
a) notifications and notices,
b) safety,
c) health,
d) design requirements,
e) *construction* requirements,
f) timing of *construction*,
g) deadlines for completion of *construction*,
h) reviews and inspections,
i) responsibilities of the owner of the equipment, device, apparatus, or system, the *constructor*, the *registered professional* and the *certified professional*,
j) compliance with this By-law and other enactments,
k) use and *occupancy*, and
l) temporary *buildings* and *occupancies*.

1.6.9.5. Operating Permit Fees

1) *Operating permit* fees are as set out in the Schedule of Fees at the end of this Part.".

91. In Book I, Division B, Council strikes out Article 10.2.2.5. and substitutes:

"**10.2.2.5. Building Energy and Emissions Performance**

1) Except as permitted by Sentence (4), for a *building* required to conform with this Article, energy modelling shall conform to
   a) the applicable requirements of Part 8 of the NECB, and
   b) the City of Vancouver Energy Modelling Guidelines.

2) Except as permitted in Sentences (3), (4) or (5), a *building* designed with this Article shall demonstrate the performance values of the proposed building comply with the limits in Table 10.2.2.5.A.

3) Compliance with the GHGI limits in Table 10.2.2.5.A is not required where a *building* can demonstrate the performance values of the proposed *building* comply with the TEUI and TEDI limits in Table 10.2.2.5.B.

4) *Buildings* and *major occupancies* designed and constructed to conform to the certification criteria for the Passive House Standard, are deemed to comply with this Article provided the design's energy model is
   a) version 9 or newer of the Passive House Planning Package, and
   b) prepared by a Certified Passive House Designer, or Certified Passive House Consultant.

5) Compliance with the TEUI and TEDI limits in Table 10.2.2.5.A is not required where a building is connected to a Low Carbon Energy System, and can demonstrate the performance values of the proposed building comply with the limits in Table 10.2.2.5.C.

Table 10.2.2.5.A
Maximum Energy Use and Emissions Intensities
Forming part of Sentence 10.2.2.5.(2)

***Occupancy* Classification**(1)	**Total Energy Use Intensity (kWh/m^2a)**	**Thermal Energy Demand Intensity (kWh/m^2a)**	**Greenhouse Gas Intensity ($kgCO_2e/m^2a$)**
Group C *occupancies* in *buildings* up to 6 *Storeys*, except Hotel and Motel	110	25	5.5
Group C *occupancies* in *buildings* over 6 *Storeys*, except Hotel and Motel	120	30	6
Hotel and Motel *occupancies*	140	20	8
Group D and E *occupancies*, except Office	120	20	3

Office *occupancies*	100	20	3

Notes to Table 10.2.2.5.A.:
(1) For *buildings* containing multiple *occupancies*, refer to the procedures on mixed-use buildings in Section 5 of the CoV Energy Modelling Guidelines.

Table 10.2.2.5.B
Maximum Energy Use and Emissions Intensities
Forming part of Sentence 10.2.2.5.(3)

***Occupancy* Classification**	**Total Energy Use Intensity (kWh/m^2a)**	**Thermal Energy Demand Intensity (kWh/m^2a)**	**Greenhouse Gas Intensity ($kgCO_2e/m^2a$)**
Group C *occupancies*	100	15	N/A

Table 10.2.2.5.C
Maximum Energy Use and Emissions Intensities
For Buildings Connected to a *Low Carbon Energy System*
Forming part of Sentence 10.2.2.5.(4)

***Occupancy* Classification**	**Total Energy Use Intensity (kWh/m^2a)**	**Thermal Energy Demand Intensity (kWh/m^2a)**	**Greenhouse Gas Intensity ($kgCO_2e/m^2a$)**
Group C *occupancies* in *buildings* up to 6 *Storeys*, except Hotel and Motel	110	25	5.5
Group C *occupancies* in *buildings* over 6 *Storeys*, except Hotel and Motel	130	40	6
Hotel and Motel *occupancies*	170	30	8
Office *occupancies*	130	30	3
Business and Personal Services or Mercantile *Occupancies*, except Office	170	30	3

".

92. In Book II, Division C, Article 1.6.9.3., Council:

(a) strikes out Sentence (1) and substitutes the following:

"**1)** To obtain or renew an *operating permit*, the owner of the equipment, device, apparatus, or system, or their authorized representative, shall file an application in writing in the form prescribed by the *Chief Building Official*.";

(b) renumbers Articles 1.6.9.4. and 1.6.9.5. as Articles 1.6.9.5. and 1.6.9.6., respectively; and

(c) adds a new Article 1.6.9.4. as follows:

"**1.6.9.4. Owner Must be Certified**

1) The owner of the equipment, device, apparatus, or system, or their authorized representative, must be certified under the Environmental Operators Certification Program, except that this requirement does not apply to *once through cooling equipment*.".

93. In Book I, Division B, Council strikes out Article 10.2.2.5. and substitutes:

"**10.2.2.5. Building Energy and Emissions Performance**

1) Except as permitted by Sentence (4), for a *building* required to conform with this Article, energy modelling shall conform to
   a) the applicable requirements of Part 8 of the NECB, and
   b) the City of Vancouver Energy Modelling Guidelines.

2) Except as permitted in Sentences (3), (4) or (5), a *building* designed with this Article shall demonstrate the performance values of the proposed building comply with the limits in Table 10.2.2.5.A1.

3) Compliance with the GHGI limits in Table 10.2.2.5.A1 is not required where a *building* can demonstrate the performance values of the proposed *building* comply with the TEUI and TEDI limits in Table 10.2.2.5.B.

4) Buildings and major occupancies designed and constructed to conform to the certification criteria for the Passive House Standard, are deemed to comply with this Article provided the design's energy model is
   a) version 9 or newer of the Passive House Planning Package, and
   b) prepared by a Certified Passive House Designer, or Certified Passive House Consultant.
   (See Note A-10.2.2.5.(4).)

5) Compliance with the TEUI and TEDI limits in Table 10.2.2.5.A1 is not required where a building is connected to a Low Carbon Energy System, and can demonstrate the performance values of the proposed building comply with the limits in Table 10.2.2.5.C.

Table 10.2.2.5.A1
Maximum Energy Use and Emissions Intensities
Forming part of Sentence 10.2.2.5.(2)

Occupancy **Classification**(1)	**Total Energy Use Intensity (kWh/m^2a)**	**Thermal Energy Demand Intensity (kWh/m^2a)**	**Greenhouse Gas Intensity ($kgCO_2e/m^2a$)**
Group C occupancies complying with 10.2.1.5.(2)(a)(i)	See Table 10.2.2.5.A2	20	3

Group C *occupancies* in *buildings* up to 6 *Storeys*, except Hotel and Motel	110	25	5.5
Group C *occupancies* in *buildings* over 6 *Storeys*, except Hotel and Motel	120	30	6
Hotel and Motel *occupancies*	140	20	8
Group D and E *occupancies*, except Office	120	20	3
Office *occupancies*	100	20	3

Notes to Table 10.2.2.5.A1.:
(1) For *buildings* containing multiple *occupancies*, refer to the procedures on mixed-use buildings in Section 5 of the CoV Energy Modelling Guidelines.

Table 10.2.2.5.A2
Mechanical Energy Use Intensity in Buildings under 4 Storeys for Group C Major Occupancies except Hotel and Motel
Forming part of Sentence 10.2.2.5.(2)

Conditioned Floor Area	**Mechanical Energy Use Intensity (MEUI) (kWh/m^2a)**
≤ 50 m^2	125
≤ 75 m^2	108
≤ 120 m^2	78
≤ 165 m^2	58
≤ 210 m^2	48
> 210 m^2	45

Table 10.2.2.5.B
Maximum Energy Use and Emissions Intensities
Forming part of Sentence 10.2.2.5.(3)

***Occupancy* Classification**	**Total Energy Use Intensity (kWh/m^2a)**	**Thermal Energy Demand Intensity (kWh/m^2a)**	**Greenhouse Gas Intensity ($kgCO_2e/m^2a$)**
Group C *occupancies*	100	15	N/A

Table 10.2.2.5.C
Maximum Energy Use and Emissions Intensities
For Buildings Connected to a *Low Carbon Energy System*
Forming part of Sentence 10.2.2.5.(4)

Occupancy **Classification**	**Total Energy Use Intensity (kWh/m^2a)**	**Thermal Energy Demand Intensity (kWh/m^2a)**	**Greenhouse Gas Intensity ($kgCO_2e/m^2a$)**
Group C *occupancies* in *buildings* up to 6 *Storeys*, except Hotel and Motel	110	25	5.5
Group C *occupancies* in *buildings* over 6 *Storeys*, except Hotel and Motel	130	40	6
Hotel and Motel *occupancies*	170	30	8
Office *occupancies*	130	30	3
Business and Personal Services or Mercantile *Occupancies*, except Office	170	30	3

".

94. In Book I, Division B, Article 10.2.2.17., Council strikes out Clause 3(a) and substitutes the following:

"**10.2.2.17. Domestic Heat Recovery Ventilators**

1) In a *building* required to comply with this Article, each dwelling unit shall be served by a heat recovery ventilator located in
   a) each dwelling *unit*, or
   b) a commonly accessible location if serving multiple *dwelling units*.

2) In a *building* required to comply with this Article, components of mechanical ventilation systems not specifically described in this Subsection shall be designed, constructed and installed in accordance with good engineering practice and as described in the ASHRAE Handbooks and Standards, HRAI Digest, TECA Ventilation Guideline, Hydronics Institute Manuals or the SMACNA manuals.

3) In a *building* required to comply with this Article, a heat recovery ventilator (HRV) shall
   a) be sized to run at its rated speed for continuous operation while achieving the performance requirements of Table 10.2.2.17. as designed and tested in conformance with CAN/CSA-C439:

Table 10.2.2.17.
Heat Recovery Ventilator Performance Requirements
Forming a part of Sentence 10.2.2.17.(3)

***Building*'s Conditioned Space (m^2)**	**Sensible Heat Recovery Efficiency (SRE) at 0°C**
≤ 110 m^2	65%
> 110 m^2	75%

b) be designed and tested to meet the CSA International Standard CAN/CSA-F326-M91, "Residential Mechanical Ventilation Systems",
c) be installed and commissioned by persons trained by the Thermal Environmental Comfort Association (TECA) or the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI) or equivalent,
d) supply outdoor air directly to the principal living area, to each bedroom, and to any *floor area* without a bedroom, including similar rooms within *ancillary residential units*, directly or indirectly, through a central recirculation system with a continuously operating fan,
e) be designed to run continuously to comply with the minimum ventilation rates of Table 9.32.3.5. of Division B,
f) not be connected to kitchen and bathroom exhaust fans,
g) except for mechanical ducts cast into concrete structure, have exterior connected supply-air ducts and exhaust ducts insulated to not less than RSI 0.75 (R 4.25) and shall have an effective vapour barrier,
h) have balanced HRV supply and exhaust air flows within plus or minus 20% of the actual normal operating exhaust capacity,
i) be labelled with tested supply and exhaust air flows for high and low settings, measured in CFM, and
j) be located in a fully serviceable space that can be readily accessed for replacement or maintenance, and
   i) designed and installed to operate with an acceptable level of weather and freeze protection if not within a *conditioned space*, and
   ii) in a *building* containing not more than two primary *dwelling units* and their contained *ancillary residential units*, be within a *conditioned space* and provided with direct access from at least one of the *dwelling units* that it serves.

4) In a *building* required to comply with this Article, the HRV system contractor or installer shall provide a completed Mechanical Ventilation Checklist to the *Chief Building Official*.

5) In a *building* required to comply with this Article, a contractor trained in the installation of energy recovery ventilators (ERV) may install an ERV in lieu of a heat recovery ventilator (HRV).".

95. In Book I, Division B, Council strikes out Article 10.2.2.20. and substitutes:

"**10.2.2.20. Passive House Planning Package (PHPP), EnerGuide, or Other Energy Documentation**

1) In a *building* required to comply with this Article, at the time of *permit* application, and at the time of final inspection, the owner shall provide to the *Chief Building Official acceptable* documentation, in the form of
a) a PHPP file from a Certified Passive House Consultant or Designer,
b) an EnerGuide Rating System Audit, or
c) equivalent energy modelling documentation *acceptable* to the *Chief Building Official*.

2) In a *building* required to comply with this article, at the time of mid-construction inspection, the owner shall provide to the *Chief Building Official acceptable* documentation, in the form of
   a) a mid-construction checklist, and
   b) a blower door test result that achieves an *acceptable* level of performance.

3) In a *building* required to comply with this Article, that contains more than 325 m^2 of *conditioned* space, and does not consist of more than one principal *dwelling unit*, the owner shall provide a calculation utilizing the EnerGuide rating system to demonstrate that the proposed home has a greenhouse gas (GHG) footprint that is no more than two (2) metric tonnes annually (see Note A-10.2.2.20.(3))."**.**

96. In Book I, Division B, Article 11.2.1.4., in Table A-11.2.1.4.(2), Council adds "Forming part of Sentence 11.2.1.4.(2)" under the title.

97. In Books I and II, Division C, Schedule of Fees, Council strikes out PART C-OPERATING PERMITS and substitutes the following:

"PART C — OPERATING PERMITS

Every applicant for an OPERATING PERMIT shall, at the time of application for a new OPERATING PERMIT or renewal of an OPERATING PERMIT, pay to the City the fee set out hereunder:

For the first OPERATING PERMIT relating to equipment or systems in a BUILDING	$250.00
For each additional OPERATING PERMIT relating to equipment or systems in the same BUILDING	$100.00

".

98. A decision by a court that any part of this By-law is illegal, void, or unenforceable severs that part from this By-law, and is not to affect the balance of this By-law.

99. This By-law is to come into force and take effect on June 1, 2021, except that:

(a) section 91 comes into force and takes effect immediately after section 9 of By-law No. 12512 comes into force and takes effect on June 1, 2021;
(b) section 92 comes into force and takes effect immediately after section 56 of By-law No. 12717 comes into force and takes effect on January 1, 2022;
(c) sections 93, 94, 95, and 96 come into force and take effect immediately after sections 25, 32, 35, and 38 of By-law No. 12692 come into force and take effect on January 1, 2022; and

(d) section 97 comes into force and takes effect immediately after section 57 of By-law No. 12717 and PART C – OPERATING PERMITS in By-law No. 12825 come into force and take effect on January 1, 2022.

ENACTED by Council this day of , 2021

Mayor

City Clerk

* * * * *

DRAFT

Note: A By-law will be prepared generally in accordance with the provisions listed below, subject to change and refinement prior to posting.

BY-LAW NO.

A By-law to amend Electrical By-law No. 5563 Regarding 2021 Housekeeping Amendments

THE COUNCIL OF THE CITY OF VANCOUVER, in public meeting, enacts as follows:

100. This By-law amends the indicated provisions of Electrical By-law 5563.

101. In Schedule A, Council:

(a) strikes out item 5 and substitutes:

"**5. The fee for staff time spent inspecting of electrical work or reviewing resubmitted or amended plans to determine compliance with this By-law, if a permit holder deviates from approved plans, for each quarter of an hour or part thereof** $54.50";

(b) in item 12(a), strikes out "$79.30" and substitutes "$81.70";
(c) in item 12(b), strikes out "$212.00" and substitutes "$218.00"; and
(d) strikes out item 13 and substitutes:

"**13. The fee for a permit amendment review pursuant to Section 5.22 shall be** $81.70".

102. A decision by a court that any part of this By-law is illegal, void, or unenforceable severs that part from this By-law, and is not to affect the balance of this By-law.

103. This By-law is to come into force and take effect on June 1, 2021.

ENACTED by Council this day of , 2021

_____

Mayor

_____

City Clerk

* * * * *

This document is being provided for information only as a reference tool to highlight the proposed amendments. The draft amending by-laws attached to the Council report RTS No. **14294** entitled **Housekeeping, Clarity, and Miscellaneous Changes to the VBBL and Electrical By-law** represent the amendments being proposed to Council for approval. Should there be any discrepancy between this redline version and the draft amending by-laws, the draft amending by-laws prevail.

Building By-law Book I (General)

Division A

Part 1 Changes

In Article 1.4.1.2., the following definitions are amended or added:

~~Journeyman p~~Plumber means a person, other than an *apprentice*, who holds a certificate issued pursuant to the provisions of the Industry Training Authority Act of British Columbia authorizing the person to engage in the plumbing trade.

Designated Structural Engineer (Struct. Eng.) means a person who is registered or licensed to practice as a professional engineer under the Engineers and Geoscientists Regulations pursuant to the Professional Governance Act of British Columbia, and a person who is designated by the Association of Professional Engineers and Geoscientists of British Columbia as a Designated Structural Engineer.

Registered professional means

- a person who is registered or licensed to practise as an architect under the Architects Act, or
- a person who is registered or licensed to practise as a professional engineer under the Engineers and Geoscientists Regulations pursuant to the Professional Governance Act of British Columbia.

2.1.1.1. Application

1) This Part applies to all *buildings* covered in this By-law except for *existing buildings*. (See Article 1.1.1.1.)

3.2.1.1. Functional Statements

1) The objectives of this By-law are achieved by measures, such as those described in the acceptable solutions in Division B, that are intended to allow the *building* or its elements to perform the following functions (See Note A-3.2.1.1.(1).):

F01 To minimize the risk of accidental ignition.
F02 To limit the severity and effects of fire or explosions.
F03 To retard the effects of fire on areas beyond its point of origin.
F04 To retard failure or collapse due to the effects of fire.
F05 To retard the effects of fire on emergency egress facilities.
F06 To retard the effects of fire on facilities for notification, suppression and emergency response.
F10 To facilitate the timely movement of persons to a safe place in an emergency.
F11 To notify persons, in a timely manner, of the need to take action in an emergency.

F12 To facilitate emergency response.
F13 To notify emergency responders, in a timely manner, of the need to take action in an emergency.
F20 To support and withstand expected loads and forces.
F21 To limit or accommodate dimensional change.
F22 To limit movement under expected loads and forces.
F23 To maintain equipment in place during structural movement.
F30 To minimize the risk of injury to persons as a result of tripping, slipping, falling, contact, assault, drowning or collision.
F31 To minimize the risk of injury to persons as a result of contact with hot surfaces or substances.
F32 To minimize the risk of injury to persons as a result of contact with energized equipment.
F33 To limit the level of sound of a fire alarm system.
F34 To resist or discourage unwanted access or entry.
F35 To facilitate the identification of potential intruders.
F36 To minimize the risk that persons will be trapped in confined spaces.
F40 To limit the level of contaminants.
F41 To minimize the risk of generation of contaminants.
F42 To resist the entry of vermin and insects.
F43 To minimize the risk of release of hazardous substances.
F44 To limit the spread of hazardous substances beyond their point of release.
F46 To minimize the risk of contamination of potable water.
F50 To provide air suitable for breathing.
F51 To maintain appropriate air and surface temperatures.
F52 To maintain appropriate relative humidity.
F53 To maintain appropriate indoor/outdoor air pressure differences.
F54 To limit drafts.
F55 To resist the transfer of air through environmental separators.
F56 To limit the transmission of airborne sound into a *dwelling unit* from spaces elsewhere in the *building* (See Sentence 3.1.1.2.(2) for application limitation).
F60 To control the accumulation and pressure of water on and in the ground.
F61 To resist the ingress of precipitation, water or moisture from the exterior or from the ground.
F62 To facilitate the dissipation of water and moisture from the *building*.
F63 To limit moisture condensation.
F70 To provide potable water.
F71 To provide facilities for personal hygiene.
F72 To provide facilities for the sanitary disposal of human and domestic wastes.
F73 To facilitate *access* to and in the *building* and its facilities by *persons with disabilities* (See Sentence 3.1.1.2.(3) for application limitation).
F74 To facilitate the use of the *building's* facilities by *persons with disabilities* (See Sentence 3.1.1.2.(3) for application limitation).
F75 To minimize obstacles for future modification to provide *access* (See Sentence 3.1.1.2.(4) for
application limitation).
F80 To resist deterioration resulting from expected service conditions.
F81 To minimize the risk of malfunction, interference, damage, tampering, lack of use or misuse.
F82 To minimize the risk of inadequate performance due to improper maintenance or lack of

maintenance.
F83 To control the amount of water a plumbing fixture will use.
F84 To control the flow of water to a plumbing fixture or outlet.
F85 To minimize thermal loss or gain.
F86 To minimize the use of energy for building systems.
F90 To limit the amount of uncontrolled air leakage through the *building* envelope.
F91 To limit the amount of uncontrolled air leakage through system components.
F92 To limit the amount of uncontrolled thermal transfer through the *building* envelope.
F93 To limit the amount of uncontrolled thermal transfer through system components.
F95 To limit the unnecessary demand and/or consumption of energy for heating and cooling.
F96 To limit the unnecessary demand and/or consumption of energy for service water heating.
F98 To limit the inefficiency of equipment.
F99 To limit the inefficiency of systems.
F100 To limit the unnecessary rejection of reusable waste energy.

Division B

Part 1 Changes

In Table 1.3.1.2. after the row associated with “TWC 1995”, inserts the following row

UL	ANSI/CAN/UL 2524 - 2019	Standard For Safety In-building 2-Way Emergency Radio Communication Enhancement Systems	3.2.5.20.(4) A-3.2.5.20.

Part 3 Changes

3.1.2.8. Child Care Facilities
(See Note A-3.1.2.8.)
1) A *child care facility* shall be classified as either a Group C or Group A Division 2 *major occupancy* as determined by this Article provided
a) except as permitted by Clause (d), the fire safety requirements for the *major occupancy* determined from Table 3.1.2.8. have been met,
b) all additional requirements in this By-law for new construction and the determined *major occupancy* have been met,
c) for *existing buildings*, the upgrade requirements in Clause 11.4.2.1.(1)(g) have been met, and
d) temporary *child care facilities* need not be *sprinklered* in accordance with Table 3.1.2.8. when provided with at least two *means of egress*
i) directly to the exterior,
ii) where it is not required to travel up or down more than 1 storey, and
iii) located so that one doorway could provide egress from the *child care facility* if the other doorway becomes inaccessible to the occupants due to a fire.
~~(See also Article 3.3.2.17.)~~

Table 3.1.2.8.
Major Occupancy* Classification and Fire Safety Requirements for *Child Care Facilities
Forming part of Sentence 3.1.2.5.(3)

Age of *Children* (months)	**Number of *Children***	***Major Occupancy* Permitted**	**Sprinklers**	**Fire Alarm**	**Smoke Detection[2] and CO Alarms**	***Fire Separation* from Remainder of Building**	**Emergency Lighting**
< 30	> 8	A2	***Building***	Required	Required	2 h	Required
	3 – 8	C	*Suite* Only	Required	Required	2 h	Required
		C[1]	*Suite* Only	Not Required	Required	No	~~Yes~~Required
≥ 30	> 8	A2	***Building***	Required	Required	1 h	Required
	3 – 8	C	*Suite* Only	Required	Required	1 h	Required
		C[1]	Not Required	Not Required	Required	No	~~Yes~~Required

Notes to Table 3.1.2.8.:
[1] Applies to residential *buildings* with no more than 2 principal *dwelling units* or *row houses*
[2] Smoke detection shall include smoke detectors where the building is provided with a fire alarm system, and smoke alarms where required by Article 3.2.4.20.

3.1.3.6. Industrial Flex Space

1) An *industrial flex space* use is permitted in a new *building* containing a Group C *major occupancy* provided

a) the total floor area of each *industrial flex space* unit or a single tenant *industrial flex space* is not more than 500 m^2,

b) the *industrial flex space* shall be located on the *first storey* and completely independent of the Group C portion of the *building*, including the *exit* system,

c) the ventilation systems for individual *industrial flex spaces* shall be completely separate and independent from each other and from the residential portion of the *building*,

d) a horizontal *fire separation* of concrete *construction* having a *fire-resistance rating* of no less than 2 hours shall be provided between the *industrial flex space* and the Group C *occupancy*,

e) vertical *fire separations* between *industrial flex space* units and any Group C portion of the *building* shall be of concrete or masonry *construction* having a *fire-resistance rating* of not less than 2 hours,

f) the Group C portion of the *building* shall be separated from the *industrial flex space* portion of the *building* by *construction* having a STC rating of not less than 55,

g) the penetrations between the horizontal f*ire separation* in Clause ~~(c)~~(d) shall be FT rated,

h) the *industrial flex space* units shall be *sprinklered* in conformance with NFPA 13 to a minimum Ordinary Hazard Group 2 classification using only quick response heads and no reduction in design area,

i) the automatic *sprinkler system* noted in Clause (h) shall be a single system supplying the entire *building*, and shall be designed so that the *industrial flex spaces* as a whole and the Group C *occupancy* floors as a whole are supplied by separate water supply lines,

j) each individual *industrial flex space* unit shall have a minimum of two egress doors regardless of the unit size,

k) the principal egress door serving each *industrial flex space* unit shall *exit* directly to the street,

l) except for the principal exit door in Clause (k), all other *exit* or egress doors shall lead to a lane or to an independent corridor leading to a public thoroughfare serving only the

industrial flex space portion of the *building* and shall be separated from the remainder of the *building* by a concrete or masonry *fire separation* having a *fire-resistance rating* of not less than 2 hours,
m) the *industrial flex spaces* shall be provided with two unisex water closets, notwithstanding the requirement of Section 3.7 of Division B, and
n) one of the washrooms serving the *industrial flex space* shall comply with the requirements of Section 3.8 of Division B.

2) An *industrial flex space* use is not permitted in an *existing building*.

3.1.11.7. Fire Block Materials

1) Except as permitted by Sentences (2) to (4) and (7), *fire blocks* shall remain in place and prevent the passage of flames for not less than 15 min when subjected to the standard fire exposure in CAN/ULC-S101, “Fire Endurance Tests of Building Construction and Materials.”

2) Gypsum board not less than 12.7 mm thick and sheet steel not less than 0.38 mm thick need not be tested in conformance with Sentence (1), provided all joints have continuous support.

3) In a *building* required to be of *noncombustible construction*, wood nailing elements described in Article
3.1.5.8. need not be tested in conformance with Sentence (1).

4) In a *building* or part of a *building* permitted to be of *encapsulated mass timber construction*, wood nailing elements referred to in Article 3.1.18.9. need not be tested in conformance with Sentence (1).

5) In a *building* permitted to be of *combustible construction*, in a *combustible* roof system permitted by Sentences 3.1.5.3.(2) and 3.1.18.5.(1), and in a raised platform permitted by Sentences 3.1.5.10.(2) and 3.1.18.10.(1), *fire blocks* are permitted to be
a) solid lumber or a structural composite lumber product conforming to ASTM D 5456, “Evaluation of Structural Composite Lumber Products,” not less than 38 mm thick,
b) phenolic bonded plywood, waferboard, or oriented strandboard not less than 12.5 mm thick with joints supported, or
c) two thicknesses of lumber or a structural composite lumber product conforming to ASTM D 5456, “Evaluation of Structural Composite Lumber Products,” each not less than 19 mm thick with joints staggered, where the width or height of the concealed space requires more than one piece of lumber or structural composite lumber product not less than 38 mm thick to block off the space.

6) Openings through materials referred to in Sentences (1) to ~~(4)~~(5) shall be protected to maintain the integrity of the construction.

7) Where materials referred to in Sentences (1) to ~~(4)~~(5) are penetrated by construction elements or by service equipment, a *fire stop* shall be used to seal the penetration. (See Note A-3.1.11.7.(7).)

8) In *buildings* permitted to be of *combustible construction*, semi-rigid fibre insulation board produced from glass, rock or slag is permitted to be used to block the vertical space in a double stud wall assembly formed at the intersection of the floor assembly and the walls, provided the width of the vertical space does not exceed 25 mm and the insulation board
a) has a density not less than 45 kg/m^3,
b) is securely fastened to one set of studs,
c) extends from below the bottom of the top plates in the lower *storey* to above the top of the bottom plate in the upper *storey*, and
d) completely fills the portion of the vertical space between the headers and between the wall plates.

(See Note A-3.1.11.7.(8).)

3.2.1.7. Fire Containment in Combustible Buildings

1) All Group C *major occupancies* in a *building* of *combustible construction* greater than 2 *storeys* in *building height* shall be separated from all other *major occupancies* except as prohibited in Article 3.1.3.2. and except as permitted in Sentences (2) and (3), by a *fire separation* with at least a 2 h *fire-resistance rating* constructed of

a) concrete,

b) masonry, or

c) in a *sprinklered building*, *encapsulated mass timber construction* complying with Subsection 3.1.18.

2) The *fire-resistance rating* required in Sentence (1) is permitted to be 1.5 h for a *storage garage*.

3) The *fire separation* of every *exit*, elevator and vertical service shaft that penetrates a concrete, masonry, or *encapsulated mass timber construction* floor assembly as required in Sentence (1) shall be separated from the remainder of the *building* by a *fire separation* having a *fire-resistance rating* determined by Sentences (1) or (2) for

a) the floor assembly above the *storey*, or

b) the floor assembly below the *storey*, if there is no floor assembly above.

4) Where a *building* of *combustible construction* or *encapsulated mass timber construction* greater than 2 *storeys* in *building height* contains an *occupancy* other than Group C or Group D on the second or third *storey* that is required to be constructed in accordance with Sentences 3.2.2.48EMTC.(4), 3.2.2.50.(5), 3.2.2.57EMTC.(3), or 3.2.2.58.(4), the *building* shall

a) be *sprinklered*,

b) be divided into at least two horizontal *fire compartments* on each *storey* containing a *major occupancy* other than Group C or Group D which ~~are~~

i) are not more than 1000 m^2 in area, and

ii) are constructed as *fire separations* with at least a 2 h *fire-resistance rating* or of *encapsulated mass timber construction*,

c) have *exit* stairs serving *storeys* above the third *storey* ~~shall be~~ constructed as *fire separations* with at least a 2 h *fire-resistance rating* on levels containing a Group A or Group E major occupancy constructed in accordance with Sentences 3.2.2.48EMTC.(4), 3.2.2.50.(5), 3.2.2.57EMTC.(3), or 3.2.2.58.(4), and

d) have each *fire compartment* required by Clause (b) ~~shall be~~ served by at least one *exit* stair.

(See Note A-3.2.1.7.(4))

3.2.4.8. Annunciator and Zone Indication

1) Except as permitted by Sentences (3) to (5), an annunciator shall be installed in close proximity to a *building* entrance that faces a *street* or an access route for fire department vehicles that complies with Sentence 3.2.5.5.(1).

2) Except as permitted by Sentences (6), (8), (9) and (10), the annunciator required by Sentence (1) shall have separate zone indication of the actuation of the alarm initiating devices, *smoke detectors, heat detectors,* manual stations and waterflow detecting devices, in each

a) *floor area* so that the area of coverage for each zone in a *building* that is not *sprinklered* is not more than 2 000 m^2,

b) *floor area* so that the area of coverage for each zone is neither

i) more than one *storey*, nor

ii) more than the system area limits specified in NFPA 13, “Installation of Sprinkler Systems,”

c) shaft required to be equipped with *smoke detectors*,

d) air-handling system required to be equipped with *smoke detectors*,
e) fire extinguishing system required by NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations,"
f) *contained use area*,
g) *impeded egress zone*,
h) *fire compartment* required by Sentence 3.3.3.5.(2), and
i) *floor area* required to be equipped with *smoke detector* or detectors as required by Clause 3.2.4.11.(1)(h) to
i) initiate an alert signal in a 2 stage system or an alarm signal in a single stage system, and
ii) indicate the actuation of each device separately on the fire alarm system annunciator.

(See Note A-3.2.4.8.(2).)

3) An annunciator need not be provided for a fire alarm system if not more than one zone indicator is required by Sentence (2).

4) If an annunciator is not installed as part of a fire alarm system in conformance with Sentence (1), a visual and audible trouble signal device shall be provided inside the main entrance of the *building*.

5) The requirements of Sentence (1) are waived in a *building*
a) in which an automatic sprinkler system is not installed,
b) that has an aggregate area for all *storeys* of not more than 2 000 m^2, and
c) that is not more than 3 *storeys* in *building height*.

6) The area limits of Clause (2)(a) are waived for an interior undivided open space used as an arena, a rink, or a swimming pool provided that other spaces in the *building* that are separated from the open space are individually zoned in accordance with the requirements of Sentence (2).

7) A fire alarm control unit installed in close proximity to a *building* entrance that faces a *street* or an access route for fire department vehicles that complies with Sentence 3.2.5.5.(1) is deemed to satisfy the requirement for an annunciator, provided all indicators required for an annunciator or trouble signal device are included on the control unit.

8) If a fire alarm system is required in *row housing* or in residential *buildings* where the egress of the *dwelling units* conforms to Sentence 3.3.4.4.(3) or Clause 9.9.9.1.(1)(b) and the *building* is no more than 4 *storeys* in *building height*, the *building* shall be provided with
a) a single electrically supervised fire alarm system for the entire *building*,
b) at least one sprinkler zone for each block of *row housing* or each residential block,
c) a *sprinkler system* which is monitored by the fire alarm system and an off-site monitoring service,
d) a strobe light located outside the principal entrance of each *dwelling unit* and connected to an internal smoke alarm within the *dwelling unit*, and
e) an exterior audible signal activated by the fire alarm system.

9) In a multi-level residential *suite*, where a single egress door is provided and the egress door opens directly into a *public corridor* or an exterior *exit* passageway or onto a street, a separate zone for sprinkler water flow detecting devices on each *storey* is not required provided
a) the actuation of a sprinkler waterflow detecting device in the *suite* shall be zoned at the *public corridor* or exterior *exit* passageway floor level, and
b) a strobe light is installed and maintained outside the *suite* entrance of the *dwelling unit*, and connected to an internal *smoke alarm* within the *dwelling unit*.

10) A separate zone for waterflow detecting devices is not required for a shaft described in Clause 3.2.4.8.(2)(c).

11) The annunciator required by Sentence (1) shall have indicator lamps for the separate zone indications required by Sentence (2). (See Note A-3.2.4.8.(11).)

3.2.4.11. Smoke Detectors

1) If a fire alarm system is installed, *smoke detectors* shall be installed in

a) except as permitted in Sentence (2), each sleeping room and each corridor serving as part of a *means of egress* from sleeping rooms in portions of a *building* classified as a Group B *major occupancy*,

b) each room in a *contained use area* and corridors serving those rooms,

c) each corridor in portions of a *building* classified as a Group A, Division 1 *major occupancy*,

d) each *public corridor* in portions of a *building* classified as a Group C *major occupancy*,

e) each *exit* stair shaft other than those serving only a Group A, Division 4 *major occupancy* or an open *storage garage*,

f) the vicinity of draft stops required by Article 3.2.8.6.,

g) elevator machine rooms, and

h) each *floor area* in front of the elevator or elevators ~~as required by Sentence 3.2.6.4.(5)~~.

(See Note A-3.2.4.11.(1).)

2) *Smoke detectors* need not be installed in sleeping rooms and in corridors serving the sleeping rooms within a *suite* of *care occupancy* where *smoke alarms* are installed in accordance with Article 3.2.4.20.

3) *Smoke detectors* required in the sleeping rooms of a *care*, *treatment* or *detention occupancy* shall, upon actuation, provide an audible and visible signal to staff serving those rooms so that the room or location containing the actuated *smoke detector* can be easily identified. (See Note A-3.2.4.11.(3).)

4) *Smoke detectors* required in Clause (1)(g) shall, upon actuation, recall the elevators served by the elevator machine room in which the *smoke detector* is installed.

5) Except as permitted in Sentences (6) and (7), *smoke detectors* installed in *buildings* required to be equipped with a fire alarm system shall be located near the entrance to *walkways* described in Articles 3.2.3.19. and 3.2.3.20. or vestibules provided in conformance with Article 3.2.6.3.

6) *Smoke detectors* installed at the entrance to the *walkways* in conformance with Article 3.1.8.14. shall be deemed to meet the requirements of Sentence (5).

7) *Smoke detectors* required by Sentence (5) may be replaced with *fire detectors* in Group F *occupancies* where the *smoke detectors* may be subjected to false alarms due to the activities within the *building*.

3.2.4.19. Visible Signal Devices and Visible Warning Systems

1) Visible signal devices shall be installed in addition to *alarm signals*

a) in *buildings* or portions thereof intended for use primarily by persons are deaf or hard of hearing,

b) in *assembly occupancies* in which music and other sounds associated with performances could exceed 100 dBA,

c) in any *floor area* in which the ambient noise level is more than 87 dBA, and

d) in any *floor area* in which the occupants

i) use ear protection devices,

ii) are located in an audiometric booth, or

iii) are located in sound-insulating enclosures.

2) Visible signal devices required by Sentence (1) shall be installed so that the signal from at least one device is visible throughout the *floor area* or portion thereof in which they are installed. (See Note A-3.2.4.19.(2).)

3) A visible warning system shall be installed in the rooms and spaces required by Section 3.8. and shall
conform to
a) Sentence (4) where a fire alarm system is provided, and
b) Sentence (5) where a fire alarm system is not provided.

4) The visible warning system required by Sentences (2) and (3) shall consist of strobe lights conforming to CAN/ULC-S526, "Visible Signal Devices for Fire Alarm Systems, Including Accessories" that are designed to operate as part of the fire alarm system, and
a) have a luminous intensity of not less than
i) 75 candela, if the strobe light is located in a sleeping room or bed space, and
ii) 15 candela, if the strobe light is not located in a sleeping room or bed space,
b) produce between 1 and 3 flashes per second, with the flashes synchronized when more than one strobe light is visible from a single location,
c) have a clear or white translucent lens with the word "FIRE" clearly visible on the
i) lens, or
ii) attached nameplate,
d) be installed in each
i) sleeping room or bed space,
ii) room closed off from the living area by a door including bathrooms, and
iii) living area or hallway serving the living area, and
e) be located in conformance with the installation requirements for visible signal devices in CAN/ULC-S524, "Installation of Fire Alarm Systems."

5) Where a fire alarm system is not provided, the visible warning system required by Sentences (2) and (3) shall consist of strobe lights conforming to CAN/ULC-S526, "Visible Signal Devices for Fire Alarm Systems, Including
a) be connected to, and activated by,
i) the *smoke alarms* required by Article 3.2.4.20. and Article 9.10.19.1., or
ii) the *smoke detectors* permitted by Article 3.2.4.20., 3.2.4.21. or 9.10.19.8.,
b) have a luminous intensity of not less than
i) 75 candela, if the strobe light is located in a sleeping room or bed space, or
ii) 15 candela, if the strobe light is not located in a sleeping room or bed space,
c) produce between 1 and 3 flashes per second, with the flashes synchronized when more than one strobe light is visible from a single location,
d) have a clear or white translucent lens with the word "SMOKE" clearly visible on the
i) lens, or
ii) attached nameplate,
e) be installed in each
i) sleeping room or bed space,
ii) room closed off from the living area by a door including bathrooms, and
iii) living area or hallway serving the living area, and
f) be located not less than 2 100 mm above the floor on a wall or ceiling in a location that will maximize effectiveness.

6) The special outlet boxes and cover plates required by Sentences 3.8.2.12.(5) and ~~3.8.5.3.(4)~~3.8.5.7.(4) shall be
a) designed, located and wired specifically to allow strobe lights to operate in conformance with
i) Sentence (4) where a fire alarm system is provided, or
ii) Sentence (5) where a fire alarm system is not provided,
b) permanently identified as "FIRE – Strobe Light Connection Only,"
c) installed in each
i) sleeping room or bed space,

ii) room closed off from the living area by a door including bathrooms, and
iii) living area or hallway serving the living area, and
d) be located not less than 2 100 mm above the floor on a wall or ceiling in a location that will maximize effectiveness.

7) For the purposes of providing power to the strobe lights that may be connected to the outlets described in Sentence (6), it shall be assumed that the total special outlets for at least 20 percent of the *dwelling units* in the *building* are in use.

3.2.4.22. Voice Communication Systems

(See also Article 3.2.5.20)

1) A voice communication system required by Subsection 3.2.6. and Sentences (7) to (10) shall
a) consist of a two-way means of communication with the central alarm and control facility and to the mechanical control centre from each *floor area*, and
b) be capable of broadcasting prerecorded, synthesized, or live messages from the central alarm and control facility that are audible and intelligible in all parts of the *building*, except that this requirement does not apply to elevator cars (See Note A-3.2.4.22.(1)(b).).

2) The voice communication system referred to in Sentence (1) shall include a means to silence the *alarm signal* in a single stage fire alarm system while voice instructions are being transmitted, but only after the *alarm signal* has initially sounded for not less than 30 s.

3) The voice communication system referred to in Sentence (1) shall include a means to silence the *alert signal* and the *alarm signal* in a 2-stage fire alarm system while voice instructions are being transmitted, but only after the *alert signal* has initially sounded for not less than
a) 10 s in hospitals that have supervisory personnel on duty for twenty-four hours each day, or
b) 30 s for all other *occupancies*.

4) The voice communication system referred to in Clause (1)(b) shall be designed so that the *alert signal* or *alarm signal* in a 2-stage fire alarm system can be selectively transmitted to any zone or zones while maintaining an *alert signal* or selectively transmitting voice instructions to any other zone or zones in the *building*.

~~**5)** The 2-way communication system referred to in Clause (1)(a) shall be installed so that emergency telephones are located in each *floor area* near *exit* stair shafts.~~

5) Except where a radio antenna system conforming to Sentence 3.2.5.20.(1) is installed, emergency telephones shall be installed and located in each *floor area* near *exit* stair shafts for the 2-way communication system referred to in Clause (1)(a).

6) Visible signal devices required by Sentence 3.2.4.19.(1) and visible warning systems required by Sentence 3.2.4.19.(3) shall continue to emit a visible signal while voice instructions are being transmitted.

7) Except for Group B, Division 1 and Group F, Division 1 *major occupancies*, where a fire alarm system is required under Subsection 3.2.4., a voice communication system shall be installed in *buildings* where a 2-stage fire alarm system is installed and whose *occupant load* exceeds 1 000.

8) A voice communication system required by Sentence (7) shall consist of loudspeakers that are
a) operated from the central alarm and control facility or, in the absence of such a facility, from a designated area, and
b) except in elevator cars, designed and located so that transmitted messages are audible and intelligible in all parts of the *building*.

(See Note A-3.2.4.22.(1)(b).)

9) Where the facility is not equipped with staff trained to provide instructions over the loudspeakers, a pre-recorded message shall be provided.

10) The voice communication system required by Sentence (7) shall meet the silencing and transmission requirements of Sentences (2) to (4).

~~**11)** Except where a radio antenna system conforming to Sentence 3.2.5.20.(1) is installed, emergency telephones shall be installed and located in each *floor area* near *exit* stair shafts for the 2-way communication system referred to in Clause (1)(a).~~

3.2.5.3. Roof Access

1) Except as permitted by Sentence (2), ~~O~~on a *building* more than 3 *storeys* in *building height* where the slope of the roof is less than 1 in 4, all main roof areas shall be provided with direct access from the *floor areas* immediately below, either by

a) a stairway, or

b) a hatch not less than 550 mm by 900 mm with a fixed ladder.

2) A *building* of residential occupancy not more than 4 *storeys* in *building height* need not be provided with direct access from the *floor areas* immediately below, provided

a) the slope of the roof is less than 1 in 4,

b) there is no common patio, balcony, or deck area, and

c) *dwelling units* are provided with direct stair access from f*loor areas* immediately below.

3.2.5.5. Location of Access Routes and Paths of Travel

(See Note A-3.2.5.5.)

1) Except as provided by Sentences (2) and (3), access routes required by Article 3.2.5.4. shall be located so that

a) the principal entrance is no less than 3 m and no more than 15 m from the closest portion of the access route, measured horizontally along the path of travel from the access route to the principal entrance (see Note A-3.2.5.5.(2)(a).), and

b) every access opening required by Articles 3.2.5.1. and 3.2.5.2. are located not less than 3 m and not more than 15 m from the closest portion of the access route, measured horizontally to the face of the *building*.

(See Note A-3.2.5.5.(1).)

2) ~~Access routes required by Article 3.2.5.4. shall be located so that the principal entrance is no less than 3 m and no more than 15 m from the closest portion of the access route, measured horizontally along the path of travel from the access route to the principal entrance (see Note A-3.2.5.5.(2).)~~ Paths of travel for firefighters shall not be more than 45 m to the principal *suite* entry for

a) a *building* or portion of a *building*, of *residential occupancy* containing *dwelling units* with *means of egress* conforming with Article 3.3.4.4. provided directly to the exterior at adjacent grade, or

b) non-residential portions of a *building*, which are cut off from and have no internal access to the remainder of the *building*. (See Note A-3.2.5.5.(3)(b).)

3) ~~Paths of travel for firefighters shall not be more than~~ The path of travel for firefighters to the main entry of a *dwelling unit* permitted by Clause (2)(a) may be increased to

a) ~~45 m from the access route to the entrance door of each *dwelling unit* for *sprinklered buildings* of *residential occupancy* with exiting directly to adjacent *grade*,~~

~~b) 55 m from the access route to the entrance door of each *dwelling unit* with exiting directly to adjacent *grade*,~~ 65 m where

i) ~~the~~ *dwelling units* are ~~is~~ separated from adjacent *floor areas* by a *fire separation* with at least 1 h *fire-resistance rating*, ~~if~~

ii) ~~exceeding Article 3.2.5.12. requirements, the building is sprinklered to NFPA 13R from NFPA 13D, or to NFPA 13 from NFPA 13R,~~ the *building sprinkler system* is designed to the NFPA 13, except that the *sprinkler system* may be designed to the hydraulic design criteria and sprinkler coverage requirements of NFPA 13R where the building would otherwise be permitted to be NFPA 13D,

~~ii) [**Deleted.**]~~

iii) a strobe light is installed outside the principal entrance of the *dwelling unit*, and is connected to an internal *smoke alarm* within the *dwelling unit*,

iv) *sprinkler systems* are monitored by ~~the~~ a fire alarm system or residential fire warning system and by an off-site monitoring service,

~~v) [**Deleted.**]~~

v~~i~~) lighting and emergency lighting is provided along the path of travel for firefighters with a minimum illumination level of 1 lx, and average illumination of not less than 10 lx, and

vi~~i~~) the *building* is provided with a fire alarm system and ~~has a~~ graphic annunciator,

b~~c~~) ~~65 m from the access route to the entrance door of each *dwelling unit* provided each *dwelling unit* has direct access to an exterior exit facility leading to adjacent ground level,~~ 90 m where

i) the requirements of Subclauses (a~~b~~)(i) to (a~~b~~)(vi~~i~~) are met,

ii) no principal *dwelling unit* or its *ancillary residential unit* is located above another *dwelling unit*, ~~the *dwelling unit* may cont ain an *ancillary residential unit* or the *dwelling unit* has not more than one *dwelling unit* on top, if~~

~~i) the requirements of Subclauses (b)(i) to (b)(vii) are met,~~

ii) a 64 mm diameter fire department hose connection is located adjacent to the path of travel for firefighters located not more than 45 m measured from the hose connection to the principal entrance of each of the dwelling units,

iii) the location of the fire department hose connections required by Subclause (c)(ii) is indicated on the fire alarm system graphic annunciator, and

iv) the *building* is *sprinklered* to NFPA 13, and

~~d) 45 m from the access route to the entrance door, for non-residential portions of a *building*, which are cut off from and have no internal access to the remainder of the *building*. (See Note A-3.2.5.5.(3)(d).)~~

4) The access route from the hydrant location to the *building* location or ~~from the hydrant location to~~ the principal entrance of the *building* as described in Sentences (5) and (6), shall be no more than 90 m. (See Note A-3.2.5.5.(4).)

5) Where the access route runs continuously across the face of a *building*, the length of the access route shall be measured by measuring the shortest distance between a line drawn perpendicular to the access route and through the hydrant and a line drawn perpendicular to the access route and through the principal entrance of the *building*.
(See Note A-3.2.5.5.(5).)

6) Where the access route terminates before the principal entrance of a *building*, the length of the access route shall be measured by measuring from a line drawn perpendicular to the access route and through the hydrant straight along the access route to its terminus and thereafter along the actual path of travel to the principal entrance. (See Note A-3.2.5.5.(6).)

3.2.5.20. Radio Antenna Systems

(See Note A-3.2.5.20.).

1) Except as permitted by Sentence (2), an *acceptable* radio antenna system shall be installed in every *building* that

a) is more than 6 *storeys* in *building height*,

b) contains more than 1 *storey* in the basement, or

c) contains more than 1200 m^2 of *floor area* in the basement.

2) A radio antenna system shall not be required for

a) government *buildings* requiring security against transfer of signals inside and outside of *buildings*, ~~and~~

b) where, in the opinion of the *Chief Building Official*, in consultation with the Fire Chief, radio signals compromise the intended use of the *building*~~.~~, and

c) buildings of *residential occupancy* only with no more than two principal *dwelling units*.

3) A radio antenna system shall provide not less than 98% coverage at in each of the following critical locations
in the *building*

a) e*xit* stair shafts,
b) e*xit* corridors,
c) *public corridors,*
d) corridors used by the public,
e) corridors serving classrooms or patients' sleeping rooms,
f) within 5 m of the fire alarm control unit,
g) within 5 m of the central alarm and control facility,
h) within 5 m of the fire alarm annunciator,
i) fire pump room,
j) emergency generator room,
k) electrical service and transformer room,
l) elevator machine room,
m) elevator lobbies,
n) elevator hoistways,
o) corridors in the basement and not within a *suite*, and
p) s*torage garages* and associated vehicle ramps.

4) A radio antenna system shall comply with ANSI/CAN/UL 2524 "Standard For Safety In-building 2-Way Emergency Radio Communication Enhancement Systems."

3.2.6.4. Emergency Operation of Elevators

1) Automatic and manual emergency recall shall be provided for all elevators serving *storeys* above the *first storey*.

2) Key-operated switches for emergency recall required by Sentence (1) shall be provided in a conspicuous location at

a) each elevator lobby on the recall level, and
b) the central alarm and control facility required by Article 3.2.6.7.

3) In-car emergency service switches shall be provided in all elevator cars.

4) Keys to operate the switches required by Sentences (2) and (3) shall be

a) provided in a suitably identified box conspicuously located on the outside of an elevator hoistway near the central alarm and control facility required by Article 3.2.6.7., and
b) kept at the central alarm and control facility.

5) The automatic emergency recall provided in accordance with Sentence (1) shall be activated by *smoke detectors* installed in

a) ~~*smoke detectors* installed in~~ each *floor area* in front of the elevator(s), ~~or~~
b) ~~the *building* fire alarm system.~~ the elevator hoistway,
c) the elevator machine room, or
d) any room containing elevator control equipment.

6) Where *smoke detectors* as provided in accordance with Sentence (5), are activated on the recall level, the automatic emergency recall signal shall automatically direct the elevator to an alternate floor level.

7) *Smoke detectors* provided in accordance with Sentence (5) shall be designed as part of the *building* fire alarm system.
8) *Smoke detectors* installed in an elevator lobby to comply with Clause 3.2.6.4.(5)(a) shall be located such that the detector is not more than its rated detection distance from the elevator doors that it serves.

3.2.7.9. Emergency Power for Building Services

1) An emergency power supply capable of operating under a full load for not less than 2 h shall be provided by an emergency generator for

a) every elevator serving *storeys* above the *first storey* in a *building* that is more than 18 m high measured between *grade* and the floor level of the top *storey* other than a *building* complying with Sentence 3.2.6.1.(2), and every elevator for firefighters in conformance with Sentence (2),

b) water supply for firefighting in conformance with Article 3.2.5.7., if the supply is dependent on electrical power supplied to the *building*,

c) fans and other electrical equipment that are installed to maintain the air quality specified in Articles 3.2.6.2. and 3.3.3.6.,

d) fans required for venting by Article 3.2.6.6., and

e) fans required by Clause 3.2.8.4.(1)(c) and Article 3.2.8.7. in *buildings* within the scope of Subsection 3.2.6.

(See Note A-3.2.7.9.(1).)

2) Except as permitted by Sentence (3), the emergency power supply for elevators required by Clause (1)(a) shall be capable of operating all elevators for firefighters plus one additional elevator simultaneously.

3) Sentence (2) does not apply if the time to recall all elevators under emergency power supply is not more than 5 min, each from its most remote *storey* to

a) the *storey* containing the entrance for firefighter access referred to in Articles 3.2.5.4. and 3.2.5.5., or

b) to a transfer lobby.

3.3.1.3. Means of Egress

(See Note 3.3.1.3.)

1. **1)** *Access to exit* within *floor areas* shall conform to Subsections 3.3.2. to 3.3.5., in addition to the requirements of this Subsection.
2. **2)** If a podium, terrace, platform or contained open space is provided, egress requirements shall conform to the appropriate requirements of Sentence 3.3.1.5.(1) for rooms and *suites*.
3. **3)** *Means of egress* shall be provided from every podium, terrace, platform or contained open space used or intended for *occupancy*, to *exits* in conformance with the requirements of Section 3.4.
4. **4)** *Means of egress* from an *occupancy* on a roof serving only a single *dwelling unit* shall be provided in conformance with Article 3.3.4.4.
5. **5)** Except as permitted by Sentence (4) and except as required by Sentence (6), a *means of egress* at the roof level, designed in conformance with the requirements for *exits* in Section 3.4., shall be provided from an *occupancy* on a roof.
6. **6)** At least two separate *means of egress* at the roof level, designed in conformance with the requirements for *exits* in Section 3.4., shall be provided from a roof used or intended for an *occupant load* more than 60.
7. **7)** For the purposes of Sentences (4) and (5), the occupied area of the *occupancy* on a roof shall be used in place of *floor area*.

8. **8)** A roof-top enclosure that does not serve as part of a *means of egress* for an *occupancy* on a roof in accordance with Sentence (5) or (6) shall be provided with an *access to exit* that leads to an *exit*
9. a) at the roof level, or
10. b) on the *storey* immediately below the roof.
11. **9)** A roof-top enclosure which is more than 200 m^2 in area shall be provided with at least 2 *means of egress*.
12. **10)** Two points of egress shall be provided for a *service space* referred to in Sentence 3.2.1.1.(8) if
13. a) the area is more than 200 m^2, or
14. b) the travel distance measured from any point in the *service space* to a point of egress is more than 25 m.
15. **11)** Except as permitted by Sentences 3.3.4.4.(5) and (6), each *suite* in a *floor area* that contains more than one *suite* shall have
16. a) an exterior *exit* doorway, or
17. b) a doorway
    18. i) into a *public corridor*, or
    19. ii) to an exterior passageway.

12) Except as permitted by this Section and by Sentence 3.4.2.1.(2), at the point where a doorway referred to in Sentence (~~8~~11) opens onto a *public corridor* or exterior passageway, it shall be possible to go in opposite directions to each of 2 separate *exits*.

3.4.6.6. Guards

1) Every *exit* shall have a wall or a well-secured *guard* on each side, where
a) there is a difference in elevation of more than 600 mm between the walking surface and the adjacent surface, or
b) the adjacent surface within 1.2 m of the walking surface has a slope of more than 1 in 2.

(See Note A-9.8.8.1.)

2) Except as required by Sentence (4), the height of *guards* for *exit* stairs and *exit* ramps as well as their landings shall be not less than 1 070 mm.

3) The height of *guards* shall be measured vertically to the top of the *guard* from
a) a line drawn through the outside edges of the stair nosings, or
b) the surface of the ramp or landing.

4) The height of *guards* for exterior stairs and landings more than 10 m above adjacent ground level shall be not less than 1 500 mm measured vertically to the top of the *guard* from the surface of the landing or from a line drawn through the outside edges of the stair nosings.

5) Except as provided in Sentence 3.3.1.18.(3) and Articles 3.3.4.7. and 3.3.5.10., *guards* in *exits* shall not have any openings that permit the passage of a spherical object whose diameter is more than 100 mm.

6) In a stairway, a window for which the distance measured vertically between the bottom of the window and a line drawn through the outside edges of the stair nosings is less than 900 mm, or a window that extends to less than 1 070 mm above the landing, shall
a) be protected by a *guard* that is
    i) located approximately 900 mm above a line drawn through the outside edges of the stair nosings, or
    ii) not less than 1 070 mm high measured to the top of the *guard* from the surface of the landing, or
b) be fixed in position and designed to resist the lateral design loads specified for *guards* and walls in Articles 4.1.5.14. and 4.1.5.16.

7) Except for *guards* conforming to Article 3.3.5.10., *guards* ~~that protect a level located more than one *storey* or 4.2 m above the adjacent level~~ shall be designed so that no member, attachment or opening located between 140 mm and 900 mm above the level being protected by the *guard* facilitates climbing. (See Note A-9.8.8.6.(1).)

3.4.6.16. Door Release Hardware

1) Except for devices on doors serving a *contained use area* or an *impeded egress zone* designed to be remotely released in conformance with Article 3.3.1.13., and except as permitted by Sentences (4) and (5) and Article 3.4.6.17., locking, latching and other fastening devices on a principal entrance door to a *building* as well as those on every *exit* door shall include release hardware complying with Clause 3.8.3.8.(1)(c) to permit the door to be readily opened from the inside with not more than one releasing operation and without requiring keys, special devices or specialized knowledge of the door-opening mechanism. (See Note A-3.4.6.16.(1).)

2) If a door is equipped with a latching mechanism, a device that will release the latch and allow the door to swing wide open when a force of not more than 90 N is applied to the device in the direction of travel to the *exit* shall be installed on

a) every *exit* door from a *floor area* containing an *assembly occupancy* having an *occupant load* more than 100,

b) every door leading to an *exit* lobby from an *exit* stair shaft, and every exterior door leading from an *exit* stair shaft in a *building* having an *occupant load* more than 100, and

c) every *exit* door from a *floor area* containing a *high-hazard industrial occupancy*.

3) Except as required by Sentence 3.8.3.6.(8), every *exit* door shall be designed and installed so that, when the latch is released, the door will open under a force of not more than 90 N, applied at the knob or other latch releasing device.

4) Except as permitted in Sentence (7), electromagnetic locks that do not incorporate latches, pins or other similar devices to keep the door in the closed position are permitted to be installed on doors, other than those leading directly from a *high-hazard industrial occupancy,* provided

a) the *building* is equipped with a fire alarm system,

b) the locking device releases upon actuation of the *alarm signal* from the *building's* fire alarm system,

c) the locking device releases immediately upon loss of power controlling the electromagnetic locking mechanism and its associated auxiliary controls,

d) except for locking devices installed in conformance with Sentence (5), the locking device releases immediately upon actuation of a manually operated switch readily accessible only to authorized personnel,

e) except as provided in Clause (k), a force of not more than 90 N applied to the door opening hardware initiates an irreversible process that will release the locking device within 15 s and not re-lock until the door has been opened,

f) upon release, the locking device must be reset manually by the actuation of the switch referred to in Clause (d),

g) a legible sign is permanently mounted on the door to indicate that the locking device will release within 15 s of applying pressure to the door-opening hardware,

h) the total time delay for all electromagnetic locks in any path of egress to release is not more than 15 s (See note A-3.4.6.16.(4)(h).),

i) where a bypass switch is installed to allow testing of the fire alarm system, actuation of the switch

i) can prevent the release of the locking device by the fire alarm system, as stated in Clause (b), during the test, and

ii) causes an audible and visual signal to be indicated at the fire alarm annunciator panel required by Article 3.2.4.9. and at the monitoring station specified in Sentence 3.2.4.8.(4),

j) emergency lighting is provided at each door, and

k) where they are installed on doors providing emergency crossover access to *floor areas* from *exit* stairs directly into a public corridor or publicly accessed *floor area acceptable* to the *Chief Building Official,* in accordance with Sentence 3.4.6.18.(2),

i) the locking device releases immediately upon the operation of a manual station for the fire alarm system located on the wall on the *exit* stair side not more than 600 mm from the door, and

ii) a legible sign with the words “re-entry door unlocked by fire alarm” written in letters at least 25 mm high with a stroke of at least 5 mm is permanently mounted on the door on the *exit* stair side.

(See Notes A-3.4.6.16.(4). and A-3.3.1.13.(7).)

5) Electromagnetic locks that do not incorporate latches, pins or other similar devices to keep the door in the closed position are permitted to be installed on doors in Group B, Division 2 and Division 3 *occupancies*, provided

a) the *building* is

i) equipped with a fire alarm system, and

ii) *sprinklered*,

b) the electromagnetic lock releases upon

i) actuation of the *alarm signal* from the *building's* fire alarm system,

ii) loss of its power supply and of power to its auxiliary controls,

iii) actuation of a manually operated switch that is readily accessible at a constantly attended location within the locked space, and

iv) actuation of the manual station installed within 0.5 m of each door and equipped with an auxiliary contact, which directly releases the electromagnetic lock,

c) upon release, the electromagnetic lock requires manual resetting by actuation of the switch referred to in Subclause (b)(iii),

d) a legible sign with the words “EMERGENCY EXIT UNLOCKED BY FIRE ALARM” written in letters at least 25 mm high with a stroke at least 5 mm wide is permanently mounted on the door,

e) the operation of any by-pass switch, where provided for testing of the fire alarm system, sets off an audible signal and a visual signal at the fire alarm annunciator panel and at the monitoring station referred to in Sentence 3.2.4.7.(4), and

f) emergency lighting is provided at the doors.

(See Note A-3.4.6.16.(5).)

6) Except as provided in Sentence 3.4.6.17.(9), door release hardware for the operation of the doors referred to in this Section shall be installed at a height between 900 mm and 1 100 mm above the finished floor.

(See also Subclause 3.8.3.6.(6)(a)(v).)

7) As an alternative to the requirements of Clauses (e), (f) and (g) in Sentence 3.4.6.16.(4), acceptable door release hardware for an electromagnetic lock shall be located in close proximity to the exit door and shall be equipped with

a) a push button together with a motion sensor or a pressure sensitive pad that will immediately release the locking device,

b) a push button that is

i) directly connected to the electrical circuit that provides power to the locking device, without any intervening mechanism,

ii) embossed with the word “EXIT” on the activation surface in text with dimensions of no less than 25 mm,

iii) internally illuminated by a permanent LED type light source, and
iv) labeled “DOOR RELEASE” in plain and legible characters, and

c) an electromagnetic lock that
i) will reset automatically, except as provided in (c)(ii),
ii) has an automatic reset feature that is not activated for at least 15 seconds, and
iii) can only be reset by manual means after the activation of the fire alarm system.

(See Note A-3.4.6.16.(7).)

3.4.6.18. Emergency Crossover Access to Floor Areas

1) Except as permitted in Sentence (2), doors providing access to *floor areas* from *exit* stairs shall not have locking devices to prevent entry into any *floor area* from which the travel distance up or down to an unlocked door is more than 2 *storeys*.

2) Doors referred to in Sentence (1) are permitted to be equipped with electromagnetic locks, provided they open directly into a public corridor or publicly accessed *floor area acceptable* to the *Chief Building Official,* and comply with Sentences 3.4.6.16.(4) and (5).

3) Doors referred to in Sentence (1) shall be identified by a sign on the stairway side to indicate that they are openable from that side.

4) Locked doors intended to prevent entry into a *floor area* from an *exit* stair shall

a) be identified by a sign on the stairway side to indicate the location of the nearest unlocked door in each direction of travel, and

b) be openable with a master key that fits all locking devices and is kept in a designated location accessible to firefighters or be provided with a wired glass panel not less than 0.0645 m^2 in area and located not more than 300 mm from the door opening hardware.

5) Where access to *floor areas* through unlocked doors is required by Sentence (1), it shall be possible for a person entering the *floor area* to have access through unlocked doors within the *floor area* to at least one other *exit*.

3.8.2.1. General

(See Note A-3.8.2.1.)

1) Except as provided in Clause 3.8.2.3.(2)(j), the requirements of this Section apply to all *buildings* and all areas of *buildings* where work functions can reasonably be expected to be performed by *persons with disabilities* except

a) *dwelling units*, row houses, boarding houses, lodging houses and construction camps, except as required by
i) Article 3.8.2.12., or
ii) Subsection 3.8.5.,

b) apartment and condominiums *buildings* except that an *accessible* path of travel conforming to Subsection 3.8.3. from *accessible* entrances as described in Article 3.8.2.2. throughout common areas and, if provided, to parking areas and passenger loading zones as described in Article 3.8.2.5. is required unless the *building* is not equipped with a passenger-elevating device, in which case an *accessible* path of travel as described in Article 3.8.2.3.
i) need only be provided on the levels with *accessible* entrances, and
ii) need not be provided where the difference in floor elevation between the entrance level or levels and every *dwelling unit* exceeds 600 mm,

c) *high-hazard industrial occupancies*,

d) *buildings* that are not intended to be occupied on a daily or full-time basis, including but not limited to automatic telephone exchanges, pump houses and substations,

e) public toilet *buildings* in locations such as highway rest areas, campgrounds, picnic grounds, parks and recreational vehicle parks where an *accessible* path of travel

conforming to Subsection 3.8.3. is provided from a roadway or *street* to at least one other *accessible* public toilet *building*,

f) ~~the~~ a portion of the *storey* next above or below the *accessible storey* in a *suite*~~*building*~~ of not more than two *storeys*, ~~*in building height*~~ provided the portion of the *storey* next above or below the *accessible storey*

i) is less than 600 m^2 in *floor area*,

ii) contains only facilities that are also contained on the *accessible storey*,

iii) does not contain an *assembly major occupancy* with an area more than 100 m^2, and

iv) is not served by a passenger-elevating device connecting the *storey* next above or below the *accessible storey* (See Note A-3.8.2.1.(1)(f) and (g).), and

g) the *storey* next above or below the *accessible storey* in a *building* with not more than one *storey* above the *first storey*, provided the *storey* next above or below the *accessible storey*

i) is less than 600 m^2 in *floor area*,

ii) contains only facilities that are also contained on the *accessible storey*,

iii) does not contain an *assembly major occupancy* with an area more than 100 m^2, and

iv) is not served by a passenger-elevating device connecting the *storey* next above or below the *accessible storeys*. (See Note A-3.8.2.1.(1)(f) and (g).)

2) *Buildings* and parts of *buildings* required by Sentence (1) and this Subsection to be *accessible* shall comply with Subsection 3.8.3. including, without limitation, exterior paths and stairs within property lines from roadways, *streets*, parking areas, exterior passenger-loading zones, and ancillary areas to all *accessible* entrances of these *buildings*.

3) The requirements of this Section take precedence over other requirements contained in this Part and in Part 9.

4) Where an *accessible* path of travel connects to a path of travel on the adjacent side of a *firewall* through a doorway, the requirements of this Section shall apply to the *floor areas* on both sides of the *firewall* as if they were in the same *building*.

5) *Access* shall be provided to *alterations*, *additions* and changes in *occupancy* to the extent required in Subsection 3.8.4.

6) Notwithstanding the exceptions of Sentence (1), the Enhanced Accessibility requirements of Sentence 3.8.3.1.(2) shall apply to all apartments and condominiums which contains three or more principal *dwelling units* served by an elevator and a *public corridor*.

3.8.5.5. Adaptable Dwelling Unit Bathrooms

(See Note A-3.8.5.5.)

1) One bathroom in an *adaptable dwelling unit* ~~of more than~~ that includes a floor level exceeding 40 m^2 shall

a) have a washbasin.

b) have a toilet,

c) have either a bathtub, shower, or be configured to accommodate the future installation of a low barrier shower and shall be constructed with

i) the addition of structural reinforcement of framed construction to accommodate the subsequent change in load, or the removal or reduction of the capacity of structural elements to facilitate the future installation of a low barrier shower, ~~double floor joists under a bathtub on timber construction,~~

ii) pre-plumbing of a drain connection to the greatest extent permitted by this Code to facilitate the future installation of a low barrier shower where it passes through a concrete floor or floor topping, or

~~ii) a second shower drain under a bathtub on timber construction with concrete topping,~~

~~iii) a second shower drain under a bathtub on a concrete slab, or~~

iii) alternative measures to the satisfaction of the *Chief Building Official* where it can be demonstrated that the future installation of a low barrier shower can be installed without substantial changes to the *building* structure or layout, and

c) be arranged so as to provide ~~have~~ a minimum clear floor space of 750 mm by 1200 mm in front of a washbasin, toilet, bathtub or shower required by Clause (c),

d) be located on ~~an *accessible* floor level or the largest floor level where there is no accessible floor~~

i) the principal floor exceeding 40 m^2 contain living space with level access to an entry at the adjacent ground level, or

ii) a floor provided with features that in the opinion of the *Chief Building Official* can readily be modified to facilitate future use by persons with limited mobility (see Note A-3.8.5.5.(1)).

2) Walls adjacent to the water closet and bathtub or shower shall accommodate the future installation of grab bars conforming to

a) Clauses 3.8.3.11.(1)(e) and (f) for water closets, and

b) Clause 3.8.3.16.(1)(f) for showers or 3.8.3.17.(1)(f) for bathtubs.

(See Note A-3.8.5.5.(2).)

3) All bath and shower controls in *adaptable dwelling units* shall be

a) easily accessible from an open floor space or offset which does not require entry into the bath or shower to operate, and

b) equipped with lever-type controls or hardware that does not require a tight grasp or twisting action of the wrist.

4) All washbasins in *adaptable dwelling units* shall be equipped with lever-type faucets or hardware that does not require a tight grasp or twisting action of the wrist.

3.8.5.7. Controls, Switches~~, and~~ Outlets and Signalling Devices

1) Controls and switches in an *adaptable dwelling unit* intended for regular occupant use, including electrical, telephone, cable and data outlets shall be mounted 455 mm to 1 200 mm above the floor, except where

a) in the opinion of the *Chief Building Official*, a different height is necessary to accommodate appliances or
equipment, or

b) otherwise required for safety or other regulatory enactments.

2) Controls for the operation of *building* services or safety devices, electrical switches, thermostats and intercoms in a *adaptable dwelling unit* shall be located no more than 1 200 mm above the finished floor, except
where, in the opinion of the *Chief Building Official*, a different height is necessary for safety reasons.

3) At least one electrical receptacle shall be provided in the vicinity of the stair required by Sentence 3.8.5.4.(3).

4) Except as permitted by Sentence (5), each *adaptable dwelling unit* shall be provided with special outlet boxes and cover plates as described in Sentence 3.2.4.19.(6). (See also Sentence 3.2.4.19.(7).)

5) Where a building is provided with an addressable fire alarm system, a special outlet box described in Sentence (4) is not required provided that

a) the dwelling unit has been designed with fire alarm signaling devices located in accordance with Clause 3.2.4.19.(6)(c), and

b) the fire alarm system and the signaling devices in clause (a) can accommodate the future replacement of audible signaling devices with combination audible visual signaling devices.

In Table-3.10.1.1.
Before the rows associated with 3.1.3.1. Separation of Major Occupancies, insert the following rows:

3.1.2.8. Child Care Facilities	
(1)	(b) [F02,F03,F05-OS1.2,OS1.3] Applies to sprinklers.
	[F11-OS1.5] Applies to fire alarm.
	[F11-OS1.5] Applies to smoke and CO alarm.
	[F03, F10-OS1.5] Applies to fire separations from the remainder of the building.
	[F10-OS1.5] Applies to emergency lighting.

And in the rows associated with 3.3.5.3. Basements, replace row (2) with:

3.3.5.3. Basements	
(2)	[F06-OS1.5,OS1.2] Applies to the separation of entrances to *basements* and to rooms containing *building* services from the remainder of the *building*.
	[F06-OP1.2] Applies to the separation of entrances from the remainder of the *building*.
	[F05-OS1.5] [F06-OS1.2,OS1.5] Applies to the separation of *exits* from the remainder of the *building*.
	[F06-OP1.2] Applies to the separation of *exits* from the remainder of the *building*.

Notes to Part 3 Changes

In Note A-3.2.5.20. replace the header:
4.4 ~~INTER~~CONNECTION TO THE FIRE ALARM SYSTEM

A-3.8.3.1.(2) Enhanced Accessibility for Residential Buildings. These measures are designed to provide a series of modest accessibility improvements to multi-unit residential buildings at minimal cost, using some of the concepts of universal design.

They are designed to enable disabled persons to visit and socialize with people in their homes. They also include simple provisions which will facilitate future adaptation of a dwelling unit so that the unit may be occupied by a person with a range of physical mobility restrictions, and are intended to extend the length of time that elderly persons may remain safely in their own homes.

It should be noted that these improvements apply only to newly constructed multi-unit residential buildings containing three or more suites and served by an elevator and a common corridor. They are NOT intended to provide full accessibility and do not, except where explicitly stated, require conformance to Article 3.7.2.10. and Articles 3.8.21~~1~~.1. to 3.8.2.3.

A-3.8.3.1.(2)(d) The provision for providing reinforcement in wall assemblies adjacent to the toilet and bathtub is intended to assist with future installation of grab bars adjacent to toilets and bathtubs. It is often difficult to add this reinforcement in walls after construction is complete. Therefore solid reinforcement must be installed in the walls adjacent to toilets and bathtubs. The requirements of 3.8.3.11.(1)(e), 3.8.3.16.(1)(f) and 3.8.3.17.(1)(f) may serve as good practice (see note A-3.8.5.5).

A-3.8.3.1.(2)(i) The provision for providing a 750 mm by 1 200 mm clear space in the washroom is to allow direct entry into the washroom and reverse exiting without the need for a 1 500 mm turning circle. Washroom fixtures should be located so as to permit side or end-on

transfer from a wheelchair without undue difficulty. The location of bathtub or shower controls should be offset or otherwise located so as to facilitate easy reach from an open floor space. Ideally, the entire space in front of a tub or should be clear of obstructions (see also CSA-B651, Section 6.5)

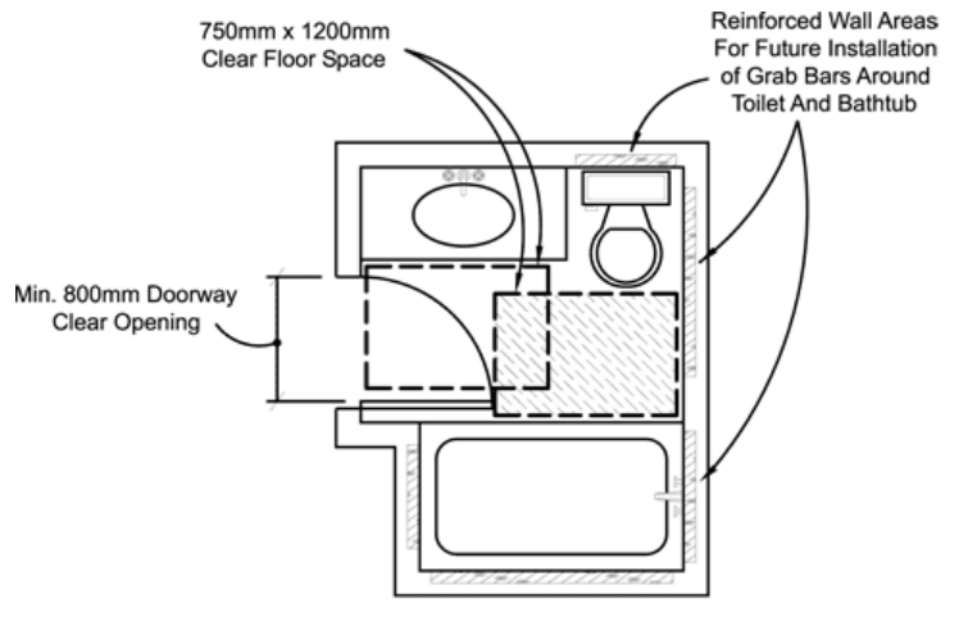

Figure A-3.8.3.1.(2)(i)-A
Signs indicating accessible facilities

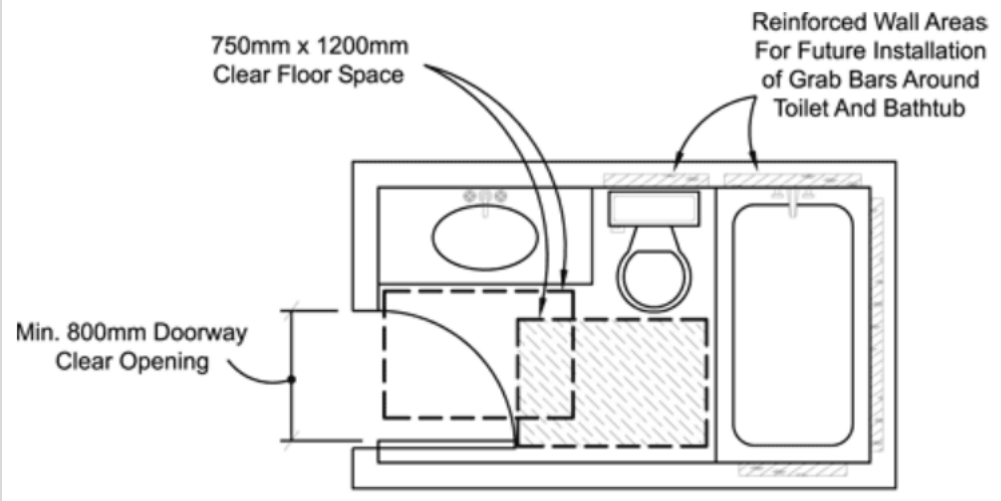

Figure A-3.8.3.1.(2)(i)-B
Signs indicating accessible facilities

A-3.8.5.5.(1) Location of Adaptable Dwelling Unit Bathrooms. One of the fundamental objectives of the Adaptable Dwelling Unit provisions is to allow for the future installation of a three piece bathroom on the principal floor of each unit with features facilitating use for a persons with a range of abilities. Consequently, the requirements of Article 3.8.5.5.(1) are intended to ensure that sufficient space is allocated at the outset so that the principal floor of the dwelling unit can accommodate a future three piece bathroom and space for the effective use

of its fixtures. This allows for the flexible use of the living space most readily providing access to the exterior for persons with varying degrees of mobility.

In the event that the specific design constraints of the ground floor does not allow for the effective inclusion of a bathroom, the Chief Building Official may permit the allocation of space for the piece washroom on another floor. Similarly, a minimum 40 m^2 floor area has been established to account for the decreasing efficiency in space use and impact on livability in smaller units.

CBO's Interim Position on the design of spaces for the future accommodation of low barrier showers (October 20, 2020):

4. *That the triggering requirement for the adaptable bathroom would be based upon an assessment of the size of the livable floor space of a suite on a floor by floor basis, meaning that:*
    a. *At least one ~~An~~ adaptable bathroom in a suite is ~~shall be~~ required where any ~~such~~ livable floor space exceeds 40 sq. m.,*
    b. *the determination of livable floor space is based upon that portion of the floor area of a given storey of the building which is intended for daily use containing kitchen, living, or dining facilities,*
    c. *that the adaptable washroom should be provided on the principal living space with ground level access, on a floor area that is 40 sq. m. or more in order to perform its intended function, and*
    d. *the current extent of the adaptable bathroom requirements for 3.8.5.5. require either a 3 piece bathroom set, or a sink and toilet plus suitable provision for future installation of a low barrier shower.*
5. *The underlying general intent of the adaptable bathroom provisions of 3.8.5.5. are to require a dedicated bathroom space ready for future adaptation to accommodate an occupant whose may have physical needs have changes such that they differ from what the present arrangement can accommodate at a minimal cost to the owner.*
6. *Where an owner opts to forego a 3 piece bathroom, a proposal for a two piece adaptable washroom generally complying with Article 3.8.5.5. shall include the following:*
    a. *a washbasin and toilet*
    b. *the pre allocation of a dedicated space for the installation of a low barrier shower which:*
        i. *is a dedicated separate space that is not currently a part of the 2 piece bathroom, (such as a 3'X3' / 3'X 4' / 3'X5' / 5'x2.5' bathtub size),*
        ii. *may include storage space or similar non-essential space,*
        iii. *may not include the current washer and dryer location, service rooms or spaces,*
        iv. *shall have suitable structural support to accommodate the future installation of the low barrier shower and surrounds, and*
        v. *where the floor is concrete or has a concrete topping, it shall be constructed to accommodate for the future installation of the shower that does not require extensive demolition or cutting of the concrete.*
    c. *a minimum clear floor space of 750mm X 1200mm for maneuvering shall be provided in front of the washbasin, toilet, and the dedicated bathtub / shower space.*
        i. *The clear floor space is to be designed to allow sufficient maneuvering room for the occupant to readily transition to and from the future low barrier shower from dedicated separate space without unusual effort.*
        ii. *The minimum clear floor space may not overlapping the sink, toilet, or the dedicated space for the lower barrier shower*
    d. *The washroom fixtures shall not be overlap nor shall they overlap the dedicated space.*
    e. *Preplumbing shall be required to support the future installation of a low barrier shower:*
        i. *with domestic cold and hot water,*
        ii. *with a drain intended for the future installation of a low barrier shower, and*
        iii. *without requiring extensive or costly modification to a facilitate the future installation of the low barrier shower.*

f. The design drawings shall indicate the location and extents of the dedicated space for the low barrier shower, and indicate the location of all pre-plumbing roughed-in at the dedicated separate space on the initial permit application drawings.

A-3.8.5.5.(~~23~~) Grab Bar Installation. This provision is intended to ensure there is adequate backing for the installation of grab bars by the occupant of the adaptable dwelling unit in the future. For example, plywood or solid lumber behind the wall finish and encompassing the location of future grab bars located as described in Clause 3.8.3.11.(1)(e) and Clause 3.8.3.16.(1)(f) or 3.8.3.17.(1)(f) would provide suitable backing for the grab bar fasteners.

Notes to Part 6 Changes

A-6.2.1.1. Good Engineering Practice.

…

Legionella Control

…

Further information on minimizing the growth and spread of legionella can be found in the following publications:

• ~~"Recognition, Evaluation and Control of Legionella in Building Water Systems" (American Industrial Hygiene Association, 2015).~~ "Recognition, Evaluation and Control of *Legionella* in Building Water Systems (Second Edition)" (American Industrial Hygiene Association, 2020).

Part 9 Changes

9.6.1.4. Types of Glass and Protection of Glass

1) Glass sidelights and windows located within 915 mm of doors, and greater than 500 mm wide ~~that could be mistaken for doors~~, glass in storm doors and glass in sliding doors within or at every entrance to a *dwelling unit* and in public areas shall be

a) safety glass of the tempered or laminated type conforming to CAN/CGSB-12.1-M, "Tempered or Laminated Safety Glass," or

b) wired glass conforming to CAN/CGSB-12.11-M, "Wired Safety Glass."

2) Except as provided in Sentence (4), glass in entrance doors to *dwelling unit*s and in public areas, other than the entrance doors described in Sentence (1), shall be safety glass or wired glass of the type described in Sentence (1).

3) Except as provided in Sentence (4), transparent panels that could be mistaken as a *means of egress* shall be protected by barriers or railings.

4) Sliding glass *partitions* that separate a *public corridor* from an adjacent *occupancy* and that are open during normal working hours need not conform to Sentences (2), (3) and (5), except that such *partitions* shall be suitably marked to indicate their existence and position.

5) Except as provided in Sentence (4), every glass or transparent door accessible to the public shall be equipped with hardware, bars or other permanent fixtures designed so that the existence and position of such doors is readily apparent.

6) Glass other than safety glass shall not be used for a shower or bathtub enclosure.

7) All skylights shall be glazed with wired glass, laminated safety glass or *combustible* glazing, which is anchored to the skylight frame and to the *building* structure. (See Note A-3.1.14.3.)

9.10.11.2. Firewalls Not Required

1) 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 principal *dwelling units* where there is no *dwelling unit* above another principal *dwelling unit*~~,~~ and its associated *ancillary residential units*.
b) **deleted**, ~~a *dwelling unit* and a house with a *secondary suite* including their common spaces, or~~
c) **deleted**. ~~two houses with a *secondary suite* including their common spaces.~~
2) Reserved.
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.

9.10.20.3. Fire Department Access to Buildings
1) Except as permitted by Sentence (8), a~~A~~ccess for fire department vehicles and fire fighters path of travel shall be provided to each principal entrance of a *building* in accordance with Articles 3.2.5.4., 3.2.5.5. and 3.2.5.6. (See Notes A-9.10.20.3.(1) and A-3.2.5.6.(1).)
2) Where access to a *building* as required in Sentence (1) is provided by means of a roadway or yard, the design and location of such roadway or yard shall take into account connection with public thoroughfares, weight of firefighting equipment, width of roadway, radius of curves, overhead clearance, location of fire hydrants, location of fire department connections and vehicular parking.
3) Despite the provisions of Sentence (1), an unobstructed path of travel for firefighters shall be provided to an *ancillary residential building* and the path of travel shall~~:~~
a) lead continuously from the *street* to the *lane*,
b) have a travel distance of no more than 45 m from the *street* to the principal entrance of the *ancillary residential building*,
c) be at least 900 mm wide,
d) have an overhead clearance of at least 2 m, and
e) consist of concrete, asphalt, or similar material.
4) An *ancillary residential building* shall have a strobe light installed and maintained outside the principal entrance, connected to an internal *smoke alarm* within the *ancillary residential building*.
5) Despite Clause 9.10.20.3.(3)(b) the path of travel for firefighters towards not more than one *ancillary residential building* on a parcel may exceed 45 m to a maximum of 70 m provided the principal entrance to that *ancillary residential building* is visible from the *street*.
6) If the principal *building* and the *ancillary residential building* are adjacent to a *lane*, the path of foot travel for firefighters to the *ancillary residential building* may be through the *lane* if
a) the travel distance from the *street* to the principal entrance of the *ancillary residential building* is no more than 70 m,
b) the path has an overhead clearance of at least 3 m,
c) the path consists of concrete, asphalt, or similar material, and
d) the principal entrance of the *ancillary residential building* is visible from the *street*.
7) Two adjacent parcels may have a single shared path of travel for firefighters over the common property line and the adjacent specified area to access both, provided
a) each parcel contains an *ancillary residential building*,

b) each parcel is subject to a covenant registered on title which prohibits construction upon or obstruction of the common property line and of a specified area adjacent to the property line~~;~~, and
c) the path of travel meets the requirements of Sentences (3), (4) and (5).

8) In a residential *building* within the scope of Division A, Article 1.3.3.3., containing not more than 2 principal *dwelling units*, access routes are permitted to be located so that the path of travel for firefighters to the principal entrance of each *dwelling unit* or ancillary *floor area* is no less than
a) 45 m where there are at least two paths of travel by which an occupant may reach a *street*, lane, or public thoroughfare,
b) 65 m where
i) there are at least two paths of travel by which an occupant may reach a *street*, lane, or public thoroughfare,
ii) the *building* is provided with *sprinklers* designed in accordance with NFPA 13, except that the *sprinkler system* may be designed to the hydraulic design criteria and sprinkler coverage requirements of NFPA 13R where the building would otherwise be permitted to be NFPA 13D,
iii) despite the requirements of Subclause (b)(ii) a fire department connection is not required,
iv) the *sprinkler system* is connected to internal smoke alarms within the *dwelling unit*, provided with an exterior audible alarm, and off-site monitoring, and
v) a strobe light is installed outside the principal entrance of the *dwelling unit*, and is connected to an internal *smoke alarm* within the *dwelling unit*, or
c) 90 m where
i) there are at least two paths of travel by which an occupant may reach a *street*, lane, or public thoroughfare,
ii) no principal *dwelling unit* or its *ancillary residential unit* is located above another *dwelling unit*,
iii) the *building sprinkler system* is designed to the NFPA 13,
iv) despite the requirements of Subclause (c)(iii) a fire department connection is not required,
v) the *sprinkler system* is connected to internal smoke alarms within the dwelling unit, provided with an exterior audible alarm, and off-site monitoring,
vi) a strobe light is installed outside the principal entrance of the *dwelling unit*, and is connected to an internal *smoke alarm* within the *dwelling unit*,
vii) an access path of at least 1.2 m wide is provided from each principal *dwelling unit* entry to the street, and
viii) lighting ~~and emergency lighting~~ is provided along the path of travel for firefighters with a minimum illumination level of 1 lx, and average illumination of not less than 10 lx.

Notes to Part 9 Changes

A-9.37.2.15 Separation of Ancillary Residential Suites. Separations between an ancillary residential unit and its associated principal dwelling unit are not required to be constructed as formal fire separations. Rather, these separations may be constructed with conventional techniques that incorporate low cost materials that will provide a degree of containment for fire, smoke, and sound to the dwelling unit of origin.

Likewise, openings between principal dwelling unit and its contained ancillary residential unit must meet certain minimum construction requirements, but need not be constructed as formal fire separations.

This 'deemed to comply' approach replaces the large variety of assemblies that could otherwise be constructed in conformance with Articles 9.10.8.11. and 9.11.1.1. (or their Part 3 and Part 5 equivalents). Where an owner provides assemblies constructed in accordance with the normal residential suite separation requirements, it can readily be seen that the intent of the provisions of 9.37.2.15. have been satisfied.

Part 10 Changes

10.2.2.5. Building Energy and Emissions Performance

1) For a *building* required to conform with this Article, energy modelling shall conform to:

a) the applicable requirements of ~~ASHRAE 90.1 ECB, or~~ Part 8 of the NECB, and

b) the City of Vancouver Energy Modelling Guidelines.

2) Except as permitted in Sentences (3), ~~and~~ (4) or (5), a *building* designed with this Article shall demonstrate the performance values of the proposed building comply with the limits in Table 10.2.2.5.A.

3) Compliance with the GHGI limits in Table 10.2.2.5.A is not required where a *building* can demonstrate the performance values of the proposed *building* comply with the TEUI and TEDI limits in Table 10.2.2.5.B.

4) *Buildings* and *major occupancies* designed and constructed to conform to the certification criteria for the Passive House Standard, are deemed to comply with this Article provided the design's energy model is

a) version 9 or newer of the Passive House Planning Package, and

b) prepared by a Certified Passive House Designer, or Certified Passive House Consultant.

45) Compliance with the TEUI and TEDI limits in Table 10.2.2.5.A is not required where a building is connected to a Low Carbon Energy System, and can demonstrate the performance values of the proposed building comply with the limits in Table 10.2.2.5.C.

Table 10.2.2.5.A
Maximum Energy Use and Emissions Intensities
Forming part of Sentence 10.2.2.5.(2)

***Occupancy* Classification**(1)	**Total Energy Use Intensity (kWh/m^2a)**	**Thermal Energy Demand Intensity (kWh/m^2a)**	**Greenhouse Gas Intensity ($kgCO_2e/m^2a$)**
Group C *occupancies* in *buildings* up to 6 *Storeys*, except Hotel and Motel	110	25	5.5
Group C *occupancies* in *buildings* over 6 *Storeys*, except Hotel and Motel	120	30	6

Hotel and Motel *occupancies*	140	20	8
Group D and E *occupancies*, except Office	120	20	3
Office *occupancies*	100	20	3

Notes to Table 10.2.2.5.A.:
(1) For *buildings* containing multiple *occupancies*, refer to the procedures on mixed-use buildings in Section 5 of the CoV Energy Modelling Guidelines.

Table 10.2.2.5.B
Maximum Energy Use and Emissions Intensities
Forming part of Sentence 10.2.2.5.(3)

***Occupancy* Classification**	**Total Energy Use Intensity (kWh/m^2a)**	**Thermal Energy Demand Intensity (kWh/m^2a)**	**Greenhouse Gas Intensity ($kgCO_2e/m^2a$)**
Group C *occupancies*	100	15	N/A

Table 10.2.2.5.C
Maximum Energy Use and Emissions Intensities
For Buildings Connected to a *Low Carbon Energy System*
Forming part of Sentence 10.2.2.5.(4)

***Occupancy* Classification**	**Total Energy Use Intensity (kWh/m^2a)**	**Thermal Energy Demand Intensity (kWh/m^2a)**	**Greenhouse Gas Intensity ($kgCO_2e/m^2a$)**
Group C *occupancies* in *buildings* up to 6 *Storeys*, except Hotel and Motel	110	25	5.5
Group C *occupancies* in *buildings* over 6 *Storeys*, except Hotel and Motel	130	40	6
Hotel and Motel *occupancies*	170	30	8
Office *occupancies*	~~170~~130	30	3
Business and Personal Services or Mercantile *Occupancies*, except Office	170	30	3

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10.2.2.5. Building Energy and Emissions Performance

1) For a *building* required to conform with this Article, energy modelling shall conform to:

a) the applicable requirements of ~~ASHRAE 90.1 ECB, or~~ Part 8 of the NECB, and
b) the City of Vancouver Energy Modelling Guidelines.

2) Except as permitted in Sentences (3)~~, and~~ (4) or (5), a *building* designed with this Article shall demonstrate the performance values of the proposed building comply with the limits in Table 10.2.2.5.A1.

3) Compliance with the GHGI limits in Table 10.2.2.5.A1 is not required where a *building* can demonstrate the performance values of the proposed *building* comply with the TEUI and TEDI limits in Table 10.2.2.5.B.

4) Buildings and major occupancies designed and constructed to conform to the certification criteria for the Passive House Standard, are deemed to comply with this Article provided the design's energy model is

a) version 9 or newer of the Passive House Planning Package, and
b) prepared by a Certified Passive House Designer, or Certified Passive House Consultant.

(See Note A-10.2.2.5.(4).)

5) Compliance with the TEUI and TEDI limits in Table 10.2.2.5.A1 is not required where a building is connected to a Low Carbon Energy System, and can demonstrate the performance values of the proposed building comply with the limits in Table 10.2.2.5.C.

Table 10.2.2.5.A1
Maximum Energy Use and Emissions Intensities
Forming part of Sentence 10.2.2.5.(2)

***Occupancy* Classification**(1)	**Total Energy Use Intensity (kWh/m^2a)**	**Thermal Energy Demand Intensity (kWh/m^2a)**	**Greenhouse Gas Intensity ($kgCO_2e/m^2a$)**
Group C occupancies complying with 10.2.1.5.(2)(a)(i)	See Table 10.2.2.5.A2	20	3
Group C *occupancies* in *buildings* up to 6 *Storeys*, except Hotel and Motel	~~100~~110	~~15~~25	5.5
Group C *occupancies* in *buildings* over 6 *Storeys*, except Hotel and Motel	120	30	6
Hotel and Motel *occupancies*	140	20	8
Group D and E *occupancies*, except Office	120	20	3
Office *occupancies*	100	20	3

Notes to Table 10.2.2.5.A1.:
(1) For *buildings* containing multiple *occupancies*, refer to the procedures on mixed-use buildings in Section 5 of the CoV Energy Modelling Guidelines.

Table 10.2.2.5.A2
Mechanical Energy Use Intensity in Buildings under 4 Storeys for Group C Major Occupancies except Hotel and Motel
Forming part of Sentence 10.2.2.5.(2)

Conditioned Floor Area	Mechanical Energy Use Intensity (MEUI) (kWh/m^2a)
≤ 50 m^2	125
≤ 75 m^2	108
≤ 120 m^2	78
≤ 165 m^2	58
≤ 210 m^2	48
> 210 m^2	45

Table 10.2.2.5.B
Maximum Energy Use and Emissions Intensities
Forming part of Sentence 10.2.2.5.(3)

***Occupancy* Classification**	**Total Energy Use Intensity (kWh/m^2a)**	**Thermal Energy Demand Intensity (kWh/m^2a)**	**Greenhouse Gas Intensity ($kgCO_2e/m^2a$)**
Group C *occupancies*	100	15	N/A

Table 10.2.2.5.C
Maximum Energy Use and Emissions Intensities
For Buildings Connected to a *Low Carbon Energy System*
Forming part of Sentence 10.2.2.5.(4)

***Occupancy* Classification**	**Total Energy Use Intensity (kWh/m^2a)**	**Thermal Energy Demand Intensity (kWh/m^2a)**	**Greenhouse Gas Intensity ($kgCO_2e/m^2a$)**
Group C *occupancies* in *buildings* up to 6 *Storeys*, except Hotel and Motel	110	25	5.5
Group C *occupancies* in *buildings* over 6 *Storeys*, except Hotel and Motel	130	40	6
Hotel and Motel *occupancies*	170	30	8
Office *occupancies*	~~170~~130	30	3
Business and Personal Services or Mercantile *Occupancies*, except Office	170	30	3

Table 10.2.2.6.
Minimum Effective Thermal Resistance of Assemblies in Buildings of Group C Major Occupancy
Forming part of Sentences 10.2.2.6.(1)

Building Assembly	**Assembly Minimum RSI Value (m^2K/W)**
Attic Space(1)	8.5
Roof Joist Assemblies for residential *buildings* with not more than 2 principal *dwelling units* (Cathedral Ceilings/Flat Roofs)	4.3
Roof Assemblies for ~~other~~ residential *buildings* ~~with not more than~~ in excess of 2 principal *dwelling units* (Cathedral Ceilings / Flat Roofs)	5.28
Walls (including frame crawl space walls)(2)	3.85
Foundation Walls	3.85
Box and Rim Joists	3.85
Concrete or Masonry Walls (other than foundation walls)	3.85
Suspended Floors (framed)	4.2
Suspended Floors (concrete slab)	4.2
Concrete Slabs on Ground at, above, or below grade (insulation under all slab area and around edge of slab)	2.5
Radiant Heating Suspended Floor Assembly Over Heated Area (insulation between heated floor and heated area below)(3)	2.5
Concrete Balconies, Eyebrows, and Exposed Slab Edge (wrapped or using manufacturer thermal break in structure)	0.42

Notes to Table 10.2.2.6.:
(1)The thermal resistance rating of attic space insulation may be reduced to value required for frame walls for a distance of 1200 mm from the exterior wall. A minimum nominal RSI of 3.52 m^2K/W is required above the top plate in the attic space .
(2) Headers and lintels: cavities between structural members are to be fully insulated, except where a framing plan provided by the builder, architect, designer, or engineer indicates that full-depth solid headers are structurally required.
(3) Not applicable when heating elements or piping are located within a concrete topping on a suspended floor assembly or within an internally heated suspended slab.

10.2.2.7. Building Envelope Windows, Skylights, Doors and Other Glazed Products
1) Except as otherwise required in this Subsection and as permitted by Sentence (2), a *building* required to comply with this Article shall comply with the performance values in Table 10.2.2.7.(1).

Table 10.2.2.7.(1)
Maximum Thermal Transmittance of Exterior Closures and Fenestration
Forming part of Sentence 10.2.2.7.(1)

Type of Closure	Assembly Maximum USI Value ($W/(m^2K)$)
Windows and sliding doors or folding doors with glazing	1.4
Curtainwall and window wall assemblies	1.4
Storefront curtainwall, window, and door assemblies	2.27
Doors with or without glazing(1)	1.8
Doors with a required fire resistance rating	Exempt
Roof access hatches	2.9
Skylights (not larger than 1220 mm in both directions), roof windows and sloped glazing systems	2.4
Skylights larger than 1220mm in both directions	2.95
Tubular daylight devices	2.6

Notes to Table 10.2.2.7.(1):
(1) Includes doors swinging on a vertical axis with or without glazing, door transoms, and sidelites.

2) A maximum of one entry door assembly consisting of one or two leafs installed in the principle entrance of a *building*, together with attached transoms and sidelites all within a single rough opening, need not comply with Table 10.2.2.7.(1), where constructed of thermally broken metal or wood with multiple panes of glass, which may be argon filled, or coated with a low-e coating.
3) The thermal transmittance of factory glazed products within the scope of existing certification programs shall be indicated by labels applied to the products at the manufacturing location. The thermal transmittance of fenestration products that are site-assembled, imported, or otherwise ~~glazed products and products~~ outside the scope of existing certification programs shall be suitably documented.
(See Note A-10.2.2.7.(3).)

10.2.2.17. Domestic Heat Recovery Ventilators

1) In a *building* required to comply with this Article, each dwelling unit shall be served by a heat recovery
ventilator located in
a) each dwelling *unit*, or
b) a commonly accessible location if serving multiple *dwelling units*.

2) In a *building* required to comply with this Article, components of mechanical ventilation systems not
specifically described in this Subsection shall be designed, constructed and installed in accordance with good engineering practice and as described in the ASHRAE Handbooks and Standards, HRAI Digest, TECA Ventilation Guideline, Hydronics Institute Manuals or the SMACNA manuals.

3) In a *building* required to comply with this Article, a heat recovery ventilator (HRV) shall
a) be sized to run at its rated speed for continuous operation while achieving a 65% sensible heat recovery efficiency (65% Minimum SRE at 0°C) and be designed and tested in conformance with CAN/CSA-C439,

b) be designed and tested to meet the CSA International Standard CAN/CSA-F326-M91, “Residential
Mechanical Ventilation Systems”,
c) be installed and commissioned by persons trained by the Thermal Environmental Comfort Association (TECA) or the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI) or equivalent,
d) supply outdoor air directly to the principal living area, to each bedroom, and to any *floor area* without a bedroom, including similar rooms within *ancillary residential units*, directly or indirectly, through a central recirculation system with a continuously operating fan,
e) be designed to run continuously to comply with the minimum ventilation rates of Table 9.32.3.5.~~3.A~~ of Division B,
f) not be connected to kitchen and bathroom exhaust fans,
g) except for mechanical ducts cast into concrete structure, have exterior connected supply-air ducts and exhaust ducts insulated to not less than RSI 0.75 (R 4.25) and shall have an effective vapour barrier,
h) have balanced HRV supply and exhaust air flows within plus or minus 20% of the actual normal operating exhaust capacity,
i) be labelled with tested supply and exhaust air flows for high and low settings, measured in CFM, and
j) be located in a fully serviceable space that can be readily accessed for replacement or maintenance, and

i) designed and installed to operate with an acceptable level of weather and freeze protection if not within a *conditioned space*, and
ii) in a *building* containing not more than two primary *dwelling units* and their contained *ancillary*
residential units, be within a *conditioned space* and provided with direct access from at least one of the *dwelling units* that it serves.

4) In a *building* required to comply with this Article, the HRV system contractor or installer shall provide a
completed Mechanical Ventilation Checklist to the *Chief Building Official*.
5) In a *building* required to comply with this Article, a contractor trained in the installation of energy recovery ventilators (ERV) may install an ERV in lieu of a heat recovery ventilator (HRV).

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10.2.2.17. Domestic Heat Recovery Ventilators

1) In a *building* required to comply with this Article, each dwelling unit shall be served by a heat recovery ventilator located in
a) each dwelling *unit*, or
b) a commonly accessible location if serving multiple *dwelling units*.
2) In a *building* required to comply with this Article, components of mechanical ventilation systems not specifically described in this Subsection shall be designed, constructed and installed in accordance with good engineering practice and as described in the ASHRAE Handbooks and Standards, HRAI Digest, TECA Ventilation Guideline, Hydronics Institute Manuals or the SMACNA manuals.
3) In a *building* required to comply with this Article, a heat recovery ventilator (HRV) shall

a) be sized to run at its rated speed for continuous operation while achieving the performance requirements of Table 10.2.2.17. as designed and tested in conformance with CAN/CSA-C439:

Table 10.2.2.17.

Heat Recovery Ventilator Performance Requirements
Forming a part of Sentence 10.2.2.17.(3)

***Building*'s Conditioned Space (m^2)**	**Sensible Heat Recovery Efficiency (SRE) at 0°C**
≤ 110 m^2	65%
> 110 m^2	75%

b) be designed and tested to meet the CSA International Standard CAN/CSA-F326-M91, "Residential Mechanical Ventilation Systems",
c) be installed and commissioned by persons trained by the Thermal Environmental Comfort Association (TECA) or the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI) or equivalent,
d) supply outdoor air directly to the principal living area, to each bedroom, and to any *floor area* without a bedroom, including similar rooms within *ancillary residential units*, directly or indirectly, through a central recirculation system with a continuously operating fan,
e) be designed to run continuously to comply with the minimum ventilation rates of Table 9.32.3.5.~~3.A~~ of Division B,
f) not be connected to kitchen and bathroom exhaust fans,
g) except for mechanical ducts cast into concrete structure, have exterior connected supply-air ducts and exhaust ducts insulated to not less than RSI 0.75 (R 4.25) and shall have an effective vapour barrier,
h) have balanced HRV supply and exhaust air flows within plus or minus 20% of the actual normal operating exhaust capacity,
i) be labelled with tested supply and exhaust air flows for high and low settings, measured in CFM, and
j) be located in a fully serviceable space that can be readily accessed for replacement or maintenance, and

i) designed and installed to operate with an acceptable level of weather and freeze protection if not within a *conditioned space*, and
ii) in a *building* containing not more than two primary *dwelling units* and their contained *ancillary residential units*, be within a *conditioned space* and provided with direct access from at least one of the *dwelling units* that it serves.

4) In a *building* required to comply with this Article, the HRV system contractor or installer shall provide a completed Mechanical Ventilation Checklist to the *Chief Building Official*.
5) In a *building* required to comply with this Article, a contractor trained in the installation of energy recovery ventilators (ERV) may install an ERV in lieu of a heat recovery ventilator (HRV).

10.2.2.20. Passive House Planning Package (PHPP), EnerGuide, or Other Energy Documentation

1) In a *building* required to comply with this Article, at the time of *permit* application, and at the time of final
inspection, the owner shall provide to the *Chief Building Official* *acceptable* documentation, in the form of

a) a PHPP file from a Certified Passive House Consultant or Designer, ~~or~~
b) an EnerGuide Rating System Audit, or
c) ~~for *buildings* ineligible for an EnerGuide Rating System Audit, a Hot2000 file modelled in general mode and using the same baseload assumptions as Energuide for New Homes~~

~~mode,~~ or equivalent energy modelling documentation, *acceptable* to the *Chief Building Official*.

2) In a *building* required to comply with this article, at the time of mid-construction inspection, the owner shall provide to the *Chief Building Official* *acceptable* documentation, in the form of,

a) a mid-construction checklist, and

b) a blower door test result that achieves an *acceptable* level of performance

3) In a *building* required to comply with this Article, ~~and where a *one family dwelling* or *two family dwelling*, with or without *ancillary residential units*, contains *conditioned space* of more than 325 m^2, including *suites* that are not strata titled~~ that contains more than 325 m^2 of *conditioned* space, and does not consist of more than one principal *dwelling unit*, the owner shall

~~a)~~ provide a calculation utilizing the EnerGuide rating system to demonstrate that the proposed home has a greenhouse gas (GHG) footprint that is no more than ~~the greenhouse gas (GHG) footprint of a 325 m^2 home built to the minimum standards in the Building Bylaw~~ two (2) metric tonnes annually (see Note A-10.2.2.20.(3)).~~, and~~

~~b) meet the requirements of the "modeling guidelines for large homes".~~

Notes to Part 10 Changes

20. **A-10.2.2.7.(3) Building Envelope Windows, Skylights, Doors and Other Glazed Products.** There are three compliance paths ('A' to 'C') available for fenestration products to comply with the energy performance requirements in Article 10.2.2.7. General guidelines are provided first, followed by the details of each compliance path.

21.

22. General Requirements for Labels On Factory-~~Glazed~~ Assembled Fenestration Products

23. The U-value (either IP or SI) labeling and verification requirements for windows, doors, and skylights in British Columbia are stipulated in the Energy Efficiency Standards Regulation of the BC Energy Efficiency Act.

24.

25. Labels bear the mark of a third-party verifier and follow NFRC 100-2010 or CSA A440.2-14 standards. Each product shall bear two labels: a removable "temporary" label indicating the product U-value, and a non-removable "permanent" marking or label identifying the verification entity, the product line and the manufacturer.

26.

27. The organizations that verify U-values according to these standards require these labels to be applied at the factory. They do not permit labels to be applied at the jobsite without prior authorization of the verifier.

28.

29. The U-value on a label is reported to two decimal places. To determine compliance, the U-value is rounded to one decimal place; for example: a USI-value of U 1.44 would be rounded to USI 1.4 and a USI-value of USI 1.45 would be rounded to USI 1.5.

30.

31. General Requirements for Simulated U-value Reports

32. Products may comply with the By-law under a "flexibility provision" that demonstrates compliance by means of a simulated U-value report accompanied by supporting documentation. This provision provides a path by which a designer can provide "suitable documentation" of U-values for products that cannot be labeled

because they are outside the scope of existing energy performance certification programs, and for imported products that do not yet have U-values determined using NFRC 100 or CSA A440.2 methods.

33. An electronic copy of the report and description of the chosen compliance path should be provided to the Building Official prior to sheathing inspection. A paper copy of the report must be present on-site for the Building Official at time of

34. sheathing inspection.

35.

36. Simulation reports must include the following:

37. **1)** A cover letter on the professional's letterhead that includes:

38. a) the professional's identity and contact information.

39. b) the street address(es) of the building.

40. c) the U-values (reported to two decimal places) for each product type, at its standard size as identified in NFRC 100 or CSA A440.2, at the actual project size, or at an average size product, depending on the compliance option.

41. d) verification by the registered professional that the information provided in the energy performance certification and accompanying documentation supports the U-value of the fenestration assembly or assemblies identified in the report.

42. e) the name, address and contact information of the fenestration product supplier(s).

43. f) the name, address and contact information of the glass supplier(s), if different from the fenestration product supplier(s).

44. g) the name, address and contact information of any individuals or firms that carried out energy performance simulations, if different from the registered professional.

45. h) a complete list of the supporting documentation attached to the letter.

46. i) the registered professional's seal and signature.

47. **2)** An attached documentation package that includes:

48. a) a list of each fenestration product type, quantity, size, area, description and U-value.

49. b) the sizes and configurations of the simulated products as shown by frame elevations and/or shop drawings, keyed to the list.

50. c) a table of the area-weighting calculations performed to determine the overall average U-value of all products using Method 1 or Method 2, of Option 2 of Compliance Path C, when applicable.

51. d) a description of each framing system used, including manufacturer name, series, and model numbers, as well as frame material and any internal reinforcing used.

52. e) a complete description of the glazing, including overall glass thickness, number of panes, pane thicknesses, gap widths, low-E coating manufacturer and type, low-E coating emissivity, and surfaces to which coatings

53. are applied, type of gap fill with percentages of inert gas, complete description of spacer by make, series, and model, and its constituent materials, and insulating glass edge sealant materials.

54. f) NFRC or CSA A440.2 certified test data for each system, or isotherms for each unique framing member used in each system covered by the letter, (heads, sills, jambs, mullions) as well as all reinforcing metal in mullions and perimeter frames.

55.

56. Compliance Path 'A' (Prescriptive U-value compliance)

57. Compliance is demonstrated by means of verifier labels, affixed to factory-~~glazed~~ assembled fenestration products at the manufacturing location in which each individual fenestration product has a compliant U-value. Compliance is achieved if each product meets the USI value requirements required by Article 10.2.2.7., at its standard size as identified in NFRC 100 or CSA A440.2.
58. When one or more products exceed the applicable USI-value in Table 10.2.2.7.(1), compliance Paths B or C may be employed.
59.
60. Compliance Path 'B' (Labeled / Tested U-value area-weighted average compliance)
61. Compliance Path 'B' is intended for projects in which all products have U-values simulated at NFRC standard sizes.
62.
63. Compliance path B requires area-weighting calculations but does not require actual size or project-specific simulation. When one or more products within Table 10.2.2.7.(1) exceed the applicable USI-value, compliance may be demonstrated by calculating the overall average USI-value by means of a tabulated USI x A reporting format. In such a table, the USI-values for the standard size of each product are to be multiplied by the area of the product to determine the average area weighted USI-value of all the products.
64.
65. Under this option, standard size U-values from test and simulation reports from accredited laboratories may be used for unlabeled products. The U-value report with area-weighting calculations shall be submitted under the seal of a registered
66. professional and may be subject to independent review at the discretion of city staff.
67.
68. The area-weighting report shall include documentation of verified U-values by means of label reproductions or attached laboratory simulation reports. In the case of NFRC certified products, CPD numbers may be used in place of label
69. reproductions.
70.
71. Compliance Path 'C' (Simulated U-value compliance)
72. Compliance path 'C' is intended for projects that use products that cannot demonstrate compliance at standard size by means of labels or accredited laboratory test/simulation reports. Such products include:
    73. • site ~~glazed~~ assembled windows, doors,
    74. • imported windows and doors not previously tested in Canada,
    75. • curtainwalls and sloped glazing assemblies, and
    76. • factory ~~glazed~~ assembled curtainwalls and window wall assemblies.
77. Under this compliance path qualified professionals perform simulations for each Individual Product simulated in accordance with NFRC 100 procedures at the size and configuration defined in NFRC 100 Table 4-3, including the normative table footnotes. Individual Products are defined in NFRC 100 and may be grouped according to NFRC 100 Grouping Rules.
78.
79. Products that require metal reinforcing at project sizes shall be simulated with metal reinforcing. U-values may be reported using one of the following options:
80. **Option 1** - All products conform to Table 10.2.2.7.(1) at standard sizes.

81. If all products are found to have USI-values that conform to Table 10.2.2.7.(1) at sizes in NFRC 100 Table 4-3, the standard size USI-values may be reported to demonstrate compliance with Article 10.2.2.7.

82. **Option 2** - One or more products do not conform to Table 10.2.2.7.(1) at standard sizes.

83. Area-weighting the USI-values of products within a U-value group at actual project sizes may be employed to

84. demonstrate compliance for that U-value group.

85.

86. To comply with Option 2, area-weighted average USI-values may be computed using one of two methods:

Method 1 USI x A table of all products within a U-value group, tabulating frame size, frame area and USI-value for each individual product to compute an overall area-weighted average for all products within the U-value group.

Method 2 USI x A table of USI-values for each individual product at its average project frame size.

87.

$$Overall\ U\ value = \frac{\Sigma U_1 A_1\ + \cdots U_n A_n}{Total\ Area}$$

88.

89.

90. Average project frame sizes shall be determined as follows:

91. **1)** Average frame sizes shall be determined for each individual product.

92. **2)** For fixed windows, the average frame size shall be based on averaging the width and height of all fixed daylight opening sizes for the fixed product type.

93. **3)** For curtain wall framing at single storey height, the average frame size shall be based on averaging the width

94. and height of all fixed daylight opening sizes for the Window Wall product type.

95. **4)** For single panel operable windows and swinging doors, the average frame size shall be the average of all single panel operable product frame sizes of the same operator type.

96. **5)** For multiple panel side hinged products (swinging doors, folding doors), the average frame size shall be based on averaging the width and height of all panel sizes for the Swinging Door with Frame product type.

97. **6)** For sliding doors, the average frame size and number of panels will depend on the number of sliding door tracks. (The fixed lite of a sliding door shall be considered a panel.)

98. a) For two-track sliding doors, a two-panel door configuration shall be simulated having a frame size shall be based on two average size panels.

99. b) For three-track sliding doors, a three-track, three-panel door configuration shall be simulated having a frame size based on three average size panels.

100. c) For four-track sliding doors, a four-track, four-panel door configuration shall be simulated having a frame size based on four average size panels. (Etc.)

101. d) Simulations shall include two jambs, head and sill simulations with the glass in each panel position, and one interlock for each panel-panel joint of the configuration.

102. **7)** For individual unit (single lite) skylights, the average frame size shall be the average of all frame sizes of the same product type.

103. **8)** For skylights with more than one lite, the average frame size shall be based on averaging the width and height of all daylight opening sizes for the Sloped Glazing product type at the solarium-sunroom configuration in NFRC 100 Table 4-3 Note 3.

A-10.2.2.20.(3) Modelling Guidelines for Large Homes. For a building required to comply with the greenhouse gas (GHG) limit, the total annual GHG footprint shall be calculated using approved modelling software and modelling criteria provided in the "Modelling Guidelines for Large Homes."

Part 11 Changes

11.2.1.4. Upgrade Requirements for a Residential Building Containing not more than Two Principal Dwelling Units

1) Except as permitted by Subsection 11.4, an *alteration* or *addition* to a solely residential *building* containing not more than two principal *dwelling units* shall comply with this By-law, and the existing portions of *building* shall be upgraded to an *acceptable* level as determined by Tables 11.2.1.4.(1)-A, 11.2.1.4.(1)-B, and 11.2.1.4.(1)-C.

Table 11.2.1.4.(1)-A
Fire and Life Safety Upgrade requirements for Residential Buildings containing not more than Two Principal Dwelling Units
Forming part of Sentence 11.2.1.4.(1)

Scope of Work	Smoke Alarms[1]	CO Alarms[2]	Guards[3]	Spatial Separation[4]	Structural[5]
Renovation	Y	Y	Y	N	N
Relocation or Reconstruction	Y	Y	Y	Y	Y
Horizontal Addition Floor Area					
up to 25%[6]	Y	Y	Y	N	N
over 25%[7]	Y	Y	Y	Y	Y
Vertical Addition Floor Area					
up to 25%[6]	Y	Y	Y	N	Y
over 25%[7]	Y	Y	Y	Y	Y

Notes to Table 11.2.1.4.(1)-A:
[1] Smoke Alarms: to be installed in conformance with Subsections 3.2.4. and 9.10.19. as applicable.
[2] CO Alarms: to be installed in conformance with Subsections 6.2.4. and 9.32.4. as applicable.
[3] Guards: all unsafe guards to be upgraded to the satisfaction of the *Chief Building Official*.
[4] Spatial Separation: Spatial separation of the building shall comply with Subsections 3.2.3., 9.10.14 or 9.10.15. as applicable; or as permitted by Section 11.3.
[5] All existing wood frame walls to be anchored to existing concrete foundation walls for seismic resistance
[6] Aggregate increase in floor area less than 25% of the building area (see flow chart #~~3~~2 of A-11.2.1.2).
[7] Aggregate increase in floor area greater than 25% of the building area.

Table 11.2.1.4.(1)-B

Egress and Exit Upgrade requirements for Residential Buildings containing not more than Two Principal Dwelling Units
Forming part of Sentence 11.2.1.4.(1)

Scope of Work	Means of Egress(1)	Handrails(2)	Exit Exposure(3)	Stair Dimensions(4)	Building Services(5)	Falling Hazards(6)
Renovation	N	Y	N	N	N	N
Relocation or Reconstruction	Y	Y	Y	Y	Y	Y
Horizontal Addition Floor Area						
up to 25%(7)	Y	N	N	N	N	Y
over 25%(8)	Y	Y	Y	Y	Y	Y
Vertical Addition Floor Area						
up to 25%(7)	Y	Y	N	N	N	Y
over 25%(8)	Y	Y	Y	Y	Y	Y

Notes to Table 11.2.1.4.(1)-B:
(1) Means of Egress: confirm that access to exit (9.9.9.) and means of escape (9.9.10.) from all floor areas is compliant with regards to travel distance and fire separation (where applicable).
(2) Handrails: all unsafe handrails to be upgraded to the satisfaction of the *Chief Building Official*.
(3) Exit Exposure: *Exits* to be confirmed to be compliant with regards to exit exposure where applicable.
(4) Stair Dimensions: Existing stairs in means of egress to comply with the dimensional requirements of Subsection 9.8.2.
(5) Building Services: Restrain building service piping, conduit, and *appliances* to resist lateral movement due to earthquake.
(6) Falling hazards: Restrain falling hazards within 3 m of the egress path to resist lateral movement due to earthquake.
(7) Aggregate increase in floor area less than 25% of the building area (see flow chart #3~~2~~ of A-11.2.1.2).
(8) Aggregate increase in floor area greater than 25% of the building area.

Table 11.2.1.4.(1)-C
Floor Areas Upgrade requirements for Residential Buildings containing not more than Two Principal Dwelling Units
Forming part of Sentence 11.2.1.4.(1)

Scope of Work	Flame Spread(1)	Floor Fire Separations(2)	Suite Fire Separations(3)	Lighting & Emergency Lights(4)	Door Hardware(5)
Renovation	N	N	N	N	N
Relocation or Reconstruction	Y	Y	Y	Y	Y
Horizontal Addition Floor Area					
Up to 25%(6)	N	N	N	N	N
Over 25%(7)	Y	Y	Y	Y	Y
Vertical Addition Floor Area					
Up to 25%(6)	N	N	N	Y	N
Over 25%(7)	Y	Y	Y	Y	Y

Notes to Table 11.2.1.4.(1)-C:
(1) Flame Spread Rating: Exposed wall and ceiling finishes of egress routes to meet the requirements of Subsection 9.10.17. in exits
(2) Floor *Fire separations*: Floor and occupied roof assemblies to be fire rated per Article 9.10.8.1.
(3) Suite *Fire Separations* (where applicable): Residential *suites* to be provided with a fire separation in accordance with Article 9.10.9.14. and
Section 9.37.
(4) Lighting & Emergency Lights (where applicable): Lighting and emergency lighting to be provided in means of egress in accordance with
Subsection 9.9.12.
(5) Door Hardware: Door hardware within existing floor areas to be made adaptable as per Subsection 3.8.5.
(6) Aggregate increase in floor area less than 25% of the building area (see flow chart #~~32~~ of A-11.2.1.2).
(7) Aggregate increase in floor area greater than 25% of the building area.

2) Where an *alteration* or *addition* is made to an existing residential *building*, containing not more than two principal *dwelling units,* the energy efficiency of a the *building* shall be upgraded to an *acceptable* level in conformance with Table 11.2.1.4.(2).

Table 11.2.1.4.(2)
Energy Efficiency Upgrade Requirements for Residential Buildings containing not more than Two Principal Dwelling Units (except as permitted by Clause 11.2.1.2.(9)(d))
Forming part of Sentence 11.2.1.4.(2)

Alteration construction ($) value	**EnerGuide Assessment(1)**	**Air tightness upgrades(2)**	**Attic and Sloped Roof Insulation(3)**
Alteration construction value ($)			
$0.00 to $19,999	N	N	N
$20,000 to $74,999	Y	N	N
≥$75,000	Y	Y	Y
Scope of Work			
Strata Property Conversion(4)			
Relocation	Y	Y	Y
Reconstruction	See Note (5)		

Notes to Table 11.2.1.4.(2):
(1) An EnerGuide Assessment completed within the last 4 years must be submitted, a post-construction assessment must also be completed
where the cost of construction exceeds $75,000.
(2) Where EGH>5 air changes per hour, air sealing is required.
(3) Where attic insulation <R12 (2.11RSI), increase to R28 (4.93RSI); where attic insulation ≥R12 (2.11RSI), increase to R40 (7.04RSI); Insulation in existing attics shall not exceed R43.7 (7.7RSI). All flat roof and cathedral ceiling insulation shall be upgraded to ≥R14 (2.47RSI).
(4) An existing building or parcel converted into 2 or more strata lots.
(5) Alterations that are defined as Reconstruction in the Upgrade Mechanism Model in Appendix A Division B shall comply with Article 11.7.1.5.

3) Where an *alteration* is made to an existing residential *building* containing not more than two principal residential *dwelling units*, that creates one or more new principal *dwelling units* or increases the size of an existing *dwelling unit*, a *sprinkler system* shall be installed

a) throughout the *building*, where the value of the *alteration* exceeds 50% of the replacement value of the *existing building*, (See Note A-11.2.1.4.(3)(a).)

b) throughout any *storey* on which a new principal *dwelling unit* is created, and all *storeys* below, or

c) throughout any *storey* on which an *alteration* to the *building* increases the aggregate area of an existing *dwelling unit* and the converted space is greater than 50% of the *floor area* of the original *dwelling unit*.

11.3.1.2. Conditions for Using Alternative Compliance Measures

1) Where a *building* or a portion of a *building* is required to comply with this By-law under Subsection 11.2.1., the provisions contained in this Section may be applied as alternative compliance measures to those requirements contained elsewhere in this By-law, under the conditions specified in Sentences (2) to (7), provided the *building* was originally constructed pursuant to a *building permit* issued prior to November 1, 1999.

2) Except for *additions,* and new *construction*, where Subsection 3.2.2. requires that the *construction* of a *building* be *noncombustible*, the applicable Article in Subsection 11.3.2. may be applied as an alternative provided all of the requirements of the Article have been met.

3) Except for *additions* and new *construction*, where the spatial separation and exposure protection requirements of Subsection 3.2.3. or 9.10.14. require that the exterior wall *construction* of a *building* to be *noncombustible*, Subsection 11.3.3. may be applied.

4) Where the fire containment measures of a *building* are deficient, Subsections 11.3.4. and 11.3.6. may be applied.

5) Where the *exits* or *means of egress* in a *building* are deficient, Subsections 11.3.5. and 11.3.6. may be applied.

6) Where a *building* is *sprinklered* throughout, Subsection 11.3.6. may be applied.

7) Where a *building* is a *heritage building*, Section 11.5. may be applied.

11.3.5. Alternatives for Exits and Means of Egress

11.3.5.1. General

1) Except as permitted in Articles 11.3.5.2. ~~and~~through 11.3.5.~~3~~4. and in Subsection 11.3.6., every *floor area* or other space shall be served with *exits* in conformance with Section 3.4.

11.3.5.4. Existing Stairs in a Means of Egress

1) Existing ~~egress~~ stairs with rectangular treads in straight flights in an exit or a means of egress, other than those serving seating areas, may be retained provided that

a) existing tread and riser dimensions within a *flight* comply with Table 11.3.5.4.(1),

Table 11.3.5.4.(1)
Dimensions of Existing Stairs
Forming Part of Sentence 11.3.5.4.(1)

	Maximum (mm)	Minimum (mm)
Rise	205	125
Run	355	200

b) existing treads and landings shall

i) be dimensionally uniform,

ii) have a finish that is slip resistant,
iii) have nosings with distinct colour contrast for the full width of the leading edge of each tread visible in both direction of travel, and
iv) have no projecting stair nosing, rakeback, or combination thereof, exceeding 38 mm or angle of more than 30 degrees from the vertical,

c) lighting is provided to
i) an average level of not less than 100 lx at floor or tread level, and
ii) the minimum value of the illumination required by (i) shall be not less than 20 lx,

d) emergency lighting is provided to
i) an average level of illumination of not less than 20 lx at floor or tread level,
ii) a minimum value of the illumination required by (i) shall be not less than 2 lx, and
iii) provided with emergency power in accordance with Article 3.2.7.4.,

e) handrails are provided conforming to the requirements of Article 3.4.6.5., and
f) tread and landings of exterior egress stairs are designed to be free of ice and snow accumulations.

11.4.3.1. Alternative Compliance Measures

1) Except as required in Sentences (2) and (3), where an *existing building* containing not more than two principal *dwelling units* is altered to create an *ancillary residential suite*, the *existing building* shall conform to the requirements of Section 9.37, except as permitted by Table 11.4.3.1., provided the *building* was constructed under a *building permit* issued on or prior to June 22, 2004. (See Note A-11.4.3.1.(1).)

2) Where the *alteration* in Sentence (1) includes an *addition*, the *addition* shall conform to the requirements of this By-law.

3) Where an *existing building* was constructed with a *building permit* issued on or after June 22, 2004, the *existing building* and the *alteration* shall conform to Part 9.37 of Division B.

4) Notwithstanding the requirements of Sentence 9.34.1.1.(1), circuits and receptacles in the *ancillary residential suite* shall have a minimum of

a) two kitchen counter duplex receptacles
i) supplied by two appliance circuits, and
ii) wired on single circuits or a split circuit,

b) two duplex receptacles located on different walls in each bedroom, and
c) three duplex receptacles located on different walls in the living area.

5) Notwithstanding the requirements of Sentence 9.34.1.1. (1)

a) where a single existing panel board is located in a common area within the *building* accessible to all occupants of the *building*, the panel board may supply electrical loads for both the principal dwelling and the *ancillary residential suite*,

b) any electrical range and equipment loads provided for the *ancillary residential suite* shall be calculated with demand factors in conformance with Sentence 9.34.1.1.(2), and

c) general circuit branch wiring may be interconnected between outlets located in the principal dwelling and the *ancillary residential suite*.

Table 11.4.3.1.
Fire Safety Requirements for Ancillary Residential Suite Conversions
Forming Part of Article 11.4.3.1.

Item	Item Details	Alternative Compliance Measure
Spatial Separation	Existing windows and doors	Original openings may remain and new openings to conform to Part 9

	New windows in existing openings	Where new windows are provided in existing openings required to be protected by Subsections 3.2.3. or 9.10.14., existing openings may be protected in conformance with Article 11.3.3.4.
Fire Containment within a Principal *Dwelling Unit*	Separation between a principal *dwelling unit* and its contained *ancillary residential units*	Existing lath and plaster in good condition or 13 mm gypsum wall board on wood studs at maximum 450 mm on centre may be used where the interior wall finish is in place prior to the construction of an *ancillary residential suite*. ~~Where possible,~~ New walls are to be 16 mm (5/8") type 'X' GWB or 12.5 mm (½") Type 'C' GWB on wood or steel studs at maximum 600 mm on centre. the stud cavity is to be filled with minimum 90 mm (3 ½") mineral wool insulation. Caulk joints where floor and ceiling meet wall GWB. Use resilient acoustic channels where possible.
	Ducts common to both units through *suite* separations	*Fire dampers* not required if sheet metal ducting extends a minimum of 1800 mm (6'-0") beyond the suite separation and the opening is firecaulked. Acoustic insulation is to be used within the common duct extending a minimum of 1500 mm (60") from either side of the suite separation.
	Plumbing and sprinkler plastic piping that penetrate *fire separations*	Shall be tightly fitted, cast in place, or caulked as per product listing.
	Suite entry doors between the principal *dwelling unit* and its contained *ancillary residential unit*	Existing solid core doors and frames with or without wired glass in good condition. Doors to be provided with positive latching hardware and self-closing devices.
Resistance to Forced Entry	Solid Blocking	Solid blocking may be omitted for doors described in Sentence 9.7.5.2.(9) where the interior wall finish adjacent the door is in place prior to the construction of an *ancillary residential* ~~*suite*~~ *unit*.
Exits	Egress from each *dwelling unit*	In combination with the Egress Windows requirement of Sentence 9.9.10.1., at least one conforming *exit* is required from the principal dwelling and one from the *ancillary residential suite.*
	Windows and doors adjacent to *exits*	No requirements where the *suite* is *sprinklered,* provided with a *closure* or provided with intervening construction extending out by at least 600 mm.
Fire Department Access	Access Path	Existing path designated for fire department is permitted to be minimum 860 mm
Flame Spread Rating	*Exits*	≤150
	Remainder of *building*	No requirement

Sprinklers		Sprinklers are not required provided the value of the alteration is less than or equal to 50% of the replacement(1) value of the *existing building*.
Heating Systems	Furnace room enclosure	No separation required but provide proper combustion air and required clearances from all equipment (2)
Smoke Alarms	Entire *building*	Interconnected *smoke alarms* to be intalled on each storey including basements, in each sleeping room and in a location between the sleeping room and the remainder of the storey and if the sleeping room is served by a hallway, the smoke alarm to be located in the hallway. Installed by permanent connections to an electrical circuit in conformance with Subsection 9.10.19. Division B. Provided with battery backup and manual silencing devices which will silence the alarm in conformance with Article 9.10.19.6. of Division B. Carbon Monoxide detectors to be provided in accordance with the 9.32.4.2.(3)
Stairs and Handrails	Entire *building*	Existing stairs to comply with Section 9.8, excepting the following dimensions: tread depth 235-355 mm, rise 125-200 mm and run 210-355 mm, unless considered to present an *unsafe condition* as determined by the *Chief Building Official*. All existing stairs to have at least one handrail in conformance with Subsection 9.8.7
Guardrail Protection	Entire *building*	Existing *guards* may be retained provided they are structurally sound, non-climbable and ≥900 mm high.
Existing Headroom	Entire *building*	May be reduced to 1 950 mm over 80% of the *suite* area and all egress routes. The minimum clear height under the remaining *suite floor area* shall be not less than 1 850 mm, except *public corridors* and *exits* which shall be not less than 2 000 mm.
	Doorways Opening Sizes	Other than, *exit* doors, and doors serving *public corridors* and *exit* corridors that serve principle *dwelling units* in a *building* containined an *ancillary residential units,* doorway openings shall be designed to accommodate swing-type and folding doors not less than 1 980 mm high, except doorway openings within an *ancillary residential unit* which may be reduced to not less than 1 890 mm high.
Unsafe Conditions	Entire *building*	Any condition within or around the *building* which could cause undue hazard or risk to persons to be corrected as directed by the *Chief Building Official*.
Sound Separation	Between the principal *dwelling unit* and its	Not required where the interior wall finish is in place prior to the construction of an ancillary residential suite.

	contained *ancillary residential unit*	Fill cavity spaces of *suite* separation with mineral wool in walls and floor assemblies of new construction.

Notes to Table 11.4.3.1.:
(1) See Note A-11.2.1.4.(3)(a).
(2) The Gas Code places restrictions on locating gas furnaces adjacent to sleeping rooms or bathrooms.
(3) See Note A-11.4.3.1.(1) Interconnected Smoke Alarms and Carbon Monoxide Detectors

Table 11.5.1.1. Except

10	**Spatial Separation** Subsection 3.2.3.; ~~Subsection 9.10.14.~~ The area of *unprotected opening* shall not exceed the limits in Tables 3.2.3.1.-A to 3.2.3.1.-E	The area of existing *unprotected opening* is not limited provided: (a) the *limiting distance* is a minimum 1 m, (b) the *building* has a supervised *sprinkler system* in conformance with Article 3.2.4.9, and c) ~~the existing *unprotected openings* are protected with close spaced sprinklers per clause 11.3.3.4.(b), and~~ ~~(d)~~ the *sprinkler system* is designed to notify the fire department in conformance with Article 3.2.4.7.
	Spatial Separation Subsection 9.10.14.; Subsection 9.10.15. The area of *unprotected opening* in an unsprinklered *building* shall not exceed the limits in Tables 9.10.14.4.-A or 9.10.15.4.	The area of existing *unprotected opening* on a *building* face is not limited provided: (a) the existing *unprotected openings* on that face are protected with close spaced sprinklers per clause 3.2.3.13.(5), and (b) the close spaced sprinklers shall be designed to notify the fire department in conformance with Sentence 3.2.4.7.

11.6.2.1. Alternative Compliance Measures

1) Where the *occupancy* of an *existing building* or portion of an *existing building* is classified as Group D offices, Group E retail, Group F Division 2 production or rehearsal studio, wholesale, warehouse, or factory, or Group F Division 2 *artist studio* without living accommodations, the *major occupancy* may be changed to a temporary Group A Division 2 *major occupancy* for an *arts and culture indoor event* if

a) the maximum *occupant load* is no more than 250 persons,

b) the *arts and culture indoor event* is located in the *first storey* or the *storey* below the *first storey* and has at least one *exit* that conforms to Clauses ~~3.8.3.19.(1)~~11.3.7.1.(1)(d) or (e),

c) emergency lighting is provided

i) inside washrooms or, in the case of a single toilet room, immediately outside the entrance door and visible under the closed toilet room door, and

ii) in locations leading from the *arts and culture indoor event* to the *street* as described in Sentence 3.2.7.3.(1),

d) portable fire extinguishers are installed in accordance with the Fire By-law, with at least one extinguisher at the main entrance and at each egress door leading from the *arts and culture indoor event floor area*,

e) an approved fire emergency procedures and security plan with *approved* maximum *occupant load* is posted beside each portable extinguisher at the main entrance and at each egress door leading from the *arts and culture indoor event*,

f) the *building* is equipped with a fire alarm system, or *supervisory staff* are designated to monitor egress and *exit* doors and to carry out an emergency evacuation in accordance with approved fire emergency procedure, and
g) the *storey* below the *first storey* used for an *arts and culture indoor event* is equipped with a *sprinkler system*, h) the *arts and culture indoor event* has at least one *accessible* entrance, and
i) the *arts and culture indoor event* has a *means of egress* in accordance with ~~Article 3.8.3.19~~ Sentence 11.3.7.1.(1).

11.7.1.3. Residential Buildings of 4 Storeys or More, and Commercial Buildings (including Hotels and Motels)~~, and Mixed-Use Residential Buildings~~

1) Alterations to energy systems or components of a *building* containing Group C, D, or E *Major Occupancies*, except those included in Articles 11.7.1.4 through 11.7.1.6., shall comply with
a) the *alteration* requirements of Clause 11.7.1.1.(3)(b),
b) Articles 10.2.2.8 through 10.2.2.20. as applicable,
c) the airtightness performance of Article 10.2.2.21. for reconstruction projects, and
d) Article 10.2.2.22. as applicable.

Notes to Part 11 Changes

In Note A-11.2.1.2., under the Heading "**ADDITION PROJECTS** (Flow Chart No. **3**)", revise as following:
[…]
Horizontal Addition – Horizontal additions include both "minor" and "major" horizontal additions. A minor horizontal addition is any expansion of a floor area beyond the extents of the existing floor area in which it is located by not more than 25 per cent of the existing building area, or by not more than 500 m^2 in aggregate floor area. A major horizontal addition is any expansion of a floor area beyond the extents of the existing floor area that exceeds the limits permitted by a minor horizontal addition. Any construction that creates new floor area, by in-fillings ~~s~~ existing roof~~,~~ or deck areas, or ~~is~~ creates new superimposed floor area over existing building structure or floor area is not considered a horizontal addition.
[…]

Appendix C – Changes

Table C-3
Seismic Design Data for Selected Locations in Vancouver

Location	Seismic Data							
	$S_a(0.2)$	$S_a(0.5)$	$S_a(1.0)$	$S_a(2.0)$	$S_a(5.0)$	$S_a(10.0)$	PGA	PGV
Burnaby (General)(1) ~~0.768~~	0.673	0.386	0.236	0.076	0.027	0.333	0.500	0.768
North Vancouver(1) ~~0.794~~	0.699	0.399	0.243	0.077	0.027	0.345	0.518	0.794
Richmond(1) ~~0.578~~	0.885	0.787	0.443	0.266	0.083	0.029	0.383	0.578
Vancouver	0.848	0.751	0.425	0.257	0.080	0.029	0.369	0.553

(City Hall)								
Vancouver (Granville & 41 Ave)	0.863	0.765	0.432	0.261	0.081	0.029	0.375	0.563

Notes to Table C-3:
(1) Data for regions immediately adjoining Vancouver provided here for context.

Building By-law Book II (Plumbing Systems)

Division A Changes

1.2.3.1. Personnel Performing Plumbing Work

1) Personnel performing the installation, extension, *alteration*, renewal or repair of a *plumbing system* shall

a) possess a Canadian trades~~man's~~ qualification certification as a *plumber*,

b) be an indentured apprentice supervised by a ~~journeyman~~*plumber* who meets the criteria set out in Clause (a), or

c) be the registered owner and occupant or intended occupant of the single family dwelling in which plumbing work will occur.

1.4.1.2. Definitions

1) The words and terms in italics in this By-law shall have the following meanings (an asterisk (*) following a defined word or term indicates that the definition for that word or term is taken from the Book I (General) of this By-law):

[…]

~~***Cooling tower*** means a cooling tower, evaporative condenser, or fluid cooler that is part of a recirculated *water system* incorporated into a *building's* cooling, industrial process, refrigeration, or energy production system.~~

Cooling tower means a direct (open circuit) cooling tower, indirect (closed circuit) cooling tower, evaporative condenser, adiabatic cooler which recirculates non-evaporated water, or fluid cooler that is part of a recirculated *water system* incorporated into a building's cooling, industrial process, refrigeration, or energy production system, and may comprise one or more cooling tower cells.

[…]

~~***Journeyman p***~~***Plumber**** means a person, other than an *apprentice*, who holds a certificate issued pursuant to the provisions of the Industry Training Authority Act of British Columbia authorizing the person to engage in the plumbing trade.

[…]

Plumbing contractor* means a person licensed as a contractor pursuant to the License By-law and who is either a *plumber* or a person who employs a *plumber* on a full time basis

[…]

Registered professional* means

- a person who is registered or licensed to practise as an architect under the Architects Act, or
- a person who is registered or licensed to practise as a professional engineer under the Engineers and Geoscientists Regulations pursuant to the Professional Governance Act of British Columbia.

[…]

Division B Changes

1.3.1.2. Applicable Editions

1) Where documents are referenced in this By-law, they shall be the editions or versions designated in Table 1.3.1.2.

[…]

Issuing Agency	Document Number(1)	Title of Document(2)	By-law Reference

104. ASHRAE	105. Guideline 12-2020	106. Managing the Risk of Legionellosis Associated with Building Water Systems	107. A-2.2.11.6

2.2.1.7. Microbiological Testing

~~**3)** The *owner* of a *building* with a *cooling tower* or a *decorative water feature* shall ensure that the laboratory conducting *Legionella pneumophila* testing for the *cooling tower* or *decorative water feature* has agreed to give immediate notice to the *owner*, the *Chief Building Official*, and the local medical health officer if the result exceeds a standard set out in Table 2.2.11.6. or 2.2.11.7. that requires such notice to be given.~~

108. **3)** The owner of a *cooling tower* or a *decorative water feature* shall ensure that the laboratory conducting *Legionella pneumophila* testing for the *cooling tower* or *decorative water feature* has agreed to give immediate notice to the owner, the *Chief Building Official*, and the local medical health officer if the result exceeds a standard set out in Table 2.2.11.6. or 2.2.11.7. that requires such notice to be given.

2.2.1.8. Maintenance Logs

1) When a maintenance log is required by Book II (Plumbing Systems) of this By-law, it shall include

m) the address and location of the equipment, device, apparatus, or system,
n) the *operating permit* number assigned to the equipment, device, apparatus, or system,
o) emergency contact information and the name and contact information of the owner of the equipment, device, apparatus, or system,
p) the location of any safety data sheets,
q) the location of the operating manual for the equipment, device, apparatus, or system and, as applicable, the location of the water management plan,
r) except when included with the operating manual, a single line schematic plan of the equipment, device, apparatus, or system, reflective of the current configuration, and including water sampling locations,
s) details of any changes or alterations made to the equipment, device, apparatus, or system at any time,
t) a record of inspections and any maintenance performed within the last 24 months,
u) a record of operational disruptions within the last 24 months and the corrective actions taken,
v) if water treatment chemicals are used, a record of the chemical treatments applied and dosages within the last 24 months,
w) a record of all water quality results from analyses performed within the last 24 months, and
x) if *Legionella pneumophila* tests are conducted, the name of the person and company collecting the sample and the name of the company conducting the laboratory test.

2) A maintenance log described in Sentence (1)

a) shall be kept on site with the corresponding equipment, device, apparatus, or system,
b) may be maintained in an electronic or paper-based format, and
c) shall be made available on such request to the *Chief Building Official*.

2.2.5.2. Concrete Pipe and Fittings

1) Concrete pipe shall conform to

a) CSA A257.1, “Non-Reinforced Circular Concrete Culvert, Storm Drain, Sewer Pipe, and Fittings,” or

b) CSA A257.2, “Reinforced Circular Concrete Culvert, Storm Drain, Sewer Pipe, and Fittings.”

2) Joints with internal elastomeric gaskets shall conform to CSA A257.3, "Joints for Circular Concrete Sewer and Culvert Pipe, Manhole Sections, and Fittings Using Rubber Gaskets."
3) Concrete fittings fabricated on the site from lengths of pipe shall not be used. (See Note A-2.2.5.2.(3).)
4) Concrete pipe shall not be used above ground inside a *building*.
5) Precast reinforced circular concrete maintenance ~~man~~hole sections, catch basins and fittings shall conform to CSA A257.4, "Precast Reinforced Circular Concrete Manhole Sections, Catch Basins, and Fittings."

2.2.10.6. Supply and Waste Fittings

7) The requirements of Sentences (2) and (5) do not apply to

a) any part of a building classified as ~~Group B within Table 3.1.2.1. of Division B of Book I (General) of this By-law, or~~ Group B *occupancy* by Part 3 of Division B of Book I (General) of this By-law, or

b) a *plumbing fixture* specifically identified in a *building*'s water management plan that conforms to ANSI/ASHRAE 188, "Legionellosis: Risk Management for Building Water Systems" and is signed by a *registered professional*.

2.2.10.17. Water Treatment Systems

(See Article 2.6.2.1. and Note A-2.2.10.17.)

1) Except as provided in Sentence (3), a water treatment device or apparatus may be connected to the *City* water system at the discretion of the *Chief Building Official* and, if permitted

~~a) an *operating permit* shall be obtained,~~

a) an *operating permit* shall be obtained, and the owner of the water treatment device or apparatus shall comply with the requirements of this Sentence,

b) the *operating permit* number assigned to a water treatment device or apparatus shall be posted on a sign or plate that is a minimum of 8.5 in by 11 in in size and securely fastened to the water treatment device or apparatus in a location that is conspicuously visible and constructed of a durable, weather resistant material, ~~and~~

c) the *Chief Building Official* shall be notified within 30 days of any changes to the information that was last provided to the *City* with regard to the *operating permit*, in the form prescribed by the *Chief Building Official*~~.~~, and

d) a maintenance log conforming to Article 2.2.1.8. shall be maintained for each water treatment device or apparatus.

2) Except as provided in Sentence (3), an existing water treatment device or apparatus shall comply with ~~Clauses (1)(a), (b) and (c).~~Clauses (1)(a), (b), (c), and (d).

2.2.11.4. Non-recirculating Applications

1) Except as provided in Sentence (2), the *City* water system shall not be connected to

…

f) non-recirculating ~~ponds, waterways,~~ water features, ornamental fountains, or swimming pools,

2) *Emergency once through cooling equipment* or *maintenance once through cooling equipment* may be connected to the *City* water system at the discretion of the *Chief Building Official* or *City Engineer* and, if permitted

~~a) an *operating permit* shall be obtained,~~

109. a) an *operating permit* shall be obtained, and the owner of the *once through cooling equipment* shall comply with the requirements of this Sentence,

2.2.11.6. Cooling Towers

~~(See Article 6.3.2.15. of Division B of Book I (General) of this By-law.)~~

(See Note A-2.2.11.6. and Article 6.3.2.15. of Division B of Book I (General) of this By-law.)

~~**1)** An *operating permit* shall be obtained for the installation of a *cooling tower*, or the retention of an existing *cooling tower*.~~

110. **1)** An *operating permit* shall be obtained for the installation of a *cooling tower*, or the retention of an existing *cooling tower*, and the owner of the *cooling tower* shall comply with the requirements of this Article.

~~**5)** A maintenance log shall be maintained for each *cooling tower* and shall include~~

~~a) the address and location of the *cooling tower*,~~

~~b) the *operating permit* number assigned to the *cooling tower*,~~

~~c) emergency contact information and the name and contact information of the *owner*,~~

~~d) a description of the location of the operating manual for the *cooling tower*, and as applicable, the location of safety data sheets and the location of the water management plan,~~

~~e) a single line schematic plan, including water sampling locations, of the *cooling tower* system,~~

~~f) details of any changes or alterations made to the system at any time since January 1, 2021,~~

~~g) a record of inspections and any maintenance performed within the last 24 months,~~

~~h) a record of operational disruptions within the last 24 months and the corrective actions taken,~~

~~i) a record of chemical treatments applied and dosages within the last 24 months,~~

~~j) a record of all water quality results from analyses performed within the last 24 months, and for *Legionella pneumophila* test results, the name of the person and company collecting the sample and the name of the company conducting the laboratory test, and~~

~~k) if a laboratory result fails to meet a standard defined in Table 2.2.11.6., a description of the extent of the deviation from the standard, the corrective action taken, a record of any required notification, and the outcome of the corrective action, including all applicable dates and times.~~

111. **5)** A maintenance log conforming to Article 2.2.1.8. shall be maintained for each *cooling tower* and, if a laboratory result fails to meet a standard defined in Table 2.2.11.6., the maintenance log shall also include a description of the extent of the deviation from the standard, the corrective action taken, a record of any required notification, and the outcome of the corrective action, including all applicable dates and times.

~~**6)** The maintenance log shall be made available on such request to the *Chief Building Official*.~~

6) Deleted.

Table 2.2.11.6.
Required Response to Failure to Meet *Legionella* Standards for *Cooling Towers*
Forming Part of Sentence 2.2.11.6.(8)

Test Type	Test Result	Required Response
Legionella pneumophila culture test(1)	10 or more CFU per mL and less than or equal to 1,000 CFU per mL	~~1. The *owner* shall give notice to the *Chief Building Official* within 24 hours;~~ ~~2. The *owner* shall, within 24 hours, either~~ ~~a) shut down the *cooling tower* system and perform offline cleaning and disinfection, or~~ ~~b) perform online remedial treatment(2) and within 7 days shut down the *cooling tower* system and perform offline cleaning and disinfection; and~~ ~~3. The *owner* shall perform a *Legionella* culture test(1) no less than 48 hours and no more than 5 days after cleaning and disinfection.~~

		1. Within 24 hours, give notice to the *Chief Building Official* and a) shut down the *cooling tower* system and perform offline cleaning and disinfection, or b) perform online remedial treatment[2] and within 7 days shut down the *cooling tower* system and perform offline cleaning and disinfection; and 2. No less than 48 hours and no more than 5 days after cleaning and disinfection, perform a *Legionella pneumophila* culture test[1].
	Greater than 1,000 CFU per mL	~~1. The laboratory shall immediately give notice to the *owner*, the *Chief Building Official* and the medical health officer[3], and in addition, an *owner* who receives notice from the laboratory must give immediate notice to the *Chief Building Official* advising that the *owner* has been notified by the laboratory[4];~~ ~~2. The *owner* shall immediately implement measures that will eliminate water dispersion by aerosol from the affected *cooling tower* system and then perform offline cleaning and disinfection of the system before putting the system back into service; and~~ ~~3. The *owner* shall perform a *Legionella* culture test[1] no less than 48 hours and no more than 5 days after cleaning and disinfection.~~ 1. Immediately, give notice[4] to the *Chief Building Official*, the medical health officer and the *owner*; 2. Immediately, the laboratory[3] shall also give notice[4] to the owner of the *cooling tower*, the *Chief Building Official* and the medical health officer; 3. Immediately, implement measures that will eliminate water dispersion by aerosol from the affected *cooling tower* system and then perform offline cleaning and disinfection of the system before putting the system back into service; and 4. No less than 48 hours and no more than 5 days after cleaning and disinfection, perform a *Legionella pneumophila* culture test[1].

2.2.11.7. Decorative Water Features

~~**1)** An *operating permit* shall be obtained for the installation of a *decorative water feature*, or the retention of an existing *decorative water feature* except for a *decorative water feature* in a *building* used exclusively for *residential occupancy* containing no more than 4 principal *dwelling units*.~~

1) Except for a *decorative water feature* in a *building* used exclusively for *residential occupancy* containing no more than 4 principal *dwelling units*, an *operating permit* shall be obtained for the installation of a *decorative water feature*, or the retention of an existing *decorative water feature*, and the owner of the *decorative water feature* shall comply with the requirements of this Article.

2) The following shall be posted in a location that is conspicuously visible:

a) the *operating permit* number assigned to the *decorative water feature*, on a sign or plate that is a minimum of 8.5 in by 11 in in size, constructed of a durable, weather resistant material and securely fastened to the *decorative water feature* or its associated mechanical equipment, and,

~~b) an advisory that the *decorative water feature* is not intended for human access, printed using a minimum letter height of 4 in and located around the perimeter of, or near an obvious access point to, the *decorative water feature*.~~

b) an advisory that the *decorative water feature* is not intended for human access, located around the perimeter of, or near an obvious access point to, the *decorative water feature*, using graphical symbols or words written in letters at least 100 mm high.

3) The *Chief Building Official* shall be notified, in the form prescribed by the *Chief Building Official*,
a) within 5 days of any start-up of a *decorative water feature* that had been shut down for 3 or more consecutive days,
b) within 5 days of any *decorative water feature* shut down for 3 or more consecutive days,
c) within 5 days of any *Legionella pneumophila* test result from a *decorative water feature*, or sooner as required by Sentence (8), and
d) within 30 days of any changes to the information that was last provided to the *City* with regard to the *operating permit*.

4) Where an outdoor *decorative water feature* is provided as an auxiliary system to a *building*, then the outdoor *decorative water feature* shall be considered part of the *building* for the purposes of this Article.

~~**5)** A maintenance log shall be maintained and shall include~~

~~a) the address and location of the *decorative water feature*,~~

~~b) the *operating permit* number assigned to the *decorative water feature*,~~

~~c) emergency contact information and the name and contact information of the *owner*,~~

~~d) a description of the location of the operating manual for the *decorative water feature*, and as applicable, the location of safety data sheets and the location of the water management plan,~~

~~e) a single line schematic plan, including water sampling locations, of the *decorative water feature*,~~

~~f) details of any changes or alterations made to the system at any time since January 1, 2021,~~

~~g) a record of inspections and any maintenance performed within the last 24 months,~~

~~h) a record of operational disruptions within the last 24 months and the corrective actions taken,~~

~~i) a record of chemical treatments applied and dosages within the last 24 months,~~

~~j) a record of all water quality results from analyses performed within the last 24 months, and for *Legionella pneumophila* test results, the name of the person and company collecting the sample and the name of the company conducting the laboratory test, and~~

~~k) if a laboratory result fails to meet a standard defined in Table 2.2.11.7., a description of the extent of the deviation from the standard, the corrective action taken, a record of any required notification, and the outcome of the corrective action, including all applicable dates and times.~~

5) A maintenance log conforming to Article 2.2.1.8. shall be maintained for each *decorative water feature* and, if a laboratory result fails to meet a standard defined in Table 2.2.11.7., the maintenance

log shall also include a description of the extent of the deviation from the standard, the corrective action taken, a record of any required notification, and the outcome of the corrective action, including all applicable dates and times.

~~**6)** The maintenance log shall be made available on such request to the *Chief Building Official*.~~

6) Deleted.

7) *Legionella pneumophila* testing shall be conducted

a) in accordance with Article 2.2.1.7.,

b) on water samples collected at a point representative of water that is aerosolized, or where this is not feasible or aerosolization is not obvious, from a location

i) prior to the point where treatment chemicals are injected in a recirculating system, or

ii) representative of water in the system in a non-recirculating system, and

c) as required by Sentence (8).

8) If a laboratory test shows that the *Legionella* result exceeds a standard set out in Table 2.2.11.7., the response set out in Table 2.2.11.7 shall be undertaken.

Table 2.2.11.7.
Required Response to Failure to Meet *Legionella* Standards for *Decorative Water Features*
Forming Part of Sentence 2.2.11.7.(8)

Test Type	Test Result	Required Response
Legionella pneumophila culture test(1)	10 or more CFU per mL and less than or equal to 1,000 CFU per mL	~~1. The *owner* shall give notice to the *Chief Building Official* within 24 hours;~~ ~~2. The *owner* shall, within 24 hours, shut down the system and perform offline cleaning and disinfection; and~~ ~~3. The *owner* shall perform a *Legionella* culture test(1) no less than 48 hours and no more than 5 days after cleaning and disinfection.~~ 1. Within 24 hours, give notice to the *Chief Building Official*, shut down the *decorative water feature* and perform offline cleaning and disinfection; and 2. No less than 48 hours and no more than 5 days after cleaning and disinfection, perform a *Legionella pneumophila* culture test(1).
	Greater than 1,000 CFU per mL	~~1. The laboratory shall immediately give notice to the *owner*, the *Chief Building Official* and the medical health officer(2), and in addition, an *owner* who receives notice from the laboratory must give immediate notice to the *Chief Building Official* advising that the *owner* has been notified by the laboratory(4);~~ ~~2. The *owner* shall immediately implement measures that will eliminate water dispersion by aerosol from the *decorative water feature* and then perform offline cleaning and disinfection of the system before putting the feature back into service; and~~ ~~3. The *owner* shall perform a *Legionella* culture test(1) no less than 48 hours and no more than 5 days after cleaning and disinfection.~~ 1. Immediately, give notice(3) to the *Chief Building* Official, the medical health officer and the *owner*; 2. Immediately, the laboratory(2) shall also give notice(3) to the owner of the *decorative water feature*, the *Chief Building Official* and the medical health officer; 3. Immediately, implement measures that will eliminate water dispersion by aerosol from the affected *decorative water feature* and then perform offline cleaning and disinfection of the system before putting the feature back into service; and 4. No less than 48 hours and no more than 5 days after cleaning and disinfection, perform a *Legionella pneumophila* culture test(1).
Notes to Table 2.2.11.7.:		

(1) The *Legionella pneumophila* culture test shall conform to the requirements of Article 2.2.1.7.
(2) See Sentence 2.2.1.7.(3).
(3) The person giving the immediate notice shall take all reasonable steps to give notice by speaking directly to or by telephone with each person required to be notified, a person designated for this purpose by the person required to be notified, or a person answering the telephone number designated for this purpose by the person required to be notified, and follow with notice in writing to each person within 24 hours.

9) Offline cleaning and disinfection of a *decorative water feature* shall be carried out
a) as recommended by the manufacturer, and at minimum of once every calendar year,
b) for any start-up after having been shut down for 3 or more consecutive days, and
c) as required by Sentence (8).
10) When a *decorative water feature* has been shut down for 3 or more consecutive days, it shall be drained within 5 days of being shut down.
11) If a *decorative water feature* is removed or its use is permanently discontinued, it shall be safely drained, thoroughly sanitized, and the make-up water line shall be disconnected and capped.

2.4.5.4. Location and Cleanout for Building Traps

1) Where a *building trap* is installed, it shall

a) be provided with a *cleanout* fitting on the upstream side of and directly over the *trap*,

b) be located upstream of the *building cleanout*, and

c) be located

i) inside the *building* as close as practical to the place where the *building drain* leaves the *building*, or

ii) outside the *building* in a maintenance ~~man~~hole.

(See Note A-2.4.5.4.(1).)

2.4.6.2. Location of Soil-or-Waste Pipes

1) A *soil-or-waste pipe* shall not be located directly above

a) non-pressure *potable* water storage tanks,

b) maintenance ~~man~~holes in pressure *potable* water storage tanks, or

c) food-handling or food-processing equipment.

2.4.6.4. Protection from Backflow

1) Except as permitted in Sentence (2), a *backwater valve* or a gate valve that would prevent the free circulation of air shall not be installed in a *building drain* or in a *building sewer*. (See Note A-2.4.6.4.(1).)

2) A *backwater valve* is permitted to be installed in a *building drain* provided that

a) it is a “normally open” design conforming to

i) CSA B70, “Cast Iron Soil Pipe, Fittings, and Means of Joining,”

ii) CAN/CSA-B181.1, “Acrylonitrile-Butadiene-Styrene (ABS) Drain, Waste, and Vent Pipe and Pipe Fittings,”

iii) CAN/CSA-B181.2, “Polyvinylchloride (PVC) and Chlorinated Polyvinylchloride (CPVC) Drain, Waste, and Vent Pipe and Pipe Fittings,” or

iv) CAN/CSA-B182.1, “Plastic Drain and Sewer Pipe and Pipe Fittings,” and

b) it does not serve more than one *dwelling unit*.

3) Except as provided in Sentences (4) and (5), where a *building drain* or a *branch* may be subject to *backflow*, a gate valve or a *backwater valve* shall be installed on every *fixture drain* connected to them when the *fixture* is located below the level of the adjoining street.

4) Where the *fixture* is a floor drain, a removable screw cap is permitted to be installed on the upstream side of the *trap*.

5) Where more than one *fixture* is located on a *storey* and all are connected to the same *branch*, the gate valve or *backwater valve* is permitted to be installed on the *branch*.

6) Except as provided in Sentence (7), where a storm *sump* is provided there shall be a *backwater valve* attached to the outlet pipe.

7) Notwithstanding Sentence (6), a *backwater valve* is not required if the storm *sump* and the storm *sump* piping are both located above the level of the next upstream maintenance ~~man~~hole of the public storm *sewer*.

2.4.7.1. Cleanouts for Drainage Systems

1) *Sanitary drainage systems* and *storm drainage systems* shall be provided with *cleanouts* that will permit cleaning of the entire system.

2) A *cleanout* fitting shall be provided on the upstream side and directly over every running *trap*.

3) Interior *leaders* shall be provided with a *cleanout* fitting at the bottom of the *leader* or not more than 3 m

upstream from the bottom of the *leader*.
4) Where a *cleanout* is required on a *building sewer* 8 inches or larger in *size*, it shall be a maintenance ~~man~~hole.
5) A *building sewer* shall not change direction or slope between the *building* and public sewer or between *cleanouts*, except that pipes not more than 6 inches in *size* may change direction
a) by not more than 5° every 3 m, or
b) by the use of fittings with a cumulative change in direction of not more than 45°.
6) *Building drains* shall be provided with a *cleanout* fitting conforming to Sentence 2.4.7.2.(2) that is located as close as practical to the place where the *building drain* leaves the *building*. (See Note A-2.4.7.1.(6).)
7) *Soil-or-waste stacks* shall be provided with a *cleanout* fitting
a) at the bottom of the stack,
b) not more than 3 m upstream of the bottom of the stack, or
c) on a Y fitting connecting the stack to the *building drain* or *branch*.
8) A *cleanout* shall be provided to permit the cleaning of the piping downstream of an *interceptor*.
9) *Cleanouts* shall be installed so that the cumulative change in direction is not more than 90° between *cleanouts* in a drip pipe from a food receptacle or in a *fixture drain* serving a kitchen sink in a non-residential *occupancy*. (See Note A-2.4.7.1.(9).)
10) A *fixture outlet pipe*, a *trap* with a removable *trap dip*, or a separate *cleanout* shall be used as a *cleanout* for a *fixture drain*. (See Note A-2.4.7.1.(10).)
11) *Building drains* shall be provided with an additional *cleanout* for each cumulative horizontal change in direction exceeding 135°.

2.4.7.2. Size and Spacing of Cleanouts

1) Except as provided in Sentences (2) to (4), the *size* and spacing of *cleanouts* in *nominally horizontal* pipes of a *drainage system* shall conform to Table 2.4.7.2.

Table 2.4.7.2.
Permitted Size and Spacing of Cleanouts
Forming Part of Sentence 2.4.7.2.(1)

***Size* of Drainage Pipe, inches**	**Minimum *Size* of *Cleanout*, inches**	**Maximum Spacing, m**	
		One-Way Rodding	**Two-Way Rodding**
less than 3	Same *size* as drainage pipe	7.5	15
3 and 4	3	15	30
over 4	4	26	52

2) *Cleanout* fittings for *building drains* shall be at least 4 inches in *size*.
3) The spacing between maintenance ~~man~~hole serving a *building sewer*
a) 24 inches or less in *size* shall not exceed 90 m, and
b) over 24 inches in *size* shall not exceed 150 m.
4) The *developed length* of a *building sewer* between the *building* and the first maintenance ~~man~~hole to which the *building sewer* connects shall not exceed 75 m.
5) Where a *building sewer* connects to another *building sewer* other than by a maintenance ~~man~~hole, the *developed length* between the *building* and the *building sewer* to which it connects shall not exceed 30 m.
6) *Cleanouts* that allow rodding in one direction only shall be installed to permit rodding in the direction

of flow.

2.4.7.3. ~~Manholes~~Maintenance Holes

1) A maintenance ~~man~~hole, including the cover, shall be designed to support all loads imposed upon it.

2) A maintenance ~~man~~hole shall be provided with

a) a cover that provides an airtight seal if located within a *building*,

b) a rigid ladder of a corrosion-resistant material where the depth exceeds 1 m, and

c) a vent to the exterior if the manhole is located within a *building*.

3) A maintenance ~~man~~hole shall have a minimum horizontal dimension of 1 m, except that the top 1.5 m may be tapered from 1 m down to a minimum of 600 mm at the top.

4) A maintenance ~~man~~hole in a *sanitary drainage system* shall be channeled to direct the flow of effluent.

2.5.7.6. Vent Pipes for ~~Manholes~~Maintenance Holes

1) The minimum *size* of a *vent pipe* that serves a maintenance ~~man~~hole within a *building* shall be 2 inches.

2.5.8.5. Lengths of Other Vent Pipes

1) When sizing an *additional circuit vent*, *offset relief vent*, *relief vent*, *yoke vent*, and the *vent pipe* for an *interceptor*, dilution tank, *sewage* tank, sump, or maintenance ~~man~~hole, length is not taken into consideration.

In Table 2.8.1.1., revise:

2.4.7.3. ~~Manholes~~Maintenance Holes	
(1)	[F20-OS3.1]
(2)	(a) and (c) [F81-OH1.1]
	(a) and (c) [F81-OS1.1]
	(b) [F20-OS3.1]
(3)	[F30-OS3.1]
(4)	[F81-OH2.1]

2.6.1.12. Service Water Heaters

1) Thermostat controls for *storage-type service water heaters* shall be set at a temperature not lower than ~~of~~ 60°C. (See Note A-2.6.1.12.(1).)

2.7.4.1. Requirements for Alternate Water Source Systems Installed Prior to January 1, 2019

1) An *operating permit* shall be obtained~~.~~, and the owner of the *alternate water source system* shall comply with the requirements of this Subsection.

2) The *operating permit* number assigned to the *alternate water source system* shall be posted on a sign or plate that is a minimum of 8.5 in by 11 in in size and securely fastened to the *alternate water source system* in a location that is conspicuously visible and constructed of a durable, weather resistant material.

3) The *Chief Building Official* shall be notified within 30 days of any changes to the information that was last provided to the *City* with regard to the operating permit, in the form prescribed by the *Chief Building Official*.

4) Water quality shall comply with the water quality standards, testing, documentation, and reporting requirements set out in Articles 2.7.7.1. and 2.7.7.2.

5) If a test result shows that the water quality fails to meet any of the standards set out in Table 2.7.7.1., the response set out in Table 2.7.4.1. shall be undertaken.

Table 2.7.4.1.
Required Response to Failure to Meet Water Quality Standards for *Alternate Water Source Systems* Installed Prior to January 1, 2019
Forming part of Sentence 2.7.4.1.(5)

Parameter	Test Result	Required Response
E. coli(1)	100 or more CFU per 100 mL or 100 or more MPN per 100 mL	1. ~~The *owner* shall i~~Immediately supply the *alternate water source system* with *potable* water only; 2. ~~The *owner* shall give notice to the *Chief Building Official* within 24 hours,~~ Within 24 hours, give notice to the *Chief Building Official* and the *owner*; and 3. ~~The *owner* shall perform an *E. coli test*(1) and a *Legionella* culture test(1) within 5 days, but no less than 48 hours after any cleaning or disinfection.~~ Within 5 days, but no less than 48 hours after any cleaning or disinfection, perform an *E. coli test*(1) and, if the water quality standard for *Legionella pneumophila* had been exceeded, a *Legionella pneumophila* culture test(1).
Legionella pneumophila(1)	10 or more CFU per mL	
Turbidity	> 15 NTU	
Temperature	> 25°C	

6) The *alternate water source system* shall be maintained in accordance with any manufacturer's specifications.

7) If the *alternate water source system* is in use, cross connection control tests shall be performed as required by CAN/CSA-B128.1, "Design and Installation of Non-Potable Water Systems."

8) A maintenance log shall be maintained in accordance with Sentence 2.7.8.2.(3).

9) An *alternate water source system* commissioned after January 1, 2019 shall comply with the requirements of Article 2.7.5.2.

2.7.5.3. Operating Permit

~~**1)** An *operating permit* shall be obtained for an *alternate water source system*.~~

1) An *operating permit* shall be obtained, and the owner of the *alternate water source system* shall comply with the requirements of this Subsection.

2) The *operating permit* number assigned to the *alternate water source system* shall be posted on a sign or plate that is a minimum of 8.5 in by 11 in in size and securely fastened to the *alternate water source system* in a location that is conspicuously visible and constructed of a durable, weather resistant material.

3) The *Chief Building Official* shall be notified within 30 days of any changes to the information that was last provided to the *City* with regard to the *operating permit*, in the form prescribed by the *Chief Building Official*.

2.7.7.3. Required Response to Failure to Meet Water Quality Standards

1) If a test result shows that the water quality fails to meet a standard set out in Table 2.7.7.1., the response set out in Table 2.7.7.3 shall be undertaken.

Table 2.7.7.3.
Required Response to Failure to Meet Water Quality Standards for *Alternate Water Source Systems*
Forming part of Sentence 2.7.7.3.(1)

Parameter	Test Result	Required Response
Turbidity	Between 10 and 15 NTU	~~The *owner* shall t~~Take the appropriate corrective action as set out in the operating manual.
Temperature	20°C to 25°C	
E. coli(1)	100 or more CFU per 100 mL or 100 or more MPN per 100 mL	~~1. The *owner* shall i~~Immediately supply the *alternate water source system* with *potable* water only; ~~2. The *owner* shall ~~Within 24 hours, give notice to the *Chief Building Official* and the *owner;* ~~within 24 hours;~~ ~~3. The *owner* shall t~~Take the appropriate corrective action as set out in the operating manual; and ~~4. The *owner* shall perform an *E. coli* test(1) and a *Legionella* culture test(1) w~~Within 5 days, but no less than 48 hours after any cleaning or disinfection, perform an *E. coli* test(1) and a *Legionella* culture test(1).
Legionella pneumophila(1)	10 or more CFU per mL	
Turbidity	> 15 NTU	
Temperature	> 25°C	

Notes to Table 2.7.7.3.:
(1) See Article 2.2.1.7.

2.7.8.1. Operating Manual

1) An operating manual shall be supplied to the *owner* or representative of the *owner* by the designer of the *alternate water source system* and shall be ~~stamped~~ sealed by a *registered professional of record*, and shall include the following

a) address and location of the *alternate water source system*,
b) system designer contact details,
c) a simplified process flow diagram,
d) a schematic of the entire system showing locations of all system components,
e) instructions on operating, maintaining, and inspecting the system,
f) required frequency of maintenance and inspections,
g) instructions on deactivating and restarting the system for repair or other purposes,
h) details on the corrective action that shall be taken if the water quality fails to meet the standards set out in Table 2.7.7.1., and
i) safety data sheets.

2) The operating manual described in Sentence (1) shall be made available on such request to the *Chief Building Official*.

2.7.8.2. Maintenance

~~**3)** A maintenance log shall be maintained and shall include~~

~~a) the address and location of the *alternate water source system,*~~

~~b) the name and contact information of the *owner*,~~

~~c) a record of inspections and any maintenance performed within the last 24 months,~~

~~d) details of any changes or alterations made to the system at any time after commissioning,~~

~~e) a record of water quality test results as set out in Article 2.7.7.1., including the name of the person and company conducting the test,~~

~~f) copies of water quality reports prepared and submitted in accordance with Article 2.7.7.2 within the last 24 months, and~~

~~g) if a water quality test fails to meet a standard defined in Table 2.7.7.1., a description of the extent of the deviation from the standard, the corrective action taken, a record of any required notification, and the outcome of the corrective action, including all applicable dates and times.~~

3) A maintenance log conforming to Article 2.2.1.8. shall be maintained, and shall also include

a) the documentation required by Sentence 2.7.7.1.(3), and

b) if a water quality test fails to meet a standard defined in Table 2.7.7.1., a description of the extent of the deviation from the standard, the corrective action taken, a record of any required notification, and the outcome of the corrective action, including all applicable dates and times.

~~2.7.8.3. Request for Operating Manual or Maintenance Log~~

~~**1)** The operating manual and the maintenance log shall be made available on such request to the *Chief Building Official* or *City Engineer*.~~

Notes to Part 2

A-2.2.11.6. *Cooling tower* start-up and shut-down. It is not the intention that the undefined terms "start-up" and "shut down" within Clause (4)(a), Clause (7)(c), Clause (9)(b) or Sentence (10) be interpreted to include a brief shutdown for the purposes of physical cleaning, system maintenance or inspection, or a "Standby (wet)" mode of *cooling tower* operation as defined by ASHRAE Guideline 12-2020. Operating a *cooling tower* in a "Standby (wet)" mode should include maintaining the water treatment program and circulating water to control biological growth, as described in ASHRAE Guideline 12-2020.

Division C

Part 1 Changes

~~1.6.9.3. Application Requirements~~

~~**1)** To obtain an *operating permit*, the *owner* shall file an application in writing in the form prescribed by the *Chief Building Official*.~~

~~**2)** The application for an *operating permit* shall be accompanied by the *operating permit* fees and any documentation required by the *Chief Building Official* to verify that the requirements of this By-law are being met.~~

1.6.9.3. Application Requirements for New Operating Permits and Renewals

1) To obtain or renew an *operating permit*, the owner of the equipment, device, apparatus, or system, or their authorized representative, shall file an application in writing in the form prescribed by the *Chief Building Official*.

2) The application for a new *operating permit* or the renewal of an *operating permit* shall be accompanied by the *operating permit* fees and any documentation required by the *Chief Building Official* to verify that the requirements of this By-law are being met.

3) Except as provided in Sentence (4), *operating permits* are valid for a one year period, and shall be renewed on an annual basis.

4) *Operating permits* for *once through cooling equipment* will be valid for a period deemed appropriate by the *Chief Building Official* or *City Engineer*, and if valid for a one year period, shall be renewed on an annual basis.

~~**1.6.9.4. Permit Expiry**~~

~~**1)** An *operating permit* shall expire and the rights of the *owner* under the *operating permit* shall terminate on the expiry date noted on the *operating permit*.~~

1.6.9.4. Owner Must be Certified

1) The owner of the equipment, device, apparatus, or system, or their authorized representative, must be certified under the Environmental Operators Certification Program, except that this requirement does not apply to *once through cooling equipment*.

~~**1.6.9.5. Operating Permit Fees**~~

~~**1)** *Operating permit* fees are as set out in the Schedule of Fees at the end of this Part.~~

1.6.9.5. Conditions on Operating Permits

1) The *Chief Building Official* may impose conditions on *operating permits* including, but not limited to, conditions regarding

a) notifications and notices,
b) safety,
c) health,
d) design requirements,
e) construction requirements,
f) timing of construction,
g) deadlines for completion of construction,
h) reviews and inspections,
i) responsibilities of the owner of the equipment, device, apparatus, or system, the constructor, the *registered professional* and the *certified professional*,
j) compliance with this By-law and other enactments,
k) use and occupancy, and
l) temporary buildings and occupancies.

1.6.9.6. Operating Permit Fees

1) *Operating permit* fees are as set out in the Schedule of Fees at the end of this Part.

This document is being provided for information only as a reference tool to highlight the proposed amendments. The draft amending by-laws attached to the Council report RTS No. **14294** entitled **Housekeeping, Clarity, and Miscellaneous Changes to the VBBL and Electrical By-law** represent the amendments being proposed to Council for approval. Should there be any discrepancy between this redline version and the draft amending by-laws, the draft amending by-laws prevail.

Electrical By-law

In Schedule A (the fee schedule):

5. The fee for staff time spent inspecting of electrical work or reviewing resubmitted or amended plans to determine compliance with this By-law, if a permit holder deviates from approved plans, for each quarter of an hour or part thereof

… $~~218.00~~54.50

[…]

12. The administration fees pursuant to Section 5.20 and 5.27 shall be
(a) the first $~~79.30~~81.70 of the permit fee when no plan review performed

… $81.70

(b) the first $~~212.00~~218.00 of the permit fee when plan review performed

… $218.00

13. ~~(a)~~ The fee for a permit amendment review pursuant to Section 5.22 shall be

… $81.70

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