

## Section 11.2. Upgrade Application

### 11.2.1. Upgrade Requirements

#### 11.2.1.1. Upgrade Objectives

- 1) An *alteration* to an *existing building* shall trigger upgrading of the *existing building* to meet the following objectives
  - a) all unsafe conditions shall be corrected to an *acceptable* level,
  - b) all new materials and *construction* work shall comply with this By-law,
  - c) the *building* shall be upgraded to an *acceptable* level of
    - i) fire, life and health safety,
    - ii) structural safety,
    - iii) non-structural safety,
    - iv) accessibility for persons with disabilities, and
    - v) energy and water efficiency,
  - d) any significant extension of the design life of an *existing building* beyond its original design life shall require upgrading to an *acceptable* level,
  - e) an *alteration* to an individual *suite* within an *existing building* will not trigger upgrades within any other *suites* except where the *alteration* creates non-conformity with the By-law within such other *suites*, and
  - f) the level of life safety and *building* performance shall not be decreased below the existing level.

#### 11.2.1.2. General Requirements

(See Note A-11.2.1.2.)

- 1) Where *construction* of *existing buildings* occurred before the effective date of this By-law, reconstruction or *alteration* of *existing buildings* is not a requirement of this By-law, except as required by Articles 11.2.1.3. to 11.2.1.11. inclusive.
- 2) Except as permitted by Sentences (3) to (9), and Articles 11.2.1.3. to 11.2.1.11., where an *alteration* is made to an *existing building*, the *alteration* shall comply with this By-law and the *existing building* shall be
  - a) upgraded to an *acceptable* level as defined in the *existing building* Upgrade Mechanism Model in Notes to Part 11, except that existing lighting exceeding the Lighting Power Density of ASHRAE 90.1-2016 shall be removed within existing spaces of a *suite* within the scope of a *project*,
  - b) upgraded to the satisfaction of the *Chief Building Official* where the *owner* demonstrates that the design levels, as defined by the Upgrade Mechanism Model in Notes to Part 11, present a hardship for the *owner*, or
  - c) upgraded to the satisfaction of the *Chief Building Official* through alternative upgrades, that demonstrate equivalent improvement where specific characteristics of the building are intended to be retained.
- 3) Except as required by Sentence (9) and changes of *major occupancy* in a *small suite*, where an *alteration* does not involve an *addition* or a change in *major occupancy*, further upgrading to an *existing building* is not a requirement of this By-law provided
  - a) *construction* or a full upgrade of the *building* occurred by means of a *building permit* issued on or after November 1, 1999,
  - b) all *unsafe conditions* are corrected to the satisfaction of the *Chief Building Official*, and
  - c) all new work is in compliance with this By-law.
- 4) Where a voluntary upgrade for fire alarm systems, *sprinkler systems*, *exits*, accessibility, seismic work, washrooms or kitchens for *single room accommodations*, energy efficiency or *building* envelope repair is carried out, no further upgrade of the *building* is required except that, where other work is included in the application, the upgrade requirement will only be based on the non-voluntary work proposed.
- 5) Where *building* envelope repair involves more than 60% of an opaque portion of a *building* face, the *building* envelope on the entire vertical section of that *building* face shall be replaced and upgraded to the thermal resistance and air-tightness requirements of Part 10, except where
  - a) the scope of work is limited to the replacement of windows

- b) the *building* is two *storeys* in *building height* or less and is required to comply with Part 9 per Division A, Article 1.3.3.3., or
- c) the *building face* has heritage merit and is required to be retained as part of an approved retention plan.
- 6)** Where a *building* is altered and is a *post disaster building* as defined in Table 4.1.2.1., or where there is a major *addition* to a *post disaster building*, the entire *building* shall be upgraded to design upgrade levels F4, S4, N4, A4 and E4 as detailed in the Upgrade Mechanism Model in Notes to Part 11.
- 7)** Where there is a temporary change of *major occupancy in a building for a temporary emergency shelter or an arts and culture indoor event*, the upgrade requirements shall be based solely on Section 11.6.
- 8)** Where there is a change of *major occupancy* in a *building*, and the aggregate area of the change in *major occupancy* within any 5 year period is greater than 50% of the *building area* in a one *storey building* or greater than 100% of the *building area* in a *building* of more than one *storey*, the entire *building* shall be upgraded to design upgrade levels F4, S4, N4, A4 and E3 as detailed in the Upgrade Mechanism Model in Notes to Part 11 except where
- a) the change in *major occupancy* is to a single *suite* and the work does not exceed 5% of the *building area* or more than 100 m<sup>2</sup> in area, or
- b) such upgrades are in conflict with an approved heritage retention plan.
- 9)** The upgrade requirements for energy efficiency to *existing buildings* shall conform to the upgrade mechanism model in Notes to Part 11 for energy efficiency except for
- a) *buildings* designed and constructed in conformance with ASHRAE 90.1-2007 or as deemed acceptable to the *Chief Building Official*,
- b) *buildings* designed and constructed in conformance with Article 9.25.2.1. of Building By-law No. 9419,
- c) *buildings* where the *alteration* is limited to the upgrade of energy related specific equipment, as listed in Table 11.2.1.2., provided the replacement equipment complies with industry standards for “high efficiency,” and
- d) *multi-family buildings* not more than 3 *storeys* in *building height* may comply with the energy efficiency upgrade requirements of Table 11.2.1.4.(2).

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**Table 11.2.1.2.**  
**Energy Related Equipment**  
Forming part of sentence 11.2.1.2.(9)

| Equipment Type                  | Specific Equipment                               |
|---------------------------------|--|
| Basic Building Systems          | Boilers  |
|                                 | Furnaces   |
|                                 | Hot Water Tanks                                  |
|                                 | Lighting Systems                                 |
|                                 | Energy Reduction Sensors (occupant, light, etc.) |
| Renewable Energy Systems        | Photovoltaic system                              |
|                                 | Solar Thermal system                             |
|                                 | Biofuel-based Energy system                      |
|                                 | Geothermal Heating system                        |
|                                 | Geothermal Electric system                       |
| High Performance Energy Systems | Wave & Tidal Power system                        |
|                                 | Ground Source Heat Pump system                   |
|                                 | Air Source Heat Pump system                      |
|                                 | Waste Heat Recovery system                       |

**11.2.1.3. Sprinkler Installation Requirements for the Addition of Dwelling Units in Multi-family Buildings**

(See Note A-11.2.1.3.)

- 1) Except as provided in Sentence (2) and Sentence 11.2.1.4.(3), where an *alteration* to an *existing building* creates or adds one or more *dwelling units*, the *building* shall be *sprinklered* in conformance with Table 11.2.1.3.
- 2) Where the *alteration* in Sentence (1) involves the *addition* of existing floor area to an existing *dwelling unit*, and that converted space is greater than 50% of the *floor area* of the original *dwelling unit*, the altered *dwelling unit* shall be considered as a new *dwelling unit* and the *building* shall be *sprinklered* in conformance with Table 11.2.1.3.
- 3) If sprinklers are required by Table 11.2.1.3., they shall be installed throughout the *storey* on which the new *dwelling unit* is to be located and all *storeys* below the new *dwelling unit*.

**Table 11.2.1.3.**  
**Sprinkler Installation Determination Where Dwelling Units are Added**  
 Forming part of sentence 11.2.1.3.(1),(2), and (3)

| Existing Dwelling Units | New DUs <sup>(1)</sup> Added Over Any 5 year Period <sup>(2)</sup> |       |       |       |       |
|-------------------------|--|-------|-------|-------|-------|
|                         | 1  | 2-3   | 4-5   | 6     | >6    |
| 0-1                     | Spr R <sup>(3)</sup>   | Spr R | Spr R | Spr R | Spr R |
| 2-4                     | -  | Spr R | Spr R | Spr R | Spr R |
| 5-10                    | -  | -     | Spr R | Spr R | Spr R |
| 11-20                   | -  | -     | -     | Spr R | Spr R |
| >20                     | -  | -     | -     | -     | Spr R |

**Notes to Table 11.2.1.3.**

- (1) Dwelling Units
- (2) The creation of dwelling units over the previous 5 years from the date of the proposed building permit application.
- (3) Sprinklers Required.

**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 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 <sup>(1)</sup> | CO Alarms <sup>(2)</sup> | Guards <sup>(3)</sup> | Spatial Separation <sup>(4)</sup> | Structural <sup>(5)</sup> |
|--------------------------------|-----------------------------|--------------------------|-----------------------|-----------------------------------|---------------------------|
| Renovation                     | Y                           | Y                        | Y                     | N                                 | N                         |
| Relocation or Reconstruction   | Y                           | Y                        | Y                     | Y                                 | Y                         |
| Horizontal Addition Floor Area |                             |                          |                       |                                   |                           |
| up to 25% <sup>(6)</sup>       | Y                           | Y                        | Y                     | N                                 | N                         |
| over 25% <sup>(7)</sup>        | Y                           | Y                        | Y                     | Y                                 | Y                         |
| Vertical Addition Floor Area   |                             |                          |                       |                                   |                           |
| up to 25% <sup>(6)</sup>       | Y                           | Y                        | Y                     | N                                 | Y                         |
| over 25% <sup>(7)</sup>        | 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 #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 <sup>(1)</sup> | Handrails <sup>(2)</sup> | Exit Exposure <sup>(3)</sup> | Stair Dimensions <sup>(4)</sup> | Building Services <sup>(5)</sup> | Falling Hazards <sup>(6)</sup> |
|--------------------------------|--------------------------------|--------------------------|------------------------------|---------------------------------|----------------------------------|--------------------------------|
| Renovation                     | N                              | Y                        | N                            | N                               | N                                | N                              |
| Relocation or Reconstruction   | Y                              | Y                        | Y                            | Y                               | Y                                | Y                              |
| Horizontal Addition Floor Area |                                |                          |                              |                                 |                                  |                                |
| up to 25% <sup>(7)</sup>       | Y                              | N                        | N                            | N                               | N                                | Y                              |
| over 25% <sup>(8)</sup>        | Y                              | Y                        | Y                            | Y                               | Y                                | Y                              |
| Vertical Addition Floor Area   |                                |                          |                              |                                 |                                  |                                |
| up to 25% <sup>(7)</sup>       | Y                              | Y                        | N                            | N                               | N                                | Y                              |
| over 25% <sup>(8)</sup>        | 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 #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 Area 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 <sup>(1)</sup> | Floor Fire Separations <sup>(2)</sup> | Suite Fire Separations <sup>(3)</sup> | Lighting & Emergency Lights <sup>(4)</sup> | Door Hardware <sup>(5)</sup> |
|--------------------------------|-----------------------------|---------------------------------------|---------------------------------------|--|------------------------------|
| Renovation                     | N                           | N                                     | N                                     | N  | N                            |
| Relocation or Reconstruction   | Y                           | Y                                     | Y                                     | Y  | Y                            |
| Horizontal Addition Floor Area |                             |                                       |                                       |  |                              |
| up to 25% <sup>(6)</sup>       | N                           | N                                     | N                                     | N  | N                            |
| over 25% <sup>(7)</sup>        | Y                           | Y                                     | Y                                     | Y  | Y                            |
| Vertical Addition Floor Area   |                             |                                       |                                       |  |                              |
| up to 25% <sup>(6)</sup>       | N                           | N                                     | N                                     | Y  | N                            |
| over 25% <sup>(7)</sup>        | Y                           | Y                                     | Y                                     | Y  | Y                            |

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**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 #2 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 <sup>(1)</sup> | Air tightness upgrades <sup>(2)</sup> | Attic and Sloped Roof Insulation <sup>(3)</sup> | E6 - Upgrade Mechanism Model <sup>(4)</sup> |
|------------------------------------|-------------------------------------|---------------------------------------|---|---|
| \$20,000 to \$74,999               | Y                                   | N                                     | N   | N   |
| ≥\$75,000                          | Y                                   | Y                                     | Y   | N*  |

**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) Reconstruction is defined in the Upgrade Mechanism Model in Notes to Part 11. A reconstruction project must meet the Part 10 energy efficiency requirements as per E6 in Table A-11.2.1.2.-C.

**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*.

**11.2.1.5. Self-contained Volumetric Spaces**

(See Note A-11.2.1.5)

1) Where an *alteration* to a *building* is a self-contained volumetric space that is separated from the remainder of the *building* by a *non-combustible vertical fire separation* with a 2 h *fire resistance rating*, the upgrade requirements of this Part do not apply to the remainder of the *building* provided

- a) the self-contained volumetric space is upgraded in conformance with this By-law,
- b) the self-contained volumetric space does not **exit** through the remainder of the *building*,
- c) the *building area* of the self-contained volumetric space is not larger than 10% of the existing *building area*,
- d) a *non-combustible vertical fire separation* with a 2 h *fire resistance rating* is constructed as a continuous vertical *fire separation* from the *building foundation* to the underside of the roof sheathing, and
- e) the self-contained volumetric space does not reduce the existing structural capacity of the *building*.

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#### 11.2.1.6. Relocated Buildings

1) Where a *building* is relocated from another municipality to the *City*, from another lot within the *City* or within its existing lot, the *building* shall be upgraded to Design Upgrade Levels F4, S4, N4, A4 and E4, as determined by the Upgrade Mechanism Model in Notes to Part 11.

#### 11.2.1.7. Relocated Property Lines

1) Where property lines are relocated closer to a *building*, the *building* shall be upgraded to conform to the spatial requirements, fire department access requirements and *means of egress* requirements of this By-law or the applicant shall demonstrate that the relocated property lines and the *existing building* configuration comply with this By-law.

#### 11.2.1.8. Demolished Buildings

1) Where a *building* is being demolished in whole or in part, the *demolition* work shall conform to the requirements of Part 8 and any part of the *building* that remains after *demolition* shall be upgraded in conformance with Article 11.2.1.2.

#### 11.2.1.9. Damaged Buildings

1) Where a *building* has been damaged, all work necessary to reconstruct the damaged portions of the *building* shall conform to this By-law and the Fire By-law and the remainder of the *building* shall be upgraded in conformance with Article 11.2.1.2.

#### 11.2.1.10. Fire Department Order

1) Where an order issued under the Fire By-law requires upgrading of a *building*, the *Chief Building Official* may allow deviations from this By-law.

#### 11.2.1.11. Specific Upgrade Requirements for Float Homes and Marinas

1) Except as permitted by Sentence (2), where a *marina* is altered, all new work shall comply with Subsection 12.2.2. and the *marina* shall be upgraded to an *acceptable* level as determined by the Upgrade Mechanism Model in Notes to Part 11.

2) Except as required by Sentence (3); Sentences 12.2.2.7.(1), and 12.2.2.8.(1) need not apply to a *marina*.

3) Where the total value of the *alteration* to a *marina* exceeds 50% of the value of the *marina* as determined at the application stage for the *alteration*, then the *marina* shall comply with Subsection 12.2.2.

4) Where a *float home* is altered

- a) new work shall comply with Subsection 12.2.2. of Division B and this By-law, and
- b) the *float home* shall be upgraded to an *acceptable* level in accordance with Article 11.2.1.4.

5) A *marina* shall have an *occupancy* classification as specified in Sentences 12.2.2.1.(4) and (5).