

APPENDIX A

BY-LAW NO. _____

**A By-law to amend Building By-law No. 9419 regarding
green building strategy for one family homes,
one family homes with secondary suites, and two family homes**

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

1. This By-law amends the indicated provisions of the Building By-law.
2. In Table 9.25.2.1 of Part 9 of Division B and the notes to that table, Council:
 - (a) from the first column, strikes out "(insulation to 600 mm below grade)";
 - (b) from the first sub-column of the second column, strikes out "Less than 4500 Celsius Degree Days⁽¹⁾";
 - (c) from the first sub-column of the second column, strikes out the "3.5" that is in the same row as "Frame Walls", and substitutes "3.85";
 - (d) from the first sub-column of the second column, strikes out the "2.1" that is in the same row as "Foundation Walls", and substitutes "3.85";
 - (e) from the first sub-column of the second column, strikes out the "1.8" that is in the same row as "Unheated Concrete Slabs on Ground at or above grade", and substitutes "2.1";
 - (f) from the first column, strikes out "Unheated Concrete Slabs on Ground at or above grade", and substitutes "Concrete Slabs on Ground at, above, or below grade (insulation under all slab area and around edge of slab)";
 - (g) from the first column, strikes out "Radiant Heating Slabs on Ground (insulation under all slab area and around edge of slab⁽⁴⁾)";
 - (h) from the first sub-column of the second column, strikes out the "2.1" that is in the same row as "Radiant Heating Slabs on Ground (insulation under all slab area and around edge of slab⁽⁴⁾)";
 - (i) strikes out the second sub-column of the second column entitled "4500 and Greater Celsius Degree Days⁽¹⁾", and the contents of the second sub-column of the second column;
 - (j) strikes out Notes 1) and 2); and
 - (k) re-numbers Notes 3), 4), and 5) as Notes 1), 2), and 3).
3. After Part 11 of Division B, Council adds:

**"Part 12
Environmental Protection**

Section 12.1. General

12.1.1. Application

12.1.1.1. Scope

1) The scope of this Part shall be as described in Subsection 1.3.3. of Division A except that this Part shall apply only to one-family dwellings, two-family dwellings, and one-family dwellings with secondary suites.

12.1.2. Definitions

12.1.2.1. Defined Terms

1) Words that appear in italics are defined in Article 1.4.1.2. of Division A.

12.1.3. Conflicts

1) In case of a conflict between any provision of this Part 12 and any other provision of this By-law, the Part 12 provision shall prevail.

Section 12.2. Building Envelope Performance and Energy Efficiency

12.2.1. Building Envelope Performance

12.2.1.1. Windows

1) Windows shall have a maximum thermal conductance (U value) of 2.00 W/(K·m²).

12.2.2. Energy Efficiency

12.2.2.1. Light Fixtures

1) At least 40% of hard wired, electrically powered light fixtures shall be hard wired so as not to accept incandescent or halogen light bulbs.

12.2.2.2. Energy Usage Display Meter

1) Electrical installations shall have an energy usage display meter in the dwelling unit capable of calculating and displaying electrical consumption on at least a monthly basis.

12.2.2.3. Hot Water Tanks

1) Electrically powered hot water tanks shall have insulation that provides a minimum RSI value of 1.76.

12.2.2.4. Hot Water Tank Piping

1) The first 3 m of non-recirculating hot water piping leading from both electrically powered and gas powered hot water tanks, and the last 1 m of piping prior to connecting to the hot water tank, shall have insulation that provides a minimum RSI value of 0.35.

2) Despite Sentence 12.2.2.4.(1), the entire hot water piping system, if it is of constant recirculation design, shall have insulation that provides a minimum RSI value of 0.35.

12.2.2.5. Gas-Fuelled Fireplaces

1) Gas-fuelled fireplaces shall use electronic ignitions.

2) Gas-fuelled fireplaces shall be direct vented so that all products for and of combustion circulate to and from the dwelling unit without the use of a chimney.

12.2.2.6. Toilets

1) Toilets shall be of dual flush design, with a maximum single flush consumption of 6 litres.

12.2.2.7. Heat recovery ventilators

1) Each dwelling unit, in the case of a one-family dwelling or two-family dwelling, and each one-family dwelling with secondary suite shall have one heat recovery ventilator.

2) Each heat recovery ventilator shall

a) be designed and tested to meet the CSA International Standard CAN/CSA-F326 M91 ("Residential Mechanical Ventilation Systems"),

b) be installed by persons trained by the Heating, Refrigeration and Air Conditioning Institute of Canada or equivalent,

c) supply outdoor air directly to the principal living area, each bedroom, and any floor without a bedroom,

d) be operated by centrally located manual controls or by automatic controls,

- e) not exhaust supplemental exhausts in the kitchens and bathrooms which shall be controlled by a manual switch in the room being served,
 - f) if a solid-fuel-fired appliance is present, be installed to operate without depressurizing the house in any operating mode,
 - g) be located in an accessible location within the dwelling unit, having a minimum headroom clearance of 2 m,
 - h) have an air intake equipped with a damper or bird screen, and be a minimum of 450mm above finished grade,
 - i) have an air exhaust equipped with a damper or bird screen, and be a minimum of 100mm above finished grade,
 - j) have supply-air ducts carrying un-tempered air through heated spaces insulated to at least RSI 0.5 (R-2.9), and
 - k) have exhaust ducts in unheated spaces insulated to RSI 0.5 (R-2.8).
- 3) Door under-cuts or transfer grilles shall be installed in doors to rooms where both supply and return air ducts are not located.

12.2.2.8. Energuide Rating System Audit

1) Before issuance of an occupancy permit, the Chief Building Official shall be provided with an Energuide Rating System Audit, as defined by the EnerGuide™ Rating Service of Natural Resources Canada.

12.2.2.9. Vertical Service Shaft

1) A vertical service shaft shall extend from the service room, which contains the service water heater, to the attic space, consisting of at least two 50 mm PVC pipes, capped at both ends, and having at least a 20° angle.

12.2.2.10. Cable Raceway

1) Each dwelling unit shall have a cable raceway leading from the electricity circuit panel to an enclosed outlet box in the garage or carport.

2) A raceway not smaller than size 21 shall be provided to accommodate future conductors of a separate branch circuit intended to supply a future receptacle for use with the electric vehicle charging system.

3) An outlet box for the receptacle referred to in Sentence (2) and approved for the purpose shall be provided in a parking space or a parking stall of a storage garage or carport intended for use with the electric vehicle charging system.

4) The raceway described in Sentence (2) shall be installed between the dwelling unit panel board and the outlet box referred to in Sentence (3).

12.3 Objective and Functional Statements

12.3.1. Objective and Functional Statements

1) For the purposes of compliance with this By-law as required in Clause 1.2.1.1.(1)(b) of Division A, the objectives and functional statements attributed to the acceptable solutions in this Part shall be the objectives and functional statements listed in Table 12.3.1.1. (See A-1.1.2.1.(1) in Appendix A.)

**Table 12.3.1.1.
Objectives and Functional Statements Attributed to the Acceptable Solutions in Part 12
Forming Part of Sentence 12.3.1.1.(1)**

Acceptable Solutions	Objectives and Functional Statements
12.2.1.1. Windows	
(1)	[F51, F52, F53, F54, F55, F61, F63, FEP1-OEP1]
12.2.2.1. Light Fixtures	
(1)	[FEP1-OEP1]
12.2.2.2. Energy Usage Display Meter	
(1)	[FEP1-OEP1]
12.2.2.3. Hot Water Tanks	
(1)	[FEP1-OEP1]
12.2.2.4. Hot Water Tanks	
(1)	[FEP1-OEP1]
(2)	[FEP1-OEP1]
12.2.2.5. Gas-Fuelled Fireplaces	
(1)	[F40, F41, F43, F44, FEP1-OEP1, OEP3]
(2)	[F40, F41, F43, F44, F54, F55, FEP1-OEP1, OEP3]
12.2.2.6. Toilets	
(1)	[F72, FEP1-OEP4]
12.2.2.7. Heat Recovery Ventilators	
(1)	[F40, F44, F50, F51, F52, F53, F54, F63, OEP1]
12.2.2.8. EnerGuide Rating System Audit	
(1)	[OEP1, OEP5]

