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Alternative Acceptable Solutions for Passive House Projects

The purpose of this Bulletin is to advise Passive House designers and consultants of specific alternative acceptable solutions for Certified Passive House projects using Passive House design requirements as specified by the Passive House Institute (PHI).

Passive House is a voluntary high performance energy-based standard to which a building may be constructed. Buildings constructed and certified in accordance with this standard are considered to be generally consistent with the City of Vancouver's green building policies, including the Zero Emission Building Plan. However, due to the demanding requirements of ultra-efficient building design, compliance with the Passive House Institute (PHI) standard may lead to unconventional design solutions.

In order to support the City's green policies and facilitate Passive House designs, the Chief Building Official may accept specific alternative acceptable solutions that can be shown to meet the intent of the Building By-law where documented appropriately in a building constructed to the Passive House standard, and confirmed to be certifiable by a qualified PHI certifier.

The following table identifies alternative acceptable solutions for Passive House certified projects, as designated by the Passive House Institute (PHI).

Table 1. Alternative Acceptable Solutions for Certified Passive House Projects

	Item	Alternative Acceptable Solution
1.	Kitchen exhaust requirements [9.32.3.3.(b)(i)]	A Heat or Energy Recovery Ventilator (HRV) exhaust vent, in conjunction with a recirculating hood fan, may be installed in lieu of the intermittent kitchen exhaust requirement in Table 9.32.3.6 of 47 L/s (100 CFM). <u>Conditions:</u> 1. The HRV exhaust vent is part of a commissioned and balanced HRV system that is sized to Passive House Institute (PHI) design standards. 2. The HRV exhaust vent is no more than 12 feet and no closer than 6 feet from the recirculating hood fan (or as specified by the HRV and/or kitchen range manufacturer). 3. A clearly labeled boost button timer or controller is within reasonable reach of the stove top facilities, or the HRV boost is interlocked when the range hood fan is turned on. 4. The HRV kitchen exhaust vent, plus the next closest HRV exhaust vent (e.g. a bathroom) on the same floor, must have a minimum combined continuous flow rate of: o the CSA F326 – M91 continuous flow rate of 30 L/s (64 CFM) for Part 9 buildings, or

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		○ the ASHRAE 62 continuous flow rate of 12 L/s (25 CFM) for each suite, for Part 3 buildings 5. The kitchen has only an electric or induction cooktop and range 6. A recirculating kitchen exhaust hood fan is installed to collect, filter and generally direct filtered cooking air to the HRV exhaust vent. The hood fan must have the following specifications: ○ Air flow is unimpeded from the range hood exhaust to the HRV exhaust vent ○ The range hood follows design and sizing requirements in CSA F326-M91, Clause 8.13.5, including best practices for a deep catchment volume and low sound ratings, and ○ It contains both a removable, washable grease filter
2.	Building Entry Vestibules [10.2.2.8]	Passive House projects achieve a high degree of whole-building envelope airtightness, including the installation of a high-performance exterior entrance door. This design satisfies the intent of the vestibules requirement in Article 10.2.2.8, and therefore an entrance vestibule is not required.

Note: Deviation or solutions not specifically identified in the above table should be discussed with the Chief Building Official, and may be required to proceed in accordance with an Alternative Solution.

Documentation

Passive House project designers that wish to take advantage of specific alternative acceptable solutions are to provide supporting documentation to the Chief Building Official. Supporting documentation is to take the form of a report that:

1. Identifies the specifics of all proposed deviations from the Building By-law and the alternative acceptable solution,
2. Identifies the rational for compliance with Building By-law requirements and confirms that the intent of the Building By-law has been satisfied,
3. Confirms that regulatory requirements of other applicable standards have been addressed, and
4. Is sealed by a *registered professional* in the province of British Columbia.

The report will be reviewed by the Building review staff who may request additional clarification or documentation.

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