



# City of Vancouver *Land Use and Development Policies and Guidelines*

## Planning, Urban Design and Sustainability Department

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# GREEN BUILDINGS POLICY FOR REZONINGS

Adopted by City Council on [July 22, 2010](#)  
Amended [June 25, 2014](#) and February 7, 2017

*(Applies to rezoning applications from May 1, 2017 to May 1, 2018)*

All rezonings must meet the following requirements of either:

- A. Near Zero Emissions Buildings, or
- B. Low Emissions Green Buildings.

This policy is effective immediately, and shall be mandatory for all Rezoning Applications received on or after May 1, 2017, with exceptions permitted at the discretion of the Director of Planning. For rezoning Applications received prior to May 1, 2017 that have not yet been approved by Council, applicants may choose to meet this updated version of the Policy or the preceding version.

## REQUIREMENTS

### **A. Near Zero Emissions Buildings**

Projects shall be designed to meet Passive House requirements and apply for certification, or to an alternate near zero emissions building standard, such as the International Living Building Institute's Net Zero Energy Building Certification, as deemed suitable by the Director of Sustainability.

OR

### **B. Low Emissions Green Buildings**

#### **(1) LEED Gold - Building Design and Construction**

All projects – with the exception of residential buildings - shall register with the Canadian Green Building Council (CaGBC) and be designed to achieve LEED Gold certification for Building Design + Construction (BD+C), or an alternate holistic green building rating system. A residential building is defined as a building in which at least 50% of the gross floor area is residential space. Where a project has multiple buildings, each building shall be evaluated separately.

The BD+C project type applies to buildings that are being newly constructed or going through a major renovation, and includes many rating systems designed for various building types. The applicant is responsible for choosing the rating system (within BD+C) that is most applicable to the project.

AND

## (2) Performance Limits

All buildings shall meet or exceed performance limits according to their building type summarized in the tables below, as modelled according to the City of Vancouver Energy Modelling Guidelines. The Energy Modelling Guidelines set standard assumptions and requirements for energy models when assessing compliance with the limits, including accounting for thermal bridging, consideration of summertime thermal comfort, and the treatment of mixed-use buildings.

<b>Performance Limits</b>			
<b>Buildings Not Connected to a City-recognized Low Carbon Energy System</b>			
Building Type	TEUI (kWh/m <sup>2</sup> )	TEDI (kWh/m <sup>2</sup> )	GHGI (kgCO <sub>2</sub> /m <sup>2</sup> )
Residential Low-Rise (< 7 storeys)	100	15	5
Residential High-Rise (7+ storeys)	120	32	6
Office	100	27	3
Retail	170	21	3
Hotel	170	25	8
All Other Buildings	EUI 35% below 90.1-2010		

<b>Performance Limits</b>			
<b>Buildings Connected to a City-recognized Low Carbon Energy System</b>			
Building Type	TEUI (kWh/m <sup>2</sup> )	TEDI (kWh/m <sup>2</sup> )	GHGI (kgCO <sub>2</sub> /m <sup>2</sup> )
Residential Low-Rise (< 7 storeys)	110	25	5
Residential High-Rise (7+ storeys)	130	40	6
Office	110	27	3
Retail	170	21	3
Hotel	210	25	8
All Other Buildings	EUI 35% below 90.1-2010		

TEUI: Total Energy Use Intensity

TEDI: Thermal Energy Demand Intensity

GHGI: Greenhouse Gas Intensity

AND

## (3) Airtightness Testing

Whole-building airtightness for each building is to be tested and reported, and all buildings are to be designed and constructed with the intention of meeting an air-leakage target of 2.0 L/s\*m<sup>2</sup> @75 Pa (0.40 cfm/ft<sup>2</sup> @ 0.3" w.c.), or sealed according to good engineering practice.

Airtightness of suites is to be tested and reported for residential buildings and must demonstrate compliance with a suite-level air-leakage target of 1.2 L/s\*m<sup>2</sup> @50 Pa (0.23 cfm/ft<sup>2</sup> @ 0.2" w.c.), as tested to ASTM E779 or an equivalent standard.

AND

## (4) Enhanced Commissioning

An enhanced commissioning process for all building energy systems is to be completed in accordance with ASHRAE Guideline 0-2005 and 1.1-2007, or an alternate commissioning standard.

AND

**(5) Energy System Sub-Metering and Reporting**

Separate master metering for each energy utility (e.g. Electricity, Gas, etc.) and each building is to be provided as well as sub-metering of all major energy end-uses and major space uses within each building.

An Energy Star Portfolio Manager account is to be setup for each building and must include all basic property information for each building as designed, including setup of meters for all energy utilities servicing the building.

A rezoning applicant will enter into an agreement with the City, on terms and conditions acceptable to the City, that requires the future owner of the building to report energy use data, on an aggregated basis, for the building as a whole and certain common areas and building systems. Such an agreement will further provide for the hiring of an approved professional service provider to assist the building owner for a minimum of three years in collecting and submitting energy use data to the City.

AND

**(6) Refrigerant Emissions and Embodied Emissions**

All projects shall calculate and report the life-cycle equivalent annual carbon dioxide emissions of each building, in kgCO<sub>2</sub>e/m<sup>2</sup>, from the emission of refrigerants. This requirement does not apply to projects where the total installed heating and cooling capacity of equipment containing refrigerants is less than 35kW.

All projects shall report the life-cycle equivalent carbon dioxide emissions (i.e. global warming potential impact, or 'embodied carbon') of each building, in kgCO<sub>2</sub>e/m<sup>2</sup>, as calculated by a whole-building life-cycle assessment (LCA).

AND

**(7) Verified Direct Ventilation**

All buildings shall be designed and constructed with a ventilation system that provides outdoor air directly to all occupiable spaces, in the quantities defined by code. This includes bedrooms, living rooms, and dens in residential units. The ventilation system shall allow for the designed flow rates to be tested and verified at the occupiable space level as part of the enhanced commissioning process.

AND

**(8) Low-Emitting Materials**

Emissions from interior materials containing volatile organic compounds (VOCs) or added urea formaldehyde are to be minimized by meeting the content requirements of Green Seal, Green Label, Green Label Plus, FloorScore, South Coast Air Quality Management District (SCAQMD) Rules, or alternate low VOC criteria as applicable to each material or product, and shall contain no added urea formaldehyde resins.

AND

**(9) Indoor Air Quality Testing**

Indoor air quality testing is to be conducted for formaldehyde, particulates, ozone, total volatile organic compounds, and carbon monoxide prior to occupancy, and report results to the City as compared to acceptable target concentration levels and standards.

AND

**(10) Integrated Rainwater Management and Green Infrastructure**

Explore and describe measures for the management of the site's rainfall through integrated rainwater management and Green Infrastructure (GI) as described in the City-Wide Integrated Rainwater Management Plan. Project teams can refer to the Citywide Integrated Rainwater Management Plan Volume I: Vision, Principles and Actions and Volume II: Best Management Practice Toolkit, for specific targets and examples of green infrastructure for rainwater management.

AND

**(11) Resilient Drinking Water Access**

A water fountain, bottle-filling station, or other fixture capable of operating on city water pressure alone and without electricity is to be provided in a location easily accessible to all building occupants.

**REQUIREMENT ADMINISTRATION**

Projects demonstrating that the building is extremely ill-suited to achieving a specific requirement may request that the requirement be modified, or deemed not applicable, at the discretion of the Director of Sustainability.

**HERITAGE BUILDINGS**

Where a project includes heritage retention, heritage components can be exempted from one or all of the requirements of this policy at the discretion of the Director of Planning.