



REFERRAL REPORT

Report Date: October 26, 2020
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Meeting Date: November 3, 2020
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TO: Vancouver City Council

FROM: General Manager, Planning, Urban Design and Sustainability in consultation with the Director of Development Services; and Director of Legal Services

SUBJECT: Updated Zoning Regulations for Zero Emissions Residential Buildings

RECOMMENDATION

THAT the General Manager of Planning, Urban Design and Sustainability be instructed to make application to amend the Zoning and Development By-law provisions for one to three storey residential buildings, as generally set out in Appendix A, and that the application be referred to Public Hearing;

FURTHER THAT the Director of Legal Services be instructed to prepare the necessary amending by-law, generally in accordance with Appendix A, for consideration at Public Hearing.

REPORT SUMMARY

This report recommends amendments to the Zoning and Development By-law, in response to Council direction in April 2020, to develop recommendations to ensure that useable space inside a new home is not reduced as a result of the increased space needed for zero emission mechanical equipment, and to ensure interior height is not reduced as a result of the roof thickness required for additional insulation in typical assemblies.

COUNCIL AUTHORITY/PREVIOUS DECISIONS

In June 2008, Council adopted a set of Building By-law amendments directed at reducing the environmental impacts of new one- and two-family dwellings and introduced new requirements for air tightness and heat recovery ventilation.

In January 2011, Council adopted the revised Greenest City 2020 Plan, including a target that all buildings constructed from 2020 onward should be carbon neutral in operations.

In April 2014, Council adopted the 2014 Building By-law that further increased the energy efficiency requirements for one- and two-family dwellings and laneway houses.

In November 2015, Council approved the Renewable City Strategy, putting Vancouver on a path to achieve 100% renewable energy use before 2050.

In July 2016, Council approved the Zero Emissions Building Plan to achieve zero emissions for all newly permitted buildings by 2030 that included intermediary, time stepped GHG emission and energy efficiency limits in the Vancouver Building By-law (VBBL) for each building type.

In January 2019, Council approved the Climate Emergency Declaration recognizing the local and global threats posed by climate change and directing staff to develop plans to accelerate the City's climate actions.

In April 2019, Council approved the Climate Emergency Response report, which established a 'Big Move' target for all new and replacement heating and hot water systems to be zero emissions by 2025.

In April 2020, Council approved the report on Climate Emergency Requirements for New Housing 3-Storeys and Under, and directed that changes to the Building By-law to decrease carbon pollution and increase the energy efficiency requirements for residential buildings 3 storeys would be required as of January 1, 2022. Industry consultation included concern about the effect on development, and support for the proposed VBBL changes was contingent on accommodations for the increased space for these building features.

In response, Council directed staff to develop recommendations to complement the climate and energy efficiency requirements, to ensure that useable space inside a new home would not be reduced as a result of the increased space needed for zero emission heating and hot water equipment, and to ensure interior height would not be reduced as a result of the roof thickness required for additional insulation in typical assemblies.

CITY MANAGER'S/GENERAL MANAGER'S COMMENTS

The City Manager recommends approval of the foregoing.

REPORT

Background/Context

Climate Emergency

The 2018 IPCC Report on Climate states we must reduce global emissions (GHGs) by 45% before 2030 to reduce the mounting damage from sea level rise, floods and droughts that will severely hinder efforts to tackle poverty, raise living standards and improve prosperity here and internationally. These proposed changes are required if Vancouver's is to reduce its GHG pollution toward this objective.

Big Move 4 in the 2019 Climate Emergency Response directed staff to accelerate implementation of this Plan and introduce requirements for zero emission space and water heating in new buildings. The combustion of fossil fuels for heating and hot water are the largest source of carbon pollution in Vancouver. In 2018, emissions from buildings accounted for 58% of carbon pollution in Vancouver.

Strategic Analysis

The April, 2020 Building By-Law update responds to the Climate Emergency by transitioning to zero emissions space and water heating in residential buildings that are three storeys or less, including single family, duplex, laneway, townhome and small multifamily residential buildings, by 2022. The updates also reduce heat loss from new homes, making the transition to zero emissions space and water heating more affordable.

Adding additional roof insulation to a typical flat roof assembly is expected to add about 0.15 m (6 inches) to the height of new one- and two-family homes, with a similar increase in pitched roof assemblies that include sloped ceilings. Allowing a similar increase in building height would accommodate better insulation without a reduction in ceiling height.

The transition of heating systems to zero emissions heat pumps and other electric equipment will be aided by providing sufficient space to install and maintain these systems. Recognizing the need for adequate floor space for mechanical equipment through a floor space exclusion, in combination with inspections in the field, will help avoid mechanical equipment being placed into compromised spaces.

Staff in the Development, Building and Licensing Services department were consulted to ensure there is no material change in permit processing times due to the proposed changes to the zoning by-law.

Public consultation on the proposed zoning change was undertaken from August 10th to September 4th through the City's online engagement site. 60% of responses agreed with the proposed changes, 27% mostly agreed but had concerns, and 13% of responses disagreed with the changes. Some comments related to the earlier building code changes, with some expressing concern about their cost, and others supporting their ability to address climate change. These building code changes have been approved and are not the subject of this report.

Comments of concern about the proposed zoning change included wanting to see stronger action on climate change, while supportive comments confirmed the ability of the proposed zoning to accommodate the new building features.

Proposed Changes

To address the issues identified by Council in April, the report recommends amendments to the Zoning and Development By-law. These proposed amendments will support zero emissions residential projects by providing additional height for increased roof insulation without reducing interior space, and by providing additional room for zero emissions mechanical equipment that is located in an appropriately designed space, as follows:

1. Height

For projects that provide roof insulation totaling 0.35 m (14 inches) or more, the permitted height of the building is increased by 0.15 m (6 inches).

2. Area

To provide additional space for the installation and proper maintenance of zero emissions equipment, the Director of Planning may conditionally exclude up to 2.3 sq. m (25 sq. ft.) per dwelling unit from floor area.

The proposed height exclusion is intended to ensure that all types of insulation, including the commonly used fiber glass and mineral wool batts that require more space, can be accommodated without a loss of interior volume.

To support the proposed area exclusion, the Director of Planning will provide an administrative bulletin for applicants and staff on the design of the mechanical space.

These proposed amendments are intended to complement the new energy and emissions requirements in the building by-law. Ultimately, these changes will support Vancouver's transition to zero emissions buildings.

Financial

There are no financial implications.

Human Resources/Labour Relations

There are no HR implications.

Environmental

The amendments contained in this report will contribute to meeting the goals and targets of the Climate Emergency response, the Renewable City Strategy, and the Zero Emission Building Plan.

CONCLUSION

Approving the recommendations in this report will help to advance zero emission buildings in Vancouver. Increasing the quality and efficiency of residential construction will help form one part of a multi-pronged response to the global climate emergency.

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**DRAFT By-law to amend
Zoning and Development By-law No. 3575
Regarding Zero Emissions Building Features**

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

1. This By-law amends the indicated provisions of the Zoning and Development By-law No. 3575.

2. In section 10, Council:

(a) adds the following new section 10.15A in the correct numerical order:

“10.15A Floor Area Exclusions for Zero Emissions Mechanical Equipment in Residential Buildings of Three Stories or Less

10.15A.1 For residential buildings of three storeys or less, the Director of Planning may exclude up to 2.3 m² per dwelling unit from the computation of floor area to accommodate zero emissions mechanical equipment for heating or hot water.”;

and

(b) in section 10.18, adds the following new section 10.18.7 in the correct numerical order:

“10.18.7 For residential buildings of three storeys or less, an additional 0.15 m in height is permitted if the roof contains at least 0.35 m of insulation.”.

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