



## POLICY REPORT

Report Date: July 2, 2019  
Contact: Pat Ryan (CBO)  
Contact No.: 604.873.7524  
RTS No.: 12601  
VanRIMS No.: 08-2000-20  
Meeting Date: July 9, 2019

TO: Vancouver City Council  
FROM: Director, Building Group, Chief Building Official  
SUBJECT: New Edition of the Building By-law (2019 Vancouver Building By-law)

### **RECOMMENDATION**

- A. THAT Council approve in principle, a new Vancouver Building By-law (2019) to take effect November 01, 2019 as provided in Appendix B, that:
- i. repeals Building By-law #10908 and its amendments,
  - ii. adopts the 2018 British Columbia Building Code, as amended from time to time, as a base document,
  - iii. retains existing fire & life safety, security, accessibility and energy & water efficiency provisions of the current Building By-law (2014), and
  - iv. incorporates such enhancements and refinements as identified in Appendix A to enhance building and personal security, fire and life safety, affordability, improved building energy and emissions performance in accordance with City priorities and objectives.

FURTHER THAT Council instruct the Director of Legal Services to bring forward, for enactment, the necessary By-laws in accordance with Council's decision in regards to Recommendation A.

- B. THAT subject to Council's approval of Recommendation A, Council approve in principle, a new amending By-law as provided in Appendix C, to enact certain building amendments to the Building By-law to come into effect on January 1, 2020, July 01, 2020, and June 1, 2021 as previously approved by Council under By-laws #12346 and #12103, regarding new requirements for certain water systems and energy efficiency;

FURTHER THAT Council instruct the Director of Legal Services to bring forward, for enactment, the necessary By-laws in accordance with Council's decision in regards to Recommendation B.

- C. THAT Council approve in principle, housekeeping amendments to the Certification of Professionals By-law #6203 to take effect November 01, 2019 as provided in Appendix D, including the replacement of the existing Letters of Assurance with new Letters of Assurance;

FURTHER THAT Council instruct the Director of Legal Services to bring forward, for enactment, the necessary By-laws in accordance with Council's decision in regards to Recommendation C.

- D. THAT Council approve in principle, amendments to the Building Board of Appeal By-law #6135 to take effect November 01, 2019 as provided in Appendix E, regarding membership of the Board and other housekeeping amendments;

FURTHER THAT Council instruct the Director of Legal Services to bring forward, for enactment, the necessary By-laws in accordance with Council's decision in regards to Recommendation D.

### **REPORT SUMMARY**

This report recommends the adoption of a new Building By-law (2019 Vancouver Building By-law) substantially based on the 2018 British Columbia Building Code, with unique to Vancouver provisions to reflect the Vancouver context. This recommendation comes in response to the recent adoption of a new Provincial Building Code as a regulation under the *Building Act* by the Province of British Columbia that took effect on December 10, 2018.

Whereas the current 2014 Building Bylaw (#10908) is based on the previous 2012 BC Building Code, Council's approval to enact a new Building Bylaw (2019) adopting the 2018 BC Building Code as the base document will be reflective of the direction previously set through prior Building By-laws.

The new Provincial Building Code is an incremental improvement over the previous code, and the adoption of the 2018 BC Building Code, as amended, along with the majority of the existing unique to Vancouver provisions, will provide two key outcomes:

1. It will provide the construction industry with an assurance that there is consistency and a common understanding of building regulations across the province, and
2. It will continue the current course of building policy and allow Vancouver to continue its leadership role in constructing safe, healthy, green, resilient, – accessible, and affordable buildings.

In the preparation of this proposal, Staff have harmonized the Building By-law with the BC Building Code where Council-mandated policy allows. Furthermore, in response to industry Staff have removed barriers to Building By-law compliance to facilitate leading-edge industry practices that are increasingly prevalent within Vancouver's building sector.

Throughout the process, Staff have worked collaboratively with the province and other authorities and departments to develop the proposed By-law. Furthermore, the building industry including design professionals, their respective professional associations, and

the umbrella associations for property owners and developers, have expressed general support for the proposed new Building By-law and implementation strategy.

The significant proposals that form part of this Building By-law include:

- Extension of door jamb reinforcement for houses to detached garage to deter break-ins;  
Enhanced mailbox construction requirements for multi-family dwelling with 20 suites or more to reduce the risk of mail and identity theft;
- Adding options to compliance and to reduce costs for construction on sloped sites.
- Introduction of the use of Encapsulated Mass Wood as an option for the construction of residential occupancy separations to support Passive House and highly energy efficient designs;
- Controls on the inclusion of voluntary exterior space heating in response to the climate emergency;
- Introduction of a prohibition on exterior balcony barbecue gas connections to reduce the risk of uncontrolled fire and spread of fire from open flame and increased production of greenhouse gases.
- Revising exterior lighting requirements to simplify language and further reduce nuisance lighting and light pollution.

### ***COUNCIL AUTHORITY/PREVIOUS DECISIONS***

Part IX. of the Vancouver Charter provides Council with the broad authority to regulate the construction of buildings, including structures of every kind, excavations, and everything so attached to a structure as to constitute it real property.

Section 306 of the Charter provides the specific authority for Council to make building regulations in the form of By-laws, of which per Clause 306.(1)(w) specifically allows Council to adopt, by reference in whole or in part and with any change Council considers appropriate, any code relating to fire safety or energy conservation or affecting the construction, alteration, or demolition of buildings. The culmination of such actions has led to the incorporation of many industry-leading amendments to the BC Building Code, resulting in the current version of the Vancouver Building By-law.

The current By-law (#10908) has been amended in recent years, including amendments to the By-law for energy efficiency, and for non-potable water systems and certain water systems, that came into effect on May 15, 2018 and December 18, 2018 respectively, but which included a staged implementation for further amendments January 01, 2020, July 01, 2020, and June 01, 2021. This staged implementation recognized that industry requires time to adjust to these changes.

### ***CITY MANAGER'S/GENERAL MANAGER'S COMMENTS***

The City Manager recommends approval of Recommendations A through D.

## **REPORT**

### **Background/Context**

The new Vancouver Building By-law proposes to adopt the 2018 British Columbia Building Code (BCBC) as a base document. This recommendation responds to the recent adoption of a new Building Code as a regulation under the *Building Act* [SBC 2015] by the Province of British Columbia that took effect on December 10, 2018.

Historically, Vancouver has adopted the British Columbia Building Code or National Building Code of Canada (NBCC) to form the base document for the City's Building By-law since 1973. The first adoption of the British Columbia Building Code in this capacity was in 1982.

This model of Code adoption is consistent with the general agreement between the Federal, Provincial, and Territorial Governments, whom have agreed to use the National Building Code as a common framework for building regulation across the Country. Consequently, the Province of British Columbia has amended the 2015 NBCC, developed by the National Research Council of Canada, by inserting Provincial variations to form the 2018 British Columbia Building Code. Likewise, the Chief Building Official is recommending that unique-to-Vancouver variations to the 2018 British Columbia Building Code be adopted to form the 2019 Vancouver Building By-law.

As stated in the previous section of this report, the Vancouver Charter empowers Council to adopt by-laws to regulate the construction of buildings. The Building By-law is the primary instrument by which this authority is exercised, and it regulates the technical requirements pertaining to the design and construction of buildings, but also the administrative provisions for permitting, inspection, and enforcement of these requirements.

Vancouver Council's ability to adopt its own Building By-law is unique in the Province and also unusual in the rest of Canada. It is an important authority which allows Council the opportunity to be responsive to local issues impacting on building safety, operation and construction much more effectively and quickly than other municipalities. This authority supports the City's ability to achieve key strategic goals through the Building By-law including the following:

- providing excellent and administratively effective services,
- demonstrating leadership in green buildings,
- supporting a sustainable, affordable, livable and inclusive city, and
- supporting a safe and secure city.

Using this authority, the City of Vancouver has become a leader in implementing progressive building regulations for mandatory sprinkler systems, energy efficiency compliance and enforcement processes, rain screen cladding, enhanced accessibility, and upgrades to existing buildings. This has led to subsequent adoption both provincially and nationally.

### **Strategic Analysis**

The City of Vancouver is a progressive jurisdiction with respect to building construction, having implemented industry leading requirements. The ability to enact its own Building

regulations has enabled Vancouver to lead the country in key policy areas. Staff views Council's authority to enact its own Building By-law as an important asset to the City, and have acted on industry recommendations to simplify and clarify requirements and remove redundant and outdated requirements.

In this proposal, City staff have attempted to deal with these concerns to the greatest extent possible, without impacting relevant Council-mandated policies in the development of this proposed Building By-law. Major changes to the Building By-law's foundational concepts require extensive research and resource commitments, which necessarily limit the extent of such changes.

### **2018 British Columbia Building Code and Unique to Vancouver Requirements**

The new BC Building Code is an incremental improvement over the previous code, and it is proposed that the adoption of the 2018 BC Building Code, as amended, along with the majority of the existing unique to Vancouver provisions, will provide two key outcomes:

1. It will provide the construction industry with an assurance that there is consistency and a common understanding of building regulations across the province, and
2. It will continue the current course of building policy and allow Vancouver to continue its leadership role in constructing safe, healthy, green, resilient, accessible, and affordable buildings.

The unique-to-Vancouver amendments are variations from the BC Building Code that become regulatory requirements in Vancouver, responding to the needs identified and targeted by specific policy. The majority of these changes have existed for several Building By-law cycles and have been progressively reviewed and updated. Where opportunities exist to harmonize the Vancouver Building By-law with the BC Building Code, staff have endeavoured to collaborate with the province where current Council-mandated policy allows, so as to provide greater consistency of interpretation across the industry and reduce the need for specialty training of industry and staff.

The unique provisions of the Vancouver Building By-law have been developed with consideration of the full construction cycle – including the design, implementation, and verification of a building. Unlike the Federal or Provincial documents which are policy instruments relying on local authorities to implement and enforce, City staff are involved throughout the construction process and have direct feedback on the effectiveness of the current requirements.

The proposed substantive changes from the 2018 British Columbia Building Code and the 2014 Vancouver Building By-law may be categorized within to the following thematic areas:

1. Administrative & Procedural Requirements
2. New Construction and Alterations Requirements
3. Fire and Life Safety Requirements
4. Resilient, Healthy, & Inclusive Buildings

The general substance of the proposed amendments is described in the following sections, with a summary of the changes included within Appendix A of this report.

### **Administrative & Procedural Requirements**

The administrative requirements of the Vancouver Building By-law provide the legal framework for the administration of the By-law. The intentions of this section have not been altered with this edition of the Vancouver Building By-law. However, to improve usability for end-users, incremental adjustments have been proposed to simplify the By-law and better align the By-law language with existing processes.

The proposed changes are intended to reduce barriers and support the City's strategic goal towards streamlining requirements and associated administrative processes wherever possible.

**Delivery of Legal Orders:** Recent experiences with enforcement actions have revealed areas of weakness in current regulations with respect to the method of delivery of legal Orders as the requirements cannot easily be demonstrated as having been fulfilled. Staff are recommending minor alterations to these requirements to reduce the risk of the City being unable to enforce By-law requirements according to recommendations from City prosecutor.

**Work without Permit:** The current penalty for work without permit is double the permit fees subject to a cap. However, the existing Work without Permit penalties do not provide sufficient deterrent against this behaviour given the sharp escalation of the cost of construction over the last decade. It is now typical for the contractual cost of financial penalties and the incidental cost to the constructor to significantly exceed the maximum penalties that may be imposed under the Building By-law. This situation has led to persons habitually failing to comply with the requirements of the Building By-law thus bringing the By-law into disrepute. The cap on penalties for work without permit is proposed to be revised upwards from \$5,000 to \$20,000 for violations of this By-law to bring this in better alignment with the current costs of construction.

### **New Construction and Alterations Requirements**

Proposed changes to the Building By-law targeting requirements for new buildings to facilitate the understanding and subsequent application of the existing requirements. These changes to the Building By-law take the form of clarifications, the addition of options, and the removal of a conflict.

**Vestibule Requirements** - In 2014, one of the few items Vancouver chose to harmonize between the NECB and ASHRAE 90.1 energy performance standards was the design requirements of vestibules. Both standards have changed their requirements from their previous versions, and so the proposed By-law change now excludes the vestibule requirement from within the newest NECB energy performance standard so as to not conflict with the vestibule requirement within the Vancouver Building By-law. To further assist By-law users, an Appendix Note has also been added to clarify the maximum vestibule depth, and the longstanding process in place for determining possible relaxations to the requirement.

**Recognize Passive House** - Although Passive House designs have been encouraged by Vancouver in recent years due to their better-than-code energy and emissions performance, submissions still require proof of compliance with the official energy compliance paths within the Building By-law. The inclusion of a specific “deemed to comply with” option for Passive House designs to meet the energy requirements of the Building By-law will allow applications to be submitted without duplicate energy documentation.

### **Exterior Space Heating**

Balconies (open & enclosed) – To counter inconsistent applications from industry at building permit application stage, this proposed language clarifies the treatment of residential balconies, whether open or enclosed, as unconditioned exterior spaces without provision for heating or cooling. This clarification specifically targets where industry is most inconsistent with Planning’s original intentions when Enclosed Balconies were introduced.

Food & Beverage Establishments - Permit applications show an increased trend to add exterior patios to food and beverage establishments, and the proposed by-law options will now allow only non-fossil fuel systems, with automated controls to prevent use during warmer weather, to prevent overheating, and to minimize the use of heaters in unoccupied areas or zones. Proposed new language within the Building By-law provides alternative paths to plumbed and portable fossil-fuel heating systems. This is not intended to be a requirement to provide exterior heat, but a restriction on the voluntary installation of an exterior heating system. The allowance is narrow in scope and highly controlled to minimize energy use and GHG emissions.

Balcony Gas Connections – Gas connections on balconies are not expressly allowed within the code but there is no language regulating them either. Staff are seeing an increase in building permit applications with designs incorporating gas services to balconies. The CBO recommends that Council regulate this growing trend on the basis of fire safety, liability and Council’s recent declaration of a Climate Emergency. Traditionally, a gas connection would have been used to serve a barbeque, however these connections are now being used on a range of newer products available on the market that produce open flame at consumption rates double and triple the use of a BBQ.

This is a safety concern since it dramatically increases the likelihood of exterior cladding fires, particularly for partially enclosed balconies, and secondly, indirectly condones the increased use of these products, directly increasing energy use and GHG emissions.

The installation of exterior sprinklers at balconies to address the increase fire risk and the installation of gas lines will increase construction costs which counters Council’s affordability goals as well. Allowing gas connections, in an era when portable products producing high intensity open flames are available to the general public, will inevitably increase potential for liability.

Other than for the purpose of cooking, the creation of open flame is generally prohibited by the Fire By-law and there is increased concern from the fire department about potential for fires on balconies being fed with an endless fuel source. Should a fire occur, the balcony shut-off will be inaccessible while the next nearest shut-off is likely within the parkade and will result in an extended burn time to use all the gas within the supply line.

In view of the fire safety concerns and City Council's Climate Emergency declaration, Staff believe it is prudent to regulate this growing trend. The proposed language will allow gas connections to service open balconies of One and Two Family Dwellings, but because of increase fire risk, will not allow gas connections at balconies of other archetypes, such as residential high rise towers and apartment buildings. Staff recognize that one balcony fire in a multi-family building can easily spread vertically to balconies above and potentially extend into the inside of the dwelling units. Hence a larger number of people will be impacted and may be displaced from their homes. The proposed language will maintain fire safety levels by eliminating unlimited operation of exposed fire pits and fire tables on balconies throughout the City, while supporting Council's objectives in the areas of energy use, GHG emissions, and affordability, for the lifespan of the these buildings.

Existing Buildings: Building codes, both nationally and provincially, have generally approached existing buildings from a static perspective in that the level of safety of existing construction is allowed to remain as long as the level of performance of the building is not reduced. This creates problems when changes occur that introduce a non-conformity with the current building codes since it unclear what actions should be taken. To by-law users, Vancouver has taken a more progressive approach by acknowledging that existing building conditions may be retained, and identifying which upgrades and improvements must be undertaken by the building owner to extend the life and usability of their buildings.

Vancouver's approach to upgrading provides the industry with clarity and is generally perceived as acceptable. However, some industry stakeholders have expressed concern regarding occasional inconsistent application of the upgrade requirements and limited cases where the upgrade trigger mechanism has led to more extensive upgrading than may be practical as a consequence of non-linear construction cost considerations.

To address these concerns, Staff recommend minor revisions to the upgrade provisions of the Vancouver Building By-law to improve clarity and consistency, and provide additional specific paths for common scenarios and conditions. If approved by Council, the existing building provisions in the proposed Building By-law will be simpler to follow and accommodate more reasonable results.

The proposed existing building changes are summarized below:

**Consolidate 1&2 Family Housing Renovation Requirements** - To simplify the determination of upgrade requirements for 1- & 2- family dwelling units, the upgrade provisions have been streamlined, by fully separating the renovation language related to houses, and consolidating these into a single By-law Article.

This consolidation reduces references to other sections of the Building By-law and from the generalized upgrade trigger model. The upgrade results remain the same, but the consolidation makes it easier to follow for persons not generally familiar with the Building Bylaw. Previously, renovations requirements for 1- & 2- family dwellings were largely separate, but required users to reference the upgrade triggers mechanism for certain specific scopes of work such as: change of major occupancy or alterations creating more dwelling units. Likewise various other upgrade requirements, applicable to houses, were scattered in other sections.



In addition, energy upgrade triggers based on cost of construction are proposed to be revised upwards and consolidated to reduce the impact on builders and simplify the application energy improvements. The energy report will now be triggered for work of \$20,000 or more (up from \$5,000), and the remainder of energy upgrades will all occur at \$75,000 or more (up from a step-wise implementation starting at \$5,000 to \$50,000). This change is more in line with current construction requirements, and makes it easier for designers and builders to understand.

**Update the Upgrade Trigger Mechanism** - The City's current Building By-law contains clear upgrade requirements for existing buildings as they are renovated. This ensure that

- a.) developers, builders, and designers are clear what the expectation are upfront in the development process,
- b.) city staff reviewing permits are clear on what the minimum requirements are, and
- c.) ensures that occupants of a building can continue to expect that alterations extending the life of a building, as well as its efficient operation, will also be accompanied by improvements to safety and health.

In this regards, Vancouver's longstanding process is an "upgrade trigger mechanism" that introduces clarity, by ensuring these improvements are scaled to the scope of work covered by the associated building permit, and not requiring more extensive work than needed to accommodate an alteration or change in use to a building.

Staff recommend that Council accept minor updates to the scope of project work in the "Upgrade Triggers Mechanism Model" to reduce the impact on designers and builders.

Proposed Structural changes include the addition of a new performance option to the 'S3' level of structural upgrade. This releases designers from the need to conform explicitly to prescriptive measures that may not be economical or effective in a variety of circumstances. No further changes are proposed in this area.

Proposed Energy changes include the addition of options to target exterior space/patio heaters, arguably the most GHG-intensive spaces within the City. Adding upgrade options focusing on simple controls to alleviate overheating and unnecessary use during warmer weather or unoccupied periods, or the heating of unoccupied sections of larger patios, will provide significant benefits towards reduced emissions with minimal effects on operators and patrons. These upgrades are being added to the existing list of options within the Upgrade Trigger Mechanism which means there is no associated mandatory cost, unless the option is voluntarily chosen as an upgrade.

**Expand Alternative Acceptable Solutions** - Since the original implementation of the Existing Buildings Upgrade Trigger Mechanism, scenarios have been identified where specific conditions were problematic or the interpretation was inconsistent. Staff are therefore proposing introducing additional options to address existing conditions that are highly impractical to modify, such as existing stairs, window openings, and floor fire separations by adding more pathways to compliance through codified solutions that would be applicable to existing construction.

Making these common solutions publically available will negate the need to hire consultants for individual submissions. This proposal will therefore reduce cost of

construction and decrease delays to further assist industry in delivering affordable housing and commercial spaces.

**Harmonize Renovation Language** - Introducing stricter versions of energy standards necessitates the introduction for guidance on how best to renovate parts of buildings designed and constructed to the previous standard. Typically, larger renovations simply meet the requirements of the newest version, however this is not always practical, particularly for smaller renovations projects.

Staff are recommending the incorporation of renovation language consistent with the ASHRAE energy standard referenced by both Vancouver and the province since 2015. This renovation language will support the other new standard (NECB) and new compliance paths (ZEBP) but equally importantly, achieves a common understanding with industry on how to address alterations to existing buildings.

In late 2018, this approach was accepted by both industry and the province resulting in Vancouver co-writing the “Alteration Language Supporting NECB 2015” document with AIBC (Architectural Institute of BC) for this specific purpose. The wording is identical to the wording from the ASHRAE standard and has the approval of ASHRAE who recognized how jurisdictions with more than one energy standard and/or compliance path would benefit with a harmonized approach to renovations. The renovation language would be referenced within the Vancouver Building By-law while residing within its Appendix.

For additional energy requirements within the Vancouver Building By-law that lie outside the referenced energy standards and alternate compliance paths, renovation language has been provided for clarification as to when the full requirement is necessary and when specific relaxations are applicable. These relaxation provisions are consistent with how relaxations are allowed within the renovation language of the energy standards and will assist smaller renovation projects avoid requirements more aptly applicable to larger projects.

### **Fire and Life Safety Requirements**

With the newer model BC Building Code inclusion of many new fire and life safety requirements, previous unique-to-Vancouver provisions are no longer necessary and therefore have been removed.

Likewise, many unique-to-Vancouver fire and life safety requirements have been updated to better integrate with the BC Building Code language, while providing greater clarity with respect to existing unique to Vancouver requirements. Staff are recommending that Council accept the proposed simplifications and harmonized By-law language to reduce barriers to compliance.

Further to the broad objective to harmonize with provincial requirements, staff have also remained sensitive to key concerns expressed by industry. Staff are therefore proposing specific measures to reduce barriers to compliance in key areas where the industry has expressed frustration. Should Council accept these recommendations, certain key fire & life safety provisions of the BC Building Code, and existing unique to Vancouver requirements, will be altered to address these needs.

Construction on Sloped Sites: A substantial proportion of Vancouver buildings are constructed on sloping sites. This is challenging for industry to address as this may lead to buildings being assessed as one or more storeys higher than if measured at the main entry, particularly for larger developments that extent across an entire block. This could lead to the imposition of high-rise measures or other costly features for buildings constructed on sloping sites.

As a consequence, Staff are recommending targeted changes to the current By-law language to address this industry concern. These changes will extend the National provisions for a 4 storey stepped building concept, to allow physically separated sections of unrestricted building height to be assessed separately for the purposes of determining the height of the building, as long as specific mitigating features have been provided, and it can be demonstrated to the Chief Building Official's satisfaction (in consultation with the Fire Chief) that firefighting response will not be compromised.

Further, an alternative set of solutions to the current high building requirements are proposed for buildings up to 6 storeys in height that are constructed on sloped sites. This will provide an option to designers to proceed with a scaled response to mid-rise developments that might otherwise be required to meet the full requirements for high buildings, if appropriate in the context of their design. These measures are generally consistent with the proposals currently being accepted as part of individual 'Alternative Solution' proposals, but which require a significant degree of senior staff involvement.

If these proposals are accepted by Council, this will establish a clear benchmark for performance that will lead to a faster and more consistent approach by industry, and reduced staff involvement.

Fire Containment in Buildings: The rapidly increasing density of the last few decades has led to design forms that are increasingly larger, while mixing commercial uses with residential occupancy. This is being supplemented by recent changes in the 2018 BC Building Code to allow increasingly larger combustible buildings with potentially more hazardous occupancy types.

To accommodate this shift, Vancouver has for many years required the residential uses be separated from commercial uses by means of concrete or masonry construction to limit the potential for fire spread or other impact of commercial use on the residential suites. This has been an important risk reduction strategy for the City, but has also led to complementary benefits through the reduction of interactions between the residential and commercial portions of a building. An additional benefit is the requirement reducing impact on residents from any fire in the commercial area reducing displacement of residents.

In recent years, the required concrete separation for residential mixed-use buildings has been a challenge for projects seeking Passive House certification. Designers have indicated that new regulations allowing increased use of combustible construction are constrained by the requirement that concrete construction be used. This causes the highly energy efficient light frame wood construction to be connected to heavier construction that does not provide the necessary thermal performance making Passive House certification more challenging to achieve.

If council directs, the Vancouver Building By-law will be brought forward with changes to allow a limited application of Encapsulated Mass Wood construction, similar to the

proposed 2020 National Building Code requirements, for separations between the residential occupancy and remainder of building. This will also provide the construction industry with an early introduction to mass timber construction and expand awareness and eventually industry capacity in this area.

Recently, as part of the 2018 British Columbia Building Code, the province has expanded the combustibile construction provisions to allow Residential and Office wood construction up to 6 storeys, about 18% larger than allowed in the previous code cycle. In addition, the province has provided exemptions to allow potentially higher hazard occupancies in the 1<sup>st</sup> and 2<sup>nd</sup> floors.

Early discussions with industry designers have shown a general concern that these regulatory changes are potentially subject to abuse, and could allow construction in excess of the limitations of conventional construction while placing an unnecessary burden on the local fire department.

Recognizing the concerns raised by industry, Staff are recommending specific changes to the Vancouver Building By-law to address the foregoing need. The proposed changes will allow developers to take advantage of the increased construction size enjoyed by the remainder of the province, but with construction features ensuring an appropriate level of fire and life safety is in place. This will consist of increased fire compartmentation which limits the development of untenable conditions to the compartment of origin, and slows any potential fire spread while providing extra time for first responders.

Dwelling Unit Egress: An area of frequent concern for designers is egress from rowhousing and townhouse arrangements. Current requirements for a single means of egress from a dwelling unit match the national and provincial requirements, and mandate that the means of egress be within 1.5 m of grade. However, in the sloping site context of Vancouver, this is not readily achievable since this constrains the maximum elevation of basement suites, or leads to stepped floor slabs, or both. This greatly affects livability and accessibility of residential suites, and increases construction costs due to complex site geometry.

Staff are recommending new options for residential suite egress that will allow a single means of egress from a two storey unit, provided the travel distance is limited to not more than 18 m, and that a single means of egress is allowed from a three storey residential unit provided that that egress is directly to the first storey. This builds upon similar requirements in Ontario who have implemented similar requirements.

Exit Exposure: In the 2014 Building By-law the use of dedicated sprinkler protection as a means to protect occupants from exposure to openings in the exterior walls of buildings was introduced as a new provision for large buildings. This was introduced as a limited application for exits serving up to 10 persons without a submission by a specialty consultant through the alternative solution process. This was later expanded in 2016 to accommodate smaller projects that did not have a full design team.

These incremental changes have been well received by industry, and Building Review Staff experience over the last code cycle has shown that industry has responded well with a minimum of difficulty. Staff are therefore recommending a further expansion to allow the use of dedicated sprinkler protection for all exit exposures. This will further reduce the need for costly alternative solution applications, while leveraging the life safety benefit of sprinkler systems.

## **Resilient, Healthy, & Inclusive Buildings**

Staff is proposing specific improvements in the new Building By-law, that if approved by Council, will promote greater well-being for building occupants, including personal security items.

Personal Security Improvements: Staff are proposing improvements to the Building By-law in the area of Personal Security as follows:

**Door Jamb Reinforcement** - In the 2014 Building By-law, requirements were introduced to reinforce the door jamb of a home's principle entry. Staff are proposing this requirement be expanded to ancillary detached storage garages serving one- and two-family dwellings as this is a low cost improvement that significantly reduces risk of break-ins. These requirements were developed in consultation with the Vancouver Police department, and respond to an increase in residential break and entries which in 2016 comprised 37.4% of all break and entry crimes<sup>1</sup>.

**Mailbox Construction** - Staff are proposing minimum construction requirements applicable to multi-family residential complexes with 20 or more suites. These requirements are intended to apply to letter mail delivery, and correspond with the Canada Post recommendations for the construction of Multi-family mailboxes. This is intended to reduce the risk of mail and identity theft, the cost of which is estimated to be over \$12 million annually in Canada<sup>2</sup>.

Revise Exterior Lighting: In a 2017 amendment to the Building By-law, exterior lighting requirements were introduced to coordinate with Bird Friendly development guidelines and energy efficiency requirements. These were based on absolute illumination levels which are inherently hard to enforce due to variations in ambient lighting. Staff are therefore recommending clarifying updates based on lighting fixture output and lighting location which are more easily enforced.

The revised exterior lighting requirements will further reduce nuisance lighting, reduce energy use, reduce night-sky glow, and align with the broader Outdoor Lighting Strategy led by the Planning, Urban Design and Sustainability Group, and the Engineering Group.

Revise Exterior Vent Discharge Locations: In order to address noise and exhaust concerns, Council have previously accepted changes to the By-law to restrict the venting of mechanical equipment into side yards in one- and two-family neighbourhoods. However, this can be costly and challenging for home owners to implement, as most existing 1- and 2-family house designs do not have a clear path from the mechanical space (usually in the basement) to the rear or roof of the building. The City therefore commissioned a study by a local consulting engineering firm to review the technical challenges associated with side yard venting.

The subsequent information and recommendations provided in this report have been used to develop a proposal for new regulations to address these challenges. Should

---

<sup>1</sup> Vancouver Police Department Crime Statistics (2017)

<sup>2</sup> Vyhnač, C. (2018Sept04). The painful price of identity theft. The Toronto Star.

<https://www.thestar.com/life/advice/2018/09/04/the-painful-price-of-identity-theft.html>

Council approve this recommendation, the applicable regulations will expand the current venting option from the existing unrestricted options of venting into the rear yard or through the roof, to allow some side yard venting provided that it complies with the proposed regulations and the Noise by-law.

Maintain Accessibility Requirements: For many years the City of Vancouver has demonstrated exceptional leadership in building accessibility. The current unique to Vancouver accessibility requirements for apartment buildings exceed those of National and Provincial Building Codes. Both the NBCC and BCBC require only access from the street to the main entrance of an apartment building and access to an elevator from either the parking area or the main entrance. Vancouver's "enhanced accessibility" provisions look beyond entry to the building, and further require that access be provided from the street and designated accessible parking areas, to all apartment units and common amenity areas of a building where an elevator and a public corridor are provided.

With the adoption of the 2014 Building By-law, Vancouver introduced a number of new features in dwelling units that allow new residential units to be adapted over time as well as allow for visits from persons with disabilities. Whereas challenges remain, particularly with respect to the impact of lost floor area within residential suites, it must be noted that Vancouver requirements exhibit exceptional leadership while provincial and federal provisions are still voluntary and not as extensive as those proposed for this By-law.

It is proposed that the existing requirements for accessibility be carried forward and overlaid over the BC Building Code requirements. This will maintain the City's leadership role to provide inclusive building spaces and harmonize with provincial requirement to facilitate industry uptake.

### ***Public/Civic Agency Input (if applicable)***

The proposed new Building By-law has been developed based on feedback from industry through standing committees, and several City of Vancouver departments with interest in building policy, including: Sustainability, Planning, Development Services, Vancouver Fire and Rescue Services and Engineering Services, as well as the Vancouver Police Department.

There has also been regular discussion and feedback during the past code cycle between staff and industry and ongoing participation with industry organizations, to understand the challenges and difficulties faced by the building industry. Several new unique to Vancouver requirements proposed in Appendix A for the new By-law reflect Vancouver's ongoing outreach to enable more efficient and effective design and construction.

In addition to this ongoing approach, the Chief Building Official's office has engaged in extensive outreach to solicit feedback from industry with respect to the new Building By-law including any substantive new unique to Vancouver provisions or variations from the BC Building Code. This outreach includes key stakeholders from the construction industry, designers and property management associations, and design professionals including the Architectural Institute of BC (AIBC), the Engineers and Geoscientists of BC (EGBC), the Building Owners and Managers Association of BC (BOMA BC), Urban Design Institute (UDI), and Greater Vancouver Home Builders' Association (GVHBA). Feedback from these discussion has indicated general support from the building

community, and Letters from key institutions responsible for the implementation of building by-law requirements have been included in Appendix F.

***Implications/Related Issues/Risk (if applicable)***

***Financial***

There are no direct financial implications expected from the proposed new Vancouver Building By-law. Reviews of building permits, permitting, and enforcement of the proposed new Building By-law are proposed to be implemented through the existing resources allocated for this purpose.

The proposed Vancouver Building By-law amendments are generally of negligible cost impact to existing construction, and may provide substantial cost relief to many projects in circumstances where expensive features such as fire fighters elevators and emergency power generators would have been required but would have been of limited benefit. The changes represent a continuation of the direction set by senior levels of government, and previous Council initiatives and priorities, and have been previously evaluated through other Policy changes or by senior levels of government.

Life and fire safety changes reflect existing building policy, and are not expected to increase developer and builder costs. Furthermore, a number of changes address industry requests and are either cost neutral or lead to potentially significant cost reductions, particularly for mixed and multi-family dwellings, due to the creation of additional new pathways to achieve Building By-law compliance and the addition of a number of common alternative solutions into the Vancouver Building By-law as acceptable solutions.

The minor changes related to security in multi-family dwellings are very modest, and can reasonably be borne by developments of modest size. When viewed in the context of the benefit they provide and the overall cost to purchase a dwelling unit in moderate sized multi-family dwelling, the increased cost is negligible.

***Environmental***

The Vancouver Building By-law requires all new buildings to comply with energy and water efficiency requirements. It further requires that existing buildings incorporate an energy upgrade within any proposed renovation. This is a potent tool to reduce the environmental impact of new construction and the production of greenhouse gases. The proposed addition of limited allowances for new exterior space heating systems, and upgrade options to existing exterior heating systems, has the potential to significantly improve some of the most GHG intensive spaces within the City.

This approach is consistent with the Zero Emissions Building policy, and corresponds with the provincial strategy to do the same.

Energy Upgrades: No significant changes are proposed as part of the proposed new Vancouver Building By-law to existing energy efficiency requirements. If the proposed By-law is accepted by Council, the proposed By-law will carry forward the current 2014 Vancouver Building By-law requirements which already consider specific improvements as part of the Zero Emissions Building plan that were

introduced in late 2014 as an amendment with a staged implementation starting in March 2018, and June 2019.

The proposed carry-over changes also included buildings containing commercial use for buildings of 7 storeys or more, containing residential occupancies with an implementation date of June 2021, as requested by the Construction industry through the public consultation process. This introduced new energy efficiency requirements based on a performance based model, which is consistent with the outcomes of the Provincial 'Energy Step Code' which was originally designed upon Vancouver's long term rezoning projections, and introduced in the latter half of BC's Building Code cycle.

The Provincial approach to energy efficiency accommodates the various needs and capacities of municipalities across the province by introducing a voluntary opt-in model with a series of performance tiers that municipalities can choose to adopt. This Provincial approach was developed with Vancouver's assistance who subsequently adopted the performance targets into the Vancouver Building By-law.

Consequently, should the proposed new Vancouver Building By-law be approved by Council pursuant to Recommendation A, it is further proposed by staff that an amending By-law provided in Appendix C also be approved to fulfill the City's commitment to industry.

Harmonize Renovation Language: The introduction of consistent renovation language applicable across all energy standards and compliance paths provides a clear roadmap to builders and designers who are renovating, updating, or constructing tenant improvements to existing buildings and spaces. The introduction of this language will reduce risk of every kind as it improves affordability, maintains industry knowledge and capacity while maintaining existing processes for permit application, review and issuance.

For smaller buildings, staff are proposing to introduce a trade-off system for small buildings (Part 9) to increase flexibility for existing building energy improvements.

## ***Legal***

The new Building By-law is a continuation of existing Council policy and is not expected to expose the City to any further risk. The Building By-law contains an extensive section devoted solely to administrative and procedural requirements, which clearly identify the City's role and obligations. No significant changes from the previous Building By-law (#10908) are proposed, and all aspects of the Building By-law have been reviewed with the City's Legal department as a matter-of-course.

## ***Supporting Actions***

If Council approves the proposed new Building By-law, it is proposed that updates to the Certification of Professionals By-law and Building Board of Appeal By-law be enacted in order to fully support the new Vancouver Building By-law.

## **Amending the Certification of Professionals By-law**



The Certified Professional program is an alternate permitting process that leverages specially trained Registered Professionals to undertake plan review and field review of complex buildings. This program originated as a joint program between the City of Vancouver and Surrey with support from the Engineers and Geoscientist BC (EGBC) and the Architectural Institute of British Columbia. This program is widely regarded by the industry as being very successful, and the general administration of the program has since been turned over to EGBC and AIBC.

Letters of Assurance are required by the Certification of Professionals By-law that enable Certified Professionals (CPs). These were substantially revised in the last Building By-law cycle. However, in order to align with the new Building By-law, these new letters of assurance require updates to align references in the existing letters with the new Building By-law. Staff are therefore recommending that the Certification of Professionals By-law be revised concurrently with the new Building By-law to include new letters of Assurance and housekeeping changes as necessary to align with the Building By-law as provided in Appendix D.

### **Amending the Building Board of Appeal By-law**

The Vancouver By-law includes an appeal provision where an applicant feels a decision is unreasonable. Although very rarely used, the Building Board of Appeal provides an important oversight mechanism in the Vancouver Building By-law.

Due to the highly technical nature of the Building By-law and the rapidly changing construction industry, Staff recommend amendments to the By-law to enhance the membership of the Building Board of Appeal by including persons with expertise and technical training in building design and construction, fire and life safety, or construction law to address the decisions of the Chief Building Official as they pertain to the technical and administrative matters of the Vancouver Building By-law, and subsequent impacts on the registered professionals who are legally liable and professionally responsible for a building's design.

### **Implementation of the New Building By-law**

Should Council accept the recommendations in this report, Staff recommend that the proposed Building By-law become effective November 1, 2019. The design and construction process of building is a potentially lengthy process, and it is recommended that sufficient time be provided for industry and City staff to become familiar with the new requirements and update project designs and permit application documentation where necessary.

In the past, Council has generally provided a transition period of three to six months between the existing and new Building By-laws which is consistent with recommendations from the Municipal Insurers Association. This transition time will also allow reasonable time for City staff to fully familiarize themselves with the changes and respond to any industry requests for additional information before the new By-law becomes effective. This will also allow time for staff to work with a publisher to publish a portable electronic version of the Building By-law and a physical copy of the By-law for industry.

Pending Council acceptance of these recommendations, staff will develop a training program in partnership with key stakeholders on the proposed changes to the new Building By-law. Staff will continue ongoing outreach with key stakeholders and local educational institutes to facilitate training and enhanced comprehension as required to support the new Vancouver Building By-law.

## **CONCLUSION**

This report proposes that Council accept the recommendations that would result in the creation of a new Vancouver Building By-law to further advance a number of key Council and City goals such as improved administrative services; continued leadership in efficient and resilient buildings with improved affordability and liveability, within a more inclusive city where people feel safer and more secure.

Significant consultation and engagement included industry stakeholders, and advisory committees, to develop a balanced building regulation with improved impact on affordability while maintaining or improving fire and life safety, accessibility and green building leadership.

This report recommends new Letters of Assurance for Certified Professionals that address liability concerns expressed by the Architectural Institute of BC and the Engineers and Geoscientists of BC for practicing Certified Professionals, while at the same time protecting City interests.

\* \* \* \* \*

• **Appendix A – Summary of Substantive Changes in the 2019 Building By-law from the 2018 BC Building Code**

Item	Proposed Change
Delivery of Legal Orders	Minor changes related to the mechanisms of the delivery of a legal order have been revised as recommended by legal services to reduce the City risk exposure.
Work without Permit (Minimum and Maximum Penalties)	To promote compliance with safety and administrative requirements, penalties have been revised. The minimum and maximum fines to be raised to \$500 and \$20,000 respectively as contractual penalties often exceed the fines or penalties that can be assessed under the Building By-law.
Vestibule Requirements	Exclude the vestibule requirement from within the newest NECB energy performance standard so as to not conflict with the harmonization of the existing vestibule requirement within the building by-law.
	Add an appendix note to clarify maximum depth for vestibules, and the process in place for determining possible relaxations to the requirement.
Recognizing Passive House	Officially recognizing Passive House within the Building By-law making things much easier for applicants and permit reviews.
Exterior Space Heating Restrictions & Allowances	To alleviate one of the more misunderstood areas, the proposed clarification confirms that balconies are exterior spaces and are to be unconditioned in accordance with Planning's long-time intention.
	For food and beverage establishments the proposed options are alternative paths to plumbed and portable fossil-fuel exterior heating systems.
Balcony Gas Connections	To balance fire safety with cultural norms, proposed language allows gas connections to serve open balconies of One and Two Family Dwellings but not balconies of other archetypes, such as residential towers.
Consolidate 1&2 Family Housing Renovation Requirements	Consolidate renovation requirements for 1- and 2-family dwellings into a single section for clarity and easy-of-use.
	Energy Upgrade triggers based on cost of construction will be revised upwards and consolidated to reduce the impact on builders, and simplify the application
Update the Upgrade Trigger Mechanism	Reclassify the relocation of demising walls from a Major Renovation status to a Minor Renovation status, incurring far less onerous upgrade requirements.
	Update the structural 'S3' upgrade level to add a performance based structural improvement option to the prescriptive option.
	Add energy and emissions upgrade options to encourage existing exterior space heating systems to become more efficient and less detrimental to the environment.
Expand Alternative Acceptable Solutions	Create a new path to allow existing stairs in a building to be retained with limited life safety improvements.
	Create an additional new pathway to assist designers & builders to retain existing windows which vary slightly from the original configuration.

Harmonize Renovation Language	Provide renovation language to support the newest NECB energy standard and ZEBP compliance pathway, where presently none exists, and in such a way as to be consistent with the renovation language already in place and in use by industry and enforced by the City since January 2015.
Construction on Sloped Sites	Add new option to consider the height of physically separated components of a building separately.
	Add new alternative option to high building measures on sloped sites where buildings are nominally six storeys but exceed 18 m in height.
Fire Containment in Combustible Buildings	Add Encapsulated Mass Wood option for the separation of residential components of the building from the remainder of the building.
	Increase compartmentation to increase fire and life safety for occupancies other than residential or office use in combustible construction.
Dwelling Unit Egress	Add new option to allow two storey suites with a single means of egress if travel distance is limited.
	Add new option to allow three storey suites with a single means of egress with direct access to the ground level
Exit Exposure	General use of sprinkler protection for all exit exposure conditions.
Door Jamb Reinforcement (Detached Residential Garages)	Expand existing requirements for door jamb reinforcement to detached storage garages to resist break and entry.
Mailbox Construction Requirements (Multi-Family Residential Buildings)	New minimum construction requirements for common mailboxes serving 20 residential suites or more to resist theft.
Revised Exterior Lighting	Revisions to exterior lighting requirements to facilitate design and enforcement of the exterior lighting of residential buildings.
Revised Exterior Vent Discharge Locations	Revisions to exterior appliance vent locations based on recent technical information.
Maintain Accessibility Requirements	The existing accessibility requirements will be maintained, but will be harmonized with the new BC Building Code voluntary adaptability requirements to increase the degree of uniformity.

***Appendix B – Vancouver Building By-law (2019)***

**DRAFT By-law to regulate the construction of buildings  
and related matters**

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

**SECTION 1  
BUILDING BY-LAW ESTABLISHED**

**SHORT TITLE**

1.1 The name of this By-law, for citation, is the “Building By-law”.

**PARTS OF BY-LAW**

1.2 The Building By-law shall consist of two parts: Book I (General) and Book II (Plumbing Systems) which are attached as Schedule 1 and Schedule 2.

1.3 The table of contents for this By-law is for convenient reference only, and is not for use in interpreting or enforcing this By-law.

Appendix C -By-law to amend the new Building By-law

**DRAFT By-law to amend the Building By-law No. \_\_\_\_\_  
Regarding New Requirements for Certain Water Systems and Energy Efficiency**

*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 Building By-law \_\_\_\_\_.
2. In Book II, Division B, Council adds a new Article 2.2.11.6. as follows:  
  
    **“2.2.11.6. Cooling Towers**  
    (See Article 6.3.2.15. of Division B of Book I (General) of this By-law.)
  - 1) An operating permit shall be obtained for the installation of a cooling tower, or the retention of an existing cooling tower.
  - 2) The Chief Building Official shall be notified within 30 days of any changes to the information that was last provided to the City with regard to the operating permit, in the form prescribed by the Chief Building Official.
  - 3) If a cooling tower is removed or its use is permanently discontinued, it shall be safely drained, thoroughly sanitized, and the make-up water line shall be disconnected and capped.”.
3. In Book II, Division B, Council adds a new Article 2.2.11.7. as follows:  
  
    **“2.2.11.7. Indoor and Outdoor Decorative Water Features**  
    (See Article 6.3.2.16. of Division B of Book I (General) of this By-law.)
  - 1) An *operating permit* shall be obtained for the installation of an indoor or outdoor decorative water feature, or the retention of an existing indoor or outdoor decorative water feature, including green walls with an integrated water system, except for an indoor or outdoor decorative water feature in a *building* used exclusively for residential occupancy containing no more than four principal *dwelling units*.
  - 2) The *Chief Building Official* shall be notified within 30 days of any changes to the information that was last provided to the *City* with regard to the *operating permit*, in the form prescribed by the *Chief Building Official*.
  - 3) If a decorative water feature is removed or its use is permanently discontinued, it shall be safely drained, thoroughly sanitized, and the make-up water line shall be disconnected and capped.
  - 4) Where an outdoor decorative water feature is provided as an auxiliary system to a *building*, then the outdoor decorative water feature shall be considered part of the *building* for the purposes of this Article.”.
4. In Book II, Division B, Table 2.8.1.1. Objections and Functional Statements, Council adds:

“

2.2.11.6. Cooling Towers	
(1)	[F40,F41,F43,F46,F81,F82,F130-OS3.4,OH1.1,OH2.2,OH5,OP5,OE1.2]
(2)	[F40,F41,F43,F46,F81,F82,F130-OS3.4,OH1.1,OH2.2,OH5,OP5,OE1.2]
(3)	[F40,F41,F43,F46,F81,F82,F130-OS3.4,OH1.1,OH2.2,OH5,OP5,OE1.2]

”.

5. In Book II, Division B, Table 2.8.1.1. Objections and Functional Statements, Council adds:

“

2.2.11.7. Indoor and Outdoor Decorative Water Features	
(1)	[F40,F41,F43,F46,F81,F82,F130-OS3.4,OH1.1,OH2.2,OH5,OP5,OE1.2]
(2)	[F40,F41,F43,F46,F81,F82,F130-OS3.4,OH1.1,OH2.2,OH5,OP5,OE1.2]
(3)	[F40,F41,F43,F46,F81,F82,F130-OS3.4,OH1.1,OH2.2,OH5,OP5,OE1.2]
(4)	[F40,F41,F43,F46,F81,F82,F130-OS3.4,OH1.1,OH2.2,OH5,OP5,OE1.2]

”.

6. In Book I, Division B, Article 6.3.2.15., directly beneath the title of the Article, Council adds “(See Article 2.2.11.6. of Division B of Book II (Plumbing Systems) of this By-law.)”.
7. In Book I, Division B, Article 6.3.2.16., directly beneath the title of the Article, Council adds “(See Article 2.2.11.7. of Division B of Book II (Plumbing Systems) of this By-law.)”.
8. In Book I, Division A, Sentence 1.4.1.2.(1) Defined Terms, Council adds the following in correct alphabetical order:

“Low Carbon Energy System means a professionally operated and maintained district-scale or on-site system that supplies heat energy, primarily derived from highly-efficient and renewable sources, in order to provide space heating and conditioned ventilation air for buildings, and may also provide domestic hot water and cooling service.”.

9. In Book I, Division B, Part 10, Council strikes Article 10.2.2.5 and substitutes:

“10.2.2.5. **Building Energy and Emissions Performance**

- 1) For a *building* required to conform with this Article, energy modelling shall conform to:
  - a) the applicable requirements of ASHRAE 90.1 ECB, or Part 8 of the NECB, and
  - b) the City of Vancouver Energy Modelling Guidelines.
- 2) Except as permitted in Sentences (3) or (4), a *building* designed with this Article shall demonstrate the performance values of the proposed building comply with the limits in Table 10.2.2.5.A.
- 3) Compliance with the GHGI limits in Table 10.2.2.5.A is not required where a *building* can demonstrate the performance values of the proposed *building* comply with the TEUI and TEDI limits in Table 10.2.2.5.B.
- 4) Compliance with the TEUI and TEDI limits in Table 10.2.2.5.A is not required where a building is connected to a Low Carbon Energy System, and can demonstrate the performance values of the proposed building comply with the limits in Table 10.2.2.5.C.

<b>Table 10.2.2.5.A</b> <b>Maximum Energy Use and Emissions Intensities</b> Forming part of Sentence 10.2.2.5.(2)			
<b>Occupancy Classification (1)</b>	<b>Total Energy Use Intensity (kWh/m<sup>2</sup>a)</b>	<b>Thermal Energy Demand Intensity (kWh/m<sup>2</sup>a)</b>	<b>Greenhouse Gas Intensity (kgCO<sub>2</sub>e/m<sup>2</sup>a)</b>
Group C <i>occupancies</i> in <i>buildings</i> up to 6 <i>Storeys</i> , except Hotel and Motel	110	25	5.5
Group C <i>occupancies</i> in <i>buildings</i> over 6 <i>Storeys</i> , except Hotel and Motel	120	30	6
Hotel and Motel <i>occupancies</i>	140	20	8
Group D and E <i>occupancies</i> , except Office	120	20	3
Office <i>occupancies</i>	100	20	3

**Notes to Table 10.2.2.5.A.:**

<sup>(1)</sup> For *buildings* containing multiple *occupancies*, refer to the procedures on mixed-use buildings in Section 5 of the CoV Energy Modelling Guidelines.



**Table 10.2.2.5.B**  
**Maximum Energy Use and Emissions Intensities**  
Forming part of Sentence 10.2.2.5.(3)

<b>Occupancy Classification</b>	<b>Total Energy Use Intensity (kWh/m2a)</b>	<b>Thermal Energy Demand Intensity (kWh/m2a)</b>	<b>Greenhouse Gas Intensity (kgCO2e/m2a)</b>
<b>Group C occupancies</b>	<b>100</b>	<b>15</b>	<b>N/A</b>

**Table 10.2.2.5.C**  
**Maximum Energy Use and Emissions Intensities**  
**For Buildings Connected to a *Low Carbon Energy System***  
Forming part of Sentence 10.2.2.5.(4)

<b>Occupancy Classification</b>	<b>Total Energy Use Intensity (kWh/m2a)</b>	<b>Thermal Energy Demand Intensity (kWh/m2a)</b>	<b>Greenhouse Gas Intensity (kgCO2e/m2a)</b>
Group C occupancies in buildings up to 6 Storeys, except Hotel and Motel	110	25	5.5
Group C occupancies in buildings over 6 Storeys, except Hotel and Motel	130	40	6
Hotel and Motel occupancies	170	30	8
Office occupancies	170	30	3
Business and Personal Services or Mercantile Occupancies, except Office	170	30	3

***Appendix D – Certification of Professionals By-law***

**DRAFT By-law to amend  
Certification of Professionals By-law No. 6203  
Regarding updated letters of assurance and consequential amendments  
Related to the 2019 Building By-law**

*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 Certification of Professionals By-law.
2. In section 6, Council strikes out “letters of confirmation and certification” and substitutes “letters of confirmation”.
3. Council strikes out section 7 and substitutes the following:

“7. After receiving a properly completed Certified Professional Building Permit Application accompanied by the required letters of confirmation, the City Building Inspector may accept the letters as satisfactory evidence of compliance and conformity with the Building By-law and issue a building permit based thereon, and upon completion of the building the City Building Inspector may issue an occupancy permit based on the CP-2 “Confirmation of Completion” letter by the Certified Professional that the building as built conforms to the accepted plans for which letters of confirmation were received.”.
4. In sections 8 and 9, Council strikes out “Certification of Design” and substitutes “CP-1 “Confirmation of Commitment””.
5. Council strikes out Schedule A and substitutes the attached Schedule A, which shall form part of By-law 6203.

Schedule A: CP-1, CP-2, and CP-3 Letters of Assurance

 <p>CITY OF VANCOUVER</p>	<p><b>Schedule CP-1</b> <b>Confirmation of Commitment by Owner and Certified Professional</b></p> <p><small>Certified Professional Program An Alternate Building Permit Process</small></p>
--	---

- Notes:**
1. This letter is endorsed by the Architectural Institute of British Columbia and the Association of Professional Engineers and Geoscientists of British Columbia.
  2. The phrase *Building By-law* where used in this letter means the Vancouver Building By-law.
  3. Words in italics are given the same meaning as defined in the Vancouver Building By-law.
  4. Words in "quotations" are defined herein.

To: *Chief Building Official* \_\_\_\_\_ Date: \_\_\_\_\_

Project Address: \_\_\_\_\_ Building Permit No.: \_\_\_\_\_

In signing and submitting this document to the *Chief Building Official* the *owner* confirms that the *owner* has authorized the *Certified Professional*, to undertake "code coordination" and the undersigned *Certified Professional* ("CP") confirms that the CP will undertake "code coordination" with respect to the above noted project for which a building permit is sought.

"Code coordination" includes the following tasks:

1. act on behalf of the *owner* as the *owner's* representative in matters involving the City of Vancouver in relation to the building permit, related project construction and related occupancy permit;
2. ascertain that the required "Registered Professionals of Record" for the project have been retained to provide *design* and *field review* in accordance with the Building By-law;
3. obtain the necessary letters of Assurance of Professional Design and Commitment for Field Review from the "Registered Professionals of Record" for the project and deliver the originals of same to the *Chief Building Official* when applying for the building permit for the project;
4. obtain the other necessary documents required to support the building permit application and deliver same to the *Chief Building Official* when applying for the building permit for the project;
5. apply for and obtain a building permit for the project in accordance with the process as described in the Building By-law;
6. provide "design review" of the plans and supporting documents prepared by each of the "Registered Professionals of Record" for the project;
7. ascertain that the "Registered Professionals of Record" have incorporated in their plans and supporting documents, the requirements of the "Building By-law" Division A; Division B Parts 1 and 3; and Division C;
8. ascertain that the Division A; Division B, Parts 1 and 3; and Division C Building By-law requirements governing the project are compatible between the plans and supporting documents prepared by each "Registered Professional of Record";
9. provide "site review" of the components of the plans and supporting documents prepared by each of the "Registered Professionals of Record" for the project;
10. keep records of all "site reviews" by the CP and of any corrective action required and taken as a result of these "site reviews". Discrepancies noted during "site reviews" must be tracked and the resolution of these discrepancies noted such that a list of significant unresolved discrepancies can be provided at any time;
11. "monitor field review activities" of the "Registered Professionals of Record";
12. monitor and report on significant events and changes in the project;
13. submit a monthly summary progress report to the *Chief Building Official* during construction of the project;
14. consult with the *Chief Building Official* if any unresolved variances in interpretation of the Building By-law arise between the CP, and the "Registered Professionals of Record";
15. consult with the *Chief Building Official* if any unresolved issues with respect to the Building By-law arise between the CP and the contractor;

16.

Date: \_\_\_\_\_  
Project Address: \_\_\_\_\_ Building Permit No.: \_\_\_\_\_

"Code coordination" (cont'd):

16. review relevant shop drawings with respect to the requirements of Division A, Division B, Parts 1 and 3 and Division C of the Building By-law;
17. notify the *Chief Building Official* in a timely manner of any significant known, unresolved contraventions of the Building By-law or Building Permit requirements;
18. obtain the necessary letters of Assurance of Professional *Field Review* and Compliance from the "Registered Professionals of Record" for the project and deliver the originals of same to the *Chief Building Official* when applying for the occupancy permit for the project;
19. obtain the other necessary documents required to support the occupancy permit application and deliver same to the *Chief Building Official* when applying for the occupancy permit for the project;
20. apply for occupancy approval for the project in accordance with the process as described in the Building By-law; and
21. apply the CP stamp to all relevant documents that are submitted to the *Chief Building Official*. Affixing his or her CP stamp to a document confirms that the CP has provided the relevant portion of "code coordination" applicable to that document.

"Design review" means the activities necessary to ascertain that the design of the project will substantially comply, in all material respects, with the requirements of Division A; Division B, Parts 1 and 3; and Division C of the Building By-law.

"Monitoring field review activities" means ascertaining that the "Registered Professionals of Record" are providing *field reviews* as required by Div C, Part 2 of the Building By-law, and includes keeping records of all *field review* reports prepared by each Registered Professional of Record. The owner will instruct each "Registered Professional of Record" to highlight in his or her field review reports any significant variation from the documents accepted in support of the building permit and any corrective action as needed. The CP will review the variations highlighted in the *field review* reports and notify the *Chief Building Official*, in a timely manner, of significant unresolved variations from the documents accepted in support of the building permit.

"Registered Professional of Record" means a *registered professional* retained to undertake design work and *field review* pursuant to Schedules B and C-B of Subsection 2.7 in Division C of the Building By-law.

"Site review" means the activities necessary in the CP's professional judgment to ascertain that the construction of the project substantially complies, in all material respects, with the requirements of Division A; Division B, Parts 1 and 3; and Division C of the Building By-law and the requirements of the building permit and monitoring for compliance with the development permit issued for the project.

In addition to "code coordination" the undersigned owner and CP also acknowledge that:

1. If the project involves future tenant improvement works, and the base *building* occupancy is not achieved prior to commencement of the tenant improvement works, the involvement of the CP may be required; and,
2. The owner and the CP are each required to notify the *Chief Building Official* on or before the date the CP ceases to be retained by the owner. It is understood that work on the above project will cease as of the effective date of such termination, until such time as a new appointment is made, and a *Stop Work Order* shall be posted upon the said project by the *Chief Building Official*.

Project \_\_\_\_\_ Date: \_\_\_\_\_  
Address: \_\_\_\_\_ Building \_\_\_\_\_  
Permit No.: \_\_\_\_\_

**NOTE:** This letter must be signed by the owner or the owner's appointed agent and by the CP. An agent's letter of appointment must be attached. If the owner is a corporation, the letter must be signed by a signing officer of the corporation and the signing officer must set forth his or her position in the corporation.

**Owner Information (please print):**

Owner's Name: \_\_\_\_\_ Name and title of  
Signing Officer, or  
Agent (if Applicable): \_\_\_\_\_  
Address: \_\_\_\_\_ Tel: \_\_\_\_\_  
City: \_\_\_\_\_ Email: \_\_\_\_\_  
Postal Code: \_\_\_\_\_ Signature: \_\_\_\_\_

*Owner's or Owner's appointed agent's Signature (If owner is a corporation the signature of a signing officer must be given here. If the signature is that of the agent, a copy of the document that appoints the agent must be attached.)*

**NOTE:** A Certified Professional means an Architect or Professional Engineer who has been recognized as qualified as a Certified Professional by the Chief Building Official pursuant to the Certification of Professionals By-law.

**Certified Professional (please print):**

Name: \_\_\_\_\_ Name of Firm: \_\_\_\_\_  
Address: \_\_\_\_\_ Tel: \_\_\_\_\_  
City: \_\_\_\_\_ Email: \_\_\_\_\_  
Postal Code: \_\_\_\_\_ Signature: \_\_\_\_\_

(Affix Certified Professional's stamp here)

(Affix Certified Professional's professional seal here)

 <b>CITY OF VANCOUVER</b>	<b>Schedule CP-2</b> <b>Confirmation of Completion of Code Coordination</b>
	<small>Certified Professional Program An Alternate Building Permit Process</small>

- Notes:
1. This letter is endorsed by the Architectural Institute of British Columbia and the Association of Professional Engineers and Geoscientists of British Columbia.
  2. Words in italics are given the same meaning as defined in the Vancouver Building By-law.
  3. Words in quotations are defined in Schedule CP-1.

To: Chief Building Official Date: \_\_\_\_\_

Project \_\_\_\_\_ Building \_\_\_\_\_

Address: \_\_\_\_\_ Permit No.: \_\_\_\_\_

I confirm that I have fulfilled my obligations for "code coordination" as outlined in my previously submitted Schedule CP-1 entitled Confirmation of Commitment by *Owner* and *Certified Professional*.

I enclose the relevant occupancy permit documents as listed on the attached Occupancy Permit Submission Documents Checklist.

<b>NOTE:</b>	A <i>Certified Professional</i> means an Architect or Professional Engineer who has been recognized as qualified as a <i>Certified Professional</i> by the <i>Chief Building Official</i> pursuant to the Certification of Professionals By-law.
--------------	--

***Certified Professional:***

Name: \_\_\_\_\_ Name of Firm: \_\_\_\_\_

Address: \_\_\_\_\_ Tel: \_\_\_\_\_

City: \_\_\_\_\_ Email: \_\_\_\_\_

Postal Code: \_\_\_\_\_ Signature: \_\_\_\_\_

(Affix *Certified Professional's* stamp here)

(Affix *Certified Professional's* professional seal here)

	<b>Schedule CP-3</b> <b>Confirmation of Tenant Improvement Compatibility</b> <small>Certified Professional Program An Alternate Building Permit Process</small>
---	---

- Notes:
1. This letter is endorsed by the Architectural Institute of British Columbia and the Association of Professional Engineers and Geoscientists of British Columbia.
  2. Words in italics are given the same meaning as defined in the Vancouver Building By-law.
  3. Words in quotations are defined in Schedule CP-1.
  4. The phrase "Building By-law" where used in this letter means the Vancouver Building By-law.

To: *Chief Building Official* Date: \_\_\_\_\_

Base Building Project Address: \_\_\_\_\_ Base Building Permit No.: \_\_\_\_\_

Specific Location of Tenant Improvement: \_\_\_\_\_

I confirm that I have reviewed the drawings on the attached list to ascertain that the tenant improvement design is substantially compatible with the original building by-law concepts for the *base building*.

I confirm that the construction of the *base building* shell space for this tenant improvement is essentially complete with the exception of the items indicated on the attached list.

<b>NOTE:</b>	A <i>Certified Professional</i> means an Architect or Professional Engineer who has been recognized as qualified as a <i>Certified Professional</i> by the <i>Chief Building Official</i> pursuant to the Certification of Professionals By-law.
--------------	--

***Certified Professional:***

Name: _____	Name of Firm: _____
Address: _____	Tel: _____
City: _____	Email: _____
Postal Code: _____	Signature: _____

(Affix *Certified Professional's* stamp here)

(Affix *Certified Professional's* professional seal here)

Appendix E - Building Board of Appeal By-law

**DRAFT By-law to Amend the Building Board of Appeal By-law No. 6135  
Regarding Membership of the Board and Housekeeping Amendments**

*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 Building Board of Appeal By-law No. 6135.
  
2. Council strikes out section 3.1 and substitutes:
  - “3.1 The Board shall consist of 5 members, one appointed from each of the following associations:
    - (a) one member of the Law Society of British Columbia;
    - (b) one member of the Architectural Institute of British Columbia;
    - (c) one member of the Association of Professional Engineers and Geoscientists of British Columbia who is a consultant in Fire and Life Safety; and
    - (d) two members of the Association of Professional Engineers and Geoscientists of British Columbia who are qualified by virtue of their training and experience to provide expertise in the areas of:
      - (i) structural,
      - (ii) mechanical,
      - (iii) electrical,
      - (iv) building enclosure, and
      - (v) geotechnical.”.
  
3. Council strikes out subsection 4.1(a) and substitutes:

“(a) the Building By-law in respect of any item referred to in Article 3.1.1.2. of Division C; and”.
  
4. Council strikes out section 6.1 and substitutes:

“6.1 There shall be a Secretary to the Board who shall be an employee of the City.”.
  
5. In section 7.4, Council strikes out “being City of Vancouver By-law No. 3844, and in particular the terms defined in Section 2 of that By-law” and substitutes “being City of Vancouver By-law No. 10200, and in particular the terms defined in Section 1.2 of that By-law”.



Appendix F: Letters of Support



URBAN DEVELOPMENT INSTITUTE – PACIFIC REGION  
#1100 – 1050 West Pender Street  
Vancouver, British Columbia V6E 3S7 Canada  
T. 604.689.9585 F. 604.689.8691  
[www.udi.bc.ca](http://www.udi.bc.ca)

June 4, 2019

Patrick Ryan, Chief Building Official  
City of Vancouver  
Development, Buildings, and Licensing  
Ground Floor, 515 West 10th Avenue  
Vancouver BC V5Z 4A8

*Re: Proposed Changes to the Vancouver Building Bylaw*

Dear Mr. Ryan:

On behalf of the 850 corporate members of the Urban Development Institute (UDI), I would like to thank you and the City of Vancouver Building department for the presentation you made to our Building Codes Committee on April 5, 2019, regarding the proposed changes to the Vancouver Building Bylaw (VBBL) for 2019.

With the recent updating of the B.C. Building Code, we appreciate the need to harmonize the VBBL with Provincial and Federal building codes while working on resiliency and climate adaptation. We welcome the inclusion of new and innovative options within the VBBL, reducing the need for alternate solutions. We are also pleased with the work that your department has undertaken to clarify definitions and standardize requirements throughout the Bylaw.

We appreciate the thorough efforts that you and your staff at the City of Vancouver have taken to review current building bylaw and the consultation with our industry. As stated at the April meeting, overall UDI supports the proposed changes to the bylaw. In particular we are pleased to see support for multi-level suites with a single egress, but would encourage consideration, and research if needed, on improving opportunities for multi-level suites without compromising safety. We would also like you to consider better facilitating small public roof decks, along with needed elevator and stair access. We believe the improved roof access facilitates building safety, rather than detracting from building safety.

In addition to the above comments, we hope that city staff will continue to engage with UDI and its members to provide additional clarification on the regulations as they are implemented, particularly related to fire alarm notification for balconies and roof decks as well as magnetic lock locations within mixed tenure buildings.

Thank you again for consulting the industry regarding these updates. We support the City's efforts to improve the efficacy of this bylaw in the Vancouver-specific context. If you have any questions about our comments, please do not hesitate to contact us. We look forward to working with the City of Vancouver on this and other initiatives in the future.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Anne McMullin'.

Anne McMullin  
President & CEO



ENGINEERS &  
GEOSCIENTISTS  
OF BRITISH COLUMBIA



ARCHITECTURAL INSTITUTE OF BRITISH COLUMBIA

May 29, 2019

Pat Ryan, M.Sc., P.Eng.  
Chief Building Official  
City of Vancouver  
515 West 10th Avenue  
Vancouver, BC V5Z 4A8

Via email to [patrick.ryan@vancouver.ca](mailto:patrick.ryan@vancouver.ca)

Dear Mr. Ryan,

**Re: 2019 Vancouver Building By-Law Proposed Changes**

The Certified Professional Committee has reviewed the proposed changes to the Vancouver Building By-law (VBBL), as presented on April 16, 2019 by Kevin Lau, P.Eng. CP, Building Policy Engineer at the City of Vancouver.

Several members of the Committee have submitted comments directly to the City of Vancouver. The Committee supports the proposed 2019 VBBL changes but asks that the comments submitted by Committee Members be taken into consideration.

Regards,

Barry R. Thorson, P.Eng., FEC  
Chair, Certified Professional Committee  
The Architectural Institute of British Columbia  
Engineers and Geoscientists BC