

NEWSLETTER

June 27, 2023

TO: Certified Professionals Practicing in the City of Vancouver
FROM: Saul Schwebs, Chief Building Official
SUBJECT: **CP Newsletter – Spring/Summer 2023**



It's summertime yet again!

We're glad to be providing everyone with the latest updates from the City. Refer to <https://vancouver.ca/home-property-development/certified-professional-program.aspx> for this and previous newsletters as well as the latest versions of all CP forms and resources.

1. Certified Professional permit fee refunds

Partial refunds for CP building permit fees have been an option for eligible projects since 1987. The original intent of the partial refund practice was to encourage developers to engage CPs as an alternative, expedited processing stream. The 'CP program' is now well adopted, stable and successful.

Given the success of the CP program, the need to incentivize CP applications through a partial refund practice is no longer necessary. **As of 1 January 2024, CP projects will no longer be eligible for partial permit fee refunds.**

Exceptions include any CP project with a building permit that features a successful intake and paid fees as of 31 December 2023. Excepted projects will continue to be able to request partial permit fee refunds within ninety days of Final Occupancy for a period of five years - that is, until 31 December 2028.

Note that permits in existing buildings, including initial Tenant Improvement projects in new CP base buildings, remain ineligible for refunds. Also, note that as part of this change, appropriate fees will be charged for permit amendments on CP projects that are not eligible for refunds.

Please share your thoughts with the City regarding this planned change by contacting us at cp.process@vancouver.ca until 14 July.

2. Code Compliance documentation reminders

The CP's Code Compliance Report and Drawings are key documents in support of a proposed building project and are heavily relied upon by the City's plan review staff, both immediately (for code compliance review of the current application) and for the life of the building (for knowledge of base building code concepts when processing future applications). Building Review staff have raised concerns regarding the quality of recent submissions under the Certified Professional Program. The following is a brief highlight of recently-flagged items to double-check when completing your Code Compliance Reports (CCRs) and/or Code Compliance Drawings (CCDs).

- Erroneous artifacts of previous code reports are incorrectly carried forward to new projects (e.g. incorrect code references, irrelevance to current project)
- Base building CCDs must show pre-ducting/shafting for anticipated kitchen ventilation systems for **every** individual commercial suite: see <https://bylaws.vancouver.ca/bulletin/bulletin-floor-area-exclusions-for-kitchen-exhaust-ducts-and-shafts.pdf>
- All alternative solutions – accepted or pending – shall be mentioned and highlighted in CCRs and CCDs to serve as an overall summary of the project concepts
- Standpipe hose connections have incorrectly been shown within exit stairs with no access to the floor areas that they are intended to serve
- Standpipe hose connections have incorrectly been shown located outside of a protected area
- Liberal application/definition of travel distance or distance between exits for floor levels or roof decks, when compared to staff spot checking distance on Bluebeam

As a project evolves because of design development and confirmed code concepts, the CCR and CCD may require updating as determined by Building Review staff in order that the most up-to-date version represents the completed project and can be relied upon in the future.

We'd also note that drawings provided by other professionals have lately been of a much lower quality (completeness, coordination, compliance...) than we are receiving for non-CP submissions. We expect CP applications to be at least as complete and correct as non-CP applications, given your role in code coordination for the project. The CP's code compliance documentation *supplements* a complete, coordinated, and compliant design package – it does not replace it.

3. Digital submission reminders

Thanks to everyone for making the transition to a fully-digital permit process relatively smooth. Now that we're a few months into the new way of work, we have some reminders and requests for you and the teams you work with that will help us to get your permits out faster.

- Be sure to leave a dedicated 3" x 2" space on every page of the permit drawings for us to apply our Accepted stamp when the permit is issued. It must be in the same place on every drawing so that we can batch-stamp and not have to spend time adjusting the location page by page. Staff will be starting to ask for drawings to be resubmitted if a consistent space isn't provided. **Pro tip:** ask the architect to define the dedicated space on their drawings before sharing backgrounds with other consultants so that it's consistent for all disciplines and easy for everyone to work around.

- Please check your documents for valid stamps/seals/digital certificates before uploading! Note that nothing has changed from the paper process with respect to every professional's responsibility for confirming that only originally-authenticated documents are submitted. As the last professional to handle the files, the CP must double-check that everything is intact before passing them to us. Staff will not review (or even preview) anything that doesn't comply with EGBC/AIBC requirements.
- While we always appreciate CPs being thorough, providing redundant or unnecessary documents is not really helpful and is actually more likely to create confusion and slow us down. Unless they're required by the CP submission checklist or the BP process, please don't upload documents to your BP application that have been provided for the supporting permits (SU, SW, etc.) "just for our information". We will be able to find them if we need them, and in the meantime we're spending unnecessary time opening each one to see what it is and figuring out why we've received it.

4. **Alternative Solution coordination**

The submission and coordination of applicable alternative solutions (ALs) relative to each CP Stage are to be discussed and confirmed with your assigned PC or Code Specialist in the Building Review Branch (BRB). An AL may require resolution and acceptance prior to issuance of a specific stage of the building permit and cannot be deferred if it coincides with or is critical to the particular stage being requested. AL submissions that materially affect the fundamental concept or layout of the project shall be discussed, evaluated and accepted prior to Stage 1 issuance.

The timing for AL submission shall be discussed with both Building Review and Building Policy team members to minimize any delay for BP issuance. This will also avoid subsequent permits or stage issuances, especially related to sprinkler-based ALs, being held for review until the AL is eventually processed. There have been instances where sprinkler design drawings were stamped reviewed by the CP and submitted to the City; however, the applicable AL was not submitted until years after the date on the review stamp. This is an unacceptable practice and places all parties in a challenging position, especially if the AL was altered or not supported, and further encumbers the permitting processes.

5. **Waiver of smoke dampers**

With the introduction of smoke damper requirements in the 2015 NBCC, there have been substantial concerns in the code and design community regarding impacts of this requirement. As a consequence, Building Policy Branch regularly receives requests to waive smoke damper requirements on the basis of a letter of professional judgement referencing Subclause 3.1.8.9.(2)(a)(iii). However, not all proposals can be addressed in this manner.

It generally the opinion of the Building Policy Branch that the provision of Subclause (2)(a)(iii) establishes a performance design path. A smoke control system, as permitted by the exception, is a system used to control the movement of smoke through a building. However the performance of such a system must be substantiated by an appropriate design. The appropriate level of performance may vary between buildings depending on their intended use and expected hazards, so a registered professional is therefore required to establish what the appropriate criteria should be for a given building. It is our general expectation that per the EGBC [Guideline for Fire Protection Engineering Services for Building Projects](#), registered professionals will develop the smoke control system in conformance with recognized standards to achieve objectives that have been

substantiated through an in-depth analysis using fire and life safety principles. Given that the VBBL explicitly identifies this as a path of compliance, it is our view that an alternative solution is not necessarily required, although we would expect an engineering report (or letter of professional judgement) be submitted to document the design approach.

In other cases, alternative safety measures in lieu of the smoke damper have been proposed, based on a rationalization or logical argument of equivalent performance. Such an approach may still be viable, but this is an entirely different approach and is not consistent with the design for a smoke control system. Such a proposal should, in our view, be approached as an alternative solution and would be evaluated by the Building Policy Branch on that basis.

As a last point of discussion on this topic, many proposals have been submitted on the basis of the BC Housing report providing guidance on the omission of smoke dampers. The Building Policy Branch acknowledges the work done in this report, but notes that this report presently only covers a limited subset of buildings and that it was intended as a guidance document and is not a formal design standard. Therefore, while the document can be acceptable as evidence of performance, it still lies with the responsible registered professional to establish the basis for code compliance and the acceptable level of performance, compare and confirm that the assumptions of the BC Housing report are applicable to their project, and confirm that the specifics of their design will achieve the level of performance that they have set.

6. Garage security provisions

The Vancouver Building By-law (VBBL) introduced the security provisions of 3.3.7.7.(4) in the late '80s, prompted by certain concerns of public safety. A specific requirement of the Building By-law mandates the provision of separate stairs that exit directly outside the building. This is clearer in older iterations of the Building By-law. However, as a consequence of changing approaches to floor design and increasing project cost pressures, there is a growing demand to find alternative solutions to address this issue.

It is often assumed that this provision addresses the concern of unhindered access from public storage garage into secured residential or office storeys. Accordingly, there have been many proposals to simply incorporate locked doors leading from the combined corridor on the first storey to the upper levels as being sufficient to demonstrate the required level of security. However, the current situation is complex and securing access to upper storeys alone does not fully address the security risk. It is a further goal of this provision to reduce population merging, effectively minimizing risk to building occupants by discouraging unauthorized access, intrusion, or loitering.

Where adherence to the regulatory requirement is problematic, the CBO's office is willing to consider a thorough review and assessment of the level of security on a case-by-case basis as part of an alternative solution. Recognizing that individual designs may vary considerably, such an alternative solution should include a framework dedicated to fostering safe and secure environments for building occupants by demonstrating that the design will:

- Create an environment where appearance of strangers and intruders stand out
- Include strategic access control
- Minimize risk of entrapment or isolation

As a whole, the alternative solution should provide a combination of design and security features to create an environment that enhances occupants' sense of safety and reduces the fear of attack, by encouraging the design of visually open spaces. The Building Policy

Branch will be endeavour to provide additional clarification regarding this Article in a bulletin to follow.

7. Sprinkler protection of mobile racking and shelving systems

It is often desirable to install mobile storage systems in retail and small industrial occupancies as part of tenant improvement work. These occupancies are typically equipped with Ordinary Hazard Group 2 sprinkler systems, which may not always be sufficient to adequately protect the mobile storage systems. The City acknowledges the difficulties faced by sprinkler designers in determining the appropriate classification of movable storage systems and the necessary sprinkler design criteria due to the limited nature of information provided for such systems in NFPA 13, and the Building Policy Branch is preparing a bulletin to clarify our policy in this regards.

Mobile Racks

Mobile racks are a type of built-in mobile storage system addressed in Section 13, Miscellaneous Storage of NFPA 13. The most common stored commodities are generally classified as either Class IV or Group A plastic. The sprinkler design criteria that apply to miscellaneous storage on racks can be found in Table 13.2.1 of NFPA 13. Based on this table, Class IV commodities that are stored on racks up to 10 feet in height can be protected using an Ordinary Hazard Group 2 sprinkler system. Likewise, Group A plastic stored up to 5 feet high may be protected using an Ordinary Hazard Group 2 sprinkler system. This aligns directly with the standard requirements of NFPA 13 for retail spaces. Therefore, when Class IV or Plastic Group A commodities are stored on mobile racks up to 10 and 5 feet, respectively, there is no need for further alterations or upgrades to protect movable racks.

Storage of Group A Plastic Commodities and Class IV Commodities on Mobile Racks

In accordance with Table 13.2.1 of NFPA 13, when Group A plastic commodities are stored on mobile racks more than 5 feet high or Class IV commodities stored higher than 10 feet, the sprinkler system must meet Extra Ordinary Group 1 hazard requirements. The City recognizes that it may be difficult to upgrade an existing sprinkler system to be an Extra Ordinary Group 1 system and are prepared to accommodate the existing system on the basis of a letter of professional judgment provided by a Sprinkler Engineer, who must review and evaluate the risk of storing Class IV and Group A plastic commodities based on their knowledge and expertise. The engineer must specify the precautions necessary to mitigate any potential risks and provide a technical justification of how the proposed design criteria will be sufficient to mitigate the concerns. The design criteria may include, but are not limited to:

- Providing 3-inch bumpers to create longitudinal traverse spaces.
- Limiting the area of the mobile racking system to less than 1,000 ft² permitted for miscellaneous storage.
- Limiting the storage height to less than 10 ft.
- Decreasing the coverage area per sprinkler to less than 130 ft².
- Increasing the discharge density to more than 0.2 gpm/ft².
- Increasing the design area to more than required by NFPA 13.

Proposed designs for movable storage shelves that do not conform to the limits in Table 13.2.1 should identify the issue requiring engineering judgment, outline the analysis and background information used to arrive at the engineer's design recommendation, and clearly state the professional opinion. The protection of movable storage systems is a complex technical issue and it is essential that the registered professional thoroughly examine whether the movable racks or shelves meet the protection criteria for Ordinary Hazard Group 2 and upgrade the sprinkler system if necessary.

8. Transformer clearance requirements

In previous communications, the Building Policy Branch has previously commented on the requirements for clearances to overhead dielectric liquid filled transformers. Discussion with respect to how the 6 m clearance requirements should be determined have been raised, as this may not have been clearly articulated by previous communications. Canadian Electrical Code (CEC) Rule 26-014 establishes a 6 m clearance around the dielectric filled transformer, but does not clarify if this measured horizontally, vertically, or as a volume, which has led to the common interpretation that it is a sphere. However, this does not take into account the rather predictable force of gravity. The debris and dielectric liquid will fall, and surfaces below the transformer may be subject to burning debris or flaming dielectric liquid. Consequently, the Building Policy Branch has recommended that the CEC requirements for non-combustible materials also extend as a cylinder below the 6 m sphere.

The CEC requires the construction of a wall or barrier with non-combustible surfaces or material. But it provides limited guidance on this, noting “*Non-combustible construction – the type of construction in which a degree of fire safety is attained by the use of non-combustible materials for structural members and other building assemblies.*” In the absence of further guidance from BC Hydro, it is our view that good practice would be to view the required construction as needing to comply with the next most relevant standards, which include the Canadian Electrical Code and Building By-law. Based on the foregoing, all openings and construction should observe the minimum 6 m clearance requirement, or a registered professional should demonstrate that an adequate noncombustible barrier has been provided that is suitable for the intended purpose.

Note that the location of outdoor electrical transformers forms part of the electrical grid infrastructure, and so lies outside the ability of the City to resolve. If the location of the infrastructure equipment is such that it would impact the design or viability of a project, then this need to be communicated to BC Hydro at the outset of the project during the development phase. The [electrical transformer clearance checklist](#) is part of the building permit application requirements and confirms that this has been resolved with BC Hydro. This form will be updated by the end of this month to more clearly reflect its purpose: please continue to refer to the [CP website](#) for the latest version of all documents.

9. Fire alarm operation sequencing

The operation of traditional single-stage fire alarm systems has been identified as potentially challenging in multi-family residential buildings and mixed use developments. However, the Building By-law only specifically identifies two-stage systems as an alternative to single-stage fire alarms, and it is an increasingly common request for fire alarm system designs to include non-standard configurations (sometimes referred to as hybrid systems). Because fire alarm sequencing can greatly affect occupant safety, additional clarification of current building policy may be required.

It is our general opinion that any proposal for two-stage systems or alternatives to a single-stage system should take into account the physical arrangement of the project, the potential ramification of fire and smoke spread, and the effect of other supportive features. Through past discussion with Vancouver Fire and Rescue Services, the Building Policy Branch has identified the following general points of concern:

- It is generally expected that fire and smoke on lower levels put high levels at imminent risk, so the initiation of alarm zones on lower levels should not delay the initiation of the alarm zones above.

- Certain specific uses or occupancies can ill afford delays in notifications, so variations in the fire alarm sequencing of a building should not delay a notification in those uses or occupancies.
- The perception of nuisance alarms should be substantiated, and modifications to the fire alarm sequencing scaled to the actual nuisance.
- Where a two-stage sequence of operation is proposed, it should be noted that the Building By-law requires 24/7 on-site monitoring and response, which isn't practical in many cases.

Although this is not intended to be an exhaustive list or necessarily applicable to all projects, the above is provided to better assist designers in understanding the Building Policy Branch's approach with respect to fire alarm operation sequencing.

10. Third party review and EMTC

Encapsulated Mass Timber is a quickly evolving area in Canadian construction codes, and the extents of current regulations and fire research in this area are being tested on a regular basis. With some frequency, alternative solution proposals are received that extend beyond the current Code requirements in a significant manner and therefore do not have a clearly established basis for acceptance under Division B. Examples of such cases include: Substantial exposed wood surfaces (reduction of encapsulation); extrapolation of the EMTC construction requirements to greater heights or larger building areas than permitted by current regulations; or the incorporation of EMTC as combustible construction into walls otherwise required to be non-combustible. As a means to bridge the gap between current construction codes and industry innovation, and to maintain objectivity and a high degree of quality in alternative solution submissions, the Building Policy Branch may require a third party review for such projects.

The third-party review process is not a peer review or an audit, and is intended to be a more informal process than the current alternative solution review panel. The owner may engage a recognized expert jointly selected by the City and project team to review the assumptions and approach taken by the alternative solution proponent and to provide an assessment of the alternative solution, the comments of which may then be used by proponent to refine their proposal. The third party will be expected to demonstrate subject matter expertise, confirm that they have no conflict or vested interests in the outcome of the project, and that the terms of engagement do not constrain their ability to render independent judgement. Should you have questions about this process or whether this might apply to your project, we invite Code users to reach out to us in the early stages of such a project.

11. Sprinkler-based alternative solutions

Vancouver has a long history of sprinkler-based acceptable solutions and alternative solutions to address a variety of fire safety conditions. Historically, concerns have been identified about the risk of an over-reliance on sprinklers to replace passive fire safety measures. [Bulletin 2000-069-BU](#) (last updated in 2015) requires that the adequacy and reliability of the sprinkler system be specifically considered and, if necessary, an independent water supply must be provided. In order to address this risk, it is not uncommon for an alternative solution to propose the installation of a tank water supply. This has been widely seen to be a reasonable solution provided that the tank is appropriately sized to accommodate the need. In this regards, appropriate water supply has typically been expressed as a duration by code professionals, however the tank sizing is often left to either the project mechanical engineer or a specialty fire protection engineer, who are often unaware what to include in their design. As a result, there have

been a few projects that have run into difficulties as there are often very limited options in rectifying an undersized tank.

The sizing of the tank should be given careful consideration upfront in the design process as there are several factors that are not necessarily immediately apparent. Tank sizing should consider not only the physical tank size, but other factors that might limit the available water supply, such as reduced available water volume due to the maximum fill level or minimum suction intake depth, or establishing the maximal water demands (which may not necessarily be the hydraulically most remote area). To help reduce the likelihood of inadequate tank sizing, the Building Policy Branch is requesting that alternative solutions proposing a water tank as part of the design identify the design basis for the tank size and include both a supply calculation as well as a demand calculation to demonstrate the requisite duration.

12. Changes to the Plumbing By-law

The City of Vancouver has developed plumbing-related updates for new construction which would affect new developments city-wide.

Hot Water Temperatures

To lower the risk of *Legionella pneumophila* infections, there are new Building By-law requirements pertaining to hot water in new construction:

- The minimum temperature of hot water in *distribution* is 49°C (120°F).
- The minimum hot water *storage* temperature of 60°C (140°F) remains unchanged.
- Drain water heat recovery units may only direct warmed water to *service water heaters*.

On 27 June 2023, Council enacted by-law changes

(<https://council.vancouver.ca/20230627/documents/bylaws1to14.pdf>) recommended in a 13 June 2023 report (<https://council.vancouver.ca/20230613/documents/r1.pdf>). For background, a suggested reference is from the US Centers for Disease Control and Prevention (<https://www.cdc.gov/legionella/downloads/Control-Toolkit-Potable-Water.pdf>).

On-Site Rainwater Management & Storm Water Use

Presently, in accordance with the Zoning and Development By-law (ZDBL), many new developments are required to provide a rainwater management plan, and the process for review and approval took 56 weeks on average for development permits issued in 2022. The proposal is to considerably simplify the existing process to an anticipated 3 weeks: With City Council approval, on January 1, 2024, rainwater requirements would transition out of the ZDBL into the Building By-law, and would be applied to new Part 3 (complex) buildings, except for buildings of solely residential occupancy with up to 8 dwelling units. Existing permit applications which have not yet been issued would be sheltered from the new requirements in the transition, and would not be required to resubmit. Further, for new developments choosing to install a non-potable water system, the proposal allows for the use of storm water without an alternative solution application.

Council has referred this to Public Hearing on 11 July 2023

(<https://council.vancouver.ca/20230711/phea20230711ag.htm>). If the recommendations are enacted by Council, a lunch-time seminar to discuss the changes and answer questions has been proposed to AIBC for 11 October 2023 as part of AIBC's Professional Development series (details to come, and will be posted here: <https://vancouver.ca/home-property-development/private-realm-rainwater-management.aspx>). This seminar would address the processing of new and in-stream development applications.

13. The next Vancouver Building By-law

With the recent release of change consultation information regarding the next BC Building Code, it is nearly inevitable that questions regarding the prospects for a new Vancouver By-law should also surface. At this time, while we are unable to provide definitive timelines on when this might be released, it is broadly intended that the City will continue with an adoption of the most recent BC Building Code as the basis document for the VBBL. The release of a new Building By-law has typically occurred in the year following the BCBC, and at present we don't anticipate anything different.

As has been the case in recent history, the harmonization of construction codes remains a key objective; however, it is intended to retain key "Unique to Vancouver" (UTV) provisions showcasing Vancouver's leadership in a number of policy areas. These include a continuation of Vancouver's Energy and GHG reduction, existing building, and adaptability provisions, among others. In the latter part of this year, the Building Policy Branch will begin a review of existing UTV provisions, and exploration of potential Building By-law improvements leading to a public consultation. In the lead-up to this work, the Building Policy Branch would like to invite CPs, code professionals, and frequent code users to identify areas of the By-law where we should focus our efforts, or where additional clarity is required, so that we can prepare a code that best serves the design community. Email suggestions in this regards can be directed to cbo@vancouver.ca.