

Building By-law Updates

- By-law update summary
 - Recent (within the last year)
 - Mechanical Permits
 - Air Filtration and Cooling
 - 1 & 2 Family house – GHG updates
 - Housing terminology alignment with ZDBL
 - Upcoming
 - Removal of Energy upgrades from the VBBL for most buildings
 - Housekeeping update

Building By-law Updates

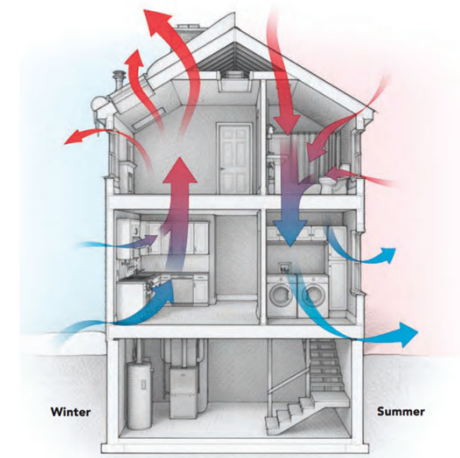
- Mechanical Permits

- All heating and cooling systems installed after July 01st 2022
- Digital application with 24 hour permit issuance
- Only Part 3 Inspection required is at final
- Inspection will consist of confirming the equipment matches the design and has been commissioned.
- Average cost of a Part 3 Mechanical permit is \$800



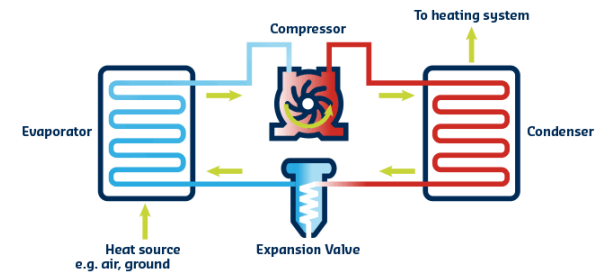
Building By-law Updates

- Air Filtration and Cooling
 - Mandatory air filtration in Part 3 buildings
 - Building without Mechanical Cooling are to demonstrate 80% of the acceptable limits of ASHRAE 55



Building By-law Updates

- 1 & 2 Family Dwelling GHG and mechanical system updates
 - Requirement for heat pumps to provide both heating and cooling (so new air-conditioning systems would also need to be able to provide heating)
 - Slight adjustment to USI requirements (adds a significant digit to account for rounding)
 - Revised Energy Efficiency Upgrade table in 11.2.1.4.(2)
- Terminology alignment with Zoning & Development By-law
 - 1 Family Dwelling Unit --> Single Detached House
 - 2 Family Dwelling Unit --> Duplex



Bulletins

- New Bulletins in 2022

| | Bulletin Title | Subject Area |
|---|--|---|
| 2022-004-AD/BU Issued October 4, 2022 | <u>Building and suite number address assignment</u> | Administrative – Detailed address assignment information |
| 2022-003- BU Issued May 19, 2022 | <u>Compliance path options for residential buildings</u> | Energy Efficiency – Recognizes there are 3 paths for compliance under 10.2.1.5. |
| 2022-002-BU/EL Issued May 6, 2022 | <u>Installation of audible signal devices</u> | Fire Alarm – clarifying the performance requirements of signaling devices in a dwelling unit, or a suite of residential or care occupancy |
| 2022-001-BU Issued January 31, 2022 | <u>Alternative acceptable solutions for passive house projects</u> | Energy Efficiency – Identifies alternative acceptable solutions |

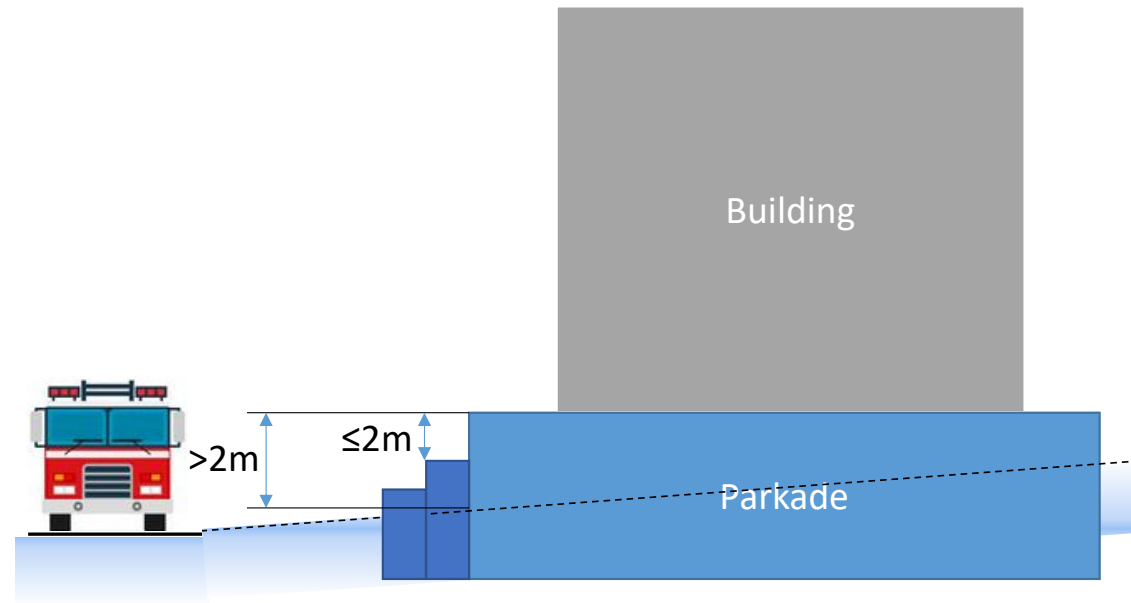
CBO Building By-law Interpretation Notes

- General opinions on
 - Grade and Sloping Sites
 - Part 9 and 3.2.1.2.
 - Accessible Loading Zones
 - Accessible path to parking
 - Smoke Dampers
 - Performance Based Alternative Solutions
 - Coordinated Life Safety Testing



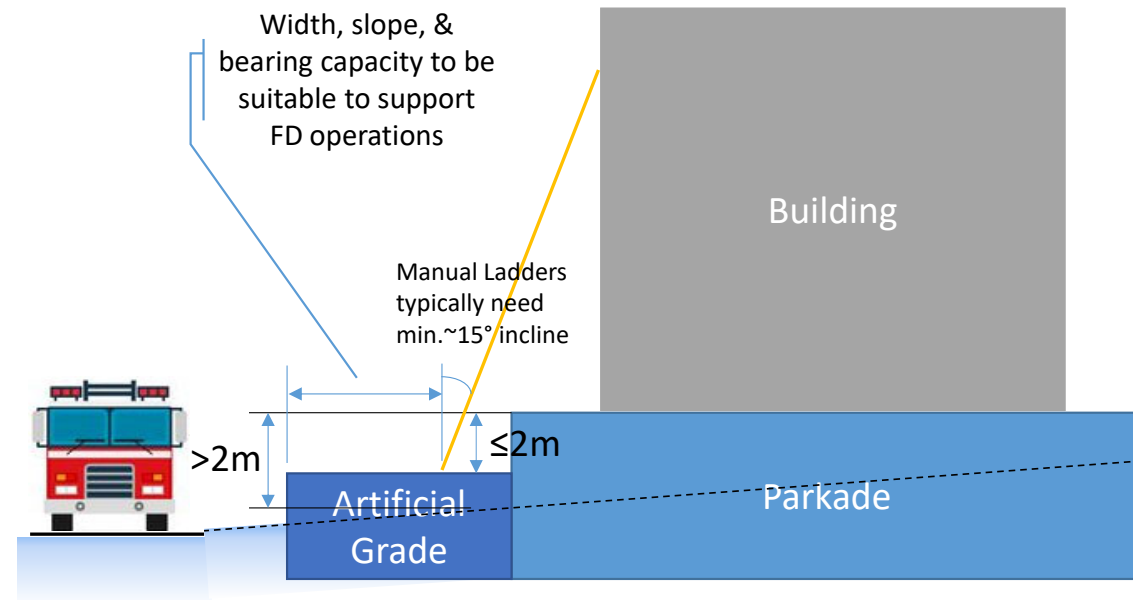
Grade and Sloping Sites

- Grade is the lowest average level of finished ground adjacent to the exterior walls of a building.
- Construction of narrow berms or planters are not a suitable way to adjust grade



Grade and Sloping Sites

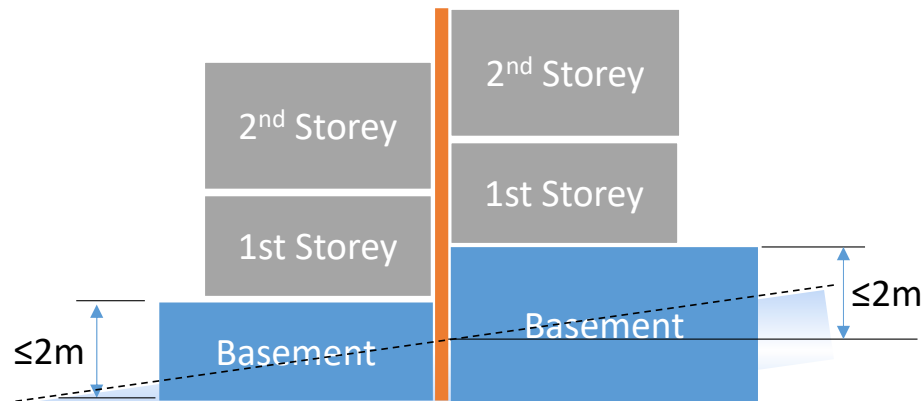
- Construction of Artificial Grade
 - May be acceptable in some circumstances
 - reasonable level area needs to be provided to support the use of ladders and other fire fighting operations.
 - VFRS review is expected



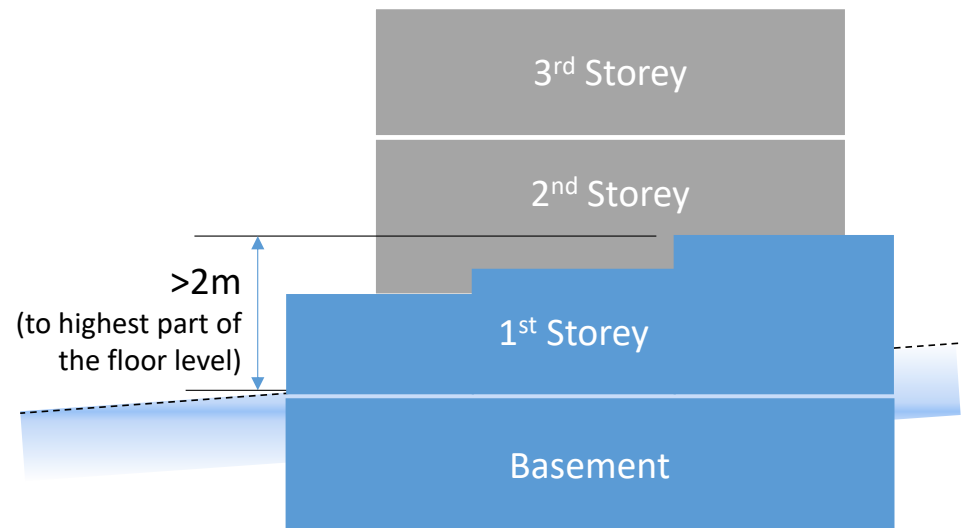
First Storey and Stepped Slabs

- First Storey based on Code definition
 - Can't apply 3.2.1.2. if not a basement
 - Could have multiple basements

First storey means the uppermost storey having its floor level not more than 2 m above *grade*.



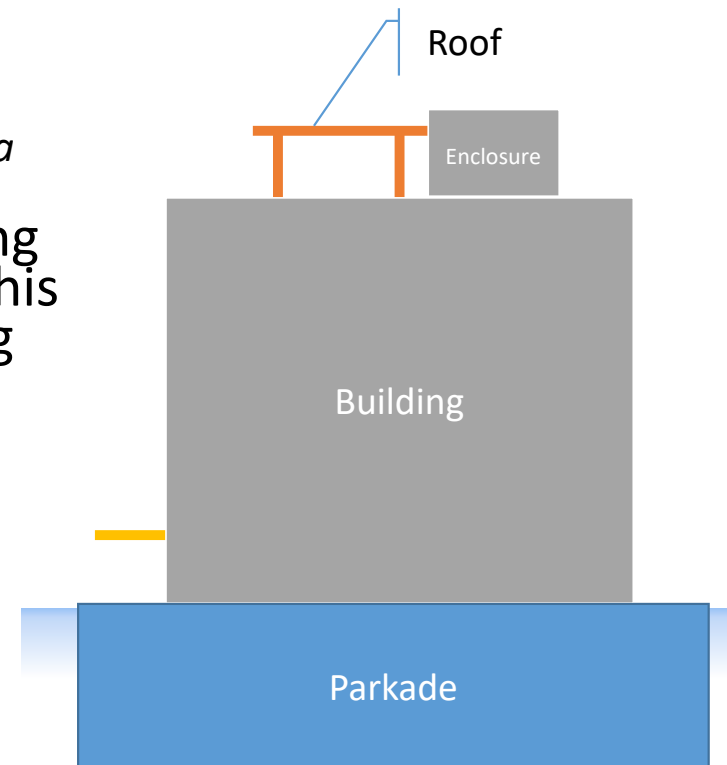
Stepped Building Configuration
(Div. A., 1.3.3.4.)



Stepped 1st Floor Slab

Unenclosed Roofs vs. Canopies

- Not a formally defined term
 - Per the oxford dictionary
 - **Roof** (noun): the structure that covers or forms the top of a building (or vehicle)
 - For the purposes of the VBBL if this is sheltering or directly supporting an ongoing occupancy this will typically be considered part of the building area
 - Storage
 - Seating
- Some exceptions:
 - Canopies & awnings (demountable; not usually self supporting)
 - Sufficiently open trellises
 - Limited areas for predominantly transitory use by either pedestrians or loading purposes



Part 9 on Separated Storage Garage

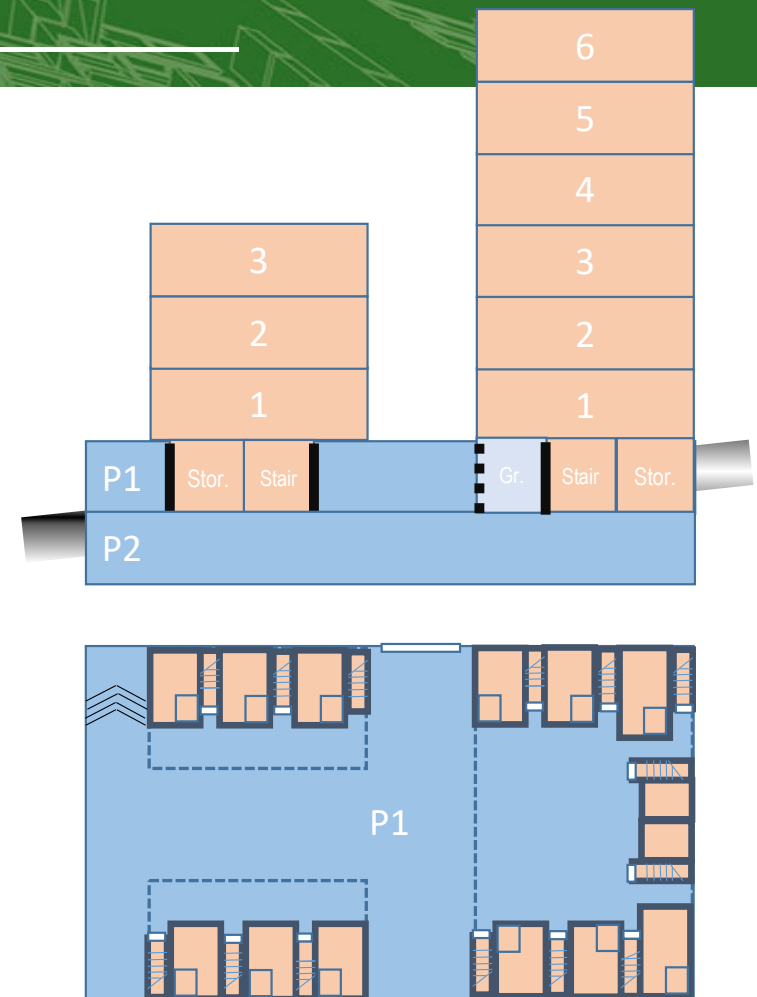
- Numerous requests received for the application of Part 9 on a 3.2.1.2.
- In general this concept is difficult to support
 - The application of Part 9 over a storage garage is unclear for a number of reasons
 - The principal concern is that the typical design and use of the building is more consistent with a Part 3 structure



The case contemplated under the BCBC

Part 9 on Separated Storage Garage

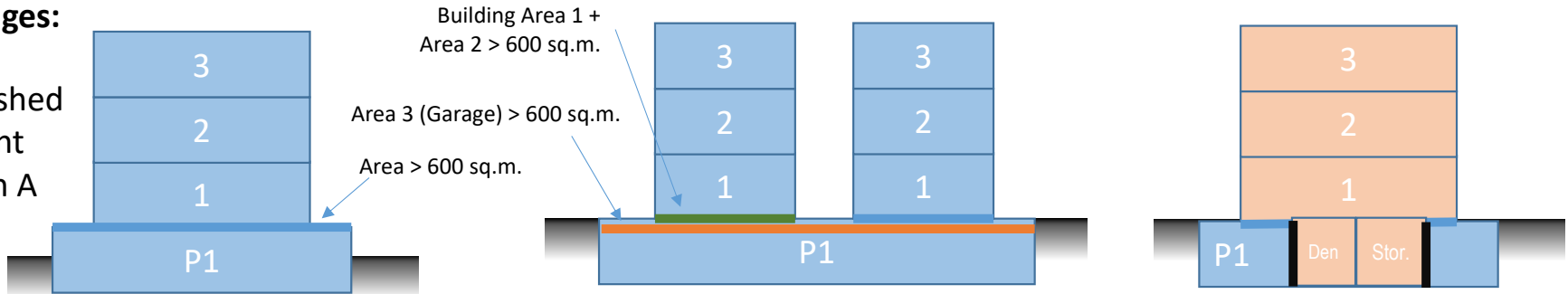
- Numerous requests but these typically do not resemble a Part 9 Building in use or construction
- Fundamentally, these are Part 3 buildings
 - The basement is not fully below grade
 - Includes multiple levels of parkade,
 - Building clusters with multiple penetrations directly from suites into the parkade
 - Suite uses extend down into the parkade levels
- Occupants of the buildings need to be aware of conditions in the remainder of the building.



Part 9 on Separate Storage Garage

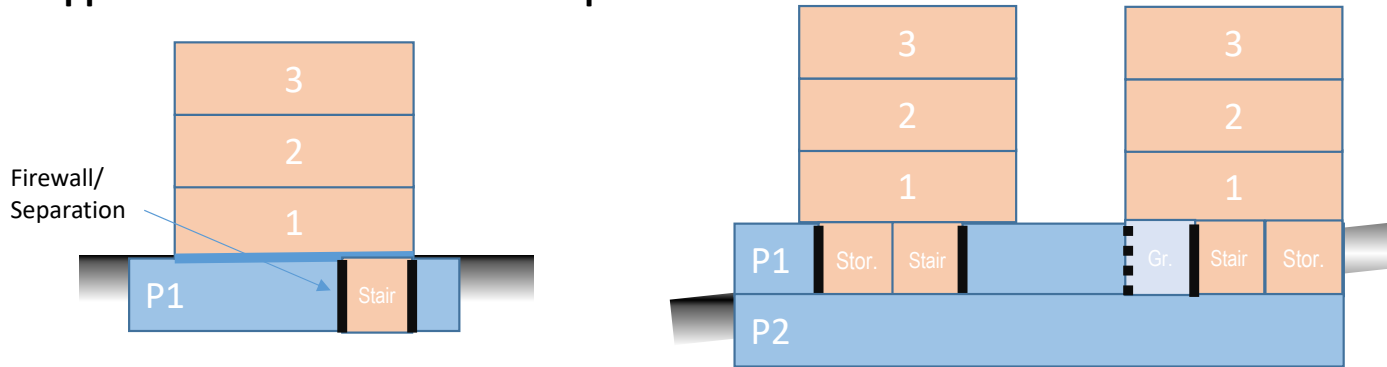
General Challenges:

Building is established as Part 3 upfront through Division A



Below grade level may not be primarily parking

Challenges to approaches based on Firewalls Equivalence:

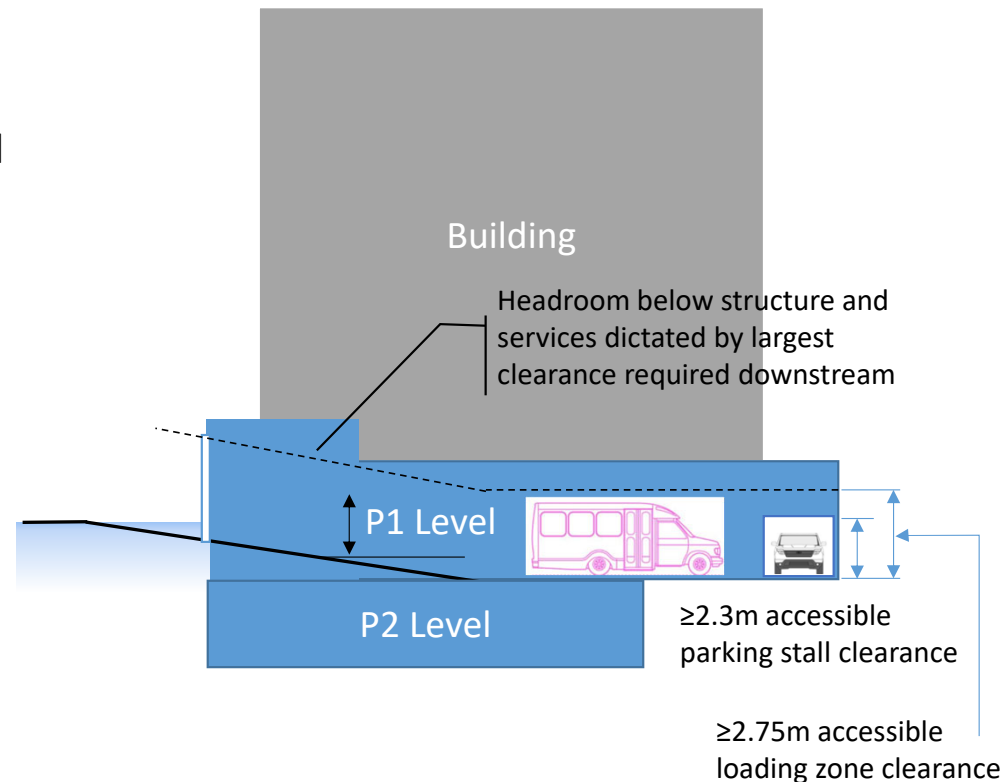


Firewall not terminating at a reinforced concrete roof slab

Bottom of the firewall not being carried through lower floors

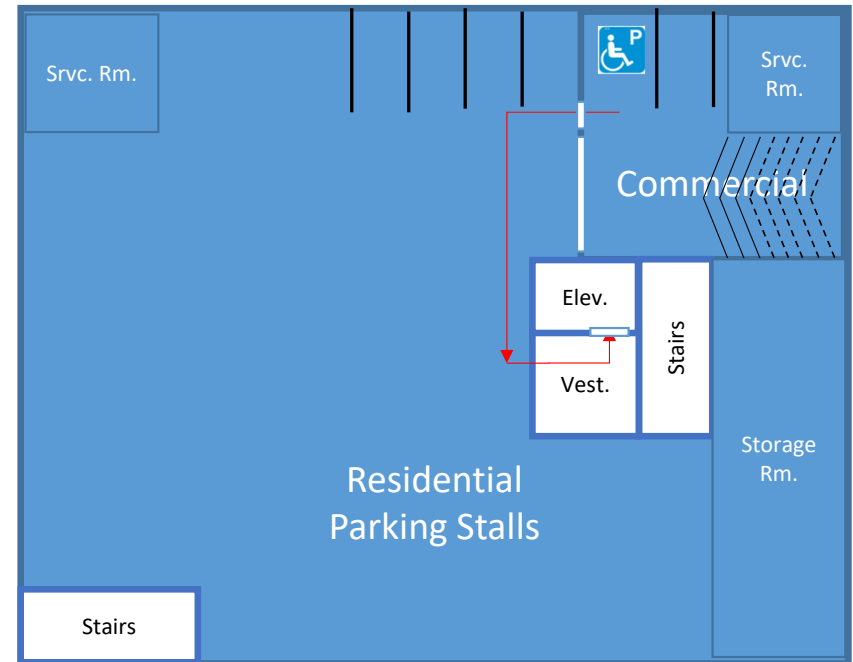
Accessible Loading Zones

- Designated passenger loading zones are to be 2.75 m high.
 - Typically this applies to porte-cochere or similar applications or as required by Development or Parking requirements.
 - For most other projects, it is permissible to load outside the building, in a suitable off-street location.
- In circumstances where the intended loading is within the parkade, then this too must meet the required clearance.
 - The language of the Building By-law uses the term “loading zone” whereas the Parking By-law use the term “loading space”, these refer to the same.
- Compliance with the Parking By-law is still required, and in most cases provides more specific and more demanding requirements



Access from Commercial Parking

- An accessible path is required from both the Commercial Accessible stall to the elevator or main entry
 - Access through the garage gate is not considered an acceptable solution
- It is expected that the designer address how the introduction of security hardware affect exiting



Smoke Dampers

- A considerable number of questions have arisen with respect to Clause 3.1.8.9.(2)(iii), and CoV policy
 - Building group is of the general opinion that a Clause (2)(iii) speaks to a performance design as a means to achieve code compliance (i.e.: this does not necessarily require an Alternative Solution)
 - Smoke Control System is not a formally defined term, but it generally to be a system designed to control the movement of smoke and air in a building (see also A-3.2.6.)
 - This is cross-discipline work – the mechanical RPR will need to work with Code professionals.

3.1.8.9. Smoke Dampers Waived

1) [...]

2) The requirement for smoke dampers or combination smoke/fire dampers stated in Sentence 3.1.8.7.(2) is permitted to be waived for noncombustible branch ducts having a melting point above 760°C that penetrate a fire separation,

a) provided the ducts

i) have a cross-sectional area not more than 0.013 m² and serve only air-conditioning units or combined air-conditioning and heating units discharging air not more than 1.2 m above the floor,

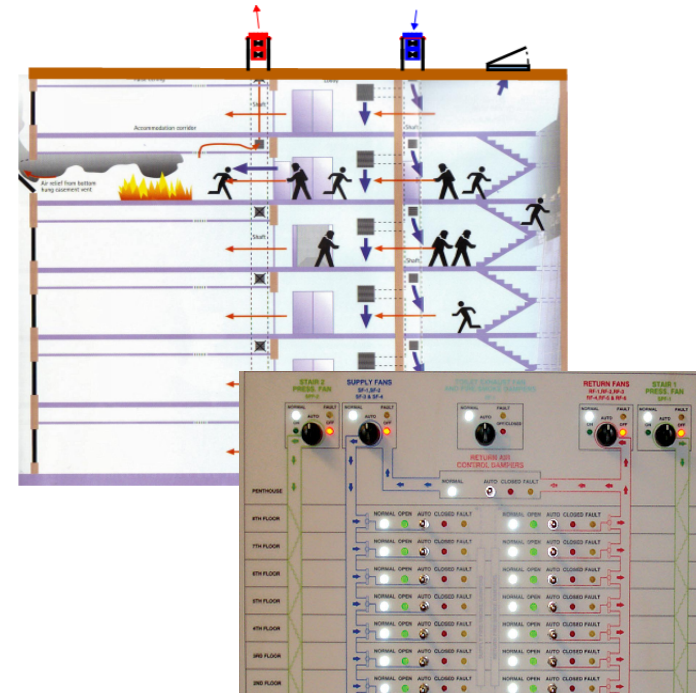
ii) extend not less than 500 mm inside exhaust duct risers that are under negative pressure and in which the airflow is upward as required by Article 3.6.3.4., or

iii) are required to function as part of a smoke control system, or

b) [...]

Smoke Dampers

- An acceptable design must be based on accepted design standards to
 - Establish suitable performance targets
 - Develop a design
 - Demonstrate that the performance of the design meets or exceeds the selected performance targets
- This is consistent with EGBC's professional practice guide to Fire Protection, which identifies that in the development of performance designs, an established design standards should be employed
 - The VBBL provides some of this
 - Recognized standards exist (SFPE Handbook, NFPA 92, etc.)
- This is new to everyone - CoV opinion will evolve, as new information becomes available
 - As has been previously stated, CoV has the intention of preparing a bulletin to further clarify the requirements



Performance Based Alternative Solutions

- Increasing interest in Performance based Alternative Solutions submissions (particularly with respect to building height, construction, and spatial separation)
 - Still governed by Div. A, 1.2.1.1., and Div. C, Section 2.3.
 - The code has not provided quantitative performance requirements
 - Proponents must clearly establish what acceptable performance
 - There must also be a demonstration that the proposed mitigating features will be capable of achieving or exceeding acceptable performance
 - Risk assessments are an integral part of good design practice, but cannot on their own demonstrate performance.

Performance Based Alternative Solutions

- Emergency responder actions as part of AL submissions
 - A general caution that it may be advisable not to rely heavily on this as part of an alternative solution
 - Emergency personnel response may vary based on training and availability of equipment
 - Local conditions may affect this, and are hard to adequately consider
 - Where emergency responder actions are referenced as part of an alternative solution, input and agreement from VFRS or other first responders is typically required



Coordinated Life Safety Systems Testing

- Reminder that this is requirement of the VBBL and Schedule B
 - Should be identified as part of the building design
 - Required as part of a Smoke Control System
 - Should be included into the fire safety plan so the information and protocol can be carried forwards for future testing.

