



# Public Review

## Vancouver Building By-law (VBBL)

### Proposed change to Parkade Security Requirements

**Topic:** Parkade Security Requirements

**Code change number:** 24-0004

**Code reference:** Book I, Division B, 3.3.7.7.(2), (4)

---

## Description of the proposed change

The proposed change are revision to the Storage Garage security provisions that will permit the interconnection of storage garage stairs exit, with egress from the ground floor areas. This is reflective of changing building design priorities and challenges.

## Justification

Owners, developers and designers, and staff have often raised concerns about Vancouver's parkade security requirements, specifically with respect to the need for dedicated and direct access to exterior from exit stairs. This has been identified as difficult to achieve in the modern context due to the building being larger, multi-use, and the cost of floor space being several orders of magnitude larger.

This also appears to have historically been inconsistently applied, and presents great difficulty in enforcement, particularly for older buildings, since developers are challenged in providing such space and in older buildings, the corridor/exit arrangements are already established and not easily modified.

Prior discussion with staff and recent approved Development permits have indicated they are no longer concerned about the mixing of populations.

This proposal provides an additional option for developers, and designers that eliminates the need for dedication of additional ground floor space dedication to corridors connecting parkade exit stairs to the exterior by allowing certain interconnection with other ground floor spaces provided certain conditions are met to reduce risk to occupants.

This proposal considers the general CPTED concepts of:

- natural surveillance by requiring clear lines of sight and glass for visibility,
- territoriality and maintenance through increased minimum lighting levels to 220 lx average illuminations (typical office illumination level),
- security measures - leveraging modern access controls to improve occupant awareness, support legitimate activities, and discourage intrusion and loitering.

This is an incremental improvement, which is expected to work for most modest size buildings where straight line of sight can reasonably be maintained to the exterior. Larger more complex buildings may have increased challenges, since the route to the exterior may involve longer distances, turns, or changes in elevation which would limit the effectiveness of line-of-sight solutions. In such cases, more detailed review is required, and alternative solutions may be required to ensure that an appropriate level of performance is achieved. Such solutions may involve the use of other technology solutions such as surveillance cameras, voice paging, mirrors or additional electronic access control, which need to be evaluated on a project specific basis.

## Proposed VBBL content

### Legend

Black Text – 2019 Vancouver Building By-law content

Underlined Black Text – Proposed modification to Vancouver Building By-law content

#### **3.3.7.7. Security for Storage Garage**

- 1)** The provisions of Sentences (2) to (7) shall apply to a *storage garage* with more than 19 parking spaces.
- 2)** If access is provided from a *storage garage* to a stair tower or to an elevator through a vestibule, the stair tower or vestibule shall be constructed
  - a) with *closures* glazed with clear wired glass in steel frames or fire protective glazing in fire-resistive frames complying with 3.1.8.16., which provide the greatest possible unobstructed view from the *storage garage* into the stair tower or vestibule,
  - b) as a *fire separation* with a *fire-resistance rating* of not less than 1 hr,
  - c) with full or half glazed *closures* with a *fire-protection rating* of not less than 45 min between the *storage garage* and the vestibule and between the vestibule and the stair tower, and
  - d) with a row of sprinkler heads running the full width of the glazing, installed on the garage side of the vestibule at a spacing of 1800 mm on centre parallel to the glass, located between 150 mm to 300 mm perpendicular to the glazing and vertically installed on the garage ceiling in conformance with NFPA requirements.

(See Note A-3.3.7.7.(2).)

3) A stair shaft serving a *storage garage* and which is connected to a *storey* containing an *occupancy* other than a *storage garage*, shall terminate at that *storey*.

4) Except for open-air *storage garages* and *buildings* of *residential occupancy*, a *storage garage* shall be provided with *exits* ~~which only serve the *storage garage* and which exit directly outside the *building*.~~

a) which only serve the *storage garage*, do not provide a common path of travel for other *floor areas*, and exit directly outside the *building*, or

b) serve the *storage garage* and *floor areas* at the *exit* level where

i) the *exit* from the stair extends in a straight line to the exterior door without adjoining dead-ends corridors,

ii) interior and exterior doors in the *exit* from the *storage garage* to the exterior are designed to maximize visibility of the egress route, adjoining spaces within the *exit* enclosure, and spaces provided with door opening into the *exit* enclosure,

iii) doors providing access into the *storage garage* exit from *floor areas* other than the *storage garage* are provided with electromagnetic locking hardware in accordance with Sentence 3.4.6.16.(5) to secure access into the *exit* except during emergencies, and

iv) the *exit* corridor is provided with an average illumination level of at least 220 lx.

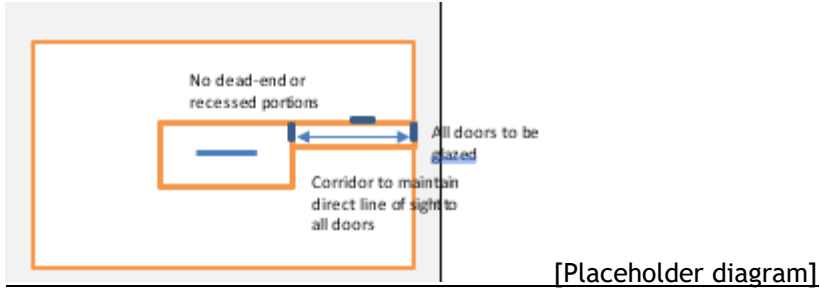
(see Note A-3.3.7.7.(3) and (4) )

5) [...]

**A-3.3.7.7.(2) Security for Storage Garage.** The requirements of Sentence 3.3.7.7.(2) are intended to provide improved visibility into or out of a stair tower or vestibule which might otherwise occlude the line of sight of building occupants as a result of intervening construction. Glazing must provide the maximum practical improvement to visibility to improve occupant safety. The term ‘stair tower’ used in this Sentence is intended to apply to vertical stair enclosures connecting more than one floor or containing superimposed flights of stairs.

**A-3.3.7.7.(3) and (4) Security for Storage Garage.** The provision of Sentence 3.3.7.7.(3) and (4) are to intended restrict access from the parking storeys to adjacent non-parking storeys of the building by mandating that the exits serving a parking storeys discharge directly to the exterior.

Clause (4)(b) is intended to provide a relaxation for mixed use buildings where reasonable security features have been implemented to ensure that occupant are not subject to an unacceptable risk of physical assault. Occupants using the exit are made aware of conditions in the exit due to increased visibility through glazed doors and clear sightlines, and can remain in a place of safety until they exit. Ancillary doors providing access to the exit serving the storage garage are to be provided with security measures to prevent general use of the exit by unauthorized persons, except for emergency egress.



**Figure A-3.3.7.7.(3) & (4)**