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Proposed Change 1765

Code Reference(s):	NBC20 Div.B 9.5. (first printing) NBC20 Div.B 9.9.5.3. (first printing)
Subject:	Accessibility — Anthropometrics
Title:	Projection of Protruding Building Elements
Description:	This proposed change extends the Part 9 requirements on the projection of protruding building elements to most paths of travel.
Related Code Change Request(s):	CCR 685

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input checked="" type="checkbox"/> Occupant safety in use |
| <input checked="" type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

The current requirements in Part 9 of the National Building Code of Canada (NBC) address the risks presented by protruding building elements only in public corridors within a means of egress. However, protruding elements in other locations and paths of travel can also present a safety issue for the 5.4% of Canadians 15 years old or older that are living with low vision that cannot be corrected by corrective lenses¹. According to a study performed by the Association of Education and Rehabilitation of the Blind and Visually Impaired, over 40% of respondents with low vision indicated they have head-level accidents at least once a year and as often as once per month; 12% indicated they have a head-level accident more than once a month². Requirements in Part 3 restrict the location and geometry of protruding building elements in areas of the building that are beyond public corridors within a means of egress, but these requirements have not yet been introduced in Part 9.

Requirements on obstructions in paths of travel that are inconsistent between Parts 3 and 9 may cause confusion and potential injury to building occupants, especially those with low vision.

Part 9 requirements should be aligned with those of Part 3 so that persons with low vision can maintain the same expectations for protection from protruding building elements along paths of travel. This proposed change would harmonize the level of safety and usability of Part 9 buildings with Part 3 buildings with respect to protruding building elements.

References

1. Statistics Canada, "Canadian Survey on Disability Reports: A demographic, employment and income profile of Canadians with disabilities aged 15 years and over, 2017", <https://www150.statcan.gc.ca/n1/pub/89-654-x/89-654-x2018002-eng.htm>
2. Manduchi, R. and Kurniawan, S. (2011). Mobility-related accidents experienced by people with visual impairment. *AER Journal: Research and Practice in Visual Impairment and Blindness*, 4(2), 44-54.

Justification

This proposed change limits the location and geometry of protruding building elements in most paths of travel in Part 9 buildings by introducing new Subsection 9.5.6. This proposed change would harmonize the level of safety between Part 3 and Part 9 buildings, and help ensure that persons with low vision can maintain consistent expectations about the presence of protrusions in paths of travel in both types of buildings.

To limit the impact on design flexibility, the proposed requirements permit elements that are detectable by canes and exempts paths in service rooms and dwelling units.

PROPOSED CHANGE

[9.5.] 9.5. Design of Areas and Spaces

[9.5.1.] 9.5.1. General

[9.5.1.1.] 9.5.1.1. Method of Measurement

[9.5.1.2.] 9.5.1.2. Combination Rooms

[9.5.2.] 9.5.2. Barrier-Free Design

[9.5.2.1.] 9.5.2.1. General

[9.5.2.2.] 9.5.2.2. Protection on Floor Areas with a Barrier-Free Path of Travel

[9.5.2.3.] 9.5.2.3. Exception for Apartment Buildings

[9.5.3.] 9.5.3. Ceiling Heights

[9.5.3.1.] 9.5.3.1. Ceiling Heights of Rooms or Spaces

[9.5.3.2.] 9.5.3.2. Mezzanines

[9.5.3.3.] 9.5.3.3. Storage Garages

[9.5.4.] 9.5.4. Hallways

[9.5.4.1.] 9.5.4.1. Hallway Width

[9.5.5.] 9.5.5. Doorway Sizes

[9.5.5.1.] 9.5.5.1. Doorway Opening Sizes

[9.5.5.2.] 9.5.5.2. Doorways to Public Water-Closet Rooms

[9.5.5.3.] 9.5.5.3. Doorways to Rooms with a Bathtub, Shower or Water Closet

[9.5.6.] -- Safety in Paths of Travel

[9.5.6.1.] --- Protruding Building Elements

[1] --) Paths of travel shall comply with Sentences 3.3.1.8.(2) and (3).

~~[9.9.5.3.] 9.9.5.3. Obstructions in Public Corridors~~

~~[1] 1) Except as permitted in Sentence (2), obstructions located within 1-~~

~~980 mm of the floor shall not project horizontally more than 100 mm into exit passageways, corridors used by the public or public corridors in a manner that would create a hazard for visually impaired persons travelling adjacent to walls.~~

~~**[2] 2)** The horizontal projection of an obstruction referred to in Sentence (1) is permitted to exceed 100 mm where the obstruction extends to less than 680 mm above the floor. (See Note A-3.3.1.8.(2) and (3).)~~

Impact analysis

While it may take some time for designers to get accustomed to applying the proposed requirements for protruding building elements, this proposed change is not expected to increase the cost of construction.

Statistics Canada reports that 5.4% of Canadians who are 15 years old or older live with low vision that cannot be corrected by corrective lenses¹. This proposed change is expected to improve building safety and usability for persons with low vision who could benefit from the reduced probability of being impacted by an unnoticed protruding building element as they travel along a path of travel.

Reference

1. Statistics Canada, "Canadian Survey on Disability Reports: A demographic, employment and income profile of Canadians with disabilities aged 15 years and over, 2017", <https://www150.statcan.gc.ca/n1/pub/89-654-x/89-654-x2018002-eng.htm>

Enforcement implications

This proposed change can be enforced using the infrastructure currently in place to enforce the Code. Protruding building elements can be measured with simple measurement tools.

Who is affected

Occupants would be less likely to collide with protruding building elements and risk injury.

Designers and builders would need to ensure that various building features met these requirements.

Authorities having jurisdiction would need to evaluate if protruding building elements comply with Code requirements.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

- [9.5.1.1.] 9.5.1.1. ([1] 1) no attributions
- [9.5.1.2.] 9.5.1.2. ([1] 1) no attributions
- [9.5.1.2.] 9.5.1.2. ([2] 2) [F10-OS3.7]
- [9.5.2.1.] 9.5.2.1. ([1] 1) no attributions
- [9.5.2.2.] 9.5.2.2. ([1] 1) no attributions
- [9.5.2.3.] 9.5.2.3. ([1] 1) no attributions
- [9.5.2.3.] 9.5.2.3. ([2] 2) no attributions
- [9.5.3.1.] 9.5.3.1. ([1] 1) [F30-OS3.1] [F10-OS3.7]
- [9.5.3.1.] 9.5.3.1. ([2] 2) [F30-OS3.1] [F10-OS3.7]
- [9.5.3.1.] 9.5.3.1. ([3] 3) [F30-OS3.1] [F10-OS3.7]
- [9.5.3.1.] 9.5.3.1. ([4] 4) [F30-OS3.1] [F10-OS3.7]
- [9.5.3.2.] 9.5.3.2. ([1] 1) [F30-OS3.1] [F10-OS3.7]
- [9.5.3.3.] 9.5.3.3. ([1] 1) [F30-OS3.1] [F10-OS3.7]
- [9.5.4.1.] 9.5.4.1. ([1] 1) [F10-OS3.7]
- [9.5.5.1.] 9.5.5.1. ([1] 1) [F30-OS3.1] [F10-OS3.7]
- [9.5.5.1.] 9.5.5.1. ([2] 2) [F10-OS3.7] [F30-OS3.1]
- [9.5.5.2.] 9.5.5.2. ([1] 1) [F30-OS3.1] [F10-OS3.7]
- [9.5.5.3.] 9.5.5.3. ([1] 1) no attributions
- [9.5.5.3.] 9.5.5.3. ([2] 2) [F74-OA2]
- [9.5.6.1.] -- ([1] --) [F30-OS3.1] [F73-OS3.1]
- ~~[9.9.5.3.] 9.9.5.3. ([1] 1) [F30-OS3.1]~~
- ~~[9.9.5.3.] 9.9.5.3. ([2] 2) no attributions~~