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Proposed Change 1962

Code Reference(s):	NECB20 Div.B 3.2.1.1.(1) (first printing)
Subject:	Building Envelope - General
Title:	Use of the Term "Grade" in the NECB
Description:	This proposed change clarifies Note A-3.2.1.1.(1) by using "ground" instead of "grade" to refer to the finished ground level.
Related Code Change Request(s):	CCR 1391
Related Proposed Change(s):	PCF 1653, PCF 1840

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

Problem

In the National Building Code of Canada (NBC), "grade" is a defined term used to determine a building's height in storeys, which in turn determines requirements for the construction and protection of that building. The NBC defines "grade" as the lowest of the average levels of finished ground adjoining each exterior wall of a building. Therefore, at any point along the length of a wall, grade may be above or below the adjacent ground level. As such, the defined term "grade" does not necessarily refer to the finished ground level.

If Code users determine the requirements for the insulation of a building component based on the definition of grade provided in the NBC, which is reproduced in the National Energy Code of Canada for Buildings (NECB), this could lead to the installation of thermal insulation that is insufficient to minimize heat loss.

Justification

In the NECB, the main purpose for references to “grade” is to establish requirements to reduce heat loss. In most instances, rather than using the defined term “grade,” the NECB should refer instead to “ground,” which more accurately describes the building level intended to be used to determine the required thermal resistance of the building element. The use of the defined term “grade” to determine thermal insulation requirements may lead to building elements having a thermal resistance that does not meet the objectives of the NECB.

Using the non-defined term “ground” instead of “grade” to determine the required thermal resistance of a building component will minimize heat loss and better meet the objectives of the NECB.

PROPOSED CHANGE

[3.2.1.1.] 3.2.1.1. Protection of Insulation Materials

- [1] 1)** Except as provided in Sentence (2), the *building envelope* shall be designed to avoid increasing the *overall thermal transmittance* of the insulation material due to
- [a] a) air leakage or convection,
 - [b] b) wetting, or
 - [c] c) moisture bypassing the plane of thermal resistance.
- (See Note A-3.2.1.1.(1).)

Note A-3.2.1.1.(1) Protection of Insulation Materials.

Sentence 3.2.1.1.(1) is not intended to preclude the use of building envelope systems such as protected membrane roofing systems, vegetative roofing systems, EIFS in rainscreen applications, and exterior insulation on below-~~ground~~~~grade~~ walls.

Impact analysis

The proposed change has no cost implications, as it is not a change to the Code requirement. The change would have the benefit of clarifying the explanatory Note.

Enforcement implications

This change can be enforced by the infrastructure currently available to enforce the NECB.

Who is affected

Designers, engineers, architects, builders and building officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[3.2.1.1.] 3.2.1.1. (**[1]** 1) [F92-OE1.1]