2020 National Building Code Adaptation - FAQs

Prepared by the Construction Association of Nova Scotia

Nova Scotia Building Code Regulations are structured into various parts, each addressing specific aspects of building design and construction. Part 3 focuses on large and complex buildings, while Part 9 pertains to smaller, residential-type buildings. These responses have been addressed by Anne Lombardi, Charity Carr and facilitators from Jensen Hughes and RJ Bartlett Engineering Ltd.

Note: This frequently-asked-questions guide is for educational purposes only and does not replace official building codes, regulations, or professional consultation. Always refer to the applicable codes and seek expert guidance for compliance.

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Which projects currently in design will be affected by this; projects not out to tender, projects not awarded, or projects not actively in construction by April 1st?

Charity Carr: Projects that have not submitted a permit by April 1, 2025.

RJ Bartlett: In most jurisdictions across the province, projects associated with a building permit that was submitted on/after April 1st, 2025, would be expected to comply with the 2025 Nova Scotia Building Code (NSBC) unless specific arrangements have otherwise been negotiated/approved with the Authority Having Jurisdiction (AHJ) on a case-by-case basis. This type of case-by-case negotiation on the applicable edition of the code around a significant change in code adoption is a reasonably common occurrence (particularly when the Project Team can demonstrate that that a particular aspect of the newly adopted edition of the code will present the project with undue/unforeseen hardship due to the project's design and/or budgeting being far enough along at the time that the timeline for the code adoption became public knowledge).

Jensen Hughes: Projects that have not been submitted for building permit will be impacted by the changes following April 1st regarding projects requiring adoption of the 2020 NBC and NSBCR 198/24 edition of the NS code.

Are there allowances for heritage buildings?

Charity Carr: Yes, the 2020 National Building Code of Canada (NBC) includes allowances for heritage buildings. Here are some key points:

1. Flexibility in Compliance: Heritage buildings may be allowed to use alternative solutions to meet the intent of the code, recognizing that strict compliance with modern building standards may not always be feasible or desirable for preserving historical features.

2. Fire Safety: Specific provisions may be adapted to maintain the historical integrity of the building while ensuring adequate fire protection measures are in place.

3. Structural Integrity: Modifications to structural requirements can be made to accommodate the preservation of original materials and construction methods, provided that the building remains safe for occupancy.

4. Accessibility: While accessibility is important, there may be some flexibility in how accessibility standards are applied to heritage buildings to balance the need for access with the preservation of historical elements.

5. Environmental Separation: The code allows for exemptions in environmental

separation requirements for heritage buildings, acknowledging that modern insulation and air barrier systems may not be compatible with historical construction techniques.

RJ Bartlett: Yes. NSBC Schedule "D" provides a set of alternative compliance measures for various issues that are common for existing buildings that may be applied if the building existed before March 13, 1987, and is either undergoing construction (other for than a change of occupancy classification), or the building is undergoing construction with a change of occupancy classification that results in an occupancy with a reduced fire hazard risk. If a change inoccupancy classification results in an occupancy with an increased fire hazard risk, the NSBC Schedule "D" measures are technically not applicable (unless specific arrangements have otherwise been negotiated/approved with the AHJ).

NSBC Schedule "D" is also permitted to be applied where a heritage building, part of a heritage building, or building located within a heritage conservation district is undergoing a change in occupancy classification.

Jensen Hughes: The same requirements/permissions for heritage buildings still apply.

What if a specific floor has an entry? Does the entry still have to be designed as barrier free?

Jensen Hughes: All entrances to a building are required to be designed as barrier-free/accessible and in conformance with Section 3.8 of the NSBCR 198/24.

Are baby change tables obsolete now?

Jensen Hughes: No, baby change tables are still appropriate. The difference is the adult change tables come with their own unique requirements for where they are required.

Do all entrance doors to commercial buildings need to be barrier free?

Jensen Hughes: All entrance doors to buildings are required to be barrier free. The exceptions to this fall under Sentence 3.8.2.1.(1) under the NSBCR 198/24, which include but is not limited to buildings containing a Group F, Division 1 major occupancy, and industrial occupancies with an operation that is not adaptable to barrier-free design.

Are there specific fire protection requirements unique to Part 3 buildings?

RJ Bartlett: Yes. Part 3 of the NSBC generally has increased fire protection requirements relating to building construction, compartmentation, active and passive fire protection systems, exit/egress, exposure protection, and fire department access when compared to the requirements for Part 9 buildings.

Does the reference building include thermal bridging calculations or is it assumed to be covered in the reference building nominal values?

Anne Lombardi: The reference building must be modelled with the prescriptive R values (R23.7). It is assumed that this represents the reference R value after accounting for thermal bridging.

Is there a definition for level of care? i.e., do they need to have some mobility?

Charity Carr: There are several levels of care: In Nova Scotia, Level of Care refers to the intensity of care a patient requires, often used to determine if they are still in need of acute care or if their needs can be met in a community setting. Staffing refers to the number of staff available in a facility or setting, often discussed in relation to patient needs and care requirements.

RJ Bartlett: The NSBC provides the following definitions for Care and Treatment occupancies respectively:

"Care Occupancy: The occupancy or use of a building or part thereof where care is provided to residents, wherein care means the provision of services, other than treatment, by or through care facility management to residents who require these services because of cognitive, physical, or behavioural limitations."

"Treatment Occupancy: The occupancy or use of a building or part thereof for the provision of treatment, and where overnight accommodation is available to facilitate the treatment. In this context, treatment is defined as the provision of medical or other health-related intervention to persons, where the administration or lack of administration of these interventions may render them incapable of evacuating to a safe location without the assistance of another person."

The Appendix Note associated with the definition of care discusses that in the context of care occupancies, these services may include a daily assessment of the resident's functioning, awareness of their whereabouts, the making of appointments for residents and reminding them of those appointments, the ability and readiness to intervene if a crisis arises for a resident, supervision in

areas of nutrition or medication, and provision of transient medical services.

Services may also include activities of daily living such as bathing, dressing, feeding, and assistance in the use of washroom facilities, etc. No actual treatment is provided by or through care facility management.

Does a one-bedroom backyard suite fall under B4?

Charity Carr: Only if a home-type care occupancy, which include single detached housekeeping units where care is provided to residents. This classification is suitable for a one-bedroom backyard suite (small, self-contained living space that can be used for residential purposes).

RJ Bartlett: The NSBC deals strictly with the intended use and design of buildings and does not make distinctions based on zoning by-laws and/or land-use regulations. In this regard, a one-bedroom backyard suite could be classified as a Group B, Division 4 major occupancy provided the building is designed to all of the applicable NSBC Part 9 requirements however, whether such a building would be permitted on the property may ultimately be subject to the applicable zoning by-laws and/or land-use regulations.

What does protective encapsulation mean?

Charity Carr: Protective encapsulation refers to the process of covering structural elements, such as mass timber, with materials that delay ignition and combustion when exposed to fire.

RJ Bartlett: In the context of Encapsulated Mass Timber Construction (EMTC), protective encapsulation refers to the protective materials used to encapsulate the exposed surfaces of mass timber elements and to achieve the required encapsulation rating. Encapsulation ratings are to be determined in accordance with CAN/ULC-S146.

Jensen Hughes: Protective encapsulation means the exterior surface applied to a mass timber element that protects the timber from the adjacent building spaces in a room or suite. These materials can include gypsum board, gypsum concrete, and non-combustible materials to name a few.

Can encapsulation be avoided by increasing the size of structural members?

Charity Carr: The purpose of encapsulation is to provide a barrier that delays the ignition and combustion of structural elements. Increasing size of the structural members alone does not achieve the same level of fire protection

as encapsulation. Materials like drywall or other fire-resistant materials is crucial for maintaining integrity during a fire, regardless of the size of the structural members.

RJ Bartlett: No. The allowances for having exposed mass timber elements are outlined in NSBC Article 3.1.6.4. and are primarily impacted by the total areas of the exposed materials within a suite/fire compartment, orientation, and flame-spread rating of the exposed materials.

Jensen Hughes: The requirements under the 2020 NBC are strictly related to encapsulated mass timber. Mass timber elements can be used in the construction of a building permitted to be constructed of combustible materials, however Sentence 3.1.6.4.(3) identifies specific instances where encapsulation can be waived. These include when their aggregate surface area does not exceed 10% of the total wall area of the perimeter of the suite or fire compartment in which they are located, and the flame-spread rating on any exposed surface is not more than 150.

Do High Building limits for Smoke Developed Classification apply?

RJ Bartlett: The requirements (and allowances) outlined in NSBC Article 3.1.13.7. for smoke developed classification are to apply to all high buildings within the Scope of NSBC Subsection 3.2.6.

Jensen Hughes: High building requirements under 3.1.13.7 are applicable to buildings constructed of EMTC.

What types of buildings fall under Part 9 of the Nova Scotia Building Code?

Charity Carr: The NS Building Code does not differ from the NBC in any significant way with the exception that section 9.39 was added to the NSBCR, which exempts tiny homes from the adaptability requirements in NBC 3.8.4.

RJ Bartlett: Except for manufactured homes built to CSA Z240 MH Series, Manufactured Homes and modular homes certified to CAN/CSA A277, Procedure for Factory Certification of Buildings, as complying with the technical requirements of this NSBC (NSBC Clause 59), Part 9 of the NSBC Applies to buildings that are 3 storeys or less in building height, having an area not exceeding 600 sqm, and used for the following major occupancies: - Group B, Division 4 (Home-Type Care) - Group C (Residential) - Group D (Business and Personal Services) - Group E (Mercantile) - Group F, Division 2 and 3 (Medium- and Low-Hazard, Industrial)

Are there specific energy efficiency requirements for Part 9 buildings?

Charity Carr: All requirements are covered in 2020 NBC 9.36 - though the requirements vary depending on whether you are building prescriptively (must hit all minimum requirements in 9.36), energy modeling (using 9.36.5.) or the NECB.

How does Part 9 address the use of alternative materials or construction methods?

Charity Carr: General Provisions Engineered Components: Part 9 recognizes the use of engineered components in wood-frame construction. This includes materials like wood I-joists and steel floor joists, which can be used in lieu of traditional lumber joists. The requirements for fastening and structural integrity still apply, ensuring that the overall performance of the building is maintained.

Alternative Nail Sizes: Power nails or nails with smaller diameters than those specified in the code can be used, provided they meet the necessary performance criteria.

Specific Sections Section 9.23: This section focuses on light wood-frame construction but acknowledges that other constructions, such as post, beam, and plank construction, must be designed in accordance with Part 4. This ensures that alternative methods are structurally sound and meet safety standards.

Roofing Materials: Methods described in standards like CSA A123.51 for asphalt shingle application can be used as alternatives to the methods described in Part 9. This allows for flexibility in roofing installations while ensuring compliance with performance standards.

Performance-Based Approach Material Standards: Where materials fall within the scope of a standard listed in Part 9, they must comply with that standard. This ensures that alternative materials meet the same performance requirements as traditional materials.

Fire Safety: Alternative materials and methods must maintain the integrity of fire separations and meet fire-resistance ratings. This includes the use of generic firestop materials like mineral wool, gypsum plaster, or Portland cement mortar to seal penetrations.

Flexibility and Innovation EIFS (Exterior Insulation and Finish Systems): Part 9 allows for the use of different component materials that meet the intent of the code. This includes using mineral-fibre insulation, mechanical fastening methods, or different types of water-resistive barriers.

Drainage and Thermal Performance: The design and construction of EIFS

drainage cavities must consider construction tolerances and sequencing to ensure adequate drainage and thermal performance.

Compliance with Standards Testing and Certification: Alternative materials and methods must be tested and certified to ensure they meet the required performance criteria. This includes compliance with standards like CAN/ULC-S716.1 for EIFS materials and systems.

RJ Bartlett: Article 1.2.1.1 of the NSBC permits compliance with the NSBC (including both Parts 3 and 9) to be achieved by either complying with the applicable acceptable solutions in Division B, or through the use of alternative solutions that will achieve at least the minimum level of performance required by Division B in the areas defined by the objectives and functional statements attributed to the applicable acceptable solutions.

With that, alternative materials or construction methods may possibly be used provided they are rationalized as part of a performance-based alternative solution demonstrating that at least an equivalent level of protection to that intended by the NSBC acceptable solution requirements can be achieved by the proposed conditions, as benchmarked by the applicable objective and functional statements of the NSBC. Alternative compliance is always subject to the review and approval of the AHJ.

What are the requirements for egress windows in bedrooms under Part 9?

Charity Carr: General Requirement: Each bedroom or combination bedroom must have at least one outside window or exterior door that is openable from the inside without the use of keys, tools, or special knowledge, and without the removal of sashes or hardware. This requirement does not apply if the suite is sprinklered.

Window Opening: The window must provide an unobstructed opening of at least 0.35 m^2 in area, with no dimension less than 380 mm. The required opening must be maintained during an emergency without the need for additional support.

Window Wells: If the window opens into a window well, a clearance of at least 760 mm must be provided in front of the window. If the sash of the window swings towards the window well, the operation of the sash must not reduce the clearance in a manner that would restrict escape in an emergency. Any protective enclosure installed over the window well must be openable from the inside without the use of keys, tools, or special knowledge of the opening mechanism. The last sentence is one that is tricky to navigate. The fall protection requirements conflict with the egress requirements when it comes

to second story windows unless the operable part of the window is more than 3’ above floor level. You can have another larger/lower windows but they must either a) not be operable b) be protected by guards or a window opening closure device.

Are there provisions for barrier-free design in Part 9 buildings?

Charity Carr: Yes, they must follow the provisions in NBC 3.8.1. with exemptions as set out in the 2020 NSBCR, which repealed section 3.8 and replaced with NSBCR Schedule C (found on page 69 of the NSBCR - latest version file title: 2024-198-BC-Nova_Scotia_Building_Code)

How accurate is modelling vs. built reality?

Charity Carr: Honestly, it depends. Energy modelers use the most accurate climate, occupancy, mechanical and envelope data they have. That said, the actual use by occupants can vary, as can weather trends and the air leakage in the building.

Anne Lombardi: An energy model estimates energy consumption based on typical usage profiles and historic weather. There will be differences between the model and real usage due to occupant behaviors, occupancy levels, annual weather, equipment operation and schedules, etc. Model verification is not required for code compliance but can be conducted for a building post-construction, if energy consumption data is available.

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On behalf of the Construction Association of Nova Scotia (CANS) and the Canadian Home Builders’ Association – Nova Scotia (CHBANS), thank you for joining us for our Building Code Adaptation sessions. We extend our sincere thanks to the Province of Nova Scotia for their funding and support, which made these sessions possible.

CANS and CHBANS are proud to have supported this successful project and look forward to continued collaboration with the Province as we work together to build a resilient, skilled, and adaptable construction industry for Nova Scotia.