Notes to Part 10

Energy Efficiency

A-10. Water Efficiency. Water efficiency requirements have been relocated in Book II, Plumbing Services, of the BC Building Code.

A-10.2.2.2. Energy Requirements for Alterations to Buildings and Major Occupancies. Alterations, rehabilitation, renovations and changes of occupancy to existing buildings or major occupancies that were originally designed and constructed to previous editions of the ANSI/ASHRAE/IES 90.1 standard are to comply with the edition of the ANSI/ASHRAE/IES 90.1 standard referenced in this Code, or the requirements of Subsection 10.2.3. Alterations, rehabilitation, renovations and changes of occupancy to existing buildings or major occupancies that were originally designed and constructed to previous editions of the NECB or Subsection 10.2.3. are to comply with the edition of the NECB referenced in this Code, or to Subsection 10.2.3. Existing buildings or major occupancies that were not designed and constructed to any version of the ANSI/ASHRAE/IES 90.1 standard, the NECB or Subsection 10.2.3, may use the edition of the ANSI/ASHRAE/IES 90.1 standard or the NECB referenced in this Code, or Subsection 10.2.3. for alterations, rehabilitation, renovations and changes in occupancy.

Sentence 1.1.1.2.(1) of Division A states that the level of building performance shall not be decreased below a level that already exists. For example, a new occupancy may be permitted a higher lighting power density by the ANSI/ASHRAE/IES 90.1 standard or the NECB than the lighting power density that was permitted for a previous occupancy. This does not constitute a decrease in the level of building performance, provided the design meets the minimum requirements of the relevant Code or standard.

A-10.2.3.2.(2) Thermal Energy Demand Intensity (TEDI). TEDI does not include receptacle loads and energy use from unusual uses such as spas and computer server rooms.

A-10.2.3.3.(2) Energy Model Calculations for Step 1. Although the total energy use intensity and thermal energy demand intensity are not required for NECB conformance, they must still be calculated in conformance with Article 10.3.1.4. and reported in accordance with Subsection 2.2.9. of Division C.

A-10.2.3.4. Energy Modelling

Energy Model Calculations for Steps 2 to 4

Notwithstanding the requirements of Part 8 of the NECB, a reference building and building energy target are not required for compliance with the requirements of Steps 2 to 4 in Article 10.2.3.3. The performance requirements of Tables 10.2.3.3.-A. to 10.2.3.3.-J. are used to determine compliance.

Air Leakage Rate in Energy Model Calculations

The requirement to account for the air leakage rate as tested in all energy model calculations, other than for Step 1 buildings, supersedes the NECB air leakage rate requirements. For buildings that must conform to the requirements of any of Steps 2 to 4, higher than expected air leakage may require the building design to be altered and the energy model calculations to be repeated. Alternatively, the air leakage rate could be retested after making alterations to the air barrier system to attain the desired air leakage rate.

Air Leakage Rate in Energy Model Calculations for Step 1

Although the air leakage rate as tested of the building need not be used for the purposes of conforming with Part 8 of the NECB and Sentence 10.2.3.4.(2), Article 2.2.9.1. of Division C requires that the air leakage rate as tested be used in the calculation of the total energy use intensity and thermal energy demand intensity for reporting purposes on the drawings and specifications. This will typically require Step 1 energy model calculations to be redone after the airtightness test. It is not intended that the results of the airtightness test for buildings that must conform to the requirements of Step 1 influence the compliance of the building with Article 10.2.3.3.

Air Leakage Rate

Section 2.4. of the City of Vancouver's Energy Modelling Guidelines provides guidance on determining infiltration/air leakage rates for buildings conforming with Section 10.2.3. at the design stage.

A-10.2.3.5.(1) Building Airtightness Testing Requirements. The intent of this testing is to quantify the airtightness level of the air barrier system, not airtightness of the building at in-service operating conditions.