LEED v4 Canadian Alternative Compliance Paths (ACPs)

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In order to ensure greater ease of use, the CaGBC has developed Alternative Compliance Paths (ACPs) for various sets of requirements and continues to actively work on additional ACPs for the future. These ACPs provide equivalent means of meeting credit and prerequisite requirements, such as by referencing standards that are more familiar to Canadians and which are available in both official languages. These ACPs have been incorporated into the USGBC's Credit Library.

LEED BD&C (all adaptations): Location and Transportation credit: Sensitive Land Protection

Relevant Requirement Language:

Option 2.

Locate the development footprint on land that has been previously developed or that does not meet the following criteria for sensitive land:

- Prime farmland. prime farmland, unique farmland, or farmland of statewide or local importance as defined by the U.S. Code of Federal Regulations, Title 7, Volume 6, Parts 400 to 699, Section 657.5 (or local equivalent for projects outside the U.S.) and identified in a state Natural Resources Conservation Service soil survey (or local equivalent for projects outside the U.S.).

ACP

In Canada, if the project is mapped under the Canada Land Inventory (CLI), then prime farmland is land classified as Class 1, 2 or 3 of this inventory. For projects located on sites not mapped by this inventory, follow global guidance[1] for local equivalents.

[1] The global guidance for an alternate definition of prime farmland outside of the USA is expected to be released by end of 2014.

LEED BD&C – Healthcare: Sustainable Sites credit: Places of Respite

Relevant Requirement Language:

Additionally, outdoor areas must meet the following requirements.

- A minimum of 25% of the total outdoor area must be vegetated at the ground plane (not including turf grass) or have overhead vegetated canopy.
- The area is open to fresh air, the sky, and the natural elements.
- Signage must meet the 2010 FGI Guidelines for Design and Construction of Health Care Facilities (Section 1.2-6.3 and Appendix A1.2-6.3: Wayfinding) [Canada ACP].

ACP

Projects in Canada may consider CSA Z8000 - Canadian Health Care Facilities - Planning, Design and Construction (Sections 6.1.9 and 6.2.2 Wayfinding) as an equivalent to meeting the 2010 FGI Guidelines for Design and Construction of Health Care Facilities (Section 1.2-6.3 and Appendix A1.2-6.3:Wayfinding) for the signage requirement of this credit.

LEED BD&C (all adaptations including Multifamily Midrise) & ID&C (all adaptations): Energy and Atmosphere prerequisite: Minimum Energy Performance Energy and Atmosphere credit: Optimize Energy Performance

Relevant Requirement Language:

Option 1. Whole-building energy simulation

Demonstrate an improvement of 5% for new construction, 3% for major renovations, or 2% for core and shell projects in the proposed building performance rating compared with the baseline building performance rating. Calculate the baseline building performance according to ANSI/ASHRAE/IESNA Standard 90.1–2010, Appendix G, with errata (or a USGBC-approved equivalent standard for projects outside the U.S.), using a simulation model.

ACP

Projects in Canada may instead demonstrate a percentage improvement in the proposed building performance rating compared with the baseline according to the National Energy Code for Buildings (NECB) 2011. The same percentage cost improvement in energy performance is required to meet the Prerequisite, and the same points for percentage cost improvement in energy performance are applicable for the Credit.

The following conditions (where applicable) must be met. Note that unless otherwise noted, CanQUEST (the Canadian energy modelling software based on eQUEST that performs NECB 2011 compliance runs) does not implement many of these conditions correctly and would require corresponding modifications to the Reference case.

1. **Comply with mandatory requirements of ASHRAE 90.1-2010**

   ASHRAE 90.1-2010 mandatory requirements must be met, in addition to the performance path limitations referenced in the NECB 2011 Sections 3.4.1.2, 5.4.1.2 and 6.4.1.2. In cases where ASHRAE and the NECBC reference requirements concerning the same item, the more stringent requirement shall be adhere to.

   The following exceptions apply:

   - ASHRAE 90.1-2010 mandatory items 6.4.3.9, 9.4.1.2b, 9.4.1.4, 9.4.1.5, 9.4.3

2. **Apply fenestration area convention similar to ASHRAE 90.1-2010**

   Maintain the same FWR (as defined by NECB, including doors) for the Reference as exists in the Proposed Design, up to the prescribed maximum. If the Proposed Design's FWR exceeds the prescribed FWR, scale down the fenestrations in the Reference case accordingly.

3. **Apply skylight area convention similar to ASHRAE 90.1-2010**

   Maintain the same SRR for the Reference as exists in the Proposed Design, up to the prescribed 5% maximum. If the Proposed Design's SRR exceeds 5%, scale down the skylights in the Reference case accordingly.

4. **Model proposed and reference outside air similar to ASHRAE 90.1-2010**

Proposed and reference (baseline) outside air rates shall be modelled as per ASHRAE 90.1 – 2010 (G3.1.2.6).

5. **Apply ASHRAE kitchen exhaust demand ventilation requirements**

   Provide for the same demand ventilation requirements as described in ASHRAE Appendix G3.1.1.d.

6. **Apply ASHRAE's chiller heat recovery requirements**

   Provide for the same chiller heat recovery requirements as applies to ASHRAE.

7. **Apply supply air temperature reset controlled based on warmest zone**

   Reset the minimum supply air temperature to satisfy the cooling requirements of the warmest zone, as stipulated in NECB Section 5.2.8.8. Note that this control setting is already corrected in CanQUEST for the Reference case.

8. **Account for uninsulated structural penetrations if they exceed 2% of net wall area**

   The 2% allowance may be applied, but based on the net opaque wall area, not the entire building envelope area.

9. **Follow ASHRAE/LEED rules for renovations to existing buildings**

   Model existing components consistent with ASHRAE and LEED provisions.

10. **Account for all anticipated energy use in building**

    Fully account for all energy end-uses in the energy performance modelling.

11. **DES Systems are to be modeled according to Option 1, Path 1 or Option 1, Path 2 as indicated in the LEED v4 Reference Guide**

    The following exceptions apply:

    - Option 1, Path 1 - Do not apply ASHRAE 90.1-2010 requirements for purchased heating and cooling. Under this ACP, purchased heating and cooling (as applicable) are modeled as cost-neutral in the baseline and proposed case. Local rates for purchased heating (fossil fuel based) and cooling are used to establish the purchased heating and cooling costs. The energy model's scope accounts for only downstream equipment, plus purchased heating and cooling. NECB clause 8.4.3.6 does not apply for LEED projects.
    - Model baseline systems in accordance with NECB requirements, with DX coils replaced with chilled water coils if purchased cooling is present and fossil-fired furnaces replaced with hot water coils if purchased heating is present.
    - Option 1, Path 2: Do not apply ASHRAE 90.1-2010 requirements for baseline systems. Model baseline systems in accordance with NECB requirements for onsite generated equipment (i.e. assume building is not connected to a DES and the proposed building is modeled with a virtual plant according to LEED v4 Reference Guide requirements).

LEED BD&C (all adaptations including Multifamily Midrise):

- **Energy and Atmosphere prerequisite: Minimum Energy Performance**
- **Energy and Atmosphere credit: Optimize Energy Performance**
- **Energy and Atmosphere credit: Annual Energy Use**

BC Energy Step Code ACP – see details here or in the USGBC's Credit Library under Resources for the applicable credits.

ID&C (all adaptations): Materials and Resources credit: Interiors Life-Cycle Impact Reduction

Relevant Requirement Language:

Option 3. Design for flexibility (1 point)

Conduct an integrative planning process to increase the useful life of the project space. Increase project space flexibility, ease of adaptive use, and recycling of building materials while considering differential durability and premature obsolescence over building design life and individual component service lives. Use at least three of the following strategies.

- Install accessible systems (floor or ceiling) for at least 50% of the project floor area to allow for flexible use of space and access to systems (under floor distribution systems) not entangled with other building systems.
- Design at least 50% of interior nonstructural walls, ceilings, and floors to be movable or demountable.
- Ensure that at least 50%, by cost, of nonstructural materials have integral labels (radio frequency identification, engraving, embossing, or other permanent marking) containing information on material origin, properties, date of manufacture, in compliance with Canadian Standards Association CSA Z782-06 Guideline for Design for Disassembly and Adaptability in Buildings.
- Include in at least one major component or systems purchase contract a clause specifying sub-contractor, vendor, or on site take back system.
- Ensure that at least 50% of nonstructural materials, by cost, are reusable or recyclable, as defined by the Federal Trade Commission Guide for Use of Environmental Marketing Claims, 260.7(d) [Canada ACP].

ACP

Projects in Canada may consider Environmental Claims: A Guide for Industry and Advertisers as an equivalent to the Federal Trade Commission Guide for Use of Environmental Marketing Claims, 260.7(d).

BD&C – Healthcare: Indoor Environmental Quality prerequisite: Minimum IAQ Performance

Relevant Requirement Language:

Mechanically Ventilated Spaces

For mechanically ventilated spaces (and for mixed-mode systems when the mechanical ventilation is activated), determine the minimum outdoor air intake flow for mechanical ventilations systems using the ventilation rates in ASHRAE Standard 170–2008, Section 7; the requirements of the 2010 FGI Guidelines for Design and Construction of Health Care Facilities (Table 2.1–2); or a local equivalent, whichever is most stringent [Canada ACP]. For any area not covered in 170 or the FGI guidelines, follow ASHRAE 62.1 or a local equivalent, whichever is more stringent and meet the minimum requirements of ASHRAE Standard 170–2008, Sections 6–8, Ventilation of Health Care Facilities (with errata) or a USGBC-approved equivalent standard for projects outside the U.S.

ACP

Projects in Canada may consider CAN/CSA-Z317.2-10 - Special requirements for heating, ventilation, and air-conditioning (HVAC) systems in health care facilities as an equivalent to ASHRAE Standard 170–2008, Section 7 and the 2010 FGI Guidelines for Design and Construction of Health Care Facilities (Table 2.1–2).

BD&C, Homes/Multifamily Midrise: Indoor Environmental Quality prerequisite: Minimum IAQ Performance

Relevant Requirement Language:

BD&C

Residential only

In addition to the requirements above, if the project building contains residential units, each dwelling unit must meet all of the following requirements.

- Unvented combustion appliances (e.g., decorative logs) are not allowed.
- Carbon monoxide monitors must be installed on each floor of each unit.
- All indoor fireplaces and woodstoves must have solid glass enclosures or doors that seal when closed.
- Any indoor fireplaces and woodstoves that are not closed combustion or power-vented must pass a backdraft potential test to ensure that depressurization of the combustion appliance zone is less than 5 Pa.
- Space- and water-heating equipment that involves combustion must be designed and installed with closed combustion (i.e., sealed supply air and exhaust ducting) or with power-vented exhaust, or located in a detached utility building or open-air facility.
- For projects in high-risk areas for radon, EPA Radon Zone 1 (or local equivalent for project outside the U.S.), design and construct any dwelling unit on levels one through four above grade with radon-resistant construction techniques. Follow the techniques prescribed in EPA Building Radon Out; NFPA 5000, Chapter 49; International Residential Code, Appendix F; CABO, Appendix F; ASTM E1465; or a local equivalent, whichever is most stringent [Canada ACP].

HOMES

If the building is in EPA radon zone 1 (or local equivalent for projects outside the United States), design and build with radon-resistant construction techniques, as prescribed by American Association of Radon Scientist and Technologists (AARST), Reducing Radon in New Construction of 1 & 2 Family (RRNC 2.0); EPA Building Radon Out; NFPA 5000, Chapter 49; International Residential Code, Appendix F; CABO, Appendix F; ASTM E1465; or a local equivalent, whichever is more stringent.

ACP

Cities in Canada that have been proven to have an average radon concentration of 4 pCi/L (150 Bq/m3) or less through testing in accordance with the *Health Canada Guide for Radon Measurements in Dwellings* (with a minimum of 50 tests) are considered equivalent to EPA Radon Zone 2, and therefore are exempted from the radon requirements of this prerequisite.

BD&C – Healthcare: Indoor Environmental Quality credit: Construction Indoor Air Quality Management Plan

Relevant Requirement Language:

Infection control. For renovations and additions adjacent to occupied facilities or phased occupancy in new construction, follow the FGI 2010 Guidelines for Design and Construction of Health Care Facilities and the Joint Commission on Standards to establish an integrative infection control team comprising the owner, designer, and contractor to evaluate infection control risk and document the required precautions in a project-specific plan. Use the infection control risk assessment standard published by the American Society of Healthcare Engineering and the U.S. Centers for Disease Control and Prevention (CDC) as a guideline to assess risk and to select mitigation procedures for construction activities [Canada ACP].

ACP

Projects in Canada may consider the CSA standard Z317.13 (Sections 7-8) as an equivalent to the FGI 2010 Guidelines for Design and Construction of Health Care Facilities and the infection control risk assessment standard published by the American Society of Healthcare Engineering and the U.S. Centers for Disease Control and Prevention (CDC) for the purposes of this credit.