LEED BD+C: Schools | v2007

Optimize energy performance

EAc1 | Possible 10 points

Intent

Achieve increasing levels of energy performance above the baseline in the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.

Requirements

Option 1—Whole building energy simulation

Demonstrate a percentage improvement in the proposed building performance rating compared to the baseline building performance rating per ASHRAE/IESNA Standard 90.1-2004 by a whole building project simulation using the Building Performance Rating Method in Appendix G of the Standard. The minimum energy cost savings percentage for each point threshold is as follows:
[INSERT TABLE HERE]

Appendix G of Standard 90.1-2004 requires that the energy analysis done for the Building Performance Rating Method include ALL of the energy costs within and associated with the building project. To achieve points using this credit, the proposed design—

- must comply with the mandatory provisions (Sections 5.4, 6.4, 7.4, 8.4, 9.4 and 10.4) in Standard 90.1-2004;
- must include all the energy costs within and associated with the building project; and
- must be compared against a baseline building that complies with Appendix G to Standard 90.1-2004. The default process energy cost is 25% of the total energy cost for the baseline building. For buildings where the process energy cost is less than 25% of the baseline building energy cost, the LEED submittal must include supporting documentation substantiating that process energy inputs are appropriate.

For the purpose of this analysis, process energy is considered to include, but is not limited to, office and general miscellaneous equipment, computers, elevators and escalators, kitchen cooking and refrigeration, laundry washing and drying, lighting exempt from the lighting power allowance (e.g. lighting integral to medical equipment) and other (e.g. waterfall pumps). Regulated (non-process) energy includes lighting (such as for the interior, parking garage, surface parking, façade, or building grounds, except as noted above), HVAC (such as for space heating, space cooling, fans, pumps, toilet exhaust, parking garage ventilation, kitchen hood exhaust, etc.), and service water heating for domestic or space heating purposes.

For EA Credit 1, process loads shall be identical for both the baseline building performance rating and for the proposed building performance rating. However, project teams may follow the Exceptional Calculation Method (ASHRAE 90.1-2004 G2.5) to document measures that reduce process loads. Documentation of process load energy savings shall include a list of the assumptions made for both the base and proposed design, and theoretical or empirical information supporting these assumptions.

OR

Option 2—Prescriptive compliance path: Advanced Buildings™ Core Performance™ Guide (2-5 Points)

Comply with the prescriptive measures identified in the Advanced Buildings™ Core Performance™ Guide developed by the New Buildings Institute. The following restrictions apply:

- The project must be a school under 100,000 square feet.
- Project teams must fully comply with Sections One, Design Process Strategies, and Two, Core Performance Requirements.

Minimum points achieved under Option 3 (2-3 points):

- Three (3) points are available for all school projects under 100,000 square feet that comply with Sections One and Two of the Core Performance Guide.
- Two (2) points are available for all other project types under 100,000 square feet that implement the basic requirements of the Core Performance Guide.

Additional points available under Option 3 (up to 2 additional points):

- Up to two (2) additional points are available to projects that implement performance strategies listed in Section Three, Enhanced Performance. For every three strategies implemented from this section, one point is available.
- Any strategies applicable to the project may be implemented except:
  - 3.1-Cool Roofs
  - 3.8-Night Venting
  - 3.13-Additional Commissioning

These strategies are addressed by different aspects of the LEED program and are not eligible for additional points under EA Credit 1.