| v4 - LEED v4

Optimize energy performance

Possible 20 points

Glossary

Intent

To achieve increasing levels of energy performance beyond the prerequisite standard to reduce environmental and economic harms associated with excessive energy use.

Requirements

Establish an energy performance target no later than the schematic design phase. The target must be established as kBtu per square foot-year (kW per square meter-year) of source energy use.

Choose one of the options below.

Option 1. Whole-building energy simulation (1–18 points except Schools and Healthcare, 1–16 points Schools, 1–20 points Healthcare)

Analyze efficiency measures during the design process and account for the results in design decision making. Use energy simulation of efficiency opportunities, past energy simulation analyses for similar buildings, or published data (e.g., Advanced Energy Design Guides) from analyses for similar buildings.

Analyze efficiency measures, focusing on load reduction and HVAC-related strategies (passive measures are acceptable) appropriate for the facility. Project potential energy savings and holistic project cost implications related to all affected systems.

Project teams pursuing the Integrative Process credit must complete the basic energy analysis for that credit before conducting the energy simulation.

Follow the criteria in EA Prerequisite Minimum Energy Performance to demonstrate a percentage improvement in the proposed building performance rating compared with the baseline. Points are awarded according to Table 1.

Table 1. Points for percentage improvement in energy performance

New Construction	Major Renovation	Core and Shell	Points (except Schools, Healthcare)	Points Healthcare	Points Schools
6%	4%	3%	1	3	1
8%	6%	5%	2	4	2
10%	8%	7%	3	5	3
12%	10%	9%	4	6	4
14%	12%	11%	5	7	5
16%	14%	13%	6	8	6
18%	16%	15%	7	9	7
20%	18%	17%	8	10	8
22%	20%	19%	9	11	9
24%	22%	21%	10	12	10
26%	24%	23%	11	13	11
29%	27%	26%	12	14	12
32%	30%	29%	13	15	13
35%	33%	32%	14	16	14
38%	36%	35%	15	17	15
42%	40%	39%	16	18	16
46%	44%	43%	17	19	-
50%	48%	47%	18	20	-

OR

Option 2. Prescriptive compliance: ASHRAE Advanced Energy Design Guide (1–6 points)

To be eligible for Option 2, projects must use Option 2 in EA Prerequisite Minimum Energy Performance.

Implement and document compliance with the applicable recommendations and standards in Chapter 4, Design Strategies and Recommendations by Climate Zone, for the appropriate ASHRAE 50% Advanced Energy Design Guide and climate zone. For projects outside the U.S., consult ASHRAE/ASHRAE/IESNA Standard 90.1–2010, Appendixes B and D, to determine the appropriate climate zone.

ASHRAE 50% Advanced Energy Design Guide for Small to Medium Office

Buildings

- Building envelope, opaque: roofs, walls, floors, slabs, doors, and continuous air barriers (1 point)
- Building envelope, glazing: vertical fenestration (1 point)
- Interior lighting, including daylighting and interior finishes (1 point)
- Exterior lighting (1 point)
- Plug loads, including equipment and controls (1 point)

ASHRAE 50% Advanced Energy Design Guide for Medium to Large Box Retail Buildings

- Building envelope, opaque: roofs, walls, floors, slabs, doors, and vestibules (1 point)
- Building envelope, glazing: fenestration - all orientations (1 point)
- Interior lighting, excluding lighting power density for sales floor (1 point)
- Additional interior lighting for sales floor (1 point)
- Exterior lighting (1 point)
- Plug loads, including equipment choices and controls (1 point)

ASHRAE 50% Advanced Energy Design Guide for K–12 School Buildings

- Building envelope, opaque: roofs, walls, floors, slabs, and doors (1 point)
- Building envelope, glazing: vertical fenestration (1 point)
- Interior lighting, including daylighting and interior finishes (1 point)
- Exterior lighting (1 point)
- Plug loads, including equipment choices, controls, and kitchen equipment (1 point)

ASHRAE 50% Advanced Energy Design Guide for Large Hospitals

- Building envelope, opaque: roofs, walls, floors, slabs, doors, vestibules, and continuous air barriers (1 point)
- Building envelope, glazing: vertical fenestration (1 point)
- Interior lighting, including daylighting (form or nonform driven) and interior finishes (1 point)
- Exterior lighting (1 point)
- Plug loads, including equipment choices, controls, and kitchen equipment (1 point)