LEED ID+C: Retail | v4 - LEED v4

Optimize energy performance

Possible 25 points

1 result in**All** .

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. Tenant-level energy simulation (1–25 points)

Analyze efficiency measures during the design process and account for the results in design decision-making. Analysis can include energy simulation of efficiency opportunities, energy simulation analyses for similar projects, or published data from energy analyses performed for similar projects (such as AEDGs).

Analyze efficiency measures focused on load reduction and HVAC-related strategies; passive measures are acceptable. Project the potential energy savings and cost implications for all affected systems.

Follow the criteria in EA Prerequisite Minimum Energy Performance to demonstrate a percentage improvement in the proposed tenant project performance rating compared with the baseline.

Table 1. Points for percentage improvement in energy performance

Interior construction	Points
4%	4
5%	6
6%	8
7%	10
8%	11
9%	12
10%	13
11%	14
12%	15
13%	16
14%	17
15%	18
16%	19
17%	20
18%	21
20%	22
22%	23
24%	24
28%	25

For all process loads, define a clear baseline to compare with proposed improvements. The baselines in Appendix 3, Tables 1–4, represent industry standards and may be used without additional documentation. Calculate the baseline and design as follows:

- Appliances and equipment. For appliances and equipment not covered in Appendix 3, Tables 1–4 indicate hourly energy use for proposed and budget equipment, along with estimated daily use hours. Use the total estimated appliance/equipment energy use in the energy simulation model as a plug load. Reduced use time (schedule change) is not a category of energy improvement in this credit. ENERGY STAR ratings and evaluations are a valid basis for performing this calculation.
- Display lighting. For display lighting, use the space by space method of determining allowed lighting power under ANSI/ASHRAE/IESNA Standard 90.1–2010, with errata (or a USGBC-approved equivalent standard for projects outside the U.S.), to determine the appropriate baseline for both the general building space and the display lighting.
- Refrigeration. For hard-wired refrigeration loads, model the effect of energy performance improvements with a simulation program designed to account for refrigeration equipment.

OR

Option 2. Prescriptive compliance (1–16 points)

Use any combination of the strategies in any or all of the categories below.

Base Building Systems (2-6 points)

For base building systems that serve the project, as well as any applicable improvements that are part of the project, document compliance with the following according to base building type 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.

- Building Envelope, Opaque (2 points)
  Comply with the recommendations in the appropriate ASHRAE 50% Advanced Energy Design Guide for all roofs, walls, floors, slabs, doors, vestibules, and continuous air barriers.

- Building Envelope, Glazing (2 points)
  Comply with the recommendations in the appropriate ASHRAE 50% Advanced Energy Design Guide for all vertical fenestration.

- HVAC Equipment Efficiency (2 points)
  For all base building HVAC systems that serve the project, comply with the recommendations in the appropriate ASHRAE 50% Advanced Energy Design Guide.

HVAC Systems (2 points)

- HVAC Zoning and Controls (2 points)
  For the tenant fit-out of spaces, provide a separate control zone for each solar exposure and interior space. Provide controls capable of sensing space conditions and modulating the HVAC system in response to space demand for all private offices and other enclosed spaces (e.g., conference rooms, classrooms).

Interior Lighting Power (1–4 points)

- Lighting Power Density (1–4 points)

  Reduce connected lighting power density below that allowed by ASHRAE/IESNA Standard 90.1–2010, either using the space-by-space method or applying the whole-building lighting power allowance to

the entire tenant space. Points are awarded according to Table 2.

Table 2. Points for percentage reduction in lighting power density

Percentage below standard LPD	Points
10%	1
15%	2
20%	3
25%	4

Interior Lighting Controls (1–2 points)

- Daylighting Controls (1 point)

  Install daylight-responsive controls in all regularly occupied daylit spaces within 15 feet (4.5 meters) of windows and under skylights for at least 25% of the connected lighting load. Daylight controls must switch or dim electric lights in response to daylight illumination in the space.

- Occupancy Sensor Lighting Controls (1 point)

  Install occupancy sensors for at least 75% of the connected lighting load.

Equipment and Appliances (1–2 points)

- ENERGY STAR Equipment and Appliances (1–2 points)

  Install ENERGY STAR appliances, office equipment, electronics, and commercial food service equipment (HVAC, lighting, and building envelope products are excluded from this credit) or performance equivalent for projects outside the U.S.. Calculate their percentage of the total (by rated-power) ENERGY STAR–eligible products in the project. Points are awarded according to Table 3.

  Table 3. Points for installing ENERGY STAR equipment and appliances

Percentage of ENERY STAR products	Points
70%	1
90%	2

  All projects pursuing Option 2 must also comply with the prescriptive measures in Appendix 3, Tables 1–4, for 90% of total energy consumption for all process equipment.