LEED ND: Built Project | v4 - LEED v4

Minimum building energy performance

Required

Glossary

Intent

To encourage the design and construction of energy-efficient buildings that reduce air, water, and land pollution and environmental damage from energy production and consumption.

Requirements

The requirements apply to 90% of the total building floor area (rounded up to the next whole building) of all nonresidential buildings, mixed-use buildings, and multiunit residential buildings four stories or more constructed as part of the project or undergoing major renovations as part of the project. Each counted building must comply with one of the following options.

Option 1. Whole-building energy simulation

Demonstrate an average improvement of 5% for new buildings, 3% for major building renovations, or 2% for core and shell buildings over ANSI/ASHRAE/IESNA Standard 90.1–2010, with errata (or a USGBC-approved equivalent standard for projects outside the U.S.) across all buildings pursuing Option 1. Multiple buildings may be grouped into a single energy model, provided (1) the building type (new construction, major renovation, or core and shell) is consistent for all buildings included in the energy model, or (2) an average 5% improvement is demonstrated for the entire energy model. Calculate the baseline building performance according to ANSI/ASHRAE/IESNA Standard 90.1–2010, Appendix G, with errata, using a simulation model.

Buildings must meet the minimum percentage savings before taking credit for renewable energy systems.
Each building's proposed design must meet the following criteria:

- compliance with the mandatory provisions of ANSI/ASHRAE/IESNA Standard 90.1–2010, with errata (or a USGBC-approved equivalent standard for projects outside the U.S.);
- inclusion of all energy consumption and costs within and associated with the building project; and
- comparison against a baseline building that complies with Standard 90.1–2010, Appendix G, with errata (or a USGBC-approved equivalent standard for projects outside the U.S.).

Document the energy modeling input assumptions for unregulated loads. Unregulated loads should be modeled accurately to reflect the actual expected energy consumption of the building.

If unregulated loads are not identical for both the baseline and the proposed building performance rating, follow the exceptional calculation method (ANSI/ASHRAE/IESNA Standard 90.1–2010, G2.5) or use the COMNET modeling guidelines and procedures to document measures that reduce unregulated loads.

OR

Option 2. Prescriptive compliance: ASHRAE 50% Advanced Energy Design Guide

Comply with the mandatory and prescriptive provisions of ANSI/ASHRAE/IESNA Standard 90.1–2010, with errata (or a USGBC-approved equivalent standard for projects outside the U.S.).

Comply with HVAC and service water heating requirements applicable to the each building, including equipment efficiency, economizers, ventilation, and ducts and dampers, for the appropriate ASHRAE 50% Advanced Energy Design Guide and climate zone:

- ASHRAE 50% Advanced Energy Design Guide for Small to Medium Office Buildings, for office buildings smaller than 100,000 square feet (9 290 square meters);
- ASHRAE 50% Advanced Energy Design Guide for Medium to Large Box Retail Buildings, for retail buildings with 20,000 to 100,000 square feet (1 860 to 9 290 square meters);
- ASHRAE 50% Advanced Energy Design Guide for K–12 School Buildings; or
- ASHRAE 50% Advanced Energy Design Guide for Large Hospitals.
  - Over 100,000 square feet (9 290 square meters)

For projects outside the U.S., consult ASHRAE/ASHRAE/IESNA Standard 90.1–2010, Appendixes B and D, to determine the appropriate climate zone.

OR

Option 3. Prescriptive compliance: Advanced Buildings Core Performance Guide

Comply with the mandatory and prescriptive provisions of ANSI/ASHRAE/IESNA Standard 90.1–2010, with errata (or USGBC approved equivalent standard for projects outside the U.S.).

Comply with Section 1: Design Process Strategies, Section 2: Core Performance Requirements, and the following three strategies from Section 3: Enhanced Performance Strategies, as applicable. Where standards conflict, follow the more stringent of the two. For projects outside the U.S., consult ASHRAE/ASHRAE/IESNA

Standard 90.1-2010, Appendixes B and D, to determine the appropriate climate zone.

3.5 Supply Air Temperature Reset (VAV)
3.9 Premium Economizer Performance
3.10 Variable Speed Control

To be eligible for Option 3, the project must be less than 100,000 square feet (9 290 square meters).

Note: Healthcare, Warehouse or Laboratory projects are ineligible for Option 3.

AND

For new single-family residential buildings and new multiunit residential buildings three stories or fewer, 90% of the buildings must meet the requirements of LEED for Homes v4 EA Prerequisite: Minimum Energy Performance.

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