



| v3 - LEED 2008

Optimize energy performance in mid-rise buildings

MEAC1 | Possible 34 points

Glossary

Intent

To establish the minimum level of energy efficiency for the proposed building and systems to reduce environmental and economic impacts associated with excessive energy use.

Requirements

Prerequisites

1.1 Minimum energy performance for mid-rise.

Demonstrate a 15% improvement in the building performance rating compared with Appendix G of ASHRAE Standard 90.1-2007 (with errata but without addenda).

Calculate the baseline building performance rating according to the EPA's Multifamily High-Rise Simulation Guidelines building performance rating method, which is modeled off of Appendix G of ANSI/ASHRAE/IESNA Standard 90.1 2007 (with errata but without addenda) using a computer simulation model for the whole building project.

Appendix G of Standard 90.1 2007 requires that the energy analysis done for the building performance rating method include all energy costs associated with the building project. To achieve points using this credit, the proposed design must meet the following criteria:

- Comply with the mandatory provisions (Sections 5.4, 6.4, 7.4, 8.4, 9.4 and 10.4) in Standard 90.1 2007 (with errata but without addenda).
- Include all energy costs associated with the building project.

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 (for the interior, parking garage, surface parking, façade, or building grounds, etc. except as noted above), heating, ventilation and air conditioning (HVAC) (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 multi-family buildings, the typical examples of un-regulated (process) loads within dwelling units include lighting, kitchen appliances, consumer electronics, and motors of small individual exhaust fans in kitchens and bathrooms.

Process loads must be identical for both the baseline building performance rating and the proposed building performance rating. However, project teams may follow the exceptional calculation method (ANSI/ASHRAE/IESNA Standard 90.1 2007 G2.5) to document measures that reduce process loads. Documentation of process load energy savings must include a list of the assumptions made for both the base and the proposed design, and theoretical or empirical information supporting these assumptions. For example, performance credit may be documented for Energy Star large kitchen appliances, hot water savings associated with low-flow fixtures and shower heads, Energy Star exhaust fans, etc.

1.2 Testing and verification for mid-rise. Meet all of the EPA Multifamily High-rise Program Testing and Verification Protocols requirements.

Credits

1.3 Optimize energy performance (maximum 34 points). Demonstrate a percentage improvement in the proposed building performance rating compared with the baseline building performance rating. Calculate the baseline building performance according to Appendix G of ANSI/ASHRAE/IESNA Standard 90.12007 (with errata but without addenda) using a computer simulation model for the whole building project. Use the chart below relating the percentage of energy cost savings to the appropriate number of LEED points.

Exhibit EA1. LEED for Homes Points for Mid-rise Buildings	
Energy Cost Savings Above ASHRAE 90.1-2007	LEED for Homes Mid-Rise Points
15%	--
16%	3
17%	4
18%	5
19%	6
20%	7

21%	8
22%	9
23%	10
24%	11
25%	12
26%	13
27%	14
28%	15
29%	16
30%	17
31%	18
32%	19
33%	20
34%	21
35%	22
36%	23
37%	24
38%	25
39%	26
40%	27
41%	28
42%	29
43%	30
44%	31
45%	32
46%	33
47%	34
48%	Maximum 34 Points available
49%	
50%	