

Multifamily Energy Performance Comparison

National Green Building Standard vs. LEED-NC

The topic of equivalency often arises in discussions about green rating systems. While there are many elements of performance in green rating systems, this summary focuses on energy performance of multifamily new construction built to the *National Green Building Standard™* ICC700-2008 (NGBS) and the LEED 2009 for New Construction and Major Renovation Rating System (LEED-NC).

Figure 1 graphically illustrates the comparison. At their most basic levels – Bronze and Certified – the NGBS and LEED-NC are equivalent. However, the requirements of the rating systems are fundamentally different above these entry-level green ratings. The NGBS has increasingly more stringent threshold requirements for energy efficiency for each successive certification level, as shown in the figure. The LEED-NC rating system has no mandatory increase on its minimum requirements for energy efficiency at the higher levels. Therefore, it could be said that the NGBS is equivalent to LEED-NC in terms of energy performance at the lowest rating level, but more rigorous at the Silver, Gold, and Emerald (Platinum) levels.

This baseline equivalency is based only on mandatory point requirements in the two rating systems. It is notable to add that both rating systems provide additional optional points for improved energy efficiency that accrue toward the green rating. This approach provides flexibility to customize the building design and performance in response to the specific needs dictated by the architectural designer's objectives and client's/owner's needs.

A common baseline must be established in order to compare rating systems that use different energy codes and editions. In their current versions, the NGBS references the International Code Council's *International Energy Conservation Code* (IECC) 2006 edition and LEED-NC references the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) *Standard 90.1-2007 – Energy Standard for Buildings Except Low-Rise Residential Building*. An analysis performed by Architecture 2030 was used to develop an interim system¹ based on 'energy code equivalents,' in order to qualify additional reductions needed beyond the requirements of a particular code. This analysis indicated that ASHRAE 90.1-2007 is 25% from its baseline and IECC-2006 is 30% from its baseline. This 5% offset between the two energy standards is used as the basis from which NGBS and LEED-NC are compared in Figure 1.

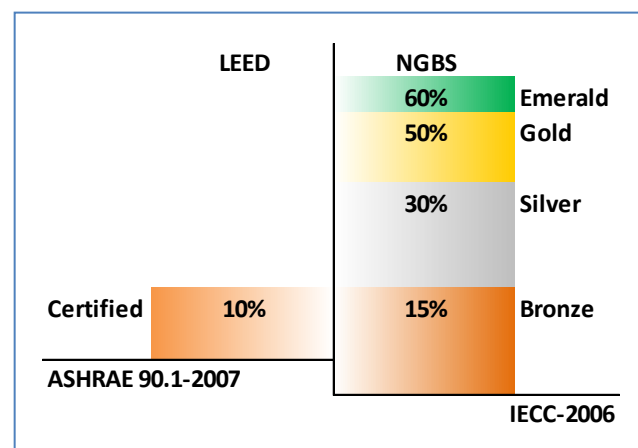


Figure 1. Minimum Energy Efficiency Requirements Percentage Improvement Above Code

¹ Meeting the 2030 Challenge Through Building Codes, Edward Mazria and Kristina Kershner, 2030, Inc. / Architecture 2030, June 20, 2008, Page 4