



Rating Systems vs. “Stretch” Building Energy Codes: Maximizing energy efficiency through building standards

PRIORITIZING ENERGY EFFICIENCY

Using energy efficiently is the fastest, most cost-effective way to reduce greenhouse gas emissions and combat global climate change.

ACHIEVING GREATER ENERGY EFFICIENCY THROUGH “STRETCH” BUILDING ENERGY CODES

Compliance with **building energy codes** presents one of the most cost-effective ways of reducing **building energy consumption** in new construction and substantial building renovation, including building additions. To achieve even greater energy efficiency, states can adopt a “stretch” energy code to supplement their base building energy code. This gives communities the option to adopt a **more stringent enforceable code** that is at least **20 percent** more energy efficient than the base state code.

RATING SYSTEMS vs. BUILDING ENERGY CODES: SAVINGS AND ENFORCEMENT

Rating Systems may not guarantee energy efficiency: Leadership in Energy and Environmental Design (LEED) is a building rating system that awards recognition to buildings that meet certain standards in categories such as site, water, energy, materials, and indoor environmental quality. While each category has prerequisites that must be met, users can choose the remainder of credits required for certification from the various categories, depending on their own priorities. Energy efficiency may or may not be one of those priorities.

Difficulties in enforcing rating systems as code: Building codes are written in normative language that is code-enforceable, whereas rating systems are not. Trying to use a rating system, such as LEED, as a building energy code leads to problems when it is time to inspect the buildings. In an article for *AIArchitect*, the Chairs of the International Code Council’s Sustainable Building Technology Committee wrote: “If a jurisdiction calls for compliance with a rating system, it has been effectively codified. But enforcement of the requirement presents some challenges to the jurisdiction, introducing tremendous education and training hurdles for code officials, depending on the complexity of the rating system.”¹

A STRECH CODE FOR COMMERCIAL, PUBLIC BUILDINGS & HOMES

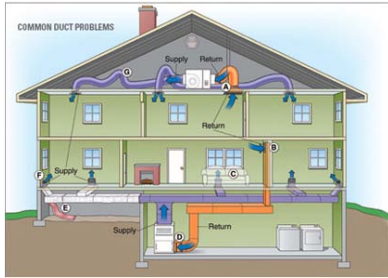


COMMERCIAL & PUBLIC BUILDINGS

Core Performance: Commercial buildings, including public buildings, can achieve “beyond code” energy efficiency by following the guidelines of the **Core Performance Guide**. The Guide was developed by the New Buildings Institute (NBI) as a step-by-step way to achieve predictable energy savings in small- to medium-sized buildings without the need for modeling.

But how is Core Performance enforceable as an energy code? In 2009, NEEP undertook the “Core to Code” project, which translated the requirements in the Core Performance Guide into code-enforceable language. The resulting product, which NEEP developed in collaboration with Massachusetts stakeholders and NBI, gives states a set of code-enforceable provisions to achieve 20 percent greater energy efficiency. Massachusetts adopted its Stretch Code (formally known as Appendix 120.AA) in April 2009, using this “Core to Code” translation as the basis for its commercial buildings requirement. **Greater efficiency ensures a better investment of public dollars.**

¹ Christopher Green, AIA, and Ravi Shah, AIA, *AIArchitect*, September 19, 2009.



HOMES

Energy Star for Homes and HERS: To achieve “beyond code” energy performance in homes, building professionals can use the prescriptive requirements of the Energy Star® for Homes program. Alternatively, home builders may take the “performance” approach, in which they are required to attain a certain Home Energy Rating System (HERS) index score (0 representing a zero-net-energy home, and 100 a code-compliant new home) for their projects.

The HERS index has been in use for many years by beyond code programs such as Energy Star Homes, and by the Federal IRS for tax credits and energy efficient mortgages. For instance, the Massachusetts Stretch Code requires a HERS index of 65 or less for new homes of 3,000 square feet or above, and 70 or less for new homes below 3,000 square feet.

A Stretch Code sets a higher standard for energy efficiency: A stretch energy code, such as Massachusetts' Appendix 120.AA, that is based on Core Performance for commercial buildings and Energy Star for Homes can push buildings to use at least **20 percent less energy** than a building that complies with base code. Buildings designed to a rating system such as LEED 2009 for New Construction, however, are required to achieve only a **10 percent energy reduction**.

FOR MORE INFORMATION

Northeast Energy Efficiency Partnerships,
Model progressive building energy codes policy for Northeast States
<http://neep.org/public-policy/4/78/Building-Energy-Codes>

Massachusetts Stretch Code Two-page Summary
http://www.mass.gov/Eeops/docs/dps/inf/stretch_code_overview_jun05_09.pdf

New Building Institute, Advanced Buildings® Core Performance Guide
<http://www.advancedbuildings.net/>

Energy Star for Homes
http://www.energystar.gov/index.cfm?c=new_homes.hm_index

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