The International Green Construction Code Is Coming—Are You Ready?

— Greg Winkler, AIA, LEED AP

When the U.S. Green Building Council (USGBC) introduced the LEED™ ratings system in 2000, it revolutionized the sustainability movement. For the first time, the building industry in the United States could measure sustainability against a simple rating system that spanned a wide range of environmental goals. Today, more than 6,300 buildings are LEED certified, and more than 21,500 buildings are registered with the USGBC to become LEED certified. Sustainable design has become one of the most influential factors in today's buildings industry, and has continued to grow–even through a slowed economy.

In the last few years, however, the LEED rating system has faced some criticisms, particularly over the fact the system does not include a means for measuring the energy performance of new facilities. The LEED program is essentially predictive in nature. It relies on the premise that the ratings structure will produce buildings with better energy performance and life-cycle cost characteristics, but does not include incentives that make energy performance a priority in accumulating points, or requirements to measure the actual performance after construction (LEED 2009 does require sharing of "all available data" with USGBC for a period of five years following certification).

Today, LEED's popularity and status as the acknowledged leader among green rating systems have resulted in more than 200 jurisdictions benchmarking components of LEED as part of their construction code or zoning ordinances. Although this represents a small fraction of the approximately 12,000 code jurisdictions nationwide, the trend is obvious: cities and municipalities across the country are seeking a way to promote green practices in construction and waste management.

Surveying the prospect of an increasingly fragmented code environment, the International Code Council (ICC) launched the creation of the International Green Construction Code (IgCC) in 2008. Their initial partners in this effort were the American Institute of Architects (AIA) and the American Society for Testing and Materials (ASTM). This group was later joined by the USGBC; the American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) and the Illuminating Engineers Society (IES) as part of an alliance that accepted ASHRAE's Standard 189.1 as a compliance alternative to the IgCC.

The IgCC is organized into six performance chapters addressing 37 specific areas of sustainability. Written in both performance and prescriptive (regulatory) language, the IgCC is an overlay code that should work well with the existing family of ICC codes. Local jurisdictions will find much to like in the IgCC:

- Their existing code enforcement administration can enforce compliance through standard procedures, though additional expertise may be required to review the compliance documents.
- Mandatory language sets minimum levels of compliance in each category, but some requirements are scalable to allow jurisdictions to increase the standards.
- Jurisdictions are not required to accept the entire code. They can adopt only those sections that are beneficial to their locale.

Whether owners and design professionals will find the code as desirable is an open question. Architects who have grown accustomed to working with the LEED requirements will likely find the IgCC to be a brave new world with both advantages and disadvantages compared with the sustainability world they now know:

- The IgCC places a premium on calculating building performance during design and measuring it afterwards. How design professional liability will be affected when a building does not meet expectations remains to be seen.
- A whole-building life-cycle assessment can be selected by the owner as an IgCC project elective, one route to comply with overall jurisdictional requirements. This assessment could

– Greg Winkler, AIA, LEED AP is the executive director of the Mid-Atlantic Precast Association (MAPA), a precast concrete trade organization representing twelve diverse manufacturers in six states and the District of Columbia. A graduate of Georgia Tech with a Master of Architecture degree, Greg has over 27 years of experience as an architect and project manager. He is the author of three construction-related books, and is currently writing a book on the International Green Construction Code for McGraw-Hill Professional.

potentially be a value-added resource for owners, as well as a way for architects or engineers to provide an additional service that helps owners understand the ultimate cost of a building's operation and maintenance.

- In contrast to LEED's template-based system, calculations to document IgCC compliance in a category are usually short and based on established engineering criteria.
- Buildings must be designed around a 60-year expected life.
- If adopted by the jurisdiction, buildings must be commissioned, owners must be provided full operation and maintenance data, and equipment training and building energy consumption must be monitored after occupancy.

Jurisdictions, at their option, may allow design professionals to use ASHRAE Standard 189.1 as an alternative to complying with the IgCC. ASHRAE describes Standard 189.1 as follows:

> "Standard 189.1 provides a 'total building sustainability package' for those who strive to design, build and operate green buildings. From site location to energy use to recycling, this standard sets the foundation for green buildings by addressing site sustainability, water use efficiency, energy efficiency, indoor environmental quality, and the building's impact on the atmosphere, materials and resources."[2]

Public Version 2.0 of the IgCC is now available for download and comment on the ICC website (visit www.iccsafe.org). Final revisions to the code will be made at a conference in November 2011, and the IgCC is scheduled to be issued in March 2012. Interestingly, Rhode Island has already adopted the code even before its completion.

The IgCC holds the potential to fundamentally change the focus of sustainability in the United States. It should promote more energy-efficient, durable, and maintainable construction. The future of LEED, and its relationship to the IgCC, remain uncertain. Some believe that LEED will work to raise the performance ceiling while IgCC raises the code-required floor of sustainability. Because it contains scalable requirements that can be adjusted by each jurisdiction, others believe that the IgCC holds the potential to accomplish both goals. What seems clear, however, is that the future of green construction lies in paying much closer attention to building operation and performance, where costs and environmental impact far outweigh those of construction. Sustainable codes and programs seem to be moving in the direction of more high-performance-based standards, where energy consumption is considered the predominant measure of greenness. This, perhaps, is where the true heart of sustainability lives. ■

Notes:

1. Murphy, Pat. "Leading from Behind." *New Solutions* #18.1, May–June 2009. The Arthur Morgan Institute of Community Solutions.
2. American Society of Heating, Refrigeration, and Air-conditioning Engineers (ASHRAE). The Green Standard. http://www.ashrae.org/publications/page/927. Accessed January 4, 2011.