



The Unclear Future of the Energy Conservation Code

By David Handwork

President Howard Taft once stated, “A system in which we may have an enforced rest from legislation for two years is not bad.” In an era of quickly evolving codes and legislation relating to environmental issues and building energy efficiency, a period of rest is well warranted. The speed of evolution is threatening to cost facilities for energy efficiency, when currently it generally provides an appreciable return on investment. Specifically, forces of influence outside of the ASHRAE Standard 90.1 process are pushing for a fast evolution of stringency of minimum building energy efficiency.

The ultimate goal of these entities is achieving a energy code providing net zero energy buildings (NZEB) by 2030, if not before. A more prevalent challenge and goal posed by the U.S. Department of Energy is achieving 30 percent more efficiency than 90.1-2004 by 2015. The 90.1 process has been expedited where the 2015 goal appears achievable. However, other entities are proposing alternatives to 90.1 as replacement energy standards/codes achieving at least 50 percent additional efficiency before 2015. An apparent energy code race is developing with the DOE possibly positioned to pick a winner, and it may not likely be the ASHRAE 90.1 standard.

THE CURRENT 90.1 INERTIA

ASHRAE Standard 90.1 is currently the de facto national code for building energy efficiency, cited or recognized in federal legislation, the Department

of Energy publications, International Code Conference (ICC) and National Fire Protection Association (NFPA) codes. Since its inception, the application of 90.1 code has produced well documented success of improved building efficiencies.

Regardless, the 90.1 process has been criticized as moving too slowly to address the current climate change and energy independence challenges. This criticism,

once from a minority view, has developed into a strong push from influential groups, with the most influential being the current U.S. Congress and presidential administration.

The current 90.1 inertia of process changes has sped up slightly with this push, but the slow rate of evolution remains a point of outside criticism. This has prompted groups such as the New Buildings Institute (NBI) in concert with the American Institute of Architects and Department of Energy, to produce an alternative energy conservation code solution.

NBI’s proposal to the International Code Council (ICC) removes 90.1 as the code basis for the International



Energy Conservation Code (IECC), and adds stringency over the 90.1-2007 version. The DOE public comment on the joint proposal is an effort “to make the IECC more consistent with ASHRAE Standard 90.1”¹. It is accurate portions of the proposed modifications are more consistent to 90.1-2007 than the current IECC version. However, it appears the primary intent of the proposal is the IECC stand on its own with minimal reference and dependence upon 90.1.

Readers should note 35 states have IECC as the statewide energy code, with most of the remaining states applying the IECC at individual municipalities. So how would this change impact facilities owners and managers? Currently, code advocacy groups, including the APPA Code Advocacy Task Force, focus efforts toward ASHRAE, not ICC. With IECC separated from the 90.1 process, evolution of the IECC could occur expeditiously under the radar, with burdensome stringency placed upon new construction and renovation projects. Since DOE is a cosponsor of the IECC proposal, it appears as a government entity they could switch support from 90.1 to IECC seamlessly.

Ironically, not all pressure on evolving 90.1 is external to ASHRAE. Standard 189.1-2009 “Standard for the Design of High-Performance Green Buildings” was released with much fanfare at the January 2010 winter conference. Unlike 90.1, 189.1 is a holistic sustainability view for building construction, not just focused on energy conservation. It is coupled with 90.1 with numerous direct references, but energy conservation is an order of magnitude more stringent, typical for a high-performance building. This coupling to 90.1 could limit the application of 189.1 as code, especially with the proposed modifications to IECC.

In contrast, the increased stringency of energy conservation mandates of 189.1 could pull forward the advancement of 90.1 stringency. Even with

the numerous 90.1 references, 189.1 is drafted in code-friendly language and could evolve into a standard that like the IECC stands alone from 90.1.

This is a point of concern. Why? On March 15, 2010, the ICC announced the release and publication of the International Green Construction Code (IGCC). Since the content of the IGCC has not been reviewed, comment of the code potential reach and applicability is unknown. However, it

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is clear Standard 189.1 is an integral part of the IGCC, just as Standard 90.1 was integral to the IECC. The scenario of concern is national politics could position IGCC as the standard for publicly funded buildings, paving the path exclusivity of high-performance buildings in the public sector. Arguably, high-performance buildings have advantages too numerous to list here, but not discussed by high-performance building proponents are the increased first cost of construction and higher level of technical expertise required for operations and maintenance of these structures. For most public entities, these two resources are either lacking or not available.

A PERPETUAL FIERCE DEBATE

The pending crisis of human-caused global climate change and energy shortage may be a subject of perpetual fierce debate. Yes, we all need to diligently conserve our energy resources and minimize any environmental impact on our

campuses and in our personal lives. In the last decade, there has been a significant cultural shift first worldwide, but highly evident in the U.S., of industrialized nations recognizing the need for environmental stewardship.

It is a great concern that environmental zealots are capitalizing on this cultural shift to expedite energy code stringency with little regard on the overall economic impact. We literally cannot afford a process where energy codes exceed practicality of implementation, cannot provide appreciable return on energy conservation investments, and lose regard of unavailable expertise and knowledge required to operate and maintain buildings of high complexity. Obsolescence of ASHRAE 90.1 may be embellished within this article, but the concern is real.

Even with a few radical elements, 90.1 is a proven code that has achieved increased energy efficiency of buildings. The evolution speed of 90.1 will eventually catch up with external and internal demands.

Will Net Zero Energy Buildings ever be a common reality? It's not likely within the next decade. Only time will reveal if the goal of 2030 is viable, as building owners and managers eagerly wait for this wonderful advance in building sciences. In the interim, all facilities managers should engage with energy code processes, whether it remains as 90.1 or transitions to the IECC, to ensure building energy efficiency advances in manner that provides acceptable financial return and building operability. ☺

NOTES

1. U.S. Department of Energy website - http://www.energycodes.gov/codedevelop/icc_0910_cycle.stm

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