A Potential Framework for Outcome-based Compliance in the International Green Construction Code

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Why Outcome-Based Pathways in Codes?

- Current codes focus on design and not the actual measured energy use of a building.
- Codes provide uniformity in approach.
- Provide starting point for jurisdictions considering such approaches.
- Pathway to realize expected result recognizing current burdens faced by code departments.
What is the International Green Construction Code?

• An overlay code
  • Provide code language above existing codes to help realize a community goal
  • Compliance with existing codes required (IBC, IECC, etc.)

• Typically adopted as optional method to achieve sustainability goals
  • Basis for incentive programs
  • Application for government buildings
  • Applied by owner as design criteria
Why Outcomes in the IgCC?

• One of three potential pathways to demonstrating compliance with energy requirements
• As an overlay code, IgCC provides low risk opportunity to preview upcoming code provisions
• Recognition of limited capacity at code departments to enforce energy code provisions
• Recognition of system based approaches
Why Outcomes in the IgCC?

**DESIGNERS. . .**
should get credit for all energy saving measures.

**COMMUNITIES. . .**
should have some assurance that energy efficiency goals are being met.

**OWNERS. . .**
should have some certainty in energy usage and be recognized for effective operations and maintenance.

**CODE OFFICIALS. . .**
should get desired energy performance without additional burdens.

**MANUFACTURERS. . .**
should have the opportunity to develop the most innovative products that help meet performance targets.
Benefits of an Outcome-Based Pathway in the IgCC

**OPTIONAL**  
One of three pathways for compliance with energy requirements in the International Green Construction Code (IgCC).

**FLEXIBLE**  
The design team has flexibility in selecting features, attributes and specifications.

**ACTUAL**  
Compliance is based on the achievement of actual energy performance, not theoretical performance.

**ACCURATE**  
Compliance is determined through utility bills over a 12-month period.

**EFFICIENT**  
Recognizing fiscal, technical and personnel constraints on code departments, the burden for demonstrating compliance above the IECC falls on the building owner.

**RESULTS**  
Building owners and communities are provided some assurance that buildings will perform at target levels.
The Proposal: GEW 147-14

- Adds new section establishing outcome-based pathway option
- Compliance with the IECC is required
- Uses table of target values based on CBECS by climate zone and building type
  - Only building types with sufficient data can use this pathway
- Consistent with the other sections of the IgCC, greenhouse gas emission requirements are calculated
- Compliance determined by ratio of actual energy use/reference energy use
The Proposal: GEW 147-14

• Temporary Certificate of Occupancy issued if all other provisions met
• Within 36 months of Temporary Certificate of Occupancy, the Owner documents at least 12 months of compliance
• If compliant, Final Certificate of Occupancy issued
• If non-compliant, the code official may elect to pursue recourse. Otherwise, the temporary certificate of occupancy remains
  – potentially hinders the owner’s ability to sell, lease, insure or finance
• Recourse for noncompliance is left up to the individual jurisdiction
The Proposal: GEW 147-14
Supporters

• National Institute of Building Sciences
• New Buildings Institute
• Institute for Market Transformation
• Colorado Chapter, International Code Council
The Proposal: GEW 147-14

Timeline

• Proposal to be considered at Committee Action Meeting, April 27 – May 3, Memphis
  – Assembly actions voted on via CDP Access

• Public Comment Hearing, October 1-7, Ft. Lauderdale
  – Online Governmental Consensus Vote via CDP Access
Outcome-Based Pathways for Achieving Energy Performance Goals
by Ryan M. Colker Sustainable Buildings Industry Council
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INTRODUCTION

Policymakers and the public are increasingly interested in reducing energy use. Whether due to a desire to reduce costs, greenhouse gas emissions, or imported energy, achieving these goals will depend on actual and measurable results. Numerous approaches exist to reduce energy use. Model energy codes provide baseline requirements (where adopted). Green building programs provide additional guidance. Benchmarking and companion operations and maintenance practices along with ongoing commissioning also support improved performance.

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http://www.wbdg.org/resources/outcomebasedpathways.php
Outcome-Based Energy Codes

Our nation’s current energy codes include structural and enforcement characteristics that limit the ability to achieve significantly more energy savings in buildings without major changes. Current energy code strategies consider only a limited number of the factors that impact building energy performance. They don’t address all those elements of building design and construction that influence performance, and they don’t address how buildings use energy once completed.

The way in which a building is occupied, operated and maintained has a major impact

http://newbuildings.org/outcome-based-energy-codes

An Outcome-Based Compliance Path for the 2015 IgCC

NBI is working towards adoption of an outcome-based compliance method that would be an alternative option to prescriptive or modeled performance compliance in the 2015 IgCC. Collaborating with the National Institute of Building Sciences (NIBS), Institute of Market Transformation (IMT) and code officials in Colorado, the proposal for the 2015 IgCC will help facilitate both innovation in design and greatly simplify the task of verifying code compliance. Read More