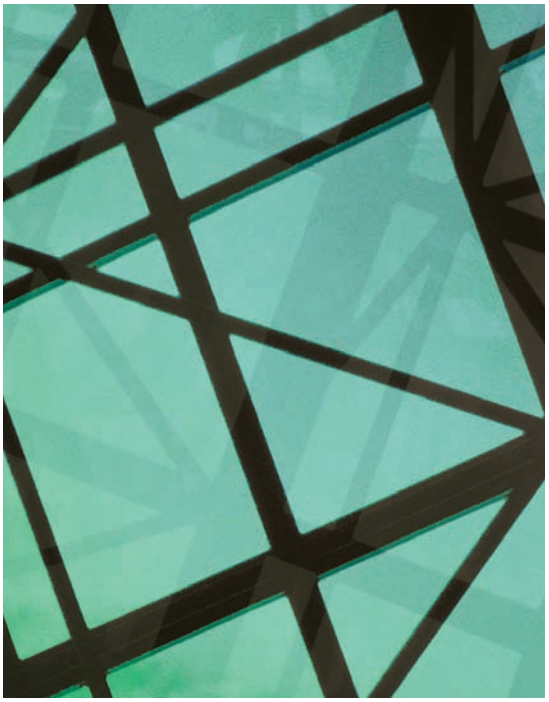
National Institute of BUILDING SCIENCES

Facility Performance & Sustainability

High Performance Building Council



The High Performance Building Council (HPBC) is working, through industry consensus, to establish metrics for high-performance buildings. By establishing a precise measurement of what the goal is, it becomes much easier to gauge the steps to achievement. With clear parameters, the Council will be better able promote the harmonization of industry standards to achieve high-performance buildings and encourage their production throughout the United States.

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Americans are placing more and more demands on buildings—particularly to conserve energy, reduce environmental impact, and improve safety and security. This shift in thinking places attention on the building as a whole, rather than the sum of various components. Achieving this kind of building, known as a high-performance building, requires the deliberate consideration and integration of many attributes. In addition, the building owner and design team need to address the planning, financing, design, construction, operations and maintenance of the building in a holistic and interdisciplinary manner.

But what is a high-performance building? The Energy Independence and Security Act of 2007 defines a high-performance building as a building that integrates and optimizes on a life-cycle basis all major high-performance attributes, including energy conservation, environment, safety, security, durability, accessibility, cost-benefit, productivity, sustainability, functionality and operational considerations.

The challenge is how to measure high performance. Many high-performance attributes currently have industry standards, codes and guidance that establish minimum (or beyond the minimum) requirements. However, the actual goals and metrics for demonstrating high performance do not yet exist. Understanding how the various attributes interact is crucial to achieving high-performance buildings. Once the targets are set, new and existing technologies and practices can be identified and put into practice to achieve the required performance.

Under a directive of the Energy Policy Act of 2005, the National Institute of Building Sciences established the High Performance Building Council to assess the existence of guidance and technology for achieving high performance, identify research needs and make recommendations to accelerate development of high-performance building processes. The high-performance processes envisioned by the legislation would enable designers, developers and owners to produce buildings that significantly exceed current minimum requirements. High-performance buildings would use much less energy and have the potential to improve the health, comfort and productivity of their occupants.

In 2008, the Council released a report, *Assessment to the U.S. Congress and U.S. Department of Energy on High Performance Buildings*. The report, which identified initial needs and recommendations to achieve high-performance buildings, is available for download on the Institute website at www.nibs.org/resources.

While developing the initial report, the Council recognized that the project is very large in scope and has immense value in real-dollar, social and environmental terms for the country at-large. Such a project required a multi-stakeholder, multi-attribute effort. The Council, through its more than 70 private and public sector organizations, has begun the process of benchmarking existing standards related to minimum requirements and stretch goals related to the high-performance attributes. The first product of this effort achieved through the Institute's partnership with the U.S. Department of Homeland Security Science and Technology Directorate's High Performance and Integrated Design Resilience Program is now available for review and further development by the Council.

Identifying the performance targets, goals, metrics and verification needs for the development of high-performance buildings serve as both an agenda for future standards, codes, guidelines and guidance, and a guidepost for manufacturers, building owners and designers. Additional work is necessary to establish common metrics and verification methods, and identify areas where further research, technology development and deployment, and processes are necessary. The Council's work will create a new model for the planning, financing, design, construction, operation and maintenance of buildings to meet high-performance requirements.

Membership in the High Performance Building Council is open to any non-profit organization or governmental agency engaged directly or indirectly in activities supporting its purpose. ■

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