



# 2015 Moving Forward: Findings and Recommendations from the Consultative Council



The U.S. building industry is a dynamic and evolving industry and the challenges it faces have significant implications for the nation's economy and citizens. Each year, the National Institute of Building Sciences, through its Consultative Council, brings together key stakeholders from across the building industry to examine the challenges and opportunities before both the industry and the nation. The Consultative Council then compiles the most critical issues, along with strategies to address them, into a report to help the industry and the nation's policymakers better deliver the high-performance buildings and communities that meet societal, governmental, owner and occupant goals.

The *2015 Moving Forward Report* includes the following three primary topics:

## 1. Resilience and a Changing Climate

Communities are trying to become more resilient to disruptions from hazards, such as severe weather, floods, hurricanes and earthquakes, as well as man-caused threats. To successfully mitigate these changing threats and risks, both public- and private-sector stakeholders need to understand the evolving effects of climate change and its potential impacts on their existing and new building stock; infrastructure; and social needs and systems. Communities need codes, standards, guidance and tools that will help them recognize their risks and prevent disruptive hazards from becoming disasters.

### A. An Industry Statement on Resilience

To accomplish resilience at the community level requires the engagement, cooperation and coordination of numerous disciplines and stakeholders. In 2014, the building industry issued a joint statement on resilience, committing to work to significantly improve the resilience of the nation's buildings, infrastructure, public spaces and communities. The statement focuses on specific aspects where the buildings industry has the greatest opportunity to make a difference.

### B. Addressing Drought and Water Use Concerns

The nation must respond to increasing droughts (in particular, the utilization of finite water resources) and continue to increase water efficiency in buildings. The Federal Government should take the leadership role in supporting plumbing research, including the development of pipe-sizing methodologies, policies that support alternative water sources and incentives to reduce energy and water use to help ensure adequate water supplies, especially in regions

of water scarcity, while addressing and mitigating the unintended consequences of water efficiency.

### C. Code Development, Adoption and Enforcement Support

Building and related safety codes and standards are an essential part of public safety in the United States. The key to making facilities safe and able to resist natural disasters is the adoption of building codes based on science and technical knowledge, combined with proper design and construction practices and strong code compliance mechanisms. Properly enforced building codes also allow communities to quickly rebound from devastation caused by those disasters. Codes enhance economic development and ensure consistency among jurisdictions; yet adopting jurisdictions can make amendments that best fit their climatic, geographic and other local needs.

### D. Resilience and Green-Building Rating Systems

While codes provide an important means for setting baseline requirements at a community level, green-building rating systems provide a valuable resource for designers, contractors and owners going beyond minimum levels. As these national rating systems continue to evolve, their stakeholders should strive to encourage owners and teams to use integrated design processes that involve broad community input; select sites that consider regional climatic threats and resource capacity; evaluate building material durability and service life issues; conduct moisture control analyses to decrease water intrusion potential; and evaluate other opportunities to safeguard occupants and property during times of high-impact events.

## 2. Aligning Government and Business to Deliver a Cost-Effective, High-Performance Built Environment

Building owners and government agencies both aim to realize specific goals in the design, construction and operations of the built environment. Many of these goals are focused on similar ends—particularly around safety and security, and sustainability. Working collaboratively will assure implementation of the most cost-effective strategies.

### A. Streamlining Regulatory Processes for Buildings and Infrastructure

High-performance, sustainable, resilient buildings and infrastructure require the consideration and integration of numerous systems and practices—which are often regulated by different government entities. Regulatory efficiency requires implementing a system that streamlines compliance. Having regulatory agencies of federal, state and local governments work collaboratively, with the support of advanced information technology resources, can assure that regulatory requirements are met and projects needed for economic, environmental and social benefits, such as resilience to disasters, can go forward in a timely and cost-effective manner.

### B. Utilizing Standards to Support Interoperability and Lower Transactional Barriers

Standards have a direct relationship with the global macro economy. Consistency in measurement standards at an international level helps to improve economic efficiency and provide the ability to accurately understand, interpret and benchmark property assets. One central theme in construction and facility and asset management is decision-making. International



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standards and building information modeling (BIM), separately and jointly, improve decision-making. Standards also allow classifications to be developed for the productive use of technology. Hence, developing standards for this information is crucial. Open data standards at an information technology (IT) technical level, along with standards for the professional work processes for those populating the BIM, are needed.

### C. Innovative Solutions to Pressing Finance and Performance Needs

Numerous building industry and consumer groups have identified the current state of the nation's infrastructure as a challenge to ongoing realization of economic goals. Several potential solutions have emerged, including a greater focus on life-cycle performance and total cost of ownership and utilization of innovative financing mechanisms.

#### 1. Small Commercial Building Energy Retrofit Finance

As identified in a report by the Institute's Council on Finance, Insurance and Real Estate, small commercial buildings offer a significant, yet untapped opportunity to improve energy performance. The retrofit market for small commercial buildings is conservatively estimated at \$35.6 billion, assuming a 30% improvement in performance for buildings constructed before 1980. Despite this considerable opportunity, numerous market barriers are preventing meaningful financing and investment in retrofits for the small commercial building market. As a result, these buildings typically fall outside the investment parameters of institutional lenders and investors, making it more difficult to supply capital for energy retrofits.

#### 2. Utilizing Innovative Procurement, Contracting and Financing Mechanisms

Public-private partnerships (P3s) offer governments the opportunity to overcome challenges related to project financing while driving achievement of performance requirements. P3s have emerged as a potential procurement and finance model to engage the private sector in helping stretch public-sector dollars, meet agency needs, introduce innovation and meet long-term performance goals cost-effectively. Across federal, state and local government, the policies for use of such a procurement and financing mechanism vary. More than 30 states have enabling legislation that addresses P3s at the state level, in a variety of models. Yet, a path forward for Federal Government utilization of P3s is currently unclear.

### D. Implementing Whole-Building and Performance-Focused Strategies

To date, strategies to reduce the impact of buildings on society or the environment largely have focused on design-based interventions or component-by-component strategies. While such strategies have resulted in some level of improvement in the built environment, it is becoming increasingly obvious that today's goals require a new approach—one focused at the systems or whole-building level and the actual, measured achievement of performance goals. Setting realistic performance goals requires supporting data. A number of efforts are already underway, including the emergence of benchmarking and disclosure requirements at the state and local level.

#### 1. A Holistic Incentivization Strategy for Resilience Investments

Resilience has come to occupy a place in public policy and programs across the United States. Yet, even in the face of growing losses and the effects of natural disasters, the nation's capacity and appetite is waning for continued federal and state funding for pre- and post-disaster mitigation as part of efforts to promote resilience. A new approach is necessary—one focused on capturing all of the potential incentives provided by both the public and private sectors for pre- and post-hazard investment. The most cost-effective manner to achieve resilience is through a holistic and integrated set of public, private and hybrid programs based on capturing opportunities available through mortgages and loans; insurance; finance; tax incentives and credits; grants; regulations; and enhanced building codes.

#### E. Cybersecurity of Buildings and Critical Infrastructure

Building control systems with embedded communications technology provide critical services that allow a facility to meet the functional and operational needs of users and occupants. Unfortunately, they also can be easy targets for hackers and people with malicious intent. Facility/building control systems, such as building automation systems, energy management systems, physical security access control systems and fire alarm systems, are now considered potential hacking points into an organization. While federal agencies have been required to meet stringent cybersecurity standards, the same level of protection is just beginning in the private sector.

### 3. The Building Workforce

Concerns are growing about the availability of a workforce that can design, construct, operate and regulate the high-performance facilities being demanded by building owners and policymakers. These concerns focus both on the availability of skilled workers for the current and near-term, as well as into the future. The reasons for skilled labor shortages are multi-faceted. The overall workforce is aging. In addition, the recent recession and down-turn in construction resulted in many construction workers leaving the industry for other sectors of the economy. Finally, quality training programs, particularly for hourly craft professionals, are lacking.

#### Conclusion

The findings and recommendations included in the Consultative Council's *2015 Moving Forward Report* represent the latest thinking from the building industry on the tools, technologies, resources and policies necessary to achieve the goals established by policymakers, the public and the industry itself. To view the report, visit [www.nibs.org/cc](http://www.nibs.org/cc).

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