

AIA | AGC
SUSTAINABILITY
AND RISK SUMMIT
Executive Summary

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AIA National



Presentations and Speakers

Cost Impact of Green Codes

Peter Morris, Davis Langdon

The Risk of Unsustainable Buildings

Ken Sandler, U.S. General Services Administration (GSA)

Green Litigation

Chris Cheatham, Esq., Cheatham Consulting

Panel: Professional Liability Insurers and Sureties

Ed Gentilcore, Duane Morris LLP, Moderator

Mark McCallum, National Association of Surety Bond Producers (NASBP)

Robert Duke, Surety & Fidelity Association of America (SFAA)

Frank Musica, Assoc. AIA, Victor O. Schinnerer & Company, Inc.

Albert Rabasca, XLDP

Panel: Codes, Standards, and Rating Systems

Jessyca Henderson, AIA, The American Institute of Architects (AIA),
Moderator

Ron Burton, Building Owners and Managers Association International (BOMA)

Dominic Sims, International Code Council (ICC)

Susan Dorn, U.S. Green Building Council (USGBC)

Beth Studley, Holder Construction

Craig Deering, AIA, LEED AP, RTKL

Introduction: **The Risk of Unsustainable Buildings**

On April 25th 2011, the American Institute of Architects and the Associated General Contractors of America hosted an industry summit of architects, engineers, contractors, insurers and surety companies to discuss the topic of risk in sustainable projects in both voluntary systems and emerging green codes. The summit convened with a presentation by Ken Sandler from the General Services Administration Office of Federal High Performance Green Buildings on the “risks of unsustainable buildings,” which set the stage for a discussion based on the safety and health of the natural environment, as well as the health, safety, and welfare of the general public.

Defining What are Sustainable and Unsustainable Buildings

When looking at the “status quo” of buildings, we must ask ourselves, is this the best of all possible worlds, with the lowest possible risk? Probably not. There are certainly business risks inherent to any form of construction, and some would maintain there also are untold environmental and/or societal risks in maintaining the business status-quo.

Buildings are responsible for nearly 40% of our energy use and carbon dioxide emissions, over 70% of electricity consumption, 13% of all water consumption, over 60% of all non-industrial waste. Impervious surfaces increase urban runoff that can carry pollutants into waterways and threaten water quality. According to EPA, we spend 90% of our time indoors, in air that is two- to five-times more polluted than the outdoors. If the indoor air quality of a building is compromised, sensitive individuals can experience serious health and productivity impacts.

Mr. Sandler challenged the participants in the summit to consider the risk allocation for those losses. Buildings provide many extraordinary functions and amenities, but they also have hidden costs to health and the environment.

The practices of building design and construction share common approaches and industry leaders rely on those approaches with confidence that comes from being “proven” in the marketplace. But there are many ignored concerns,

hazards, and trends when we observe a typical building. When we talk about risk in this light, building inherently unsustainable buildings certainly seems like a bigger risk than attempting to improve the status quo.

We must all ask ourselves, can we keep doing what we're doing indefinitely?

The earth has been around for 4.5 billion years and there's been life on earth for 3.8 billion of them. Human civilization only dates back 10,000 years. In all this time, earth has sustained 5 enormous mass extinctions. Whatever we do, the Earth will wait us out (or, as the biologist Lynn Margulis said aptly, "Gaia is a tough bitch" and the question is whether we can sustain human civilization if we are draining or destroying resources at a much faster rate than we are replenishing them.

Sustainability is really about being conscious of the context necessary for our survival.

We live and build everything we have based on the elements we are granted by earth—air, water, land, materials. We need to renew and replenish rather than just taking and destroying—or we will run out of what civilization needs. When we refer to sustainability, the subject is not really nature or the Earth, but human civilization. It's not that the Earth will be literally destroyed by our actions, but the habitability of the Earth, and the fragility of human existence, that are at play—we must align human systems with the ecosystem or suffer the consequences.

Green Building Trends from Past to Future

Sustainable building concepts, introduced by the architect and engineer Buckminster Fuller in the mid-twentieth century, began to find renewed traction in the 1970s with the global oil crisis. The AIA's Energy Committee formed in 1973 to provide resources for AIA members in response dwindling resources. The thinking soon shifted away from coping with environmental challenges to mitigating them. As a result, the AIA's Committee on the Environment (COTE) formed in 1989, followed by the U.S. Green Building Council (USGBC) in 1993, and "green building" emerged in the following decade (looking, in part, to Fuller's ideas) as a convenient umbrella concept for the environmental and

health concerns related to buildings, which included energy, water, indoor air quality, materials, building sites. In 1992, the AIA published The Environmental Resource Guide, with funding from the U.S. Environmental Protection Agency (EPA), followed by the launch of the EPA's ENERGY STAR program, and Austin, Texas, became the first city to institute a local green building program. Over the years, AIA and AGC have taken steps individually to provide education to their members and to reward green building successes. Indeed, sustainability has been a topic of discussion and outreach at prior meetings of the AIA-AGC Joint Committee; and both organizations offer environmental awards.

Why Rating Systems and Labels?

From the beginning of the 1990s, it became clear to industry leaders and analysts that “green building” would require definition, measurement, and verification. Rating systems quickly became important market tools to distinguish progressive design from the status quo, but also represented a valuable bleeding edge to drive higher and higher expectations for building standards. As a result, their influence over model energy codes (in particular) as well as green building codes and standards, such as the IGCC and Standard 189, has grown.

Green Building: Where to Next?

In the span of the history of the green building movement (envisioned as a bell curve with innovators on the far left, followed by early adopters, early majority, late majority, and laggards), we are in the phases between early adopters and early majority. The advent of green building codes has introduced the mainstream design and construction industries to “mandatory green.” As green codes and standards continue to be adopted across the country, we will eventually see the “green” dropped from “green code” —and we'll just have better codes.

Barriers and Challenges to Green Building

We still have a number of challenges ahead of us before all the boats rise. There are still a number of major research questions to be answered and green building is still a relatively young field. As an industry we must be able to measure how green buildings are performing and how to tweak them in

order to improve. Moreover, the vast majority of building stock is existing—and the question of what to do with that building stock to make it more efficient remains one of the biggest challenges.

We also have many players in the green building industry. If you look at all the green labels, logos, and mantras in the marketplace, it can be hard to distinguish what is really “green” and what is “green-washing.” Even for the more discerning observer, the vast sea of “green” information is in itself a challenge to translate into actionable steps for businesses and buildings, green code compliance, or non-compliance risk assessment.

How It All Adds Up

Green building is a reasonable approach to reducing the risks of unsustainable buildings. While evolving rapidly, the green building field has entered a standardization phase. No matter what corner of the building industry you come from, if you really want to reduce risk, both environmental and economic, supporting green building research is tantamount.

Green Litigation

As an industry we are witnessing a transition from voluntary market transformation to regulation of environmental sustainability. Codes set a minimum baseline for that regulation.

While some jurisdictions will be pushed to change, a few at the top will likely continue to pull the others along. One thing is certain: there is no standard or rule for the acceptance and adoption of green ordinances. According to Chris Cheatham, principal of Cheatham Consulting, a Washington, D.C.-based construction law firm, there are three types of risk associated with sustainable projects and the forms of litigation that arise out of disputes between parties involved in the creation of those projects.

The first type of risk involves materials and methods of green building projects. Whether you have a standard roof or a green roof, if it leaks, that's a problem. The same type of liability exists if your leaking roof is green or not and the same laws applies (even if it will be applied differently in each case).

The second category of green building risk is regulatory non-compliance. With CALGreen, for instance, there is no clear penalty on the books if you do not comply. When you ask the sureties, the bonds that represent a jurisdiction's "green" requirements for "green projects" don't exist. This creates an ongoing issue for projects on the boards or in the design phase to comply with the certification requirement.

The final category is green building certification, or rating systems. What happens if there's a dispute around getting LEED or Green Globes certification? That litigation has not developed to the degree that has been seen in the other categories. There are a few examples to date that involve projects not achieving certification thereby losing out on tax credits. For example, NASCAR headquarters in North Carolina was supposed to get LEED certification (added in the middle of the process) adding additional costs to the project that the owner did not want to pay for. The contractor was not paid, the subcontractors were not paid, resulting in liens; that was resolved out of court. The general sense is that there are many disputes like this popping up in this category and the other two that are being resolved out of court.

As disputes arise around green buildings, legal standards continue to evolve. At the same time, the technology continues to evolve with untested materials (and new methods for applying them), which introduces additional risk for both designers and builders. This presents an array of challenges for evaluating risks at every level including project agreements, performance bonds, professional liability insurance, and underwriting.

The Cost Impact of Green Codes

Peter Morris, of the global construction consulting firm Davis Langdon, summed up the cost implications of green codes in a recent study (2011) of Title 24/CalGreen's implementation in this way: cost will continue to drive the conversation for owners and design professionals are facing both opportunities for additional services, as well as the potential for unfunded mandates on their services. For federal projects, with the least flexibility in terms of compensation, there is the highest amount of pressure as goals for those projects have been established by the government in pursuit of carbon neutrality.

There is a need for collaboration in the industry, as energy modeling and building technologies continue to contribute a positive impact on the “triple bottom line” of environmental, social, and economic concerns. In addition, the standard of care is not a static bar, but a dynamic line. A major concern for design and construction professionals is the uncertainty that additional responsibilities associated with green will be compensated.

As the standard of care changes, what is insured also changes on the basis of known negligence, misunderstandings between owner and design professional, or the shifting burden of risk.

Contractors see that is not the design professional’s risk alone to bear. They, too, are expected to have special skills and a special understanding (which extends to sub-contractors) in the realm of green codes.

In thinking about sureties bonds (or guarantees of security and obligation between two parties) or bonding contracts with green implications, three questions for the surety should be contemplated: what are the additional risks, who’s responsible for those additional risks, and how are those risks being addressed?

There is a question of how a surety proceeds, whether it’s trying to cordon off only construction-only obligations or perhaps broadening its exposure with a contractor who has the balance sheet and the capital to handle the additional expertise of a sustainable project. But, really, how the sureties are addressing this is consistent with how surety bonds have been typically underwritten; they want to know that the expectations are being adequately formed between the owner and the other parties.

Sureties have begun to understand what is exactly meant by green requirements, which is then translated into the construction documents. But, in general, there is poor understanding of what surety bonds actually do—and this issue speaks to the growth of the industry and its new players. Unfortunately the lack of understanding leads to poorly written language that mentions bonds in legislation. Something big is lost in translation. This sort of misunderstanding leads to claims and suits against both contractors and design professionals.

The downstream issues related to operations and maintenance is another major caveat in approaching mandatory sustainable projects and tying design to performance. Even if the people who are responsible for the maintenance and operation of the building are involved, tenants are not always inclined to change their habits. If there's not going to be buy-in at all levels, that's a risk which could potentially come back to the designers and the contractors.

This also leads to the question: when is the appropriate time to verify building performance vis-a-vis the complex web of codes, other green regulations, incentives, and so on? Requirements will likely overlap in awkward ways.

The bottom line here is that the surety industry looks very carefully at the skill sets of the folks they insure to determine risk. As a result, we may be seeing warranties and other uninsurable agreements popping up because of green design. Typically there is a way for insurers to cover firms on the cutting edge based simply on negligence. But what we are seeing in the insurance industry as there are a lot of insurers that will exclude certain services, or compose riders to policies in order to avoid covering the additional risk.

Industry collaboration and clarity are essential for moving forward with green codes and an enhanced standard of care.

Panel Discussion: Green Codes and Standards

With the IGCC set to be published for the first time in 2012, and voluntary adoptions of the Code already showing up in both cities and states, as well as a multitude of "home grown" mandatory green codes, we are seeing a greening of codes, but this will not happen overnight.

Green code adoptions are likely to be "lumpy" across the country, as there are so many shades of green spanning the many types of jurisdictions.

One of the biggest challenges facing the industry will be the education of building officials in the jurisdictions that choose to adopt the code. While architects and engineers in general are aware of green building practices, and are already engaged in projects that are part of voluntary green programs,

while also engaging in continuing education on the subject, the officials who would enforce the code are largely not prepared to enforce these emerging codes.

As green claims continue to flood the marketplace from manufacturers, and green codes become standard, we must ask, is the science really tested enough to prescribe outcomes or are we setting up the profession of architecture and the building industry at large for failure? Do we really believe in the last 5-10 years that we can prescribe these results for available technology that is economically feasible? Will there be code officials who can enforce the code? These are all concerns moving forward.

Sustainable projects may require architects and owners to hire additional consultants, changing the risk scenario for projects. Each person's individual area of expertise will have additional pressure and in all corners of the building industry we'll field questions in general, but we'll all need to have dependable resources close at hand.

Open Discussion—The Issues

The Standard of Care

Codes set the baseline for standard of care, which over time is adopted by a profession as minimum standard practice. As our members realize that there's a change on the horizon, big or small between current practice capabilities and the baseline in the code, there will be a need for education and eventual acceptance of these changes. Bridging that gap will be a huge issue for the AIA and AGC either in terms of bringing members who are capable up to speed quickly, or convincing those that are not prepared for a change in practice to hire more consultants to fill gaps in practice. AIA has identified a caveat in this approach is it may potentially dilute the role of the architect in general, paving the way for specialists to fill in the gaps.

Over time, it is anticipated by summit attendees that any standard of care will balance emerging changes and common practice. As different market areas progress at different rates, the code is adopted (which will not be in a uniform manner) and early-adopting jurisdictions force professionals to be early-learners. Late adopters will benefit from trial and error of the early adopters.

Compensation

The added cost of design under green codes and the issues around compensation will continue to be of major concern to architects, and their clients. If the cost of construction does not rise in proportion to the cost of design (and the designers fees are capped by statute), that will present a huge problem for design professionals.

Owner Education, Business, and Bargaining Power

We enter into new territory contemplating construction as “one more business transaction”—based on market forces and bargaining power, each party wants to leverage the best ‘deal’ that they can. For owners, that’s the highest quality product for the lowest price. The busier the market, the more likely the architects can leverage their value and the value of design. But in today’s market, that’s more difficult to do and architects will have to set their business practices and risk accordingly. The caveat, of course, is public owners who have statutorily set caps on fees. Because the same market factors are not at play, it’s a downward competitive spiral. When the market was good and contractors and architects could charge what they wanted, then designers reaped the benefit of it. As the cost of construction went up, their fees went up even if basic services did not.

Executive Orders and Federal Mandates

There is essentially the highest amount of pressure on the tightest market in terms of compensation.

It is the public owners that are pushing and required to do high performance buildings by both executive order and the recent passage of federal laws mandating performance in federal buildings. This sector, with its mandated caps on fees and issues relating to the existing structure of qualifications based selection, as well as competition for projects within the small business classification (covering 91% of AIA member firms), represents one of the toughest arenas in which AIA and AGC members compete for work. At the same time, it is essentially driving the cutting edge in high performance buildings. Large commercial facilities such as the 280,000 square-foot National Renewable Energy Laboratory in Golden, Colorado, represent a new generation of high performance design whose architects intend to replicate that

design. With more large scale buildings being commissioned by GSA and other federal agencies, the stage is set to make the argument that all public projects should follow suit.

Industry Involvement in the IGCC

The AIA, AGC and other professional organizations must think and act strategically with regard to the continued development of the IGCC.

Jurisdictions now have a “way out” of codifying LEED and raise the bar, including the extra design costs of the performance standards that are included in the IGCC. That might force architects to use additional consultants, so that sustainable design aspects are not part of basic services—even though anything in the code is a basic service, in theory. It may be possible that the codes are written in such a way that they only envision a certain scope as basic services if you can convince the contracting authority that these are the only ones and can have them outside the fee cap.

Some professionals have worked around the statute for public projects and have had additional work fall under “studies” which is additional services. Additionally, there is the least flexibility in the area with the biggest push for high performance; in public projects.

Codes and Building Performance

The most recent developments in the model energy codes has found the industry at a crossroads. We are slowly moving toward performance based codes—in support of outcome and evidence based design. Whereas this is a good thing for design professionals, the gap between design intent and actual performance is vast, both in terms of energy and other performance modeling, and owner education on proper operations and maintenance of high performance buildings. Contractors are understandably resistant to accepting performance guarantees on a design “or promise” they did not make. Design professionals also understand that without tools like sub-metering, blame cannot be assigned when something goes wrong with the performance of a building, and that may lead to inappropriate claims against design professionals.

Where do we go from here?

The questions posed at this Summit on Sustainability and Risk have multiple possible solutions none of which can be fully realized without collaboration among industry partners. The AIA and AGC were pleased to convene this group in April 2011, to identify areas of opportunity and exploration for the industry. We hope that the outcomes are seen as a rallying cry to industry associations to undertake more research, more education and more discussion on the topic of sustainability and risk. The summit attendees agreed that engaging all players—architects, contractors, engineers, owners, and other stakeholders—in a collaborative solution will get us to those solutions faster, better, and cheaper than if we go at them on our own.