

Sustainable Design Risk Management



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Though a truly “green” design is difficult to achieve, it is impossible to argue against the value of sustainability in the design and operation of our built environment. Green design minimizes hazardous environmental consequences and reduces energy use. Green building components usually have lower “encapsulated energy,” are almost always environmentally benign, and are often renewable. And perhaps most appealing to clients, life cycle costs are reduced. Although green design does not create unmanageable exposure to firms, recent professional liability and contractual claims indicate that design firms may become the victims of their own zeal. Many firms seem to overlook the risks and potential consequences of their statements, their contracts, and their services when it comes to sustainability.

The AIA 14th edition of *The Architect’s Handbook for Professional Practice* defines sustainability as “the concept of meeting present needs without compromising the ability of future generations to meet their own needs.” Designing for sustainability involves considering environmentally responsible design alternatives consistent with the client’s program, schedule, and budget. This paper will explore some of the legal and insurance implications of the “green” movement, as well as developments in common rating systems.

The Duty to be Green

The standard of care for design professionals is usually defined as the care and skill ordinarily used by members of the same profession practicing under similar circumstances at the same time and in the same locality. In other words, design professionals are held to a standard imposed on them by their own profession, rather than an outside party. But the statements of professional groups, the language of industry standard contracts, and the constraints of codes of ethics all affect the development of the applicable standard of care.

Contracts

Design firms make recommendations based on tradeoffs involving time, money, and quality. These recommendations are the nature of the design process, and clients make significant financial commitments based on them. However, contractually committing to obtain third-party certification, achieve stated energy savings, reduce construction materials and waste, or create a healthful interior environment can lead to obligations beyond the standard of care and, as contractual obligations, are not covered by professional liability insurance. Therefore, design professionals should be wary of, and may want to remove, contract clauses that raise the standard of care to the use of “best efforts” or specify a result, such as a 50% reduction of material waste.

Similarly, if the design professional is using a standard contract, such as one offered by the AIA, and has no experience with sustainability or is not offering green design services, those provisions should be removed from the agreement.

In 2007, The American Institute of Architects (AIA) revealed its latest changes to the AIA Contract Documents. One provision, new to several of the owner-architect agreements, is the contractual duty to consider green design alternatives on every project. The new core document for practice is the B101™-2007 agreement, which contains the following language:

§ 3.2.3 The Architect shall present its preliminary evaluation to the Owner and shall discuss with the Owner alternative approaches to design and construction of the Project, including the feasibility of incorporating environmentally responsible design approaches. The Architect shall reach an understanding with the Owner regarding the requirements of the Project.

§3.2.5.1 The Architect shall consider environmentally responsible design alternatives, such as material choices and building orientation, together with other considerations based on program and aesthetics, in developing a design that is consistent with the Owner's program, schedule and budget for the Cost of the Work. The Owner may obtain other environmentally responsible design services under Article 4.

The creation of these contractual obligations means that firms using the B101 need to be aware of their duties and properly communicate and document green design options with clients. The new provisions may exceed the standard of care for professional services, but if contained and agreed to in the contract, will be enforced in a court of law. This obligation should be shared with the client, and subsequent discussions should cover the desire and feasibility of incorporating green design elements. Those discussions should be documented, along with any green design alternatives considered by the design professional and reasons for choosing to, or choosing not to implement them. Otherwise, the obligation may lead to a breach of contract claim or raise a firm's professional liability exposure if a client assumes that sustainability features, including reduced energy use, are intrinsic in the design solution. Similarly, users of the B103, the contract variation for a large or complex project, and the B201, the design and construction contract administration scope document, should follow the advice above, as both contain the same provisions as the B101. The B104 abbreviated contract form and the B105 short form contract for use on a residential or small commercial project do not have a similar requirement.

Codes of Ethics

Many factors both within and outside the design and construction industry can influence the standard of care for design services. Recent changes in

professional society policies and codes of ethics have made it difficult to determine if the standard of care is in line with professional services being offered and client expectations. Several professional societies, including the AIA, the National Society of Professional Engineers (NSPE), the American Society of Civil Engineers (ASCE) and the American Society of Landscape Architects (ASLA), have added sustainability to their ethical guidelines.

A revision to the NSPE *Code of Ethics* in January 2006 incorporated an ethical obligation for sustainability. The language was clarified in July 2007 to state the following in the professional obligations section of the code:

Engineers shall at all times strive to serve the public interest. Engineers are encouraged to adhere to the principles of sustainable development in order to protect the environment for future generations.

The original 2006 language went further in establishing the obligation of NSPE members by stating that engineers “shall strive” instead of “are encouraged.” The 2007 revision significantly reduces the obligations of NSPE members and modifies its impact on the developing standard of care for sustainable design.

In December 2007, the national Board of Directors of the AIA added sustainability goals to the code of ethics governing its members’ conduct. Added was “Canon VI, Obligations to the Environment,” which contains three ethical standards. AIA members cannot be disciplined for violating an ethical standard since such standards are defined as goals “toward which Members should aspire in professional performance and behavior.” The goals use the word “should” rather than “must.” While these ethical standards place AIA members in an advocacy role, the language’s effect on the standard of care will not be known until case law develops. The AIA’s ethical provisions for its members state the following:

Members should promote sustainable design and development principles in their professional activities.

E.S. 6.1 Sustainable Design: In performing work, Members should be environmentally responsible and advocate sustainable building and site design.

E.S. 6.2 Sustainable Development: In performing professional services, Members should advocate the design, construction and operation of sustainable buildings and communities.

E.S. 6.3 Sustainable Practices: Members should use sustainable practices within their firms and professional organizations, and they should encourage their clients to do the same.

Another organization at the forefront of adding environmental concerns to its code of ethics was the American Society of Landscape Architects (ASLA). In

October 2000, the ASLA adopted a *Code of Environmental Ethics* to supplement its *Code of Professional Ethics*, amended most recently in 2006. The ethical standards are based off of four tenets and state that ASLA members “should make every effort” to support those ethical obligations.

The American Society of Civil Engineers (ASCE) may have been the first professional society to incorporate sustainability requirements into their code of ethics. In November 1996, the ASCE Board of Direction, instead of adding an eighth canon, chose to add sustainability principles to Canon 1 and Canon 3. One “Fundamental Canon” is slightly more stringent than the NSPE and AIA Codes because it states engineers “shall strive” to perform their professional duties in accordance with sustainable development principles. The adoption of sustainability to the ASCE Code seems to have done little to modify the standard of care of civil engineers in the past 12 years, but the effect is yet to be known on other design professionals.

Design professionals need to be aware that the addition of ethical requirements related to sustainable design may have an effect on the legal standard of care applicable to design services. Although past case law indicates that industry publications and handbooks can be considered evidence of a duty (as opposed to a violation constituting negligence) the new ethical provisions could have an impact on future judicial opinions.

Related Organizations

Other organizations are at the forefront of including sustainability in their policies and guidelines. The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has developed a number of publications supporting sustainability including Standards 90.1 and 90.2 for energy efficiency, Standards 62.1 and 62.2 for indoor air quality, the *Advanced Energy Design Guides*, and the *ASHRAE Green Guide*. Similarly, the Department of Transportation (DOT), the Environmental Protection Agency (EPA) and the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) are supporting sustainability in guides, reports, and legislation. These organizations are studying the benefits and impacts of including waste and byproduct materials in highway and commercial construction. In a joint study between the DOT and EPA, in 2005 at least 34 states had laws, regulations, policies, or at the very least, guidance on using coal combustion products (coal fly ash) in structural fill applications. It is likely that advances will continue in this area, requiring, in the future, the use of waste products and the recycle of materials left unused on jobsites.

Green Legislation

As of January 2008, at least 28 states had passed statutes or executive orders promoting green design, and many others have similar legislation pending. South Carolina, for example, passed the Energy Independence and Sustainable Construction Act of 2007, S.C. Code Ann. §48-52-800, which requires all state-funded construction projects to achieve LEED Silver certification or two Green Globes if they are greater than 10,000 gross square feet or if more than 50% of the facility will be replaced. Design firms should be aware of green legislation passed and pending in the jurisdictions where their projects are located. In many states, failure to comply with such laws may impose strict liability on the design professional.

How “Green” is Your Design?

Few design firms have the expertise to assess the “encapsulated energy” in building materials or judge the long-term impact of the use of renewable or recycled materials. Therefore, in the past, design professionals had difficulty explaining the trade-offs intrinsic to a sustainable design because no system existed to quantify that design. Now, however, with the acceptance of several rating systems in the American market, the concept of sustainability can be quantified.

LEED®

In 1998, the United States Green Building Council (USGBC) developed requirements for environmental sustainability and resource conservation. This system, the Leadership in Energy and Environmental Design® (LEED) program, is a point-driven certification of buildings that sets arbitrary values for design features, construction processes, and energy use. The new construction rating system is organized into six categories: sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, and innovation and design process. Some of the other rating systems include existing buildings, schools, healthcare, retail, and commercial interiors. Each system mandates that certain prerequisites in order for any certification level to be awarded. Once the prerequisites have been implemented, a project must achieve at least 26 points to be “Certified,” 33-38 points for “Silver,” 39-51 points for “Gold,” and reach 52 or more points for a “Platinum” rating. In 2009 USGBC will release the third version of LEED, which will introduce major modifications to the four major rating systems (new construction, core and shell, commercial interiors, and existing buildings). The systems will be on a 100-point scale, where 40 points (40%) will be required for building certification, 50 points for Silver, 60 Points for Gold and 80 points for Platinum. Also, credits will be weighted differently, with a stronger emphasis on energy-efficiency and

an upgrade to the ASHRAE 90.1-2007 standard.

The LEED program also offers accreditation for professionals in the design and construction industry. The Green Building Certification Institute (GBCI) is now responsible for the administration of the Professional Accreditation exam. No prerequisites exist to take the exam. However, knowledge of the building industry, green design, LEED credit intents and requirements, LEED documentation processes, and an understanding of life cycle costs is highly recommended. The promulgation of this accreditation program calls into question the ability of non-accredited professionals to design environmentally sensitive projects.

More information on LEED is available at www.usgbc.org.

Green Globes™

In the United States the Green Globes™ program is owned and operated by the Green Building Initiative (GBI). Green Globes features two major rating systems, one for “New Construction” and another for the “Continual Improvement of Existing Buildings.” A project is awarded points based on its performance in seven areas of assessment in the new construction system and six areas in the existing building system. Under New Construction, the system is divided into project delivery phases, and those phases are divided into seven assessment areas, which include project management, energy, indoor environment, site, water, resources, and emissions. Green Globes can be used for self-assessment, or for a fee, a third-party verification can be acquired to assign the Green Globes rating. The independent verification is based on a comprehensive review of documentation and a post-construction, on-site inspection. Worthy projects will then be awarded a final rating of one (35-54 percent), two (55-69 percent), three (70-84 percent), or four (85-100 percent) globes based on a cumulative 1,000 points possible.

The Green Globes rating system does not require extensive training or accreditation to be utilized by design professionals. Assessment of a project’s sustainability potential is available online through a questionnaire, which can be completed by a design professional with or without green design experience. After completion of the questionnaire, a report is generated that describes a list of achievements and recommendations. Therefore, the design professional can see the impact of their design decisions on the point score, and use that information to make future improvements. The online system also allows for the addition of project updates for up to one year, with the option to extend.

More information about Green Globes is available at www.theGBI.org.

Mandatory Green Design

Currently, both LEED and Green Globes are predominantly voluntary programs with which an owner, with the advice of the design professional, can make a decision to utilize green design. But the designation as a voluntary program is slowly eroding as more and more design professionals are required to design for sustainability. This reality is accelerated by legislative endorsements and the accreditation of standards developers by the American National Standards Institute (ANSI).

Both the USGBC and GBI have been accredited by ANSI as Standards Development Organizations (SDOs). This designation allows those organizations to produce environmental design and rating systems, which will then be reviewed and approved by the ANSI Board of Standards Review, to become American National Standards (ANS). Once approved, it is the desire of GBI and USGBC that those standards be incorporated by government agencies into local building codes. Currently, USGBC has partnered with the ASHRAE and the Illuminating Engineering Society of North American (IESNA) to develop Standard 189.1P, *High-Performance Green Buildings Except Low-Rise Residential*. This standard will address site sustainability, water use efficiency, energy efficiency, indoor environment quality (IEQ), and the building's impact on the atmosphere, materials, and resources. GBI is also developing a standard called *Green Globes Design Commercial Green Building Assessment Protocol*, which will include criteria and practices for environmental design and construction of commercial buildings. If and when these standards are incorporated into building codes, design professionals must proceed with caution. Knowledge of both standards will be essential since the standard passed will differ from jurisdiction to jurisdiction. Also, if the standard is a building code, the design must comply with the code or the design professional will likely be found negligent.

Green Liability

Design professionals are well aware of the competition between client demands and sound design principles. Often, the client's desire to reduce initial costs, compress delivery times, and see an immediate return on investment outweighs design options and construction techniques that could reduce a project's impact on the environment. From a professional liability perspective, there are many exposures generated or intensified by the advent of sustainable design. Advertising, sustainability descriptions, and even contracts can lead to exposures beyond allegations of negligently performed services.

Unfulfilled Expectations

Although design firms are encouraging employees to learn more about LEED and Green Globes, and to become LEED Accredited Professionals, firms should market and negotiate with caution. An employee who passes the LEED accreditation test and attaches LEED AP to his business card may create client expectations. The client may have hired the design professional with a belief that the designer is an expert with significant experience and knowledge of the design principles underlying the “green” system. Unfortunately, experience or competence does not necessarily accompany LEED accreditation. This challenge creates the possibility of dissatisfied clients, and dissatisfied clients bring claims. Therefore, it is vital to conduct open and thorough communication with a client concerning reasonable expectations of sustainability. Likewise, clients have to make a genuine commitment to participate in the process, to share in the responsibility for the decisions that might lead to certification, and to invest in the process as well as the design and construction measures required to achieve certification.

Example:

Lured by the promise of “healthier and more productive occupants” basic to LEED publicity, a tenant rented space in a LEED Silver-certified building. At the end of the year, the tenant’s records indicated a greater use of sick leave, increased complaints by employees of eyestrain and drafts, and reduced output from the clerical staff. The tenant demanded a rent rebate from the project owner based on a false promise of a healthful workplace and increased productivity. The owner sued the architect for not designing a healthful workplace and the tenant sued the architect for bodily injury based on poor indoor air quality.

Cost Recovery

The broad nature of the “green” rating system can serve as a trap for design professionals attempting to design to a pre-selected certification level. Clients expect to see the financial savings that their investment is supposed to produce. Higher certification levels usually require more design effort and greater construction costs. If an anticipated benefit is not achieved, the firm may be expected to pay for its “mistake.” Therefore, a design firm should never “warrant,” “guarantee,” “ensure,” or “use its best efforts” to achieve a certain rating.

Example:

A design team agreed to a project consisting of three schools that would serve as examples of sustainable design and energy conservation. The architects

and consulting engineers signed a contract that stated projects would “reduce operating costs by 50 percent” over schools of similar size. After completion, the energy usage was comparable to other schools recently designed and constructed. Newspaper coverage identified increased design and construction costs and no energy savings. The school system was publicly embarrassed, disappointed, and blamed as being “hoodwinked” by the architect and engineers. The school system brought a claim.

Implied or Express Warranties

Building certification implies energy savings and increased productivity. The design process, however, is interdependent on the actions of the client and can be later influenced by many factors. Projects seeking certification have a final review by the USGBC or Green Globes after construction. That final review may change the certification level expected. And as the certification levels increase from “Silver” to “Platinum” under LEED or one to four globes under Green Globes, expectations of benefits also increase. The stated goal of the LEED system, through which LEED certification is obtained, is to distinguish building projects that have demonstrated commitment to sustainability by meeting the “highest green building and performance measures.” Design professionals should be aware that such language could be construed as a warranty standard on the design and on the performance of the design as constructed. Other warranties could be claimed for anything ranging from the failure to meet the certification level planned to “excessive” energy, water, or maintenance costs. Even the failure of the design to decrease employee sick leave and increase productivity could be claimed.

Example:

An architect agreed to design with a goal of LEED Gold certification. The developer advertised the planned office building using superlatives from USGBC information about “reduced operating costs and healthier and more productive occupants” to attract tenants at higher rents. Budget and time constraints prevented certification at the Gold level. The developer sued the architect for negligence and breach of warranty based on the architect’s “guarantee” of Gold certification.

Fraud or Misrepresentation

It is surprisingly easy for a design firm involved in sustainable design to inadvertently give clients a false representation, commonly the result of overselling the firm and its capabilities. For example, the calculation of energy savings and life-cycle costs is not an exact science. It depends heavily upon many factors, such as building material choices, design settings, occupancy,

weather, etc. Thus, the initial savings in life-cycle costs offered by the design professional may be misleading. If a client does not understand this, the design professional could be accused of deceptive practices. An overstatement of qualifications may also lead to claims of deliberate misrepresentation in order to secure the commission—or fraud in the inducement to contract—exposing the professional to risks excluded from insurance coverage.

Example:

A homeowner was interested in a low-cost addition that would provide a healthful interior and save on energy costs. An architect agreed to design a “state-of-the-art” green residence. He discussed expertise and how design and service would “assure” the client of satisfaction with a project that met the schedule and budget. The owner, unhappy with the cost, time, and result, sued the architect under consumer protection laws, alleged fraud in the inducement of the contract for services, and demanded rescission of contract and return of fee and legal costs even though the project was complete.

New Product Liability

With the growth of green rating systems and laws encouraging green building, the construction industry is flush with new products aimed at cashing in on the sustainable movement. Manufacturers are putting new products on the market with limited time for research and virtually no product history of performance. So who bears the risk of specifying experimental products? The architect and the engineer are certainly likely targets for claims. To mitigate that liability, the design professional should fully disclose the risk of using an untested product with the client, and, if possible, share that risk with the client. Furthermore, the design professional could require the informed consent of the client when using experimental products. This informed consent would require the architect or engineer to offer several green alternatives, informing the client of the risks and benefits of each, and indicating those products that are especially experimental. Then the client should consent in writing to the use of any untested products so it is clear that the client participated in the decision to take on the risk.

Example:

An architect made the decision to use a green product from a new manufacturer with impressive promotional information. The architect did not conduct research on the product availability and did not warn the owner of any possible problems. The owner, based on the architect’s opinion, agreed to its use. When the contractor was ready to install the product it was not readily available, delaying the project’s completion and the distorting the construction

schedule. The contractor demanded increased payment for overhead, lost profits, and out-of-sequence construction. The owner brought suit against the architect since the architect never informed the owner that the product was subject to delayed delivery.

Design Practice Points

1. Stay up-to-date with green legislation and changes in standards or codes in the jurisdictions where your projects are located.
2. Know what the current standard of care is for your profession. Examine if the standard of care for a specific project type includes green design services.
3. Read your professional society code of ethics. If a dispute arises, the applicable code of ethics will be used to establish a professional duty.
4. Be familiar with the major green rating systems.
5. Be careful that advertising and marketing staff are not overselling design professional and firm experience with green design.
6. Understand your client's green expectations early in the process. If their expectations are high or unattainable, explain the green process with them and discuss realistic outcomes. If the client expects specific results or 100% perfection in design, carefully consider whether to accept the project.
7. Examine whether the design contract requires green design services. If you do not plan to offer green services eliminate those provisions.
8. Do not promise, warrant or guarantee specific design results such as a specific certification or third-party approval, waste reduction, decreased energy use, or anything else beyond your control.
9. Document communications with the client about green design services and options.
10. Use informed consent forms when offering green design services and unproven or experimental products.