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# A&E Briefings

Structuring risk management solutions

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## Green Design & Construction: Managing the Risks

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### Introduction

With the increasing concern about the environment, energy conservation, and potential global warming, the push for green design and construction has grown dramatically in the last few years. Because we can't solve new problems with old thinking, green design and construction encourages innovation. To achieve a green design we are encouraged to think differently, to try new things, to take risks – to see what works and what doesn't work – and learn lessons from our trial and error. The downside is that all that risk-taking can come with a price. If we do not understand and manage the risks of innovation, our good intentions may lead directly to unachieved expectations, disappointed clients, and increased costs.

As project owners, design professionals, contractors, and suppliers alike jump on the sustainability band wagon, they may only vaguely understand the fundamental risks that green design carries with it. This article addresses those unique risks and provides strategies for addressing them, including suggestions for managing client expectations, drafting appropriate contract language, preserving available insurance coverage, and exercising construction administration services to control or mitigate these risks before they escalate into claims.

### What is sustainable or green design and construction?

The American Institute of Architects (AIA) defines sustainability as "the concept of meeting present needs without compromising the ability of future generations to meet their own needs." (AIA Handbook of Professional Practice). Throughout this newsletter, we will use the terms "sustainable," and "green" design and buildings interchangeably.

### What Creates a Duty of the Design Professional to Design Green?

Contract Requirements: The AIA, in its recently published 2007 AIA contract form B101 – 2007 Standard Form of Agreement Between Owner and Architect (AIA B101-2007), has added sustainable design concepts to the architect's basic responsibilities. The agreement commits the architect to a contractual duty to consider green design alternatives on every project.

Two key provisions of B101 are the following:

§ 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.*

These same two provisions are also found in B103, the contract form for a large or complex project, as well as in AIA B201-2007, the scope of services document for design and construction contract administration. AIA B104-2007, an abbreviated contract form, includes only the duty to discuss with the owner the feasibility of incorporating environmentally responsible design solutions. B105-2007, the short-form contract for use on a residential or small commercial project, does not have either requirement.

According to these two provisions, the architect has sustainable design requirements, and these requirements will be met by (1) discussing with its client the feasibility of incorporating environmentally responsible designs into the project and (2) considering "environmentally responsible design alternatives" that are "consistent with the Owner's program, schedule and budget..."

In signing the new AIA document, the architect must be aware of the new environmental commitments. These are duties it did not have under previous AIA contracts, and which are not imposed by common law in the absence of contract language.

These new contract obligations will need to be understood and honored by the architect; otherwise, there likely will be a breach of contract.

Having created this new contractual obligation, an architect will need to document its communication with its client and document its environmental design recommendations to the client. Without this documentation, the architect may be unable to prove that it met its environmentally responsible obligations.

Additional "environmentally responsible design" or "green building" services may be added to the architect's scope of services in B101-2007 by way of Article 4 (Additional Services). The architect should note carefully sections 4.1.23 and 4.1.24 of the additional services table. If it does not intend to provide these additional services, for extensive environmentally responsible design and LEED® certification, the architect should be sure that these services are not designated in the agreement when executed, and may even want to strike through these services to delete them entirely.

A supplemental scope of services document specific to green design is also available. This is B214-2007, Standard Form of Architect's Services: **LEED Certification**. It assigns to the architect responsibility for performing services needed to certify a project to achieve a Leadership in Energy and Environmental Design (LEED) rating. Some of the key provisions of the form include the following:

- **Article 1.** Fill field for "initial information" that serves as the premise for the Architect's LEED-related services.
- **Article 2.3.** The Architect shall conduct a pre-design workshop with the Owner and consultants to review the LEED Green Building Rating System and establish green building goals, develop a strategy for attaining LEED credits, and assessing the impact on the Owners program and budget.
- **Article 2.6.** The Architect shall provide specifications that incorporate LEED requirements and assign the Contractor's responsibilities and documentation requirements.

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When specifying systems and equipment thoroughly document how the equipment was selected and evaluated. Obtain any third-party information and test data that might be available on the products. Obtain from the vendors information and proof of use on other projects, including evidence of how the product performed.

If there are risks that the design professional identifies as inherent in the equipment that is chosen, convey those risks to the client in writing. Create documentation of the communication to demonstrate that the client has been advised of the risks and understands and accepts the risks of using the equipment.

## Conclusion

For the reasons explained in this newsletter, project owners, design firms and contractors that are embarking upon green projects need to be well aware of the risks inherent in these projects. The environment in which we work is changing rapidly and we see many articles and presentations proclaiming the benefits of going green that encourage design firms and contractors to be advocates of sustainable design and construction. While there are indeed benefits of green design and construction that result in high performance buildings, it is evident from the few studies completed so far that even when designers and contractors perform their services consistent with the standard of care, the buildings that are designed green do not always result in energy savings or other anticipated benefits. The key to designing and building green is to manage the project owner's expectations and to mitigate the inherent risk of innovation that may result for well-intentioned designers and contractors.

*NOTE: This newsletter is an abridged version of a more extensive white paper that is available on the Zurich Web site for downloading by insureds*

*of Zurich in North America Commercial Markets. A webinar on this subject is also offered by Zurich in North America.*

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- **Article 2.7.1.** The Architect shall conduct a pre-bid meeting to review the differences in construction practices that will be required by LEED principles, procedures and requirements.
- **Article 2.7.3.** The Architect shall consider requests for substitutions, if permitted by the Bidding Documents.
- **Article 4.1, 4.2.** The owner shall furnish a program setting forth its objectives, schedule, constraints, and criteria, including system and special equipment requirements.

Whether the requirements contained in the articles of B214 will add to, or reduce, the risk of the architect involved in LEED design is yet to be seen. At least the document, by assigning these tasks to the various parties (Owner, Architect and Contractor) serves to focus the parties on better understanding their expectations and duties.

**Code of Ethics:** The AIA added new provisions to its code of ethics in 2007 to address environmental goals. The new "Canon VI, Obligations to the Environment," adds the following broad principle of conduct, followed by three ethical standards: "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.

Ethical standards are "goals" and are not mandatory. They are stated as things the architect "should" strive for, not what "must" be done. Since they are not mandatory, there is little likelihood that an architect will be disciplined by a state board for failing to meet these goals. Nevertheless, it would not be surprising to see these standards used by third parties, such as green design advocates.

It is not difficult to imagine, for example, a group opposed to the development or expansion of ski resorts filing ethical complaints against design professionals for designing ski slopes that impact wilderness areas – despite all reasonable efforts by the design firm to act environmentally responsibly in its design. Ethical codes may become one more tool for some individuals to attempt to stop projects they don't want to see built.

In addition to 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 each added sections to their ethical guidelines to address sustainability. The NSPE *Code of Ethics* was revised in January 2006, and revised again in July 2007, to include the following:

*"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."*

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### Laws, Codes and Regulations Promoting Sustainable Design:

Green Design Requirements are being created by numerous law, codes, ordinances and regulations.

According the United States Green Building Council (“USGBC”) as of October 2008, laws, resolutions, ordinances, policies, or executive orders promoting sustainable design had been enacted by 44 states, 163 municipal or county governments, 31 state governments, 12 federal agencies or departments, 15 public school districts and 39 institutions of higher education. This number is increasing dramatically each year. To avoid inadvertently running afoul of these requirements, design professionals must acquaint themselves with the codes and statutes applicable in the jurisdictions where they practice.

### Risk and Liability Arising out of Green Design

For the design professional the risks associated with green design are many and varied. The list below includes issues raised by attorneys, design professional risk managers, insurance underwriters, and others:

1. uninformed and unrealistic expectations of project owners;
2. potential claims from owners when the project fails to achieve the desired certification – resulting in the owner’s failure to qualify for expected tax credits and various government incentives;
3. increased standard of care;
4. uninsurable guarantees or warranties;

5. liability to owners for problems in completed buildings due to the design of green systems or products that failed to perform as advertised;
6. construction errors and defects blamed on the design professional for the failure of a green product or system that may have been specified correctly, but installed incorrectly, and;
7. claims alleged for the design professional’s failure to properly supervise the contractor in green design implementation.

### Increased Costs of Going Green

Project Owners may be investing additional money to obtain LEED certified buildings. Depending upon which statistics and reports are cited, it may cost anywhere from 2 to 10 percent more to obtain LEED certified status. The increased costs for designing and constructing a green building include the typical categories of costs: soft costs, hard costs, and operating/maintenance costs.

In exchange for the increased costs of site development, design and construction, project owners will obviously expect to receive some tangible benefits of going green. One of the top reasons given by owners for going green is the expectation of saving energy and life-cycle costs. According to a recent report (“Energy Efficiency in Buildings, Facts & Trends,” by the World Business Council for Sustainable Development, July 2008), the higher the LEED certification, the greater the energy savings.

Another study summarized in the above-referenced report indicates that the predicted annual return on investment in green upgrades for all classes of buildings averages 10 percent annually. If this turns out to be true, these green upgrades in energy efficient systems will pay for themselves over a ten year period by operational savings. Even if that is the case, however, the

### 4. Indemnification Provisions Creating Uninsurable Contractual Liability:

Beware of indemnification provisions requiring the design professional to indemnify the client for damages arising out of “all performance of the professional services” or out of “all acts, errors and omissions” or out of “damages caused in whole or in part by the negligence of the design professional.” Each of these three provisions may create indemnity obligations for the design professional in the event a third party files a claim against the client/building owner for failing to achieve LEED certification or certain building performance expectations.

By agreeing to assume responsibility for non-negligent acts, the design professional creates an uninsured contractual liability not required under the common law, which is precisely the type of liability that is excluded from coverage under professional liability policies.

**Solution:** Carefully review the indemnification provisions of the design professional contract. Delete any “duty to defend” obligations since these are uninsurable. Delete any language that requires indemnification other than indemnification for damages caused by the design professional’s negligence.

### 5. LEED Letter Templates:

The letter templates that LEED requires of the design professional contain language that may create unreasonable expectations of the client and other and imply a warranty or guarantee by the design professional.

**Solution:** Add a paragraph to the certification stating that the design professional represents that it exercised the appropriate standard of care in the performance of its services and is signing the LEED certification to the best of its knowledge, information and believe, BUT makes no warranty or guarantee concerning building performance or any other matter.

### 6. Selection of Systems and Equipment:

In specifying systems and products for a building that are represented by the vendors and suppliers to be “green,” the design professional is potentially subject to claims against it by its client in the event that the systems and equipment fail to meet the LEED certification requirements or fail to achieve the expected green building performance. The legal theories behind the claims could range from negligent design, negligent selection, negligent inspection or supervision of construction, breach of contract, and breach of warranty.

**Solution:** Don’t sign a contract containing any warranties of these systems or equipment by the design professional. Require that the manufacturers of all systems, equipment, and products provide appropriate warranties.

Specify the use of manufacturers and suppliers that have been in business for a significant period of time and have a good history with their products. This is not to say that an innovative system or product cannot be specified, but rather that when such an innovative product or system is selected, it is preferable that it be from a corporation that has been in business for a significant period of time – even if producing different products.

For major systems such a curtain wall, roofs, and HVAC, further protection is obtained from requiring performance bonds for their work. Also require that all such vendors maintain commercial general liability insurance (CGL) and builder’s risk insurance. The CGL policies should be required to name the design professional and the building owner as additional insureds. These policies may provide coverage for damages caused to the building by malfunctioning equipment.

There are examples of buildings that have been LEED certified because they met all the documentation requirements necessary for that certification – yet they do not perform as well as conventional buildings.

standard of care. Although the world is changing rapidly and other societal factors may contribute to changing the standard of care over time, in the absence of the new clause, the design professional would have no duty to consider environmentally responsible designs – unless law, codes, ordinances or licensing statutes might otherwise impose such a duty upon the design professional. In any event, the design professional needs to be aware of this important provision of the AIA contract.

**Solution:** Strike this clause from the AIA contract if the design professional does not intend to perform these services. If, however, the requirements of this section must be accepted by the design professional either by virtue of the contract language or by other standards imposed, then the design professional will need to carefully document that it adhered to the requirements. This will again include documentation of communications and conversations with the client or owner. Documenting design decisions has always been a good idea, but it is more important now than ever before to document which environmental design elements were considered, what understandings were reached, and how ultimate decisions were made.

### 3. Building Energy Performance Expectations not satisfied:

As discussed above, even if a building obtains the LEED certification level desired by the building owner, there is no assurance that the building will be more energy efficient, will improve worker health and attendance, or produce other benefits that so many of the trade journals and press have been publicizing.

An unsatisfied project owner that has paid more money to achieve a LEED certified building than it would have paid for a conventional building may be so unhappy with the result (particularly in a bad economy) that this owner may seek to recover damages from the design professional. Conceivable legal theories could include negligence, breach of contract, breach of warranty, and negligent misrepresentation.

**Solution:** Manage the owner's performance expectations by communicating at the outset that despite reasonable efforts to obtain LEED certification, this does not necessarily translate into performance benefits even if LEED certification is obtained. There are examples of buildings that have been LEED certified because they met all the documentation requirements necessary for that certification—yet they do not perform as well as conventional buildings. Perhaps give the project owner a copy of the GSA Report entitled "Assessing Green Building Performance," July 2008, that provides case study examples showing that a percentage of buildings with LEED certification perform worse than buildings that were designed conventionally.

Don't agree to any warranties or guarantees concerning building performance. Include a waiver of consequential damages clause in the contract so that these types of potential damages that might be claimed by the building owner are barred from recovery. Get the building owner to include language either in the contract or as an addendum stating that it has been informed about the risks concerning building performance, especially items such as green roofs that might leak, and that the owner accepts and assumes those performance risks.

building would only see a net benefit if the equipment lasts more than 10 years without having to have major repair or replacement due to system failure, possibly resulting from being designed to be green. As with any new idea and process, there is insufficient data and information at this point to make dispositive factual statements concerning the long-term benefits and cost savings.

### Certification Isn't so Certain

Certification by third-party evaluators is granted only after construction of a building is complete. During the design stage, and even while construction is being performed, it is not possible to be certain that a building will obtain the LEED certification being sought. There are factors beyond the control of the design professional and contractor than may affect the eventual award of LEED certification. Consequently, design professionals are well-advised not to sign a contract that promises the project owner that the building will achieve a LEED certification. Language in contracts that may create such promises includes words stating that the design professional "guarantees," "warrants," "assures," or "ensures" that result, or, "LEED certification shall be achieved or liquidated damages shall be imposed in the amount of X dollars."

Typically, design professionals are taught in their insurance company risk management sessions that their professional liability policy covers them only "for negligent acts, errors and omissions." Not every mistake and error is an insured one. This is because courts generally only impose liability on design professionals where their services fail to meet the appropriate standard of care applicable to design professionals practicing in similar services and at the same time and place.

If a design professional agrees to liquidated damages or to a standard of care higher than

that which is imposed by law, the insurance policy will not cover damages arising out of the design firm's failure to meet that higher standard. Warranties and guarantees are expressly excluded from coverage under the design professional policy. Consequently, if liability is imposed on the design professional pursuant to the language of the contract promising that a certain level of certification would be achieved, the damages arising out of that contractual breach will be excluded from coverage pursuant to the contractual liability exclusion or the warranties and guarantees exclusion.

### What Can the Design Professional Contractually Commit to Achieve?

We discussed above the environmental requirements imposed on architects that enter into the new AIA B101-2007 contract document. The standard forms for most other organizations have not yet added environmental sustainable design issues to their forms in such a philosophical and detailed manner, but it is likely that others will soon follow suit.

In my review of design professional contracts in the past several years, I have noticed that instead of using trade association standard forms, project owners such as hospitals, schools, large commercial enterprises and government agencies more typically use forms of their own creation. Many of these forms are now adding sustainable design and construction requirements, including specific warranty language for LEED certification achievement.

In one contract involving a large and complex new medical center and hospital, the design contract stated that the design firm would

There are factors beyond the control of the design professional and contractor than may affect the eventual award of LEED certification.

design the facility so that LEED Gold certification would be achieved, and that “in the event that LEED certification is not granted, liquidated damages in the amount of \$2 million shall be assessed.” Although I counseled against agreeing to what constitutes an uninsured warranty, it is possible that the design firm ultimately decided that it must agree to the warranty in order to get the work.

A firm that agrees to such increased, uninsured, responsibility will certainly have a personal financial interest in reviewing every product that the contractors submit for approval, and also in managing more closely how the contractors perform their work and install the products and equipment. That design professional will also need to adhere to a greater responsibility than its scope of services might require when it comes to commissioning the building to do all it can to see to it that the project owner and contractor do what is necessary to commission the building consistent with the LEED requirements to achieve the certification. In spite of such costly, extra effort and diligence, the desired certification may not be achieved for reasons beyond the firm’s control.

If a design firm that designs the project and warrants the LEED Gold has only minimal construction phase responsibility, it will have little opportunity to control its risk. If its scope of service does not call for significant construction administration services and some other firm, such as construction management (CM) firm, performs that function instead, the design firm may not be able to protect itself against decisions being made during construction and commissioning that are inconsistent with achieving Gold Certification.

As an example of what can go wrong in this regard, consider this possibility: the project is running behind schedule and the contractor can complete the building on time, and thereby avoid its

own liquidated damages for late performance, only by foregoing the long period of air flush-out required to obtain points toward the certification. Performing the air flush-out might add days or weeks to a large building’s schedule, but the contractor is looking at a building that appears totally complete and ready to turn over for beneficial occupancy – except for the fact that someone is trying to score LEED points by flushing out the smells, toxins, and air of the building. The contractor may believe this is not only silly, but is actually contrary to common sense because the flush-out process will, in his opinion, create mold problems by bringing humid outside air into the building when the air-conditioning system is not operating.

Unlike a supplier that gives an equipment warranty, a design professional does not have anything close to the same level of control over the final result as does the supplier.

### Using Contract Language to Limit Liability

The standard AIA contract documents contain a mutual waiver of liability clause stating that both the project owner and design firm waive consequential damages that they might claim from each other. Such consequential damages may include lost profits, lost rents, lost tax breaks, lost financing terms, increased operation and maintenance costs, and other economic losses such as loss or impairment of the building value due to failure to obtain a specified LEED certification.

This waiver of consequential damages may be an important tool to limit the architect’s potential liability arising out of failure to achieve the sustainability objectives intended. Engineers and other design professionals should consider adding such a waiver of consequential damages clause to their contracts as well.

It is possible that a project owner might not be willing to grant a broad waiver clause but would

### Potential Claim Scenarios and Ideas for Managing the Risk

It is reasonable to foresee a number of potential claim scenarios that could involve design professionals. Among the possibilities are the following:

#### 1. Contractual Warranty Obligation:

The design professional is asked to sign a contract that states the building will be designed to attain LEED Gold Certification and that, if it fails to achieve that certification, the design professional will pay its client as liquidated damages the sum of \$2 million. This is an uninsurable damage or claim under the professional liability policy.

**Solution:** Delete this contract clause in its entirety and replace it with a clause stating that the design professional will perform its services in a manner consistent with the generally accepted standard of care exercised by design professionals performing similar services to attain LEED Gold certification, but that factors beyond its responsibility and control will affect whether the building is granted Gold Certification, and the design professional makes no warranty or guarantee concerning Gold Certification.

#### 2. Unfulfilled Green Expectations Under the AIA B101-2007 Contract:

The Design professional by contract might commit itself to environmental design requirements without realizing that it is doing so, or without realizing the full extent of the responsibility it is taking on. For example, the architect may sign the B101 contract that contains the new standard clauses discussed above in this newsletter.

**Claim Possibility 1:** The design professional discusses with its client the feasibility of incorporating “environmentally responsible design approaches” but the client decides it is not interested in green design because it is constructing a warehouse and feels that it will not matter to the people who work there whether it

is green or not, nor will it matter to the value of the building. Finally, the owner decides it will not matter to the community since this is a building that is being built in an old industrial park on the wrong side of the tracks where few people will actually see it. No written record is made of the “discussion” between the design professional and owner. Later, the owner sells the building to a third party (or perhaps loses it at foreclosure to a lender), and that third party or lending institution learns that the building is not functioning up to the green standards that it believes should have been incorporated into the warehouse. As an example, it may cost more to operate and this reduces the resale value of the building.

**Solution:** Document in writing all discussions that the design professional has with the client, and all understandings reached with the client. If there is an oral communication, follow up with a letter, memorandum, e-mail, meeting minutes, or other appropriate written documentation to memorialize the oral communication. If the design firm gives recommendations to the project owner and those recommendations are rejected, this too needs to be memorialized in writing.

**Claim Possibility 2:** Consider now the duties created by §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 design professional is required to consider environmentally responsible design alternatives, including material choices, regardless of whether the project owner has otherwise asked for this as part of the scope of services.

Beware that this clause increases the scope of service from previous editions of AIA agreements. It may also change and elevate the normal

The report further states that "Fully 25% of the buildings show savings in excess of 50%, well above any predicted outcomes, while 21% show unanticipated measured losses, i.e., measured energy use exceeding the modeled code baseline." (Report, page 23)

### The Basis for Claims against Design Professionals

When a building designed and constructed to obtain LEED certification fails to obtain the desired certification, the project owner might make claims based on a number of different legal theories to recover "damages" resulting from the failure to obtain the certification. Even if the building obtains a certification, the owner might find that the actual performance is less than the level the designers and contractors led it to expect, and the owner might file a claim for damages on that basis.

In some instances, the claim may include a demand to perform redesign services and rip out and replace systems, materials, products and equipment that are failing to perform as expected. In other cases, it is possible that the project owner will choose not to redesign its building and replace the systems and products, but instead will seek monetary damages to recover financial loss due to the failure of the building to obtain certification or otherwise perform an expected.

An example of just such a situation is the matter of *Southern Builders, Inc. v. Shaw Development, LLC*, (Somerset, MD, Circuit court, No. 19-C-07-11405, 2007 – case settled without a decision).

In the Southern Builders case, the contractor, Southern Builders, filed suit against the developer, Shaw Development, for about \$54,000 for unpaid fees. Shaw filed a countersuit for almost \$635,000 based on the contractor's alleged failure to construct the condominium complex as required to obtain LEED Silver certification as specified in the construction contract. The amount claimed by the developer was based on the amount of the tax credit the developer expected to obtain from the state for constructing a LEED-certified condominium complex.

This case is perhaps the first example of the kind of law suits we can expect to see in the future. These suits will likely grow in number due to the current state of the economy which may foster increased litigation by project owners that they may not have considered in the previous hot real estate market when financing was easy to obtain and owners could sell or rent their new buildings as fast as they could build them. In the current distressed market, project owners are suffering financially and may look to others to share their financial burden, especially if they can't obtain the LEED certifications expected or the high-performance savings anticipated.

In addition to the loss of tax breaks, the owners may lose certain zoning benefits such as higher density development to which they were entitled by getting LEED certification, or they may be in breach of loan covenants where lenders required the collateralized building to be LEED-certified. Certain tenants have also signed leases on the basis that they would be moving into a LEED-certified building. Failure to obtain the LEED certification might be a breach of the lease agreement permitting the tenant to get out of a lease it no longer wants due to the bad economy and reductions in its work force. Each of the above situations could be the basis for a claim for "damages" against the design professionals and possibly the contractors.

accept such a clause if it were limited to consequential damages related to green design. This would be a possibility worth pursuing during contract negotiation. In drafting a waiver of consequential damages clause specifically for green design, consider delineating the consequential damages items listed above, plus any others you might think of, and state that the waiver applies, "but is not limited to" each of those items.

In addition to not agreeing to any warranties or guarantees concerning green design, it may also be advisable to add a clause affirmatively stating that the design professional is making no warranty and giving no guarantee concerning LEED certification because such certification is beyond its ability to control.

It may also be prudent to add a paragraph to the contract stating that any forms or representations that the design professional or contractor might give to the project owner concerning LEED credit submittals do not constitute representations or warranties concerning the ultimate functionality or high performance of the building, but instead are solely for the purpose of satisfying the LEED certification process documentation requirements.

In addition to exercising great caution with the language that goes into the contracts for design and construction, attention should also be given to the language of marketing materials, advertisements, Web sites, and proposals. Surprisingly, the same firm that may place language in contracts carefully worded to avoid over-promising the quality of the services to be provided or the results to be obtained, may also potentially create liability through its marketing materials, Web sites and proposals.

Proposals are often incorporated by reference or attachment to the design professional

agreement. The representations contained in those proposals can, consequently, become an affirmative part of the contract. But even if not actually incorporated by reference, the content of the proposals might still be relied upon by a project owner in selecting a design professional, contractor, or vendor. Owners have successfully argued that they were expected and intended to rely upon those proposals when deciding whether to award a contract.

Some complaints have alleged fraud and negligent misrepresentation in the proposals and marketing materials, in addition to actual negligent performance of the services or work. Owners find this allegation particularly useful as a means to avoid liability limitations they may have agreed to in the contract. By arguing that they were "fraudulently induced" into the contract, the owner might be able to avoid a summary judgment to enforce a waiver of consequential damages clause or other limitation of liability clause in the contract.

The point is this: it is not safe to think that proposals and marketing materials are merely "puffing" and can't be enforced. Owners who are not satisfied with the result of services may latch onto those materials as one basis of its claim – and that one basis might be the thing that gets them past a motion to dismiss or summary judgment motion.

### Problems with Construction Materials Selected

In a paper entitled "The Hidden Risks of Green Buildings," September 1, 2008, published originally in *NCARB Magazine*, David Odom,

Attention should also be given to the language of marketing materials, advertisements, Web sites, and proposals.

Richard Scot, and George H. Dubose cogently explain the risks inherent in the use of new, innovative green products and materials, as follows:

“Most new products are experiments and most experiments fail.” – Stewart Brand, *“How Buildings Learn: What Happens After They’re Built.”*

Stewart Brand’s caution in 1994 about using new products is engaging and controversial, since progress can only be made through the use of new products and innovative approaches. Brand’s caution echoes what forensic building consultants and building scientists have seen for decades: anything that departs from the “tried and true method” often fails. This isn’t surprising, since even traditional building materials experience some percentage of catastrophic failures from moisture and mold problems.

The warning is especially appropriate today with the expansion of new products, many intended for Leadership in Energy and Environmental Design (LEED®) certification.

Although many of these “green” products have been developed within the last five years, they’re intended for use in buildings that should last for more than 50 years. Even a casual review of product literature indicates that some of these products appear to have had minimal on-site testing or performance verification. Additionally, many have not been marketed in a manner suggesting caution about regional or climatic restrictions in their use. Finally, we suspect that there has been even less testing of the complex, interrelated assemblies in which these products will be asked to co-exist for 50+ years or more.

When using innovative products it must be understood that these products are new and relatively untested, and certainly don’t have a long history of use by which they can be

evaluated. Design professionals are being encouraged by groups like the AIA, USGBC, GSA, and others to consider and specify sustainable products. For example, the GSA is now requiring that all new construction projects and substantial renovations must be LEED certified and it aspires for its projects to achieve the LEED® Silver rating. To achieve these types of ratings, the architect may find itself relying upon marketing materials and sales pitches by green product vendors and suppliers.

Additional risk for the design professional results from such reliance and yet the contract that requires the achievement of such goals may incite the architect to take that risk. A prudent design professional should insert language into its owner/architect agreement to expressly address that increased risk, and include a strong paragraph advising the owner that there are risks of using new products over which the architect has no control and that the owner, not the architect, must assume the risk of product failure that impairs the performance of the building.

When it comes to specifying innovative products that claim to be “green,” “eco-friendly,” “sustainable,” “renewable,” and other similar adjective, the design professional will need to document the due diligence it performed in specifying the materials or in accepting them during the contractor submission process.

It will not be a sufficient defense to say that reasonable reliance was placed upon the representations of the vendors.

When evaluating a new product or system that claims to be green, a design professional should be exceedingly cautious, and, perhaps, a bit cynical. Don’t accept the vendor’s word for it. Challenge everything. Make the vendor prove its claims. Before accepting any innovative product, give the project owner the information available on the green products, warn the client about the risks. The 2007 AIA agreements require the architect to discuss green design

8

with the owner. The risks of new products should be part of that conversation. The prudent architect will also document the discussion, and have the owner accept in writing the risk of new products.

### Building Commissioning Process – A layer of risk management

When the completed building is ready for commissioning, this is a final opportunity to obtain some quality assurance that the contractor has completed the construction as planned and that the commissioning process itself is carried out correctly.

Third party verification can be used to go beyond just the documentation issues needed for LEED. It can include an actual systems and building performance evaluation to include testing, adjusting, changing, and balancing systems to obtain high performance functioning as intended. This step of having a professional commissioning agent participate at this final stage may be able to correct issues that could otherwise turn into problems that would lead to unmet expectations of the project owner and litigation against the design firms and contractors.

### Energy Performance of LEED Certified Buildings

Much of the legislation noted above requiring sustainable design and construction is intended to achieve a high-performance building – one that is energy efficient and economical to manage over time. A recent publication illustrates that green design does not always result in a high performance building. In a mini-monograph entitled *Energy Performance of LEED for New Construction Buildings*, Final Report, March 4, 2008, prepared for the US Green Building Council by Cathy Turner and Mark Frankel, and published by NBI Buildings Institute ([www.newbuildings.org](http://www.newbuildings.org)), the authors analyze a number of buildings that went through the green design and construction process.

9

The monograph begins by explaining that EPA’s Energy Star program rates a building’s energy use in relation to existing national building stock for the same activity type. The average Energy Star rating of LEED buildings was 68. This means they were better than 68% of similar buildings. Nearly half of LEED certified buildings had Energy Star ratings of at least 75—thereby meeting the qualification level for an EPA-certified Energy Star building.

“While the average LEED Energy Star Rating is favorable, ... one quarter of these buildings had ratings below 50, meaning they used more energy than average for comparable existing building stock. Further investigation of the reasons for these shortfalls holds potential for significant further improvements of overall LEED performance.”

As explained by the report, LEED points are awarded for energy performance based on predicted energy cost savings. To predict the savings, a comparison is made to a modeled code baseline building. To generate the baseline, the ASHRAE 90.1 standard is used for an energy cost budget (ECB) approach and performance requirements. The report states that the measured energy savings for the buildings in the study averaged 28% compared to code baselines. This was quite close to the 25% energy cost savings predicted in the LEED submittals.

The study also revealed, however, that the advance energy modeling was a good predictor of average building energy performance, but actual buildings varied widely from the average. As stated in the report, “Some buildings do much better than anticipated.... On the other hand, nearly an equal number are doing worse –sometimes much worse.” (Report, page 3)