

# What Are The Risks of Sustainable Design? (Practicing Law at the Interface Between Building Code and Buddhist Economics)

By P. Douglas Folk, Esq.  
Folk & Associates, P.C.

Fueled by concern about global climate change and resource scarcity, and firm in the belief that good design will remedy society's ills, the design professions have embraced sustainable design as both a goal and deliverable. Building owners, users, lenders, and the government have also rallied to the call for "green design", although for reasons that are often less altruistic and more economic in nature. In many circles a "green" office or residential building is thought to command a premium price for re-sale or rental.

Risk managers and construction lawyers quickly realized that this new mission could lead design professionals into uncharted territory. Working in an environment where objectives are often stated in philosophical or sociological terms, rather than the math and science of building codes, design professionals run the risk that they will be judged against a new and subjective standard of care. Worse yet, their professional liability insurers may decide that sustainable design risks exceed the customary standard of care or insured practice areas and will not be covered. The challenge of this paper is to define the nature of sustainable design, explore its impact on professional practice, and suggest means to manage the risk of professional liability claims and disputes over the performance of "green" designs.

A Westlaw search for the etymology of "sustainable design" led nowhere, as this term has not been used in any published decisions of a state or federal court in

the United States. As of this date, no appellate court has published a decision in a case involving this concept or any reference to one of the more widely used measures of sustainable design – LEED® certification.

Lacking a statutory or common law lineage, it should come as no surprise that the terms “sustainable design” and “sustainable development” derive from the environmental movement of the 1970s. Advocates for many different social and ecological causes joined in seeking a more holistic approach to environmental protection. Their focus on the impact of human activity on the environment gave birth to the concept of “sustainable development”, which was expressed with Zen-like simplicity in a 1987 publication of the World Commission on the Environment and Development entitled *Our Common Future*, as “a form of development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”<sup>1</sup>

One frequently-cited source for sustainable design principles is the work of British economist and statistician, Ernst Friedrich Schumacher. Schumacher’s essay “Buddhist Economics”<sup>2</sup> turned conventional economic principles on their head by arguing that minimizing resource consumption with small-scale, appropriate technology found in the developing world was more conducive to societal development and personal happiness than the resource intensive, technologically complex industries of the developed nations. Schumacher’s credo – “Cease to do evil; try to do good.” – is echoed in all present-day definitions of sustainable design. The American Institute of

---

<sup>1</sup> ASTM Standard E 2432-05 Standard Guide for General Principles of Sustainability Relative to Buildings, Appendix X1.1.1.

<sup>2</sup> *Small is Beautiful: Economics as if People Mattered* (Blond & Briggs, Ltd. 1973) at 56. While Schumacher borrowed Buddhist concepts to make his point, his work was not presented as a religious polemic

Architect's Committee on The Environment has restated Schumacher's principles more broadly, though less eloquently:

The linked domains of sustainability are environmental (natural patterns and flows), economic (financial patterns and equity), and social (human, cultural and spiritual). Sustainable design is a collaborative process that involves thinking ecologically – studying systems, relationships and interactions – in order to design in ways that remove rather than contribute stress from systems. The sustainable design process holistically and creatively connects land use and design at the regional level and addresses community design and mobility; site ecology and water use; place-based energy generation, performance, and security; materials and construction; light and air; bioclimatic design; and issues of long life and loose fit. True sustainable design is beautiful, humane, socially appropriate, and restorative.<sup>3</sup>

Has anything been omitted from this statement of scope and purpose?

Little wonder then that risk managers and lawyers are searching for a more concrete expression of the standard of care applicable to sustainable design. Traditional standard-setting bodies have begun the task, but results are mixed. On the one hand, very technical reference standards for energy consumption (ASHRAE 90.1 – Energy Standard for Buildings Except Low-Rise Residential Buildings), user comfort (ASHRAE 55 – Thermal Environmental Conditions for Human Occupancy), and indoor quality (ASHRAE 62.1 – Ventilation for Acceptable Indoor Air Quality) have been promulgated by the American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE). They are accepted as the prevailing standard of design practice and a resource often consulted by standard of care experts.

In the field of architecture, such clarity and specificity is yet to be expressed. No building code provision prescribes the elements of sustainable design.

---

<sup>3</sup> AIA COTE Definition of Sustainable Design at [www.aia.org/nwsltr\\_print.cjm?pagename=cote\\_a\\_200608\\_define](http://www.aia.org/nwsltr_print.cjm?pagename=cote_a_200608_define)

The ASTM Standard Guide for General Principles for Sustainability Relative to Buildings (ASTM Standard E 2431-05) reads more like one of E.F. Schumacher's essays. It acknowledges that sustainability incorporates three general principles: environmental, economic and social.<sup>4</sup> The Guide also makes clear that it does not replace or recreate tools and standards published elsewhere to qualify and quantify the impacts of buildings, building materials and building methods on sustainability.<sup>5</sup> The remainder of the Guide's principles are so general and philosophical in their terms as to be useless for daily practice. Concerned, perhaps, that such fuzzy "standards" could breed mischief in the courtroom, the authors of the Guide also included four important caveats:

- The Guide "does not recommend a specific course of action."
- It "cannot replace education or experience and should be used in conjunction with professional judgment."
- "Not all aspects of this guide may be applicable in all circumstances."
- "This ASTM standard is not intended to represent or replace the standard of care by which the adequacy of a given professional service must be judged...."<sup>6</sup>

And if the point has not already been hammered home, the Guide also advises that "The word 'Standard' in the title of this document means only that the document has been approved through the ASTM consensus process."<sup>7</sup> In short, this

---

<sup>4</sup> *Id.*, at 1.1

<sup>5</sup> *Id.* at 1.5

<sup>6</sup> *Id.* at 1.8

<sup>7</sup> *Id.*

ASTM Guide is of little benefit in defining the legal standard of care for sustainable design.

The US Green Building Council (USGBC) has also attempted to standardize and benchmark sustainable design with its Leadership in Energy and Environmental Design® -- LEED – program. To achieve recognition as a LEED-certified building, designers and owners must submit to a process and develop documentation demonstrating to USGBC measurable benefits according to six rating criteria in the LEED For New Construction v 2.2 standard<sup>8</sup>:

- Sustainable sites
- Water efficiency
- Energy and atmosphere
- Materials and resources
- Indoor environmental quality
- Innovation and design process

The LEED criteria vary from prescriptive requirements to reduce construction waste or increase daylighting and natural ventilation by specified percentages, to more process or policy-oriented duties to purchase “green power” or use a commissioning agent to confirm optimal building performance and energy savings. LEED criteria are evolving over time and should be expected to assume the more elaborate trappings of a reference standard or building code. The USGBC has been accredited as a Standards Development Organization by the American National Standards Institute (ANSI), which means that future editions of its rating system and

---

<sup>8</sup> Version 3.0 of the LEED NC standard will take effect in 2009 to restructure these criteria and put even greater emphasis on energy conservation. Compliance with technical standards such as ASHRAE 90.1 will be a pre-condition for LEED certification.

design standards can become ANSI National Standards, or one step closer to a restatement of the standard of care.

Design professionals must be concerned about the impact of sustainable design principles on the standard of care because these standards are, more frequently, mandated by governmental regulation and contract. Many state and local governments have enacted ordinances or executive orders requiring new construction to satisfy certain minimum standards for sustainable design. Arizona, for example, typifies this trend in Executive Order 2005-05, requiring, to the extent practicable, that all new state-funded facilities:

- Derive at least 10% of their energy needs from renewable resources.<sup>9</sup>
- Comply with statutory energy efficiency standards – typically ASHRAE standards.
- Attain LEED Silver certification.

This Executive Order defines a standard of care for sustainable design in the public sector, and can be expected to filter down into contractually-mandated performance standards in private projects. As of October 2008, at least 44 states, 163 municipal or county governments, 31 state governments, 12 federal agencies or departments, 15 public school jurisdictions and 39 institutions of higher education in the United States have passed laws, resolutions, ordinances, policies, or executive orders promoting sustainable design, and legislation is pending in many other jurisdictions.<sup>10</sup>

---

<sup>9</sup> This requirement may be satisfied by any combination of solar, wind, thermal energy generated by biomass fuels, or the purchase of qualified energy credits.

<sup>10</sup> According to USGBC, Government Resources, [www.usgbc.org](http://www.usgbc.org).

AIA re-affirmed its commitment to “sustainable design” by incorporating several new obligations in the standard form of agreement for architectural services. These new or expanded “green design” duties are assigned to the architect in Article 3.2 of the B101<sup>TM</sup>-2007 Standard Form of Agreement Between Owner and Architect<sup>11</sup>:

- 3.2.3 – Architect shall discuss “feasibility of incorporating environmentally responsible design approaches” with Owner.
- 3.2.5.1 – “Architect shall consider environmentally responsible design alternatives....”
- 3.2.5.2 – “Architect shall consider the value of alternative materials, building systems and equipment....”

Comparable requirements were also added to the B103<sup>TM</sup>-2007, which is used for large or complex projects and the B201<sup>TM</sup>-2007, the Standard Form of Architect’s Services: Design and Construction Contract Administration. This is one area in which the competing ConsensusDOCS system has not attempted to maintain pace with AIA. The ConsensusDOCS 240 – Standard Form of Agreement Between Owner and Architect/Engineer is silent about sustainable design.

More specific “sustainable design” or “green building” services may be added in Article 4 (Additional Services) of the B101 and AIA has published a supplemental scope document, the B214<sup>TM</sup>-2007, Standard Form of Architect’s Services: LEED® Certification, which specifically tasks the Architect to perform those services needed to develop and construct a design that will achieve LEED certification.

The B214 modifies the underlying contract to which it is attached. For the most part it is process-oriented – describing the steps to be taken in developing the documentation needed for LEED certification. It does, however, have some notable provisions that can be used to define and narrow the standard of care and performance

---

<sup>11</sup> This form of agreement is the successor to the B151-1997 and incorporates portions of the B141-1997.

requirements applicable to the architect and other members of the design team. They include:

- Article 1 – Fill field for “initial information” that serves as the premise for the Architect’s LEED-related services. This can be used to clarify the Owner’s expectations and precisely define success criteria for the LEED certification process. Changes to this “initial information” will entitle the architect to additional compensation.
- 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 – most importantly – assessing the impact on the Owner’s program and budget.
- Article 2.6 – The Architect shall provide specifications that incorporate LEED requirements and assign the Contractor’s responsibilities and documentation requirements.
- 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. (This is significant in that due care must be exercised to assure that substitutes are truly equivalent to products and systems specified to meet LEED criteria.)
- Articles 4.1, 4.2 – The Owner shall furnish a program setting forth its objectives, schedule, constraints, and criteria, including system and special equipment requirements. (This can be extremely helpful in drawing out any special owner requirements that would jeopardize or influence LEED certification efforts.) The Owner is also obligated to provide to the Architect with any data needed to fulfill LEED documentation requirements.

It remains to be seen whether these contract terms will trigger unanticipated new liability exposures or reduce and manage exposure for sustainable design risks. Clearly, the general sustainable design duties imposed by the B101 must be defined further in a detailed scope of services. The new processes and tasks



assigned to Owner, Architect, and Contractor in the B214 are helpful in that they force all parties to re-examine their needs and duties in light of Green Building Rating System. The adoption of a formal LEED Certification Plan should also provide a useful tool to refine the duty, shape the standard of care, and manage risk.

Having described the challenge facing “green” design professionals, the focus then shifts to identifying those circumstances that can be expected to result in professional liability claims arising from sustainable design errors or omissions. Some of the claims scenarios that this writer has encountered – and recommendations to avoid their re-occurrence – include the following:

1. **Implied Obligation:** Liability could arise if, for example, the client asked during negotiations whether the design team adheres to “green design” principles, and then assumed that meant the project would be LEED certified or demonstrate some other tangible benefits of sustainable design.

***Solution:** Confirm client expectations or regulatory requirements for sustainable design or LEED certification prior to negotiating contract terms. Expressly exclude LEED-related services if not in scope or include suitable terms defining additional services, success criteria and compensation due.*

2. **Ignorance Is Not Bliss:** The accelerating shift towards sustainable design and development of more complex standards for energy conservation and indoor air quality put at risk any firm that does not

have a fundamental understanding of minimum technical standards for building performance.

**Solution:** *Strike sustainable design duties from contract terms, or affiliate a consultant who can advise on minimum technical standards for sustainable design. For projects seeking LEED certification, employ a LEED accredited professional to assist with identification of target criteria, development of a LEED Certification Plan, and correlation of certification requirements to design criteria.*

3. **Botched Conversion:** Quite often, errors and omission occur on projects where the Owner elects to seek LEED certification after contracts are awarded and design commences. This happens because LEED technical requirements may require systems or methods that would not have been employed in a conventional design. For example, an HVAC system might require a chiller, rather than split system direct expansion units, to achieve LEED-required energy savings. Room activity sensors to turn off lights would not typically be found in a conventional design. If the owner and design team fail to modify the design for sustainability requirements, the resulting cost to correct the error during construction or after a LEED certification request was rejected would almost certainly generate a professional liability claim against the design team.

**Solution:** *Confirm during negotiations and prior to contract signing whether LEED certification is sought. Where a LEED requirement is*

*overlaid on partially-completed design, conduct a design charrette or QA/QC review to identify target criteria, confirm design solutions, and implement any modifications to incorporate sustainable design criteria. The owner should also be required to participate in the design review and compensate the design team for these modifications and additional services.*

4. **Breach of Warranty or Guaranty:** Care should be taken not to convert an aspirational goal of LEED certification or specific cost or energy savings into contractual warranties or guarantees. If the owner is unable to attain the promised certification or green building benefits, the resulting claim against the design team may fall outside insurance coverage; either because it is a contractual obligation exceeding the standard of care, or it is a warranty or guaranty. The design team is not in a position to control the LEED certification process and standards for the Green Building Design Rating System are evolving as frequently as building codes.

***Solution:*** *Do not accept contract terms that warrant or guarantee achievement of a certain LEED rating or specific benefits such as a reduction in energy consumption. Explain to the owner and document in writing the fact that LEED certifications are governed by processes and criteria established by USGBC, and that the design team has agreed to comply with those procedures in effect at the time of contract execution. Explain and document the limitations of precision in energy*

*modeling programs, and the impact of the owner's actual use on operating results. Confirm to the owner that actual operating costs will depend on other factors over which the design team has no control; such as, rates charged by public utilities, performance of equipment per manufacturer's stated specifications, and the owner's adherence to assumed use, occupancy, and maintenance criteria.*

5. **Unfulfilled Expectations:** The design team can incur liability if the first cost of constructing a LEED-certified project exceeds the owner's original budget assumptions. While the cost premium for "green" design and products is shrinking, it can still be significant to an owner who budgets according to conventional design assumptions. Likewise, the design team can incur liability if the project fails to perform to the owner's expectations; including savings in operating costs promised by energy modeling done for LEED certifications. For major commercial, government, or institutional projects, the lifetime cost of excess energy costs, unrealized rent or re-sale premiums for a "green building", or lost tax benefits can be staggering.

***Solution:*** *Confirm contractual obligations for LEED certification or other success criteria on which the owner will rely. Avoid warranties or other guarantees of actual operating results. Include a disclaimer of liability for consequential damages in the contract and consider an agreed remedies provision (a/k/a limitation of liability) that puts an absolute dollar limit on potential liability exposure. Review LEED*

*targets with the owner at beginning of project and discuss/document assumptions for anticipated benefits or cost savings. Confirm in writing the limitations on accuracy or reliability of modeling data. In some cases – especially those involving unsophisticated owners or novel design solutions or equipment – the best method to avoid or limit risk is to refuse the work or require the owner to sign an “informed consent” in which they acknowledge and voluntarily assume the risks associated with the chosen course of action.*

6. **Cost Recovery:** These claims may either be premised on a contractual indemnity or explicit cost recovery clause, or under federal or state False Claims Acts. The owner attempts to recover from the design team the additional costs incurred to modify or retrofit the project to achieve LEED certification or other sustainable design criteria. The owner may attempt to recover unrealized savings in energy usage, lost tax credits, or other economic loss.

**Solution:** *Cost recovery clauses (a/k/a “safe harbor” or “allowable change order” clauses) must be avoided because they are uninsurable. Likewise, the design team must take care it is not certifying to false or materially inaccurate facts – such as energy savings – that may trigger liability under criminal or civil false claims acts. Use other contractual means recommended in this paper to limit liability exposure and avoid making guarantees or warranties.*

7. **Untested Products:** The advent of sustainable design has also generated entire classes of new products and equipment that are touted as more energy-efficient or “sustainable” than conventional products. Quite often these products are developed and initially marketed by smaller companies that do not have the experience in product development and large-scale testing that a more established vendor can provide. Some products are also so new that they have seen only limited use in real world conditions. The design team can incur liability for products or equipment that fail to perform as represented or disappoint client expectations. Products that cannot be repaired or replaced, due to their unique characteristics or relative scarcity, may also generate claims against the design team for improperly specifying the offending product.

***Solution:*** *Thoroughly research new products before agreeing to their use, to determine their suitability for the particular project. Require verifiable manufacturer or independent third party test data to confirm product claims or performance expectations. Require references for comparable installations of the product or equipment and verify those references. Where appropriate, require submittals, mock-ups, first samples, and/or independent test data to confirm suitability and performance of the product or equipment. Disclaim any responsibility to the owner for contractor means and methods, or for the cost or performance of any product or device specified. Confirm in writing that*

*the only warranty available will be that of the manufacturer. Counsel the owner to invest in any inspection, testing, warranty or bond that may safeguard the owner against a significant performance failure in the unique product. Where critical systems are involved, provide in the design for a back-up system or approved alternate if the specified product fails in use.*

## SPEAKER'S BIOGRAPHY

P. DOUGLAS FOLK, Esq.  
FOLK & ASSOCIATES, P.C.  
3636 N. Central Ave. Suite 600  
Phoenix, Arizona 85012  
602-222-4400  
800-222-3443

[pdfolk@folklaw.com](mailto:pdfolk@folklaw.com)

[www.folklaw.com](http://www.folklaw.com)

P. Douglas Folk has represented members of the design professions and construction industry since receiving his law degree with honors from the University of Iowa College of Law in 1980. Mr. Folk's primary practice areas include professional liability and disciplinary complaint defense, construction law, architectural copyright, and ethics for design professionals. Mr. Folk is also active in the educational and legislative programs of several professional and trade associations serving architects, engineers, land surveyors, and contractors. From 1995-2001, he served as the public member of the Arizona Board of Technical Registration by appointment of the governor. Mr. Folk continues to serve on Enforcement Advisory Committees for the Board.

Mr. Folk is a past Chairman of the Construction Law Section of the State Bar of Arizona. He is also a member of the Forum on the Construction Industry, the Public Contract Law Section, and the Tort and Insurance Practice Section of the American Bar Association. Mr. Folk has written many articles for publication on construction law and risk management issues. He is also a co-author of the *Arizona Construction Law Practice Manual* published by the State Bar of Arizona and co-editor of *Design Professional and Construction Manager Law* published by the American Bar Association Forum on the Construction Industry. Mr. Folk's *Design Professionals Survival Course™* provides specialized training in business practices and legal strategies that minimize the risk of professional liability claims and litigation.

Folk & Associates, P. C. represents design professionals and contractors in the mediation, arbitration and litigation of professional liability claims, construction law disputes, bid protests, mechanics lien and bond claims, and government contracting issues. The firm also handles other complex commercial litigation, administrative law, or employment law matters for business owners and managers in many industries. The firm embraces three guiding principles in every aspect of its services: *Professional Excellence*, *Practical Solutions*, and *Uncompromising Ethics*. These guiding principles are symbolized by the firm's three arrow logo.

