LEGAL CONSIDERATIONS IN SUSTAINABLE DESIGN AND CONSTRUCTION

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I. WHAT IS “GREEN” DESIGN AND CONSTRUCTION

Like many newly-evolving topics in the law, “green construction” or “sustainable design and construction” has a nomenclature problem. What do we mean by these phrases? On the one hand, the design and construction of wind farms and other alternative forms of energy production could well fall under the umbrella of “green design and construction.” A more narrow approach centers upon the development of more energy efficient and environmentally friendly buildings. Expanding on this perspective a bit brings into focus not only the end product, but also the processes by which it is created. Green construction includes not only the creation of more resource-efficient structures, but also employs more energy efficient and environmentally construction processes.

The focus of this examination is upon the implementation of more efficient construction processes and the creation of buildings that are intended to perform appreciably better from an energy and environmental standpoint than similar non-green structures. As a consequence, while the cleanup and redevelopment of contaminated properties (sometimes known as “brownfields”) can quite literally be the “greening” of our environment, it is beyond our scope. Nor are we going to tackle the interesting, yet nascent, topic of the effect of climate change regulation on the construction industry. For the purposes of our discussion, the following definition of “green buildings” or “green construction” will suffice:

The practice of (1) increasing the efficiency with which buildings and their sites use energy, water and materials, and (2) reducing building impacts on human health and environment through better siting, design, construction, operation, maintenance, and removal – the complete building cycle.

II. WHY GREEN BUILDINGS?

Buildings matter. When it comes to reducing energy consumption and our “carbon footprint,” how we design, construct, maintain, and operate buildings is important. In the United States, buildings account for:

1 For a good introductory article on alternative energy sources, see Margaret Keliher, Brian Autry, and Dena DeNooyer Stroh, “Alternative Energy 101,” in TALKING GREEN BLUES: ENERGY, SUSTAINABILITY, AND GREEN BUILDING CHALLENGES AFFECTING THE CONSTRUCTION INDUSTRY (ABA Forum on the Construction Industry, April 16-18, 2009).


4 Building Design & Construction; Whitepaper on Sustainability at 4 (Nov. 2003).
65% of electricity consumption,  
36% of energy use,  
30% of greenhouse gas emissions,  
30% of raw materials use,  
30% of waste output, and  
12% of potable water consumption.

III. BUSINESS CASE FOR BUILDING “GREEN”

A. Green Cost Premium: Perception vs. Reality

While there does not appear to be much debate over whether designing and constructing more energy efficient and environmentally friendly buildings is the “right thing” to do, does it make economic sense? Is there a “green” premium to be paid for building a more sustainable project and, if so, what is the payback from the maintenance and operation of the building? Of course, it depends upon how “green” one goes. As a general rule, the more aggressive one becomes in cutting energy consumption and lessening environmental impacts, the greater the initial costs. Yet, the cost premium for going green appears to be significantly less than most construction and real estate professionals believe:

A green premium typically results from a mix of increased soft and hard costs, but often primarily results from additional architectural and engineering design services. Given the non-homogenous nature of real estate and the difficulty of isolating the green costs in a project’s budget, measuring the premium from project to project is not a simple task. Based on available studies, project costs for developing these buildings typically range anywhere from 0 to 10% over the costs of developing comparable conventional buildings, with most buildings falling below a 2% increase. Even on the high end, the premium is less than the widespread perception. . . . [P]erception of the green premium among those in the real estate industry remains well above what data supports. In a 2007 survey of architects, engineers, contractors and developers/owners by Building Design & Construction magazine, 78% of respondents said, “their clients thought sustainability added ‘significantly’ to first costs.” Surprisingly, rather than representing a decrease from the previous year, the response was a marked increase compared to the response to the same question only a year earlier, which yielded 56%. This year-to-year increase dates back to 2003. This data reveals a perception among real estate professionals that their clients are increasingly resistant to green building. In giving their own thoughts on the overall cost of green buildings, 84% of the respondents believed the overall cost to green

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building was higher than conventional buildings, with 41% perceiving the premium as 11% or more.\textsuperscript{6}

Reality, however, paints a very different picture:

In an attempt to move away from anecdotal evidence, several notable studies have isolated green costs. The results have consistently shown the premium as much lower than the common perception. In a frequently cited 2003 study of 33 LEED-rated buildings, Gregory H. Kats found the green premium for the various LEED certifications levels as: 0.66% for LEED certified buildings, 2.11% for LEED Silver, 1.82% for LEED Gold, and 6.5% for LEED Platinum. In applying a dollar amount to the green premium, Kats, assuming an average project cost between $150 and $250 per square foot and a 2% premium, calculated a total increase of $3-5 per square foot.\textsuperscript{7}

B. Managing Green Expectations

Any time there is a disconnect between perception and reality, the task of managing a client’s expectations becomes more challenging. If the design professional’s scope of services includes making recommendations with respect to sustainable design alternatives, then managing this disparity between perception and reality regarding the cost of “green” design can be critical. Many architects are having to meet this challenge as the most widely used design agreements require a discussion of alternative approaches to the design and construction of the project, including the feasibility of incorporating environmentally responsible design approaches.\textsuperscript{8}


\textsuperscript{8} \textit{See} AIA Document B101 (2007) at §§ 3.2.3, 3.2.5.1, 4.1.23 and 4.1.24. Section 3.2.3 of the Owner and Architect Agreement states:

\textit{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.}

Section 3.2.5.1 continues this theme:

\textit{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.}
client believes that green development is more expensive than it really is, and the design professional advises as to the true expected cost, what challenges arise if construction cost exceeds budget? There may be a tendency for the client to conclude that the design professional’s advice with respect to the cost of “going green” was in error. This could well result even if the cost increases were not the result of “green” considerations. Therefore, managing expectations with respect to environmentally responsible design alternatives is quite important. The key lies in educating owners on the benefits and potential risks of particular green design alternatives. Where the benefits include reduced maintenance and operation costs over the structure’s life, care will need to be taken to accurately assess these savings. In many cases, this will require the design professional to reach out to those with more expertise and experience in such matters.

As one advisor to design professionals noted:

Design professionals are well aware of the competition between client demands and sound design principles. Often, the client’s desire to reduce initial costs, compressed 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. And 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. It has always been difficult to explain these trade-offs intrinsic to a sustainable design. Designing for the good of the environment could not be quantified.9

C. Green Payback

A well-known rule of thumb in development is that eighty percent of a project’s cost is in the operation and maintenance of the structure. The development cost – project planning, design and construction – while significant, represents only a fraction of the overall cost of the project over its useful life. This suggests, of course, that choosing design alternatives that result in maintenance and operation savings, which outweigh the initial first costs incurred to implement the alternative design, makes economic sense. Of course, if one doesn’t have the money to implement the green design alternative, it really doesn’t matter how much savings could be achieved in the future. Moreover, many owners develop projects for eventual sale and have less of a direct incentive to reduce back-end costs.

From an owner’s perspective, the single most important driver of green building practices is rising energy costs.10 Estimating energy savings based upon the adoption of specific “green”

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design alternatives can be tricky. There are studies which provide general estimates of operation and maintenance savings due to the implementation of green design and construction approaches. Perhaps the most well known is a 2003 study by Gregory Kats involving California public buildings. This study concluded that green buildings resulted in a savings of $1.16 per square foot annually, for a 20-year present value of $14.77 per square foot. Of these savings, $0.44 per square foot annually is saved from a thirty percent reduction in the $1.47 per square foot paid annually for energy use in California public buildings. This amounts to a 20-year present value of $5.48 per square foot.

Extrapolating, however, from general studies to project-specific savings can be a challenge. A number of assumptions need to be made, including future energy costs, the likely effects of inflation over the building’s life, and potential future maintenance expense. Given that design professionals and contractors have a difficult enough time predicting construction costs over a one- or two-year period, calculating operation and maintenance costs over the twenty-five year life of a building can pose real challenges.

IV. BUILDING INCENTIVES TO GO “GREEN”

A. Energy Performance Contracting

If green design and construction poses more risk for design and construction professionals, what incentives are there to engage in these practices? Expressed another way:

The way buildings are typically designed, constructed and operated offers little incentive for energy efficiency. Architect/Engineer firms are often paid a flat fee or a percentage of construction costs, an arrangement that discourages them from spending extra time on innovation and efficiency. . . . This has the effect of emphasizing speed and discouraging additional work such as improvements to overall building performance. When extra effort is expended, architect/engineer (A/E) firms focus on highly visible building features such as exterior and interior finishes because they know these will be appreciated by the owner. Additionally, A/Es fear litigation from non-standard or undersized design. From the mechanical engineer’s point of view, it is a good idea to grossly oversize a system since there is no incentive for appropriate sizing, and an undersized system is a


huge liability. Since the lowest bid for design services often wins, architects and engineers spend little time calculating appropriate equipment sizes or investigating the energy benefits of one glazing type over another. As a result, equipment is grossly oversized at the expense of energy efficiency.\footnote{Eley Associates, “Energy Performance Contracting for New Buildings,” at II and I (1997).}

Energy performance contracting is a way to create incentives to design energy efficient buildings. The principle behind these contracts is similar to the energy service business that retrofits existing buildings based upon a compensation schedule tied to energy savings. One of the principal differences, however, is that unlike in the retrofit situation where there is a known baseline (i.e., the energy usage of the existing building), with new construction there is no such starting point from which to measure energy savings. As a consequence, energy performance contracting for new buildings requires the creation of a baseline from which to measure performance.

There are computer software programs that allow one to create digital models of the building at various energy efficiency levels. Moreover, one can set savings using a recognized industry standard base level. The federal government has adopted the latter approach. For new federal buildings, energy savings goals are to reduce the energy cost budget by thirty percent, compared to the baseline building performance rating per the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE).\footnote{See “Guiding Principles for Federal Leadership in High-Performance and Sustainable Buildings,” set forth in the Federal Leadership in High-Performance and Sustainable Buildings Memorandum of Understanding (2006). The principles also require new construction to achieve a thirty percent reduction in the energy cost budget compared to the Illuminating Engineering Society of North American (IESNA) Standard 90.1-2004, Energy Standard for Buildings Except Low-Rise Residential.}

While every energy performance contract is tailored to the specific project under consideration, they all share four basic elements:

\begin{itemize}
\item A clearly stated target or performance goal.
\item A method to evaluate performance during the design process.
\item A protocol for measuring performance after the building is constructed, commissioned and occupied.
\item Compensation that is partly contingent upon meeting stated performance goals.\footnote{Eley Associates, “Energy Performance Contracting for New Buildings,” at 3. See also, Department of Energy, “International Performance Measurement and Verification Protocol.”}
\end{itemize}

There are any number of ways to express the performance goals. One way is to express the goals in the form of specifications. A sample specification for the building envelope system might be written as follows:
Both the owner and the performance contractor agree to the following energy efficiency specification:

a. The head loss through the gross exterior wall is less than ____ Btu/h°F – ft²

b. Infiltration through the exterior envelopes is less than ___ Cfm/ft² at 50 Pa of pressure difference.

c. The interior mean radiant temperature of the exterior wall is warmer than ____ °F under design heating conditions.

d. The average daylight factor at 10 feet from the window wall and at a height of 2.5 feet above the floor is at least ___. The daylight factor is the ratio of daylighting illumination at the reference point to the illumination outside the window.¹⁶

Similarly, incentives can be structured in any number of ways. As a general rule, incentive compensation is tied to achieving or exceeding a defined target energy performance. A base level of performance may also be defined and tied to a base fee. Base and target levels of performance may be adjusted for factors that are not under the control of the design or construction professional. These contracts also usually contain detailed protocols for measuring and verifying energy performance.¹⁷

B. State and Local Incentives for Sustainable Development

State and local governments have enacted a broad array of incentives to encourage green design and construction.¹⁸ Projects owned or leased by government authorities are often subject to mandatory “green” requirements. Private development is encouraged to go green through a myriad of positive and negative incentives. The following are just some representative examples of state “green” initiatives:


¹⁸ According to the University of Wisconsin, as of May 2008, there were 134 mandatory government green building programs and 85 voluntary programs in place in 118 counties, municipalities, and districts in the United States. See Solid & Hazardous Waste Education Center, University of Wisconsin – Extension, Government Green Building Programs Inventory, available at http://www.4.uwm.edu/shwec/publications/cabinet/reductionreuse/GGBI.swf.
Arizona: Executive Order 2005-05 requires all state-funded buildings to achieve LEED Silver certification.

Arkansas: Act 1770 encourages state agencies to use green design strategies, including LEED.

California: Executive Order S-20-04 requires new and renovated state-owned facilities to achieve LEED Silver.

Colorado: All buildings which include twenty-five percent or more in state funds to be high-performance green buildings.

Connecticut: Facilities that receive $2 million or more in state funding must meet LEED Silver.

Florida: All new construction and renovation of state buildings to follow guidelines of LEED or other green building rating systems and Executive Order 07-126 adopts LEED-NC for any new building constructed for or by the state.

Hawaii: All state-owned construction of 5,000 s.f. or greater to meet LEED Silver or comparable standard.

Illinois: School construction to meet LEED or comparable requirements.

Indiana: All new state buildings to earn either LEED Silver, EPA’s Energy Star rating, Two Globes under Green Globes rating system or the equivalent under ANSI-accredited rating system.

Louisiana: State and local facilities construction authority created to support LEED or other energy efficiency matters in public schools.

Maine: Executive Order directing all new state buildings or additions to incorporate LEED guidelines, provided standards can be met on a cost-effective basis.

Maryland: High-Performance Building Act requires all new public construction and major renovation of 7,500 s.f. or greater to earn LEED Silver or two Green Globes.

Massachusetts: Executive Order 484 requires all state major renovation projects of over 20,000 s.f. to meet LEED certification and other energy efficiency standards.

Michigan: Executive Order 2005-4 mandates all state-funded new construction and major renovation projects over $1 million to meet LEED guidelines.
Minnesota: Next Generation Energy Act of 2007 establishes goal of 100 commercial buildings achieving LEED or Green Globe certification by the end of 2010.

New Jersey: All new state-owned buildings of 15,000 s.f. or greater to earn LEED certification.

New Mexico: Sustainable building tax credit promoting construction of high-performance buildings with credit commensurate with the level of LEED certification achieved.

New York: New York Star Energy Research & Development Authority created to administer green residential building grant program to encourage construction of high-performance homes. New York State Green Building Tax Credit Program provides income tax incentive to commercial developments incorporating specific green strategies.

Nevada: Tiered property tax exemption for residential structures meeting LEED Silver.

North Carolina: Law granting cities and counties right to encourage green building practices through the use of reduced permitting fees or partial rebates for construction projects that achieve LEED certification or other comparable rating systems.

Ohio: Energy efficiency and sustainable design features to be incorporated into all future school projects.

Oklahoma: State buildings over 10,000 s.f. to follow LEED guidelines or those of Green Globes.

Oregon: Projects meeting LEED Silver available for business energy tax credit.

Pennsylvania: School construction reimbursement rates influenced by whether schools meet or exceed LEED Silver or two Green Globes.

Rhode Island: All new construction and renovation of public buildings to meet LEED Silver or higher.

South Carolina: All state-owned and state-funded construction projects greater than 10,000 s.f. and any major renovation project of greater than fifty percent of the total building space or value to achieve LEED Silver.

South Dakota: All new construction and major renovations of state-owned buildings costing at least $500,000 and more than 5,000 s.f. to earn LEED Silver or two Green Globes or a comparable standard.
Virginia: Energy efficient buildings achieve tax break.

Washington: All projects over 5,000 receiving public funds to be LEED Silver or higher.

Wisconsin: Executive Order directs Department of Administration to establish and adopt guidelines based on LEED for New Construction and mandating that any project requesting LEED certification as part of the initial project request to be supported by the Department of Administration.\textsuperscript{19}

While many initiatives at the state level focus on meeting a certain “green” standard for state-owned or state-funded projects, the incentives at the municipal level are more varied. Some of the more common incentives offered by municipalities include: (1) tax incentives; (2) bonus density (e.g., height bonuses, floor/area ratio bonuses, reductions in landscaping requirements), (3) expedited permitting, (4) net metering (allowing projects utilizing renewable energy facilities to sell excess power back to the community), (5) grants (e.g., monies to subsidize the cost of certification), (6) loans, (7) technical assistance, (8) permit and zoning fee reductions (in exchange for meeting specific “green” levels, building or other fees are reduced or waived), (9) rebates and discounts for use of environmental products (e.g., Energy Star products), and (10) leasing assistance (reducing the cost of acquiring energy efficient equipment through use of municipality’s purchasing power).\textsuperscript{20}

The sustainability initiatives of municipalities display a great diversity. This is so even within the same state. For example, within Arizona, Phoenix requires all new municipal buildings to meet a relatively lax LEED Certified standard. While Scottsdale, Arizona, requires all new city buildings of any size to achieve LEED Gold – a relatively stringent standard. Scottsdale is the first city in the United States to adopt a LEED Gold policy. Flagstaff, on the other hand, requires all new municipal buildings to earn a minimum of LEED Silver, but encourages the highest LEED certification level – LEED Platinum – where such certification is feasible. Finally, Tucson requires all new city construction or major renovations over 5,000 s.f. to achieve LEED Silver or a higher certification when resources and conditions permit.\textsuperscript{21}

V. CHALLENGES PRESENTED BY STATE AND LOCAL GREEN INITIATIVES

According to the U.S. Green Building Council (USGBC), the non-profit that administers the LEED rating system, more than 150 local governments have adopted LEED-based requirements or incentive programs impacting private-sector development. This trend continues to grow. These initiatives vary in their flexibility and complexity. For example, Scottsdale, which requires a relatively stringent LEED-Gold certification level for all new city buildings, admits of few, if any, exemptions. King County, Washington, on the other hand, requires green


\textsuperscript{20} See American Institute of Architects, Local Leaders in Sustainability: Green Incentives.

building practices for all building projects but allows a fair amount of flexibility in its implementation. While all covered projects are required to seek the highest potential LEED certification level, where project scope makes achieving a certain level infeasible, the state agency in charge of the project is required only to incorporate those green building practices possible using LEED criteria as guidance.

A number of legal issues arise in connection with these state and local initiatives. Local governments must have sufficient enabling authority to create green building programs. Without an enabling statute, a local government imposing LEED-based requirements must rely on either home rule authority or enabling legislation relating to broader zoning, subdivision, and building-related controls. A local government without home rule authority is often required to draw upon a patchwork of statutory enabling authorities relating to zoning or building powers. Moreover, local municipalities’ green initiatives may conflict with state or federal regulations. As a general rule, conflict with state law occurs if the state has preempted the area in which a local government seeks to regulate.

Many state and local green initiatives adopt private rating systems. This raises a possible improper delegation issue. A private entity, such as the USGBC, determines whether the project meets the mandated level of certification. As a result, a government entitlement or approval is tied directly to a private party’s decision with respect to compliance. As a general rule, delegation of governmental functions to private parties cleaves along two planes: (1) delegation of legislative powers, and (2) delegation of administrative powers or ministerial functions. A local government’s delegation of legislative powers to a private party is a violation due process. Delegation of administration and ministerial functions presents a more murky picture. Courts look at various factors such as the need for local government to retain ultimate control; the right of a person aggrieved by the private entity to seek review before a local government body and the degree of discretion delegated to the private party.

Preemption was the problem in *Air Conditioning, Heating & Refrigeration Institute v. City of Albuquerque*,

where the United States District Court for the District of New Mexico issued a preliminary injunction against the City of Albuquerque, barring enforcement of its energy conservation code. The code required a minimum certification of LEED Silver for commercial and multi-family residential buildings, or a thirty percent energy efficiency improvement over the baseline energy efficiency standards for commercial buildings included in the ASHRAE 90.1 code. The court determined that the city was preempted from regulating the energy efficiency of heating, ventilating, and air-conditioning (HVAC) systems by federal law.

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24 *Air Conditioning, Heating & Refrigeration Institute v. City of Albuquerque*, No. 08-633, Slip Op. at 23 (D.N.M. Oct. 3, 2008) (“Unfortunately, the drafters of the code were unaware of the long-standing federal statutes governing the efficiency of certain HVAC and water heating products and expressly preempting state regulation of these products.”).
Perhaps a more troubling potential with these initiatives is their complexity and lack of clarity. A law or “ordinance is unconstitutionally vague when men of common intelligence must necessarily guess at its meaning.”

Design standards contained within building ordinances have been struck down as vague in the past. Generally, such efforts have failed to pass constitutional muster, as they provide little or no guidance as to what is required. Standards such as “pleasing,” “harmonious,” or “rural, rustic, or non-urban characteristics,” have been found wanting.

While ordinances built upon specific “green” rating systems, such as LEED or Green Globes, provide a fair amount of structure as to what is required to achieve specific certification levels, they can present interpretive challenges. For example, the LEED-NC rating system provides points for “innovation in design.” Points provided under this category are subject to more subjectivity than points afforded under other design categories where the determination is based upon objective and measurable design characteristics.

Complexity is another challenge for these initiatives. Take the recent initiative enacted by Minnesota’s capitol city, St. Paul. In an effort to be egalitarian, the city tied financial assistance to compliance with one of four possible rating systems for commercial projects and one of three possible rating systems for residential development. The law presents a myriad of challenges for design and construction professionals.

Community leaders, including Mayor Chris Coleman, are committed to making St. Paul the most livable city in the United States. So begins the resolution passed by the St. Paul City Council in the waning days of 2009. The new resolution creates a Sustainable Building Policy (Policy) that requires any new construction project receiving more than $200,000 in municipal financing to meet specific green design and construction guidelines. City financing is broadly defined to include money originating from the Housing and Redevelopment Authority (HRA), Community Development Block Grants (CDBG), Tax Increment Financing (TIF), HOME Investment Partnership Program (HOME), Multi-Family Housing Revenue Bonds, Federal Low-Income Housing Tax Credits (LIHTC), other federal, state, and Metropolitan Council funding programs, any City of St. Paul funds, including STAR, from any combination of loans, grants, land write down or other funding vehicle.

At this time the Policy only applies to new construction. The Policy applies to projects for which schematic design is initiated after July 1, 2010. Nevertheless, major renovations have been the subject of policy review at the state level. In 2008, the Minnesota Legislature required the establishment of sustainable guidelines for Major Renovations. The Major Renovations guidelines are called B3 Guidelines and are currently in a public draft version available for review and comment. The City of St. Paul chose to limit its Policy to new construction for the first few years in order to evaluate workability and goal attainment on a limited number of projects before expanding it to other project categories.

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The Policy breaks projects down into two major types: Commercial projects and residential projects. Commercial projects are required to comply with one of four possible rating systems:

- Leadership in Energy and Environmental Design (LEED) New Construction (NC), Silver;
- Green Globes 2;
- State Guidelines Building Benchmarking and Beyond (B3) Compliant;
- St. Paul Port Authority Green Design Review (as applicable)

For residential projects three rating systems are identified:

- LEED for Homes (H) or LEED NC 1, Silver;
- Minnesota GreenStar, Silver;
- Green Communities, Minnesota Overlay Compliant

Of the acceptable ratings systems, the U.S. Green Building Council’s LEED system is the best known. Moreover, LEED Silver is becoming a widely adopted minimal green building standard. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, material selection, and indoor environmental quality. The LEED system requires third-party verification of achievement at the end of construction. Another national rating system is Green Globes, developed in Canada in 1996, for use with existing commercial buildings. It is now used in the U.S. through the Green Building Initiative and has been expanded to include new commercial construction. It delivers an on-line assessment protocol, rating system and guidance for ease of use. As with LEED, there is third-party verification of compliance.

In contrast to these national rating systems, the Minnesota Sustainable Building Guidelines apply to all projects receiving state bond money since 2004, promotes reasonable values, priorities and requirements by taking into account local climatic conditions and environmental factors. Instead of relying upon third-party verification, the Guidelines require documentation to be submitted by the builder to the agency receiving the bond funds and to the Center for Sustainable Building Research at the University of Minnesota. Complying with the Minnesota Sustainable Building Guidelines is one of the two systems required by St. Paul on its own new buildings, and those that undergo major renovation. The other being LEED Silver. The last permissible rating system for commercial construction is that used for projects developed on St. Paul Port Authority property, known as the Port Authority’s Green Building Design Review Policy. Where the development is located on Port Authority property, this rating system is available and contains elements similar to LEED and the B3 Guidelines.

Residential rating systems include Minnesota GreenStar, which was developed by Minnesota’s residential building and remodeling industry. It is managed by a non-profit organization and calls for third-party verification. LEED for Homes is another rating system offered by the U.S. Green Building Council. It operates like the LEED rating system for New Commercial Construction. Finally, the Minnesota Green Community’s system is focused on
affordable housing and is a collaborative effort of the Greater Minnesota Housing Fund, the Family Housing Fund, and Enterprise, the national non-profit that created the Green Community’s rating system. This approach requires the designer, contractor/developer to certify in writing at three stages of the development their intention to comply and actual compliance with all mandatory criteria. Finally, the St. Paul Overlay is an attempt to inject statewide priorities into the Green Community system by creating a list of mandatory requirements. These requirements pertain to energy and potable water usage, disposal of construction materials, indoor environmental quality, storm water management, and greenhouse gas emission.

The Minnesota Overlay requirements must be met on both commercial and residential projects, regardless of the developer’s chosen rating system. In addition to meeting specific goals in the areas identified above, the actual energy data for the project must be submitted to the Minnesota Building 2030 database by the building owner or by the building’s utility service provider.

The Policy requires the joint creation of a Sustainable Building Technical Committee (Committee) by the Department of Planning and Economic Development (PED) and the Department of Safety and Inspections. A private sector representative will serve on the Committee, and the developer’s representative will be invited to Committee meetings when the developer’s project is being reviewed. Moreover, to assist the developer in compliance with the Policy, the City will provide at no additional cost a sustainability facilitator within the PED to help guide the project through the development process, insuring adherence to the Policy. Moreover, the city will identify sustainable design experts for the developer to work with and secure energy modeling during the design stage from appropriate utilities.

St. Paul’s Policy, and others like it, certain create challenges for the design and construction community. Nevertheless, these are challenges that must be met if critical energy and environmental goals required for sustainable development are to be achieved. Many of the Policy’s requirements are set forth as performance standards. Design and construction professionals are required to utilize their expertise to achieve the required standards. Care must be taken, particularly with respect to the design disciplines, to avoid contractual agreements to meet a specific standard, as this might be interpreted as a guarantee and compromise the designer’s insurance coverage. For example, one of the mandatory requirements contained within the Minnesota Overlay is the predicted use of potable water being at least thirty percent below EPA Policy Act of 1990. This is a specific performance requirement. A design that fails to meet this requirement, may still be commercially reasonable and thus not the result of any particular professional error or omission. Nevertheless, this is a fine line as it is quite possible that the failure to meet a particular energy or environmental requirement could be the result of a design failure.

Care must also be taken with respect to those requirements that are stated in a more general manner. For example, one of the Policy’s requirements is that indoor environmental quality be addressed through a number of strategies, including utilizing “low-emitting materials,” “thermal comfort,” without defining what these terms mean. Another challenge arises due to the various rating systems available for compliance with Policy requirements. Rather than simply having to understand one particular rating system, the design and construction team needs to be
familiar with a variety of systems in order to evaluate which one is most appropriate for the project.

Finally, the Policy sets forth the process and potential consequences of non-compliance. In the event of non-compliance and after a reasonable opportunity to cure, the City shall refer the project to the Sustainable Building Technical Committee, which will consider remedial action and make recommendations to the proper authorities. The authority may require remedial action, but it shall be limited to the amount of funds granted to the developer. Given the amount of public assistance provided, this remedy could be quite costly.

VI. GREEN BUILDING CODES AND NEGLIGENCE PER SE

Where a design professional’s work fails to meet an applicable building code requirement, and injury results, liability is often not far behind. In some jurisdictions, a violation of the building code is considered to be negligence per se when the violation results in the type of injury the code was designed to prevent.  

In 2007, Governor Schwarzenegger of California directed the California Building Standards Commission to work with specified state agencies on the adoption of green building standards for residential, commercial, and public building construction for the 2010 code adoption process. As a result of these efforts, California is the first state to adopt mandatory “green” building regulations for all new construction. The CalGreen Code is the nation’s first statewide green buildings standard code and will take effect January 1, 2011. The CalGreen Code is a comprehensive and uniform regulatory code for all residential, commercial, hospital, and school buildings, insuring that every new building in California is built using environmentally advanced construction practices. California’s property owners can build according to the state’s CalGreen Code, at no cost for certification. Moreover, having a mandatory code will allow California’s builders to achieve a certifiable green standard without having to pay fees for third-party programs. Like California’s existing building code provisions that regulate construction projects throughout the state, the mandatory CalGreen Code provisions will be inspected and verified by local and state building departments.

The CalGreen Code requires:

- Twenty percent mandatory reduction in indoor water use, with voluntary goal standards for thirty- thirty-five-, and forty-percent reductions;

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Separate water meters for non-residential buildings’ indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects;

Requiring diversion of fifty percent of construction waste from landfills, increasing voluntarily to sixty-five and seventy-five percent for new homes, and eighty percent for commercial projects;

Mandatory inspections of energy systems (i.e., heat furnace, air-conditioner, mechanical equipment) for non-residential buildings over 10,000 s.f. to insure that all are working at their maximum capacity according to their design efficiencies; and

Requiring low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particle board.

While the California Green Building Code eschews third-party certification programs, such as LEED, the state requires its own new and existing buildings to conform to LEED. Moreover, the code allows local jurisdictions to retain stricter green building standards, if they already exist, or to adopt stricter versions of the state code if they choose.

The CalGreen Code was not adopted without some controversy. The Code permits property owners to label their building has having complied with the Code once it passes building inspection. Whether inspectors will have the expertise and resources to verify compliance is a matter of concern for some environmental groups. Moreover, the prospect of owners labeling their projects “green” as a result of passing the Code creates potential confusion in the marketplace and could undermine the tough green building ordinances adopted by cities and counties.

From a design professional’s perspective, however, the greatest concern is what does failure to comply with the Code mean from a liability standpoint. Just what is the harm that the Code is intended to prevent? Is failure to comply considered negligence per se? How does the adoption of a green building code affect a design professional’s standard of care? At this point, there are many more questions than answers.

VII. FEDERAL GOVERNMENT GREEN INITIATIVES

President Obama, like President Bush before him, has stressed sustainability goals for federal agencies. Through the issuance of Executive Order 13514 on October 5, 2009, President Obama requires federal agencies to set a 2020 greenhouse gas emissions reduction target within ninety days. The Executive Order also requires agencies to meet a number of energy, water, and waste reduction targets, including:

Thirty-percent reduction in vehicle fleet petroleum use by 2020;

Twenty-six-percent improvement in water efficiency by 2020;
Fifty-percent recycling and waste diversion by 2015;

Ninety-five percent of all applicable contracts will meet sustainability requirements;

Implementation of the 2030 net-zero energy building requirement;

Implementation of the storm water provisions of the Energy Independence and Security Act of 2007, § 438; and

Development of guidance for sustainable federal building locations in alignment with the Livability Principles put forward by the Department of Housing & Urban Development, the Department of Transportation, and the Environmental Protection Agency.

Government contracting is affected by a requirement that ninety-five percent of new contract actions be energy efficient. On this score, the Executive Order states:

The head of each agency shall:

(h) advance sustainable acquisition to insure that 95% of new contract actions including task and delivery orders, for products and services with the exception of acquisition of weapons systems, are energy-efficient (Energy Star or Federal Energy Management Program (FEMP) designated), water-efficient, biobased environmentally preferable (e.g., Electronic Product Environmental Assessment Tool (EPEAT) certified), non-ozone depleting, contain recycled content, or are non-toxic or less-toxic alternatives, where such products and services meet agency performance requirements.  

A. Federal Government’s Role in Environmentally-Friendly Development

The federal government owns approximately 445,000 buildings with total floor space of over 3.0 billion square feet. The federal government also leases 374 million square feet of floor space in an additional 57,000 buildings. While this is an impressive number, it pales by comparison to the private sector. There is approximately 37 billion total square footage of commercial buildings in the nation. By 2030, this is projected to increase to 108 billion. By 2030, more than 56 billion square feet of this commercial space will have been built new, or rebuilt on site. In the United States alone, buildings account for:

28 Executive Order 13514, § 2(h) (October 5, 2009).


30 McKinsey & Co., “Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost?” at 39-40 (December 2007). There is also a large amount of existing residential stock in our nation. There are currently approximately 113 million homes. The nation’s housing stock is forecasted to grow to 147 million homes by 2030.
- 72% of electricity consumption
- 39% of energy use
- 38% of all carbon dioxide (CO₂) emissions
- 40% of raw materials use
- 30% of waste output (136 million tons annually), and
- 14% of potable water consumption

While the trend toward green building is growing, governmental agencies play a key role in jumpstarting initiatives and markets for sustainable materials and services. As the Fourth Assessment Report of the Intergovernmental Panel on Climate Change noted:

Government agencies, and ultimately taxpayers, are responsible for a wide range of energy-consuming facilities and services such as government office buildings, schools and health care facilities. The government itself is often a country’s largest consumer of energy and largest buyer of energy-using equipment. The U.S. federal government spends over $10 billion/yr for energy-using equipment. Government policies and actions can thus contribute, both directly and indirectly, to energy savings and associated GHG [greenhouse gases] reductions. A recent study for several EU [European Union] countries found a potential for direct energy savings of 20% or more in EU government facilities and operations. According to the U.S. DOE’s Federal Energy Management Program (FEMP), average energy intensity (site energy per square meter) in federal buildings has been reduced by about 25% since 1985, while average energy intensity in U.S. commercial buildings has stayed roughly constant.

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32 The value of green building construction is projected to increase to $60 billion by 2010. (See McGraw-Hill, “Key Trends in the European and U.S. Construction Market,” SmartMarket Report (2008). The construction market accounts for about 13.5% of the $13.2 trillion U.S. Gross Domestic Product (GDP). See Department of Commerce, “Annual Value of Construction Put in Place” (2008). By the end of this year, it is projected that 82% of corporate America is expected to be greening at least 16% of their real estate portfolios. Of these companies, 18% will be greening more than 60% of their real estate portfolios. See McGraw-Hill, “Greening of Corporate America,” SmartMarket Report (2007). The green building products market is projected to be worth $30 to $40 billion annually by 2010. See Green Building Alliance, “Green Building Products: Positioning Southwestern Pennsylvania as the U.S. Manufacturing Center” (2006).
Indirect beneficial impacts occur when governments act effectively as market leaders. First, government buying power can create or expand demand for energy-efficient products and services. Second, visible government energy-saving actions can serve as an example for others. Public sector energy efficiency programmes fall into five categories (i) policies and targets (energy/cost savings; CO₂ reductions), (ii) public buildings (energy-saving retrofit and operation of existing facilities, as well as sustainability in new construction); (iii) energy-efficient government procurement; (iv) efficiency and renewable energy use in public infrastructure (transit, roads, water and other public services); and (v) information, training, incentives and recognition of leadership by agencies and individuals.  

B. Office of Federal Procurement Policy (OFPP) “Green” Contracting Guidelines

The United States has taken this leadership role to heart. The Office of Federal Procurement Policy (OFPP), in the Office of Management and Budget (OMB), plays a central role in shaping the policies and practices federal agencies use to acquire the goods and services they need to carry out their responsibilities. The federal government spends approximately $350 billion annually for a wide range of goods and services to meet mission needs. OFPP was established by Congress in 1974 to provide overall direction to government-wide procurement policies, regulations and procedures and to promote economy, efficiency, and effectiveness in acquisition processes. OFPP statutory authorities and responsibilities are set forth in the Office of Federal Procurement Policy Act. OFPP provides overall direction to shape the government’s procurement regulations. The Office’s primary focus is on the Federal Acquisition Regulation (FAR), the government-wide regulation governing acquisition of goods and services.

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34 In fiscal years 2009 and 2010, this amount is likely to substantially grow as the government increases its spending in attempt to stimulate the overall economy. Congress is considering the American Recovery and Reinvestment Bill of 2009. As of January 15, 2009, this package contains targeted efforts in clean, efficient energy, modernizing roads, bridges, transit and waterways, increased spending for education construction, and modernizing federal buildings. As the bill is currently structured, $32 billion is earmarked for transformation of the nation’s energy transmission, distribution and production systems; $16 billion to repair public housing and make key energy efficiency retrofits and $6 billion to weatherize modest-income homes. Another $30 billion is earmarked for highway construction; $31 billion to modernize federal and other public infrastructure with investments that lead to long-term energy cost savings; $19 billion for clean water, flood control, and environmental restoration investments; and $10 billion for transit and rail to reduce traffic congestion and gas consumption. Fourteen billion dollars is set aside for new school modernization and repair program, with another $6 billion for higher education modernization. Nearly $7 billion has been set aside for renovations and repairs to federal building, including at least $6 billion focused on increasing energy efficiency and conservation. See, Press Release, Committee on Appropriations, David Obey, Chairman, January 15, 2009.

35 41 U.S.C. 401, et. seq.
On December 28, 2007, OFPP proposed to issue a policy letter on green procurement policies and strategies. The policy letter would address: (1) general responsibilities of agencies for the procurement of green products and services; (2) the relationship of green products and services to other socio-economic programs; (3) automatic “green” products substitution policies; (4) listing of green products in Federal catalogues and online ordering systems; (5) green requirements for paper and printing; (6) application of green requirements in service contracting; and (7) energy efficiency.\(^{36}\)

The OFPP’s proposed policy letter, *Acquisition of Green Products and Services*, implements green procurement requirements set forth in Executive Order 13423, issued in January 2007.\(^{37}\)

Executive Order 13423 sets a number of goals for federal agencies. Among these goals are:

- Improve energy efficiency and reduce greenhouse gas emissions by three percent (3%) annually through the end of fiscal year 2015 or thirty percent (30%) by the end of fiscal year 2015, relative to the baseline of the agency’s energy use in fiscal year 2003.

- Insure that at least half of the statutorily required renewable energy consumed by the agency in a fiscal year comes from new renewable sources and to the extent feasible implement renewable energy generation projects on agency property for agency use.

- Beginning in fiscal year 2008, reduce water consumption intensity, relative to the baseline of the agency’s water consumption in fiscal year 2008, through life-cycle cost-effective measures by two percent (2%) annually through the end of fiscal year 2015 or sixteen percent (16%) by the end of fiscal year 2015.

- Require agency acquisitions of goods and services to (1) use of sustainable environmental practices, including acquisition of biobased, environmentally preferable, energy-efficient, water-efficient, and recycled-content products and (2) use of paper of at least thirty percent post-consumer fiber content.

- Insure that agencies reduce the quantity of toxic and hazardous chemicals and materials acquired and increased diversion of solid waste and maintain cost effective waste prevention and recycling programs at their facilities.

\(^{36}\) Federal Register, Vol. 72, No. 248 at 73904-73909 (December 28, 2007).

\(^{37}\) Executive Order (E.O.) 13423, Strengthening Federal Environmental, Energy, and Transportation Management (January 24, 2007). This Order sets goals in the areas of energy efficiency, acquisition, renewable energy, toxic reductions, recycling, sustainable buildings, electronics stewardship, fleets, and water conservation. In addition, the Order requires more widespread use of Environmental Management Systems as the framework in which to manage and continually improve sustainable practices. See also, Federal Register, Vol. 72, No. 116 at 33504 (June 18, 2007).
If the agency operates a fleet of at least twenty motor vehicles, reduce the fleet’s total consumption of petroleum products by two percent (2%) annual through the end of fiscal year 2015.

Acquisition of electronic product to meet at least ninety-five percent (95%) of its requirements with an Electronic Product Environmental Assessment Tool (EPEAT) – registered electronic product, unless there is no EPEAT standard for such product.  

With respect to new construction and major renovation of agency buildings, E.O. 13423 set the following goals:

Insure that (1) new construction and major renovation of agency buildings comply with the Guiding Principles For Federal Leadership In High-Performance And Sustainable Buildings Set Forth In The Federal Leadership In High Performance And Sustainable Buildings Memorandum Of Understanding (2006), and (2) fifteen percent (15%) of the existing Federal capital asset building inventory of the agency as of the end of fiscal year 2015 incorporates the sustainable practices of the Guiding Principles.

C. Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings

The Guiding Principles are organized into five broad categories: (i) employ integrated design principles; (ii) optimize energy performance; (iii) protect and conserve water; (iv) enhance indoor environmental quality; and (5) reduce environmental impact of materials.

Integrated design principles incorporate a collaborative, integrated planning and design process that:

Initiates and maintains an integrated project team in all stages of a project’s planning and delivery.

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38 Executive Order 13423, Sec. 2 (January 24, 2007).
39 Executive Order 13423, Sec. 2(f) (January 24, 2007). Agencies agreed to incorporate and adopt, as a appropriate and practical, the Guiding Principles into existing agency policy and guidance within 180 days of signature. The signatories to the Guiding Principles are: Department of Defense, Department of Energy, General Services Administration, Department of Veterans Affairs, Department of Interior, Department of Justice, Department of Agriculture, National Aeronautics and Space Administration, Department of Homeland Security, Department of Health & Human Services, Department of Transportation, Tennessee Valley Authority, Environmental Protection Agency, Department of State, Department of Housing & Urban Development, Office of Personnel Management, Department of Labor, Department of Commerce, and the Executive Office of the President. The Memorandum adopting the Guiding Principles was signed between January and May of 2006.
40 Guiding Principles for Federal Leadership in High-Performance and Sustainable Buildings.
Establishes performance goals for siting, energy, water, materials and indoor environmental quality along with other comprehensive design goals; and insures incorporation of these goals throughout the design and lifecycle of the building.

Considers all stages of the building’s lifecycle, including deconstruction.

The Guiding Principles call for total building commission practices tailored to the size and complexity of the building and its systems components in order to verify performance of the building components and systems and help insure that design requirements are met. This should include a designated commissioning authority, inclusion of commissioning requirements in construction documents, a commissioning plan, verification of the installation and performance of systems to be commissioned, and a commissioning report.

In the area of energy performance, the Guiding Principles call for the establishment of a whole building performance target that takes into account the intended use, occupancy, operations, plug loads, and other energy demands, and designed to earn the Energy Star targets for new construction and major renovation where applicable. For new construction, the goals are to reduce the energy cost budget by thirty percent compared to the baseline building performance rating per the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE), and the Illuminating Engineering Society of North America (IESNA) Standard 90.1-2004, Energy Standard for Buildings Except Low-Rise Residential. For major renovations, the goal is to reduce the energy cost budget by twenty percent below pre-renovation’s 2003 baseline.

With respect to water conservation, the Guiding Principles require the employment of strategies that, in the aggregate, use a minimum twenty percent less potable water than the indoor water use baseline calculated for the building, after meeting the Energy Policy Act of 1992 fixture performance requirements. With respect to outdoor water use, the use of water-efficient

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- Federal Leadership in High-Performance and Sustainable Building Memorandum of Understanding
- EPA’s Final Guidance on Environmentally Preferable Purchasing
- Greening of the Government Executive Orders
- EPA’s Comprehensive Procurement Guidelines for Recovered Content
- USDA’s Biobased Purchasing Program
- ENERGY STAR and the Department of Energy Federal Energy Management Program (FEMP) Product Efficiency recommendations
- Energy Policy Act of 2005
- ASTM International Standards, Leadership in Energy and Environmental Design (LEED), Green Globes, and Other Rating Standards and Systems

See also, Environmental Protection Agency, EPP Update, Issue 17 (September 2006).
landscape and irrigation strategies, including water re-use and recycling, so as to reduce outdoor potable water consumption by a minimum of fifty percent over that consumed by conventional means (plant species and plant densities). Agencies are to employ design and construction strategies that reduce storm water runoff and polluted site water runoff.

In the area of indoor air quality, agencies shall strive to meet current ASHRAE Standard 55-2004, Thermal Environmental Conditions for Human Occupancy, including continuous humidity control within established ranges per climate zone, and ASHRAE Standard 62.1-2004, Ventilation for Acceptable Indoor Air Quality. Daylighting goals include achieving a minimum of daylight factor of two percent (excluding all direct sunlight penetration) in seventy-five percent of all space occupied for critical visual tasks. Agencies are also required to protect indoor air quality during construction by following the recommended approach of the Sheetmetal and Air-Conditioning Contractors’ National Association Indoor Air Quality Guidelines for Occupied Buildings Under Construction.

Agencies are also required to control construction waste. During a project’s planning stage, agencies are to identify local recycling and salvage operations that could process site-related waste. They are to program the design to recycle or salvage at least fifty percent construction, demolition, and land-clearing waste, excluding soil, where markets or on-site recycling opportunities exist.

D. Office of Federal Procurement Policy’s Proposed Policy Letter on Green Procurement

The OFPP’s proposed policy letter expands upon and replaces OFPP Policy Letter 92-4, issued in November 1992.\textsuperscript{42} The proposed policy also follows recent changes to the federal procurement rules regarding the purchase of items containing recovered materials and biobased content and would require the use of Electronic Products Environmental Assessment Tool (EPEAT) when acquiring personal computer products. The purpose behind the policy letter is described as follows:

This policy letter provides Executive branch policies for the acquisition, use and disposition of green products and services, including but not limited to: recycled content products; water-efficient, energy-efficient, Energy Star and those products with the lowest watt stand-by power; biobased products; environmentally preferable products; alternative fuels, hybrid and alternative fuel vehicles; non-ozone depleting substances; renewable energy; and all services that may include the supply or use of any of these products. Agency acquisition policies and programs shall enhance and, where appropriate, mandate the purchase and use of green products and services covered in this policy letter.\textsuperscript{43}


\textsuperscript{43} Office of Federal Procurement Policy (OFPP), Proposed Policy Letter, Acquisition of Green Products and Services, Sec. 1, Federal Register, Vol. 72, No. 248 at 73905 (December 28, 2007).
The proposed policy letter provides guidance to agencies for implementing the green acquisition requirements of Executive Order 13423, including its implementation within an Environmental Management System (EMS) framework. Executive Order 13423 also provides guidance to agencies that do not have an EMS or have not yet incorporated goals toward sustainability but are still required to implement an affirmative procurement program for green products and services as part of their overall acquisition strategy. As the proposed policy letter states:

It is the policy of the Federal Government to develop and implement green purchasing policies and affirmative procurement programs in order to conserve resources and be good stewards of the environment and reduce our negative impact on the environment. The purchase of green products applies to all acquisition and contracting mechanisms used by federal agencies, including service contracts, purchases made with government purchase and fleet cards and purchases below the micropurchase threshold. 44

Policy requirements include:

Agency Preference for Green Products and Services. Federal agencies are required to give preference to the acquisition of green products and services including but not limited to: (1) alternative fuels and alternative fuel vehicles; (2) biobased products; (3) Energy Star products; (4) environmentally-preferable products; (5) recycled content; (6) renewable energy; and (7) water-efficient products. 45

Integrated Procurement Teams. Federal agencies are to insure representation of environmental and energy experts, managers or technical personnel on integrated procurement teams for all major acquisitions and consider each of the following factors: (a) sustainable design practices; (b) lifecycle cost analysis; (c) product or packaging take-back (return to manufacturer for recycling or remanufacturing purposes); and (d) maximization of energy and resource recovery in solid waste management. 46

Implementation of Affirmative Procurement Plan. Federal agencies are instructed to develop and implement an “affirmative procurement program” or a “green purchasing plan,” in which the agencies state a preference for green products

Agencies are expected to “flow down” this preference to contractors and subcontractors.  

**Relationship of Green Contracting Priorities to Socio-Economic Programs.** When making green acquisitions, agencies must first turn to mandatory sources, which include non-profits that meet certain federal standards, as well as preferred sources, which include small businesses, such as those owned by women or service-disabled veterans. If these sources do not offer compliant green products or services, agencies should seek other contractors to meet their needs.  

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47 Office of Federal Procurement Policy (OFPP), Proposed Policy Letter, Acquisition of Green Products and Services, Sec. 8(A)(3) and (4), Federal Register, Vol. 72, No. 248 at 73906-907 (December 28, 2007). When incorporating green purchasing requirements, agencies are instructed to seek guidance from *Incorporating Environmentally Preferable Purchasing into Environmental Management Systems*, at www.epa.gov. An effective affirmative procurement program should address, among other issues, (1) past performance evaluation of contractor’s adherence to green component/sustainable aspects of contracts; (2) green and/or sustainable standards and performance indicators in statements of work, source selection factors, and performance-based acquisitions; (3) for agencies that manage government specifications or commercial item descriptions, review and revise, as necessary, specifications and standards to permit the acquisition of green products and services; (4) the incorporation of green product requirements in the agency’s automated contract writing system; (5) strategic sourcing opportunities for purchasing green products and services; (6) achievement of best value based on lifecycle cost assessments of cradle-to-grave manufacture, use and disposition; (7) development of templates for incorporating green purchasing requirements into solicitations and contracts and/or using the model templates developed by other agencies; (8) preference for green products and services in the agency’s annual procurement forecast for all products and services; and (9) reporting of green contract requirements implementation through the Federal Procurement Data System (FPDS). OFPP Proposed Policy Letter, Acquisition of Green Products and Services, Sec. 8(A)(4)(b), Federal Register, Vol. 72, No. 248 at 73906-907 (December, 28, 2007).

48 Office of Federal Procurement Policy (OFPP), Proposed Policy Letter, Acquisition of Green Products and Services, Sec. 8(B), Federal Register, Vol. 72, No. 248 at 73907 (December 28, 2007). The interplay between “green contracting” and such socio-economic policies as encouraging disadvantaged business enterprises’ (DBEs) participation in federal procurement is complex. Part of the OFPP’s mission is to promote maximum participation of small business in government contracting. OFPP is responsible for developing policies, in consultation with the Small Business Administration (SBA), that promote maximum participation of small business in government contracts. In 2002, OFPP drafted Executive Order 13360 to increase contracting opportunities for service-disabled veterans. OFPP works closely with SBA on an ongoing basis to promote achievement of statutory percentage contracting goals for small businesses, including small businesses owned by women, service-disabled veterans, and socially and economically disadvantaged individuals.

One of the criticisms of the OFPP’s proposed “green contracting” policy was its potentially adverse effect on small business:

If OFPP leadership decides to move ahead with implementation of a green contracting policy, we believe a number of pressing issues should be addressed before they proceed. We believe OFPP should consider how the policy will impact certain groups of contractors. Mandates can have a disproportionate effect on small businesses since they have fewer resources to implement and manage any new requirements that cause significant changes in the way they do business. The Coalition has seen this occur with contract bundling.

Letter dated February 26, 2008, from Larry Allen, President of the Coalition for Government Procurement, to Jim Daumit, Office of Federal Procurement Policy. (The Coalition for Government Procurement is a non-profit association of over 350 companies that sell commercial services and products to the federal government primary
Automatic Substitution of Green Products and Services. Agencies are required to implement automatic substitution policies for the purchase of functionally equivalent green products and services. Additionally, the government’s central supply sources are to phase out competing non-green products from federal catalogues and online ordering systems.\textsuperscript{49}

In the area of service contracting, including construction services, OFPP’s policy letter could result in a number of dramatic changes to the way the federal government procures design and construction services. Executive agencies must include requirements and preferences for the use of green products in all service contracts and recompeted service contracts where green products may be substituted for equivalent non-green products in the performance of the contract. Agencies are also encouraged to incorporate these requirements and preferences into existing contracts as they are modified or extended through options. Specific requirements include:

Implementation of Guiding Principles When Acquiring Leased Space or Entering Into Construction Contracts. When acquiring leased space or entering into construction contracts for buildings and other major assets, agencies shall implement the five Guiding Principles for high-performance and sustainable buildings identified in the \textit{Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding}. Agencies are encouraged to consult technical guidance found in the Whole Building Design Guide as long as it is lifecycle cost effective to do so.\textsuperscript{50}

Thirty Percent More Energy Efficient New Buildings. Agencies are to insure that new buildings are thirty percent more energy efficient than 2004 International Energy Conservation Code for Residential Buildings or the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 90.1-2004 for Non-Residential Buildings, if life-cycle cost effective.\textsuperscript{51}

Use of Energy Savings Performance Contracts and Utility Energy Savings Contracting. In order to meet government-wide goals for energy efficiency, sustainable building, green products and services acquisition, and renewable energy, agencies are authorized and encouraged to use Energy Savings Performance Contracts (ESPC) and Utility Energy Savings Contracting (UESC) programs. ESPC and UESC programs are innovative tools for investing in building through MAS contracts and GWACs. Membership includes small and large business and accounts for seventy percent of sales on the GSA schedule program and approximately half of all federal commercial item acquisitions.)

\textsuperscript{49} Office of Federal Procurement Policy (OFPP), Proposed Policy Letter, Acquisition of Green Products and Services, Sec. 8(C), Federal Register, Vol. 72, No. 248 at 73907 (December 28, 2007).

\textsuperscript{50} Office of Federal Procurement Policy (OFPP), Proposed Policy Letter, Acquisition of Green Products and Services, Sec. 8(F)(1)(a), Federal Register, Vol. 72, No. 248 at 73908 (December 28, 2007). The Whole Building Design Guide can be found at \url{www.wbdg.org}.

\textsuperscript{51} Office of Federal Procurement Policy (OFPP), Proposed Policy Letter, Acquisition of Green Products and Services, Sec. 8(F)(1)(b), Federal Register, Vol. 72, No. 248 at 73908 (December 28, 2007).
improvements to reduce energy and water use and increase the portion of remaining energy needs supplied from renewable energy sources. Agencies may use any combination of appropriated funds and private financing to carry out an individual project by covering its upfront costs, as long as the entire project’s future cost savings exceed the amounts required over time to repay the private financing.\footnote{Office of Federal Procurement Policy (OFPP), Proposed Policy Letter, Acquisition of Green Products and Services, Sec. 8(F)(2), Federal Register, Vol. 72, No. 248 at 73908 (December 28, 2007).}

The proposed policy letter was issued for comment on December 28, 2007. The policy’s impact on agencies and governmental contractors will depend on the OFPP’s final letter due for publication this year and implementation of the policy by the Federal Acquisition Regulatory Councils and agencies. A theme found in a number of the comments is the lack of precision over the term “green”:

Although there are various federal and private sector “green” programs currently in effect, the Proposed Policy Letter does not appear to provide the specific standards on which agencies may rely in making \[\] evaluations or to describe methods of applying these programs to the unique circumstances of a government contractor nor to provide guidance for identifying alternative green sources. Therefore, the Section suggests the Proposed Policy Letter further identify how the Government intends to aid agencies and contractors in their implementation of and adherence to the policies and strategies set forth in the Letter. Such aid, possibly through assistance from an agency designated to provide guidance on “green” procurement, could include instruction on how to appropriately identify and differentiate between green contractor practices.

The Section is also concerned that agencies may enact and enforce the policies and strategies contained in the Proposed Policy Letter differently. In particular, some critical terms in the Proposed Policy Letter are undefined. For example, the meaning of terms such as “maximum extent practicable,” “life-cycle cost effective,” and “not reasonably available to meet the functional requirement” are not included in the letter. Each of these terms, among others, could result in different interpretations among agencies and, perhaps, even within a given agency.

Therefore, the Section suggests that the Letter identify processes that will be established to better insure that the policies and strategies set forth therein are enacted in a uniform and consistent manner. The Section suggests this may include oversight and coordination by a common agency or other government body.

Further, since “green” products and services may cost more than standard products and services, the Proposed Policy Letter should explain the cost-impacts of its proposals. In particular, the letter should clarify that the imposition of
“green” requirements on existing contracts is certain to require changes to an existing contract. Finally, the Section is also of the opinion that the Proposed Policy Letter would better serve agencies and contractors if it provided a process whereby its broad goals could be transformed into useful guidance for the practical application of the green procurement procedures. For example, establishing evaluation factors from the Proposed Policy Letter’s objectives would assist agencies and contractors in determining what actions they must take to comply with the Letter. 53

Whether the final policy letter will provide greater definition for the many terms employed to describe policy requirements and procedures is anyone’s guess. Without question, the final letter will have significant impact on federal procurement. A mandate with respect to energy efficiency in commercial and residential buildings alone will have a significant impact on the procurement of design and construction services. Moreover, the creation of integrated procurement teams focused on sustainable design practices, life-cycle cost analysis, and maximization of energy and resource recovery should encourage broader integrated delivery approaches consistent with the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings. 54

E. Department of Defense’s Green Contracting Initiatives

While the OFPP’s Proposed Policy Letter on green procurement has yet to reach final form, the federal government did enact green contracting legislation in 2008. A provision of the National Defense Authorization Act for Fiscal Year 2008 (the “Act”), moves the federal government further down the “green” supply chain. 55 The Act became law on January 28, 2008. It expresses the Legislative Branch’s expectation that the Department of Defense (“DOD”) adopt green practices in its procurement programs, but also requires the DOD to report back to

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53 Letter from Patricia A. Meagher, Chair, American Bar Association, Section of Public Contract Law, to Office of Federal Procurement Policy, dated March 18, 2008. See also, letter from Larry Allen, President, The Coalition of Government Procurement to Jim Daumit, Office of Federal Procurement Policy, dated February 26, 2008 (“The term ‘green,’ whether describing products of services, or purchasing policies, has not been defined in either this Proposed Policy Letter or within the provisions of Executive Order (E.O.) 13423, or the sections of the various Acts which this policy letter would address. “Green” cannot be singularly or accurately defined to cover the numerous acquisition that the OFPP policy addresses. In other words, there is not a “one-size-fits-all” definition of “green” that is appropriate for the purposes of the policy. Therefore, the Coalition recommends that “green” be deleted from the proposed policy.”) (emphasis in original).

54 Much federal procurement has been characterized by linear, non-collaborative delivery platforms. To achieve significant improvements in sustainable design and construction more integrated platforms, such as novel alliance models, are needed. See Patrick J. O’Connor, Integrated Project Delivery: Collaboration Through New Contract Forms, available at http://www.faegre.com/showarticle.aspx?Show=8831.

55 Pub. L. 110-181, National Defense Authorization Act for Fiscal Year 2008 (January 28, 2008). This Act received more notoriety for creating another opportunity for former President George W. Bush to execute another of his controversial “signing statements” in which he asserted that certain sections of the Act limiting the Executive branch’s authority to utilize appropriate funds to establish military installations in Iraq “could inhibit the President’s ability to carry out his Constitutional obligations to take care that the laws be faithfully executed, to protect national security, to protect the Executive branch, and to execute his authority as Commander in Chief.” The “green” provisions of the Act created no such controversy, at least at the Executive branch level.
Congress within ninety days of the Act’s enactment regarding how it will increase the use of environmentally friendly products and services. Section 888 of the Act, entitled Green Procurement Policy, provides:

(a) Sense of Congress – It is the sense of Congress that the Department of Defense should establish a system to document and track the use of environmentally preferable products and services.

(b) Report – Not later than 90 days after the date of the enactment of this Act, the Secretary of Defense shall submit to Congress a report on a plan to increase the usage of environmentally friendly products that minimize potential impacts to human health and environment at all Department of Defense facilities inside and outside the United States, including through the direct purchase of products and the purchase of products by facility maintenance contractors. The report shall also cover consideration of budgetary impact of implementation of the plan.56

Earlier attempts at encouraging green procurement practices include the Resource Conservation and Recovery Act of 197657 (RCRA). This Act included a program to encourage federal purchases of items containing recovered or recycled materials. The RCRA directed the Environmental Protection Agency to create a list of recycled and recovered items which federal agencies must purchase, subject to purchase thresholds, availability, and unreasonable price exceptions. Section 9002 of the Farm Security and Rural Investment Act (FSRIA) required the OFPP to report to Congress every two years on actions taken by federal agencies to implement the purchasing requirements of this statute.58

It is clear the federal government is moving aggressively toward adopting green procurement standards. What this means for government officials responsible for implementing and managing these programs as well as contractors doing business with the government is, as of yet, not clearly understood.

F. Challenges of Green Contracting

In the words of Kermit The Frog: “It’s not easy being ‘green’.” Nor is it easy to clearly define what “green” means in the context of procurement, design and construction. Just how does one go about determining the “encapsulated energy” contained in certain building materials or judge the long-term impact of the use of renewable or recycled materials? The debate over how much water goes into a hamburger is instructive:

58 Farm Security & Rural Investment Act of 2002, 7 U.S.C. § 7901 et. seq. Furthermore, a number of executive orders issued during the Clinton administration, including Executive Order 12,873 issued in 1993 and Executive Order 13,101 issued in 1998, were also attempts to develop cohesive green procurement policies and programs. These Executive Orders resulted in a number of agencies adopting preferential procurement policies for the use of recycled-content and other environmentally products.
A fast-food quarter-pounder costs $3, and 1,300 gallons of water. That’s how much it takes, per burger, to hydrate the cow, grow its food and process its carcass, according to the websites of the National Park Services, the U.S. Geological Survey, and a bottled-water trade group. By contrast, a loaf of bread uses 150 gallons, and milk requires just 65. . . . The message is broadly correct, but the number itself is disputed. It stems from decades-old research conducted by California scientists for a presentation to a local high school’s future farmers class. One of the scientists now says the number is too high. A more thorough investigation by an independent group halved the figure. And a researcher funded by the cattle industry reduced it still further.59

Similar disputes arise over the benefits and incremental costs often claimed in connection with green contracting:

The important concern for private and public owners, and for developers who are putting up more than vanity buildings is the return on investment calculation. Too often the return-on-investment information provided suffers from reliance on the same poor studies or other highly biased studies produced by groups seeking to validate the rating product’s value. One egregious return on investment claim is that the use of the rating product will increase worker productivity. By noting that the overwhelming cost to a corporation is for its employees over the lifecycle of the building – often enough said to be over 75% of total corporate expenditures – any minimal increase in worker productivity can provide a huge return for the corporation. Claims are often made that a three-to-five percent increase in worker productivity as a result of sustainable building features more than pays for all the increased initial costs of design and construction, certification, and any incremental increases in maintenance and operation. Sadly, measuring worker productivity is very difficult, especially in the professional services arena where most of the rating products concentrate. Worker productivity has been an area of intense study for almost a hundred years and continues to confound both reliable measurement and analysis. Any building owner depending on claims of increased employee productivity should realize that such claims do not rest on solid ground.60


60 Ujjval Vyas, “Green, Sustainable or High Performance? Knowing the Difference and Managing the Risks,” Construction Briefings, at 8-9 (September 2008). The author goes on to note that the incremental cost studies of green design and construction also suffer from methodology issues:

Incremental increase cost analysis has also relied on questionable studies with inadequate data points or questionable assumptions. For example, the “definitive” study often cited in support of the LEED product (the same study mentioned above that was done for the California Sustainable Task Force) claims a two percent increase in initial capital expenditure to deliver a LEED certified building. This study is dependent on only thirty data points of a wildly varied nature and based only on California buildings where the building code requirements are very close to the LEED certification benchmarks. Yet, this study is commonly cited as evidence to convince skittish
No doubt creating green contracting standards and procedures present significant challenges. But these difficulties are not likely to slow the momentum toward creating more environmentally friendly design and construction practices and products. There is still debate over global warming, notwithstanding a gathering consensus that something must be done. The same is true for the greening of design and construction. The architectural profession has adopted aggressive sustainability goals and even created “green” obligations on design professionals when executing design agreements. The American Institute of Architect’s recent Standard Form Agreement between Owner and Architect contains the following provision:

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 4.61

While green design and contracting practices will place additional responsibilities on design and construction professionals, the movement toward a more “sustainable” built environment is only going to grow and, as a consequence, those industry participants who immerse themselves in these issues will be the ones with a competitive advantage in years to come.62

owners throughout the country. Even more striking, a highly touted recent study conducted by the same consulting group that produced the California Sustainability Task Force report, and deeply biased in favor of validating the LEED rating product claims the use of LEED product for schools will result in a 37% reduction in asthma. On closer analysis, the claim is completely groundless based on both epidemiological practices and study methodology. Accepting these claims at face value may actually put design professionals and attorneys acting as environmental advocates at risk by aiding and abetting the mismatched expectations for both public and private owners. It should be understood that these studies are not exceptions but the norm.

Ujval Vyass, “Green, Sustainable or High Performance? Knowing the Difference and Managing the Risks,” Construction Briefings, at 9 (September 2008).

61 AIA Document B101 – 2007, Standard Form of Agreement between Owner and Architect, § 3.2.5.1 (2007). See also AIA Document B101 – 2007, Standard Form of Agreement between Owner and Architect, § 3.2.3 (2007) (“The Architect shall present its preliminary evaluation to the Owner and 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.”)

62 Some of the challenges designers will need to face were set forth by Victor O. Schinnerer & Co., Inc., in a management advisory to design professionals:

From a professional liability perspective, there are many exposures generated or intensified by the LEED certification process. The accreditation and certification process may lead to claims against design professionals. Some of these may not be within the scope of professional liability coverage. Exposures include:

Unfulfilled expectations: Passing the certification test and thus holding oneself out as an expert without any significant experience and knowledge of the design principles underlying the “green” system, creates the likelihood of unsatisfied clients. And dissatisfied clients bring claims.

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.
VIII. STANDARD OF CARE

Are the great number of sustainability initiatives changing the design professional’s standard of care? The American Institute of Architects (AIA) has issued a Sustainable Architectural Practice Position Statement. The Statement recognizes the need for architects to accept responsibility for their role in creating the built environment and alter current practices of design and construction to realize significant reductions in the use of natural resources, non-renewable energy sources, and waste reduction. This will take a multiple-year effort in developing new design processes and specifications.

Clients expect to see the financial savings that their investment is supposed to produce. Higher certification levels usually require more design effort and construction costs. If an anticipated benefit is not achieved, the firm could be expected to pay for its “mistake.”

Implied or express warranties: LEED certification implies energy savings and increased productivity. The design process, however, is interdependent on actions of the client and can be later influenced by many factors. Projects have a final review by the USGBC after construction. That final review may change the certification level expected. As the certification levels increase from “silver” to “gold” to “platinum,” expected benefits also increase. 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.

Fraud or misrepresentation: Although the process is supposed to take into the account the “encapsulated energy” in materials, few project owners seem willing to accelerate recycling or replacement costs by increasing their initial investments. Thus, the savings in life-cycle costs may be misleading. If a client does not understand this, the design professional could be accused of deceptive practices.

As with all projects, design professionals need to carefully assess the risks of “green” designs. The concept of sustainability also needs to apply to the financial viability of the design firm.


§ 3.4 LEED CERTIFICATION SPECIFICATIONS

The Architect shall provide specifications that incorporate LEED requirements for inclusion in the Contract Documents. The Contract Documents shall define the Contractor’s responsibilities and documentation requirements related to LEED certification, including Construction Waste Management, Construction Indoor Air Quality, and obtaining materials credits.

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§ 3.7 FINAL LEED CERTIFICATION REPORT

The Architect shall prepare a Final LEED Certification Report documenting the LEED rating the Project achieved, including the LEED Certification Plan, LEED Certification Documentation submitted, LEED Certification Reviews received from the USGBC, together with the specific LEED points that the Project is recognized as having received, all clarifications or interpretations of credits, and any re-certification requirements.
conjunction with clients, industry partners, and concerned organizations. To achieve the needed changes, the AIA will work to:

- Promote sustainable design, including resource conservation, to achieve a minimum 50% reduction from the current level of consumption of fossil fuels used to construct and operate new and renovated buildings by the year 2010, and promote further reductions of remaining fossil fuel consumption by 10% or more in each of the following five years;

- Develop standards for the architectural profession that incorporate greater sustainability into design, education, management, and licensure standards and provide resources to assist integrating these standards into the daily practices of all architects;

- Promote research by industry, scientific, and governmental entities to provide the design and construction industry with full life cycle assessment data for all products and assemblies used in the construction of the built environment at every scale in order to facilitate decision-making and communicate benefits to all; and

- Promote the AIA’s building performance design targets to local, state, and national governments.\(^6^3\)

At the end of 2007, the AIA Board of Directors approved a new section to the AIA Code of Ethics and Professional Conduct. Cannon VII, Obligations to the Environment, was created and sets forth a goal toward which members should aspire in professional performance and behavior. Unlike other “ethical standards,” the AIA chooses to use the language “should” rather than “shall” when setting forth these professional obligations:

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

E.S. 6.1 Sustainable Design: In performing design 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 in 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.\(^6^4\)

\(^6^3\) AIA, Sustainable Architectural Practice Position Statement (2005), available at www.aia.org. The AIA also supports the development, evaluation, and use of codes, standards, and evidence-based rating systems that promote the design, preservation, and construction of sustainable communities and high-performance buildings. See AIA, Directory of Public Policies and Position Statements, No. 44 (Approved December 2009).
The AIA Board of Directors has also encouraged architects to “promote energy efficiency and waste reduction in the built environment, encourage energy-conscious design and technology, plus support a national program for more efficient use and recycling of non-renewable resources and carbon-neutral design strategies.”

The sustainability pronouncements have also found their way into contract language. In the 2007 edition of the Institute’s owner/architect agreement, the architect shall discuss with the owner alternative approaches to design and construction of the project, including the feasibility of incorporating environmentally responsible approaches. Similarly, 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 owner’s program, schedule, and budget for the Cost of the Work.

What effect do these policy statements and contractual language have for the standard of care? At least one decision has found a relationship between AIA policy announcements and its members’ standard of care. In Taylor, Thon, Thompson & Peterson v. Cannaday, the AIA’s Handbook of Professional Practice was admitted into evidence as authority to establish the architect’s duties. The court determined that this was appropriate, although the deviation from the standards set forth in the handbook were not to be deemed negligence per se.

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64 AIA 2007 Code of Ethics & Professional Conduct (Dec. 2007). Similarly, the NSPE’s Code of Ethics for Engineers contains a new professional obligation dealing with sustainable design. The NSPE chose to avoid the terms “shall” or even “should,” but simply states that engineers “are encouraged” to “adhere to the principles of sustainable development in order to protect the environment for future generations.” NSPE Professional Obligation III.2.d (July 2007).

65 AIA Public Policy No. 41 (Approved December 2009). An earlier version of this policy contained more obligatory language:

Architects must strive for energy efficiency and waste reduction in the built environment, encourage energy-conscious design and technology, and support a national program for more efficient use of non-renewable resources and the development of renewable energy sources.


66 AIA Document B101-2007 § 3.2.3.

67 AIA Document B101-2007 § 3.2.5.1. The AIA in 2004 released B214-2004, Standard Form of Architect’s Services (LEED Certification). This document provides the architect’s scope of services for a green building project. It establishes the duties and responsibilities of the architect when the owner seeks certification from the USGBC. The services include conducting a pre-design workshop, in which the parties review the LEED system and establish targets for achieving LEED points. Other services involve preparing a LEED certification plan, monitoring the LEED certification process, providing LEED specifications for inclusion in the contract documents, and preparing a LEED certification report describing the LEED rating that the project achieved. Under the B101, these LEED-related services are additional services entitling the architect to additional compensation. B101-2007, § 4.1.24.


69 See also, Ruffiner v. Material Service Corp., 116 Ill. 2d 53, 506 N.E.2d 581 (Ill. 1987) (evidence of standards promulgated by industry, trade, or regulatory groups or agencies may be admissible to aid the trier-of-fact in determining the standard of care in a negligence action).
Is the design profession on board with the push for more sustainable designs? Perhaps not. Eight-three percent of design professionals surveyed about sustainability acknowledged an obligation to offer “green solutions” to their clients, although only seventeen percent of them did.\textsuperscript{70} It appears that the design profession has some catching up to do. The movement toward a more sustainable design in development is rapidly picking up pace. Developments such as green building laws, contractual provisions contained in standard agreements requiring evaluation of sustainable alternatives as part of basic services, a plethora of laws and ordinances creating incentives for sustainable development, and policy pronouncements from many quarters calling for “greener” design and construction services are likely over time to alter the professional’s standard of care.

IX. GREEN LIABILITY

A number of articles have addressed the question of what the movement toward more sustainable development means for the liability exposure of design and construction professionals.\textsuperscript{71} For all the concern and ink spilled on the question, at the present time there have been precious few suits directly dealing with sustainable design or construction gone awry. The only lawsuit mentioned by the commentators involved the failure to achieve an anticipated tax credit associated with a green building project. In \textit{Southern Builders, Inc. v. Shaw Development, LLC},\textsuperscript{72} a Maryland developer of a condominium project applied for a LEED Silver rating. Achievement of this certification level would have made the project eligible for $635,000 in state tax credits. A certificate of occupancy, however, was necessary to obtain LEED certification. The certificate of occupancy was not achieved within the requisite amount of time and the developer failed to earn the tax credits. When the general contractor filed a mechanics’ lien on the project, the developer counterclaimed for the lost tax credits. The case was settled out of court. \textit{Southern Builders} represents a straightforward “green” liability case. It also points out the inherent risks of tying performance to the decision-making of a third party.

\textsuperscript{70} See AIA Members Strive to be “Legally and Ethically” Green, AIArchitect Jan. 11, 2008. See also, G. William Quatman and Paula Vaughan, “Legally Green: What Lawyers Need to Know About Sustainable Design,” in the 47th ANNUAL MEETING OF INVITED ATTORNEYS, at 168-69 (2008) (authors conducted a survey of a random pool of 300 architects who rated their knowledge on sustainable design – 19% said they had “none”; 56% said they had “some” knowledge; 19% claimed “significant” knowledge; while 6% were “rock stars”).


Most “green” claims will be pursued pursuant to familiar legal theories such as negligence and breach of contract. Design professionals must be leery of agreeing to meet a specific third-party certification standard. Warranting that the design will achieve a certain standard jeopardizes one’s insurance coverage, as liability may no longer be determined by a breach of standard of care, but rather the failure to achieve what one has warranted. Design and construction professionals should also take care when advertising “green” credentials or services. The same is true when it comes to representations about the benefits of “green” design and construction alternatives. Misrepresentation claims can be particularly problematic if captured by states’ consumer protection laws. These laws often afford recovery for attorneys’ fees or a multiplier on compensatory damages. Moreover, fraud or misrepresentation can serve as a platform for exemplary damages.73 Another area of potential concern that, if not unique to “green” design and construction, at least is a heightened risk, involves the specification and use of new and specialized products. As one commentator noted:

With the hyper-growth of LEED certifications 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 market, with limited time for research and virtually no product history of performance. Go to Energy Star website, and you will find a link to new products, with this note, “products in more than 50 categories are eligible for the ENERGY STAR. They use less energy, save money, and help protect the environment.” Architects and engineers who specify such products rely on the manufacturer’s data but may have no actual experience with the product performance. So who bears the risk of specifying experimental products? The client or the design professional? While permeable paving allows more water to return to the earth, how does it hold up under freeze/thaw cycles? Who pays to tear up a two-foot thick “green roof” to get access to a leaking roof membrane? What happens when a “grey water” system does not produce enough water to fixtures or, worse yet, spread some virus to those who come in contact with “dirty” water?74

The use of new and unfamiliar products raises liability concerns. Similarly, providing novel services, such as energy modeling, raises the risk profile of the design and construction professional. As with everything else in life and business, as designers and contractors become more familiar with “green” products and services, the less liability there will be associated with them. Yet, at this time, we are at the beginning of the learning curve for many professionals.

Another potential source of concern is conflict between “green” objectives and other program requirements. One insurer representative recounts a claim against a government contractor that incorporated windows and skylights in order to achieve certain daylighting requirements for a “green” rating that allegedly compromised the owner’s security

73 See Jeffrey Masters and John Musitano, “Managing Liability Risks in Green Construction,” LOS ANGELES LAWYER at 19 (December 2007).

requirements. Other claims, arguably related, in one way or another, to “green” objectives experienced by a professional liability insurer include:

- **LEED certification as guarantee:** Architect agrees to design to LEED-Gold standard. Developer advertises the building as energy efficient and healthier for occupants. Budget and time constraints prevent certification, and developer sues architect for negligence and breach of warranty based upon it’s purported “guarantee.”

- **Green roof structural problem:** Architect, landscape architect, and client agree on extensive green roof installation. Water infiltration causes significant damages. Structural instability is the cause. Structural engineer claims that information on roof use was not provided.

- **Operable sash endangering health:** University agreed to architect’s design of operable sash despite concerns over effect of untreated air on building’s operations. Designer stressed importance of outside air for health reasons. Solar shading for energy conservation provided shelter for pigeons. Students report respiratory illnesses when using the library. Architect sued for negligence because of introduction of diseases contained in pigeon droppings.

- **Improper use of patented system:** Design team developed process for solar shading for building. After project is completed, owner gains publicity because of innovation. Company that had valid patent on a similar system demands a licensing fee or the removal of the solar shading system. Owner sues architect for failing to research patent and to enforce contractual provision that requires architect to defend and indemnify it for any intellectual property infringement.

- **Delay because of product unavailability:** Architect makes decision to use green product from new manufacturer because of promotional material. Architect shared promotional information with owner who, based on architect’s opinion, agreed to its use. Product was not readily available and project completion was delayed. Contractor demanded increased payments for overhead, lost profits, and out-of-sequence construction. Owner brought claim against architect, as it failed to inform owner that product was subject to delayed delivery.

- **Substitution of high-embodied energy material:** Owner agrees to a design that uses domestic stone. Contractor approaches owner with option of using stone quarried in India, finished in Italy, and installed in Vermont for cost savings. Architect “discovers” substitution, argues with owner about violation of green design because of high-embodied energy in imported stone. Architect releases information to press about substitution. Architect is sued by owner for violation of confidentiality agreement and by contractor for defamation.

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 Guarantee of indoor air quality: Tenant rents space in a LEED-Silver Certified building due, in part, to promises of “healthier more productive occupants.” However, at the end of its first year, tenant’s records indicated greater use of sick leave, increased complaints by employees about eye strain and drafts, and reduced output by clerical staff. Tenant demands rent rebate from owner and sues architect.

 Unrecognized change in standards: Architect designs facility to meet existing codes, including local laws on sustainability. Public pressure produces political action that changes requirements while project under construction. Owner is forced to delay project for redesigns and meet new requirements and architect wants to be paid for the redesign. Owner sues architect, stating that a reasonable architect should have been aware of impending changes and is responsible for the redesign and delay damages.

 Design/build “skip-over” of liability: Contractor signs design/build contract for green design. Design/builder “educates” owner that many problems with sustainable design can occur based on incompetence of design professionals. Owner agrees with design/builder that it will pursue remedies against design team if problem occurs. Design/builder assigns rights to sue subcontracted design team members and agrees to assist owner in any litigation. Design/builder signs design subcontracts with design team. Problems occur (delays, extras, and constructability issues) and owner sues design team directly.

 Responsibility for material recycling: County requires recycling of excess construction materials. Architect designs green project that calls for recycling. Architect agrees to construction observation services. During construction, contractor determines that prices for recycled steel and other materials have declined. Project is delayed by recycling obligations and some waste dumped by contractor because of lower tipping fees in another state which saved time and money. County finds out about dumping and takes legal action against project owner. Owner sues architect based on architect’s duty to observe construction services, and failure to identify and prevent dumping.

 Subcontractor substitution: Green design calls for sealants that are “environmentally friendly.” Subcontractor uses wrong sealant, claiming that sealant was improperly specified and, even if properly specified, would not have worked. Sealant has to be removed. Subcontractor declares bankruptcy. And client’s reputation hurt by wrong sealant. Claim against architect includes improper specification and negligent construction observation.

 Confidentiality violated by award competition: Architect designs building recognized for innovative sustainability attributes. Owner agrees to allow photography of exterior and interior to be used in promotional material. Architect enters award competition and provides details of floor plans, mechanical systems, and building structure without further approval from owner. Owner seeks
injunction against public display and damages because of violation of confidentiality and security interests.

*Vicarious liability for owner-selected consultant:* Project owner recommends LEED-Accredited Professional to architect. Architect agrees to hire person as consultant. Consultant recommends specific materials and systems. After construction, owner is dissatisfied because of increased up-front costs, questionable quality, construction delays and energy costs that are higher than anticipated. Owner sues architect, architect blames advice of consultant.

*Application of consumer protection laws:* Homeowner interested in architect creating a low-cost addition that would provide a healthy interior and save on energy. Architect agrees to design a “state-of-the-art” green residence. Designer discusses its expertise and assures client of satisfaction. Owner is unhappy with cost, time, and result. Owner sues architect under consumer protection laws, alleging fraud in the inducement to contract for services and demands rescission of contract and return of fee, even though design and construction are complete.

*Building information modeling use creates unpaid services:* Firm uses BIM system for energy analysis and constructability. Client appreciates ability of firm to respond quickly to requested changes during design process. Based on client’s continually increasing awareness of the latest in sustainable design, client constantly requires changes and design analyses. Firm accommodates client demands, even though its contract does not specifically allow it to modify its compensation to meet the increase in services. Firm attempts to collect additional fee; client sues for negligence stating that changes were the result of the firm’s failure to understand sustainable design requirements.

*Energy use above promise:* Design team agrees to a three-school project that would serve as examples of sustainable design and energy conservation. Using appropriate design standards, including commissioning efforts, schools are completed and put into service. Architects and consulting engineers signed contract that stated projects would “reduce operating costs by 50%” over schools of similar size. Energy usage is comparable to schools recently designed and constructed. School system is publicly embarrassed. School system brings claim.

*Cycle of redesign to meet budget:* Architect agrees to design to owner’s budget. Construction costs escalate and specialty contractors experienced in sustainable construction cost more than projected. Bids come in over budget. Redesign reduces scope and quality. Rebids come in over budget because of cost escalation. Additional redesign significantly delays schedule, which is still over budget. Owner did not agree to limit architect’s liability to redesign and architect is sued for increased financing costs, lost opportunity costs, and other expenses.

*Greenwashing causes damage to reputation:* Law firm noted for lobbying expertise hires architect to design new law offices at a level of green design that
would attract positive attention. Architect obtains promotional information from manufacturer of products and systems and, based on promotional information, provides plans and specifications for an attention-getting green design. Local press looks into materials and systems used and claims that sustainability is not as promoted. The firm is held up to ridicule beyond that attributed to its lobbying. The firm denies attempt to “greenwash” project and publicly blames architect and demands remediation and apology.

Client demand for aesthetic changes: Architect designs building that seems to meet point totals for sustainability rating. During construction, public owner finally becomes aware of the design’s “look” and is dissatisfied. Owner orders an aesthetic change that jeopardizes rating and increases life-cycle costs, but also saves construction costs. Building no longer meets certification standards. Owner wants rating to “increase resale and lease rates and attract tenants in a saturated market” but argues that aesthetic change was needed for same purpose. Owner claims architect should have designed project to allow change and still garner points.⁷⁶