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If you develop, own, or invest in real estate, thinking "green"—as in environmentally conscious—is no longer optional. A combination of factors favoring green construction is likely to render conventional buildings noncompetitive in the near future.

Green building certification in the United States is dominated by the United States Green Building Council ("USGBC") and its Leadership in Energy and Environmental Design ("LEED®") rating systems. As of the Fall of 2009, USGBC reports a pipeline of more than 25,000 projects registered for LEED® certification and over 3,300 projects already certified. This article will briefly describe the LEED® system and some of the reasons for its dramatic growth. It will then offer several practical suggestions that, if considered as part of a comprehensive risk management strategy tailored to the goals, needs and circumstances of each particular project, should increase the likelihood of achieving LEED® certification on time and within budget.

The LEED® Rating System

Under LEED®, a building is awarded points based upon its design and construction with regard to five environmental categories: Sustainable Sites, Water Efficiency, Energy & Atmosphere, Materials & Resources and Indoor Environmental Quality. Each of these categories includes "prerequisites" and "credits" with points assigned to the credits. A sixth category, Innovation in Design Process, awards points for exceptional performance or novel approaches.

Different scoring systems apply to different types of projects. Since introducing LEED® for New Construction and Major Renovations ("LEED®-NC") in March, 2000, USGBC has expanded its rating systems portfolio to include core & shell, commercial interiors, schools, retail, healthcare, and neighborhood development, as well as one devoted to existing buildings operations and maintenance.

After construction is completed the USGBC determines whether and at what level to certify a project based upon information collected by the project's architects, engineers, and contractors. Increased green performance—the greater the number of points earned—results in a higher

rating. Under the 2009 version of LEED®-NC, projects may be certified as LEED® Certified for earning 40-49 points, Silver for earning 50-59 points, Gold for earning 60-79 points and Platinum for earning 80 points.

The Rise in Green Development

The upsurge in green building has been fueled by a combination of forces. The Federal government and jurisdictions across the country are increasingly mandating that public and private building stock meet green standards, especially LEED®. The General Services Administration already requires all newly owned construction, major renovations and build-to-suit leasing to achieve a LEED® silver rating or higher.

State and local governments have followed suit. USGBC reports that LEED® initiatives have been enacted in 132 cities, 35 counties, 28 towns, 34 state governments, and 17 public school jurisdictions.

The private demand for green buildings has accelerated as well because saving energy and lowering greenhouse gas emissions have become civic virtues. Employees and customers increasingly expect their employers, landlords, retailers and hotels to share their sustainability values.

Developers and investors are being “pulled” into green building, too, by tax, permitting and density incentives and especially by the mounting evidence that green buildings will outperform conventional buildings even assuming that the "first costs" of a green building exceed those incurred in conventional construction. This so-called "green premium" is becoming less a foregone conclusion, however, as the green learning curve levels out, more builders and suppliers compete for green work and the continued improvement in sustainable materials.

The growth rates seen the past few years are likely to diminish given the continuing credit crisis. However, even a modest continuation of these trends indicates, as one study concluded, that green building is "fundamentally altering real estate market dynamics" such that "the risks of not moving quickly enough almost certainly will outweigh the risks of moving too quickly." Nelson, "The Greening of U.S. Investment Real Estate—Market Fundamentals, Prospects and Opportunities," *RREEF Research*, No. 57, November, 2007.

"It's Not Easy Being Green"

The rewards that green buildings, and the green ratings that come with them, will not be realized unless *all* the parties involved in a green project appreciate and manage its unique issues. Failing to achieve the required, desired, or promised green rating is a very real risk. Parties attempting to secure LEED® certification face a relatively new process that lacks sufficient transparency for project teams to predict if, when or which certification will be obtained. Compounding the risk, stakeholders with credible experience in green building projects remain in short supply. On top of these factors, USGBC faces a large backlog of projects which will only grow as more jurisdiction adopt LEED® as their standard and more projects seek certification.

It is unrealistic to expect an A/E or contractor to "guarantee" that a particular LEED® rating will be obtained. This is especially true for design

professionals whose liability policies exclude coverage of warrantees. Therefore, strategies—like those set forth below—should be implemented to enhance the likelihood that a completed green building will meet its owner's needs and will secure the expected LEED® rating on time and within budget; and, if not, that reasonable remedies will be available.

1. Have A Clear Understanding of Your Particular Green Objectives and the Options for Meeting Them Under LEED®

Green building can mean many things: using sustainable building materials, increasing energy efficiency, improving indoor air quality, or lessening one's carbon footprint. The reasons for developing or acquiring green assets are likewise varied: complying with applicable law; securing a tax or regulatory incentive; marketing to customers or employees; enhancing an asset's value by reducing its operating costs; minimizing a property's carbon footprint; reducing the demand on non-renewable resources; or any combination of the above. It is essential for those pursuing LEED® certification to understand their particular green motivations and expectations preferably from a project's inception.

A law mandating the LEED® rating required to secure an incentive or certificate of occupancy *does not* obviate the need for clarity as to a project's green objectives. Likewise, a promise to design or construct a "green" building or to achieve a particular LEED® rating does not automatically translate into delivery of a building meeting project goals. On the contrary, there are a plethora of approaches to "skinning the LEED® cat" because, beyond each rating system's prerequisites, the USGBC does not dictate either which credits or the precise number of points a project must obtain to achieve a desired certification level.

The selection of the credits and points to target, therefore, must depend upon the particular goals and motivations driving the pursuit of LEED® certification in the first place. Therefore, it is essential at the outset of a project—preferably before a site is even selected—to (1) establish your objectives for pursuing LEED® certification; (2) understand the options available under the applicable rating system to achieve the desired level of certification coinciding with your project's program; and (3) clearly communicate realistic objectives to those responsible for designing, constructing, or acquiring green assets.

2. Engage Experienced A/Es and Contractors Capable of Working Together Collaboratively Early in the Development Process

Successfully developing green buildings requires specialized knowledge among all those involved in a building's life-cycle. If possible, "green" should not characterize the experience level of the A/E, contractors, and facilities managers involved with developing and operating your green building. Ideally one LEED® Accredited Professional should be associated with each member of the project team.

There is an emerging consensus that any cost premium associated with a green project can be minimized or eliminated if each stakeholder is "at the table" when a project's green goals are established. A successful green project, therefore, requires an owner, A/E and contractor able to discard the traditional, linear view of a project's development, in favor of a more collaborative model. Using Integrated Project Delivery or incorporating

some of its elements into the more traditional delivery systems—both of which are outlined later in this article—are two possible approaches to securing the benefits of early collaboration.

3. Determine if BIM is Right for Your Project

Meaningful collaboration among the project team may require use of Building Information Modeling ("BIM") which is revolutionizing the way buildings are designed and built. With BIM, A/Es and contractors generate and exchange information, create digital representations of all stages of the building process and simulate real world performance. BIM empowers all members of a project team to work together to resolve discrepancies during the design phase rather than in the field and should facilitate collection of the information required to support LEED® certification.

Because BIM is blurring the traditional line between designers and contractors, thoughtful, upfront consideration by stakeholders and their legal counsel about its risks and responsibilities is required.

4. Consider Pursuing the LEED® Credit for Enhanced Commissioning

Commissioning is the systematic process of ensuring that a building's systems perform according to the design intent and the owner's operational needs, and is an important investment for any project. This is especially true for a green project where systems are expected to perform to a high level of efficiency.

LEED®-NC includes two forms of commissioning: Fundamental Commissioning must be satisfied by any project seeking certification; Enhanced Commissioning is optional. The systems to be commissioned under either form must include HVAC, refrigeration, lighting, domestic hot water and renewable energy systems. USGBC recommends the commissioning of other systems, such as the building envelope, storm water management, water treatment, and information technology.

Both Fundamental and Enhanced Commissioning require a Commissioning Authority ("CxA") to review the project requirements ("OPR") and basis of design ("BOD") and to verify that the installation and performance of the commissioned systems conform with the OPR/BOD and the Contract Documents.

The additional services the CxA must perform under the Enhanced Commissioning credit, however, should increase the probability that a project will achieve its LEED® goals on time and within budget, and also maintain those performance benefits after construction. Whereas Fundamental Commissioning does not require the CxA to be on the project team until just before the equipment installation phase, Enhanced Commissioning requires the CxA to conduct a design review before the construction documents are 50 percent complete and to review the contractor's submittals. These reviews are intended to find problems early while they can still be fixed economically and, therefore, should pay for themselves as inefficiencies and mistakes are corrected and the need for change orders and repairs are reduced.

The Enhanced Commissioning credit also requires the development of a systems manual, training of operations personnel and an inspection of the

building's operations by the CxA within ten (10) months of completion. With systems properly documented and personnel properly trained, Enhanced Commissioning should reduce the total cost of ownership by improving operations, avoiding problems and maintaining the energy efficiencies established during initial commissioning.

5. If Time Permits, Opt for LEED®'s Two Phase Certification Process

Until 2005, all information necessary to establish compliance with LEED®'s prerequisites and credits was submitted after construction was completed. Now, applicants have the one-time option of submitting "design phase credits" for review when construction documents are completed. "Design phase credits" are credits the USGBC can reasonably adjudicate without information collected during construction. Design phase credits under LEED®-NC include all Water Efficiency credits, most Sustainable Sites and Energy & Atmosphere credits, and approximately 40% of Indoor Environmental Quality credits.

The two-phase application process affords project teams the opportunity to assess the likelihood of credit achievements, correct any deficiencies or modify the targeted credits before a point in construction is reached that could jeopardize achieving the desired rating or significantly increase the cost of doing so.

6. Do Not Rely on Industry Standard Forms of Agreement

With one exception, none of the major industry organizations have added specific agreements for the design or construction of green buildings to their current library of contract forms. Although the American Institute of Architects has created Form B214 as an addendum to its standard Owner-Architect Agreement, the form only scratches the surface of the A/E's role and its ramifications and in no way addresses the responsibilities of contractors, subcontractors, or suppliers.

Therefore, owners either must develop proprietary forms of agreement or significantly modify the standard industry forms to properly address and allocate the many unique elements of scope and risk associated with green projects. Paragraphs A and B, below, offer suggestions with respect to some of the green issues that typically arise in design and construction agreements, respectively. .

A. The A/E Contract. The A/E's scope should include:

- informing the owner about the LEED® rating system and its available options;
- recommending designs and alternatives that are consistent with the owner's approved LEED®-related objectives, program and applicable law;
- collaborating with the CxA and contractors to arrive at a plan targeting LEED® credits and strategies for achieving them;
- including LEED® points in excess of the number required to achieve the desired LEED® rating;
- preparing the OPR and BOD;
- scheduling design services to utilize the USGBC's two-phase application process;

- providing services required to appeal the denial of any claimed credit;
- referencing LEED® requirements in Division 1 of the specifications, in the applicable technical division and on the plans;
- managing the collection and submittal of required LEED® information;
- using commercially reasonable efforts to prevent “green washing”—i.e., the practice of some product manufacturers to make inaccurate claims about the "green-ness" or performance of their products; and
- denying certification of payment to a contractor that is not in compliance with its LEED®-related obligations.

With respect to liability and remedies, the owner should consider:

- re-defining the standard of care to include A/Es experienced in the design and administration of LEED® projects;
- withholding retainage from A/E's fees and releasing it upon a successful design phase review and eventual certification of the project; and
- either (i) establishing an amount of liquidated damages if the consequences of a denial of certification would be difficult to determine; or (ii) making the financial consequences of a denial of certification recoverable for a breach; or (iii) leaving remedy options open by not waiving consequential damages.

B. <u>The Construction Contract</u>. The Contractor's scope should include:

- recruiting subcontractors and suppliers with validated experience and skills in green construction, and avoiding bids that contain unjustified green premiums;
- recommending appropriate modifications to the drawings, specifications, and subcontractor bid documents to facilitate compliance with the targeted credits;
- compliance with the requirements of the targeted credits which depend upon the contractors' performance;
- implementing a system for submitting the required LEED® information; and
- training operating personnel in utilization of systems and equipment.

With respect to liability and remedies, the owner should consider:

- making submittal of LEED® information a condition precedent to payment;
- re-defining substantial completion to include successful commissioning;
- holding the contractor accountable for remediation resulting from unauthorized substitutions, changes, or "value engineering" that prevent a project from achieving its desired level of LEED® certification;
- releasing final payment in installments: for example, half upon final completion and the balance upon certification of the project; and
- establishing an amount of liquidated damages (or not) under similar circumstances as set forth above for the A/E.

7. Consider Integrated Project Delivery

Owner frustration over project delays and cost overruns as a result of poor communication, upfront planning, and problem solving between designers and contractors has lead to the development of a new model for the design and construction of buildings—Integrated Project Delivery. According to AIA's California Council, Integrated Project Delivery utilizes "highly collaborative, cross functional teams composed of all project lifecycle stakeholders including the owner, architect, general contractor, engineers, suppliers and security." The Council identifies assembling the project team early in the process, providing all team members with open and equal access to information, and ensuring that all team members share equally in the risks and rewards of the project as keys to IPD success.

A comprehensive look at IPD is beyond the scope of this article. However, the congruity between what is required for a successful green project and the purposes and strategies underlying IPD are apparent. For complex projects, IPD's project-centric approach may represent the best means to the intended green ending. The AIA California Council's "Integrated Project Delivery Frequently Asked Questions" (August 2006) provides an excellent primer on IPD.

8. Purchase Property Insurance that Covers Losses Associated with Green Buildings

Traditional insurance products may fall short of providing adequate coverage for the combination of requirements and specialized materials and systems used in green buildings. In a June, 2008 survey, *"The Green Built Environment in the United States: The State of the Insurance Marketplace*," Marsh identified several property insurers that already had introduced green endorsements to their standard property forms or specific insurance policies for LEED® certified buildings. Programs include, for example, coverage for non-toxic, low odor paints and carpeting; interior lighting systems that meet LEED standards; water-efficient plumbing; Energy Star qualified roof and insulation materials; and the additional cost of having a building certified.

According to Marsh, green enhancements to builder's risk polices are of even more recent vintage. Marsh notes, however, that builder's risk coverage varies by market so that a conducting a policy form comparison is required.

Conclusion

Where it is not already a condition for occupancy or other incentives, LEED® certification is fast becoming the standard against which a building's commercial value is judged in the marketplace. Given the stakes, it is essential for owners, developers and investors to understand what LEED® requires, to coordinate their programs and goals with those requirements, and to appreciate and address both in the field and in the contract documents the peculiar risks and challenges of constructing green buildings to achieve LEED® certification. While the requirements and risks may be novel for now, the tools for managing these risks are the same as for conventional projects: clear goals and expectations, careful, upfront planning, and an appropriately skilled and experienced project team with a track record for attention to quality service and workmanship.

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