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# 'Green' Contracts

## *Documents Should Reflect LEED Requirements*

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In the last several months, there has been a sea change in the acceptance of "green buildings," that is, buildings which are designed, built and managed in a manner which promotes occupant health and resource efficiency. It is now generally accepted that green buildings equate to high levels of energy and water efficiency, the appropriate use of land and landscaping, the use of environmentally friendly materials, and the increase in worker productivity through improved indoor air quality.

Where an owner elects to build green, its design and construction contracts should be revised to reflect the services of the project team necessary to meet the requirements for the production of a green building. In this article, we will provide a brief overview of the green building process and identify the types of services expected of the project team.

### The LEED Rating System

Generally speaking, the measure of a "green" building is the rating awarded by the Leadership in Energy and Environmental Design ("LEED") green building rating system, established by the U.S. green building Council ("USGBC") in 1998. The LEED rating system evaluates the location, design, construction, and operational aspects of newly constructed and renovated buildings, and serves as a national standard by which construction and renovation projects earn credits toward certification as green buildings. The LEED rating system was created to (1) define a "green" building by establishing a common standard of measurement; (2) promote integrated, whole-building design practices; (3) recognize environmental leadership in the building industry; (4) stimulate green competition; (5) raise



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consumer awareness of green building benefits; and (6) transform the building market. (The LEED rating system can be found at <http://www.usgbc.org/DisplayPage.aspx?CategoryID=19>.) The LEED rating system covers several types of projects (such as new construction, existing

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buildings, and commercial interiors) and awards credits for achieving LEED criteria, resulting in four levels of certification depending on the number of credits achieved: certified, silver, gold and platinum.

### The Project Team

The process of achieving a particular LEED rating is a team effort involving the owner, a

LEED accredited professional, the architect and its consulting engineers, the contractor or construction manager and a commissioning authority. (A commissioning authority verifies that the building's energy related systems are installed, calibrated and perform according to the design and construction documents.) Each member of the project team shares some degree of responsibility for earning the LEED credits necessary to achieve certification.

#### A. The LEED Consultant

The LEED consultant serves as the overall coordinator of the certification effort and provides specifications clarifying the LEED credit requirements relating to five distinct areas of planning, design and construction: sustainable site development; water efficiency; energy efficiency; material resources; and indoor environmental quality.

Each category will earn the owner a certain number of LEED credits and the LEED consultant will recommend architectural details, mechanical systems and construction practices which, if properly executed, will yield these credits. The LEED consultant should be expected to provide descriptions of the specific tasks to be implemented by various members of the project team and outline the type of documentation necessary to submit to the USGBC in connection with the LEED application.

It is the responsibility of the LEED consultant to register the project with the USGBC, prepare submittals for credit rulings and submit the LEED certification application. During the application process, all communications with USGBC should be through the LEED consultant, who should be required to respond and submit requested additional information.

The LEED consultant should also provide specifications for environmentally preferred products and work site practices. Inasmuch as construction of green buildings is a relatively new experience, the LEED consultant must assist the owner in the ongoing education of the contractors and participate in pre-bid and bid meetings to confirm that the contractors are

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aware of LEED requirements. During all phases of the project, the LEED consultant should review both design and construction activities to determine that the project is proceeding in accordance with LEED criteria, including the examination of all LEED submittals, products and construction practices.

#### B. Commissioning Authority

Commissioning of the building energy systems is one of the key elements of LEED certification. The objective of commissioning is to insure that the goals of reduced energy use, lower operating costs and improved occupant productivity have been met. As part of the LEED certification process the owner must designate an individual as the commissioning authority (also known as the CxA) to lead, review and oversee the completion of the commissioning process. The CxA must be independent of the project's design and construction management, but may be a qualified employee or consultant of the owner, including the LEED consultant.

The CxA should be expected to coordinate commissioning during design, develop an outline of design criteria, review design development documents, prepare a proposed construction phase commissioning plan, develop commissioning specifications and review construction documents. The CxA should present the final commissioning plan and schedule to all members of the project team, perform site observation and attend project meetings during the course of the work. The CxA should maintain logs and other reporting documentation and prepare initial submittals for the LEED certification process.

The actual process of commissioning involves a startup and prefunctional checkout for which the CxA will prepare an equipment startup plan, together with checklists and other templates for the submission of data in connection with the LEED application. The CxA should identify deficiencies and nonconformance with building systems, confirm the presence of effective operating controls and develop functional tests and verification procedures to be followed by building management after the project is complete. Included within the CxA's duties should be the review of owner and maintenance manuals and warranties; the training and orientation of owner personnel; the preparation of a re-commissioning manual; and the conducting of reviews during the warranty periods of the mechanical systems.

#### C. The Architect

As with any project, the architect (and its consulting engineers) is responsible for the overall conceptual design. On a LEED project, the architect must incorporate the LEED criteria recommended by the LEED consultant and approved by the owner into the design. Working with the LEED consultant, the architect should assist in the preparation of the LEED certification plan, which will identify green building goals and the LEED credits targeted. The architect should also assist the LEED consultant and other members of the project team in the implementation of the

LEED strategies selected, and coordinate the roles of the other team members.

During the design process, the architect must identify systems and components that require special attention in order to obtain LEED certification, as well as identify the LEED certification documents required under the LEED rating system. The LEED consultant will recommend general language for specifications; however, it is the responsibility of the architect to include that language in its formal specifications, such as material selection and construction site practices. During the course of construction, the architect must review submissions by the contractor or construction manager relating to LEED requirements and inspect the work for compliance with LEED criteria. The architect should also be responsible to assist the LEED consultant with any submissions to the USGBC during the LEED certification process.

#### D. The Construction Manager

Inasmuch as the LEED certification process begins well before the start of construction, it is advantageous to employ a construction manager during the preconstruction phase of the project, rather than a general contractor, which is generally employed after the completion of construction documents.

The traditional role of the construction manager is to coordinate, manage and build the project. On a LEED project, the construction manager must possess an understanding of LEED standards for certification and a working knowledge of LEED components. It is recommended that the project superintendent be qualified to manage LEED projects and, preferably, be a LEED Accredited Professional. The superintendent should be charged with the responsibility for compliance with LEED criteria, particularly, work site practices.

The relevant LEED credits to be earned during the construction process, and for which the construction manager should have coordination responsibility, involve, among other things, the storage and collection of recyclables, construction waste management, material reuse, recycled content, and construction indoor air quality management. The construction manager should provide certifications for waste cycling and disposal as well as the use of energy efficient equipment and materials. The construction manager should also insure that the trade contractors are provided adequate information relating to materials used in construction, including recycled content, regional materials and renewable materials.

Construction indoor air quality management relates to the establishment of minimum indoor air quality performance to enhance air quality in the construction phase. The construction manager should maintain deficiency and corrective action logs, conduct inspections and maintain regular communications with trade contractors regarding air quality issues. It is the responsibility of the construction manager to collect all construction phase documentation necessary for the LEED certification process.

At the conclusion of construction, and during

the commissioning process, the construction manager should be responsible for implementing an indoor air quality management plan for the preoccupancy phase. This includes performing a building "flush-out" by supplying a high volume of outdoor air while maintaining certain designated internal temperatures. The flush-out process is designed to purge the building of any contaminants remaining after the completion of construction. The construction manager's involvement in the project should continue until the certification process is complete.

### Effects of Noncertification

There are significant financial losses an owner can suffer if a desired level of LEED certification is not met. Public funding, tax credits, incentive program benefits and other bonuses can be forfeited and an owner may lose tenants if the particular LEED rating is not obtained. The issue will then become fixing responsibility for the failure to obtain LEED certification and the consequences of that failure. While an owner may wish to impose damages upon a member of the project team as a result of such losses, considerable resistance from the team members at the contract negotiation stage can be expected.

A more practical approach to the enforcement of contractual obligations to perform services during the LEED certification program may be the intermediate step of tying the payment of fees to the performance of specific services during the design and construction process. For example, the failure of the construction manager to submit required documentation for the recycling of materials may be the basis for withholding all or a part of payments due under construction requisitions. Additionally, to the extent any member of the design team has a contractual obligation to perform specific LEED certification services, final payment should be withheld until those services are complete. In the event a certification service is not performed by a member of the project team and the owner is required to retain a substitute service provider, the cost of the substitute provider should be assessed against the defaulting party.

### Conclusion

Owners who undertake the LEED certification process should familiarize themselves with the LEED rating system and allocate responsibilities under the system to the various project members. The successful performance of those responsibilities will result in the desired LEED certification and enable the owner to proclaim that it has produced a green building, accompanied by the desired LEED certification.