

URBAN LAND GREEN — SPRING 2007

AGENTS OF CHANGE

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How are strong designers guiding owners and developers to consider sustainable design?

When an owner has minimal interest in green architecture, the architect can be an agent of change. Green architecture, once seen as an offshoot of the environmental movement and the purview of starry-eyed eco-believers, is now in the mainstream. No longer relegated to a few projects with owners willing to spend extra money on untested materials and construction, green architecture—more properly called sustainable design—has become a new approach for many architects, engineers, and, most important, developers. And it's an approach that doesn't necessarily cost more.

Many architects have an interest in or even a passion for sustainable design. The movement was propelled by the belief that architects, builders, developers, and owners could affect the environment with their projects. Green strategies were perceived as expensive, untested, and not measurable. There weren't many developers who would adopt sustainable design practices just to feel good about their buildings.

Slowly, the reality began to change as industry groups (led by the U.S. Green Building Council, based in Washington, D.C., with local chapters around the country) formulated quantifiable methods of defining what sustainable or green design was. The most noteworthy and most commonly employed measurement tool is the Leadership in Energy and Environmental Design (LEED) certification. The LEED process evaluates buildings according to a series of energy and environmental standards that yield a numerical rating or LEED credits. Depending on the number of credits awarded, a building can receive a Certified, Silver, Gold, or Platinum rating.

This kind of system took sustainable architecture out of the “feel good” realm and made it understandable, quantifiable, and, most important, marketable. It was just the tool designers could use to introduce developers and owners to sustainable design. LEED certification for buildings allowed design teams to pursue design they intuitively knew was right—sustainable with measurable results. The next challenge was to make it cost effective and believable to clients. The following is an approach to doing so.

There are four realities that allow a design team to effectively promote sustainable design to clients; two of these are trends at the macro scale over which design professionals really have little control, and two are tactics that designers can bring in to play in their design practice. The macro trends are: 1) changes in the energy and regulatory market; and 2) advancements in green materials and technology. The tactics leading architects are applying include: 3) working creatively within clients' budget framework; and 4) maintaining a thorough knowledge of sustainable materials, technology, and standards that in turn give clients confidence that the members of the design team know what they are talking about.



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Energy costs are continuing upward. As a significant component of building operating costs, energy, as well as its conservation, must be addressed and managed. Dependence on foreign oil as well as global warming concerns have also heightened awareness of the need for energy conservation and alternative energy sources. These trends have created a demand for more energy-efficient buildings. The logic of thinking about energy usage during the design phase is clear. Designing with energy savings in mind has become a standard. Developers, property managers, and tenants who directly or indirectly pay for energy understand this and are beginning to demand it. The energy market will continue to shape our behavior and our bottom line. Architects and their engineering consultants must comprehensively calculate energy usage as part of the design process. The market demands it.

The construction industry that supplies building materials and systems has responded as well. Consider the low-E glazing (an energy-saving glass), now available to the building designer, that simply did not exist 20 years ago. Advances in nearly every building material—sustainable wood products, recycled-content textiles and fabrics, low-volatile organic compound (VOC) paints and coatings—have given the architect a palette of environmentally low-impact components with which to work. Of greatest significance, these materials are now available as off-the-shelf items from familiar manufacturers. Likewise, building systems (mechanical, electrical, plumbing), which represent some of the greatest costs in building construction and operation, have undergone an energy transformation.

As the construction industry begins to shift toward sustainable design, the regulatory environment is changing as well. An increasing number of state and municipal governments are requiring that LEED or its equivalent be incorporated into their design and construction projects. Leading the charge are higher education clients (both public and private), who because of their mission must think about the long-term operation of their facilities. As more of the building delivery industry (architects, engineers, and contractors) adopt and adapt to the LEED requirements, the industry's approach to constructing buildings changes. Sustainable design, over time, comes to be an accepted practice rather than an afterthought.

These are the overall trends—energy costs, regulation, new materials, and systems—that architects and designers have at their disposal. The imperative is to translate those trends into specific building designs in ways that clients can realize value and benefit while putting sustainable design into practice. The members of a design team can choose to view that imperative as “an inconvenient truth” or they can challenge themselves to deal with reality as clients see it. Architects who choose the latter find that those clients can be open to change.

This means, however, that architects must tackle the client's budget from the beginning. Designing to a budget is the mantra instead of “budgeting a design.” Is LEED certification a goal for every client and every building? Or, can many of the results of the LEED process be achieved without pursuing certification? Can a client be shown that sustainable design will not threaten the project budget? These are the questions the architect and consultant team must tackle. In the process, the architect learns how to articulate the design and cost choices to clients, putting them in terms the client can understand and benefit from.

LEED is an important tool, but not necessarily an end in itself. This means that green choices can be proposed throughout the design process. Savvy designers are realizing that focusing on several key areas of design produces major environmental benefits:

- Discriminating site selection: redevelopment sites; proximity to public transit;
- Building orientation: minimize heating and cooling loads while maximizing opportunities for passive systems such as natural ventilation and solar heat;
- Daylighting: maximize daylighting and hence save energy costs;
- Incorporate synergies between building systems: daylighting reduces heating loads from light fixtures; landscaping can provide solar shading and stormwater management; green roofs further improve storm runoff; and
- Thorough analysis of payback periods: utilize engineering consultants to demonstrate cost savings over the life of the facility.

At the first of three office buildings at M Square, a university research park in College Park, Maryland, the developer mandated LEED Silver certification for the project. The developer is committed to building every new building to Silver certification levels. Still working within a tight budget on a site conveniently located near mass transit, the developer/design team specified recycled-content, low-VOC, and light-colored materials, and a construction waste recycling program. These decisions, along with use of a high-efficiency glazing and a tightly tailored mechanical system, enable the development to achieve LEED rating. The developer is successfully marketing a “green” design property that makes economic and environmental sense.

The architect, owner, and developers endeavored to construct a green building for the student housing at the University of Wisconsin at Milwaukee; however, LEED certification was not formally pursued. The 488-bed project, currently under construction by private developers, Capstone Development Corporation of Birmingham, Alabama, and Direct Development of Milwaukee, Wisconsin, on behalf of the university, employed many of the same smart choices as the M Square office building. Building on a brownfield site and locating near bus lines automatically generated environmental benefits. Use of recycled-content materials and energy-efficient design created further sustainability.

One project came with a LEED goal as a matter of corporate policy and strives for a LEED Silver rating. The other came with no set environmental goals, but the architect demonstrated the benefit and value inherent in sustainable design. Both ultimately incorporated sustainable principles into their design and provided benefits to their users, the developers, and the environment. Architects and designers, acting in the owners’ best interests, can be an agent of change that benefits everyone.