

Sustainable design: Going beyond LEED and beginning the process of codification

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Some level of sustainable design should now be the goal all responsible building owners, developers and designers strive to attain. Green buildings show a commitment to the environment that has become a necessity in this era of global warming and energy uncertainty.

The trend we are seeing today is toward developing, designing and constructing green buildings using the minimum standard allowed by building codes. However, there is no sustainable design code that addresses the environmental impact of the construction and operation of a building. There are certain municipalities and states that have already adopted the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) green building rating system as a minimum requirement for public building projects. However, LEED is subjective, and a voluntary system, much of which should be codified for use in the construction of buildings.

It should be noted that LEED's subjectivity has been criticized by users of the system. Criticism also stems from LEED being used purely as a public relations tool by some users. As a result, the real estate, design and construction communities should now go beyond LEED and codify environmentally sound practices. Codification would then mandate greater energy efficiency and environmental stewardship.

The green building community needs to reach out to authorities having jurisdiction to help facilitate the building code process. Simultaneously, developers, contractors and designers must be educated and informed on what needs to be applied to facilitate the codification process.

The International Building Code (IBC) embraces energy efficiency standards and now needs to codify sustainable principles. The latter includes greater energy conservation requirements, energy management and control systems, integrated day lighting and daylight harvesting, more stringent building envelope requirements storm water management and potable water use redistribution beyond minimum EPA requirements. (These requirements include low-flow lavatories, dual flush toilets and low flow urinals).

Regenerative Buildings

Since codification means conservation, the next step is for the development, construction and design communities to go beyond LEED, voluntarily, by making a building regenerative. A regenerative building is one that may for example, generate more energy than it uses in a year and can recycle water through rainwater harvesting and grey water reuse. A regenerative building would also reduce pollution through the use of filtration systems that return cleaner exhaust air to the outside. Additionally, a regenerative building allows for the restoration of the natural environment, including trees, landscaping and green space.

While it may not be possible to attain all of these desired attributes on any given project, it is important to take every aspect of development beyond LEED by creating a new mindset in the minimum standards for how buildings are conceived, designed, delivered, constructed, operated and maintained. For instance, Syska has been working with its architectural design partners to develop advanced façade systems that utilize ventilated cavities, passive and active shading devices and integrated daylight harvesting systems to enhance occupant comfort, and improve energy performance. The capital cost and iconic importance of these new systems have led to the use of

more advanced computer simulation tools to enable our designers to more accurately predict the behavior and performance of the facility before it is built.

Additionally, we have been developing integrated living machines that aid in the treatment of storm water and provide indoor ecological environments. Other areas being investigated include total energy and alternative energy cogeneration plants that, until recently, were reserved only for large building complexes, but can now be economically applied to much smaller buildings. The use of biomass and bio-fuels on these smaller building projects is also being

evaluated.

With minimum LEED certification becoming more commonplace in public and commercial buildings, it's time to begin the process of codification of sustainable design to ensure higher standards for green buildings. And with new research leading to technology breakthroughs, it's an appropriate time to strive for buildings that incorporate regenerative design as well.

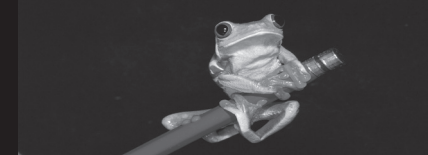
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It's Easy Being Green



With half of the LEED® points and prerequisites directly relating to the performance of mechanical, electrical and plumbing systems, your engineers need to be experienced, innovative and truly collaborative.

As the firm who engineered the Natural Resources Defense Council building – the highest rated LEED® Platinum building in the US – we deliver sustainable design solutions. We provide this with a practice rooted in more than 78 years of experience. Our work has spanned nearly every kind of building at every stage in its life cycle, including renovations and adaptive re-use.

For more information call 212.556.3211 or visit us at

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