

Green Buildings

'Buildings have a tremendous impact on the environment – both during design and construction, and also through their operation. Nationally, there are over 4.6 million commercial buildings alone, with an additional 101.5 million residential housing units.¹ The building industry consumes one-third of all energy used in the United States, driven by the considerable energy used and waste generated in making building products from the extraction, processing and transportation of raw materials. Construction waste generates 136 million tons annually between demolition, renovation, and new.²

As such, the building industry has historically represented a sizable factor in contributing to environmental depletion and waste generation.

Given such daunting figures in recent years, that trend, although still prevalent, is being challenged through public appeal, governmental agencies and within the industry itself. This will ultimately steer the industry towards environmental awareness and preservation. 'Green building is a loosely defined collection of land-use, building design, and construction strategies that reduces the aforementioned environmental impacts. Their benefits range from reduced energy consumption to protection of ecosystems to building occupants health'.³

Sustainable practices, attributing to buildings 'Green' designation, have gained 'mainstream' acceptance in recent years. Realizing that corporate business and the environment are not mutually exclusive, manufacturing companies, one of the largest culprits in environment depletion and energy consumption, have begun a steady transformation towards sustainable practices. As a response to growing consumer and market trends, sustainability, 'meeting the needs of the present without compromising the ability of future generations to meet their own needs,' has transformed many building industries corporate philosophies and direction. As such the beneficiary of such moves, below the overall positives on the worlds ecosystem, has been the building industries ability to not only embrace the sustainability trends, but also implement their successes.

It stands to reason the greatest environmental impact a development can have is to not build at all. Inherently that is in conflict with the very nature of the development industry and its long-term success. As such the industry, which we as the consumer rely upon to lead in the charge for increased environmental awareness, does so, in part, in an effort to maintain customer acceptance.

Industry standards and products are becoming more aware of environmental issues by incorporating sustainable practices within their production, transportation and utilization of their products. Post-consumer and post-industrial content are becoming commonplace in product descriptions and industry standards. 'Green' has become a term used widely through the industry as a means of signaling the embedded environmental consideration within products and processes. As such, the greater the usage of these products and practices, the greater potential it is for a building to have positive environmental impacts and thus be considered a 'Green Building'.

¹ Environmental Building News, volume 10, No. 5 May 2001

² Environmental Building News, volume 10, No. 5 May 2001

³ BuildingGreen.com, Environmental Building News 'What is Green Building?'

It is unusual that any building or development project will integrate all the potential products and processes that are openly available in an effort to reduce environmental impact. Risks of using newly developed products with limited market testing along with potential increased first costs reduce the practicality of some sustainable approaches. It is important to prioritize a building or developments sustainable goals in an effort to provide the greatest overall impact without losing the opportunity entirely. Prioritizing larger scale environmental impacts, global or regional in nature, will have a far greater effect than looking towards specific environmental publicity chances.

Below is a sample priority list for sustainable buildings.⁴

- Save energy – design and build energy-efficient buildings
- Recycle Buildings – utilize existing buildings and infrastructure
- Create Community – design communities to reduce dependence on automobiles
- Reduce Material Use – make use of smaller spaces and utilize materials efficiently
- Protect and Enhance the Site – preserve or restore local ecosystems
- Select Low Impact Materials – use low-environmental impact, resource-efficient materials
- Maximize Longevity – design for durability and adaptability
- Save Water – use water efficiently
- Healthy Buildings – provide a safe and comfortable indoor environment
- Minimize Waste – reuse and recycle job-site waste
- Green your Business – minimize environmental impact of business practices

LEED- Leadership in Energy and Environmental Design.

In an effort to measure the environmental practices incorporated into a buildings design and construction, the United States Green Building Council, (USGBC) initiated a program in 1993 attempting to develop a consistent and level platform for sustainable building, 'green building', evaluation and comparison. LEED marked the beginning of a process of ranking a building's environmental practices through a rating system based upon five main categories; Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources and Indoor Environmental Quality. 'It evaluates environmental performance from a whole building perspective over a building's life cycle, providing a definitive standard for what constitutes a 'green building'.'

'LEED is based on accepted energy and environmental principles and strikes a balance between known effective practices and emerging concepts.' Over time, LEED itself has evolved into the format presently being recognized, LEED version 2.1. Additional LEED rating systems, including corporate interiors, and existing building re-use, designed to specifically target the various construction types within the building industry, have been implemented. These sub-groupings begin to acknowledge the diversity in building projects, separate from conventional new building developments, and their related impact on the environment.

⁴ Environmental Building News – Establishing Priorities volume 4, No. 5 – September/October 1995

The LEED rating system is divided among five categories, each representing specific criteria within the building process. Within each of these five main headings, specific opportunities and requirements are represented in an effort to define and designate sustainable buildings and the practices associated with them. The categories include:

- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Research
- Indoor Environmental Quality

The benefits to designing, building and operating a green building represent a strong argument towards their implementation and overall acceptance within the building industry and the public as a whole. As a major contributing factor to the environments overall health and longevity, the building industry must embrace these new sustainable opportunities put before it. If successful it can provide long term benefits not only to the global environment but also to the economic vitality of the individual businesses and consumers who are at the core of this environmental re-awareness.

Benefits include:

Environmental:

- Reduced destruction of natural areas, habitats, and preserve biodiversity
- Reduce air pollution, water pollution, and solid waste creation
- Reduce depletion of finite resources
- Energy independence

Economic:

- Hard Costs:
- Reduced operating costs
- Enhanced asset value & increased profits
- Reduced or neutral first costs
- Optimized life cycle economic performance

Soft Costs:

- Improved productivity
- Reduced absenteeism and & maintained occupant health
- Reduction in liability

Sustainable practices are becoming more commonplace in building design and construction. Environmental considerations must be acknowledged and embraced, implemented and sustained in order to have an overall positive impact on the global ecosystem. The building industry, as a contributor to our global makeup, must take a leadership role in the charge against environmental depletion. 'Green Buildings' are an example of such leadership and must continue to raise the level of sustainable building standards and acceptance, thereby reducing the negative environmental impacts buildings and developments pose to our individual regions, and our shared world.