

# Understanding Green Building Rating Systems

By Jim DeStefano

There are three nationally available green building rating systems in the US market, two for commercial construction and one for residential, by independent non-profit organizations and are widely available for use. There are some state and local governments that have mandated, or are considering mandating, various rating programs for certain construction.

The two national programs for commercial construction are:

- US Green Building Council—  
[www.usgbc.org](http://www.usgbc.org)
- The Green Building Initiative™ —  
[www.thegbi.org](http://www.thegbi.org)

The most widely accepted green building rating system is the *Leadership in Energy and Environmental Design – New Construction (LEED-NC)*® developed by the U.S. Green Building Council (USGBC). This rating system is intended for new construction and substantial renovations of commercial and institutional buildings. USGBC has other programs that deal with existing buildings, commercial interiors, as well as core and shell projects. The first version of LEED-NC (version 2.0) was released in 2000 and it was revised (version 2.1) in 2004.

The *Green Globes*® rating system was developed by the Green Building Initiative. It is a user-friendly web based design tool intended to provide guidance to design professionals on green building design. The Green Globes rating system is a flexible program that can be applied to all types of projects, including residences.

The rating systems involve scoring points for including specific green building features into a project. The rating systems each include six categories as shown in *Table 1*. In general,

% of total	Points	LEED	Green Globes	Points	% of total
20%	14	Sustainable Sites	Site	220	22%
7%	5	Water Efficiency	Water	85	9%
25%	17	Energy and Atmosphere	Energy	325	33%
19%	13	Materials and Resources	Resources	100	10%
22%	15	Indoor Environmental Quality	Indoor Environment	220	22%
7%	5	Innovation and Design Process	Project Management	50	5%
100%	69	Total	Total	1000	100%

Table 1

the only category that structural engineers become involved with is materials and resources. There are four levels of certification for each system, as shown in *Table 2*.

In addition to scoring points, there are also seven prerequisites that must be met for a project to become **LEED** Certified:

- Sediment and Erosion Control
- Minimum Energy Performance
- Fundamental Commissioning
- CFC Reduction in HVAC Equipment
- Storage of Recyclables
- Minimum Indoor Air Quality Performance
- Environmental Tobacco Smoke Control

In addition to certifying building projects, both systems accredit professionals to participate in the certification process. An individual can become an Accredited Professional by successfully completing an examination.

Green Globes Designation	Required number of points	LEED™ Designation	Required Point
Total Possible Points	1000 points	Total Possible Credits	64 + 5 innovation points
Five Green Globes	86+%	LEED™ Certified Platinum level	81+%
Four Green Globes	71-85%	LEED™ Certified Gold level	71-80%
Three Green Globes	56-70%	LEED™ Certified Silver level	61-70%
Two Green Globes	36-55%	LEED™ Certified	50-60%
One Green Globes	15-35%	N/A	N/A

Table 2

The **LEED** certification process begins with registering a project with the USGBC at the inception of the design. Throughout the design and construction of the project, green building efforts must be documented. The **LEED-NC** scorecard along with documentation is submitted to **USGBC** for review and if it is deemed to meet their standards, certification is awarded.

For Green Globes, projects are evaluated at eight stages of design, with a preliminary score at the schematic design phase and a final score at the completion of contract documents. The system can be self-administered. However, if an official certification is desired, a third party is engaged to verify the design.

LEED		Green Globes	
Materials and Resources	13	Resources	100
		E.1 Low impact systems and materials (selection of building materials based on low environmental impact)	40
MR Prerequisite 1 - Storage & Collection of Recyclables		E.6 Recycling and composting facilities	10
MR Credit 1 - Building Reuse	3	E.3 Reuse of existing buildings	15
		E.4 Building durability, adaptability and disassembly	15
MR Credit 2 - Construction Waste Management	2	E.5 Reduction, reuse and recycling of demolition waste	5
MR Credit 3 - Resource Reuse	2	E.2 Minimal consumption of resources (reused, recycled, local, low-maintenance materials, certified wood)	15
MR Credit 4 - Recycled Content	2		
MR Credit 5 - Local/Regional Materials	2		
MR Credit 7 - Certified Wood	1		
MR Credit 6 - Rapidly Renewable Materials	1	N/A	N/A

Table 3

The points available under the category “Materials/Resources” are shown in *Table 3*.

The concept of green building design can include a wide variety of strategies and initiatives that reduce adverse impacts on the environment and conserve energy and material resources. The green building rating systems cover only a few of the initiatives that result in green buildings. It is tempting for design professionals to get caught up in scoring points rather than pursuing meaningful green building initiatives that may not contribute to the scorecard. It is important to remain focused on the *objectives* of green building design.

It is clear that other design professionals such as mechanical engineers, site engineers and landscape architects play a much more significant role than structural engineers in the certification of a project. They also generate considerable fees for their participation in the process. It is not surprising that very few structural engineers participate in the committees that have developed the certification programs. Green building design is not a passing fad and the rating systems are here to stay. Isn't it time for our profession to get involved and play more of a leadership role? ■

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