

Paper Presented at the Sustainable Building 2008 (SB08) Conference
September 21-25, 2008, Melbourne, Australia

**A COMPARISON OF TWO ENVIRONMENTAL RATING SYSTEMS USING DUAL CERTIFIED
BUILDINGS**

Harvey Bryan, Ph.D., FAIA
Jiri Skopek, AA.Dip., RIBA, MCIP, OPPI, OAA

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Harvey Bryan, Ph.D., FAIA¹
Jiri Skopek, AA.Dip., RIBA, MCIP, OPPI, OAA²

¹ College of Design, Arizona State University, Tempe, AZ. 85287, harvey.bryan@asu.edu

² Jones Lang LaSalle, 165 Kenilworth Avenue, Toronto, Canada, M4L 3S7, jiri@bellnet.ca

Keywords: rating systems, building comparison, sustainable buildings, green buildings

Summary

The environmental rating system tools presently available to the design community in North America are limited in numbers. Before green buildings can become mainstream more systems need to emerge, however equivalency between these rating systems must be determined. Thus this paper will attempt to compare the environmental attributes of the two most popular environmental rating systems in use today in North America. The comparison will be performed by means of seven dual certified buildings and use the official submission summaries from each system to determine their relative robustness to various individual environmental criteria as well as to the overall rating systems performance.

1. Introduction

Architects, builders and developers have many tools at their disposal to improve the environmental performance of buildings. Two such environmental rating systems that are being widely promoted in the North America are the LEED (Leadership in Energy and Environmental Design) Green Building Rating System® developed by the U.S. Green Building Council (USGBC) (www.usgbc.org/leed) and Green Globes,™ a web-based tool being advanced by the Green Building Initiative (GBI) (www.thegbi.org). Green Globes has been operating in Canada for several years and has been widely used by several of their federal agencies. Green Globes is the basis for the Building Owners and Managers Association of Canada's "Go Green Plus" program for assessment of existing buildings. Adopted by BOMA Canada in 2005, it has been used to assess more than 500 buildings, over 300 of which were from Canada's Department of Public Works and Government Services national portfolio of buildings.

However the GBI did not introduce Green Globes into the U.S. until 2005. The first year of its introduction was spent in a pilot phase to ascertain if Green Globes was appropriate for the U.S. market. During this pilot phase a number of buildings were evaluated, of these seven had or were in the process of also undergoing LEED certification. Thus the Green Globes pilot also offered an opportunity to undertake a comparison of these two environmental rating systems using dual certified buildings. While both of these systems offer a range of rating products for new and existing buildings, for this comparison only Green Globes for New Construction and LEED-NC (New Construction) will be used. The aim of this paper is to use the official submission summaries for each system that was generated by the rating authority to compare their relative robustness to various environmental criteria (see Figures 1 and 2). Although these two systems address slightly different levels of detail (for example Green Globes includes an integrated design process, life-cycle assessment and noise criteria which are not addressed in LEED), the general comparison between the two systems indicates a similar rating nomenclature. Table 1 compares the rating nomenclature use by these two systems.

Table 1. A comparison of the four levels of ratings that are used by Green Globes and LEED

Green Globes	LEED
One Globe (>35%)	Certified -- 26 to 32 points (>37%)
Two Globes (>55%)	Silver -- 33 to 38 points (>47%)
Three Globes (>70%)	Gold -- 39 to 51 points (>56%)
Four Globes (>85%)	Platinum --52 to 69 points (>75%)

Table 2. Percentage of points assigned to system categories

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

environmentally sensitive systems, uses low impact materials, renewable energy and the purchase of green power. This building achieved the same rating level in both systems, Two Green Globes and LEED Silver. However, within that second rating level, Green Globes rated this building slightly higher than did LEED. This was due to the fact that the Center scored well in Green Globes' Project Management and Emissions categories; LEED does not have such categories.

2.2 Alberici Headquarters

This two story, 110,000-square foot Class-A office building, located near St. Louis, Missouri, is constructed on a previous industrial site. This building reused much of the previous structure, it remediates previously contaminated land, has exceptional energy performance, an on-site wind generator, significant reuse and recycling of construction waste, uses low impact materials and exceptional attention was paid to IEQ issues. Both systems gave this building their highest rating, Four Green Globes and LEED Platinum. It achieved 93% and 87% of all possible points within the Green Globes and LEED systems, respectively.

2.3 Pfizer Clinical Research Unit

This 62,500-square foot clinical research building, located in New Haven, Connecticut, is constructed on an existing Brownfield site. This building remediates previously contaminated land, significant reuse and recycling of construction waste, uses low impact materials, and significant attention was paid to IEQ issues both during construction and operations. This building received a one level rating difference between the two systems, Three Green Globes and LEED Silver. This difference was due to the fact that the Clinic scored very well in the Green Globes' Project Management and IEQ categories. The integrated project team that Pfizer formed for this project was highly valued within Green Globes; LEED has no equivalent category. In addition, the level of IEQ quality that exists in a clinical building such as this one seems to have scored much better under Green Globes (scored 80% in their IEQ section) than it did under LEED (scored 60% in their IEQ section).

2.4 Blakely Hall

This 7,000-square foot mixed use building, located in Issaquah, Washington. Blakely Hall is part of the 2,200 acre Issaquah Highlands Community, a community noted for making a strong commitment to environmental stewardship. This building incorporates the use of daylighting, natural ventilation, uses low impact materials and significant reuse and recycling of construction waste. Blakely Hall achieved the same rating level in both systems, Two Green Globes and LEED Silver. However, within that second rating level, Green Globes rated this building slightly higher than did LEED. This was due to the fact that Blakely Hall did not have the resources to perform energy modeling, thus they did not achieve any energy points. Green Globes requires a much easier energy performance exercise, which is why there was a slight difference between these two systems for this building.

2.5 Wisconsin Electrical Employees Benefit Fund Office

This 12,000-square foot office building, located in Madison, Wisconsin, is constructed on a previously undisturbed site. The WEEBF building incorporates an innovative use of prairie grass landscaping to reduce run-off, has a high level of energy performance, use of recycled and local materials, use low impact materials and green power. This building received a one level rating difference between the two systems, Two Green Globes and LEED Certified. This difference was due to the fact that the WEEBF building scored very well in

Table 3. Results of the comparison

Evaluated Buildings	Green Globes	LEED
Clinton Presidential Center	Two Globes (68%)	Silver (34 out of 69 points (49%))
Alberici Headquarters	Four Globes (93%)	Platinum (60 out of 69 points (87%))
Pfizer Clinical Research Unit	Three Globes (70%)	Silver (33 out of 69 points (47%))
Blakely Hall	Two Globes (64%)	Silver (34 out of 69 points (49%))
Wis. Elect. Employees Benefit Fund	Two Globes (55%)	Certified (26 out of 69 points (38%))
RenewAire Facility	Two Globes (66%)	Silver (33 out of 69 points (49%))
Home Saving Bank Branch	Two Globes (55%)	Silver (33 out of 69 points (49%))

the Green Globes' Project Management category. The integrated nature of a design build project was highly valued within Green Globes; LEED has no equivalent category.

2.6 RenewAire

This 37,000-square foot office/industrial building, located in Madison, Wisconsin, is a major remodeling of an existing building. The RenewAire Building reused much of the previous building, has air-to-air heat recovery, has a high level of energy performance, significant reuse/recycling of construction waste, use of low impact materials and green power. This building achieved the same rating level in both systems, Two Green Globes and LEED Silver. However, within that second rating level, Green Globes rated this building slightly higher than did LEED. This was due to the fact that this building scored well in Green Globes' Project Management; LEED does not have such categories.

2.7 Home Savings Bank

This 5,000-square foot branch bank building, located in Madison, Wisconsin, is constructed on a pre-developed site. The Home Saving Bank building incorporates the use of daylighting, provides space for use by the local community, has air-to-air heat recovery, has a high level of energy performance, a rain garden, significant reuse and recycling of construction wastes, use of low impact materials and green power. This building achieved the same rating level in both systems, Two Green Globes and LEED Silver.

3.0 Results

Table 3 presents the results from the seven individual building comparisons that were undertaken. Although, each of these systems addresses slightly different levels of detail, these seven buildings represented a good range of building type, size and geographical location. Both rating systems in their assessment of each of the seven dual certified buildings seemed to have identified similar reduction in environmental impact. Thus, the detailed side-by-side comparison presented in Table 3 indicates a high level of equivalency between the two systems. Where differences exist, they are much more a result of minor criteria differences than with overall system differences.

4.0 Conclusion

The application of LEED within North America has been well documented in the professional press. However, it is becoming increasingly clear that we need a much more rapid uptake of green buildings (since April 2000 only 1500 buildings have actually been LEED certified) and that "one size does not fit all." It seems that many architects, builders and developers that deal with smaller sized projects do not have access to the level of resources, expertise or consulting services necessary to successfully navigate the LEED preparation, documentation and submittal process. A system such as Green Globes, which uses a web-based questionnaire approach with its lower entry threshold and immediate feedback not available from a primarily paper-based system, seems much more appropriate for this audience. Thus, having competing systems that have a recognized level of equivalency is an important prerequisite in moving green buildings into the mainstream of North American building practices. It is hoped that this comparison and the high level of equivalency that was shown between Green Globes and LEED can help achieve this outcome.

Reference

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