

## Green Globes Overview

Town of Frisco  
22 May 2008



## Goals for Discussion

- GBI: Overview and History
- Green Globes for New Construction
- Q&A



## Buildings' Impact

Responsible for nearly half of all greenhouse gas emissions produced in the U.S. every year<sup>1</sup>

Account for 39% of total U.S. energy consumption, more than both the transportation and industry sectors<sup>2</sup>

By 2035, 75% of our nation's buildings will be new or remodeled<sup>3</sup>

Department of Energy's Energy Information Administration

1. Department of Energy's Building Energy Data Bank

2. AIA Research Corporation



## Who is the GBI?

- Formed in 2004; 501(c)(3) non-profit
- Headquartered in Portland, OR
- Initial funding from industry
  - Moving to a membership based funding model
- Partnered with National Association of Homebuilders
- Acquired US License to Green Globes environmental assessment and rating system
  - Developed in Canada; in use since 1998



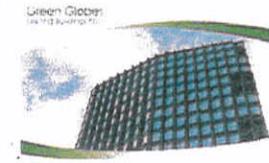
## A Better Way to Build

The mission of the Green Building Initiative is to accelerate the adoption of building practices that result in energy-efficient, healthier and environmentally sustainable buildings by promoting credible and practical green building approaches for residential and commercial construction.



## Green Globes Offerings

- 1. Green Globes for New Construction**  
guides the Integrated Design Process at each stage of project delivery.
- 2. Green Globes for Continual Improvement**  
establishes the baseline, gives a current performance report, guides improvement.



## How Green Globes Works

- Design team performs on-line self assessment – [www.thegbi.org](http://www.thegbi.org)
- Real time feedback in seven areas of assessment
- Modifications made to building design, as desired
- Early assessment at schematic design stage



## How Green Globes Works

- Final assessment at construction documents stage
- Self assessment complete
- Third party review and assessment (optional but required for external recognition)
  - Review of Green Globes report, construction documents, on-site inspection



## Assessment Choices

- **Third Party Assessment** (required to receive a rating from Green Globes)
  - \$4,000 - \$6,000 per building, depending on complexity, size and distance travel costs for verifier
- **Self Assessment** for those who don't need or want to promote their building as having a rating from Green Globes.



## What does Green Globes cost?

- **Registration:**
  - \$500/year for 1 project or \$2,500/year for unlimited projects
- **3<sup>rd</sup> party review:**
  - \$4,000 - \$6,000 per building, depending on complexity, size and distance travel costs for verifier
- **Documentation:**
  - \$2,500 - \$5,000/project, depending on complexity and size of project
- **Building Commissioning\*:**
  - \$1.50 - \$2.50 per square foot of space, depending on the complexity of the space and the systems installed
  - Not required for buildings smaller than 10,000 sq ft



## Why Green Globes?

- "It's easy to use. It provides a self assessment tool that focuses the team on how to make the building green...It helps to eliminate the high costs and labor typically associated with green certification."
  - Zoe Khoei (Ottawa, Canada)  
Project Manager, Dept. National Defense HQ  
Using BREEAM Greenleaf (Green Globes) for Warehouse, Dining Hall, Quarters, Office...all under \$10 million in construction cost



## Why Green Globes?

- "I've been impressed with the system's ability to provide both education and on-site review and assessment. It's a flexible yet comprehensive tool that encourages users to learn more about green while working toward specific performance goals."
  - Eric Truelove, P.E. (Madison, WI)  
Director, Sustainable Design, Renschler, Inc.,  
Three Dual Certified Projects in Wisconsin (LEED certification pending) and Chicago Center for Green Technology, LEED Platinum

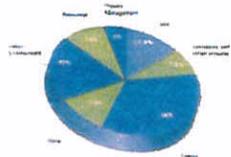


# Green Globes for New Construction



## Seven Areas of Assessment

1. Project Management
2. Site
3. Energy
4. Water
5. Resources
6. Emissions and Other Impacts
7. Indoor Environment



1,000 Points Available



## Seven Areas of Assessment

### 1 Project Management (50 pts.)

- Integrated design process
- Environmental purchasing
- Commissioning (plans for systems testing after construction)
- Emergency response plan





## Seven Areas of Assessment

### 2 Site (115 pts.)

- Development area
- Ecological impacts (erosion, heat island, light pollution)
- Watershed features
- Site ecology enhancement







## Seven Areas of Assessment

### 3 Energy (360 pts.)

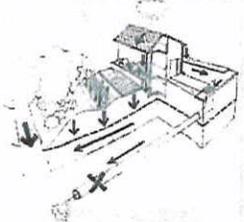
- Energy performance
- Reduced demand (space optimization, microclimatic design, daylighting, envelope design, metering)
- Energy efficiency features (lighting, heating & cooling equipment).
- Renewable energy (solar, wind, biomass, etc)
- Transportation




## Seven Areas of Assessment

### 4 Water (100 pts.)

- Water performance
- Water conserving features (equipment, meters, irrigation systems)
- On-site treatment (stormwater, greywater, blackwater)



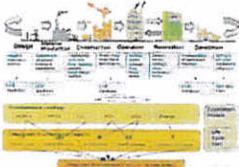




## Seven Areas of Assessment

### 5 Resources (100 pts.)

- Low-impact systems and materials (LCA)
- Minimal use of non-renewables
- Reuse of existing buildings
- Durability, adaptability and disassembly
- Demolition waste (reduce, reuse, recycle)
- Recycling & composting facilities





## Seven Areas of Assessment

### 6 Emissions and Other Impacts (75 pts.)

- Air emissions (boilers)
- Ozone depletion
- Sewer & waterway protection
- Pollution control (procedures, compliance with standards)



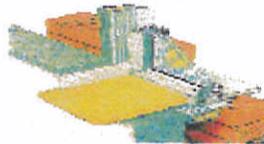




## Seven Areas of Assessment

### 7 Indoor Environment (200 pts.)

- Ventilation system
- Indoor pollution control
- Lighting (daylighting & electric)
- Thermal comfort
- Acoustic comfort



## Project Dashboard

See the status of all sections on one screen



## Flexibility Allows Trade Offs

Stage: Schematic Design  
Section: Energy Questions

Go back to previous questions or continue to next questions

| Question                                 | Answer | Points |
|--|--------|--------|
| How many stories will the building have? | 10     | 100    |
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### Intuitive Data Entry Screens

Questionnaire

Tip box To activate, move the mouse over the question.



## Complete the Questionnaire

Stage: Schematic Design  
Section: Energy Questions

Go back to previous questions or continue to next questions

| Question                                 | Answer | Points |
|--|--------|--------|
| How many stories will the building have? | 10     | 100    |
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Project Stage and User  
Questionnaire has settings for individuals team members (architects, engineers, etc.)

Questionnaire Questions are "yes", "no" or "n/a", multiple choice, require data entry or description.

Tip box To activate, move the mouse over the question.



## Generate the Report

### Easy to Read Reports

The report is generated from the Green Globes Assessment tool. The report is generated from the Green Globes Assessment tool. The report is generated from the Green Globes Assessment tool. The report is generated from the Green Globes Assessment tool.

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**GREEN BUILDING INITIATIVE**

## Scoring



 35-100%  
 70-84%  
 55-69%  
 35-54%

Green Globes Assessment and Rating System for New Construction Projects

**GREEN BUILDING INITIATIVE**

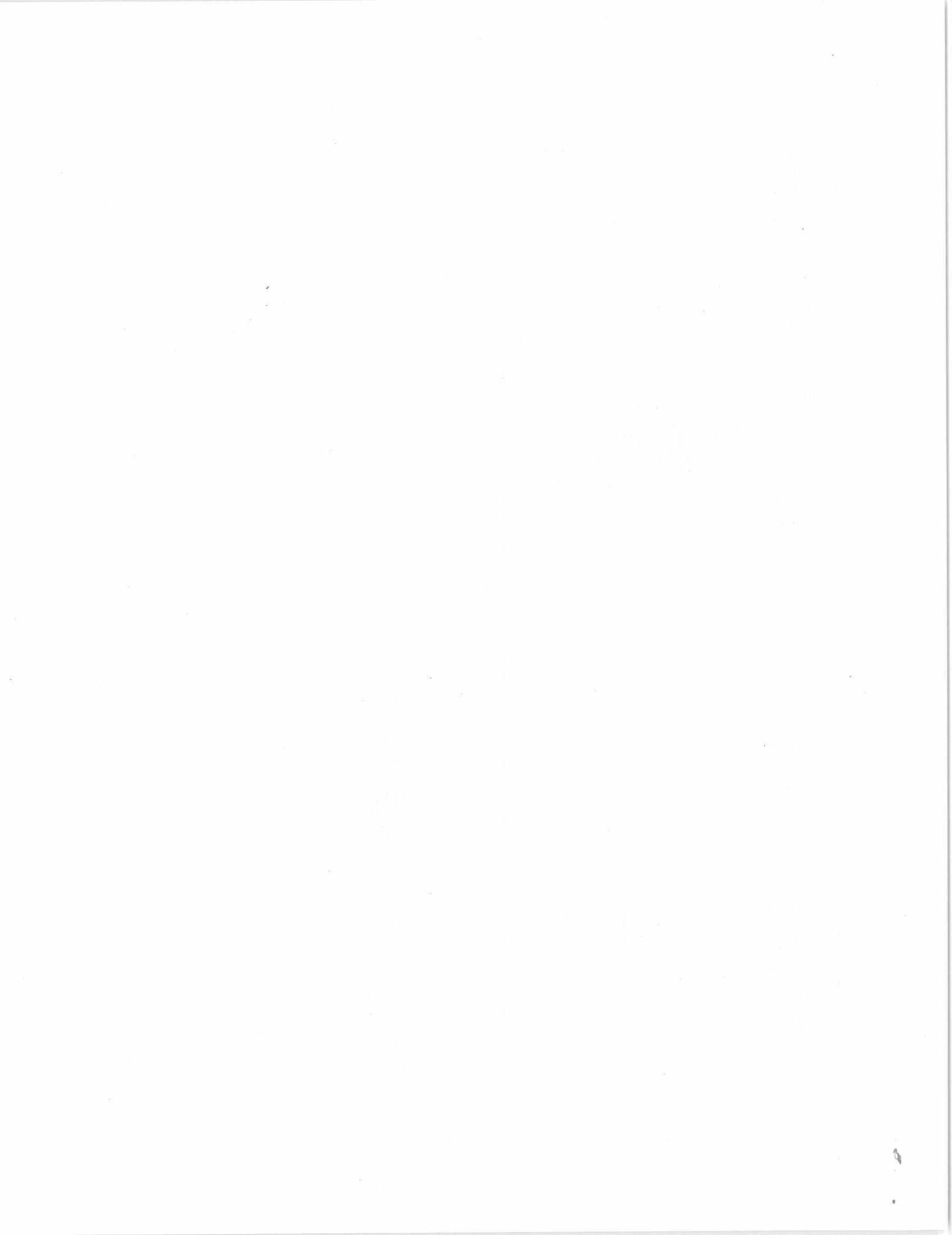
## Contact

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**GREEN BUILDING INITIATIVE**





## Green Globes for New Construction

The Green Building Initiative's™ (GBI) Green Globes environmental assessment and rating system is a revolutionary green management tool that includes an assessment protocol, rating system and guide for integrating environmentally-friendly design into commercial buildings.

Designed for use on building projects of any size, Green Globes is suitable for everything from large and small offices and multi-family structures, to institutional buildings such as schools, universities and libraries. Its unique interactive platform is flexible and user-friendly, providing a practical and affordable way for all building professionals, regardless of experience, to make their projects more sustainable.

Once complete, the Green Globes tool also facilitates recognition of a project's green attributes through third-party assessment.

### How Green Globes Works

While many green building tools claim to be Web-enabled, only Green Globes offers a comprehensive and fully interactive experience.

Once the user completes an online questionnaire, the system generates a point score and offers project design suggestions aimed at reducing the building's overall environmental impact. Suggestions are supported by links to other resources that provide best design practices, standards and information on building systems and materials. They are designed to help users achieve a higher Green Globes score and, ultimately, a better performing building.

Projects are awarded up to 1,000 points based on their performance in seven areas of assessment:

#### 1. Project Management – 50 Points

Points are awarded for: integrated design, environmental purchasing, commissioning–documentation and emergency response planning.

#### 2. Site – 115 Points

Points are awarded for: site development, reduced ecological impacts, the enhancement of watershed features and site ecology improvement.

#### 3. Energy – 360 Points

Points are awarded for: energy consumption, energy demand minimization, "right sized" energy-efficient systems, renewable sources of energy and energy-efficient transportation.

#### 4. Water – 100 Points

Points are awarded for: water consumption, water-conserving features and the reduction of off-site water treatment.

#### 5. Resources – 100 Points

Points are awarded for: materials with low environmental impact, minimized consumption and depletion of material resources, re-use of existing structures, building durability, adaptability, and disassembly, and the reduction, re-use and recycling of waste.

#### 6. Emissions, Effluents and Other Impacts – 75 Points

Points are awarded for: air emissions, ozone depletion and global warming, contamination of sewers or waterways, land and water pollution, integrated pest management, and storage of hazardous materials.

#### 7. Indoor Environment – 200 Points

Points are awarded for: effective ventilation system, source control of indoor pollutants, lighting design and integration of lighting systems, thermal comfort and acoustic comfort.

### **Green Globes Scoring**

Projects that achieve a score of 35 percent or more become eligible for a Green Globes rating of one, two, three or four globes, as follows:

- One Globe: 35-54 percent
- Two Globes: 55-69 percent
- Three Globes: 70-84 percent
- Four Globes: 85-100 percent

However, a building cannot be promoted as having achieved a Green Globes rating until it has undergone a two-stage assessment process.

Stage I is initiated once the user completes the online questionnaire, which is then reviewed against the construction documentation generated during the design process. Providing the building is on target to achieve a minimum 35 percent of the 1,000 possible points, the design team receives a Certificate of Achievement.

Stage II assessment occurs post-construction and includes a site visit and walk-through by a qualified third-party assessor. The GBI currently oversees a team of Green Globes-trained assessors, who are primarily licensed architects and engineers with significant experience in building sciences and sustainability issues.

To further strengthen its third-party assessment program, the GBI recently announced an agreement with CSA America, Inc., a leading developer of standards and codes, to develop an independently accredited Green Globes Personnel Certification Program. Based on ISO 17024 General Requirements for Bodies Operating Certification Systems of Persons, it will be the industry's first independently administered certification program for third-party assessors of green buildings.

### **Competition, Consensus Standards Development and Leading Innovations**

The GBI believes that having more than one credible rating system on the market is helping to accelerate the adoption of green building practices. In addition to supporting the diversity of buildings and building professionals, competition is doing for green building what it has done in countless other areas—driving improvements and lowering costs. This benefits users of the various systems as well as our shared environment.

The GBI's commitment to continual improvement can be seen in the advancements it has made since introducing Green Globes in the United States at the start of 2005:

- GBI was the first green building organization to be accredited as a standards developer by the American National Standards Institute (ANSI) and is now well into the process of establishing Green Globes as the first ANSI standard for commercial green building.
- GBI commissioned the development of a life cycle assessment (LCA) tool, which it is integrating into Green Globes—another rating system first. LCA is considered to be the most effective way to compare the environmental impacts of building materials and assemblies.
- To help advance the green movement as a whole, GBI supported the development of a generic version of its LCA tool—the ATHENA® *EcoCalculator for Assemblies*—which is available from the Athena Institute (<http://www.athenasmi.ca>), free of charge, to the entire sustainable design community.

GBI's status as an innovator was also reinforced by the American Institute of Architects' and Architecture 2030's recent call for climate change legislation based on energy data generated through the Department of Energy's Commercial Buildings Energy Consumption Survey (CBECS). Widely considered to be the most accurate and reliable source of energy benchmarking information, GBI's Green Globes and the EPA's Energy Star program are the only rating systems that rely on this important database. Green Globes is unique in its emphasis on using CBECS for both its design and existing buildings modules, where it serves as the benchmark for measured reductions in energy consumption.