Green Building Initiative—
Green Globes

Erin Shaffer
Vice President
Federal Outreach
The Green Building Initiative (GBI)

• A 501(c)(3) non-profit organization formed in 2004, based in Portland, Oregon

• Dedicated to advancing green design and operation in commercial marketplace

• Offer practical and affordable approaches to green building design, assessment and certification

• Own US license to Green Globes environmental assessment and rating system

• ANSI Accredited Standards Developer
What is Green Globes?

North America’s first interactive design guidance, environmental assessment and rating tool.
Brief History of Green Globes®

Green Globes USA is the first rating system to become an American National Standard for commercial green building.

BREEAM UK

BREEAM Canada

BREEAM GreenLeaf

Green Globes-US/CAN

100,000 buildings certified

950 buildings certified
Green Globes – a Life Cycle Approach to Sustainability

1. **Green Globes for New Construction**
   Guides the Integrated Design Process at each stage of project through delivery.

2. **Green Globes for Continual Improvement of Existing Buildings**
   Establishes the baseline, gives a current performance report, guides improvement.
Green Globes

- American National Standards Institute (ANSI) Accredited Standards Developer

- Developed Green Globes as an industry standard
  - Three years; vetted by the industry
  - GBI ANSI Standard includes CIEB criteria
Green Building Initiative

- Green Building Initiative Establishes American National Standard for Commercial Green Building

- ANSI/GBI 01-2010: *Green Building Assessment Protocol for Commercial Buildings* was derived from the Green Globes environmental design and assessment rating system for New Construction and was formally approved on March 24, 2010.

- ANSI/GBI 01-2010 is the first, and only, green building rating system for commercial buildings to become an American National Standard, as approved by the American National Standards Institute (ANSI).

- Pilot project opportunities currently available
# ANSI Technical Committee

<table>
<thead>
<tr>
<th>Industry</th>
<th>Users</th>
<th>Third-Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Wood Council</td>
<td>AIA</td>
<td>AMERICAN LUNG ASSOCIATION®</td>
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<tr>
<td>Steel Recycling Institute</td>
<td></td>
<td></td>
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<tr>
<td>American Concrete Institute</td>
<td>IAPMO</td>
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<td>ACI</td>
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<td>Alliance for Water Efficiency</td>
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<td>PMI</td>
<td>THE GREEN TEAM INC.</td>
<td>UNIVERSITY OF MINNESOTA</td>
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<tr>
<td>PLUMBING MANUFACTURERS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INSTITUTE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Green Globes® Environmental Assessment Areas

1. Management  (50%)
2. Site           (11.5%)
3. Energy         (36%)
4. Water          (80%)
5. Resources      (10%)
6. Emissions      (10.5%)
7. Indoor Environment (28.5%)

New Construction = 1000 points available

Continual Improvement of Existing Bldgs = 1000 points
University of Minnesota compared Green Globes and LEED.

Among their findings:

- More similarities than differences
- 80-85% point overlap between Green Globes and LEED
- Green Globes places greater emphasis on energy use and better integrates LCA
Green Globes® LCA Credit Calculator

**Winner of awards**

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**Total Impacts by Building Component**

<table>
<thead>
<tr>
<th>Component</th>
<th>Primary Energy (MJ)</th>
<th>GWP (kg CO2e)</th>
<th>Weighted Resource Use (kg)</th>
<th>Acidification Potential (kg S+4 eq)</th>
<th>Haze Respiratory Effects Potential (kg PM2.5 eq)</th>
<th>Eutrophication Potential (kg N eq)</th>
<th>Ozone Depletion Potential (kg CFC-11 eq)</th>
<th>Smog Potential (kg NOx eq)</th>
<th>Points Possible</th>
<th>Points Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundations &amp; Footings TOTAL</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Whole Building TOTAL</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**The Amount of Square Footage That Each Assembly Is Used in Your Building**

<table>
<thead>
<tr>
<th>Assembly</th>
<th>Percentage of Total</th>
<th>Primary Energy Consumption (MJ)</th>
<th>Weighted Resource Use (kg)</th>
<th>Acidification Potential (kg S+4 eq)</th>
<th>Haze Respiratory Effects Potential (kg PM2.5 eq)</th>
<th>Eutrophication Potential (kg N eq)</th>
<th>Ozone Depletion Potential (kg CFC-11 eq)</th>
<th>Smog Potential (kg NOx eq)</th>
<th>Composite percent higher or lower than average</th>
<th>Point multiplier</th>
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</thead>
<tbody>
<tr>
<td>Square footage</td>
<td>94.91</td>
<td>38.66</td>
<td>8.16</td>
<td>2.22</td>
<td>13.47</td>
<td>135.23</td>
<td>0.02</td>
<td>38.25</td>
<td></td>
<td></td>
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<tr>
<td>Square footage</td>
<td>97.17</td>
<td>64.55</td>
<td>9.40</td>
<td>2.56</td>
<td>16.46</td>
<td>98.44</td>
<td>0.03</td>
<td>42.03</td>
<td>26%</td>
<td>0.0</td>
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<tr>
<td>Square footage</td>
<td>92.95</td>
<td>12.76</td>
<td>7.23</td>
<td>1.89</td>
<td>10.49</td>
<td>172.03</td>
<td>8.01</td>
<td>34.48</td>
<td>26%</td>
<td>0.0</td>
</tr>
<tr>
<td>Square footage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Concrete Volume (yG)**

| Volume | 3046.15 | 2532.90 | 324.45 | 82.17 | 626.72 | 8649.19 | 1.00 | 624.58 |

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**SBIC**

**GREEN BUILDING INITIATIVE**
1 Management

New Construction

Integrated design process

Environmental purchasing

Commissioning (plans for systems testing after construction)

Emergency response plan

Existing Building

EMS Documentation (policy, goals, targets, action plans)

Purchasing Policy (including energy efficient products)

Emergency Response

Tenants Awareness (communication, tenants satisfaction)

Emergency response flip charts

Environmental Choice™ Program
Sample of Environmental Management Questionnaire

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Management System (EMS) Documentation</td>
<td></td>
<td>30</td>
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<tr>
<td>Does building management have a written environmental policy?</td>
<td>☑ Yes</td>
<td>10</td>
</tr>
<tr>
<td>Are there stated goals and targets documented in the policy manual with respect to each of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy conservation?</td>
<td>☑</td>
<td>2</td>
</tr>
<tr>
<td>Water conservation?</td>
<td>☑</td>
<td>1</td>
</tr>
<tr>
<td>Waste reduction and recycling?</td>
<td>☑</td>
<td>2</td>
</tr>
<tr>
<td>Environmental purchasing?</td>
<td>☑</td>
<td>1</td>
</tr>
<tr>
<td>Reduction in use and proper handling of hazardous products?</td>
<td>☑</td>
<td>2</td>
</tr>
<tr>
<td>Training and education?</td>
<td>☑</td>
<td>2</td>
</tr>
</tbody>
</table>
Site

New Construction

Development area

Ecological impacts (erosion, heat island, light pollution)

Watershed features

Site ecology enhancement

Existing Building

Site assessment

Site enhancement

Natural corridor and Riparian Zone

Green roof

Brownfield

Native plant species – Bulrushes, Goldenrod, and Switchgrass
3 Energy

New Construction

Energy performance

Reduced demand (space optimization, microclimatic design, daylighting, envelope design, metering)

Energy efficiency features (lighting, heating & cooling equipment).

Renewable energy

Transportation

Existing Building

Energy performance and CO₂ emissions

Energy efficiency features (lighting, heating & cooling equipment, controls, building envelope, green energy (solar, wind, biomass, etc))

Energy Management (energy policy, audits, targets, metering, operating manual, schedules, preventive maintenance)

Transportation (access to public transport, bicycles, carpooling)
Integrates EPA Target Finder & Portfolio Manager

Design

Energy Consumption

Operation

- Gas month 1: 1,488
- Gas month 2: 2,984
- Gas month 3: 2,307
- Gas month 4: 1,071
- Gas month 5: 211
- Gas month 6: 15
- Gas month 7: 0
- Gas month 8: 0
- Gas month 9: 20
- Gas month 10: 0

Cost:
- $1,088.32
- $4,378.84
- $2,302.27
- $2,342.17
- $416.66
- $331.11
- $290.67
- $306.7
- $652.68

Number of PCs: 120
Number of Hours: 32
4 Water

New Construction

Water performance

Water conserving features (equipment, meters, irrigation systems)

On-site treatment (stormwater, greywater, blackwater)

Existing Building

Water performance

Water conserving features (equipment faucets, toilets, urinals, showers, cooling towers, irrigation, stormwater systems)

Water management (policy, monitoring, water audit, fix leaks)
5 Resources

New Construction

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

Existing Building

Waste reduction and Recycling (collection/storage/handling facilities, composting)

Waste Reduction Workplan (waste audit, diversion rate, construction, renovation and demolition waste)
Emissions & HazMat

New Construction
Air emissions (boilers)

Ozone depletion

Sewer & waterway protection

Pollution control (procedures, compliance with standards)

Existing Building
Air emissions (boilers)

Water effluents (floor drains, roof drains, landscaping practices, glycol discharges)

Hazardous materials (asbestos, radon, PCBs, refrigerants, storage tanks, drinking water)

Hazardous products, HCS, health & safety (MSDS, health and safety, management, pesticides)

Low-NOx burners

Pest prevention

Storage Tank

Smog

MSDSs, equipment manuals, etc.
## Indoor Environment

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

### Existing Building
- **Indoor air quality** (ventilation, filtration, humidification, cooling towers, parking and receiving, control of pollutants at source, IAQ management, mold, temperature)
- **Lighting** (Lighting features, Lighting Management)
- **Noise** (volume, acoustic privacy)

*Insulated cavity closer discourages mold and bacteria growth*
Green Globes Assessment and Rating System for New Construction Projects
Third-Party Assessment

- Complete On-line Survey
- Highly Qualified Third-party Assessor
- Document Review
- On-site Visit & Interview
Green Globes Certification Plaque

FOUR-GLOBES CERTIFIED

BUILDING NAME

2008

RECOGNIZED FOR ENVIRONMENTAL AND ENERGY-EFFICIENT DESIGN BY THE GREEN GLOBES™ DESIGN AND RATING SYSTEM.
Green Globes Strengths

- Web-based, interactive, design, assessment and rating system
- Emphasizes energy
- Benchmarks against Energy Star
- Incorporates Life Cycle Assessment
- Requires third party site visits for certification
- Cost effective and user friendly
Third-Party MOUs/Partnerships
Green Globes Projects

[Logos of various organizations and images of buildings]
Private Sector Recognition

- Recognized by commercial insurance companies
Green Globes Drivers: Federal

Testified before Congress: Senate Energy and Environmental Committees

“How Green Rating Systems Affect Energy Consumption”

Written by name into Green Schools Legislation

ED.gov
U.S. Department of Education

Testified before House Committee on Veterans Affairs (VA)

21 VA buildings completing Green Globes-CIEB certification process

The National Institute of Health recognizes GG to assess laboratories
Personnel Certifications
Green Globes Professionals – individuals who receive training at the Green Globes user level who are qualified to complete online evaluations, offer project management and technical support to clients undergoing the building assessment and certification process.
Green Globes Professional

The GGP designation will:

- expand the base of experts in green building best practices
- focus on use of the Green Globes rating system

- Qualified candidates:
  - five years experience in the building industry
  - familiarity with current sustainability practices
Training and Examination Subject Matter

- Incorporation of energy and environmental best practices into green building design;

- The Green Globes online assessment tools;

- Assessment protocol for both new and existing buildings and LCA;

- Energy modeling, including use of the EPA’s Energy Star tools; and

- The Green Globes Certification process
Learning Management System Delivers Training

Green Globes Professional Training and Testing

- The Green Globes training process is web-based and user-friendly.

- Registration, application, training sessions and tests are all administered online.

- Training and testing is completed in a Learning Management System (LMS)
Green Globes Assessor

- **Green Globes Assessors** – highly experienced industry professionals who complete extensive training and testing and are authorized and individually assigned by the GBI to perform on-site, third-party building assessments and that can lead to the award of an official one through four Green Globes building rating/certification.

- Specialization in NC/CIEB or both
Green Globes Assessor

- **GOAL**: build nationwide network of individuals qualified to assess and rate Green Globes buildings

- Minimum requirements include:
  - 10 years of total industry experience;
  - 5 years of specific functional experience;
  - Formal education and a degree in Architecture, Engineering, or related field;
  - Prior knowledge of green building and/or management practices, environmental issues, and sustainability; and
  - Demonstrated experience using sustainable building practices, which includes documented involvement in a minimum of three building projects where sustainable improvements were applied.

*GGA credential represents the nation’s first and only formal training program for qualified green building assessors open to the public*
• Applications for both programs are being accepted

• Discounts are available for:
  ▪ Other professional accreditation, such as LEED AP
  ▪ Registration of a Green Globes project (comes back in rebate form)

• For more information, and to register, please visit www.thegbi.org
New Users:

- Go to www.thegbi.org
- Scroll to Register and Subscribe
- Or take a Free 30-day Trial
- Click!
Thank you for your time today

Erin Shaffer
VP, Federal Outreach

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