Green Building Initiative

Materials Trends & Green Globes

May 15, 2018

2018 Green Globes Annual User Summit

Panel:
- Vicki Worden, GBI President & CEO
- Charles Kibert, Ph.D., GGA, University of Florida & Cross Creek Initiative
- Jane Rohde, GGA, JSR Associates, Inc.
Overview – what this discussion will address

What role do materials & resource issues play in Green Globes certification?
What are the major trends we are seeing related to materials issues?
What are the most often and least often pursued credits in Green Globes today and why?
Where are the overlaps between the health, wellness, and productivity concerns of building owners & tenants today and Green Globes?
What are the most glaring gaps in education today for the A/E community?
Your questions, observations, and input...
Codes vs. Standards vs. Rating Systems

• Building codes – IBC, local codes, plumbing, mechanical
• Standards – ANSI, ASTM, ASHRAE (ANSI/GBI 01-2010)
• Green codes – IgCC and ASHRAE 189.1, ICC 700 – National Green Building Standard, CalGreen
• Green product certifications – EnergyStar, WaterSense, SFI, FSC, CSA, ATFS, Greenguard, GreenSeal, Cradle to Cradle, GreenSquared, FloorScore
• Green building certifications – Energy Star, Green Globes, LEED
Green Building Certification Uptake in North America

Existing Bldgs. Only
Green Globes for New Construction (NC)
- Guides the integrated design process at each stage of the project

Green Globes for Existing Buildings (EB)
- Establishes a baseline and guides improvement for individual buildings or portfolios

Green Globes EB for Healthcare
- Specializes for healthcare buildings with licensed in-patient beds

Green Globes for Sustainable Interiors (SI)
- Designed for tenant improvement projects, fit-outs and remodels
Green Globes
New Construction
2013 Point Distribution

7 Areas of Assessment
1000 Possible Points

- Energy: 39.0%
- Water: 11.0%
- Indoor Environment: 16.0%
- Materials & Resources: 12.5%
- Project Management: 5.0%
- Site: 11.5%
- Emissions: 5.0%
Green Globes
Existing Building Point Distribution

6 Areas of Assessment
1000 Possible Points

- Energy 35.0%
- Emissions 17.5%
- Resources 11.0%
- Indoor Environment 18.5%
- Water 8.0%
- Environmental Management 10.0%
Green Globes Sustainable Interiors Point Distribution

6 Areas of Assessment

1000 Possible Points

- Energy: 30.0%
- Materials & Resources: 25.0%
- Indoor Environment: 25.0%
- Project Management: 7.0%
- Emissions: 4.0%
- Water: 9.0%
# Green Globes NC *2019* Point Distribution

<table>
<thead>
<tr>
<th>Environmental Assessment Area</th>
<th>Total Points Available</th>
<th>Minimum Percentage of Points Required For Compliance at the First Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Management</td>
<td>100</td>
<td>20% of applicable points</td>
</tr>
<tr>
<td>Site</td>
<td>150</td>
<td>20% of applicable points</td>
</tr>
<tr>
<td>Energy</td>
<td>260</td>
<td>20% of applicable points</td>
</tr>
<tr>
<td>Water Efficiency</td>
<td>190</td>
<td>20% of applicable points</td>
</tr>
<tr>
<td>Materials</td>
<td>150</td>
<td>20% of applicable points</td>
</tr>
<tr>
<td>Indoor Environment</td>
<td>150</td>
<td>20% of applicable points</td>
</tr>
<tr>
<td>Total</td>
<td>1000 (less Not Applicable points)</td>
<td>20% of applicable points</td>
</tr>
</tbody>
</table>
Green Globes NC 2013

Building Assembly & Interior Fit-Out

Performance Path – Life Cycle Assessment

Prescriptive Path –

- Environmental Product Declarations (EPD)
- 3rd Party Certification (uses consistent Product Category Rules and conforms to ISO standards)
- Wood Certification – 4 options (incorporated in Prescriptive Path)

Whole Building Life Cycle:
- Reuse of Existing Buildings
- Building Life Service Plan - Durability, Adaptability, and Disassembly

Construction Waste Management

Design & Construction of Waste Management Space
e.g., Prescriptive: Earn Credit for Industry-wide or Brand-Specific EPDs...or

...third-party product certifications + sustainable forestry certs
IEQ & Source Control

• VOCs
  • Adhesives and sealants, flooring, paints
  • Uses South Coast Air Quality Management District Rule 1168, GreenGuard, Cal OEHHA.
Chemical Transparency

Hazard vs. Exposure – Product Risk Assessment
Banned Lists, Redlists – Cradle-to-Cradle, Living Building Challenge, GreenScreen (e.g., PVC)
HPDs, Disclosure & Optimization – LEED
Product Risk Assessment – GBI’s ANSI update
Product Lens™ - UL simplified ingredients assessment
Self-declaration – the latest
Health, Wellness, and Productivity

- Air quality & ventilation
- Humidity
- Thermal comfort
- Acoustic comfort
- Walkability
- Healthy snacks
- Stairs vs. elevators
- Daylight & lighting
Q: What are the most often and least often pursued credits in Green Globes today and why?

Q: Where are the overlaps between the health, wellness, and productivity concerns of building owners & tenants today and Green Globes?

Q: What are the most glaring gaps in education today for the A/E community?
### Green Globes NC Credit Pursuit – Most often achieved – out of 257 bldgs.

<table>
<thead>
<tr>
<th>Criteria Question</th>
<th>Maximum Points Possible</th>
<th># of Projects with Score &gt;0</th>
<th>Average Score</th>
<th># of projects = 0 points</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3.5.4</strong> Waste</td>
<td>9.0</td>
<td>219.0</td>
<td>3.3</td>
<td>38</td>
<td>0</td>
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<td><strong>3.5.4.2</strong></td>
<td>Operational Waste</td>
<td>2.0</td>
<td>212.0</td>
<td>1.3</td>
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<tr>
<td><strong>3.5.6</strong> Resource Conservation</td>
<td>6.0</td>
<td>215.0</td>
<td>3.0</td>
<td>42</td>
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<tr>
<td><strong>3.5.6.1</strong> Minimized Use of Raw Materials</td>
<td>3.0</td>
<td>204.0</td>
<td>2.1</td>
<td>53</td>
<td>0</td>
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<tr>
<td><strong>3.5.7</strong> Envelope – Roofing / Openings</td>
<td>10.0</td>
<td>251.0</td>
<td>6.8</td>
<td>6</td>
<td>5</td>
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<tr>
<td><strong>3.5.7.1</strong> Roofing Membrane Assemblies and Systems</td>
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<td>246.0</td>
<td>2.1</td>
<td>11</td>
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<td><strong>3.5.7.2</strong> Flashings</td>
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<td>242.0</td>
<td>2.1</td>
<td>15</td>
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<tr>
<td><strong>3.5.7.3</strong> Roof and Wall Openings</td>
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<td>247.0</td>
<td>2.6</td>
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<td>6</td>
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<tr>
<td><strong>3.5.8</strong> Envelope – Foundation, Waterproofing</td>
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<td>239.0</td>
<td>3.5</td>
<td>18</td>
<td>14</td>
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<tr>
<td><strong>3.5.8.1</strong> Foundation Systems</td>
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<td>239.0</td>
<td>2.6</td>
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<td>14</td>
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<td><strong>3.5.8.2</strong> Below Grade Wall Slabs and Above Grade Horizontal Assemblies</td>
<td>2.0</td>
<td>141.0</td>
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<tr>
<td><strong>3.5.9</strong> Envelope – Cladding</td>
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<td>243.0</td>
<td>3.0</td>
<td>14</td>
<td>0</td>
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<tr>
<td><strong>3.5.9.1</strong> Exterior Wall Cladding Systems</td>
<td>3.0</td>
<td>237.0</td>
<td>2.2</td>
<td>20</td>
<td>0</td>
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<tr>
<td><strong>3.5.10</strong> Envelope – Barriers</td>
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<td>234.0</td>
<td>3.3</td>
<td>23</td>
<td>18</td>
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<tr>
<td><strong>3.5.10.1</strong> Air Barriers</td>
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<td>2.8</td>
<td>31</td>
<td>22</td>
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</tbody>
</table>
Green Globes provides two paths for assessing building assemblies (core and shell including envelope):

Path A: Performance Path for Building Assemblies - 33 points
Path B: Prescriptive Path for Building Assemblies - 20 (out of 33) points

Points cannot be combined between paths. Please review and select one of the two pathways below.

<table>
<thead>
<tr>
<th>Criteria Question</th>
<th>Maximum Possible</th>
<th># of Projects with Score &gt;0</th>
<th>Average Score</th>
<th># of projects = 0 points</th>
<th>N/A</th>
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</thead>
<tbody>
<tr>
<td>3.5.1 Building Assembly (core and shell including envelope)</td>
<td>33.0</td>
<td>57.0</td>
<td>5.0</td>
<td>200</td>
<td>3</td>
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<tr>
<td>Path A: Performance Path for Building Assemblies</td>
<td>33.0</td>
<td>23.0</td>
<td>3.0</td>
<td>234</td>
<td>128</td>
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<td>Path B: Prescriptive Path for Building Assemblies</td>
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<td>2.1</td>
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<td>132</td>
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<tr>
<td>3.5.2 Interior Fit-out (including finishes and furnishings)</td>
<td>16.0</td>
<td>51.0</td>
<td>1.5</td>
<td>206</td>
<td>2</td>
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<tr>
<td>Path A: Performance Path for Interior Fit-Outs</td>
<td>16.0</td>
<td>5.0</td>
<td>0.3</td>
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<td>147</td>
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<tr>
<td>Path B: Prescriptive Path for Interior Fit-Outs</td>
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<td>46.0</td>
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<td>112</td>
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<td>3.5.3 Re-use of Existing Structures</td>
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<td>Façades</td>
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<td>Non-structural Elements</td>
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<td>76.0</td>
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<td>3.5.5 Building Service Life Plan</td>
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<td>1.0</td>
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<td>1</td>
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