

ADEQ Headquarters, North Little Rock, Arkansas



GovEnergy: Overview of Sustainable Technologies and Certifications

The Green Building Initiative (GBI)

- A 501(c)(3), formed in 2004, based in Portland, Oregon
- Dedicated to advancing green design and operation in the commercial marketplace
- Offer practical and affordable approaches to green building assessment and certification
- Own US license to Green Globes environmental assessment and rating system
- ANSI Accredited Standards Developer



Commercial Program

What is Green Globes?



North America's
first interactive design
guidance, environmental
assessment and rating tool

Brief History of Green Globes®

BREEAM UK

100,000 buildings certified

BREEAM Canada

BREEAM GreenLeaf

Green Globes-US/CAN

950 buildings certified

Green Globes USA is on its way to becoming first American National Standard for commercial green building.

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



- Develop Green Globes as an industry standard
 - Three years
 - Vetted by the industry
- GBI proposed ANSI to include CIEB criteria

ANSI Technical Committee

Industry

American Wood Council



Users

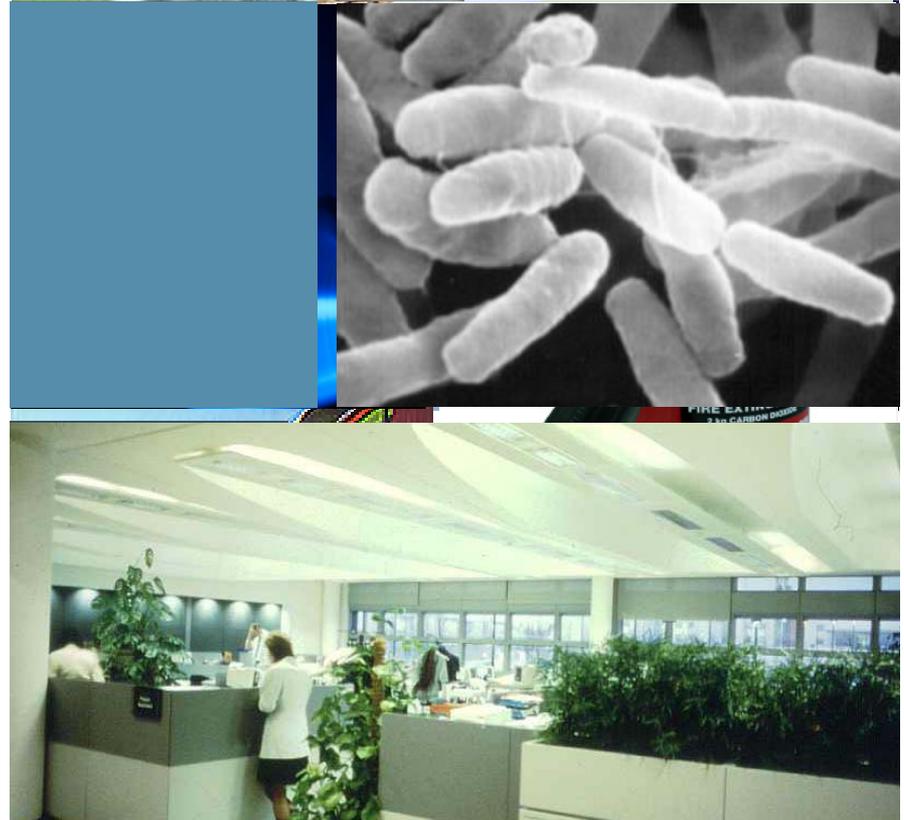


Third-Party



Green Globes® Environmental Assessment Areas

50%	1 Management
11.5	2 Site
36	3 Energy
80	4 Water
10	5 Resources
7.5	6 Emissions
28.5	7 Indoor Environment



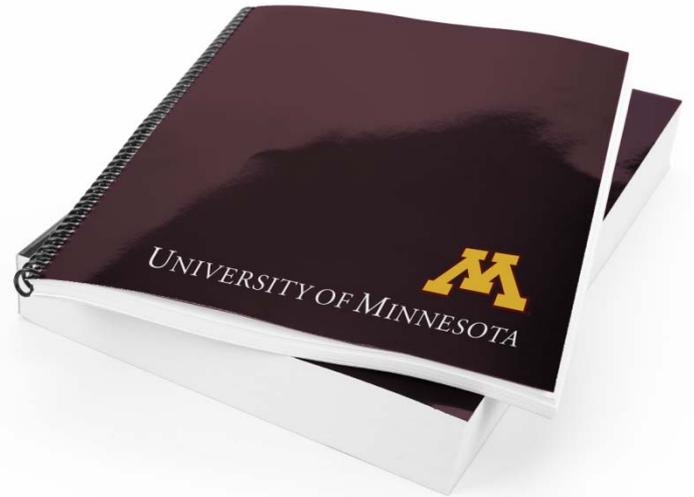
New Construction 1000 points
Existing Buildings 1000 points

Rating System Report

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

Green Globes LCA Credit Calculator v1.9.3 USA Zone 6 Low-rise v-1-9-3 [Compatibility Mode] - Microsoft Excel non-commercial us

Home Insert Page Layout Formulas Data Review View FlowBreeze

Tahoma 9

Clipboard Font Alignment Number Styles

D10 0

	D	E	F	H	J	L	N	P	R	T	V	W
TOTAL IMPACTS BY BUILDING COMPONENT			Primary Energy (MJ) TOTAL	GWP (kg) TOTAL	Weighted Resource Use (kg) TOTAL	Acidification Potential (moles of H+ eq) TOTAL	HH Respiratory Effects Potential (kg PM2.5 eq) TOTAL	Eutrophication Potential (kg N eq) TOTAL	Ozone Depletion Potential (kg CFC-11 eq) TOTAL	Smog Potential (kg NOx eq) TOTAL	POINTS POSSIBLE	POINTS AWARDED
FOUNDATIONS & FOOTINGS			0	0	0	0	0	0	0	0	0.0	0.0
WHOLE BUILDING TOTAL			0	0	0	0	0	0	0	0	0	0

assembly tabs at bottom of spreadsheet)

THE AMOUNT OF SQUARE FOOTAGE THAT EACH ASSEMBLY IS USED IN YOUR BUILDING

	Percentage of total	Primary Energy Consumption (MJ)	Weighted Resource Use (kg)	Global Warming Potential (kg CO2 eq)	Acidification Potential (moles of H+ eq)	HH Respiratory Effects Potential (g PM2.5 eq)	Eutrophication Potential (mg N eq)	Ozone Depletion Potential (mg CFC-11 eq)	Smog Potential (g NOx eq)	Composite percent higher or lower than average	Point multiplier
Square footage		94.91	38.66	8.36	2.22	13.47	135.23	0.02	38.25		
0		97.17	64.55	9.49	2.56	16.46	98.44	0.03	42.03	26%	0.0
0		92.65	12.76	7.23	1.89	10.49	172.03	0.01	34.48	-26%	0.0
0											
Square footage											
0		30.69	31.37	3.84	0.98	7.41	15.24	0.01	9.39		
0.00											
Concrete volume (yd3)											
0		3046.15	2532.90	324.45	82.17	626.72	8049.19	1.00	626.58		
0.00											

How-To Foundations & Footings Columns & Beams Intermediate Floors Exterior Walls Windows Interior Walls Roofs Summary

Winner of awards



SBIC

1 Management

New Construction

Integrated design process

Environmental purchasing

Commissioning (plans for systems testing after construction)

Emergency response plan

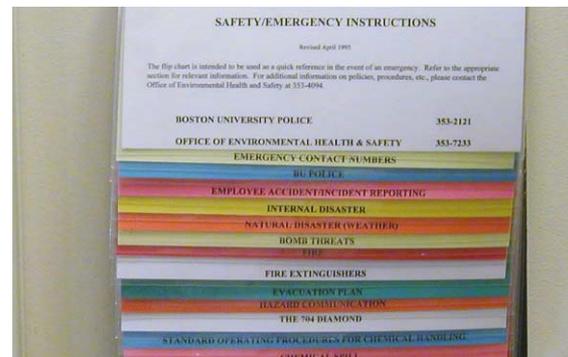
Existing Building

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

Question	Answer	Points
Environmental Management System (EMS) Documentation		30
<u>Does building management have a written environmental policy?</u>	<input checked="" type="radio"/> Yes <input type="radio"/> No	10
<u>Are there stated goals and targets documented in the policy manual with respect to each of the following:</u>		
	<input checked="" type="checkbox"/> Energy conservation?	2
	<input checked="" type="checkbox"/> Water conservation?	1
	<input checked="" type="checkbox"/> Waste reduction and recycling?	2
	<input checked="" type="checkbox"/> Environmental purchasing?	1
	<input checked="" type="checkbox"/> Reduction in use and proper handling of hazardous products?	2
	<input checked="" type="checkbox"/> Training and education?	2

2 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 – Bullrushes, 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)



Hydrogen station

Green roof

Efficient lighting

Bicycle storage

Energy metering

Integrates EPA Target Finder & Portfolio Manager

Design

ENERGY STAR
ENVIRONMENTAL LEADERSHIP ADDS VALUE TO YOUR BOTTOM LINE AND CORPORATE REPUTATION

Target Finder

Save Energy, Money, and Time

- Determine an annual energy target for your building design
- Compare energy use from simulations with your target
- Monitor your design's energy performance as building plans progress
- Evaluate the cost effectiveness of energy efficiency measures
- Minimize potential greenhouse gas emissions associated with your building design

EPA's energy performance rating uses a 1-100 scale. Lower energy use yields a higher performance rating. An ENERGY STAR rating is 75 or higher.

NEW FEATURES!

Facility Information

Washington, DC 20585
United States

Facility Characteristics		Estimated Design Energy			
Space Type	Gross Floor Area (Sq. Ft.)	Energy Source	Units	Estimated Total Annual Energy Use	Energy Rate (\$/Unit)
Office (General)	19,000	Electricity	kWh	238,160	\$ 0.073/kWh
Total Gross Floor Area	19,000	Natural Gas	kERu	147,840	\$ 0.012/kERu

Operation

Energy Consumption

Updating information for Merit Building (Large Office Building)

Please select the fuels or utilities used by the building, for which energy consumption figures will be entered:

Gas Electricity Propane Oil Steam Chilled Water

Please supply the following data in order that an Energy Star® energy target may be established:

How many people work in this facility during normal operating hours?

Number of PCs

How many hours per week is the facility open?

Month	cu ft	Cost
Gas month 1:	<input type="text" value="1,458"/>	<input type="text" value="\$1,988.38"/>
Gas month 2:	<input type="text" value="3,254"/>	<input type="text" value="\$4,315.84"/>
Gas month 3:	<input type="text" value="2,307"/>	<input type="text" value="\$2,802.27"/>
Gas month 4:	<input type="text" value="1,071"/>	<input type="text" value="\$2,342.17"/>
Gas month 5:	<input type="text" value="211"/>	<input type="text" value="\$416.56"/>
Gas month 6:	<input type="text" value="15"/>	<input type="text" value="\$58.11"/>
Gas month 7:	<input type="text" value="0"/>	<input type="text" value="\$30.07"/>
Gas month 8:	<input type="text" value="0"/>	<input type="text" value="\$38.07"/>
Gas month 9:	<input type="text" value="20"/>	<input type="text" value="\$60.56"/>

4 Water

New Construction

Water performance

Water conserving features
(equipment, meters, irrigation systems)

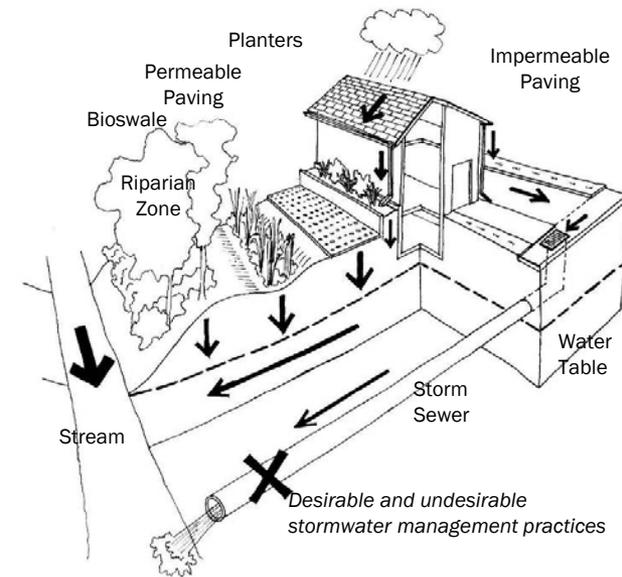
On-site treatment
(stormwater, greywater, blackwater)

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)



Permeable paving



Solar aquatics wastewater treatment,



Low-flush toilet



Bioswale,



Water-saving showerheads

5 Resources

New Construction

Low-impact systems and materials (LCA)

Minimal use of non-renewables

Reuse of existing buildings

Durability, adaptability and disassembly

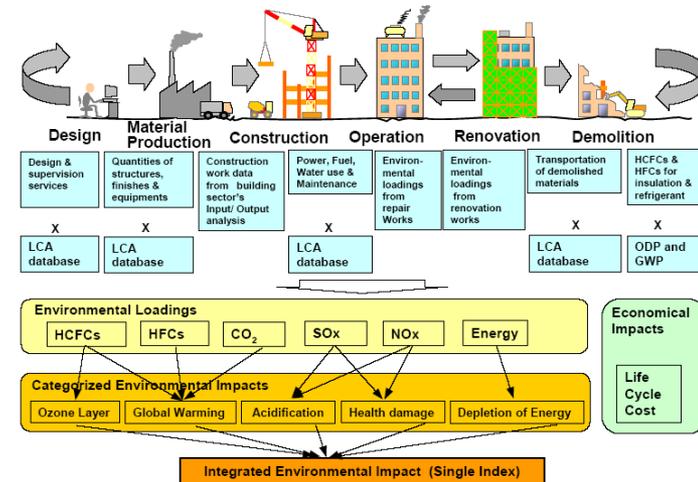
Demolition waste

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)



Reused Buildings



Alternative composite panels



Recycled carpet



6 Emissions & HazMat

New Construction
Air emissions (boilers)

Ozone depletion

Sewer & waterway protection

Pollution control (procedures, compliance with standards)

Existing Building

Air emissions (boilers)

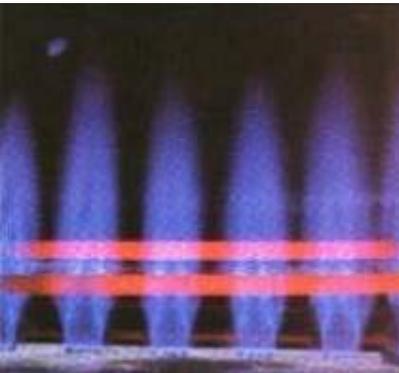
Water effluents (floor drains, roof drains, landscaping practices, glycol discharges)

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

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



Recuperative boiler



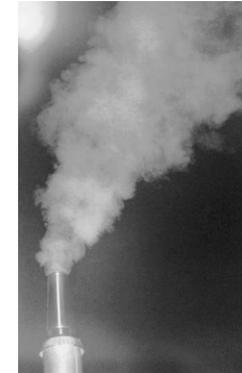
Low-NOx burners



Pest prevention



Storage Tank



Smog



MSDSs, equipment manuals, etc.

7 Indoor Environment

New Construction

Ventilation system

Indoor pollution control

Lighting (daylighting & electric)

Thermal comfort

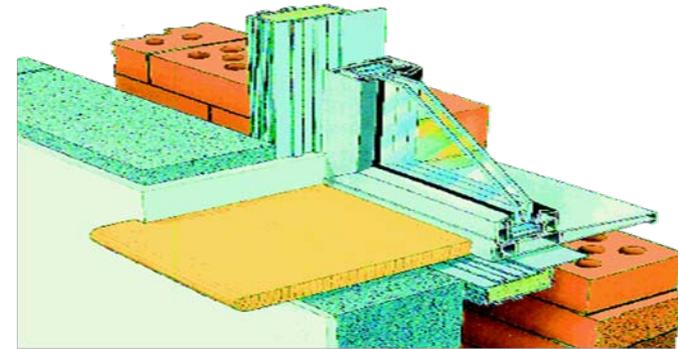
Acoustic comfort

Existing Building

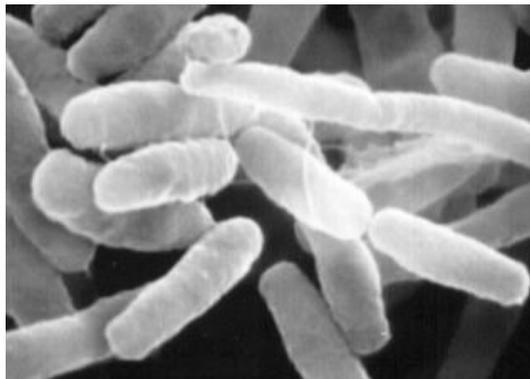
Indoor air quality (ventilation, filtration, humidification, cooling towers, parking and receiving, control of pollutants at source, IAQ management, mold, temperature)

Lighting (Lighting features, Lighting Management)

Noise (volume, acoustic privacy)



Insulated cavity closer discourages mold and bacteria growth

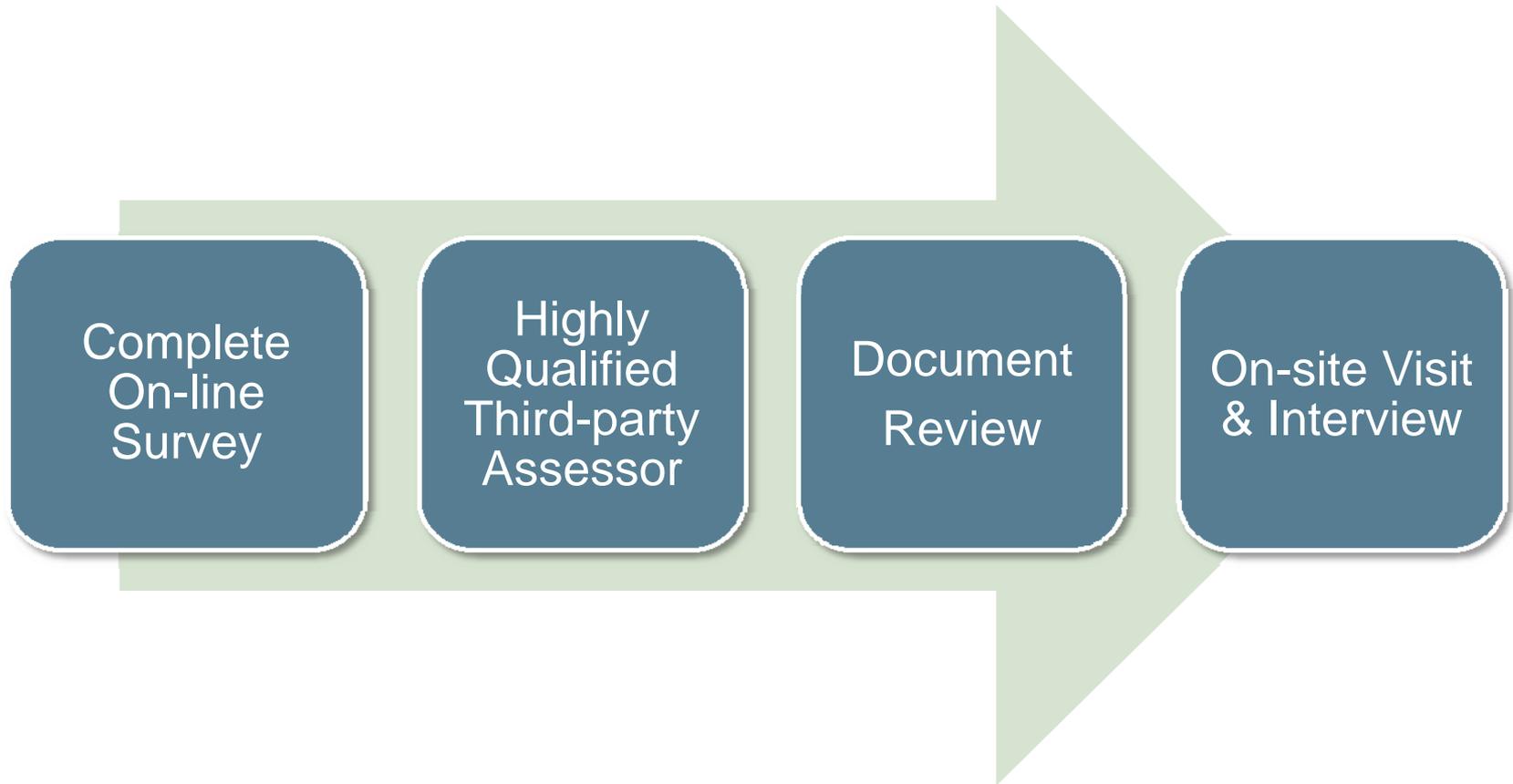


Scoring



Green Globes Assessment and Rating System for New Construction Projects

Third-Party Assessment



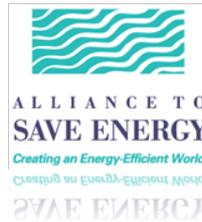
Green Globes Certification Plaque



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



Private Sector Recognition

- Recognized by commercial insurance companies



Inclusion in Obama Platform



BARACK OBAMA AND JOE BIDEN: PROMOTING A HEALTHY ENVIRONMENT

"We cannot afford more of the same timid politics when the future of our planet is at stake. Global warming is not a someday problem, it is now. We are already breaking records with the intensity of our storms, the number of forest fires, the periods of drought. By 2050 famine could force more than 250 million from their homes The polar ice caps are now melting faster than science had ever predicted. . . . This is not the future I want for my daughters. It's not the future any of us want for our children. And if we act now and we act boldly, it doesn't have to be."

[Barack Obama, Portsmouth, NH, 10/8/07]

Use Innovative Measures to Dramatically Improve Efficiency of Buildings:

- Set National Building Efficiency Goals: Barack Obama and Joe Biden will establish a goal of making all new buildings carbon neutral, or produce zero emissions, by 2030. They will also establish a national goal of improving new building efficiency by 50 percent and existing building
- Expand Federal Efficiency Grants: Barack Obama and Joe Biden will expand federal grant programs to help states and localities build more efficient public buildings that adopt aggressive green building provisions like those provided by **Green Globes** and the Leadership in Energy and Environmental Design program of the U.S. Green Buildings Council.

bills for families and businesses. Barack Obama and Joe Biden will provide early adopter grants and other financial assistance from the federal government to states that implement this energy efficient policy.

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Alberici Headquarters, St. Louis, MO



Personnel Certifications



- The GGP designation will:
 - expand the base of experts in accepted green building best practices
 - focus on use of the Green Globes rating system for new and existing commercial buildings.
- Qualified candidates
 - at least five years experience in the building industry
 - familiarity with current sustainability practices
- Training and Examination includes:
 - Green building and operations best practices;
 - Green Globes assessment protocol for both new and existing buildings;
 - Proficiency in using the Green Globes online assessment tools;
 - Life Cycle Assessment (LCA);
 - Energy modeling, including use of the EPA's Energy Star tools; and
 - Familiarity with the entire Green Globes Certification process from start to finish

- Established to build nationwide network of individuals qualified to assess and rate Green Globes buildings
- Minimum requirement include:
 - At least 10 years of total industry experience;
 - At least 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, including documented involvement in 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 currently being accepted
- Training will begin on October 15th
- Discounts are available for:
 - Early registration – before September
 - Other professional accreditation, such as LEED AP
 - Registration of a Green Globes project
- For more information, and to register, please visit www.thegbi.org



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.

Benefits of Green Homes

The green building trend goes beyond saving the environment. Owners of green homes reap a variety of benefits that include utility savings, improved indoor air quality and less overall maintenance. Not surprisingly, green homes also have less negative impact on the environment by saving energy and reducing waste, particularly during construction.

New Users:

- ✉ Go to **www.thegbi.org**
- ✉ Scroll to Register and Subscribe
- ✉ Or take a Free 30-day Trial
- ✉ Click!

Commercial



GBI™ offers the Green Globes software suite as a guide for integrating environmentally friendly design into new or existing buildings. The system includes an assessment protocol, rating system and suggestions for making buildings more environmentally friendly. [Learn more](#)

Hot News

[Comment Period for Nation's First American National Standard for Commercial Green Building Complete.](#) (June 30, 2008)

RSS feed

Latest News

- [Oklahoma Recognizes Green Building Initiative's™ Green Globes™ System.](#) (June 26, 2008)
 - [Green Building Initiative's™ Green Globes™ Module for Continual Improvement of Existing Buildings Gaining Momentum.](#) (June 22, 2008)
- Local Home Builders Launch New

Green Globes™



- ✉ [Learn about Green Globes](#)
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- ✉ [Sign Up for a New Construction 30-day Free Trial](#)
- ✉ [Sign Up for an Existing Building 30-day Free Trial](#)
- ✉ [Register and Subscribe](#)

Coming Events

Residential



GBI works with state and local home builder associations to develop locally-relevant green building programs. These programs help builders

Alberici Headquarters, St. Louis, MO



Thank you for your time today

Erin Shaffer

VP, Federal Outreach

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www.thegbi.org