

A Nationally Recognized Green Rating System

ADEQ Headquarters, North Little Rock, Arkansas



Agenda

- Introduction to the Green Building Initiative (GBI)
- Green Globes ®, New Construction (NC) and Continual Improvement of Existing Buildings (CIEB) Rating/Certification System
- Sample Projects

The Green Building Initiative

- Non-profit organization in Portland, Oregon
- Green Building Initiative Mission
 - To accelerate the adoption of building practices that result in energy efficient, healthier and environmentally sustainable buildings.
- Exclusive provider of the Green Globes rating and assessment system in the U.S.



Brief History of Green Globes®

BREEAM UK

200,000 buildings certified

BREEAM Canada

BREEAM GreenLeaf

Green Globes US/CAN

2500 buildings certified

BOMA Toronto data shows that Green Globes buildings have:

- **13%** less energy intensity than average commercial buildings
- **17%** higher waste diversion rates
- **19%** less water usage

Green Globes Strengths

- Online tool
- Emphasizes energy
- Benchmarks against Energy Star
 - Target Finder NC/Portfolio Manager CIEB
- Requires third party site visits for certification
- Cost Effective and scalable
- First -American National Standards Institute (ANSI) – recognized green rating and assessment tool in the US



Certification Similarities and Differences



Operated by:	USGBC	EPA	GBI & BOMA Canada
Number of points	...100	100	1000 or 0-100%
Submittals require additional documentation	●		
New Buildings	●		●
Existing Buildings	●	●	●
Score relative to other buildings		●	
Online interface with <u>Energy Star</u>		na	●
Online interactive questionnaire. Automated report		●	●
Useful to compare multiple buildings		●	●
Most effective for portfolio assessment			●
Criteria weighted. Partial scores possible			●
ANSI standard process			●

Green Globes: Tools

Green Globes for New Construction

Guides the integrated design process at each stage of project through delivery.

Green Globes for Continual Improvement of Existing Buildings

Establishes the baseline, gives a current performance report, guides improvement.

Green Globes for Continual Improvement of Existing Buildings Healthcare



Green Globes Continuum

New Construction

Existing Building

Intended Performance

Actual Performance

Design & Construction

Occupancy

Integrated Design Process

Continuous Improvement

PRE-DESIGN
Goals,
programming,
site issues

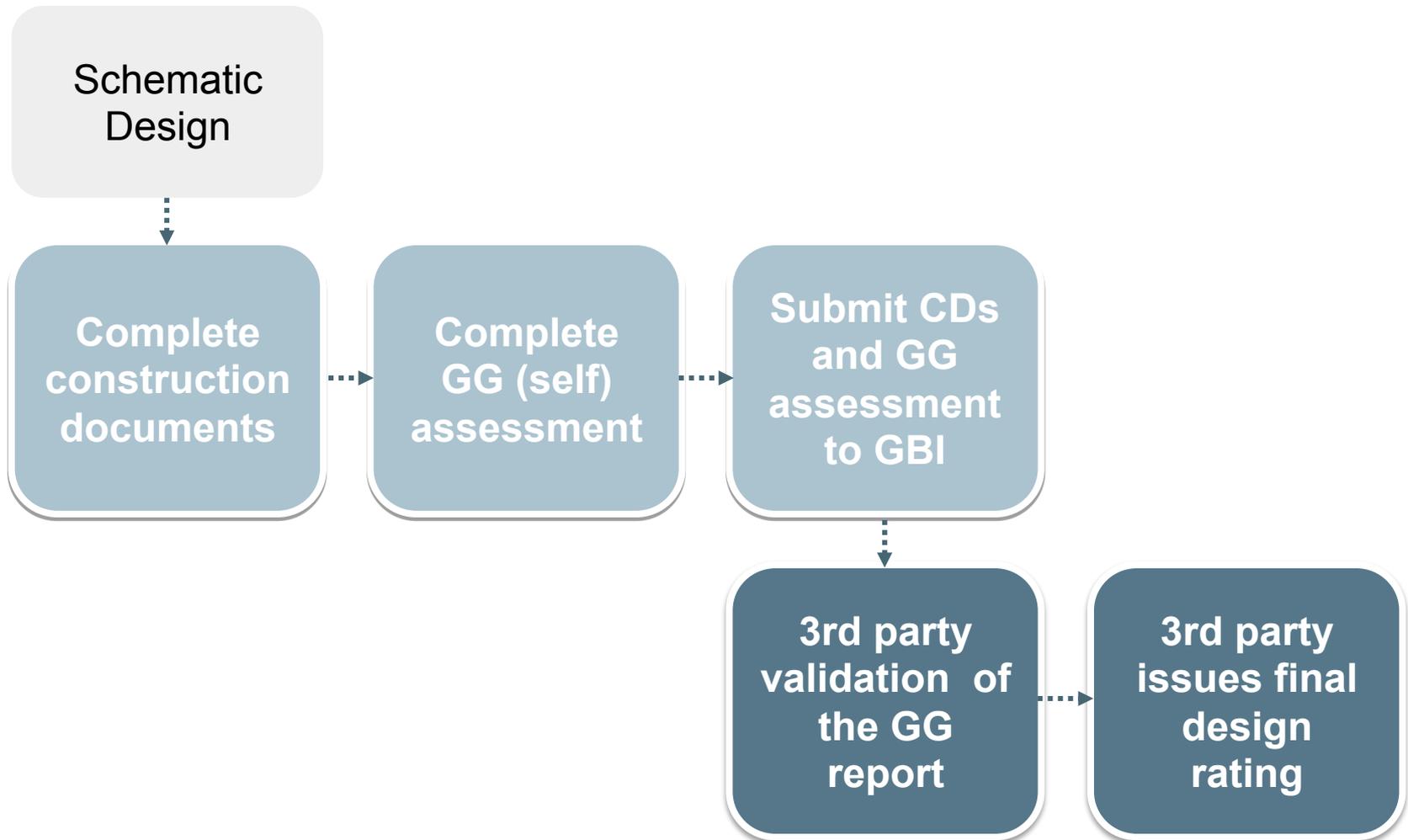
**SCHEMATIC
DESIGN**
Preliminary self-
assessment
rating, feedback
reports, oppty.
for improvement

**CONSTRUCTION
DOCUMENTS**
3rd party
conditional final
rating

3rd party on-site
verification after
Construction
Completion

Ongoing
assessments
avoid
performance
slippage, ensure
continuous
improvement

Construction Documents & 3rd Party Validation



Green Globes® LCA Credit Calculator

Winner of awards



SBIC

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 [Font settings]

Clipboard [Clipboard icons]

Alignment [Alignment icons]

Number [Number icons]

Styles [Styles icons]

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	0.0
WHOLE BUILDING TOTAL	0	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		30.69	31.37	3.84	0.98	7.41	15.24	0.01	9.39		
0.00											
Concrete volume (yd3)		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

Green Globes Ratings

Once an assessment is verified by a third party, properties achieving a score of 35% or more receive a Green Globes rating based on the percentage of total points (up to 1000) achieved.

85-100%		Reserved for select building designs which serve as national or world leaders in energy and environmental performance. The project introduces design practices that can be adopted and implemented by others.
70-84%		Demonstrates leadership in energy and environmental design practices and a commitment to continuous improvement and industry leadership.
55-69%		Demonstrates excellent progress in achieving eco-efficiency results through current best practices in energy and environmental design.
35-54%		Demonstrates movement beyond awareness and commitment to sound energy and environmental design practices by demonstrating good progress in reducing environmental impacts.

Buildings that have a predicted rating of 35% or more can pursue third-party assessment. Third-party assessment is required to publicize your building as a Green Globes rated/certified building.

One to four globes are possible and our recognition program includes a plaque and PR kit. Case study development is encouraged.

Green Globes NC/CIEB Costs

Hard Costs	NC	CIEB
• Cost of the license	\$ 500	1,000
• On site certification		
▪ Phase I	3,500	4,000
▪ Phase II	3,500	
• Travel of certifier	<u>1,500</u>	<u>1,500</u>
• Total	\$ 9,000	6,500

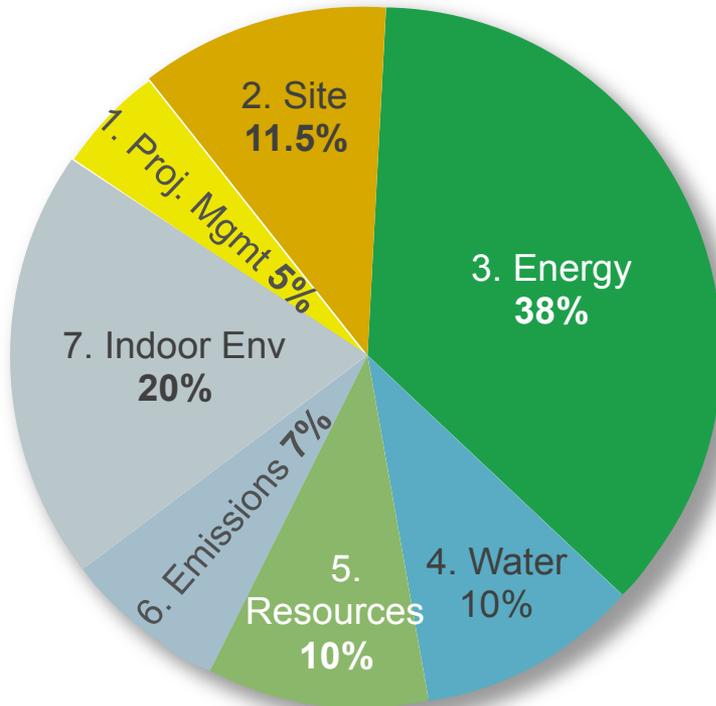
(Cost for buildings 50,000 up to 100,000 sq. ft)

(does not include the soft costs associated with hiring consultants)

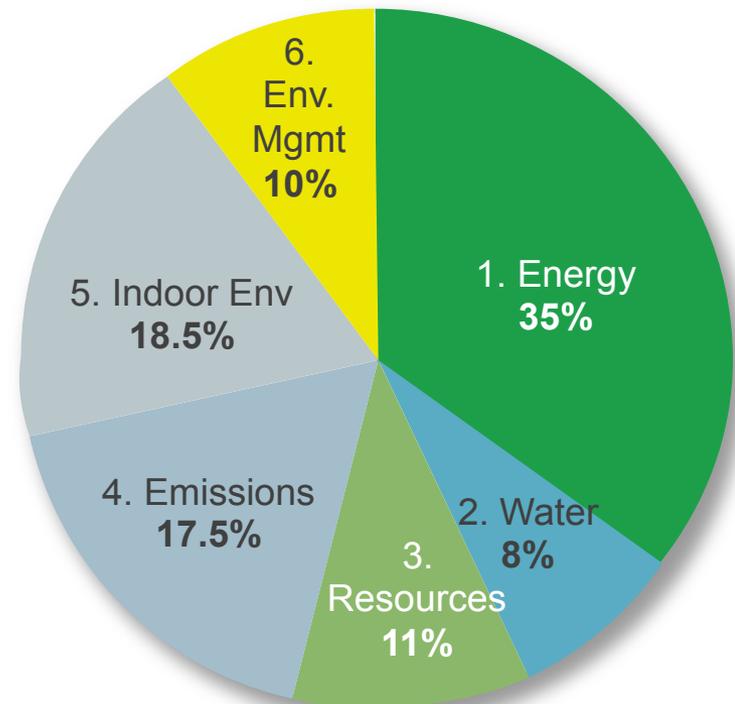
<http://www.thegbi.org/assets/pdfs/Green-Globes-Price-List-01-01-2011-Building-Certifications.pdf>

Green Globes System: Points

New Construction
1000 points



CIEB
1000 points



Survey Tool Uses Plain Language and Tooltips

Question	Answer	Points
Facilities for Storing and Handling Recyclable Materials		
Are there separate storage/handling facilities for used paper products, glass, metal and plastic?	<input checked="" type="radio"/> Yes <input type="radio"/> No	10
Are there collection points for sorting paper, glass, metal and plastic near the areas where waste is generated?	<input checked="" type="radio"/> Yes <input type="radio"/> No	10
Is there a composting program in place?	<input type="radio"/> Yes <input checked="" type="radio"/> No	5
Waste Reduction Workplan		
Has a waste audit been done within the last three years?	<input type="radio"/> Yes <input checked="" type="radio"/> No	5
Is regular monitoring of waste conducted?	<input checked="" type="radio"/> Yes <input type="radio"/> No	5
What is the current diversion rate?	<input type="radio"/> >85% <input type="radio"/> >75% <input type="radio"/> >50% <input checked="" type="radio"/> Unknown	10
Are there waste-reduction targets?	<input type="radio"/> Yes <input checked="" type="radio"/> No	5
Is there a construction, renovation and demolition waste management policy?	<input checked="" type="radio"/> Yes <input type="radio"/> No	5

Save and Continue

Tooltip

A waste audit can be conducted in-house, or using a waste-management firm. It should identify the types and quantities of waste generated in the building and assess which waste materials are produced in sufficient quantities to warrant recycling.

New Construction Dashboard

YOUR PROJECT LIST | INSTRUCTIONS | DEMONSTRATION | USER FORUM
MANAGE MY ACCOUNT | LOGOUT

Alberici HQ - Office (General)

User: ustest@greenglobes.com

[Project Reports](#) (all stage reports)
[Edit Basic Project Information](#)

Current Project Rating

64%

Progress key: ■ Not started ■ In Progress ■ Completed

Project Dashboard	Sections								Total Questions Answered	% of Points Earned
	Click on any stage name or box to go to questionnaire									
	Proj Mgt	Site	Energy	Water	Resources	Emissions	Indoor Environ.			
Predesign - project init stage	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Predesign - site analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Predesign - programming	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Schematic design	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Design development	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Construction documents	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Contracting & construction	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Commissioning	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

 = Goal Setting stage
 = Preliminary Assessment stage
 = Final Assessment stage

SECTION DESCRIPTION

This section addresses strategies to ensure that the indoor environment is healthy and comfortable. The design should be developed to provide a high level of indoor air quality, effective lighting, thermal comfort and suitable acoustic conditions.

Green Globes Report



Environmental Assessment for New Commercial Buildings



[YOUR PROJECT LIST](#) |

[INSTRUCTIONS](#) |

[DEMONSTRATION](#) |

[USER FORUM](#)

[MANAGE MY ACCOUNT](#) |

[LOGOUT](#)

SELECT/ADD
PROJECT



SELECT
STAGE



SELECT
SECTION



COMPLETE
QUESTIONNAIRE



**VIEW
REPORT**



Womens Centre - Office

User: ustest@greenglobes.com

Current Project Rating



25%

Progress key:

■ Not started

■ In Progress

■ Completed

Project Dashboard

Click on any stage name or box to go to questionnaire

Sections

Proj Mgt	Site	Energy	Water	Resources	Emissions	Indoor Environ.	Total Questions Answered	% of Points Earned

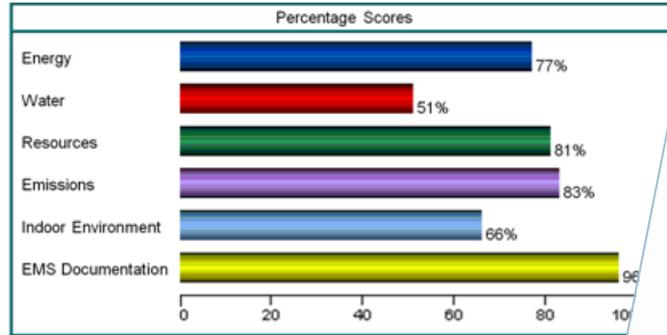
Green Globes Report

Green Globes

Sample Building
January

INTRODUCTION

Sample Building is a 1,120,380 square foot building located in San Diego, California. It has 5 stories and is described as follows: Garden style development with stucco on podium



Sample Building achieved an overall rating of 76%.

Overview

The management of multi-residential buildings has strong jurisdiction over the common areas, but has relatively little control over the tenants' suites. With regards to energy consumption, control is limited to outdoor, parking and service area lighting. With regards to water, control is limited to common areas. The best opportunities for an intervention are through working with or advising the tenants. This is particularly applicable in the time of new lease agreements. Having clear energy and environmental policies would also empower the management to act on environmental issues. Such "best practice" policies and procedures may include:

- Energy
 - Energy Audit
 - Energy Management (Reduction) Plan
- Water
 - Written Policy to Minimize Water Use
 - Water Audit
- Waste Reduction and Site
 - Recycling Program
 - Waste Audit
 - Construction, Renovation and Demolition Waste Management Plan
- Emissions and Effluents
 - Hazardous Materials Survey
 - Hazardous Products Management Plan
- Indoor Environment
 - Means for Addressing Tenant/Occupant Concerns
- Environmental Management System
 - Tenant Criteria Manual

WASTE REDUCTION AND SITE

Buildings consume many resources, including the land they are built on. During construction, the products used for their maintenance, and the equipment used by the tenants. This section evaluates the waste generated by the building as well as the original building materials used in the construction of the building are an important part of existing buildings.

Sample Building achieved 81% for managing resources through waste reduction and recycling.

Waste Reduction and Recycling

Buildings generate a large quantity of waste in addition to waste paper. Sample Building achieved 56% for implementing best practices for waste management.

HIGHLIGHTS

Facilities for Storing and Handling Recyclable Materials

- There are separate storage/handling facilities for paper products, glass, metal and plastic waste.
- There are collection points to separate paper, glass, metal and plastic waste is generated.

Waste Reduction Workplan

- There is a construction, renovation and demolition waste management plan on-site source separation for recycling
- The waste audit has been approved and is in the process of implementation.

OPPORTUNITIES FOR IMPROVEMENT

Facilities for Storing and Handling Recyclable Materials

- Consider providing composting, either on-site or centralized (off-site) for occupant scraps and any outdoor or indoor landscape waste.

Waste Reduction Workplan

Recommendations, Supplemental Information & Hotlinks

RECOMMENDATION	
Recommendations	Supplementary Information
Consider the feasibility of using "grey water" for irrigation in the event of a major retrofit.	A building may use "grey water" for irrigation only when its plumbing has been built to allow this use. During a major retrofit, the plumbing system could be modified to permit the use of grey water, but such modifications are not likely to be as feasible as an independent project.
<i>Links to more information about this recommendation:</i>	
<ul style="list-style-type: none"> ◆ Greywater Resources ◆ Reuse grey water for irrigation ◆ Case study of grey and black water use for toilets ◆ Case study of a dual plumbing system 	
RECOMMENDATION	
Recommendations	Supplementary Information
Once-through domestic water-cooled air-conditioning units should be evaluated for conversion to closed-loop cooling methods.	For more effective water use, consider connecting the equipment to a cooling tower system, converting to closed-loop cooling methods, or using the single-pass effluent for some other use such as landscape irrigation. Consult a mechanical engineer to determine the mechanical and economic feasibility of

Report details Recommendations, Supplementary Information, and provides hotlinks to more detailed information.

Federal Government Recognition of Green Globes®

**30 Federal
Agency Buildings
Green Globes
certified**

Agencies include
GSA, Department
of State, and the
Department of
Veteran's affairs

**Written by
name into
Green Schools
Legislation**

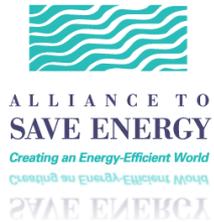
ED.gov

U.S. Department
of Education

**The National
Institute of Health
recognizes GG
to assess
laboratories**



Third-Party MOUs/Partnerships



Green Globes Projects



William J. Clinton Presidential Center

Overview

- Location: Little Rock, AR
- Climate Region: 3A: Warm - Humid
- Building type(s): Assembly, Recreation, Library, Interpretive Center
- 79% new construction, 21% renovation
- 167,000 ft² (15,500 m²)
- Urban setting
- Completed November 2004
- Rating: U.S. Green Building Council LEED-EB, v.2.0
--Level: Platinum (69 points)
Rating: Green Globes
--Level: Two Green Globes
Rating: U.S. Green Building Council LEED-NC, v.2/v.2.1--Level: Silver (34 points)



EL Paso County Ysleta Annex

GBInsight

Join the GBI Today!
[click here](#) ▶



A Better Way to Build

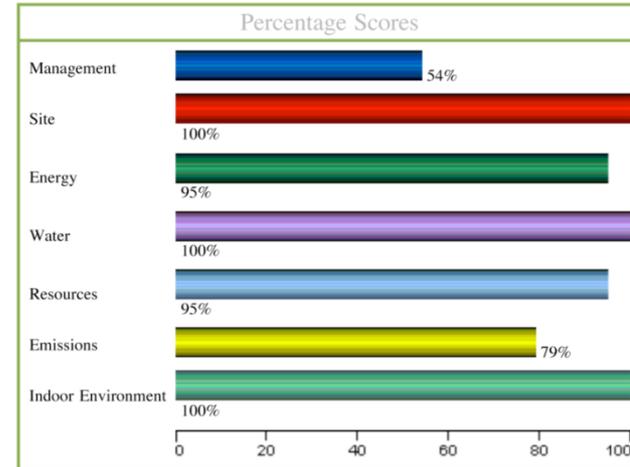


The Ysleta Annex achieved a certified rating of Three Green Globes, becoming the first Green Globes-rated building in Texas.



The Green Globes assessment and rating system represents more than eleven years of research and refinement by a wide range of prominent international organizations and experts.

- Third Party Assessment at Design & Construction
- Energy use Systems Commissioning
- Envelope Commissioning & Testing
- Minimum Parking Requirement Per Code
- Drought Tolerant Regional Landscaping
- Drip Irrigation System & Water Harvesting
- Waste Management Plan
- Day-lighting Strategies using Radiance
- High Efficiency HVAC using Hourly Analysis Program
- High Efficiency Lighting and controls
- Building Automation System
- Heat Island Effect: Cool Roof
- Low Flow Plumbing Fixtures
- Waterless Urinal
- 5% Regional Materials
- 10% Recycled Content
- Light Pollution Control



The Ysleta Annex achieved an overall rating of approx. 64%+.



- GREEN GLOBES AND LEED BOTH REDUCES LIFE CYCLE COST
- GREEN GLOBES IS CHEAPER WITH UP-FRONT COSTS
- GREEN GLOBES IS USER FRIENDLY FOR CLIENTS AND PROFESSIONALS



Getting Started

Using Green Globes-New Construction (NC) *OR*
Continual Improvement of Existing Buildings (CIEB)

www.thegbi.org