ADEQ Headquarters, North Little Rock, Arkansas

GREEN GLOBES®

Introducing a major update for New Construction

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GREEN BUILDING INITIATIVE™

Agenda

- The Green Building Initiative (GBI)
- Green Globes® Overview
- Green Globes® for New Construction
  - ANSI origins
  - Criteria overview
  - Energy criteria
  - Materials & Resources criteria
  - Process overview
  - Cost

GBI Overview

The Green Building Initiative

- Nonprofit corporation – HQ in Portland, OR
  - Mission: Accelerate the adoption of building practices that result in energy efficient, healthier & environmentally sustainable buildings
- Founded in 2004
- Exclusive U.S. provider of the Green Globes® and Guiding Principles Compliance assessment & certification systems (fed gov)

GREEN BUILDING INITIATIVE

ANSI Standards Developer

- American National Standards Institute accredited standards developer since 2005

- Developed Green Globes® from an industry standard
  - *ANSI/GBI 01-2010: Green Building Assessment Protocol for Commercial Buildings*

GREEN BUILDING INITIATIVE

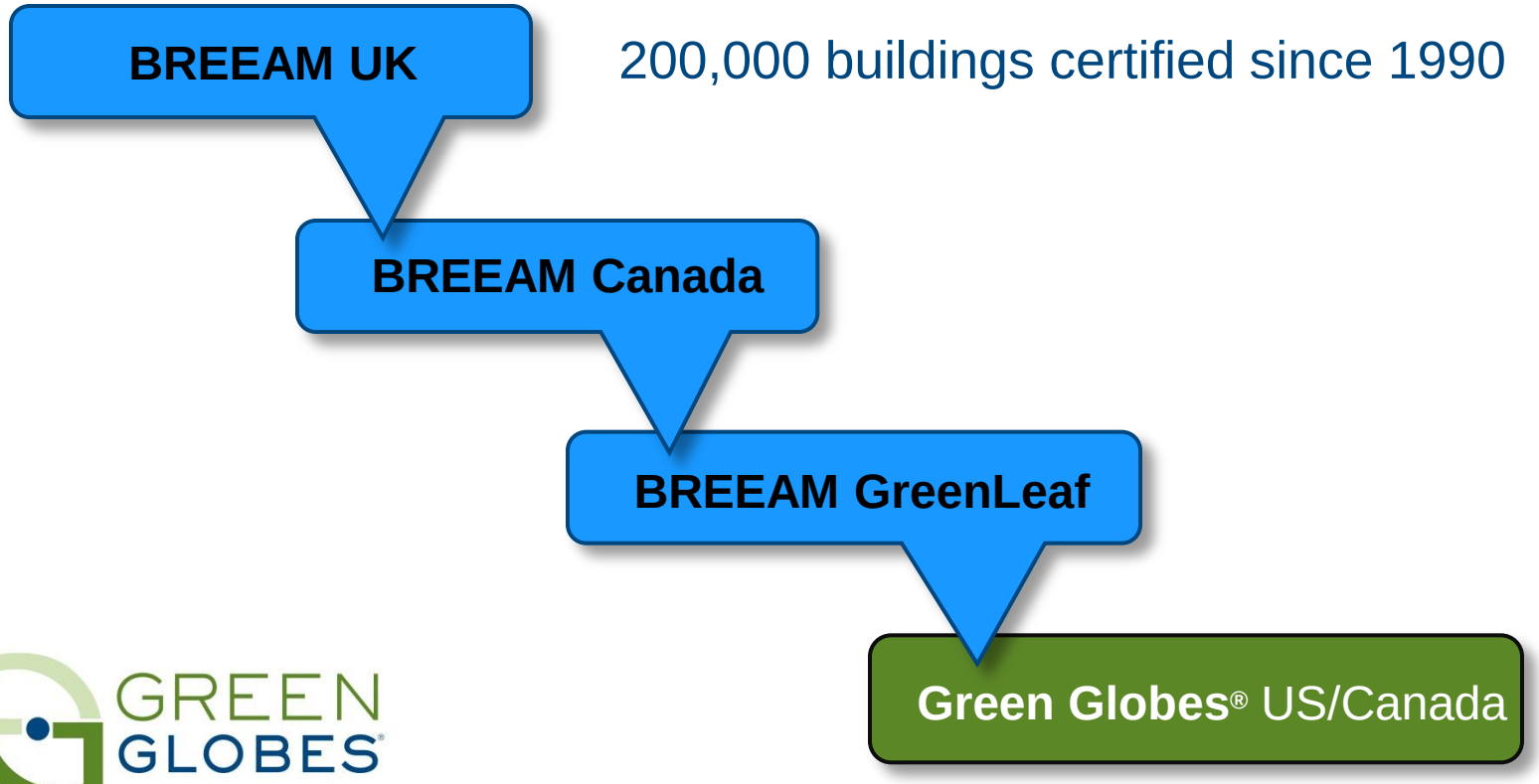
Overview

GREEN BUILDING INITIATIVE

Green Globes® is…

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

Great Lineage – Widely Used



GREEN GLOBES®

GREEN BUILDING INITIATIVE

Assessment Tools

- **Green Globes® NC**

  Guides the integrated design process at each stage of the project

- **Green Globes® CIEB**

  Establishes a baseline, provides a current performance report, guides improvement

- **Green Globes® CIEB for Healthcare**

Federal Govt. Recognition

Green Building Certification System Review - March 2012

GSA

"Green Globes aligns with more of the Federal requirements than any other new construction system"

The National Institutes of Health recognizes Green Globes to assess laboratories

NATIONAL INSTITUTES OF HEALTH

Used Across Government & Industry

GSA

Department of State

Department of Veterans Affairs

University of Arkansas

Arizona State University

Rubbermaid

Pfizer

Whole Foods Market

Drexel University

JPMorganChase

Bristol-Myers Squibb

Poudre School District








Green Globes® Attributes

- Transparent, interactive process
- Web-based survey
- Site visit by third-party assessor for certification
- Provides recommendations for improvement
- 30-50% the full cost of LEED

Updated Program for New Construction

GREEN BUILDING INITIATIVE

Goal

Use the best building science to help deliver sustainable buildings that have significantly reduced operating costs.

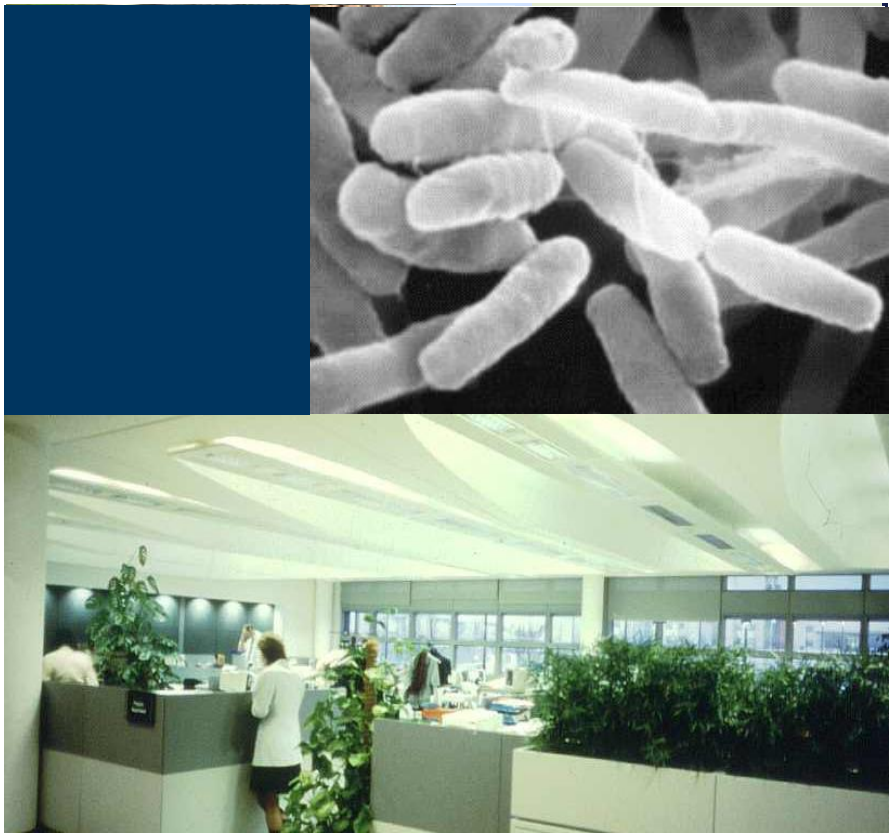
New Release – Green Globes NC

New Construction module introduces major updates including:

- New criteria developed by an ANSI-approved consensus body
- Increased focus on Energy, and Materials & Resources, with an emphasis on life cycle assessment
- Increased number of Path options to meet certain criteria
- A new approach assessing building assemblies, furnishings, finishes and fit-outs by utilizing multi-attribute certifications, and/or third-party assessments by approved standards development organizations
- Complete coverage of the federal government's Guiding Principles for New Construction with a report detailing level of compliance

Environmental Assessment Areas

%	
5	**1** Management
11.5	**2** Site
39	**3** Energy
11	**4** Water
11.5	**5** Materials & Resources
6	**6** Emissions
16	**7** Indoor Environment



1 Management

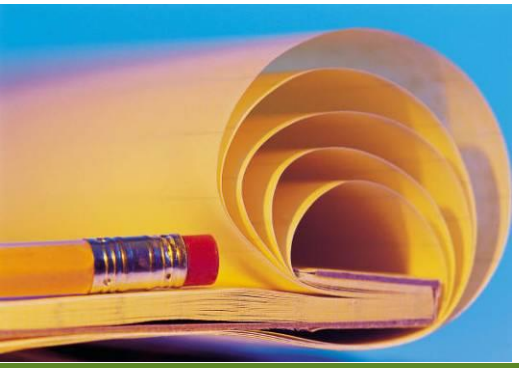
Integrated Design and Management

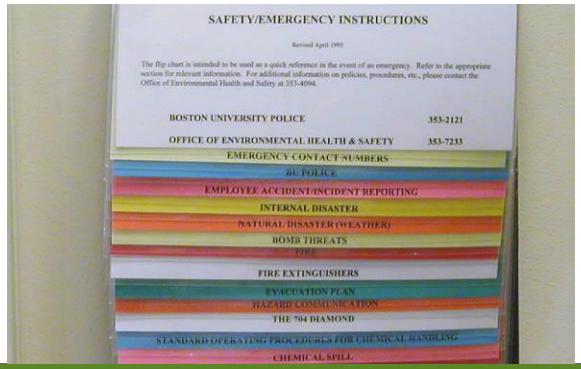
Environmental Purchasing

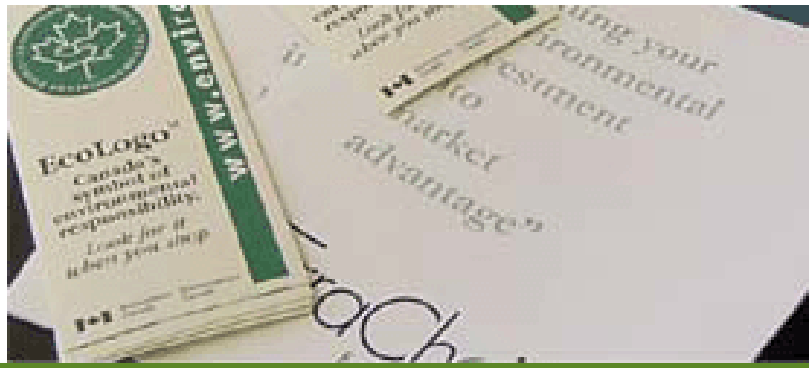
Whole Building Commissioning

Environmental Mgmt. – During & Post Construction

Emergency Response Plan







2 Site

Development Area

Ecological Impacts (erosion, heat island, light pollution)

Watershed Features and Onsite Water Management

Site Ecology Enhancement and Landscaping

Site Construction Best Practices





3 Energy

Energy Performance – 4 paths… ANSI Path A, Energy Star, ASHRAE 90.1, Building Energy Quotient

Reduced Demand (space optimization, microclimatic design, day-lighting, envelope design, metering, peak demand response)

Energy Efficiency Features (lighting, heating & cooling equipment)

Metering and submetering

Renewable Energy (including ground source)

Transportation






Energy

Four pathways for Energy Performance:

A. ENERGY STAR® Target Finder

B. ASHRAE 90.1-2010, Appendix G

C. ANSI/GBI 01-2010 Energy Performance Building Carbon Dioxide Equivalent Emissions (CO2e)

D. ASHRAE Building Energy Quotient (bEQ) 'As Designed' assessment

4 Water

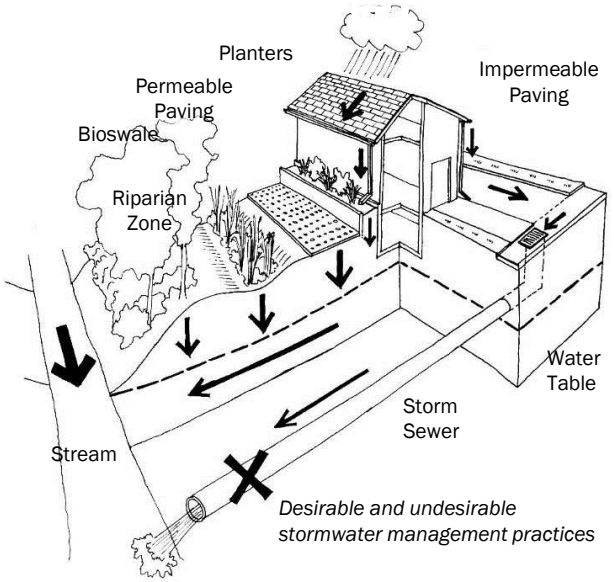
Water Performance – Benchmark using the GBI Water Calculator

Water Conserving Features (Plumbing, fixtures, fittings, appliances, and equipment, incl. medical, food service, laundry, cooling towers, boilers, water heaters, special water features and water treatment)

Alternate Water Sources

Metering and Submetering

Irrigation Design



GBI Water Calculator

An Excel based program that allows the user to gauge a proposed building's water performance by benchmarking against a base building:

- Input Assumptions includes data regarding – building size and type, operating hours, fixture use frequency
- Output Page displays calculated baseline water use and allows addition of other water consumption features including – HVAC systems, pools, water features, commercial kitchens, etc.
- Project use analysis – includes water performance improvement over the baseline
- Additional feature – parallel program for Multi–Unit Residential

5 Materials & Resources

Assemblies, Furnishings and Fit-Ups

Performance Path – Life Cycle Assessment

Prescriptive Path – Environmental Product Declarations (EPD) or 3rd Party Certification

Wood certification – 4 options

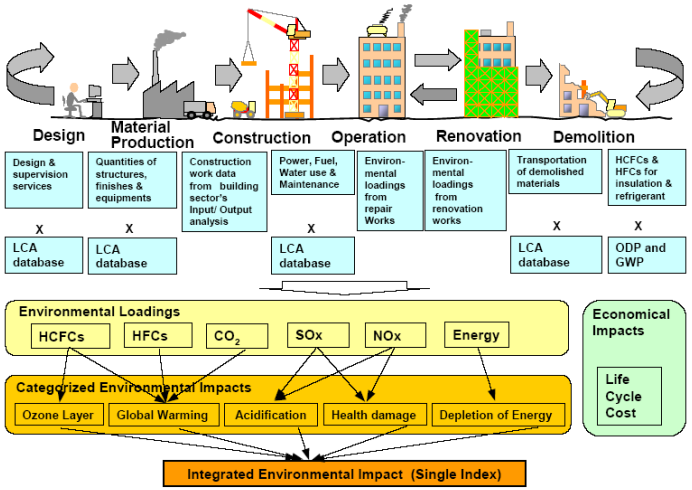
Whole Building Life Cycle:

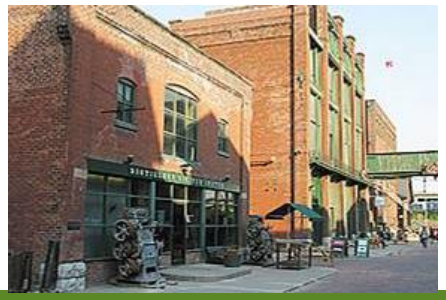
– Reuse of Existing Buildings

– Building Life Service Plan; Durability, Adaptability and Disassembly

Construction Waste Management

Design & Construction of Waste Management Space





Materials & Resources

- Green Globes® NC introduces the next advance in addressing materials and resources for building assemblies, furnishings, finishes, and fit-outs

- Eliminates the single attribute assessment method, focusing on full life cycle analysis, multi-attribute certifications, and/or third-party assessments by approved standard development organizations. Similar to updates currently being considered by both ASHRAE (189.3) and LEED (v4), placing Green Globes at the vanguard of green rating programs advancing Life Cycle Analysis in the U.S.

- Green Globes allows EPDs “that utilize consistent Product Category Rules” and conform to ISO standards

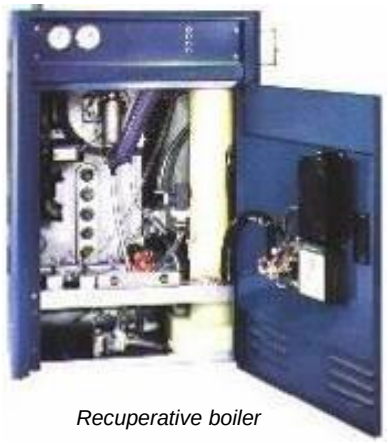
6 Emissions & Other Impacts

Air Emissions (heating equipment, including District Heating)

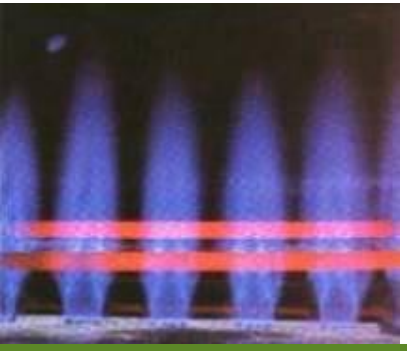
Refrigerants – ODP and GWP; GreenChill best design practices

Pollution Control (procedures, compliance with standards)

Radon Mitigation/Asbestos (major renovations)



Recuperative boiler



7 Indoor Environment

Ventilation System (including HVAC access)

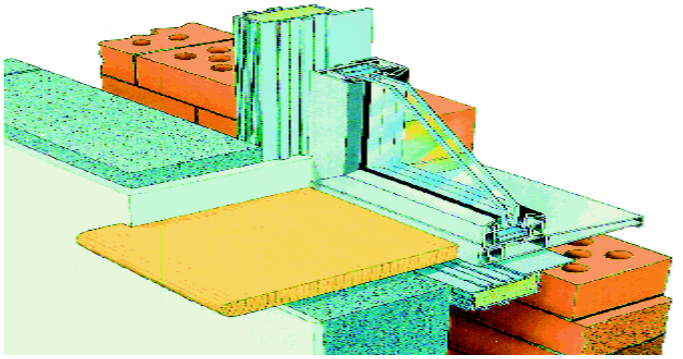
Lighting (daylighting & electric lighting integration)

Source Control and Indoor Pollutants

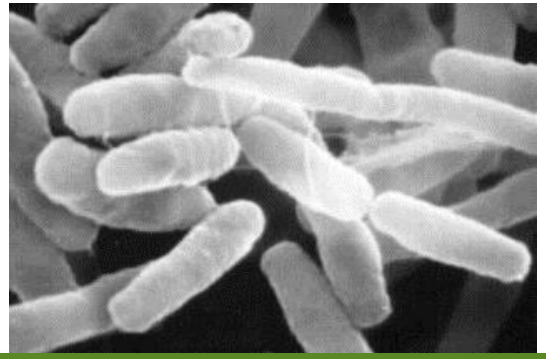
Integrated Pest Management

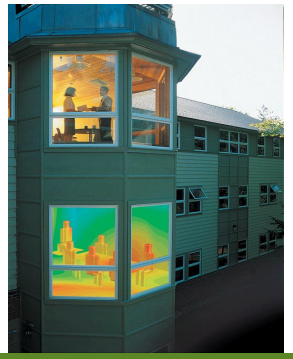
Thermal Comfort

Acoustic Comfort



Insulated cavity closer discourages mold and bacteria growth





Flexible Assessment Protocols

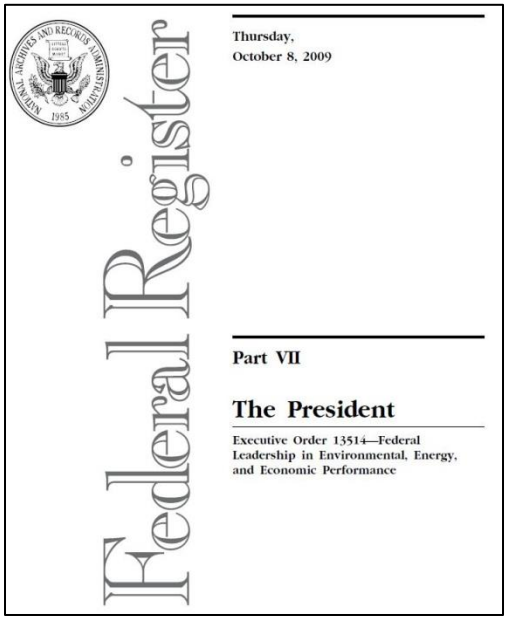
- 1000 point assessment allows for accurate weighting of individual criteria's environmental impact/benefit
- Assessment rules avoid credit penalties and result in the most objective and accurate final score possible
- No prerequisites, Non-applicable provision for most technical criteria, and possible partial credit
- Third-party assessor professional judgment is exercised
- Site visit for certification allows dialogue with the assessor

Green Globes Strengths – Guiding Principles

EO 13514, section 2(g), directs the head of each agency to:

"implement high performance sustainable Federal building design, construction, operation and management, maintenance, and deconstruction including by:

(iii) Ensuring that at least **15 percent of the agency's existing buildings (above 5,000 gross square feet)** and **building leases** (above 5,000 gross square feet) meet the Guiding Principles **by fiscal year 2015** and that the agency makes annual progress toward 100-percent conformance with the Guiding Principles for its buildings inventory."


Federal Register

Thursday,
October 8, 2009

Part VII

The President

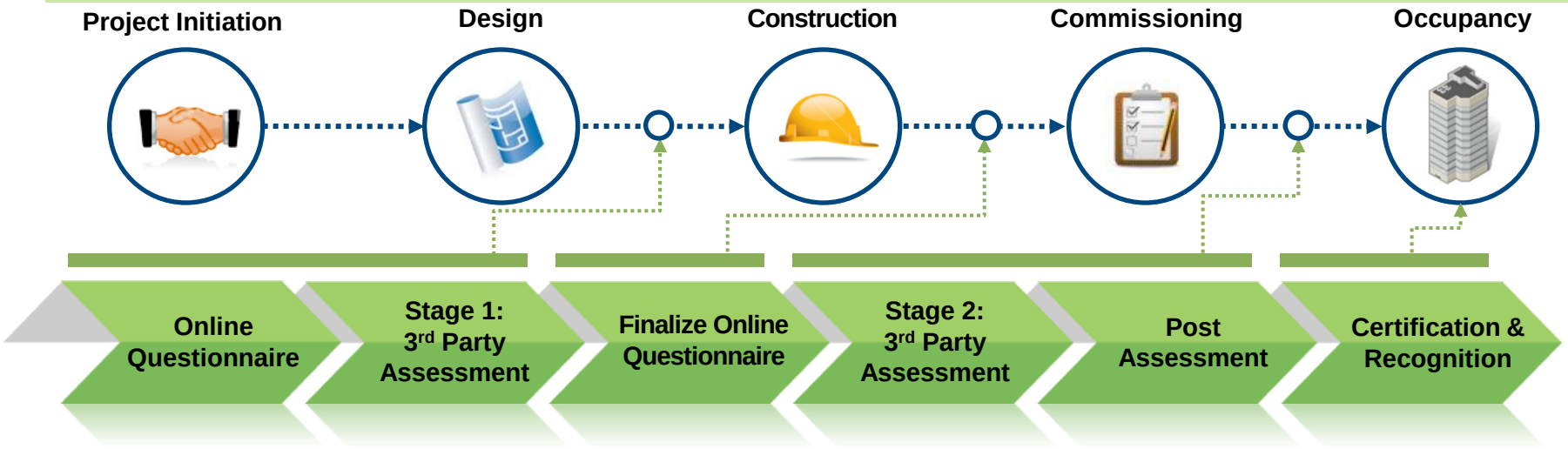
Executive Order 13514—Federal Leadership in Environmental, Energy, and Economic Performance

GREEN BUILDING INITIATIVE

How Does It Work?

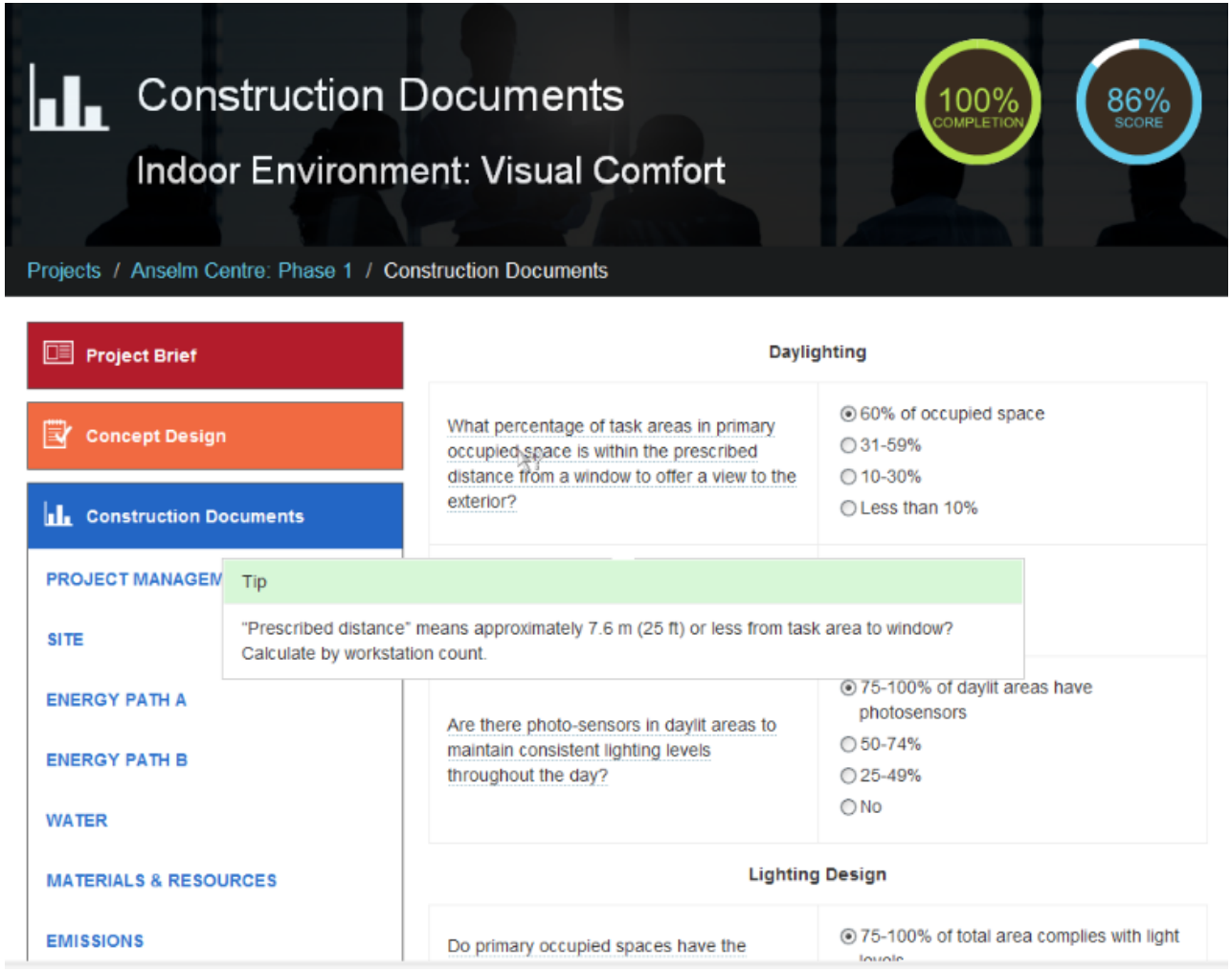
GREEN BUILDING INITIATIVE

Rating & Certification Process

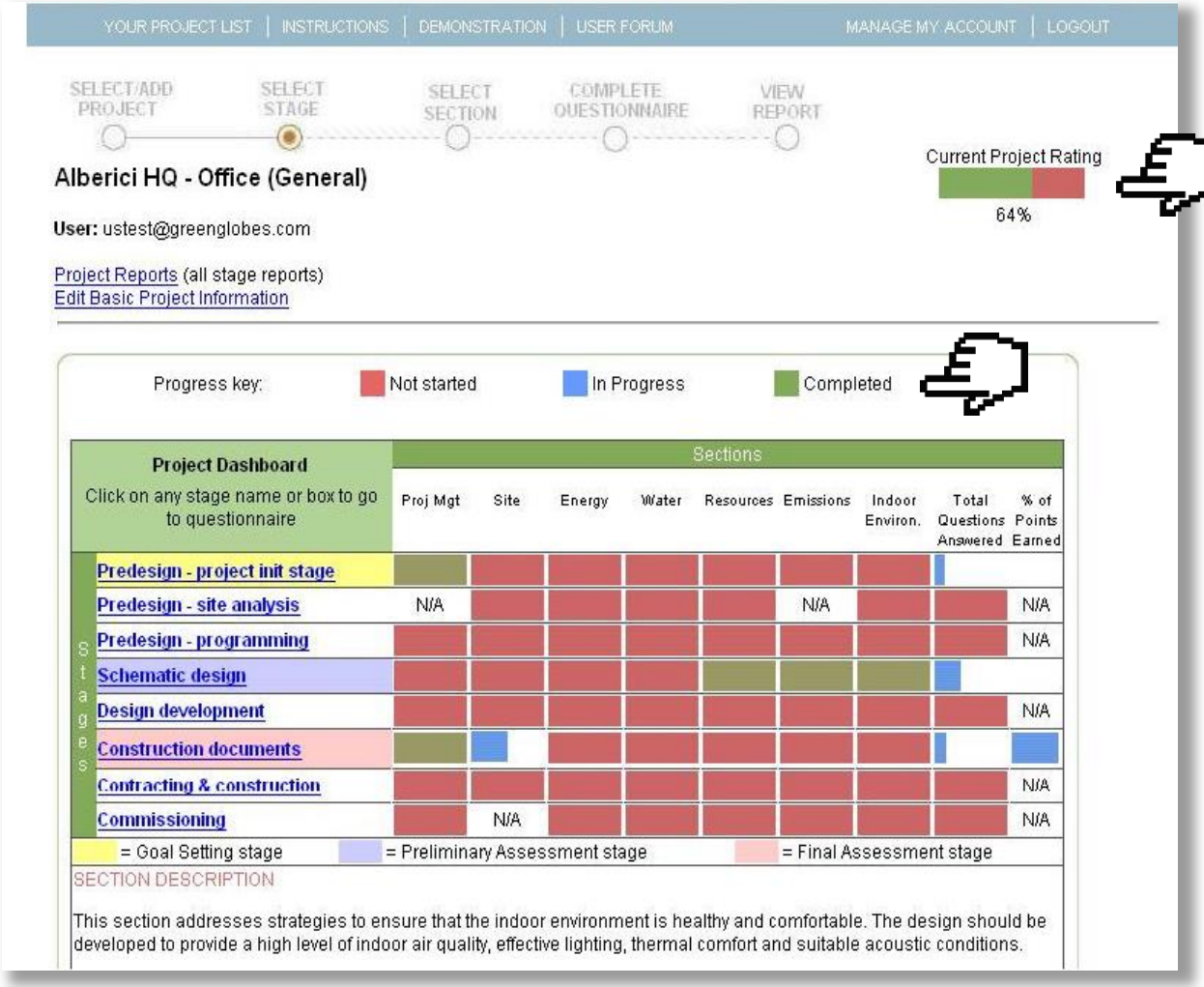


1. Client completes the online evaluation … score > 35% to move forward
2. Stage 1 third-party assessment - design review includes evaluation report and recommendations
3. Client updates the online questionnaire to reflect design changes, if needed
4. Stage 2 third-party assessment - onsite meetings and building tour
5. Post Assessment - client delivers additional documentation, assessor prepares report with recommendations, GBI issues final report, client reviews findings
6. Certification and public recognition of the achievement

Online Tool Uses Plain Language – Has ToolTips

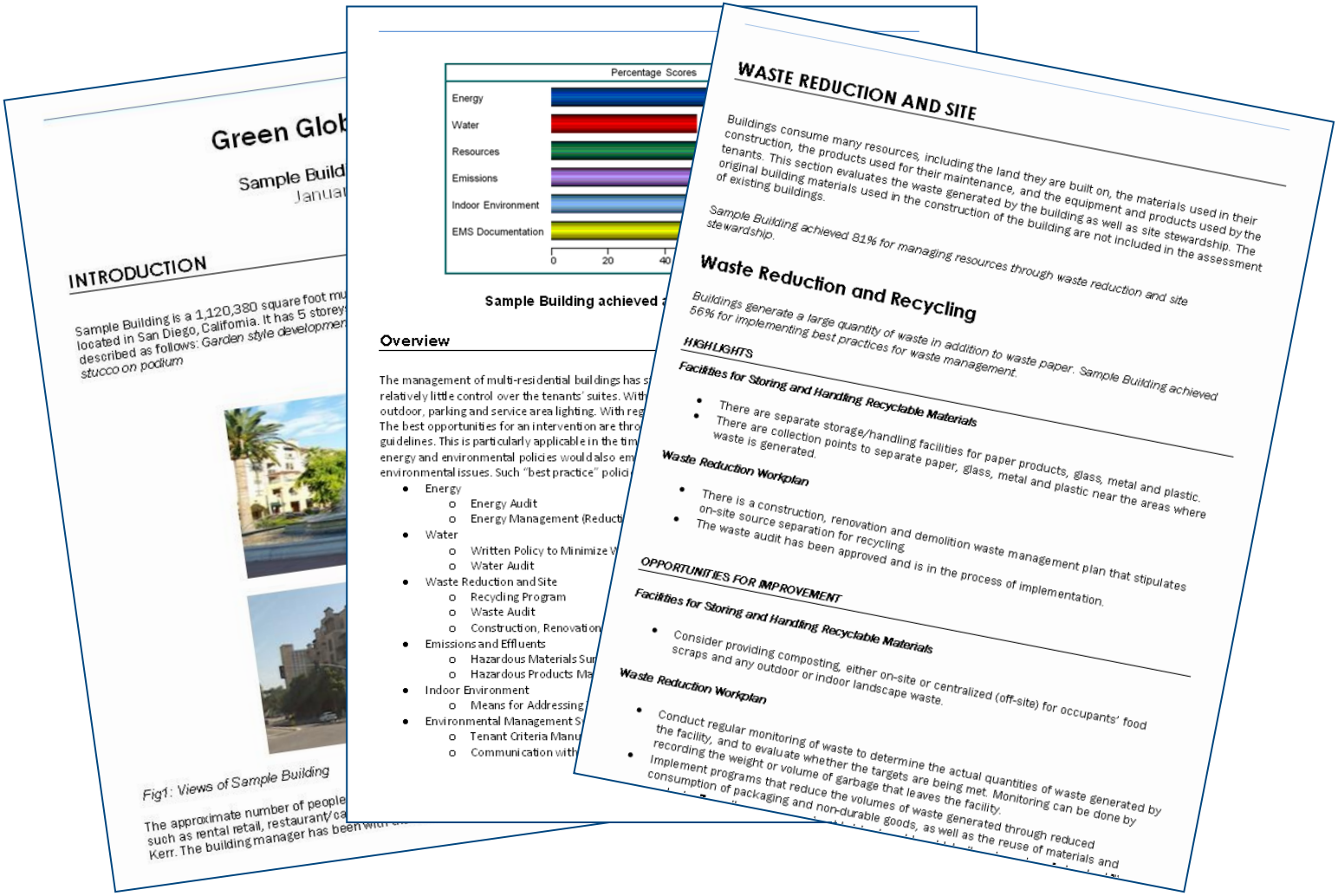


Green Globes® NC Dashboard



- Color coding indicates progress
- Project rating updates as the survey is complete

Green Globes® Reports



Green Globes® Ratings

Once an assessment is verified by a third party, buildings achieving a score of 35% or greater receive a Green Globes rating based on the percentage of total points achieved.

Green Globes Rating Scale		
85% - 100%		Demonstrates national leadership and excellence in the practice of energy, water, and environmental efficiency to reduce environmental impacts.
70 - 84%		Demonstrates leadership in applying best practices regarding energy, water, and environmental efficiency.
55 - 69%		Demonstrates excellent progress in the reduction of environmental impacts and use of environmental efficiency practices.
35 - 54%		Demonstrates a commitment to environmental efficiency practices.

GREEN BUILDING INITIATIVE

Certification Plaque

Personnel Certifications

- Green Globes Professional (GGP)
  - Qualified to assist in filling out the GG questionnaire and getting the building ready for certification

- Green Globes Assessor (GGA)
  - Qualified to act as an independent third-party for the GBI to audit registered projects and assign the appropriate number of Green Globes

Summary

Green Globes® for New Construction is a major advance in the assessment and certification of commercial buildings

- Streamlined & transparent process, web-based survey
- Accurate
- Performance oriented
- Broadest coverage of building types
- Customer support
- Affordability

Supporting Materials

- White Papers
  - Overview from a users perspective [Morrison Hershfield]
  - Energy Section [Ravi Srinivasan, Ph.D. – U of FL]
  - Materials & Resources Section [Jane Rohde – JSR Associates]
- LEED Cost Comparison – [Drexel University]
- Technical Manual – Explains GG NC criteria & process
- Paper – Switching from LEED to Green Globes [Charles Kibert, Ph.D. – U of FL]
- GG NC/LEED v4 Crosswalk [June, 2013]
- GG NC/Guiding Principles NC Crosswalk [late May, 2013]

Alberici Headquarters, St. Louis, MO

Thank you

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GREEN BUILDING INITIATIVE™

[Supplemental Slides]

GREEN BUILDING INITIATIVE

[Supplemental Slides]

GREEN BUILDING INITIATIVE

US Dept. of Veterans Affairs Medical Center, Fayetteville, North Carolina

Guiding Principles Compliance Assessment & Certification Program

for compliance with

Executive Order 13514

GREEN BUILDING INITIATIVE™

5 Environmental Assessment Areas

1: Employ Integrated Assessment, Operation, and Mgmt. Principles

2: Optimize Energy Performance

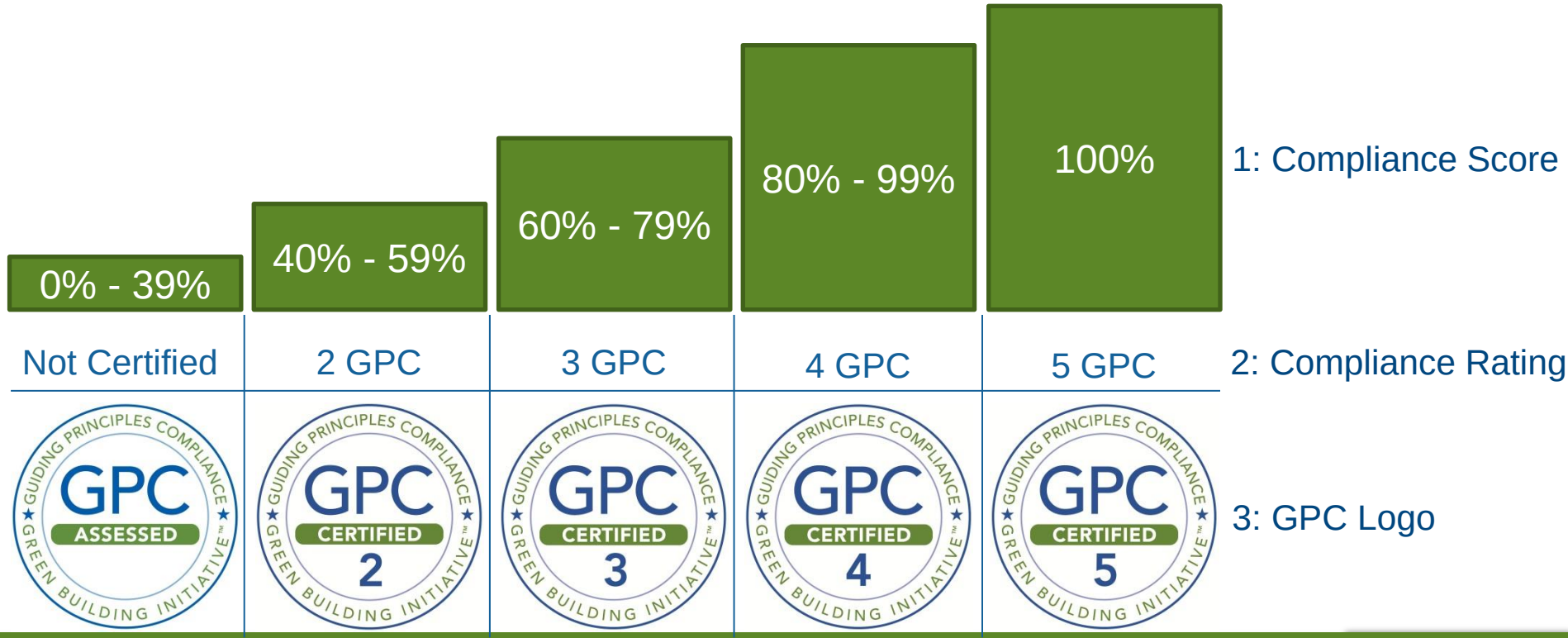
3: Protect and Conserve Water

4: Enhance Indoor Environmental Quality (IAQ)

5: Reduce Environmental Impact of Materials

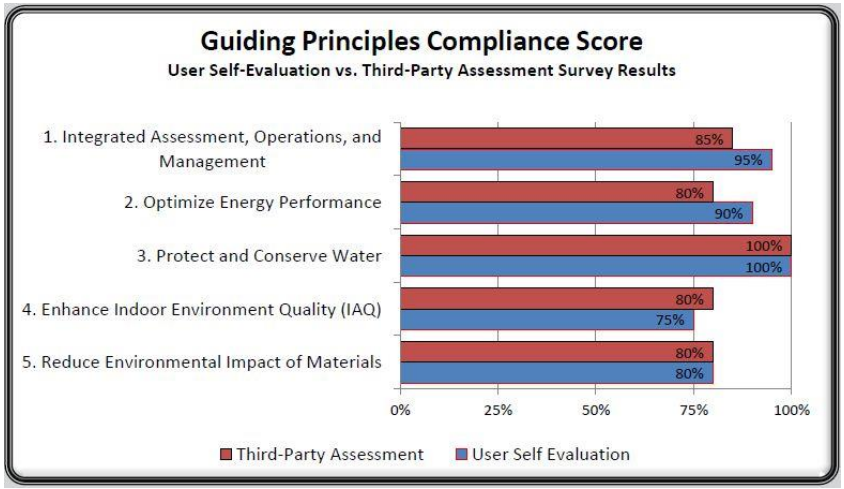
Rating System

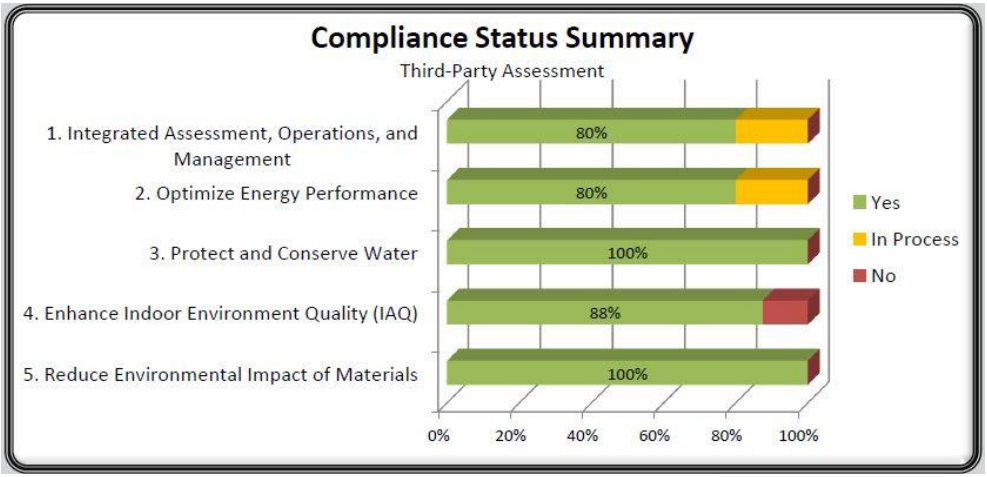
- Buildings are assessed for compliance on a 0 – 100% point scale.
- A minimum score of 40% is required in order to be Certified.
- There are three, central elements to the GPC Rating System.



Third-Party Final Report

- Provides the final GPC Score and Rating
- Graphs, charts, and data clarify details of compliance
- Standardized reporting ensures consistency
- Designed for benchmarking across and within agencies
- “Roadmap to compliance” outlines what was missed & how to comply





GPC Report: Roadmap to Compliance

- Lists all points missed in the Survey
- Organizes compliance recommendations by individual criteria
- Allows you to focus on where and how to comply with the Guiding Principles

#3: PROTECT AND CONSERVE WATER

Total Points Scored: 12 Total Points Missed: 8 Environmental Assessment Area Rating: 60%

Roadmap to Compliance:

- **3.2 Outdoor Water:** The times of sprinkler operation should be recorded so that an accurate estimate can be developed of water consumption. The actual quantities can be compared to a baseline water level developed from a variety of water calculation programs such as Watergy. Once the initial water usage has been estimated, a plan can be developed to continue to track performance and reduce the potable water for irrigation.
  - Missed points: 5
- **3.4 Water Efficient Products:** A written command instruction should be developed that establishes a purchasing policy that all applicable equipment should be rated as water efficient. Additionally, a procurement report should be developed that tracks the purchases and readily provides information on compliance with this procedure.
  - Missed points: 3

Benefits

An integrated program offering surveys, instructions, training, and GBI customer support.

A detailed assessment methodology ensuring clear and consistent awarding of points for compliance.

Standardized reports that clarify the details of compliance and overall level of compliance for each building.

Assessment results are based on a site visit and documentation review by a sustainability expert.

Third-party assessment/ certification ensures objective, credible, and accurate reporting of compliance.

A rating system with 4 categories (levels) of compliance for benchmarking.

Verifiable evidence of compliance: GBI provides a detailed third-party assessment report, and score/rating certificate.

ADEQ Headquarters, North Little Rock, Arkansas

GUIDING PRINCIPLES COMPLIANCE PROFESSIONAL

Guiding Principles Compliance Professional (GPCP)

GREEN BUILDING INITIATIVE™

GPCP Definition

What is a Guiding Principles Compliance Professional?

GPCP - a consultant or federal facilities personnel qualified to complete the GPC Survey and offer project management and technical support to federal agencies undergoing the GBI's/GPC assessment and certification process.

GUIDING PRINCIPLES COMPLIANCE PROFESSIONAL

GREEN BUILDING INITIATIVE

Green Globes ↔ LEED Comparison

	USGBC	GBI
Number of points	110	1000
New Buildings module	●	●
Existing Buildings module	●	●
Online interactive questionnaire. Automated report.		●
Transparent process – Customer support throughout		●
Submittals require additional documentation	●	
Coordination with Energy Star		●
Incorporates Life Cycle Assessment		●
Prerequisites (eliminates building types)	●	
Criteria weighted. Partial scores possible.		●
ANSI approved development process		●

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