

Energy Codes 2007

Green Building: Past, Present, Future



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We have come a long way...

8/3/2007

Green Building Alliance

The Pittsburgh Green Story

1898: No where to go but up...

The American Biographer James Parton viewed it (Pgh) from Mt. Washington and writing in the Atlantic Monthly in 1868 called it *“Hell with the lid off”* the first of many such comparison with infernal regions.



11:00 a.m. November 5, 1945, Fifth Ave.

“A smoky Pittsburgh is a healthy Pittsburgh – we didn’t mind the smoke so much, for it indicated production and it indicated prosperity” old Pittsburgher

Renaissance I (1940)

Air and Water Quality

- **Public/Private Partnership**
- **Allegheny Conference on Community Development**
- **Key Actions:**
 - ◆ smoke and flood control
 - ◆ rebuilding of the Golden Triangle
- ***Economic Health connected to Environmental Health***



Renaissance II (1980's)

Brownfield Redevelopment

Remediate/Reuse Existing Sites

- Soil and water contamination
- Reuse existing infrastructure
- Recycle land
 - ◆ Washington's Landing
 - ◆ Pittsburgh Technology Center
 - ◆ South Side Works



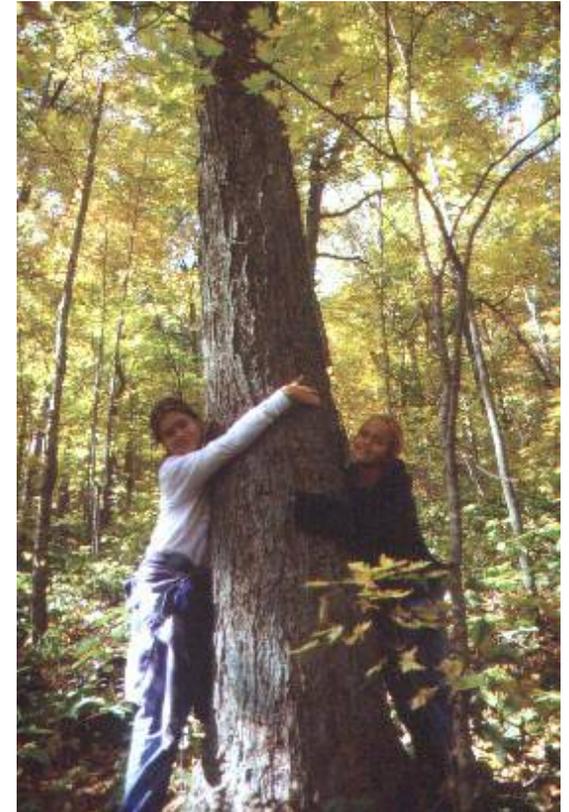
The Pittsburgh Green Story

Early Market Challenges: 1990's

Green Building: “*Rebellion Years*”

- just a “fad” – won’t last!
- My clients/tenants aren’t asking for it, so we don’t offer it.
- I am already practicing green!
- It’s too experimental - high risk
- It’s really just about energy
- it only applies to new construction
- costs too much!

90% Attitude – 10% Technology





GBA *Response: Market Driven Approach*

- Define Audience:
progressive-thinking
decision makers
 - focus groups
 - market analysis
 - interviews
 - evaluations
- Create professional
image
 - offices
 - staff
 - materials



GBA's Market Driven Approach

- **Form Alliances**
 - other non-profits
 - universities
 - professional organizations
 - government
 - funders
- **Establish and Deliver Message**
 - clear and consistent definition
 - be honest – provide real facts, no hype
 - quantify the benefits



GBA's Market Driven Approach

➤ Create Programs and Evaluate Progress

- Understand market/ needs first
- Hire appropriate staff
- Define and *focus* on appropriate programs
- Evaluate all activities – constantly change with market

➤ Target Visible & Diverse Projects

- Educate the Owner
- Build Team Capacity
- Establish Green Goals
- Provide Technical Assistance
- Document and Promote Projects



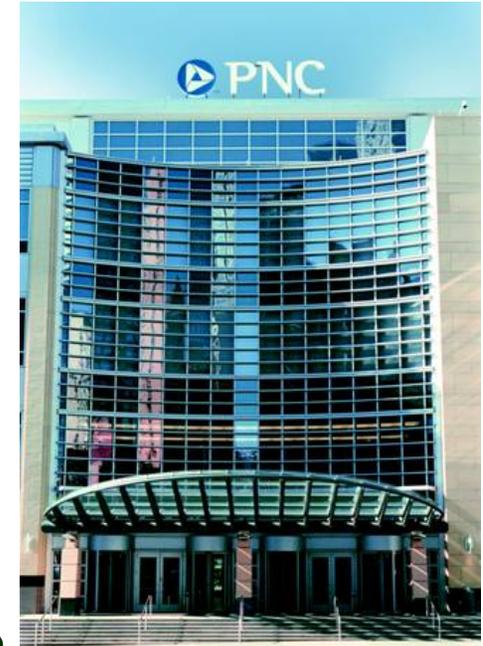
Renaissance III (2000's)

Green Building "Adoption"

- **Foundation Support**
- **NGO Infrastructure**
- **Universities**
- **Building Product Manufacturers**
- **Projects: 180+ (52% LEED)**

"No Longer About Why Go Green?"

It is Now About "How We Can Help You Go Green!"



The Pittsburgh Green Story *cont.*

Current Market Challenges

- Lack of valid performance data
- Inappropriate use of LEED
- Cost is not understood:
 - ROI is not factored in budgets
 - Integrated design is not practiced
 - Green is a catch all for overruns
- Government Leadership is limited and uncoordinated
- Weak City Markets: minimal private sector motivation to perform competitively and progressively



New Birmingham

Architects

**Product
Manufacturers**

**Building
Owners**

**Federal,
Local,
and State
Governments**

Nonprofit Leaders

Planners

USGBC

Engineers

**Financial
Planners**

**Utility
Managers**

**Interior
Designers**

**Landscape
Architects**

**Building
Tenants**

**Property
Managers**

**Code
Officials**



COMMERCIAL REAL ESTATE GOING GREEN

Environmental efficiency is actually the hottest trend in real estate. The challenge is creating demand among tenants.

Special
Reprint
Edition

USA
TODAY
NO. 1 IN THE USA

As seen in
USA
TODAY
Money
July 26, 2006

Building 'green' reaches a new level
REAL ESTATE FINANCE

Real Estate's Latest Movement

green
by
DESIGN

The Green in A

Adobe has turned its headquarter
and is saving millions of dollars

The New York Times
Editorial

FRIDAY, AUGUST 11, 2006

Build Green, Make Green

New York Times
EducationLife

SUNDAY

The Greening of America's Campus

CONDOLiving

...cling anymore. The sustainability movement
...ow campuses are built, and how students live

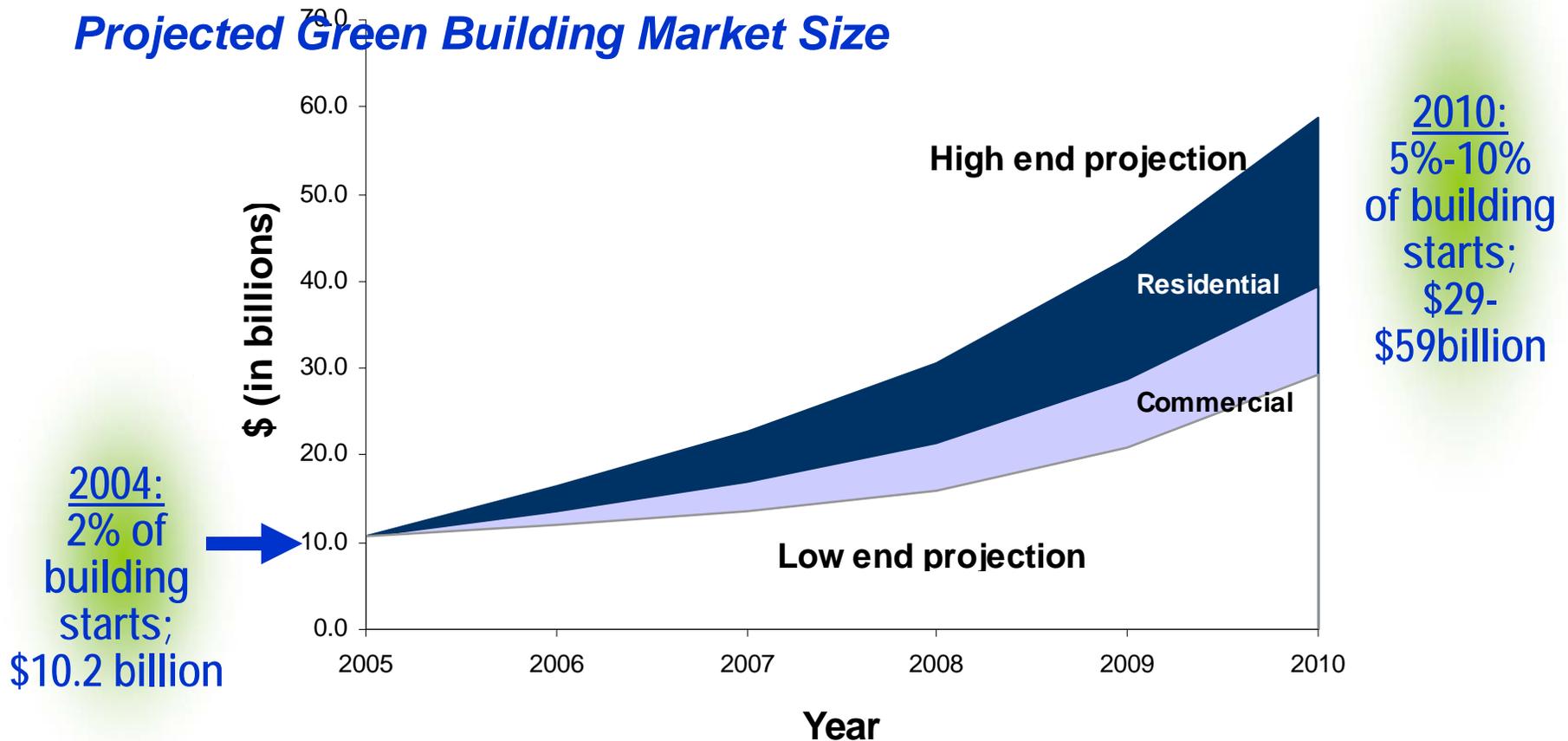
It's Easy Being Green



The Washington Post
REAL ESTATE
SATURDAY, APRIL 16, 2005

Green Building is not a Fad – It is a permanent Industry Driver!

Projected Green Building Market Size

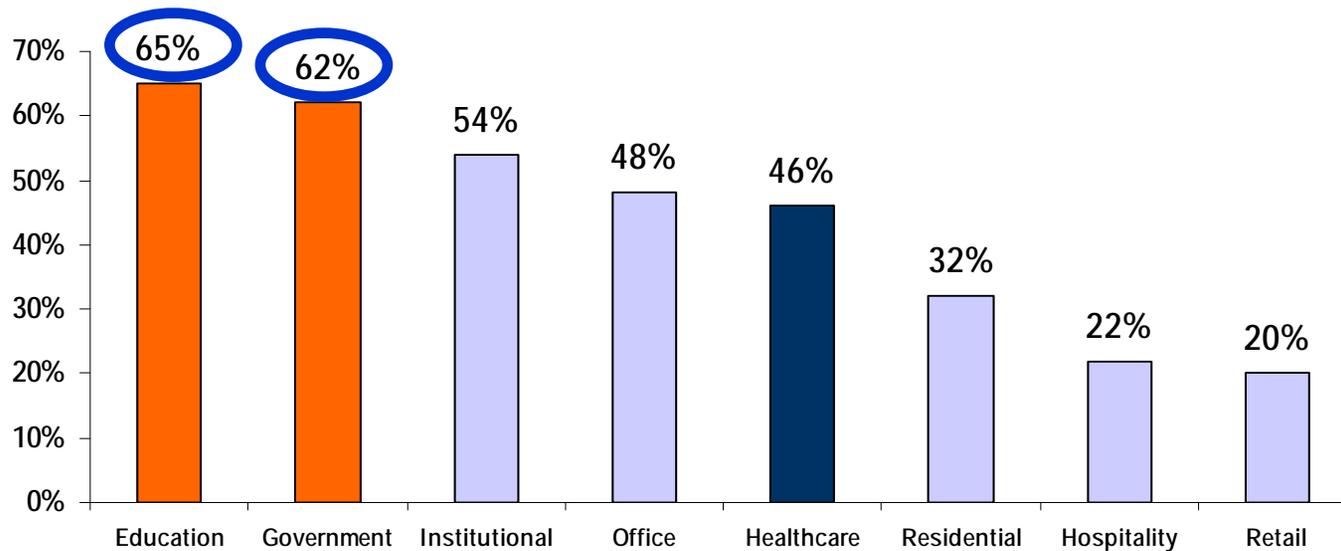


Source: McGraw-Hill Construction (MHC), 2005. Market values projected based on MHC construction starts value for 2005, and forecasted starts value through 2010. Figures do not include single-family housing remodeling expenditures.



Green Construction Sectors

Sectors Expected to have Substantial Growth – according to the AEC/Owner Community





Industry Involvement

86% of AEC Community
Participate in Green
Building Activities

60% of AEC Community
Specify Green
Building Products

40% of AEC Firms &
Owners Are More than
Moderately Involved



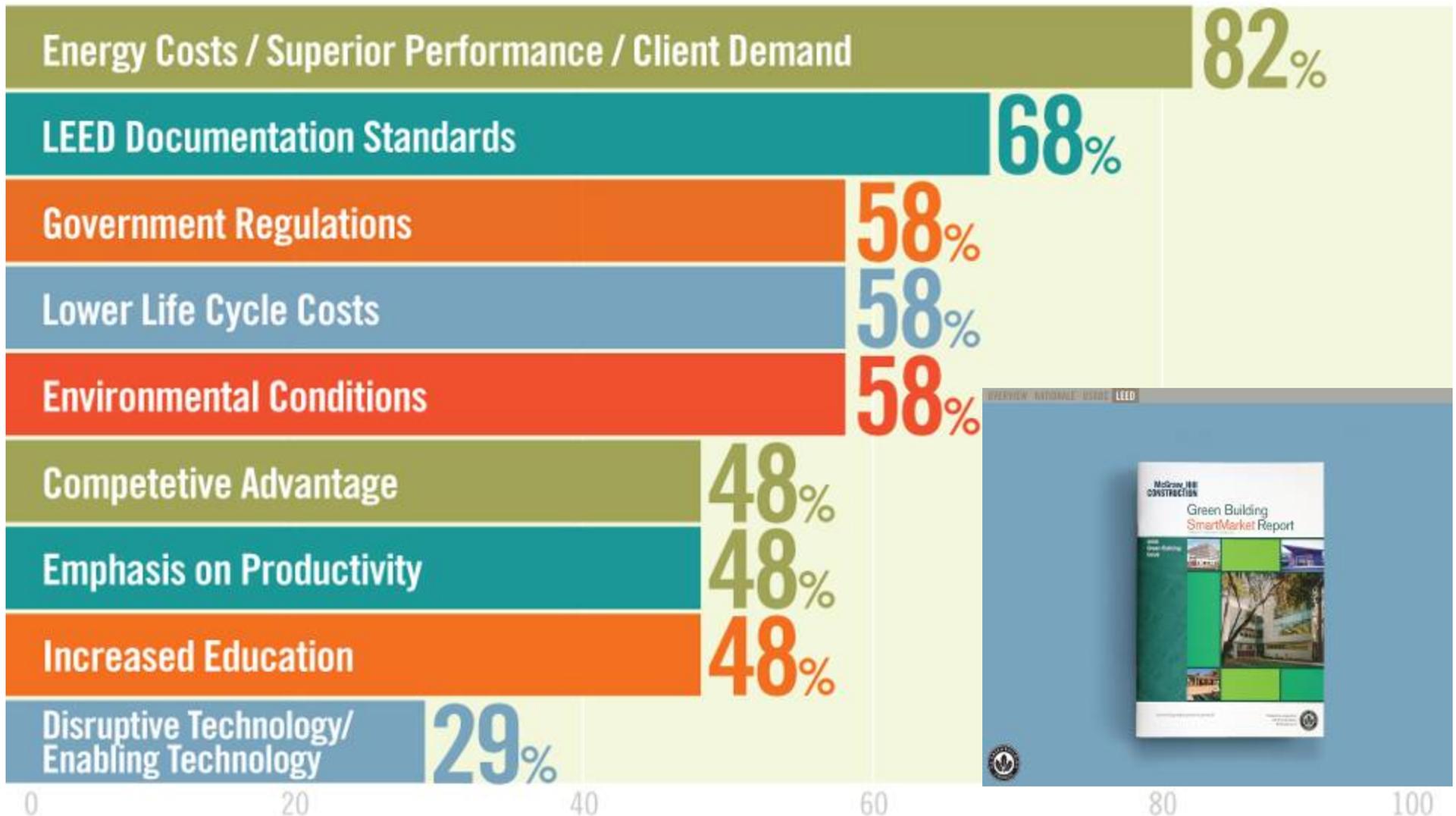
*Building product
manufacturing firms
Are not yet as
Engaged!*

Source: McGraw-Hill Construction, 2005.

8/3/2007

Triggers to accelerate green building

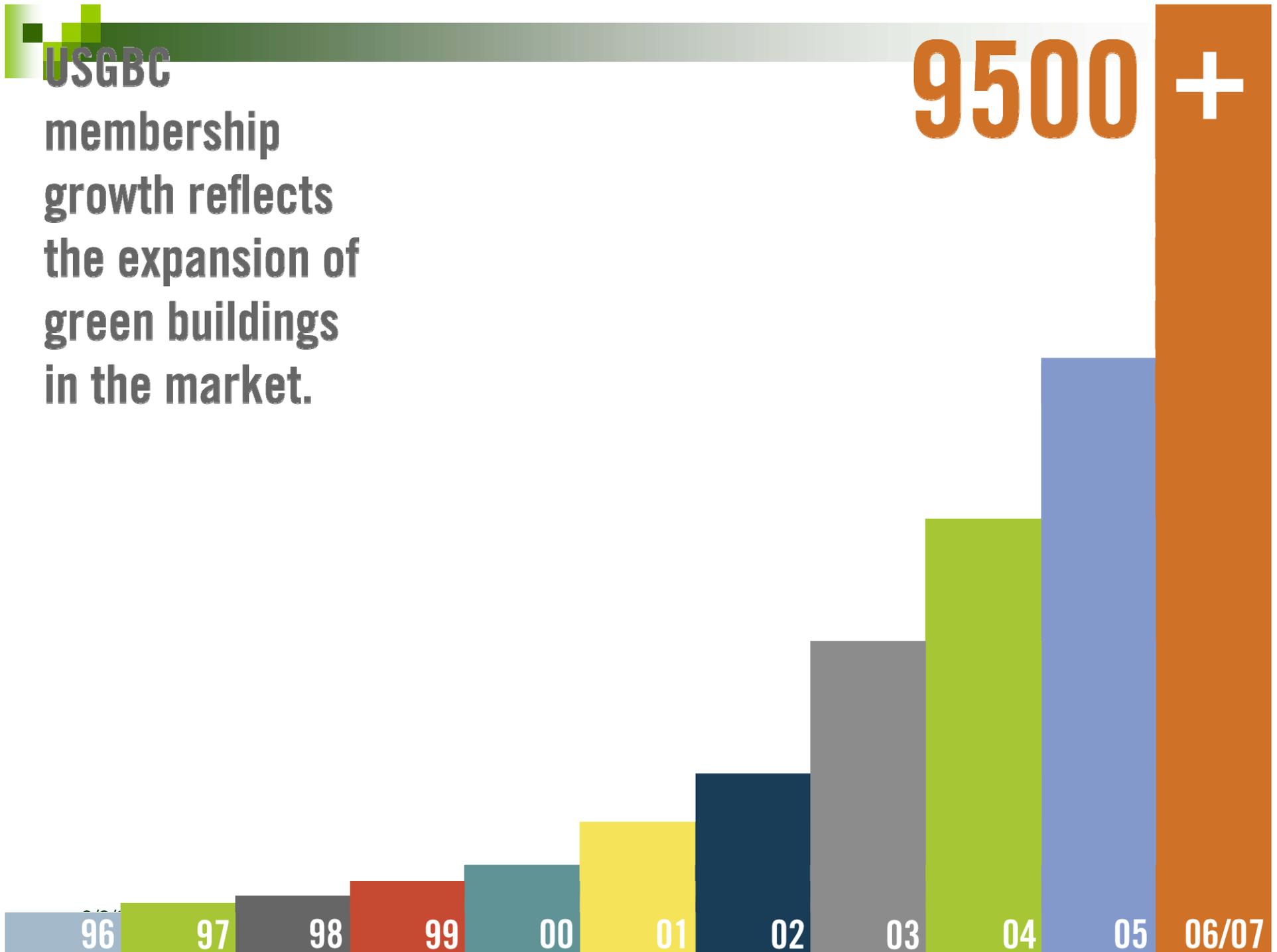
From the 2005
USGBC/McGraw-Hill Survey



USGBC

membership
growth reflects
the expansion of
green buildings
in the market.

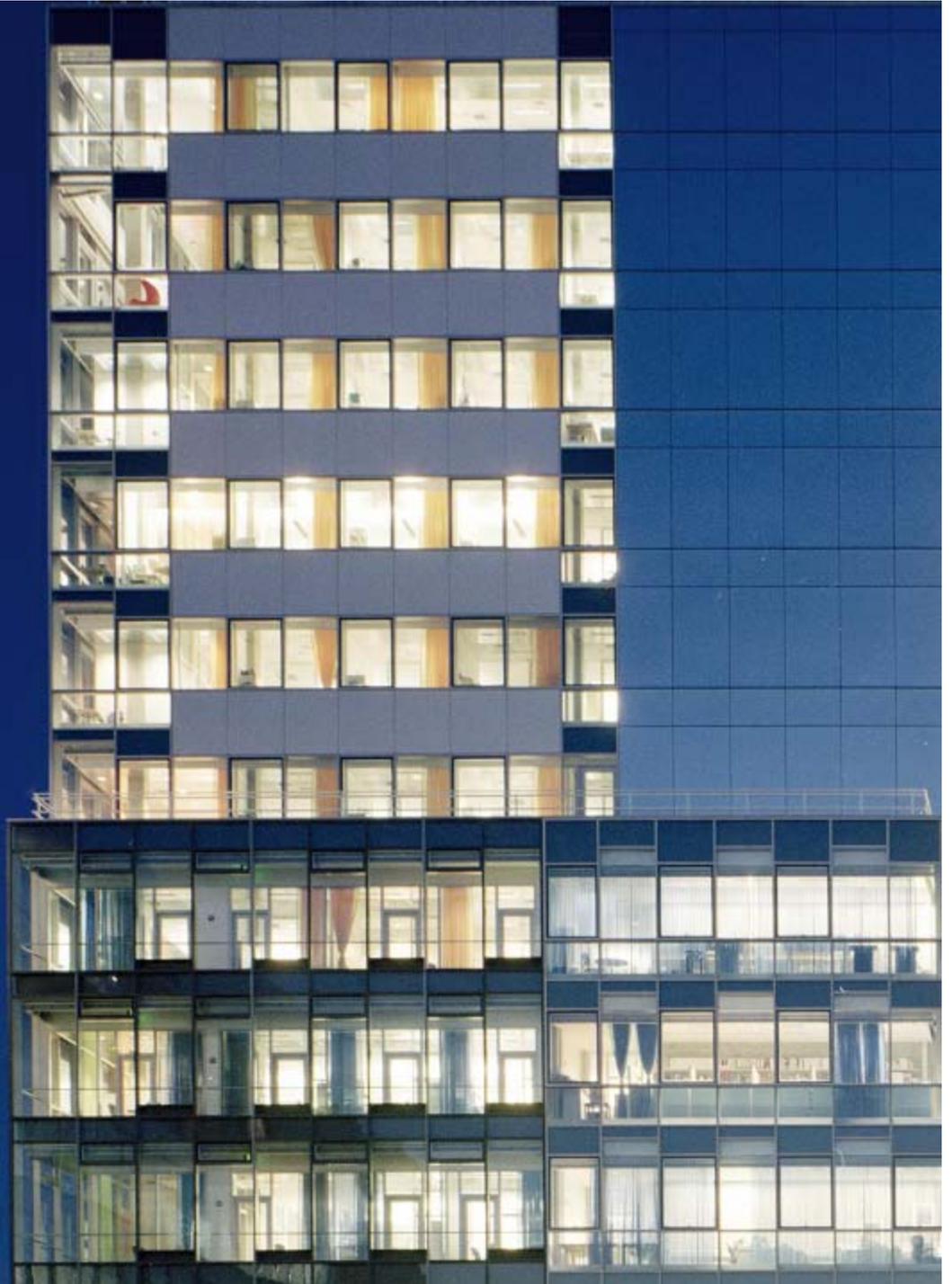
9500 +



12 federal agencies

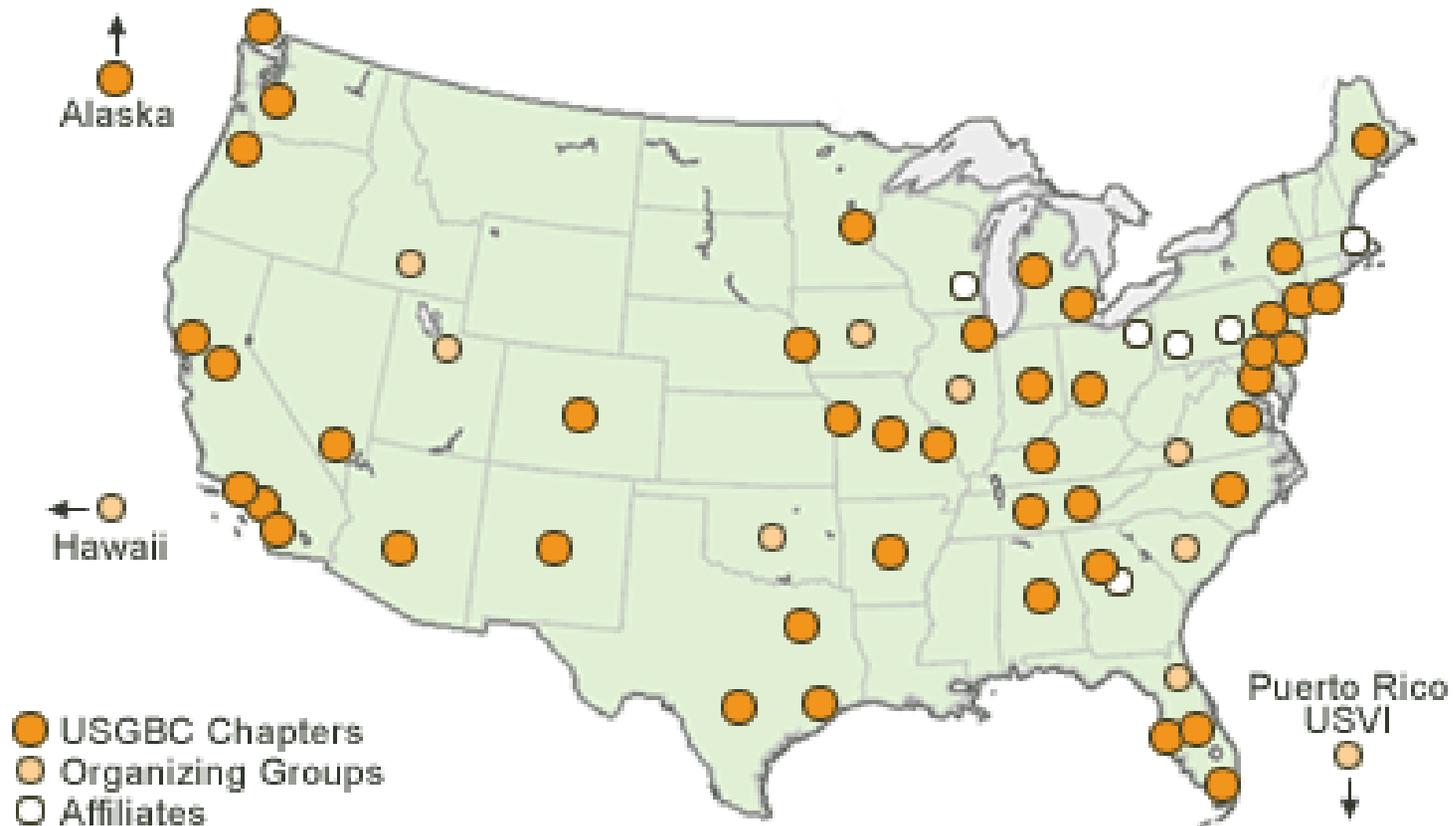
22 states

75 local governments



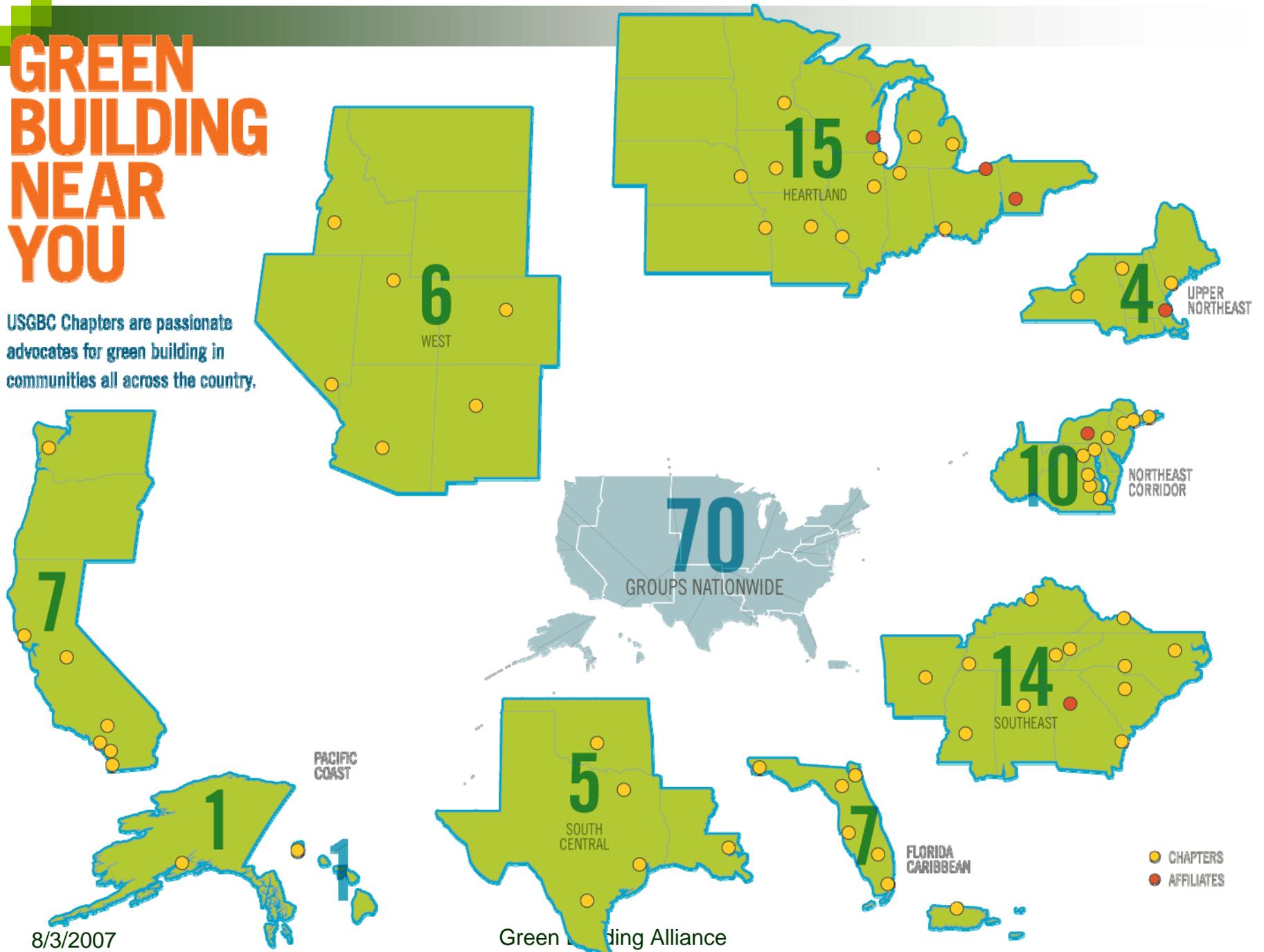


USGBC Chapters and Affiliates



GREEN BUILDING NEAR YOU

USGBC Chapters are passionate advocates for green building in communities all across the country.



8/3/2007

Green Building Alliance

What is the LEED System?

LEADERSHIP in ENERGY and ENVIRONMENTAL DESIGN

A leading-edge system for certifying DESIGN, CONSTRUCTION, & OPERATIONS of the greenest buildings in the world

Scores are tallied for different aspects of efficiency and design in appropriate categories.

For instance, LEED assesses in detail:

1. Site Planning
2. Water Management
3. Energy Management
4. Material Use
5. Indoor Environmental Air Quality
6. Innovation & Design Process



Green Facts

John M. Langston High School
Continuation & Langston-Brown
Community Center
Arlington, Virginia

LEED-NC rating out of 69

Silver 35

Sustainable Site 8

Water Efficiency 3

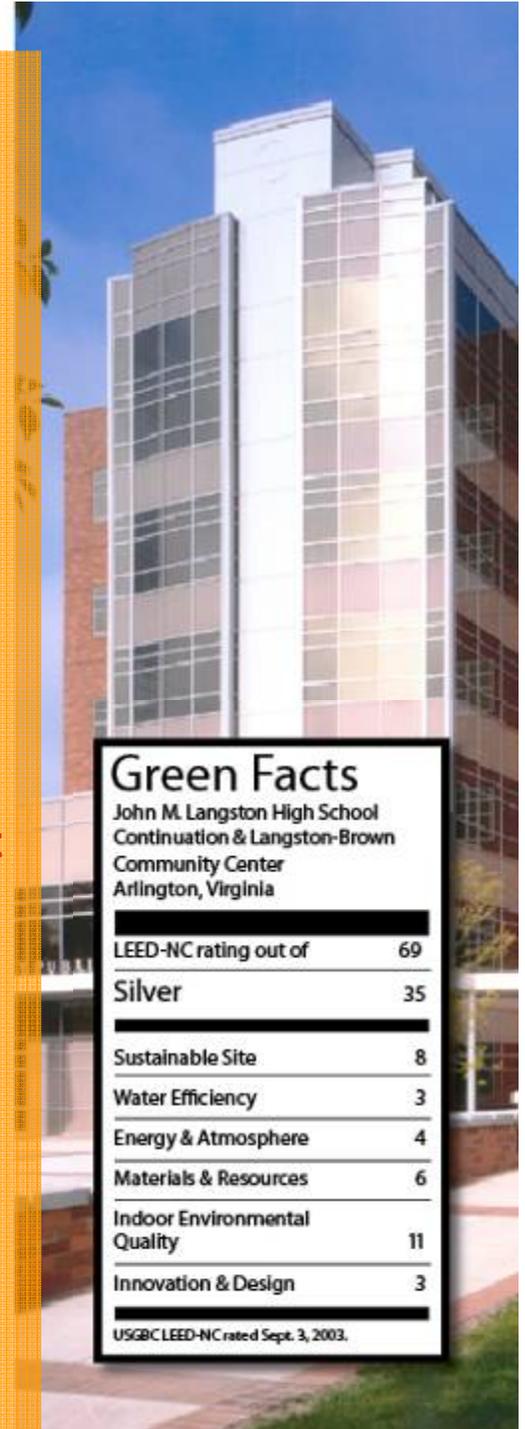
Energy & Atmosphere 4

Materials & Resources 6

Indoor Environmental Quality 11

Innovation & Design 3

USGBC LEED-NC rated Sept. 3, 2003.

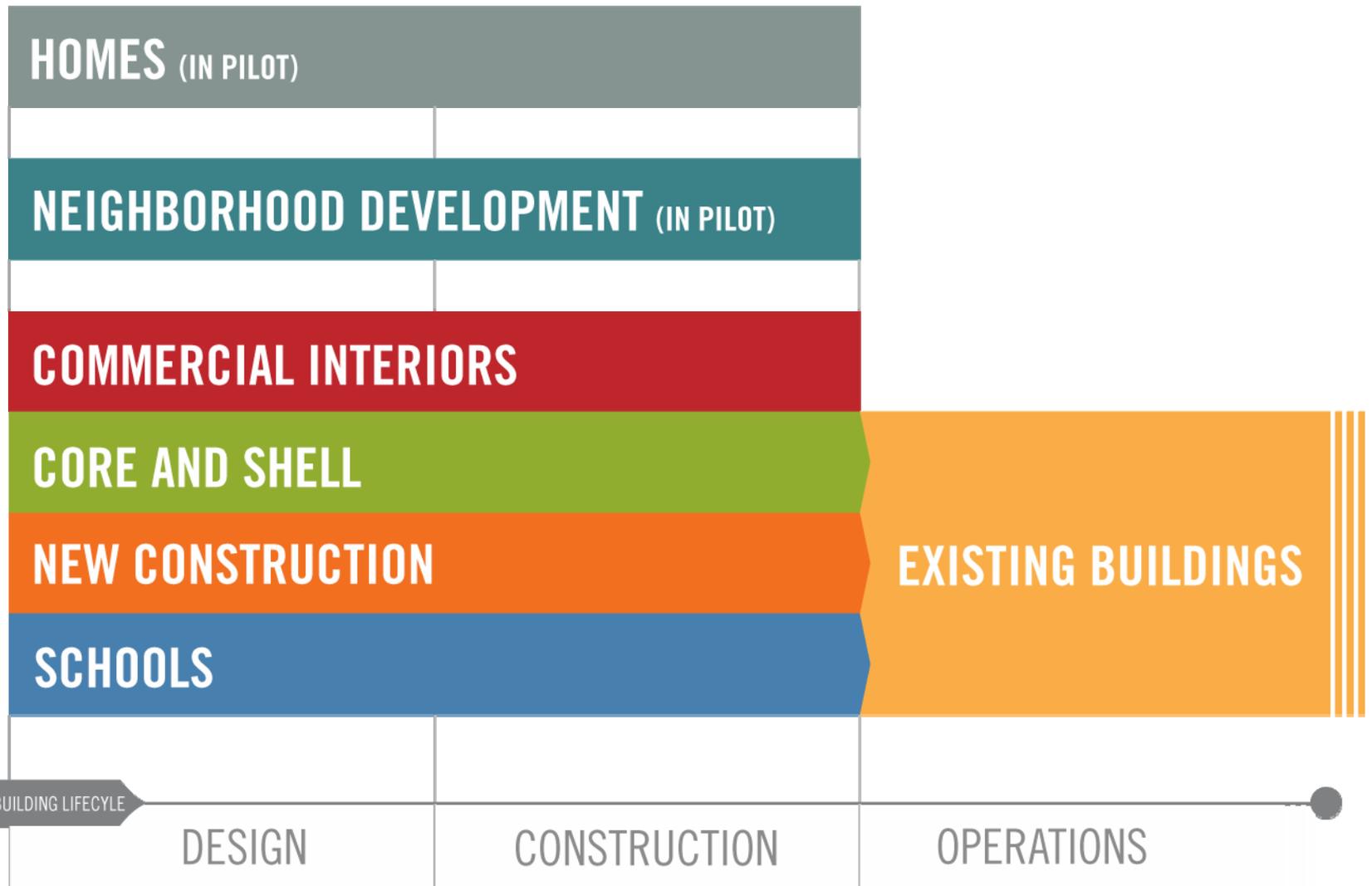


Levels of LEED Ratings

**Green Buildings
worldwide are certified
with a voluntary,
consensus-based
rating system.
USGBC has four
levels of LEED.**



LEED addresses the complete lifecycle of buildings:



© 2007

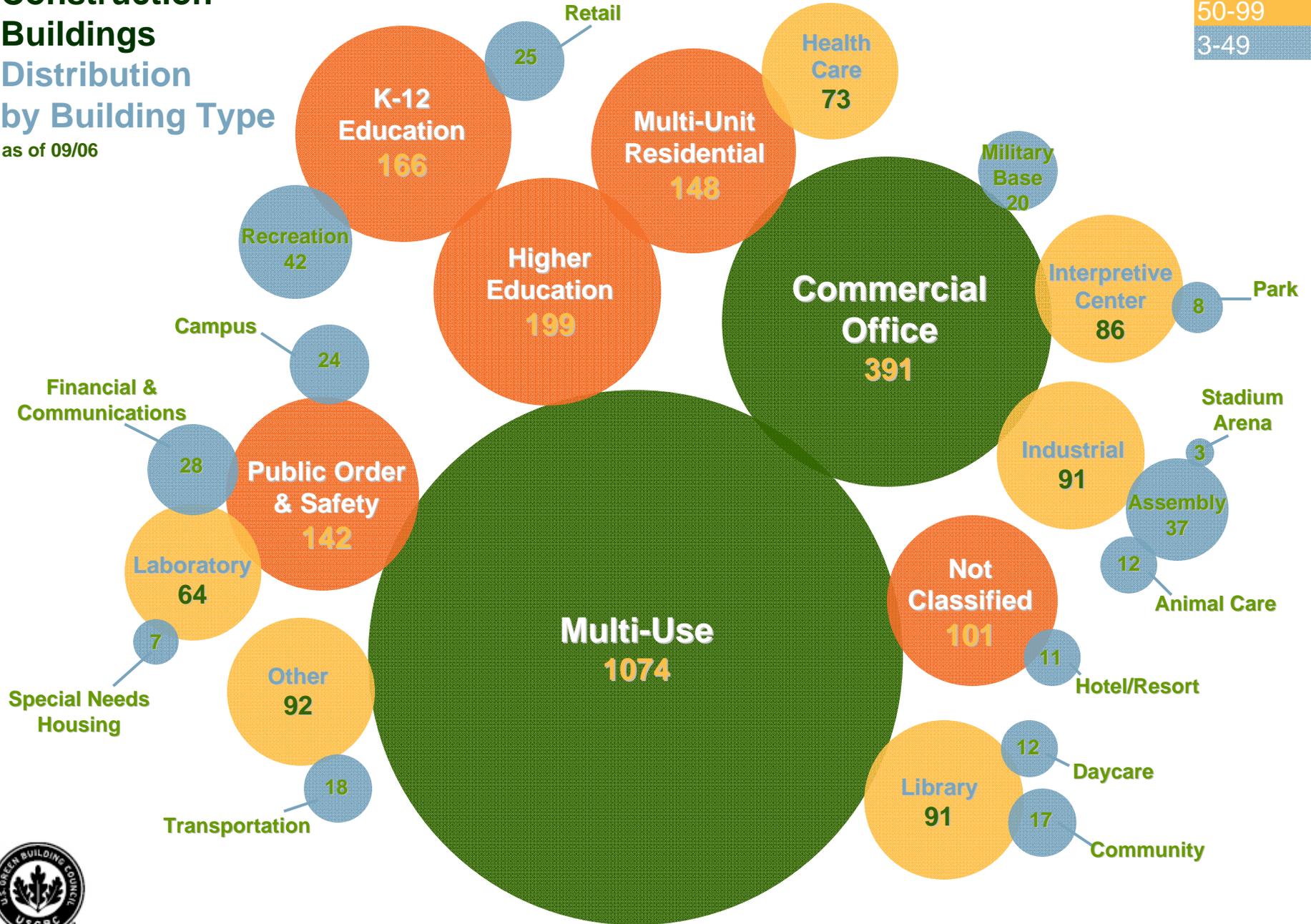


2007

Green Building Alliance

LEED for New Construction Buildings Distribution by Building Type

as of 09/06





U.S. Green Building Council

HEREBY CERTIFIES THAT

37,000

HAVE ACHIEVED THE DESIGNATION OF

LEED® ACCREDITED PROFESSIONAL

DEMONSTRATING THE KNOWLEDGE OF GREEN BUILDING PRACTICE
AND SUCCESSFUL IMPLEMENTATION OF THE LEADERSHIP IN ENERGY
AND ENVIRONMENTAL DESIGN (LEED®) GREEN BUILDING RATING SYSTEM™.

LEED:
Streamlined,
refined,
and online.

LEED-Online: Login - Microsoft Internet Explorer

Address: <http://leedonline.usgbc.org/Login.aspx>

LEED

GREEN BUILDING RATING SYSTEM

Welcome to LEED-Online

The login below is designed to allow Project Administrators and Project Team members to log in to the LEED-Online system.

- If you are a Project Administrator, please login below
- If you are a Project Team member, please be sure you are logging in with the email addresses and passwords which are assigned to you.

LOGIN
LEED-Online uses the same login as the USGBC Web site. If you have any problems logging in, please contact leedinfo@usgbc.org.

Email Address:

Password:

[Forgot Password](#)

LEARN MORE ABOUT LEED RATING SYSTEMS

LEED-NC LEED-EB LEED-EB

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LEED-NC 2.1 Letter Template

EA Credit 1.1-1.10: Optimize Energy Performance

(Architect, HVAC Engineer or Responsible Party)

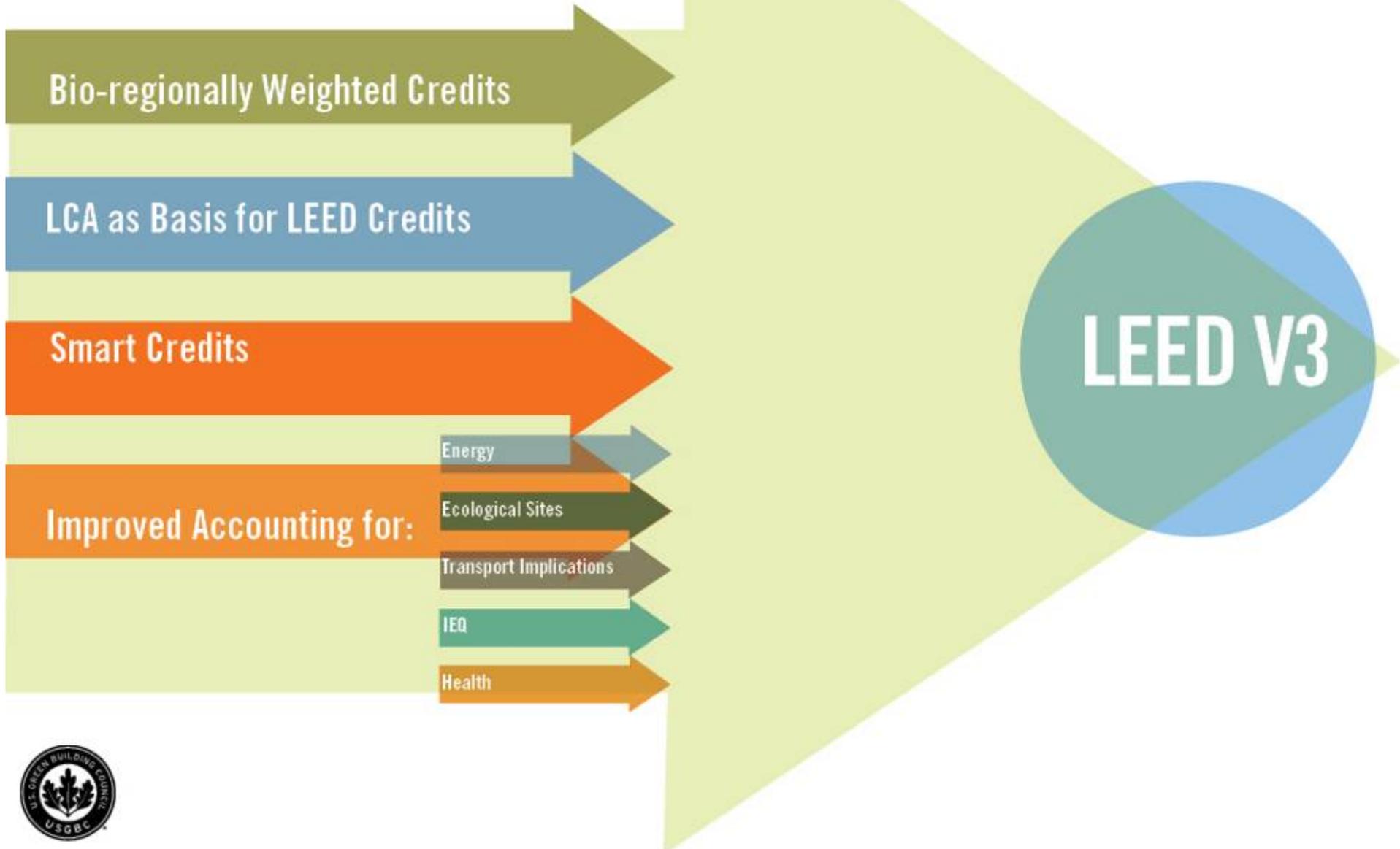
I, , declare to USGBC the following reduction in design energy cost compared to the energy cost budget for energy systems regulated by ASHRAE/IESNA Standard 90.1-1999 (without amendments):

- | New Buildings | Existing Buildings |
|---------------------------|---------------------------|
| <input type="radio"/> 15% | <input type="radio"/> 5% |
| <input type="radio"/> 20% | <input type="radio"/> 10% |
| <input type="radio"/> 25% | <input type="radio"/> 15% |
| <input type="radio"/> 30% | <input type="radio"/> 20% |
| <input type="radio"/> 35% | <input type="radio"/> 25% |
| <input type="radio"/> 40% | <input type="radio"/> 30% |
| <input type="radio"/> 45% | <input type="radio"/> 35% |
| <input type="radio"/> 50% | <input type="radio"/> 40% |
| <input type="radio"/> 55% | <input type="radio"/> 45% |
| <input type="radio"/> 60% | <input type="radio"/> 50% |

I have provided the following supplementary information to support the declaration:

- quantitative summary table (as per LEED reference Guide) showing the energy saving measures incorporated in the building design. The summary table includes detailed data on both design and budget assumptions.
- summary printout from an energy simulation package demonstrating that the design energy cost is lower than the energy cost budget as defined in ASHRAE/IESNA 90.1-1999, Section 11. The summary printout contains all the information requested

Taking LEED to the Next Level



1993 - 2008



What's Next???

Possible Future Emphasis

- **Research:** Invest in Data Collection and Performance Testing – Lessons Learned
- **Raise Public Awareness:** residential, neighborhoods, schools...
- **Build Professional Capacity:** training
- **Form Partnerships:** look for common agendas
- **Advocacy:** promote the economic and human value of a green economy Clarify
- **Refine Mission/Definition:** Evolve from Green Building to Sustainable Development Practices



For Further Information

Green Building Alliance

64 S. 14th Street, Pittsburgh

www.gbapgh.org

USGBC

Washington, D.C.

www.usgbc.org

*Select Slides Provided by:
USGBC and McGraw Hill*

