

U.S. Green Building Council

LEED Update

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U.S. Green Building Council



Our Mission

To transform the way buildings and communities are designed, built and operated, enabling an environmentally and socially responsible, healthy and prosperous environment that improves the quality of life.



IMPACTS OF U.S. BUILDINGS ON RESOURCES

40% primary energy use*

72% electricity consumption*

39% CO₂ emissions*

13.6% potable water consumption**

Sources:

*Environmental Information Administration (2008). EIA Annual Energy Outlook.

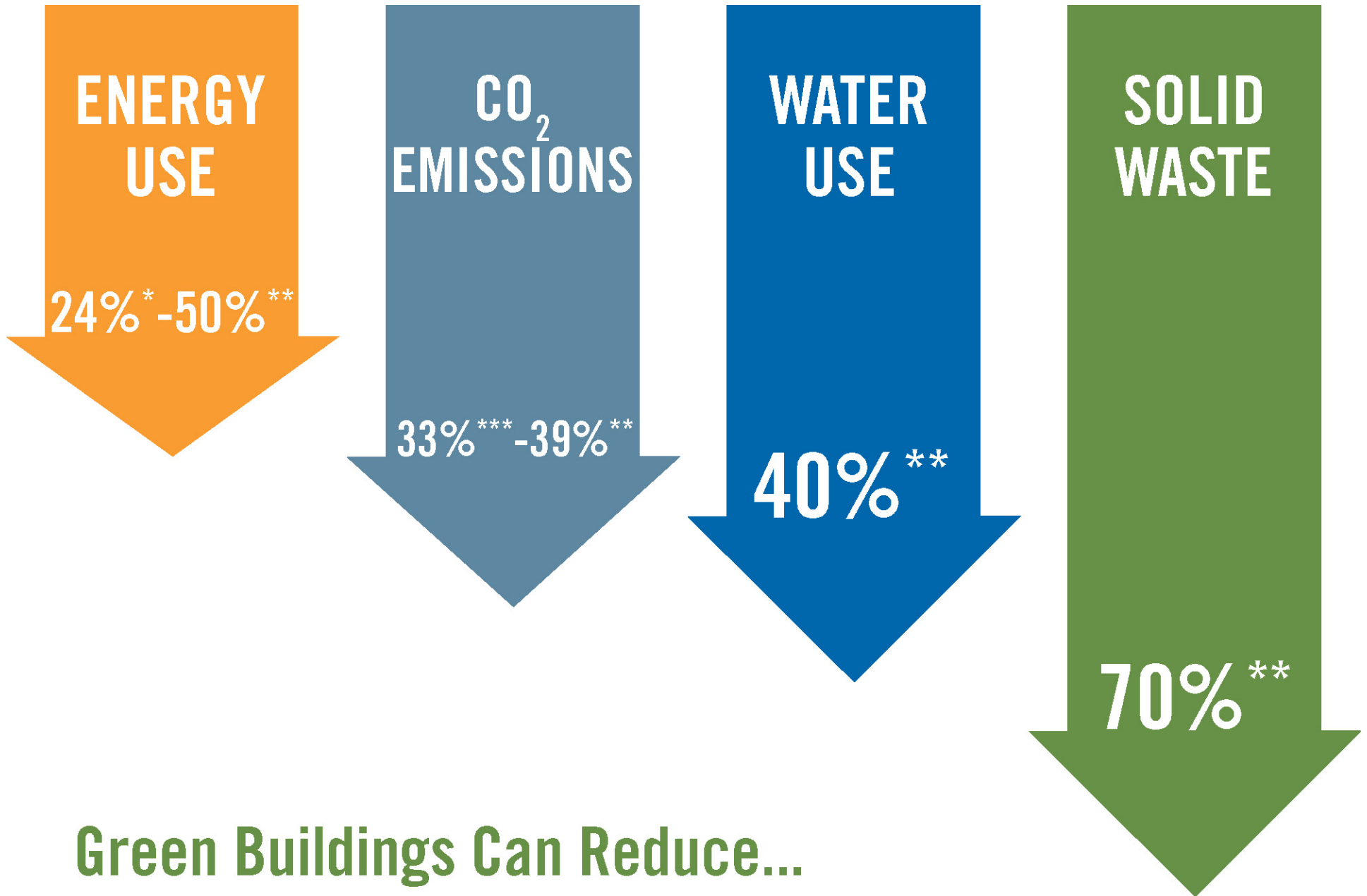
** U.S. Geological Survey (2000). 2000 data.

Global CO₂ Emissions by Sector

#1. Buildings

#2. Transportation

#3. Industry



* Turner, C. & Frankel, M. (2008). Energy performance of LEED for New Construction buildings: Final report.

** Kats, G. (2003). The Costs and Financial Benefits of Green Building: A Report to California's Sustainable Building Task Force.

*** GSA Public Buildings Service (2008). Assessing green building performance: A post occupancy evaluation of 12 GSA buildings.

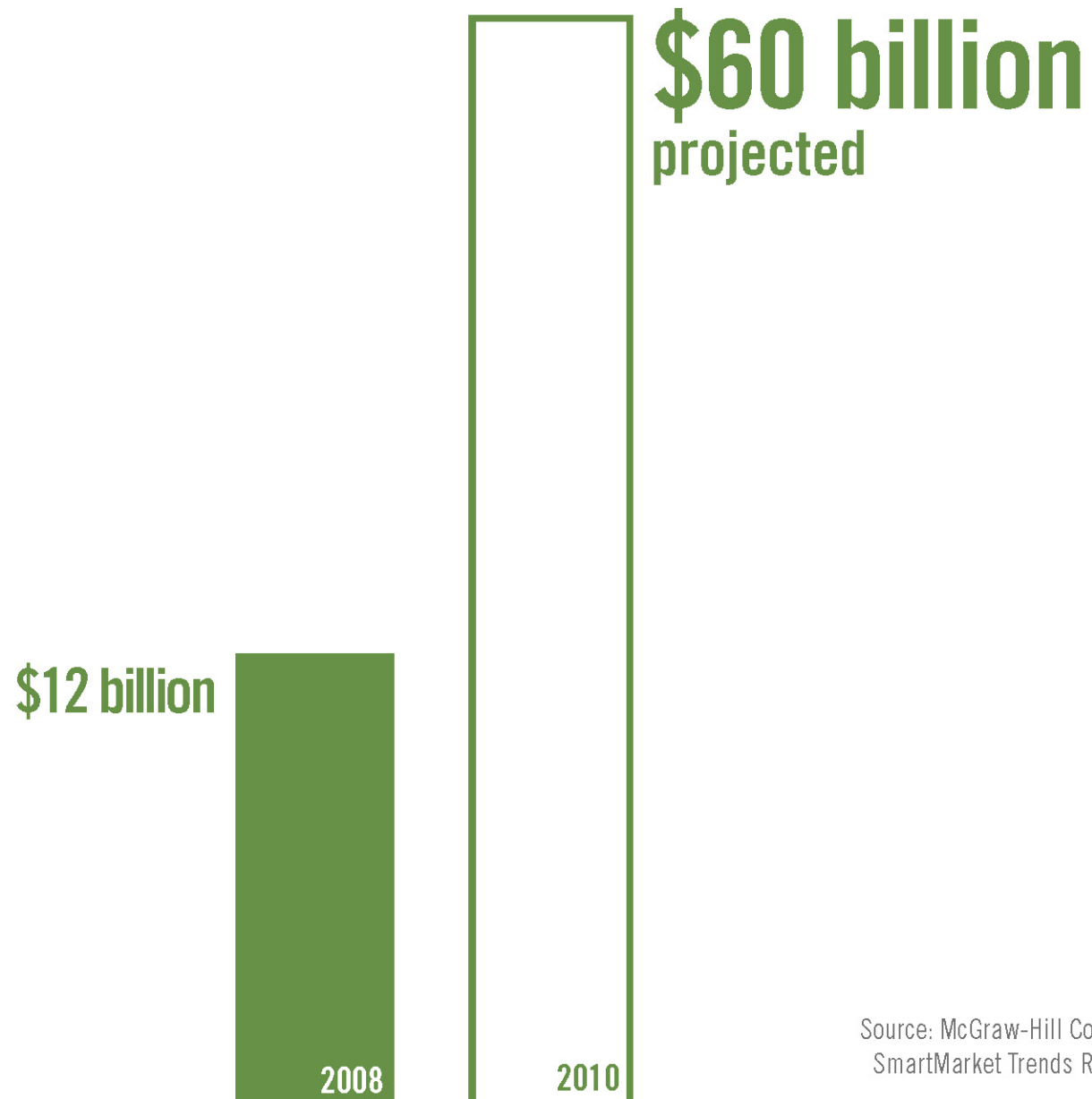
Green Building Occupants Are Healthier & More Productive

- In the U.S., people spend, on average, 90% or more of their time indoors*
- Green buildings typically have better indoor air quality and lighting
- LEED certified project case studies illustrate 2-16% increased worker and student productivity**

* Source: The Total Exposure Assessment Methodology (TEAM) Study. EPA 600/S6-87/002. U.S. Environmental Protection Agency. 1987.

** Source: LEED project data, USGBC

Green Building is in Demand

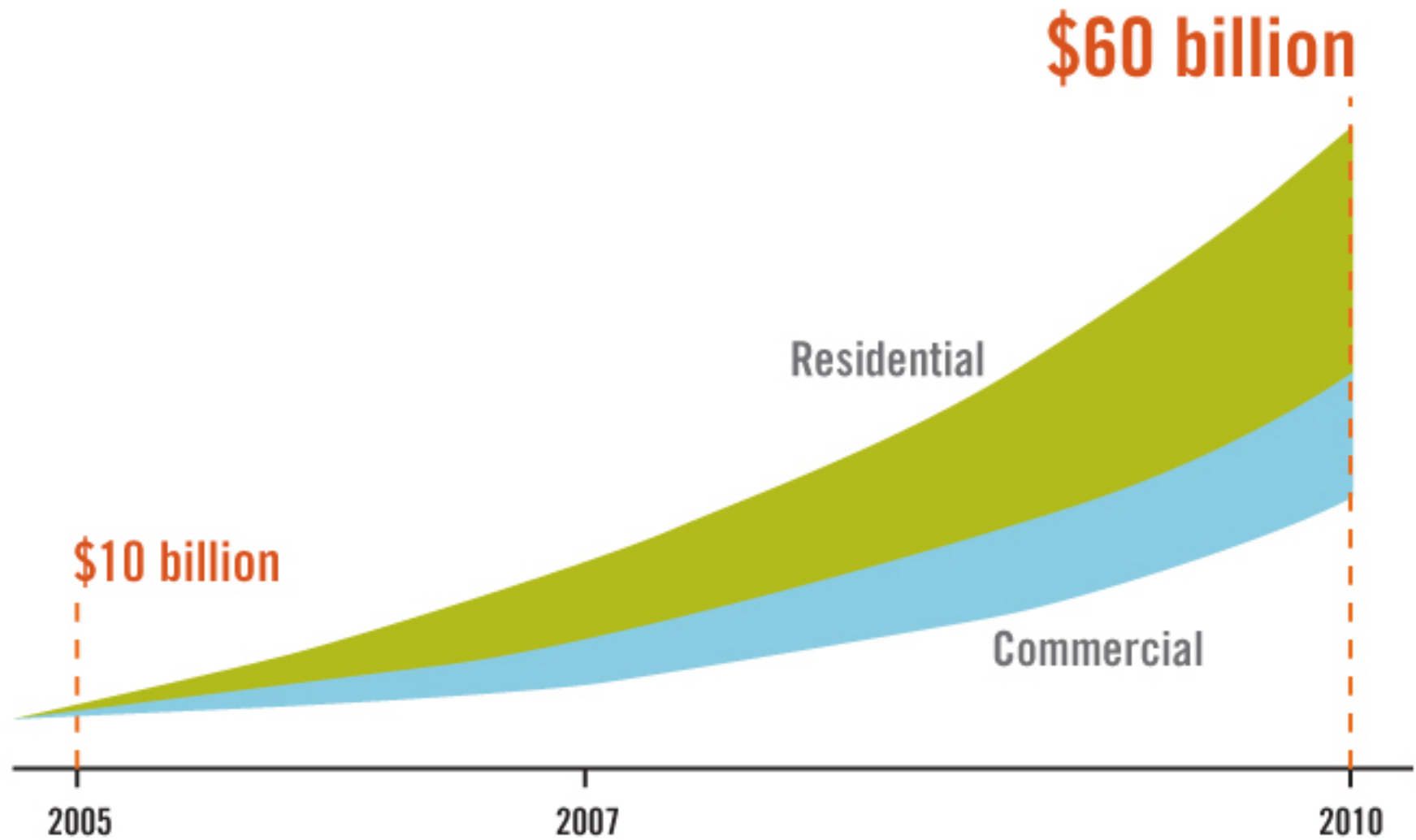


Source: McGraw-Hill Construction,
SmartMarket Trends Report 2008

Why the Demand?

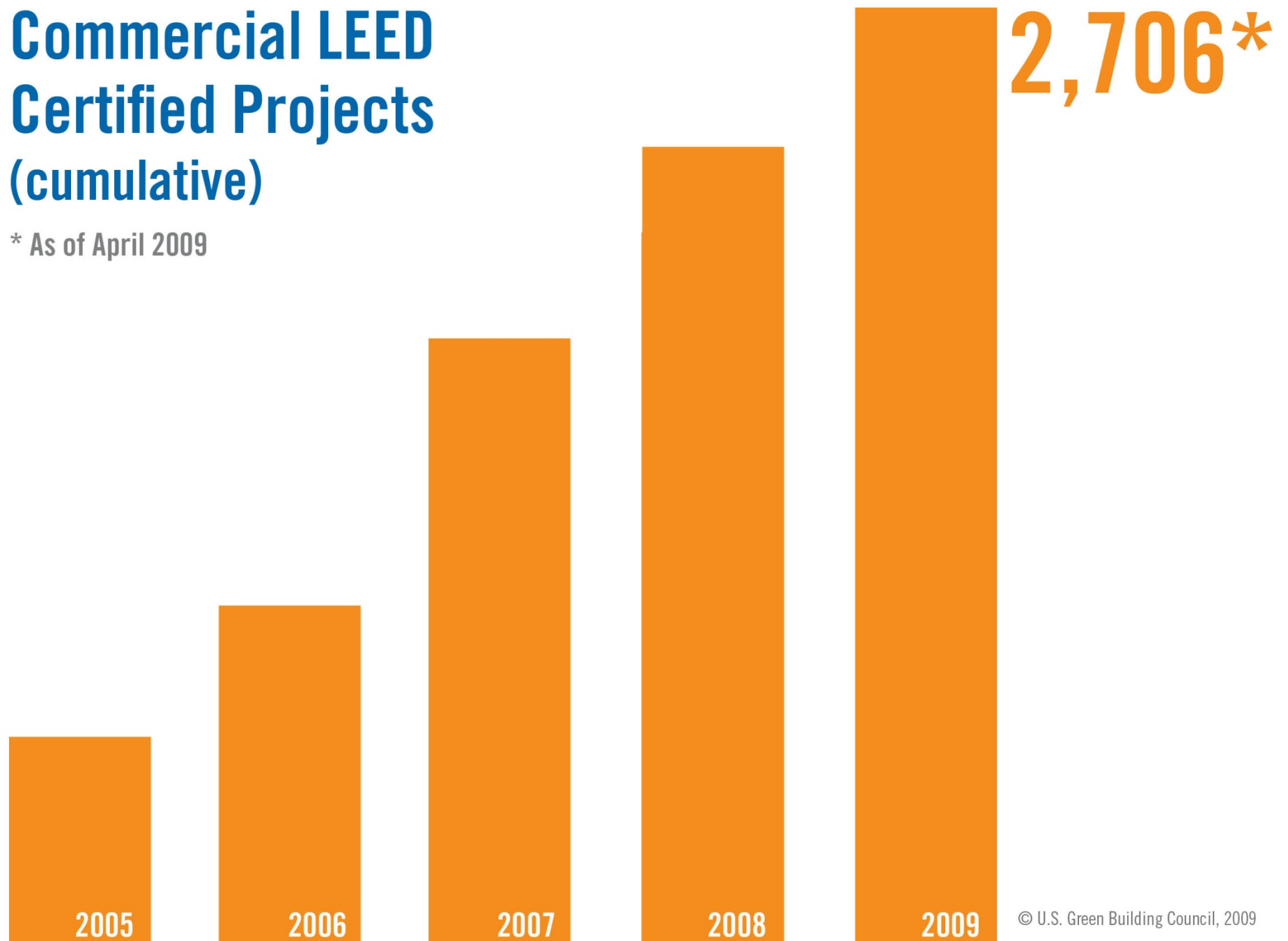
- Unprecedented level of government initiatives
- Heightened residential demand for green construction
- Improvements in sustainable materials

Green Building is an Industry Trend Not a Fad



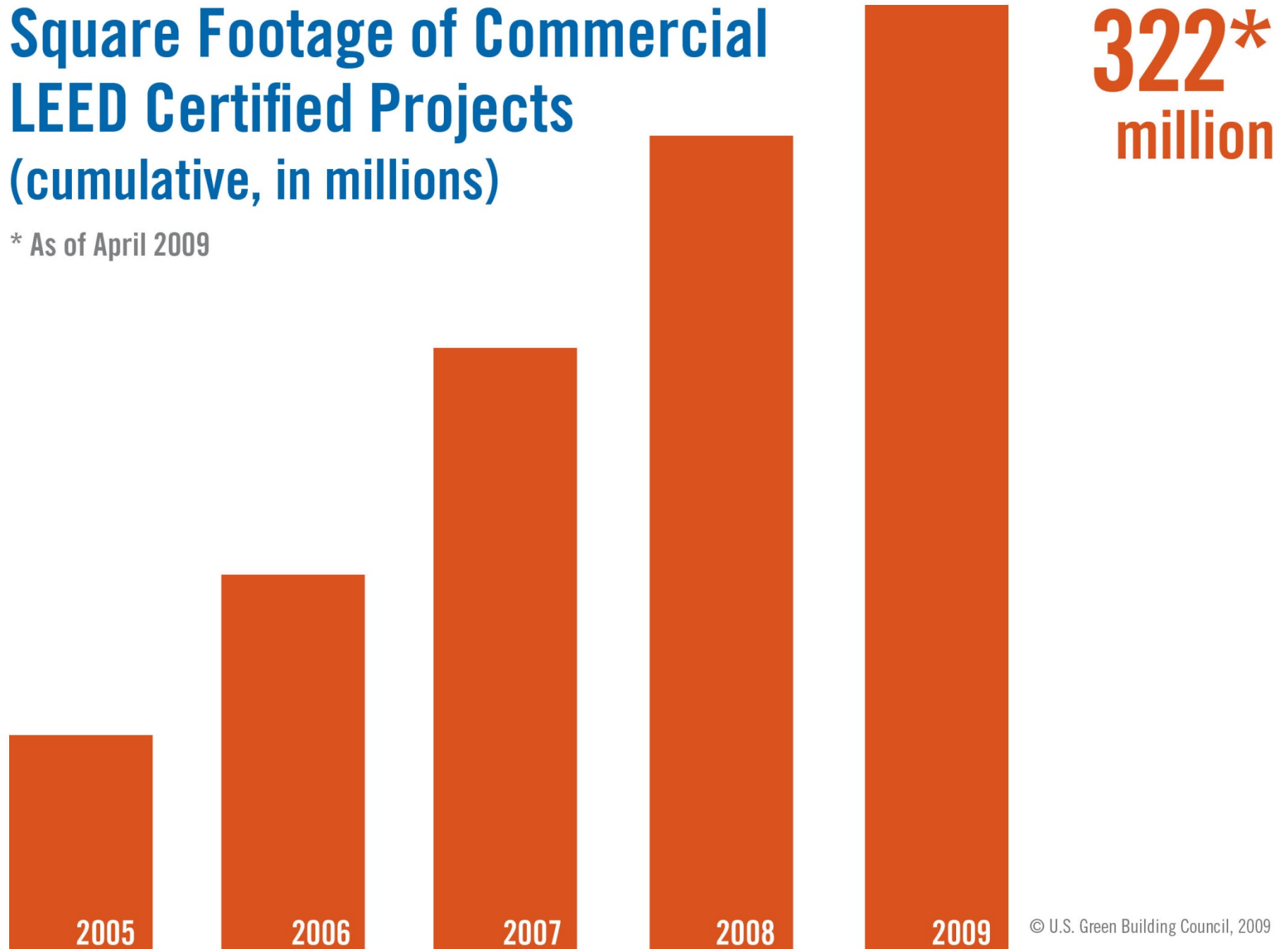
Commercial LEED Certified Projects (cumulative)

* As of April 2009



Square Footage of Commercial LEED Certified Projects (cumulative, in millions)

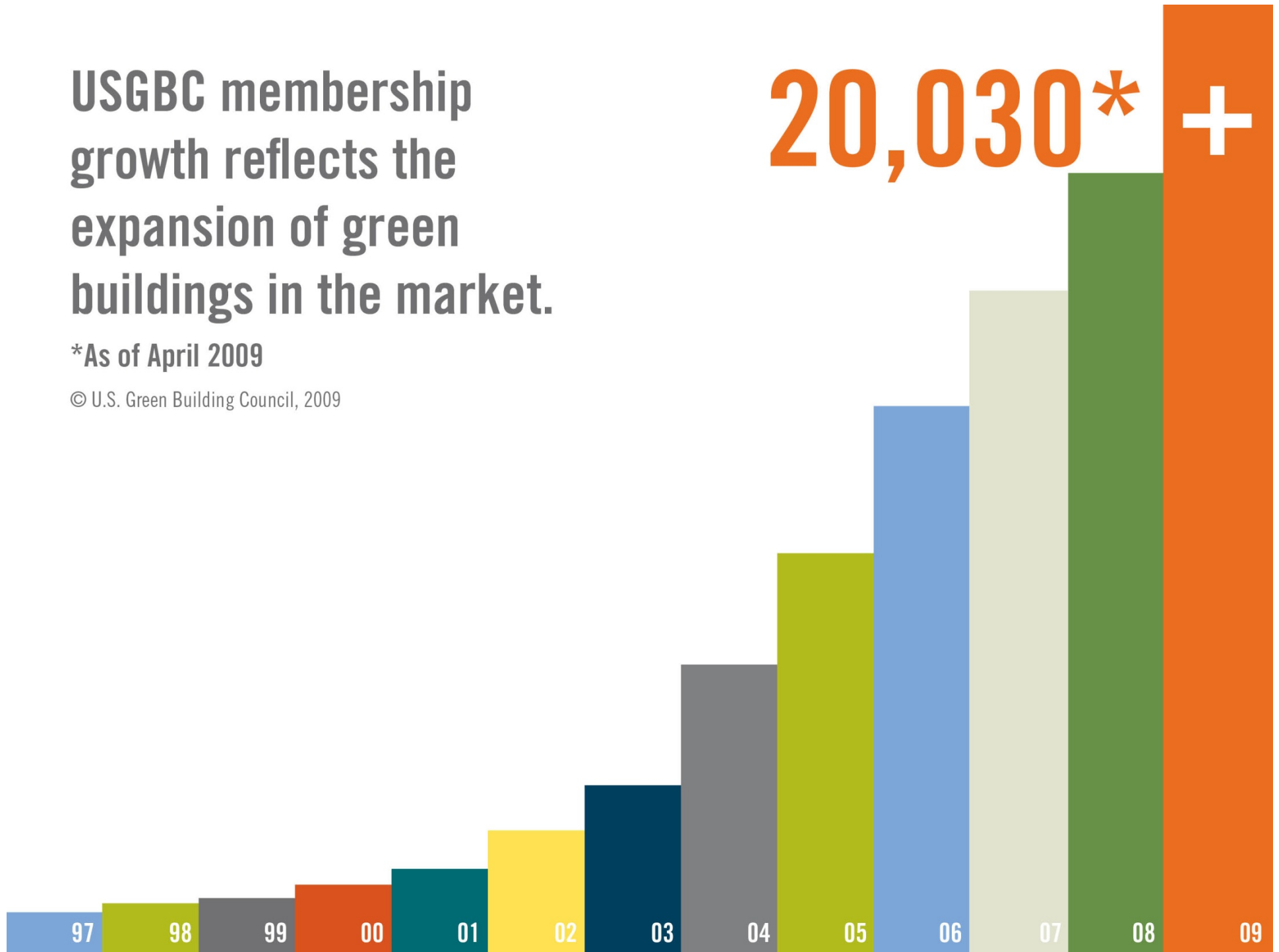
* As of April 2009



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

*As of April 2009

© U.S. Green Building Council, 2009





Nutrition Facts

Serving Size 8 crackers (28g)
Servings Per Container About 2

Amount Per Serving

Calories 120 Calories From Fat 30
% Daily Value*

Total Fat 3.5g 5%

Saturated Fat 1g 5%

Trans Fat 0g

Polyunsaturated Fat 1.5g

Monounsaturated Fat 0.5g

Cholesterol 0mg 0%

Sodium 140mg 6%

Total Carbohydrate 22g 7%

Dietary Fiber Less than 1g 3%

Sugars 7g

Protein 2g

Vitamin A 0% • Vitamin C 0%

Calcium 10% • Iron 4%

* Percent Daily Values are based on a 2,000 calorie diet.

CONTINUED ON OTHER SIDE

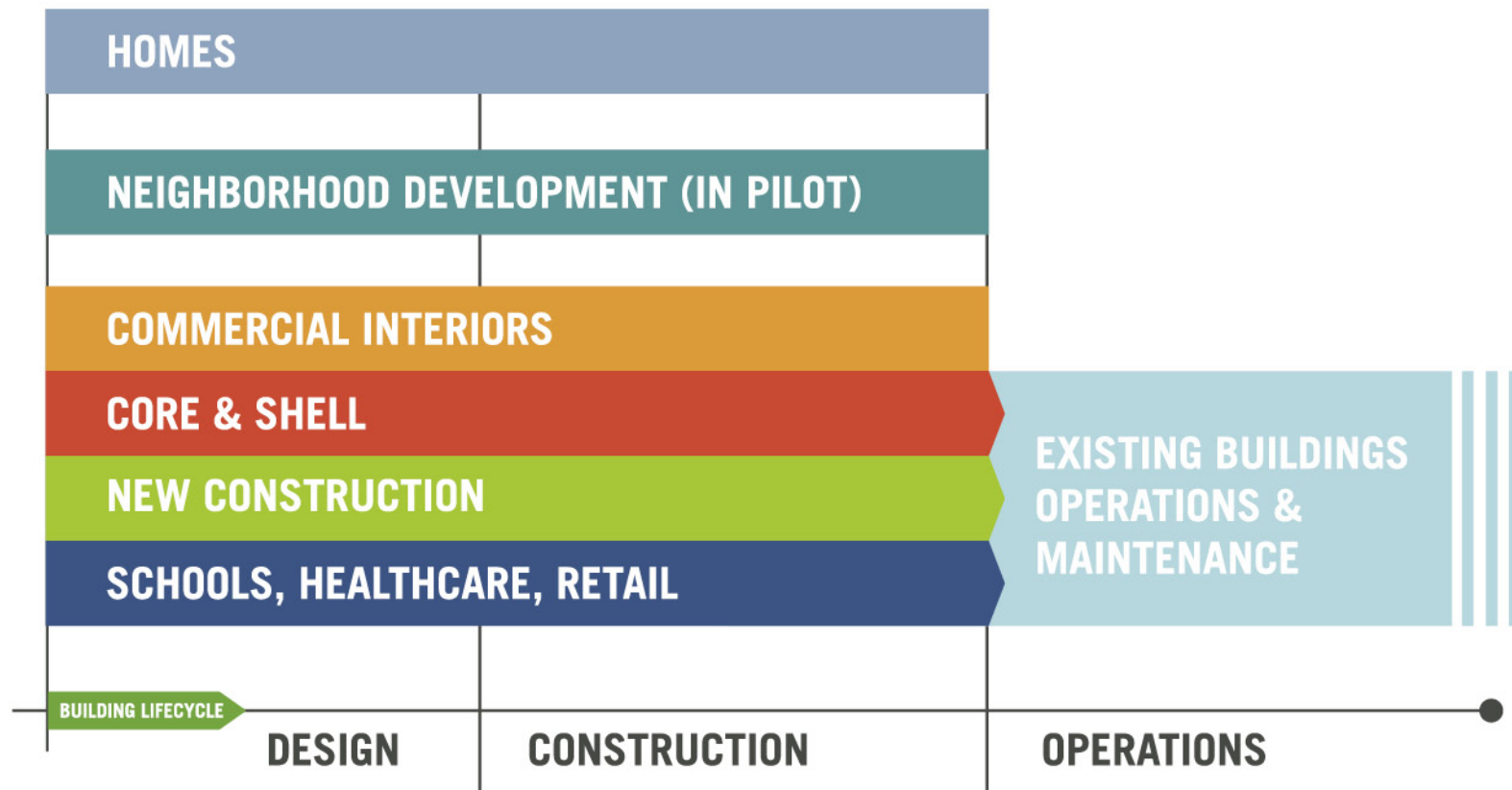


Leadership in Energy and Environmental Design

A leading-edge system
for certifying the
greenest performing
buildings in the world



LEED ADDRESSES THE COMPLETE LIFECYCLE OF BUILDINGS



Heat Island Effect – Roof

LEED 2009: Sustainable Sites credit 7.2

Intent: To reduce heat islands to minimize impacts on microclimates and human and wildlife habitats.

Requirements:

- Option 1:
Use roofing materials with the required SRI for 75% or more of the roof surface. (Low-slope: ≥ 78 ; Steep-slope: ≥ 29)
- Option 2:
Install a vegetated roof covering 50% or more of the roof surface
- Option 3:
Install a combination of SRI compliant roofing materials and a vegetated roof

Heat Island Effect – Roof

Credit achievement history in LEED:

	Projects that attempted SSc7.2	Projects that earned SSc7.2
LEED NC v2.0 & 2.1	63%	59%
LEED NC v2.2	57%	53%
LEED EB v2.0	24%	22%
Total	61%	57%



V3

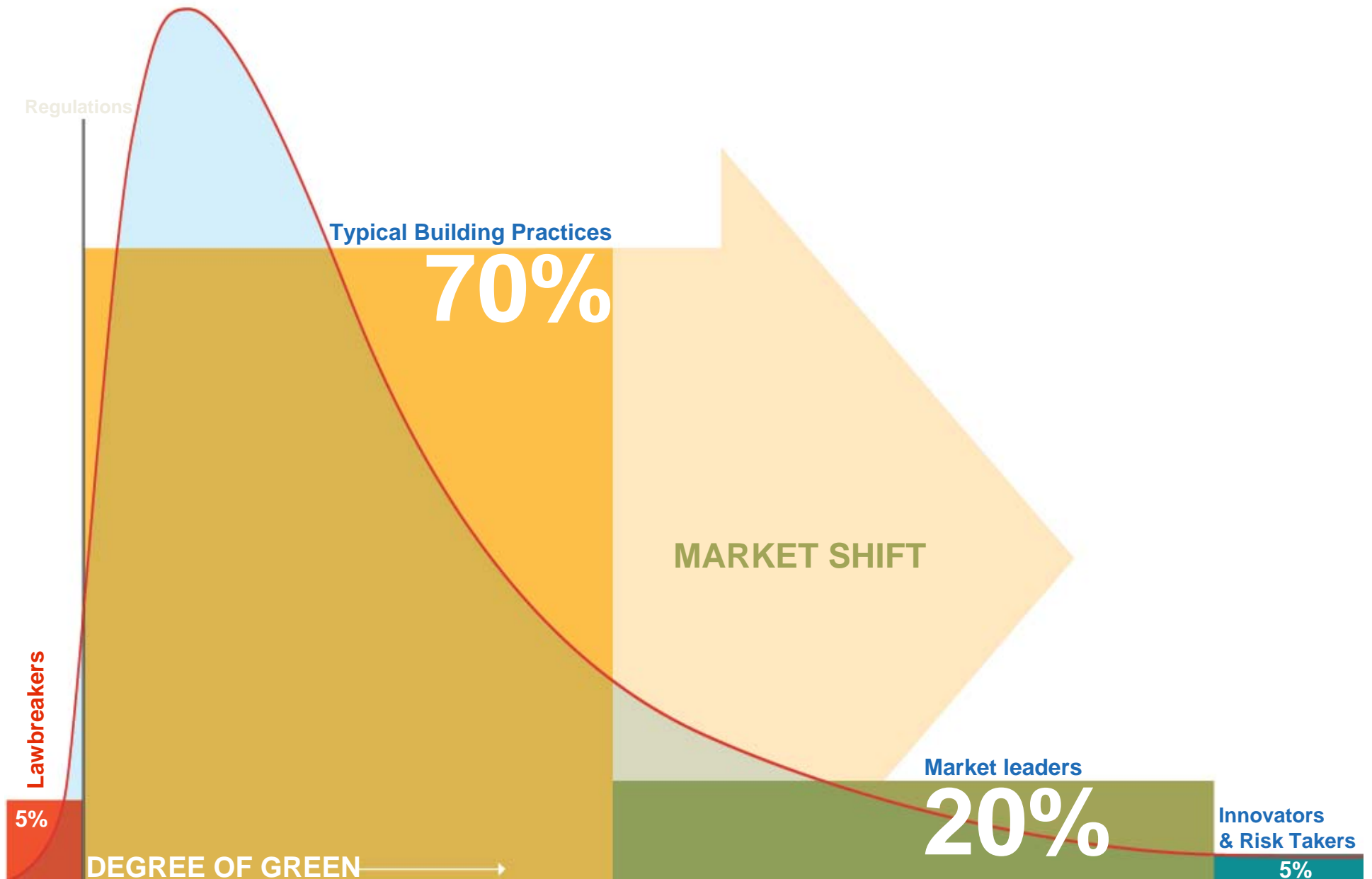
URGENCY

CLIMATE CHANGE • ENERGY SAVINGS • HEALTHIER BUILDINGS •
SMARTER BUILDINGS • REDUCE FOSSIL FUEL USE • RESTORE
COMMUNITIES • EXCELLENT RESALE VALUE • BUILT TO LAST •
IMPROVE WATER USE • LOWER OPERATING COSTS • SHAPE
THE MARKET FOR GREEN PRODUCTS AND SERVICES • BETTER
AIR QUALITY • MINIMIZE CHEMICALS • PROTECT BIODIVERSITY •
MINIMIZE STRAIN ON LOCAL INFRASTRUCTURE • USE LESS
WATER • DEMONSTRATE COMMITMENT TO THE ENVIRONMENT
• PROTECT ECOSYSTEMS • CONSERVE NATURAL RESOURCES •
ENHANCE OCCUPANT COMFORT • FOSTER SOCIAL EQUITY
IMPROVE OVERALL QUALITY OF LIFE

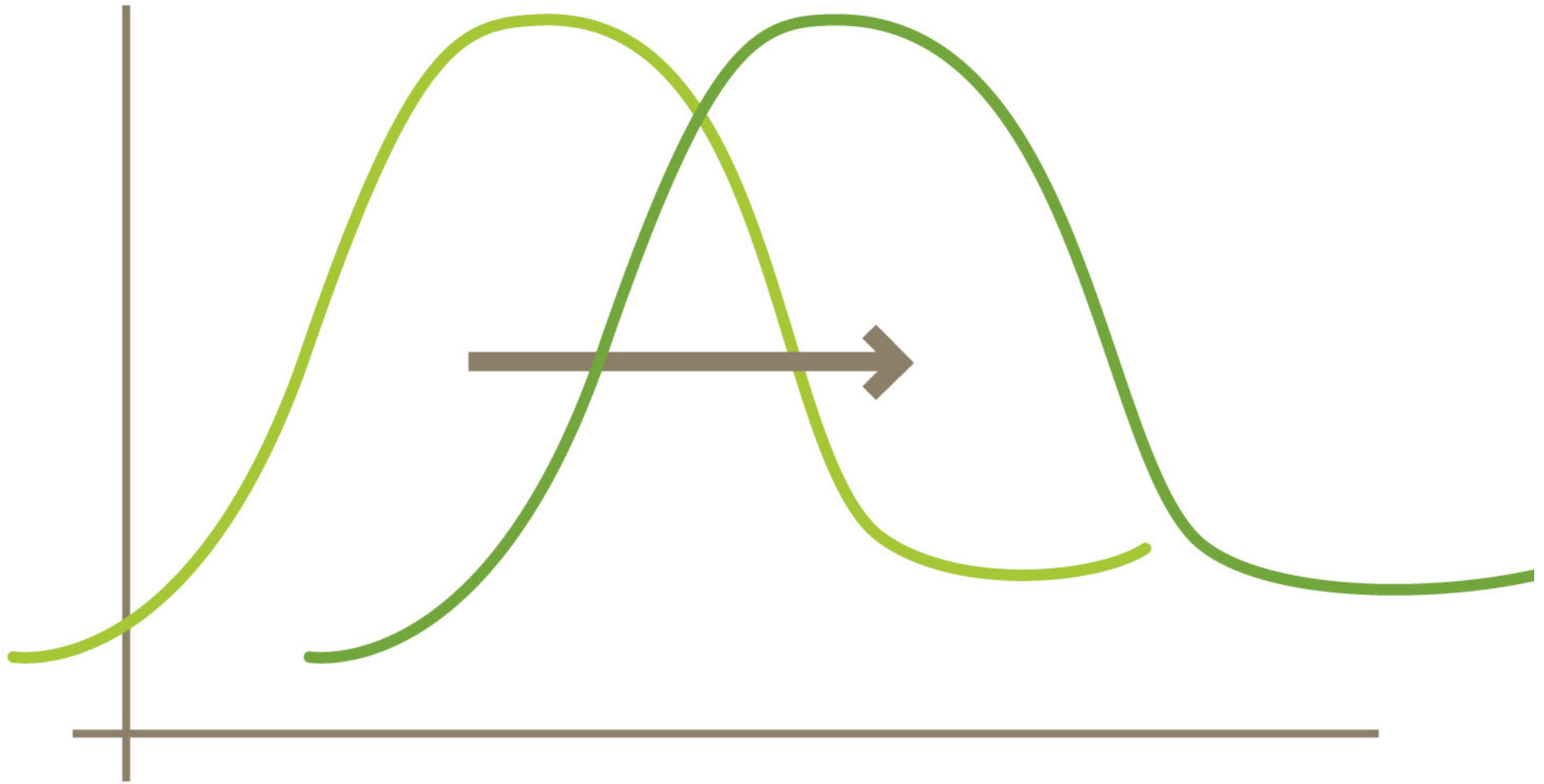
CREATIVE TENSION



The Market



LEED 2009...SHIFTING FORWARD



LEED 2009

ADVANCEMENTS TO THE RATING SYSTEM

LEED ONLINE

FASTER, SMARTER & A BETTER USER EXPERIENCE

+

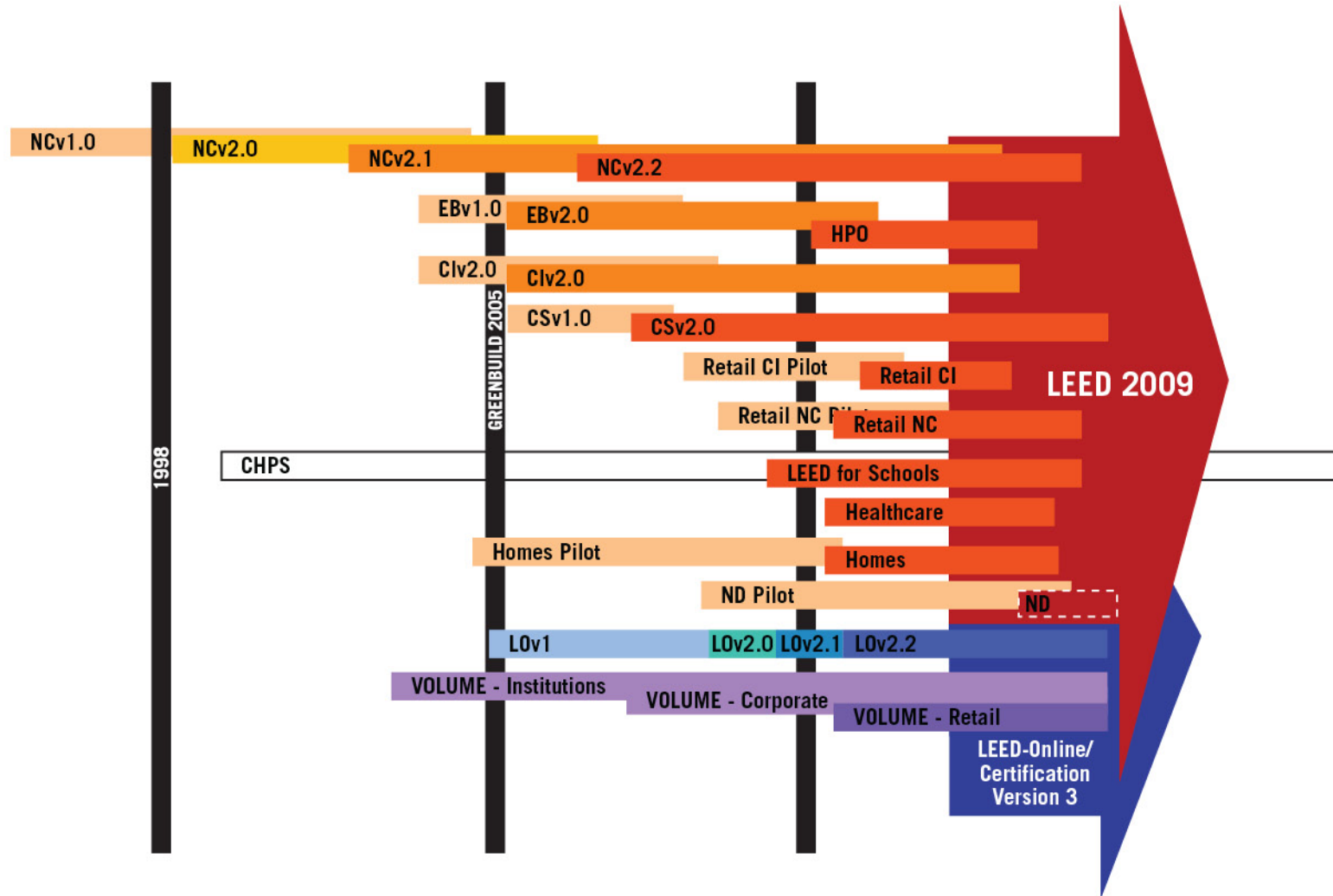
CERTIFICATION MODEL

GBCI & CERTIFICATION BODIES

=

LEED V3

HISTORY OF LEED LAUNCHES



PREDICTABILITY

AND CONTINUOUS IMPROVEMENT



CREDIT PILOTING

innovation doesn't keep to a schedule

LCA

LEED 2009

**HARMONIZATION
WEIGHTINGS
REGIONAL CREDITS**

HARMONIZATION

**CREDIT ALIGNMENT
AND HARMONIZATION**

**LEED'S MOST EFFECTIVE
COMMON
DENOMINATOR**

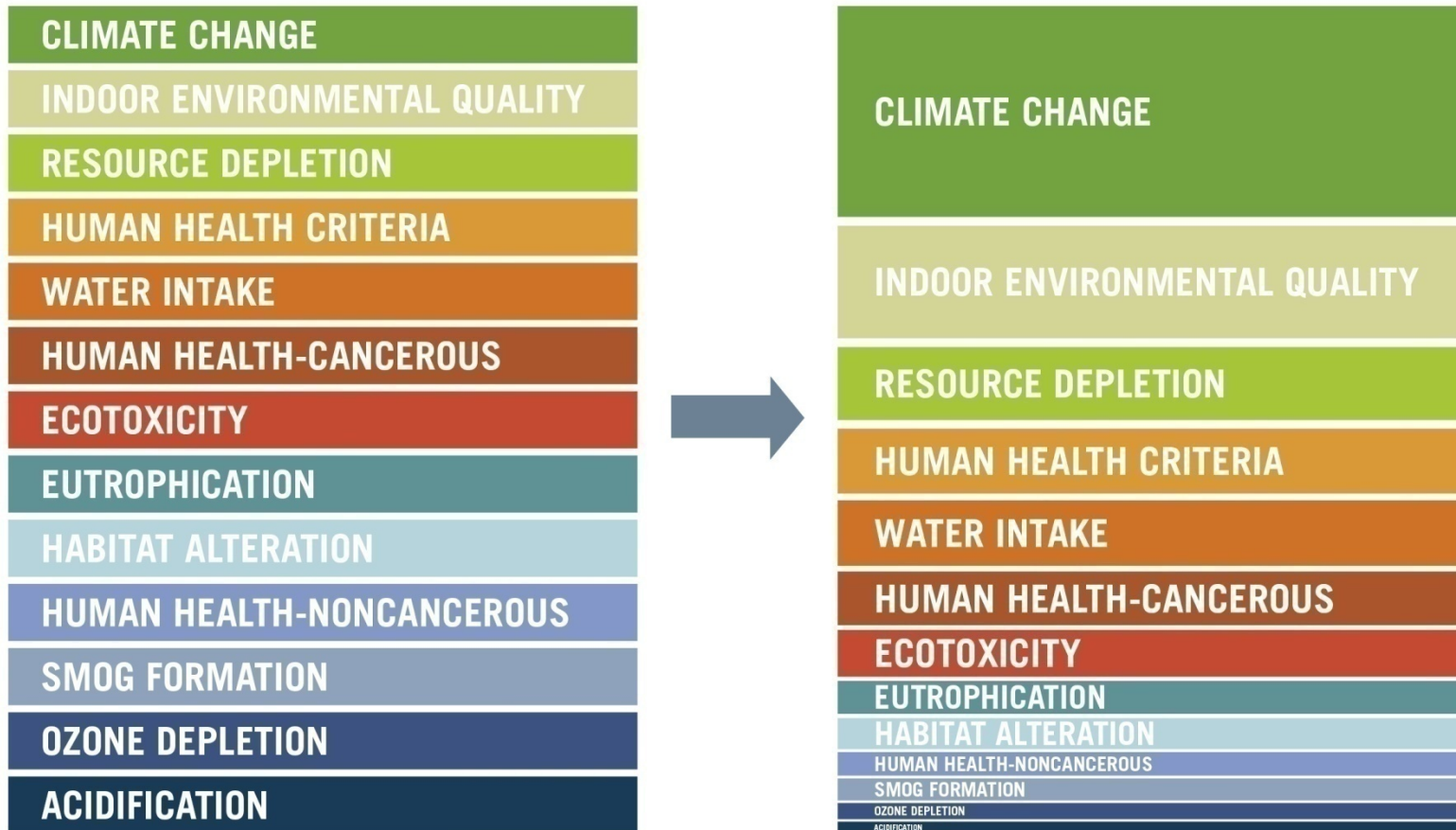


BOOKS
=
LEED
CREDITS



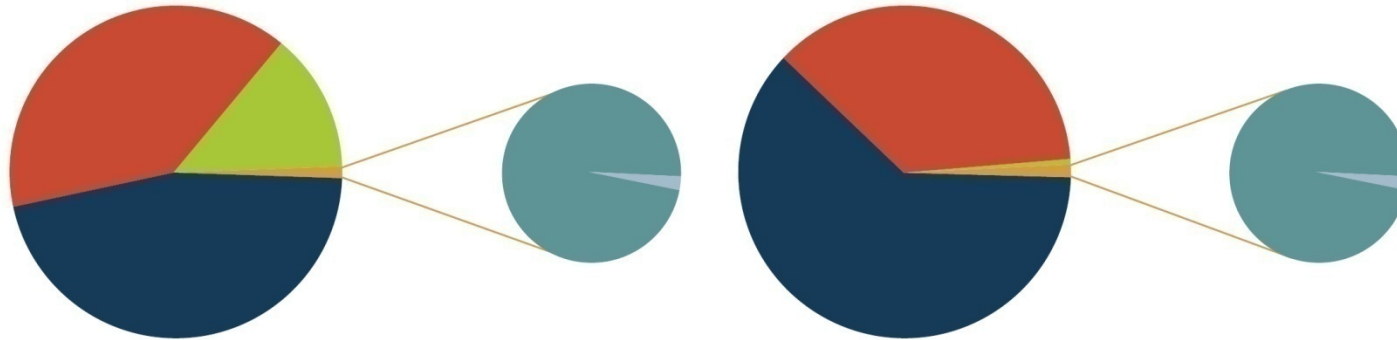
WEIGHTINGS

IMPACT CATEGORIES



WEIGHTINGS TOOL

■ Building Systems
 ■ Transportation
 ■ Water
 ■ Materials
 ■ Solid Waste

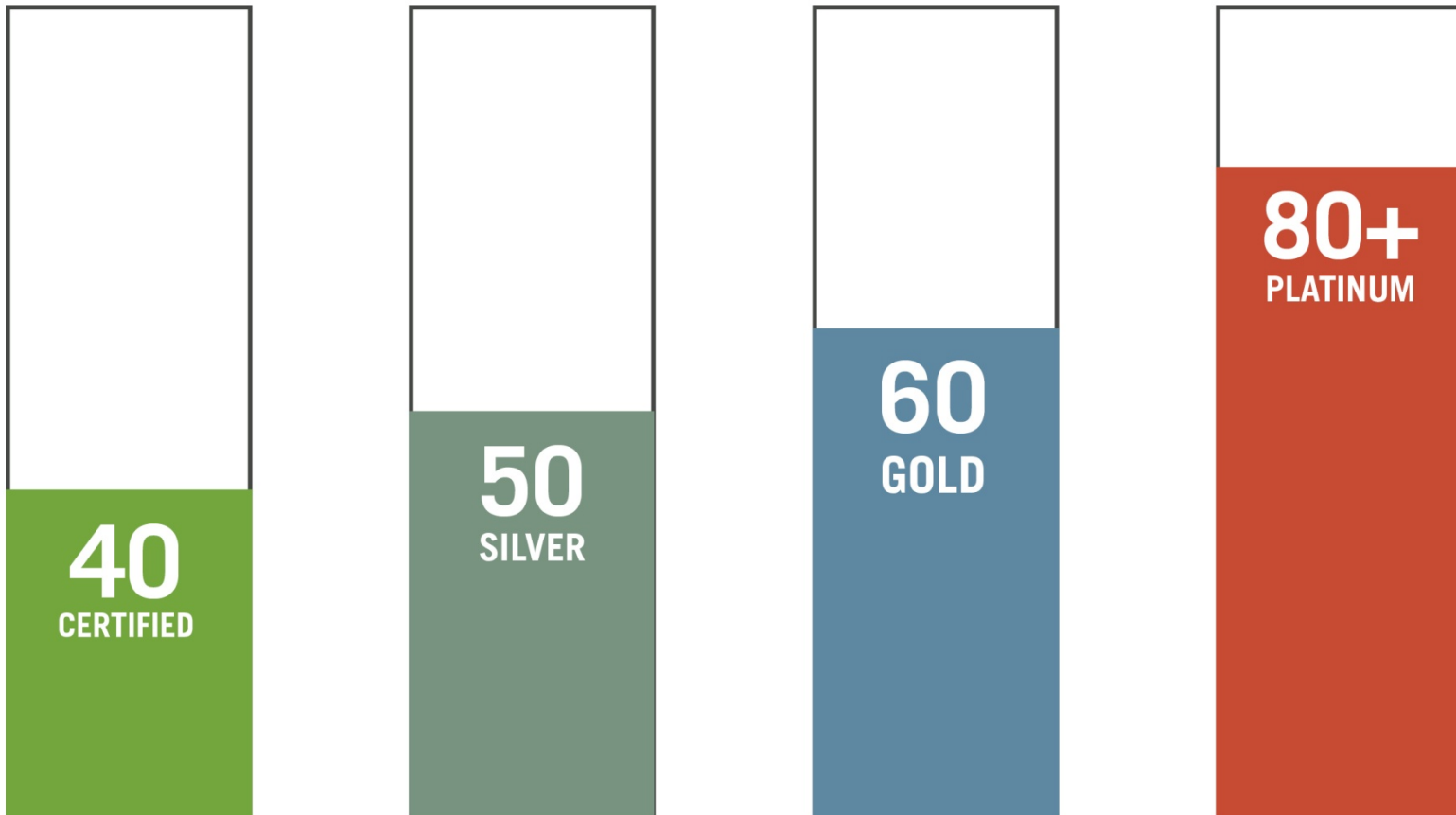


Impact Categories				Carbon Footprint		Fossil Fuel Depletion		Water Use		Land Use		Acidification
Impact Category Weighting Relative Importance [%]				25%		9%		7%		5%		3%
Credit	Description	Impact		Credit Weight (0-10)	Relative Impact [%]	Credit Weight (0-10)	Relative Impact [%]	Credit Weight (0-10)	Relative Impact [%]	Credit Weight (0-10)	Relative Impact [%]	Credit Weight (0-10)
Building systems					59%		46%		0%		0%	
			Base Net	59		46		0		0		Base Net
				73.89		57.61		0		8E-04		
SS	7.1	Landscape and exterior design to reduce heat island, non-roof	Reduce EUI	1	3.4	1	2.6	0	0.0	1	0.0	1
SS	7.2	Landscape and exterior design to reduce heat island, roof	Reduce EUI	1	3.4	1	2.6	0	0.0	1	0.0	1
SS	8	Light pollution reduction	Reduce EUI	1	3.4	1	2.6	0	0.0	1	0.0	1
EA	1.1	Optimize Energy Performance 10.5%	Reduce EUI	1	3.4	1	2.6	0	0.0	1	0.0	1
EA	1.2	Optimize Energy Performance 14%	Reduce EUI	1	3.4	1	2.6	0	0.0	1	0.0	1
EA	1.3	Optimize Energy Performance 17.5%	Reduce EUI	1	3.4	1	2.6	0	0.0	1	0.0	1
EA	1.4	Optimize Energy Performance 21%	Reduce EUI	1	3.4	1	2.6	0	0.0	1	0.0	1
EA	1.5	Optimize Energy Performance 24.5%	Reduce EUI	1	3.4	1	2.6	0	0.0	1	0.0	1
EA	1.6	Optimize Energy Performance 28%	Reduce EUI	1	3.4	1	2.6	0	0.0	1	0.0	1
EA	1.7	Optimize Energy Performance 31.5%	Reduce EUI	1	3.4	1	2.6	0	0.0	1	0.0	1

THE POINT VALUE FOR MOST CREDITS HAS CHANGED

**THE CREDITS
ARE INTACT**

100-POINT SCALE





LEED for Commercial Interiors v2009

Registered Project Checklist

Sustainable Sites Possible Points: 21

<input type="checkbox"/>	Credit 1	Site Selection	up to 5
<input type="checkbox"/>	Credit 2	Development Density and Community Connectivity	6
<input type="checkbox"/>	Credit 3.1	Alternative Transportation—Public Transportation Access	6
<input type="checkbox"/>	Credit 3.2	Alternative Transportation—Bicycle Storage and Changing Rooms	2
<input type="checkbox"/>	Credit 3.3	Alternative Transportation—Parking Availability	2

Water Efficiency Possible Points: 11

<input checked="" type="checkbox"/>	Prereq 1	Water Use Reduction—20% Reduction	
<input type="checkbox"/>	Credit 1	Water Use Reduction	6 to 11

Energy and Atmosphere Possible Points: 37

<input checked="" type="checkbox"/>	Prereq 1	Fundamental Commissioning of Building Energy Systems	
<input checked="" type="checkbox"/>	Prereq 2	Minimum Energy Performance	
<input checked="" type="checkbox"/>	Prereq 3	Fundamental Refrigerant Management	
<input type="checkbox"/>	Credit 1.1	Optimize Energy Performance—Lighting Power	1 to 5
<input type="checkbox"/>	Credit 1.2	Optimize Energy Performance—Lighting Controls	1 to 3
<input type="checkbox"/>	Credit 1.3	Optimize Energy Performance—HVAC	5 to 10
<input type="checkbox"/>	Credit 1.4	Optimize Energy Performance—Equipment and Appliances	1 to 4
<input type="checkbox"/>	Credit 2	Enhanced Commissioning	5
<input type="checkbox"/>	Credit 3	Measurement and Verification	2 to 5
<input type="checkbox"/>	Credit 4	Green Power	5

Materials and Resources Possible Points: 14

<input checked="" type="checkbox"/>	Prereq 1	Storage and Collection of Recyclables	
<input type="checkbox"/>	Credit 1.1	Tenant Space—Long-Term Commitment	1
<input type="checkbox"/>	Credit 1.2	Building Reuse	1 to 2
<input type="checkbox"/>	Credit 2	Construction Waste Management	1 to 2
<input type="checkbox"/>	Credit 3.1	Materials Reuse	1 to 2
<input type="checkbox"/>	Credit 3.2	Materials Reuse—Furniture and Furnishings	1
<input type="checkbox"/>	Credit 4	Recycled Content	1 to 2
<input type="checkbox"/>	Credit 5	Regional Materials	1 to 2
<input type="checkbox"/>	Credit 6	Rapidly Renewable Materials	1
<input type="checkbox"/>	Credit 7	Certified Wood	1

Indoor Environmental Quality Possible Points: 17

<input checked="" type="checkbox"/>	Prereq 1	Minimum IAQ Performance	
<input checked="" type="checkbox"/>	Prereq 2	Environmental Tobacco Smoke (ETS) Control	
<input type="checkbox"/>	Credit 1	Outdoor Air Delivery Monitoring	1
<input type="checkbox"/>	Credit 2	Increased Ventilation	1
<input type="checkbox"/>	Credit 3.1	Construction IAQ Management Plan—During Construction	1
<input type="checkbox"/>	Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
<input type="checkbox"/>	Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
<input type="checkbox"/>	Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
<input type="checkbox"/>	Credit 4.3	Low-Emitting Materials—Flooring Systems	1
<input type="checkbox"/>	Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
<input type="checkbox"/>	Credit 4.5	Low-Emitting Materials—Systems Furniture and Seating	1
<input type="checkbox"/>	Credit 5	Indoor Chemical & Pollutant Source Control	1
<input type="checkbox"/>	Credit 6.1	Controllability of Systems—Lighting	1
<input type="checkbox"/>	Credit 6.2	Controllability of Systems—Thermal Comfort	1
<input type="checkbox"/>	Credit 7.1	Thermal Comfort—Design	1
<input type="checkbox"/>	Credit 7.2	Thermal Comfort—Verification	1
<input type="checkbox"/>	Credit 8.1	Daylight and Views—Daylight	1 to 2
<input type="checkbox"/>	Credit 8.2	Daylight and Views—Views for Seated Spaces	1

Innovation and Design Process Possible Points: 6

<input type="checkbox"/>	Credit 1.1	Innovation in Design	1
<input type="checkbox"/>	Credit 1.2	Innovation in Design	1
<input type="checkbox"/>	Credit 1.3	Innovation in Design	1
<input type="checkbox"/>	Credit 1.4	Innovation in Design	1
<input type="checkbox"/>	Credit 1.5	Innovation in Design	1
<input type="checkbox"/>	Credit 2	LEED Accredited Professional	1

Regional Priority Credits Possible Points: 4

<input type="checkbox"/>	Credit 1.1	Regional Priority	1
<input type="checkbox"/>	Credit 1.2	Regional Priority	1
<input type="checkbox"/>	Credit 1.3	Regional Priority	1
<input type="checkbox"/>	Credit 1.4	Regional Priority	1

Total Possible Points: 110

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

So where did the points go?

LEED NC v2.2			2009 LEED-NC		
Credit Category	Points	% of Total	Credit Category	Points	% of Total
SS	14	22%	SS	26	26%
WE	5	8%	WE	10	10%
EA	17	27%	EA	35	35%
MR	13	20%	MR	14	14%
IEQ	15	23%	IEQ	15	15%
LP		0%	LP		0%
ID	4		ID	5	
LEED AP	1		LEED AP	1	
RP			RP	4	
Total Base Points	64		Total Base Points	100	
Total Points	69		Total Points	110	

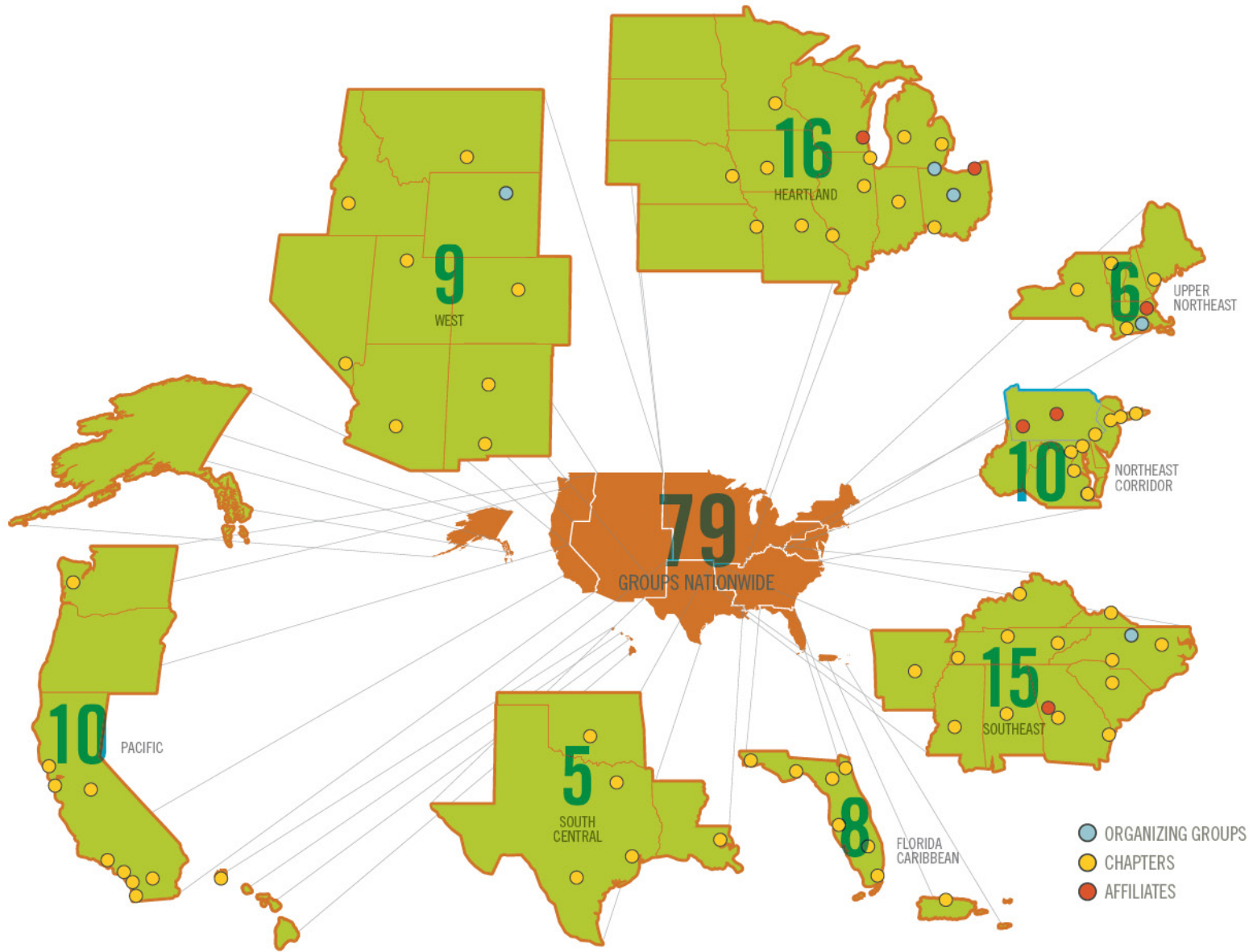
Top 2 LEED-NC Credits in LEED 2009

- SS
 - Public Transportation Access (6)
 - Development Density & Community Connectivity (5)
- WE
 - Water Efficient Landscaping (4)
 - Water Use Reduction (4)
- EA
 - Optimize Energy Performance (19)
 - On-site Renewable Energy (7)

Top 2 LEED-NC Credits in LEED 2009

- MR
 - Building Reuse (4)
 - Material Reuse, Recycled Content, Regional Materials (2 points each)
- EQ
 - Controllability of Systems, Thermal Comfort, Daylight and Views (2 points each)

REGIONAL CREDITS



Regional Priority Credits

Reno, NV

2009 LEED-NC

- SSc5.2: Site Development – Protect or Restore Habitat
- WEc1 Option 2: Water Efficient Landscaping – No Potable Water Use or Irrigation
- EAc1: Optimize Energy Performance
- EAc2: On-site Renewable Energy
- EQc2: Increased Ventilation
- EQc8.1: Daylight and Views – Daylight

**THE RATING SYSTEM LOOKS
VERY FAMILIAR,**

**BUT THE WAY YOU USE IT
HAS CHANGED.**



LEED ONLINE

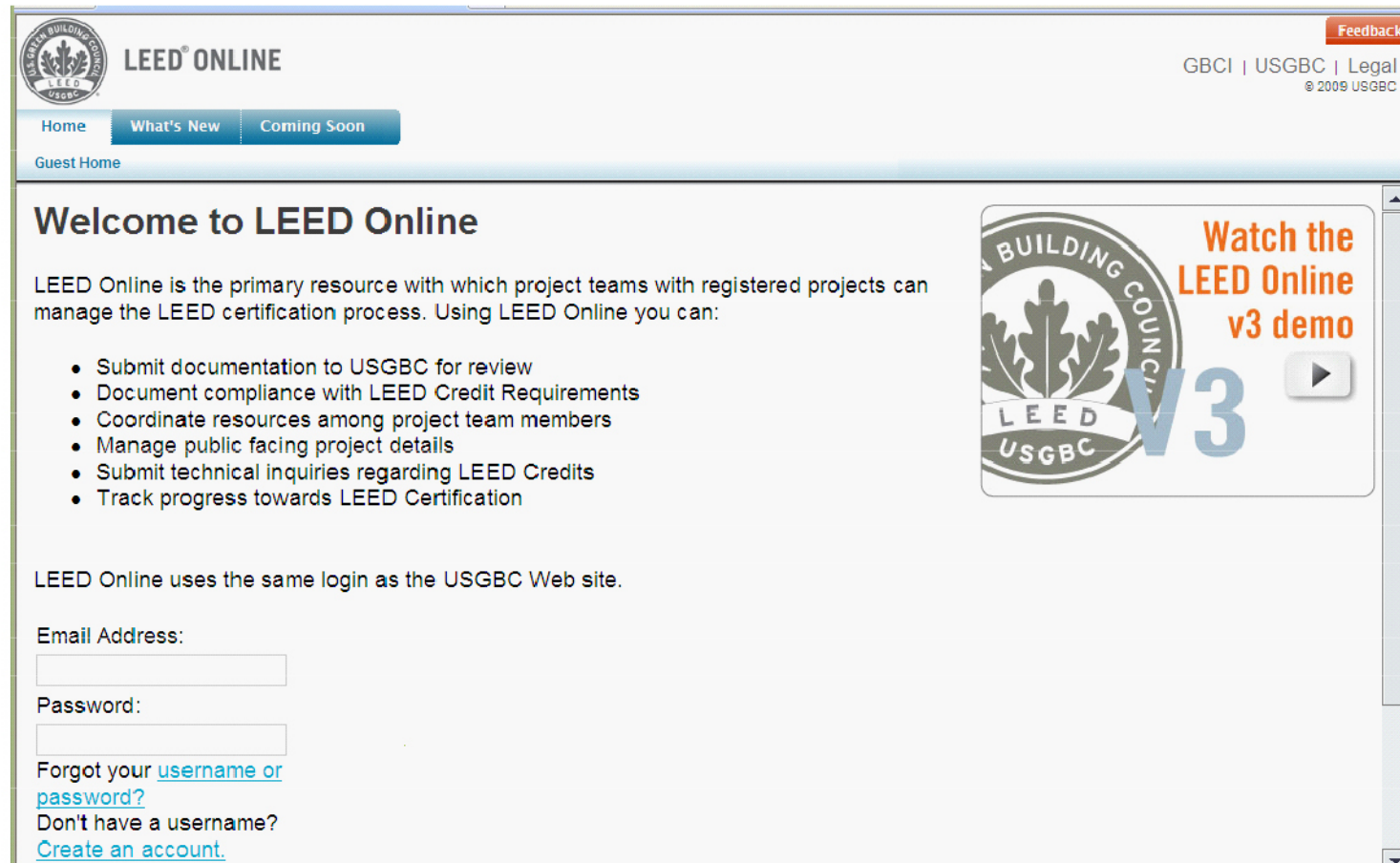
HOW WE GOT HERE

Ancient LEED = paper binders

Old LEED = LEED Online V2

New LEED = LEED Online V3

https://www.leedonline.com/



The screenshot shows the LEED Online website homepage. At the top left is the US Green Building Council (USGBC) logo and the text "LEED ONLINE". To the right, there is a "Feedback" button and the text "GBCI | USGBC | Legal © 2009 USGBC". Below the logo is a navigation menu with "Home", "What's New", and "Coming Soon" buttons. A "Guest Home" link is also visible. The main heading is "Welcome to LEED Online". Below this, a paragraph states: "LEED Online is the primary resource with which project teams with registered projects can manage the LEED certification process. Using LEED Online you can:". This is followed by a bulleted list of five items: "Submit documentation to USGBC for review", "Document compliance with LEED Credit Requirements", "Coordinate resources among project team members", "Manage public facing project details", "Submit technical inquiries regarding LEED Credits", and "Track progress towards LEED Certification". To the right of the list is a promotional graphic for "Watch the LEED Online v3 demo" featuring the LEED V3 logo and a play button icon. Below the list, a note says "LEED Online uses the same login as the USGBC Web site." followed by login fields for "Email Address:" and "Password:". At the bottom, there are links for "Forgot your username or password?", "Don't have a username? Create an account.", and a vertical scrollbar on the right side.

LEED ONLINE

GBCI | USGBC | Legal
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Home What's New Coming Soon

Guest Home

Welcome to LEED Online

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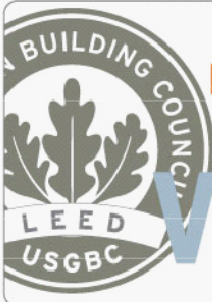
LEED Online uses the same login as the USGBC Web site.

Email Address:

Password:

Forgot your [username or password?](#)
Don't have a username?
[Create an account.](#)

Watch the LEED Online v3 demo



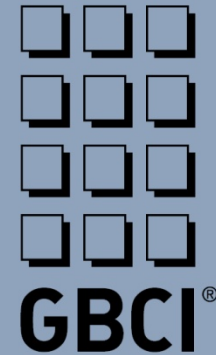


**GREEN BUILDING
CERTIFICATION INSTITUTE**

HOW IT ALL FITS TOGETHER



Rating System Development
LEED Online
Support & Education



Building Certification
Professional Accreditation

TOOLS AND RESOURCES

Rating System

LEED for New Construction

LEED for Core & Shell

LEED for Schools

LEED for Healthcare*

LEED for Retail*

LEED for Commercial Interiors

LEED for Retail Interiors*

LEED for Existing Buildings

LEED for Existing Schools*

Reference Guide

**GREEN BUILDING DESIGN
& CONSTRUCTION**
2009 Edition

**GREEN INTERIOR DESIGN
& CONSTRUCTION**
2009 Edition

**GREEN BUILDING
OPERATIONS & MAINTENANCE**
2009 Edition

CONTINUING LEED EDUCATION

400 LEVEL
MASTERY

300 LEVEL
IMPLEMENTATION
& SPECIALIZATION

200 LEVEL
UNDERSTANDING

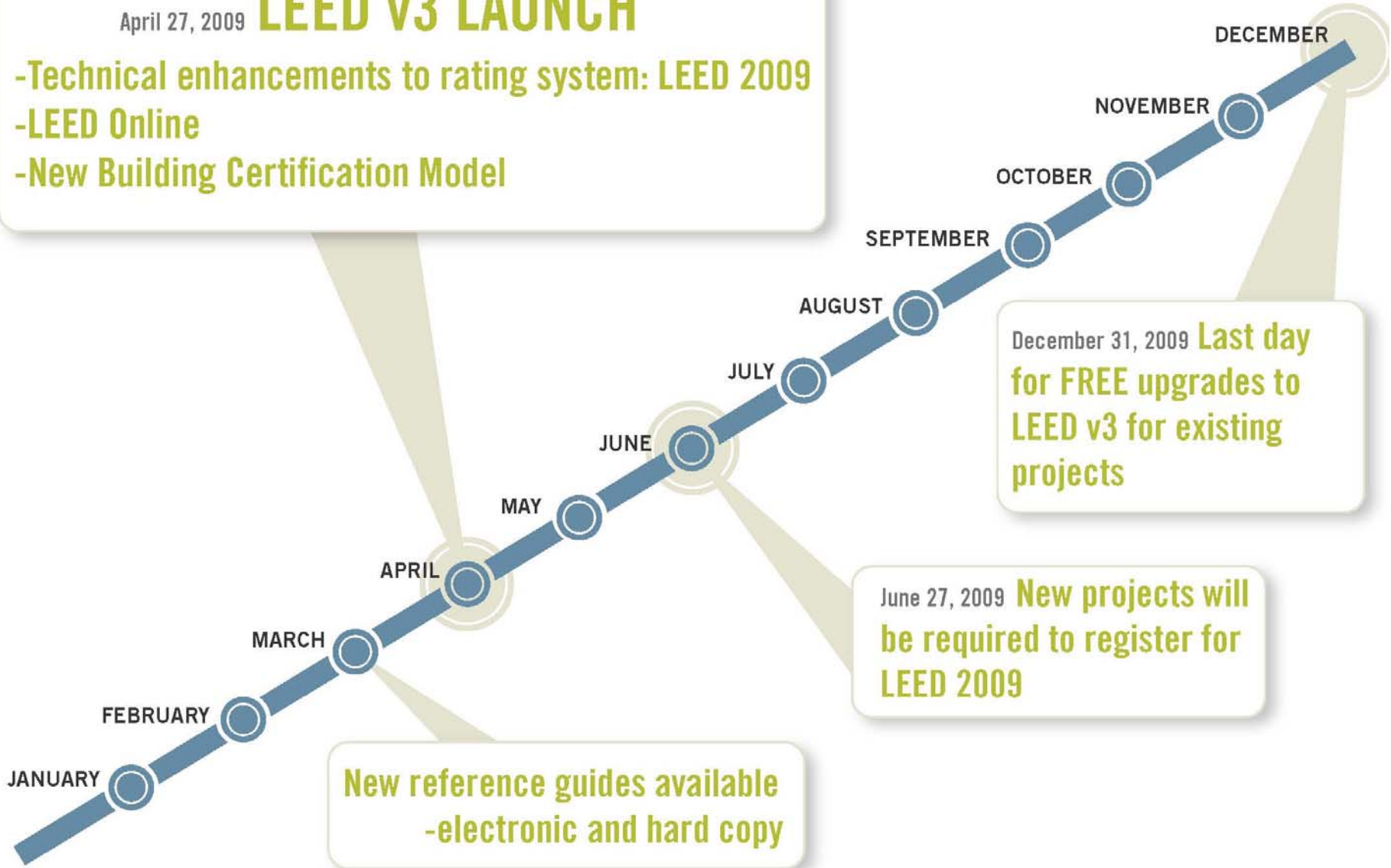
100 LEVEL
AWARENESS



LEED v3 ROLLOUT

April 27, 2009 **LEED v3 LAUNCH**

- Technical enhancements to rating system: LEED 2009
- LEED Online
- New Building Certification Model



New reference guides available
-electronic and hard copy

June 27, 2009 **New projects will be required to register for LEED 2009**

December 31, 2009 **Last day for FREE upgrades to LEED v3 for existing projects**



www.usgbc.org