

# LEED 2009 Overview

## USGBC San Diego Chapter Green Meet



June 17, 2009

# Agenda

- 1** Introductions
- 2** LEED 2009 Overview & Approach
- 3** LEED 2009 Rating System Highlights
- 4** The New Credentialing Program
- 5** Questions

# About Brightworks

## Sustainability Advisors

## LEED and Green Building

- Kick-off Sustainability Charrette & Development of Sustainability Program
- Integrated Design Process Facilitation
- Research and Support for Sustainability Objectives
- Certification Management

Elleven and Luma, First LEED Gold Condos in California



# About Brightworks

## Sustainability Advisors

## Workshops

- Succeed at LEED
- Envisioning Fully Sustainable Buildings
- LEED for Contractors
- LEED EB Overview and Application
- Biomimicry
- Carbon Footprint Tracking
- LEED Exam Training



# About Brightworks

Sustainability Advisors

Organizational Consulting

- Sustainability Planning
  - Universities, Organizations, REITs
- Sustainability as a Business Driver
- Targets Capital Construction, Procurement,
  - Transportation, Waste Management, etc.



BRIGHTWORKS™

LEED 2009  
Brightworks 2009

# Brightworks' Projects

## Wayne Morse US Courthouse: LEED Gold Certified

- 30% energy savings
- 40% water savings
- Displacement ventilation
- Radiant heating & cooling



# Brightworks' Projects

## OHSU Center for Health and Healing: LEED Platinum Certified

- 60% energy savings
- 100% on-site waste water treatment
- Stormwater reuse for irrigation
- Stormwater reuse for toilets
- Microturbines, PVx Trombe wall
- No cost premium after incentives





# LEED 2009 Overview

# LEED 2009: Overview

**LEED** = **L**eadership in  
**E**nergy &  
**E**nvironmental  
**D**esign

# LEED 2009: Overview

LEED not LEEDS – still no “S”!!



Leeds, United Kingdom



Leeds Mattress in LA

# LEED 2009: Overview



## Why LEED?

1. Rigor
2. Comprehensiveness
3. Credibility
4. Carrots (and Sticks)
5. Market Differentiation
6. Evolves

# LEED 2009: Overview of Changes

# JUNE 27

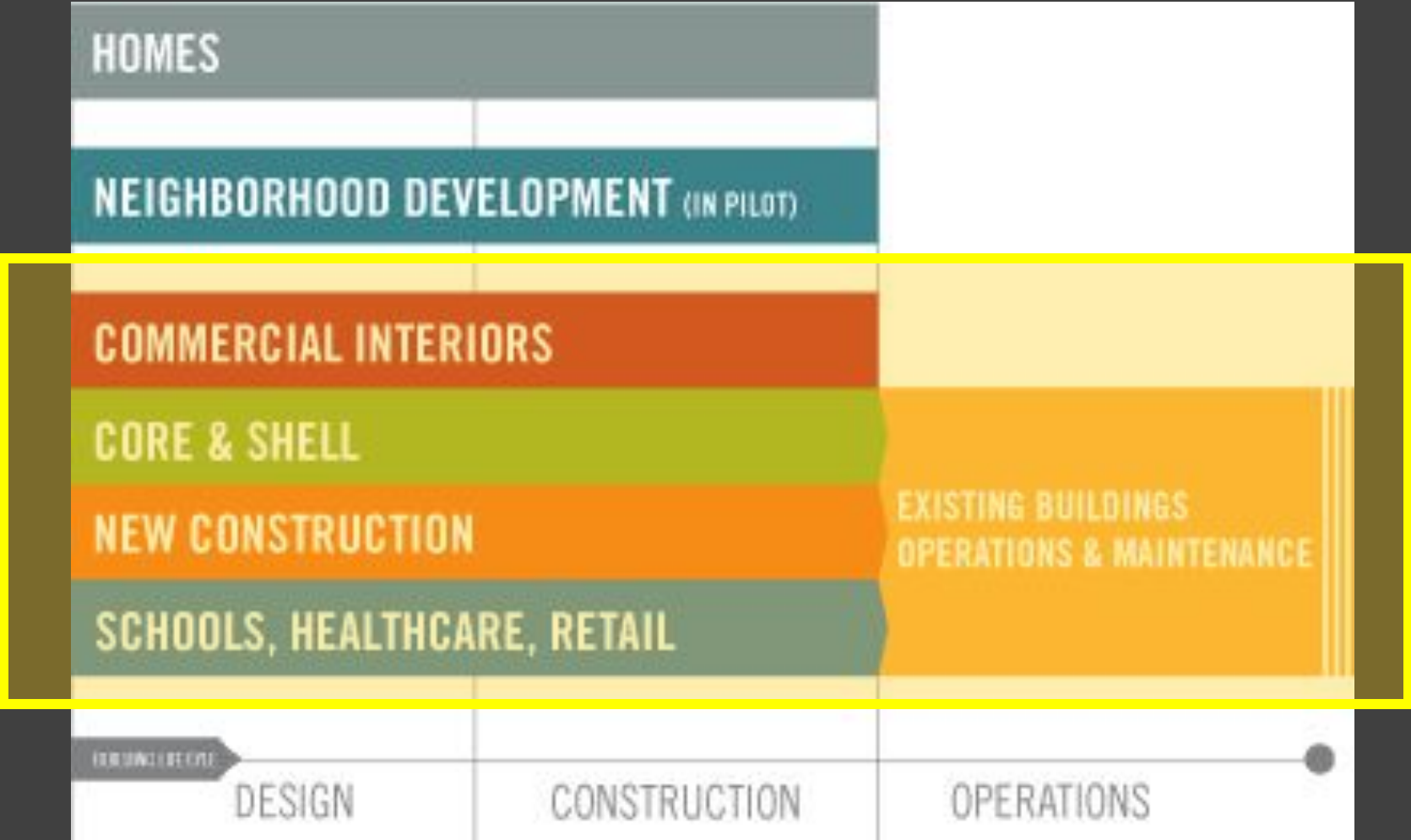
Last day to register projects under existing LEED Rating Systems

# JUNE 30

Last day to sit for the LEED NC or LEED CI Exam



# LEED 2009: Overview of Changes



# LEED 2009: Overview of Changes

## 3 Key Enhancements

- 1 Harmonization
- 2 Weightings
- 3 Regionalization

Not a complete overhaul, the language is familiar, the use has changed a bit.



# Harmonization

# LEED 2009: Harmonization



Consolidates & aligns all LEED Rating Systems into their “most effective common denominator” – credits and prerequisites are consistent

- BD+C (NC, CS, Schools)
- ID+C (CI)
- O+M

*Homes and Neighborhood Development not part of LEED 2009*

Individual rating system specific credits have been retained where needed

- e.g., Tenant Guidelines for Core & Shell, Acoustics for Schools

Existing CIRs were incorporated where appropriate






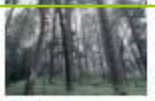
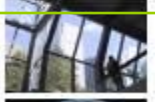

# Weightings

# LEED 2009: Weightings

- Re-distribution of points
- **110** points possible
  - 100 Base points
  - 6 Innovation points
  - 4 Regional points
- More weight given to credits based on ability to impact environmental and human health concerns – where there is the highest potential to make the biggest change

# LEED 2009: Weightings

## LEED NC v2.2 Structure

5 Sections	<u>Prerequisites</u>	<u>Credits</u>	<u>Possible Points</u>
 Sustainable Sites	1	8	14
 Water Efficiency		3	5
 Energy and Atmosphere	3	6	17
 Materials Resources	1	7	13
 Indoor Environmental Quality	2	8	15
 Innovation and Design	--	2	5
	--	<b>TOTAL</b>	<b>69</b>

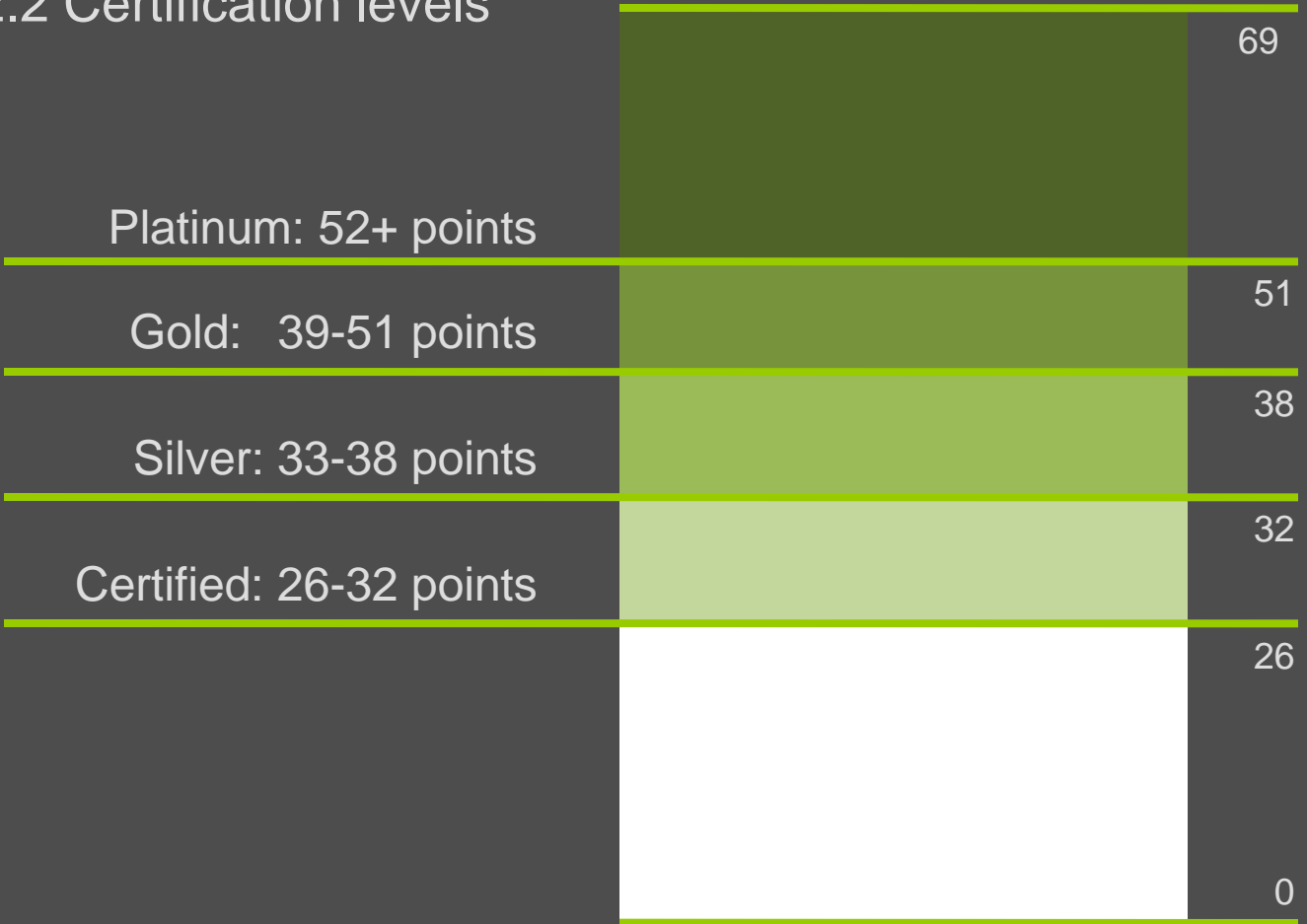
# LEED 2009: Weightings

## LEED NC Structure

6 Sections	Prerequisites	Credits	Possible Points
 Sustainable Sites	1	8	26
 Water Efficiency	1	3	10
 Energy and Atmosphere	3	6	35
 Materials Resources	1	7	14
 Indoor Environmental Quality	2	8	15
 Innovation and Design	--	2	6
<b>Regional Bonus Credits</b>	--	1	4
		<b>TOTAL</b>	<b>110</b>

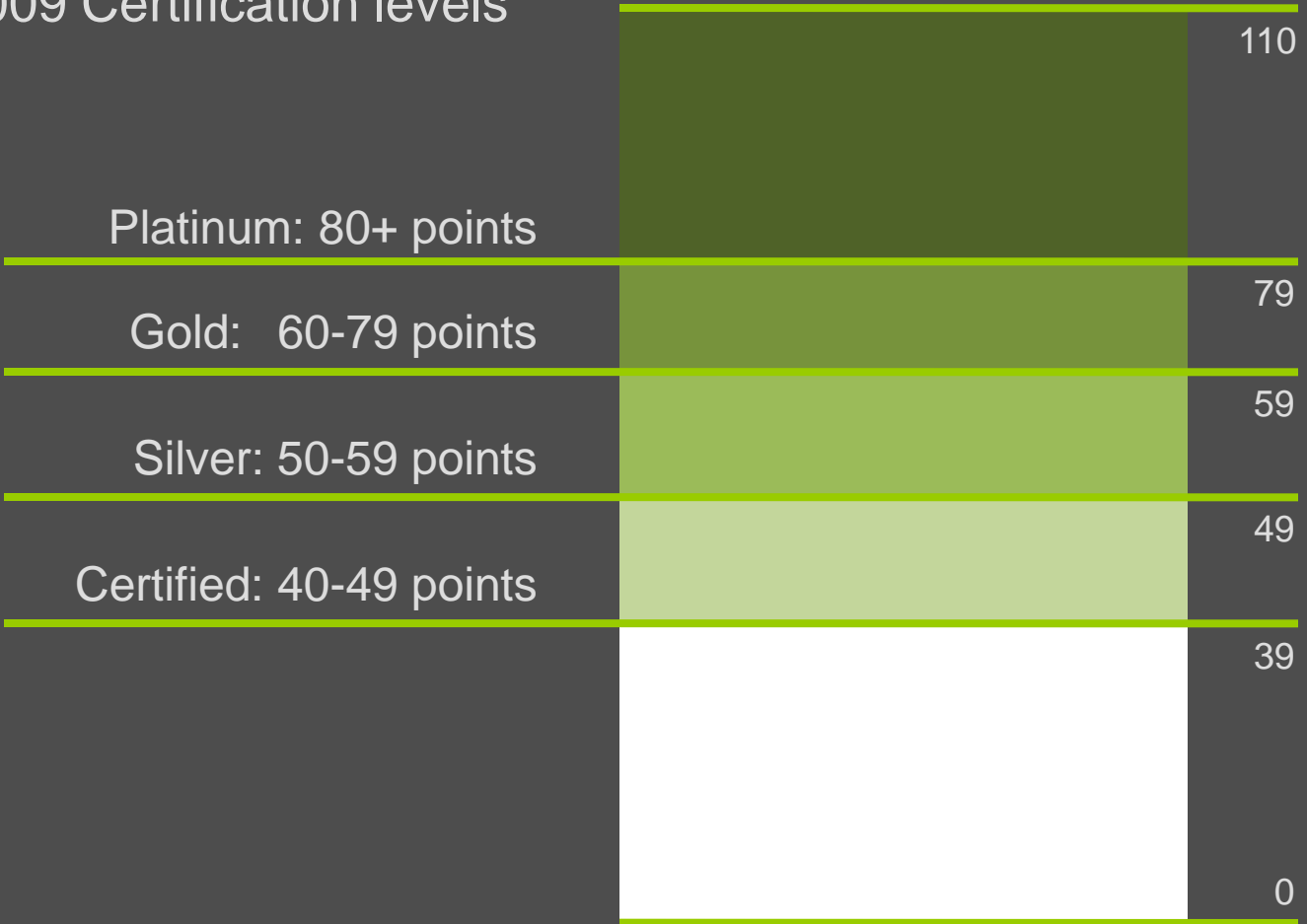
# LEED 2009 Certification

## LEED NC v2.2 Certification levels



# LEED 2009 Certification

## LEED NC 2009 Certification levels



# LEED Background and Process

## LEED CI 2.0 Structure

	Prerequisites	Credits	Possible points
Sustainable Sites	-	5	7
Water Efficiency	0	2	2
Energy & Atmosphere	3	7	12
Materials & Resources	1	14	14
Indoor Environmental Quality	2	15	17
Innovation & Design	-	5	5
		<b>Total</b>	<b>57</b>

# LEED Background and Process

## LEED 2009 ID+C Structure

	Prerequisites	Credits	Possible Points
Sustainable Sites	0	5	<del>7</del> 21
Water Efficiency	<del>0</del> 1	2	<del>2</del> 11
Energy & Atmosphere	3	7	<del>4</del> 37
Materials & Resources	1	14	14
Indoor Environmental Quality	2	15	17
Innovation & Design	0	2	<del>5</del> 6
Regional Priority Credits		1	4
			<b>TOTAL 110</b>

# LEED-EB Framework

## LEED-EB Operations & Maintenance Structure

	Prerequisites	Credits	Possible points
Sustainable Sites	-	8	12
Water Efficiency	1	4	10
Energy & Atmosphere	3	6	30
Materials & Resources	2	2	14
Indoor Environmental Quality	3	4	19
Innovation & Design	-	5	5
		<b>Total</b>	<b>90</b>

# LEED-EB Framework

## LEED-EB 2009 Changes

	Prerequisites	Credits	Possible points
Sustainable Sites	-	8	<del>12</del> 26
Water Efficiency	1	4	<del>10</del> 14
Energy & Atmosphere	3	6	<del>30</del> 35
Materials & Resources	2	<del>2</del> 9	<del>14</del> 10
Indoor Environmental Quality	3	4 3	<del>19</del> 15
Innovation & Design	-	<del>5</del> 6	<del>5</del> 6
Regional Priority Credits		1	4
			<b>TOTAL 110</b>

# LEED 2009: Weightings

- Re-distribution of points
- **110** points possible
  - 100 Base points
  - 6 Innovation points
  - 4 Regional points
- More weight given to credits based on ability to impact environmental and human health concerns – **where there is the highest potential to make the biggest change**

# LEED 2009: Weightings

- “Scientific” approach – EPA’s TRACI model
- Evaluated 13 environmental impact categories
  - Climate change
  - Water intake
  - Resource depletion, etc.
  - Addresses previous criticism of unfair distribution of points

# LEED 2009: Weightings

## ENERGY

25% to **35%** of total points

## WATER

7% to **10%** of total points

## TRANSPORTATION

7% to **17%** of total points



## SSc4.1 Alternative Transportation Public Transportation Access

1 credit now worth 6 Points! Why?

It can impact...

- Fossil fuel depletion
- Land use
- Ozone depletion
- Smog formation
- Human health impacts with single occupant vehicle use
- CO2 associated with commuting



# LEED 2009: Weightings

# 177 CARS



# LEED 2009: Weightings

200 PEOPLE CAN COMMUTE IN..



# LEED 2009: Weightings

## 3 BUSES



# LEED 2009: Weightings

## 1 LIGHT RAIL TRAIN





# Regionalization

# LEED 2009: Regionalization



- Input from 70+ USGBC Chapters and Regional Councils who identified salient environmental issues, broken out by zip code
- 6 Regional Priority Credits for each zip code. Teams will automatically earn a bonus point (up to 4) if they meet the RPC in the base credits.
- International projects cannot currently earn bonus points for the associated RPC.

## San Diego, CA 92101

- SSc5.2 Maximize Open Space
- WEc2 Innovative Waste Water Technologies
- WEc3 Water Use Reduction, 40%
- EAc2 Onsite Renewable Energy, 1%
- MRc1.1 Building Reuse, Maintain 55% of Existing Walls, Floors & Roof
- EQc8.1 Daylight & Views, Daylight 75% of Spaces

# Sustainable Sites Highlights

- **SSc4.3 - Alternative Transportation, Low-Emitting and Fuel Efficient Vehicles** - Clearly defines preferred parking via discounts for spaces as at least 20% below the normal price. *(Example of a CIR incorporate into the Rating System)*
- **SSc7.1 - Heat Island Effect, Non-Roof** - Allows area shaded by solar panels or other renewable energy sources to be added qualifying area calculation.



# Water Efficiency Highlights

- WEp1 Water Use Reduction – Finally a prerequisite! Requires 20% domestic potable water use reduction
  - The baseline for public lavatories is now .5 GPM per Uniform Plumbing Code
- WEc3.1 and 3.2 Water Use Reduction – 30% and 40% reduction. New innovation point will be 45% reduction.



# Energy & Atmosphere Highlights

- EAp1 Minimum Energy Performance - ASHRAE 90.1-2007 is now the Referenced Standard. The prerequisite requires 10% improvement.
- EAc1 Optimize Energy Performance – Up to 19 points available for 12%-48% improvement (*almost 20% of base points are available in this credit!*)
- EAc2 Renewable Energy – Credit can now be achieved for as little as 1% of onsite generation (previously 2.5% for NC)– up to 7 points available for 1% - 13% onsite generation.

# Materials & Resources Highlights

- CSI Master Format 2004 is cited instead of 1997. Materials in divisions 3-10, 31.6, 32.1, 32.3, and 32.9 are to be accounted for, division 12 remains optional.
- MRc1.1 - Building Reuse--Maintain Existing Walls, Floors, and Roof More points = the thresholds for achievement have changed. 55%-95% for NC.



# Indoor Air Quality Highlights

- EQp1 Minimum IAQ Performance – Reference Standard is now now ASHRAE 62.1-2007 (updated code)
- EQc4.3 Low-Emitting Materials, Flooring Systems – Not just carpet, now includes hard flooring systems that are to be compliant with Floorscore certification standards
- EQc5 Chemical Pollutant – Walk-off mats now 10' long in the direction of travel (lines up w/ EBOM) and containment for appropriate disposal of hazardous liquid wastes where chemical mixing occurs.
- EQc8.1 Daylight and Views, Daylight 75% of Spaces – Option 4 new – can combine any combination of previous option requirements to meet the 75% threshold



# Innovation & Design Highlights

- A maximum of 3 of the 5 points allowed for Exemplary Performance Strategies
  - Comprehensive Transportation Management Plan
  - Water Use Reduction 45%
  - Recycled Content >30%
- Encourages teams to develop Innovative Strategies if all 5 points for IDc1.1 are desired

# LEED v.2.2 & LEED 2009 at USC Campus Center



# USC Campus Center LEED NCv2.2

38 Y 8 ?Y 2 ?N 21 N = high silver, almost gold!



LEED Scorecard				Certified 26 to 32 points				Silver 33 to 38 points				Gold 39 to 51 points				Platinum 52 or more points											
Yes	?Y	?N	No	Total Project Score																							
38	8	2	21	Sustainable Sites				Materials & Resources				Water Efficiency				Energy & Atmosphere				Indoor Environmental Quality				Innovation & Design Process			
Y	?Y	?N	N	9	2	1	2	4	3	1	5	10	1	0	4	4	1	0	0								
Y				Prereq 1				Prereq 1				Prereq 1				Prereq 1											
1				Credit 1				Credit 1.1				Y				Credit 1.1											
1				Credit 2				Credit 1.2				Y				Credit 1.2											
1				Credit 3				Credit 1.3				1				Credit 1.3											
1				Credit 4.1				Credit 2.1				1				Credit 2.1											
1				Credit 4.2				Credit 2.2				1				Credit 2.2											
1				Credit 4.3				Credit 3.1				1				Credit 3.1											
1				Credit 4.4				Credit 3.2				1				Credit 3.2											
			1	Credit 5.1				Credit 4.1				1				Credit 4.1											
	1			Credit 5.2				Credit 4.2				1				Credit 4.2											
			1	Credit 6.1				Credit 5.1				1				Credit 5.1											
1				Credit 6.2				Credit 5.2				1				Credit 5.2											
		1		Credit 7.1				Credit 6				1		1		Credit 6											
1				Credit 7.2				Credit 7				1				Credit 7											
1				Credit 8				Credit 8																			
3	0	0	2	Water Efficiency				Indoor Environmental Quality																			
1				Credit 1.1				Prereq 1				Y				Prereq 1											
			1	Credit 1.2				Prereq 2				Y				Prereq 2											
			1	Credit 2				Credit 1				1				Credit 1											
1				Credit 3.1				Credit 2				1				Credit 2											
1				Credit 3.2				Credit 3.1				1				Credit 3.1											
8	1	0	8	Energy & Atmosphere				Innovation & Design Process																			
Y				Prereq 1				Credit 1.1				1				Credit 1.1											
Y				Prereq 2				Credit 1.2				1				Credit 1.2											
Y				Prereq 3				Credit 1.3				1				Credit 1.3											
2				Credit 1.1				Credit 1.4				1				Credit 1.4											
2				Credit 1.2				Credit 1.5				1				Credit 1.5											
2				Credit 1.3				Credit 2.1				1				Credit 2.1											
			2	Credit 1.4				Credit 2.2				1				Credit 2.2											
			2	Credit 1.5				Credit 2.3				1				Credit 2.3											
			1	Credit 2.1				Credit 3				1				Credit 3											
			1	Credit 2.2				Credit 4				1				Credit 4											
1				Credit 2.3				Credit 5				1				Credit 5											
1				Credit 3				Credit 6				1				Credit 6											
1				Credit 4								1															
			1	Credit 5																							
			1	Credit 6																							

Page 1



# USC Campus Center as LEED 2009

53 Y 14 ?Y 2 ?N 38 N = low/mid silver!

## LEED 2009 Scorecard

Yes ?Y ?N No
Certified 40-49
Silver 50-59
Gold 60-79
Platinum 80-100

**53 14 2 38** **Total Project Score**

Y ?Y ?N N

### 20 4 0 2 Sustainable Sites

Y	?Y	?N	N	
Y				Prereq 1 <b>Construction Activity Pollution Prevention</b>
1				Credit 1 <b>Site Selection</b>
5				Credit 2 <b>Development Density &amp; Community Connectivity</b>
1				Credit 3 <b>Brownfield Redevelopment</b>
6				Credit 4.1 <b>Alternative Transportation, Public Transportation Access (6)</b>
1				Credit 4.2 <b>Alternative Transportation, Bicycle Storage &amp; Changing Rooms</b>
3				Credit 4.3 <b>Alternative Transportation, Low Emitting &amp; Fuel Efficient Vehicles (3)</b>
2				Credit 4.4 <b>Alternative Transportation, Parking Capacity (2 points)</b>
	1			Credit 5.1 <b>Site Development, Protect or Restore Habitat (or 20% of site area)</b>
		1		Credit 5.2 <b>Site Development, Maximize Open Space</b>
		1		Credit 6.1 <b>Stormwater Design, Quantity Control</b>
	1			Credit 6.2 <b>Stormwater Design, Quality Control</b>
	1			Credit 7.1 <b>Heat Island Effect, Non-Roof</b>
1				Credit 7.2 <b>Heat Island Effect, Roof</b>
	1			Credit 8 <b>Light Pollution Reduction</b>

### 2 0 0 4 Water Efficiency (LEED 2009)

Y	?Y	?N	N	
				Prereq 1 <b>Water Use Reduction, 20% Reduction</b>
2				Credit 1.1 <b>Water Efficient Landscaping, Reduce by 50% (2)</b>
		2		Credit 1.2 <b>Water Efficient Landscaping, No Potable Use or No Irrigation (2 points)</b>
		2		Credit 2 <b>Innovative Wastewater Technologies (2 points)</b>
4				Credit 3.2 <b>Water Use Reduction, 30%, 35%, 40% reduction (2-4 points)</b>

### 14 2 0 19 Energy & Atmosphere

Y	?Y	?N	N	
Y				Prereq 1 <b>Fundamental Commissioning of the Building Energy Systems</b>
Y				Prereq 2 <b>Minimum Energy Performance - (10% Requirement)</b>
Y				Prereq 3 <b>Fundamental Refrigerant Management</b>
10		9		Credit 1.1 <b>Optimize Energy Performance, 12% to 48% (19 possible)</b>
		7		Credit 2.1 <b>On-Site Renewable Energy, 1% to 13% (7 points possible, 2% inc.)</b>
2				Credit 3 <b>Enhanced Commissioning (2)</b>
2				Credit 4 <b>Enhanced Refrigerant Management (2)</b>
		3		Credit 5 <b>Measurement &amp; Verification (3)</b>
	2			Credit 6 <b>Green Power 35% (2)</b>

### 1 0 0 3 Regional Credits

Y	?Y	?N	N	
			1	Credit 1.1 <b>Regional Credit - CA SSC5.2</b>
1				Credit 1.2 <b>Regional Credit - CA WE3.2</b>
			1	Credit 1.3 <b>Regional Credit - CA WEc2</b>
			1	Credit 1.4 <b>Regional Credit - CA EAe2</b>

Y ?Y ?N N

### 3 4 2 6 Materials & Resources

Y	?Y	?N	N	
Y				Prereq 1 <b>Storage &amp; Collection of Recyclables</b>
			3	Credit 1.1-1 <b>Building Reuse, Maintain Existing Walls, Floors &amp; Roof</b>
		1		Credit 1.4 <b>Building Reuse, Maintain 50% of Interior Non-Structural Elements</b>
1				Credit 2.1 <b>Construction Waste Management, Divert 50%</b>
1				Credit 2.2 <b>Construction Waste Management, Divert 75%</b>
		1		Credit 3.1 <b>Materials Reuse, Specify 5%</b>
		1		Credit 3.2 <b>Materials Reuse, Specify 10%</b>
1				Credit 4.1 <b>Recycled Content, 10% (POST-CONSUMER + 1/2 PRE-CONSUMER)</b>
	1			Credit 4.2 <b>Recycled Content, 20% (POST-CONSUMER + 1/2 PRE-CONSUMER)</b>
	1			Credit 5.1 <b>Regional Materials, 10% Extracted, Processed &amp; Manufactured</b>
		1		Credit 5.2 <b>Regional Materials, 20% Extracted, Processed &amp; Manufactured Regionally</b>
		1		Credit 6 <b>Rapidly Renewable Materials 25%</b>
1				Credit 7 <b>Certified Wood</b>

### 9 2 0 4 Indoor Environmental Quality

Y	?Y	?N	N	
Y				Prereq 1 <b>Minimum IAQ Performance</b>
Y				Prereq 2 <b>Environmental Tobacco Smoke (ETS) Control</b>
1				Credit 1 <b>Outdoor Air Delivery Monitoring</b>
		1		Credit 2 <b>Increased Ventilation</b>
1				Credit 3.1 <b>Construction IAQ Management Plan, During Construction</b>
1				Credit 3.2 <b>Construction IAQ Management Plan, Before Occupancy</b>
1				Credit 4.1 <b>Low-Emitting Materials, Adhesives &amp; Sealants</b>
1				Credit 4.2 <b>Low-Emitting Materials, Paints &amp; Coatings</b>
1				Credit 4.3 <b>Low-Emitting Materials, Carpet Systems</b>
	1			Credit 4.4 <b>Low-Emitting Materials, Composite Wood &amp; Agrifiber Products</b>
1				Credit 5 <b>Indoor Chemical &amp; Pollutant Source Control</b>
		1		Credit 6.1 <b>Controllability of Systems, Lighting</b>
		1		Credit 6.2 <b>Controllability of Systems, Thermal Comfort</b>
1				Credit 7.1 <b>Thermal Comfort, Design</b>
1				Credit 7.2 <b>Thermal Comfort, Verification</b>
		1		Credit 8.1 <b>Daylight &amp; Views, Daylight 75% of Spaces</b>
		1		Credit 8.2 <b>Daylight &amp; Views, Views for 90% of Spaces</b>

### 4 2 0 0 Innovation & Design Process

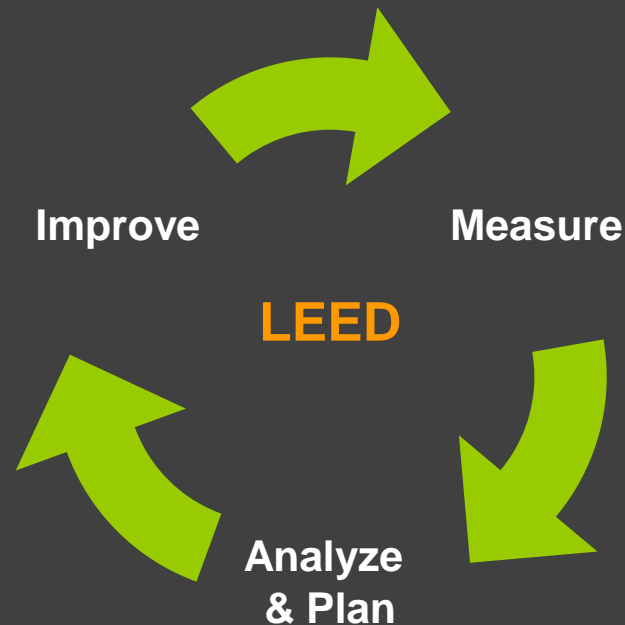
Y	?Y	?N	N	
	1			Credit 1.1 <b>Innovation in Design: Green Power</b>
	1			Credit 1.2 <b>Innovation in Design: Green Housekeeping</b>
	1			Credit 1.3 <b>Innovation in Design: Educational Building</b>
	1	1		Credit 1.4 <b>Innovation in Design: Transportation Mgt Plan</b>
1				Credit 2 <b>LEED™ Accredited Professional</b>

Page 1



# LEED 2009, 2011, 2013

- Continuous & consistent improvement structure (2-year cycle)
  - 1 year of technical development
  - 1 year of approvals and process





# The New Credentialling

why

what

when

# LEED 2009

## New Three- Tiered Credentialing System



# LEED Credentialing Program - 2009

## WHY?

- 80,000+ LEED APs have earned distinction since 2001
  - (about 100,000 registered with the GBCI to take the old exam)
- Rapid Advances in technology, products, and knowledge of the industry
- Credentialing provides a way to provide distinction to those with exceptional experience and knowledge, while still recognizing those who are less experienced



# LEED Credentialing Program - 2009

I'm already a LEED AP...



# LEED Credentialing Program - 2009

## Changes overseen by GBCI

- Three Levels of Excellence
- Eligibility Requirements for all levels of the exam
- Credentialing maintenance required for all levels of the exam



# LEED Credentialing Program - 2009

## Three Levels of Recognition



### “LEED Green Associate” – Tier 1

- Exam: 2.5 hour test – core knowledge (computer based)
- Eligibility:
  - Agree to Disciplinary Policy + credential maintenance guidelines
  - Demonstrate involvement in LEED projects
  - Be employed in a sustainable field of work or engaged in an education program in green building principals and LEED
  - Submit to application audit (5-7% of all apps)
  - CREDENTIALING REQUIREMENTS
    - 15 Hours of Continuing Education every 2 years, with 3 hours obtained from an approved program specific to the LEED rating system

# LEED Credentialing Program - 2009

## Three Levels of Recognition



### “LEED Accredited Professional +” – Tier 2

- Exams: 4 hours – Green Associate + SPECIALIZATION\*
- Eligibility:
  - Agree to Disciplinary Policy + credential maintenance guidelines
  - Demonstrate professional experience in one LEED project
  - Document work on a LEED project within the last 2-3 years with verification through LEED Online
- Submit to application audit
  - CREDENTIALING REQUIREMENTS
    - 30 Hours of Continuing Education every 2 years, with 6 hours obtained from an approved program specific to the LEED rating system



# LEED Credentialing Program - 2009

## Three Levels of Recognition

### “LEED AP Fellow” – Tier 3

- Eligibility: Major Contribution to the standards of practice and body of knowledge for achieving continuous improvement in the field of green building
- Signing disciplinary policy and agreeing to credential maintenance
- Program requirements under development





# Thank You

Questions?

**Annie Argento, LEED AP**  
annie.argento@brightworks.net  
www.brightworks.net