

LEED®-EB: O&M Recertification: The Key to Making Building Sustainability Sustainable

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Learning Objectives

- Participants will be able to:
 - Explain why ongoing building recertification under LEED-EB: Operations and Maintenance (O&M) is key to maintaining sustainable building performance.
 - Describe the challenges and opportunities in recertification of previously:
 - LEED-NC certified buildings under LEED-EB: O&M
 - LEED-EB certified buildings under LEED-EB: O&M

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Why Recertification of LEED-NC Buildings is Important

Poor Post-Occupancy
Performance
after LEED-NC Certification



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In the Studies! Key Points

- Poor post-occupancy energy performance for some LEED-NC certified buildings.
- A fully integrated approach trends towards greater building performance.
- Actual performance data should be evaluated to accurately evaluate LEED designed performance.
- More performance data is necessary
- More action is necessary to maintain performance

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National Building Institute (NBI) & USGBC Study - March 2008

- Median energy use by LEED-NC buildings was less than the median for national building stock (CBECS)
- Wide scatter of data
- LEED-NC does not ensure energy efficiency
- Modeled vs. measured
- Quarter of new buildings save less energy than modeling predicted

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NBI – USGBC Study (cont.)

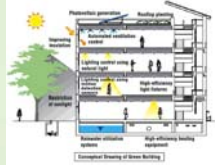
- After certification 53% did not qualify for Energy Star label
- 15% scored lower than at least 70% of comparable buildings



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GSA: Assessing Green Building Performance - June 2009

- Buildings with an integrated design approach achieve higher overall performance
- O&M costs are lowest when sustainability is integrated in every aspect of a building
- Upfront investments in sustainability must be matched by sustainable operations



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In the News

"Fake Green Labels"
New York Post

"Some Buildings Not Living Up to Green Label!"
The New York Times

"Don't LEED Us Astray"
The New York Times

"Green Buildings Standard Seen as Flawed"
San Francisco Chronicle

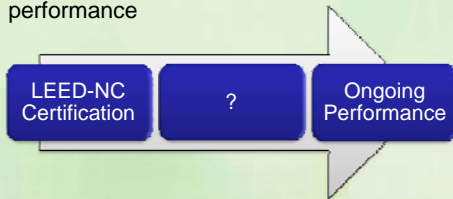


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In the News – Key Points

- LEED-NC is only a promise of performance
- Energy performance is falling short
- LEED-NC establishes the template for performance



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Why Post-Occupancy Performance May Fall Short



- Inaccurate modeling
- Ineffective transition from design team to operations team
- Lack of performance monitoring
 - Projects may not be implementing LEED-NC EAc3 and EAc5

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Post-Construction Testing is Not a Complete Solution

- Post-construction testing
 - Just provides a snapshot at one point in time
 - Typically addresses just a few components of sustainable operations, such as:
 - Energy use
 - Outdoor air delivery



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Post-Construction Testing is Not a Complete Solution (cont.)

- What is needed:
 - Ongoing program for monitoring, maintaining and improving building sustainability performance!
 - Program that addresses the full range of sustainability issues



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Why Recertify?

- What does an aging (2-3 years old) LEED-NC plaque tell you about a building's sustainability performance:
 - Past achievement: Yes
 - Current performance: Very little
 - No verification of sustainability performance for:
 - Staff, Management, customers or Tenants
 - Sustainability, CSR, or environmental reporting



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LEED for Existing Buildings:
Operations and Maintenance
is the Right Tool for
Achieving & Maintaining
High Post-Occupancy Performance



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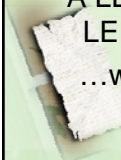
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Why LEED-EB Recertification of LEED-NC Certified Buildings?

- Maintains ongoing high sustainability performance
- Verifies the delivery of ongoing sustainable performance
- Provides documentation of ongoing performance that will be asked for by tenants
- Increases operational efficiencies, decreases costs

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A LEED-NC plaque without ongoing
LEED-EB recertification plaques...
...will look like a lonely 5-year-old
restaurant review
in a restaurant window



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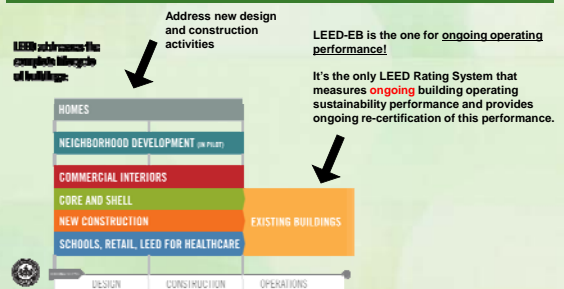
What Makes LEED-EB Unique?

- LEED-EB is about maintaining and improving building performance over the long term



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What Each LEED Rating System Addresses



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LEED-EB Delivers Performance

- Policies
- Plans
- Tracking
- Performance metrics



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How to use
LEED-EB: O&M
to maintain
high post-occupancy
performance



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2 Steps for Making LEED-NC Sustainability Sustainable

(1) Initiate Green Operations

- Implement LEED-EB practices
- Earn Initial LEED-EB certification



(2) Operate Green Indefinitely

- Continue LEED-EB operation and performance tracking
- Earn ongoing LEED-EB recertification (every 1-5 years)

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Step 1: Initiate Green Operations

- Implement LEED-EB practices



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Step 1: Initiate Green Operations

- Implement LEED-EB
 - Set up LEED-EB policies and plans for green building operations
 - Implement LEED-EB policies and plans for green building operations
 - Implement tracking of green achievements
 - Maintain green operations on an ongoing basis

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Step 1: Initiate Green Operations

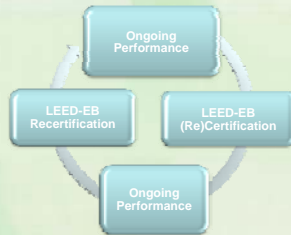
- Building Performance
 - Review and monitor performance
 - Make adjustments as needed
 - Work with design team to maximize operations and address performance issues



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Step 2: Operate Green Indefinitely

- Earn Initial LEED-EB certification
- Continue LEED-EB operation
- Earn ongoing LEED-EB recertification



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Step 2: Operate Green Indefinitely

- Certification Details
 - Apply for and earn LEED-EB certification
 - Recertify building every 1 to 5 years for the rest of the life of the building
 - Work to increase LEED-EB score and rating with each recertification
 - Work to increase building performance with each recertification
 - Utilize EPA Energy Star Portfolio Manager to monitor energy performance

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Step 2: Operate Green Indefinitely

- Ongoing Operations
 - Operate and maintain building for maximum efficiency and sustainability
 - Track and manage ongoing sustainability performance
 - Performance is often a direct result of operations:
 - When buildings are operated well, performance is maintained or improves
 - When buildings are operated inattentively, performance declines



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Brief Introduction to LEED-EB O&M 2009



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How LEED-NC and LEED-EB Are Different

- LEED-NC Focus:
 - Reduces the environmental impacts of building construction
 - Creates the potential for sustainable building operating performance
- LEED-EB Focus:
 - Delivers ongoing sustainable building operation and performance for the rest of the life of the building



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LEED-EB: O&M

- Specifically designed to:
 - Achieve, maintain, and improve sustainability performance of buildings over time
 - Addresses both:
 - New buildings first certified under LEED-NC
 - and
 - Existing buildings first certified under LEED-EB

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LEED-NC & LEED-EB O&M 2009 Point Distribution

NC	EB	
26	26	Sustainable Sites
10	14	Water Efficiency
35	35	Energy and Atmosphere
14	10	Materials and Resources
15	15	Indoor Environmental Quality
100	100	
4	4	Innovation in Operations
1	1	LEED® Accredited Professional
1	1	Documenting Sustainable Building Cost Impacts
4	4	Regional Priority Credits
110	110	TOTAL Points Available

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Key LEED-EB Credits

SS – Sustainable Sites
EA – Energy & Atmosphere



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LEED-EB O&M 2009 Alternative Commuting Transportation

- SS Credit 4
 - Earn points for percent of occupants using alternative transportation
 - 10-100% reduction in commuting trips earns 3-15 points



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LEED-EB O&M 2009 Energy Efficiency

- EA Prerequisite 2
 - Minimum Energy Performance
 - EPA Energy Star Score of 69
- EA Credit 1.1-1.18
 - Increased Energy Performance (1-18 pts)
 - Earn points by improving energy performance beyond level required for Prerequisite 2



Energy Star Score	71	73	74	75	76	77	78	79	80	81	82	83	85	87	89	91	93	95
LEED-EB Points	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

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USGBC Recertification Requirements



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USGBC Requirements for Ongoing Performance & Recertification

After LEED-NC certification:

- USGBC does not yet require LEED-EB recertification
- USGBC requires reporting of energy and water performance data
 - For buildings certified under LEED-NC 2009

After LEED-EB certification:

- USGBC requires ongoing LEED-EB recertification every 1 to 5 years

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Review of USGBC Recertification Process & Fees

- For recertification from NC to EB
 - Treated as first time certification under LEED-EB
 - Registration: Certification - Full fees
- For recertification from EB pilot, EB v2.0 to EB
 - Treated as first time certification under LEED-EB
 - Registration: Certification - Full fees
- For recertification from EB v2008 or v2009 to EB
 - Treated as recertification
 - Registration: Certification - Half fees

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How Frequently Should Buildings Recertify?

- Based on Experience
 - Every 2-3 years
- Competitive Market Required Frequency?
 - We think the market will start to require recertification every 2-3 years – we'll see!



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Recertification Process: Making the Transition from LEED-NC to LEED-EB



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Change in Mindset for Moving from LEED-NC to LEED-EB

- LEED-NC is focused on sustainable building design and construction (there is an end point)
- LEED-EB is focused on delivering sustainable operations performance (ongoing)



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Key steps in the LEED-EB Implementation Process Used

1. LEED-EB Assessment / Gap Analysis
2. Formation of the LEED-EB Implementation Team
3. Implementation Strategy Development
4. Update Building Operating and Purchasing Policies to Meet LEED-EB Requirements
5. Implementation & Staff Training
6. Performance Period & Performance Tracking
7. Certification Application Preparation

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LEED-EB Assessment and Gap Analysis for NC to EB

- Review LEED-NC Application and Credits Earned
 - Many NC credits have strong synergies with EB credits
- Gather Building Data:
 - Practices
 - Performance



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LEED-EB Assessment and Gap Analysis for NC to EB (cont.)

- Prerequisite and Credit Evaluation
 - Determine which credits are easy, moderate and challenging
 - Set Goals
 - Clinton Library set a goal of Platinum Certification
- Develop Strategy
 - Target credits and implementation actions needed

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Credits That Transfer Directly from LEED-NC to LEED-EB

- Sustainable Sites
 - Open space and native vegetation
 - Stormwater management
 - Heat island effect reduction
 - Green site and building exterior management
- Water Efficiency
 - Fixture water use reduction



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Credits That Transfer Directly from LEED-NC to LEED-EB (2)



- Energy and Atmosphere
 - Energy submetering
 - Refrigeration management – No CFC's, No HCFC's
 - Renewable energy
 - Emissions – carbon neutrality

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Credits That Transfer Directly from LEED-NC to LEED-EB (3)

- Indoor Air Quality
 - MERV 13 filters
 - Walk-off mats at doorways
 - Daylighting and Views



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LEED-EB Credits Not Covered by LEED-NC

- Energy and Atmosphere
 - Building operations & maintenance
 - Performance measurement across all LEED credits
 - Documenting sustainable building cost impacts
- Materials and Resources
 - Sustainable cleaning products and materials
 - Occupant recycling
- Indoor Air Quality
 - Green cleaning
 - IEQ management

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Ongoing LEED-EB Recertification

- Once re-certified under LEED-EB
 - Continue to track performance
 - Continue to identify and implement sustainability improvements
 - Re-certify under LEED-EB every 1-5 years

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Things to Remember for Ongoing LEED-EB Recertification

- Register for recertification to lock in rating system
- If rating system that you register under for recertification is different from the rating systems last certified under
 - Make a plan for updating all LEED-EB practices to meet requires of new rating system
 - Implement this Plan

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LEED-NC to LEED-EB Recertification Case Studies



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Clinton Presidential Library LEED-NC to LEED-EB

Taking a LEED-NC Silver Building to LEED-EB Platinum



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The Clinton Library LEED-NC Certification

- Date: November 2004
- Version: LEED-NC v2.1
- Points Earned: 34 of 69
- Level Awarded: Silver



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Clinton Presidential Library LEED-NC to LEED-EB Recertification

- LEED-EB Implementation and Certification



- Work started in January 2007
- Completed in October 2007

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The Clinton Library LEED-EB Certification



- Certification Awarded
 - Date: November 2007
 - Location: At Greenbuild 2007 - President Clinton received plaque from USGBC President Rick Fedrizzi.
- Version: LEED-EB v2.0
- Level Awarded: Platinum

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Diversey Distribution Center LEED-NC to LEED-EB

Taking a LEED-NC Gold Building
to LEED-EB Gold



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Diversey Distribution Center LEED-NC to LEED-EB

- LEED-EB Implementation and Certification
 - Work started in 2007
 - Completed in 2010
- LEED-NC certification
 - Gold, LEED-NC v2.2, 2007
- First recertification under LEED-EB
 - Gold, LEED-EB v2.0, 2010



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LEED-EB to LEED-EB Recertification Case Studies

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National Geographic HQ LEED-EB to LEED-EB



Taking a LEED-EB
Silver Building to
LEED-EB Gold

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National Geographic HQ LEED-EB to LEED-EB

- First certification under LEED-EB
 - Silver, pilot version, 2003
- First recertification under LEED-EB
 - Gold, version 2, 2009
- Second recertification under LEED-EB
 - Gold, version 2, 2010
- Third recertification under LEED-EB
 - version O&M 2008, Underway

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Diversey HQ LEED-EB to LEED-EB

LEED-EB to LEED-EB



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Diversey HQ LEED-EB to LEED-EB

- First certification under LEED-EB
 - Gold, pilot version, 2004
- First recertification under LEED-EB
 - Gold, v2.0, 2010



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Questions?

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About Leonardo Academy

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Charitable 501(c)(3) nonprofit organization dedicated to advancing sustainability.

Seeks to develop and implement new approaches to sustainability that make sustainability practical for everyone

Areas of Work:

- Organizational Sustainability
- LEED® implementation & certification support
- Emissions footprints, reduction strategies and offsets
- Cleaner and Greener® Program
- Sustainability Standards Development

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