



BOMA BESt and LEED EB: O&M AN INFORMATIVE COMPARISON

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Topics

1. Why Sustainable Certification?
2. BOMA BEST Overview
3. LEED EB: O&M Overview
4. Comparing BOMA BEST & LEED



Why Sustainable Certification?

Green standards can bring at least 3% higher occupancy rates and a 7.5% increase in a building's value.

McGraw-Hill's 2006 SmartMarket Report

LEED® certified buildings had a 92% occupancy rate.

Commercial Real Estate and the Environment, CoStar Group, Inc.,



Why Sustainable Certification?

Motives

- Greater Indoor Air Quality 88%
- Corporate Environmental Commitment 88%
- Value of Public Relations 75%
- Employee Productivity 75%
- Operational Cost Reductions 75%
- Attraction/Retention of Workforce 69%
- Greater Building Value 31%
- Higher Occupancy Rates 19%
- Reduction of GHG Liability 13%

The Dollars and Sense of Green Retrofits, Deloitte and Charles Lockwood



Why Sustainable Certification?

Impact

- Goodwill/Brand Equity 100%
- Employee Comfort 87%
- Employee Well-Being 87%
- Employee Health 75%
- Workforce Productivity 87%
- Attraction/Retention of Workforce 81%
- Greater Building Value 51%
- Higher Occupancy Rates 38%

The Dollars and Sense of Green Retrofits, Deloitte and Charles Lockwood



Why Sustainable Certification?

Options

BOMA Building Environmental Standards (BESt)

- Developed by the Building Owners and Managers Association.

LEED for Existing Building: Operations & Maintenance

- Developed by the USGBC and licensed for use in Canada by the CaGBC.



BOMA BEST Overview



BOMA BEST Overview

Building Environmental Standards Online Rating Tool

Four Levels of Certification:

Level 1: Meet BOMA BEST Best Practices

Level 2: 70 % – 79%

Level 3: 80 % – 89%

Level 4: 90% +

Note: Best Practices consists of 14 Prerequisites



BOMA BEST Overview

BOMA BEST Level 1 Applies to All Asset Classes;

Four asset classes for levels 2-4:

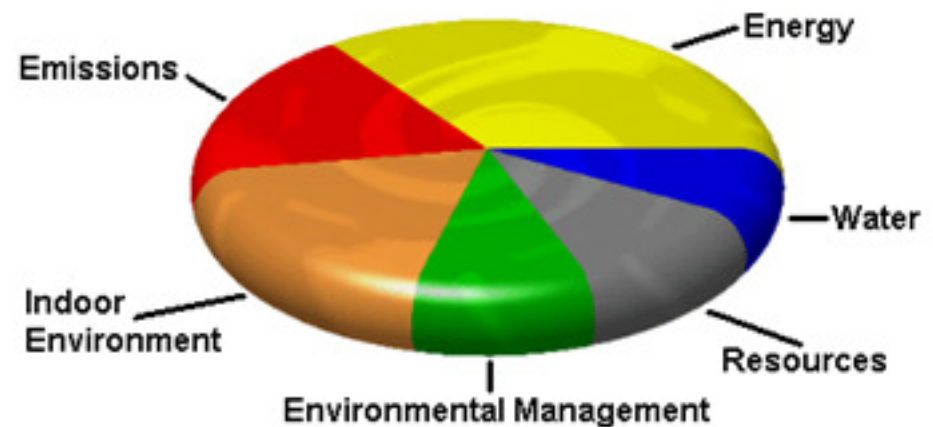
- Office Properties;
- Retail Properties – Enclosed Shopping Centres;
- Retail Properties – Open Air Retail and,
- Light Industrial Properties



BOMA BEST Overview

BOMA BEST Categories

- Energy (350 possible points);
- Water (80 possible points);
- Waste Reduction (110 possible points);
- Emissions and Effluents (175 possible points);
- Indoor Environment (175 possible points); and,
- Environmental Management System (110 possible points)



BOMA BEST Overview

BOMA BEST Application Process

Registration and Application is online

www.bomabest.com

1. Register your ID
2. Identify Building Seeking Certification
3. Submit Application Fee
4. Proceed through Questionnaire
5. Lock your data
6. On-Site Verification
7. Certification Received



BOMA BEST Overview

Registration and Application

- Application Fee depends on type, size and number of facilities.
- Fees for a single facility range from \$1,500 (BOMA member) to \$6,000 (non-BOMA member)
- Fees remain the same regardless of certification level or re-certification.
- Once the building is registered you have 6 months to complete your submission and lock your data.



BOMA BEST Overview

BOMA BEST Tips

- Review questionnaires on BOMA BEST website before you start;
- Start gathering your data before registering;
- Once registered go through the questionnaire online, save your data but do not lock it. It will provide you with a score and tips on how to improve it;



BOMA BEST Overview

BOMA BEST Documentation

- Policy Documents;
- HVAC equipment specs;
- Other energy/water efficiency features;
- Audits and assessments completed on the building e.g. BCA, Phase 1 ESA, waste audit, IAQ, etc.;
- Capital Plans;
- Contracts for purchasing green energy;
- Training records; and,
- Service contracts.



BOMA BEST Overview

Verification

- The Verifier will
 1. review the relevant documentation,
 2. interview the management team and,
 3. conduct a walkthrough of the building.
- If certification is not achieved the building has 30 days to resubmit.
- Re-Certification anytime (additional cost)
- Re-Certification required every 3 years.





LEED for Existing Buildings, Operation and Maintenance



LEED® EB: O&M Overview

- Designed to provide existing buildings with an entry point into the LEED® program, thus encouraging sustainable operations and maintenance practices in existing buildings.
- Rating system addresses building site maintenance, water and energy use, environmentally preferred products and cleaning practices, sustainable purchasing policies, waste stream management and indoor environmental quality.



LEED® EB: O&M Overview

LEED® EB O&M Certification Levels

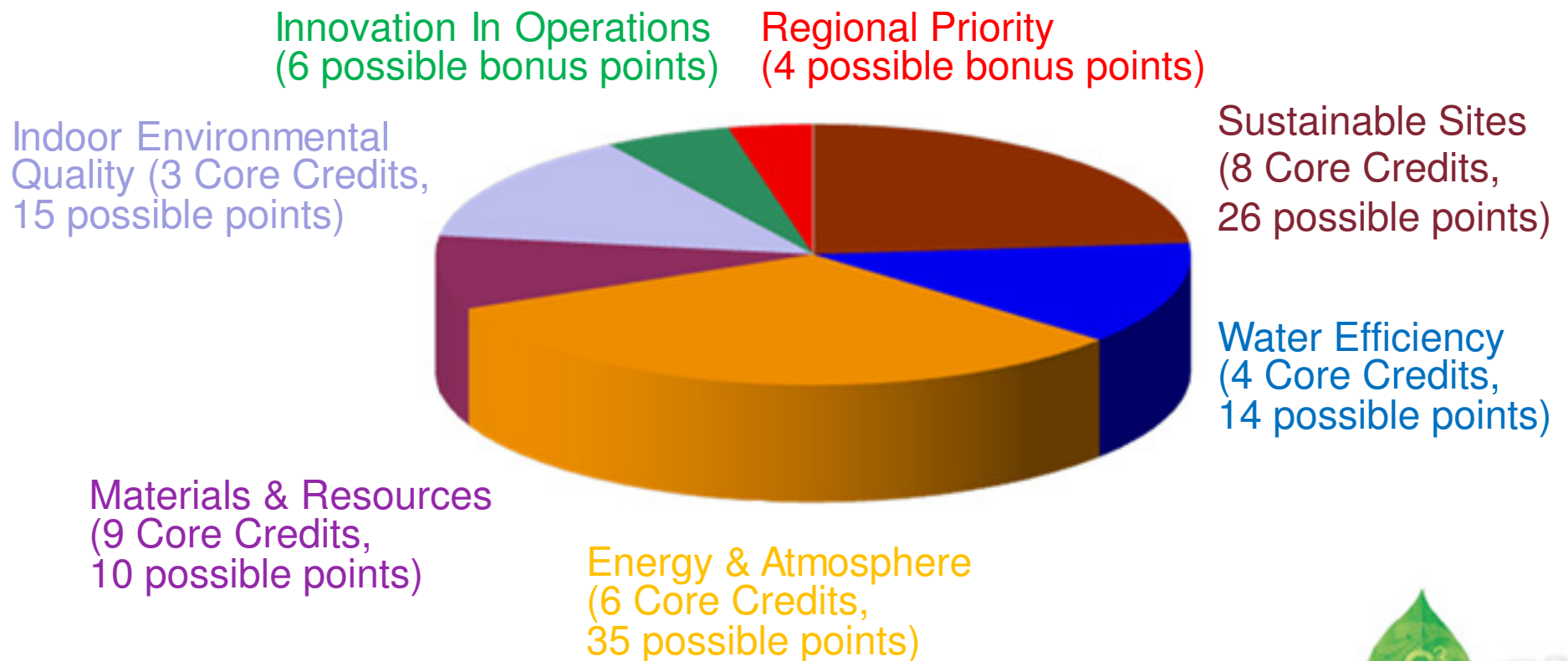
LEED Certified	40 - 49 Points
LEED Silver	50 - 59 Points
LEED Gold	60 - 79 Points
LEED Platinum	80+ Points

Must meet all 9 prerequisites in addition to credits achieved.



LEED® EB: O&M Overview

Categories (110 possible points)



LEED® EB: O&M Overview

LEED® EB Application Process

Registration is online, PDF documentation and Digital Submission www.cagbc.org

1. Register your Building
2. Submit Application Fee
3. Collect Prerequisite / Credit Documentation
4. Submit Documentation and Certification Fee
5. 3rd Party Submission Review
6. Additional Audit Submission / Review
7. Receive Certification



LEED® EB: O&M Overview

Registration and Certification Fees

- Registration fee depends on **SIZE** of the facility.
- Registration fees for a single facility range from \$500 (CAGBC member) to \$1,500 (non-CAGBC member).
- Fees remain the same regardless of certification level or re-certification.
- Certification fees for a single facility range from \$3,000 (CAGBC member) to \$22,500 (non-CAGBC member).



LEED® EB: O&M Overview

Performance Period

- Prior to submission the facility must go through a “performance period”.
- The “performance period” is the time in which the sustainable operation is being performed.
- Data is collected from this period to be submitted as part of the application process.
- Must be a minimum 3 months to a maximum of 24 months,
- Period may be different lengths for each credit but all must end within 1 month of each other.
- Submission required within 60 days of performance period end.



LEED® EB: O&M Overview

Documentation

- This program is very prescriptive. There are very detailed and specific documentation and practices that must be met to achieve a credit.
- Documentation may be in the form of written policies and programs, photographs, calculations, drawings.



LEED® EB: O&M Overview

Submission Review

- Independent Review Process has 2 Stages
 1. Preliminary Review
 2. Second Review and Certification
- CaGBC will review the documentation.
- Certification Time Period is typically 3-12 months, but can be longer.
- Recertification required every 5 years.



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® Similarities

- Both programs aim to “green” the built environment.
- Both programs are focused on operation of an existing building.
- There are minimum requirements or “prerequisites” to qualify for each program.
- Each have registration fees
- Require verification before certification

Comparing BOMA BEST & LEED®

BOMA BEST & LEED® Similarities

- Four levels of Certification
- Certification Cost
- Energy Performance Focus
- Potable Water Use Reduction Focus
- Waste Reduction Focus
- Air Quality Focus
- Operations Focus



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® Differences

- BOMA consists of a questionnaire requiring supporting documentation or on-site demonstration of the response.
- LEED EB contains prescriptive credit requirements and documentation to receive points.
- LEED EB also requires proof the sustainable practices have been in place for a minimum of three months.
- Both require policies however BOMA requires the policy exists while LEED EB indicates the topics that must be covered .



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® Differences

- BOMA BEST is an inclusive rating system to be widely adopted to green the built environment.
- LEED EB was not designed for total market penetration but rather to promote excellence for early adopters, innovators and top performers.
- LEED EB requires increased documentation to offset the on-site review for BOMA.



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® Differences

- BOMA BEST uses energy intensity for benchmarking without incorporating effects of climate.
- LEED EB uses Energy Star portfolio manager and incorporates site, source and climate data.



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® Differences

- BOMA BEST – Points are not disclosed (except for categories). This discourages point chasing.
- LEED EB – Points are disclosed and process is clear.

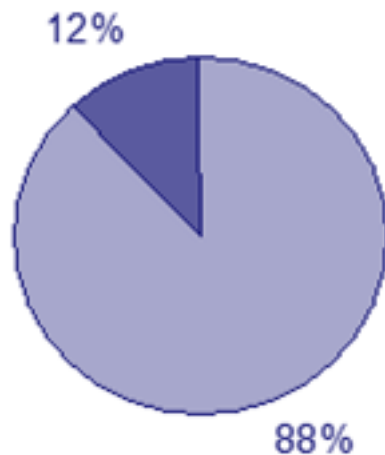


Comparing BOMA BEST & LEED®

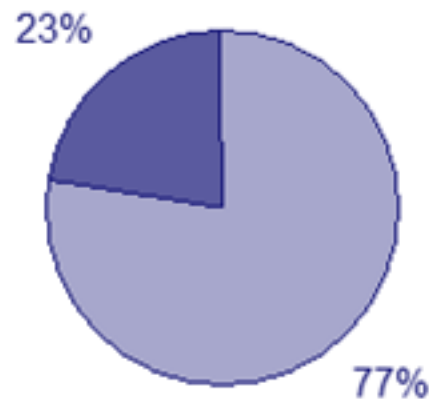
BOMA BEST & LEED® Differences

Operations vs. Tenant Credits

BOMA BEST



LEED EBOM



Comparing BOMA BEST & LEED®

BOMA BEST or LEED EB

WHICH IS RIGHT FOR YOU?



Thank You & Questions



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® EBOM Comparison

Energy Performance Focus

BOMA BEST:

- Walk through Energy Audit or acceptable equivalents
- Min 12 month Energy bills collected
- Snapshot* of Current Building
 - Energy Uses
 - Lighting Fixtures
 - HVAC Equipment Efficiency
 - Green Energy Source
 - Energy Policy
 - Commissioning
 - Preventative Maintenance
 - Sub-metering

LEED® EBOM:

- Conduct Energy Audit that meets ASHRAE Level 1 Requirements
- Establish min. energy performance and achieve increased level of operating efficiency
- Encourage on or off site renewable energy
- Re-commission or conduct ASHRAE Level 2 Audit

*Note: Snapshots can be construed as entering current building status as is, or a guideline for changes to pursue to meet the requirement suggested.



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® EBOM Comparison

Energy Performance Focus – BOMA Point Distribution

BOMA Point Distribution:

Energy Consumption	80
Lighting	25
HVAC Equipment	22
Controls	11
Hot Water	12
Other Energy Efficient Features	13
Green Energy	12
Envelope	35
Energy Management	80
Transportation	60

Do You Have Energy Efficient
Equipment Installed in
Your Building?

Purchase of “Green Power”,
Other Renewable
Energy Sources



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® EBOM Comparison

Potable Water Use Reduction Focus

BOMA BEST:

- Conduct walk through water audit
- Snapshot of current water use in the building
 - Irrigation
 - Non-potable
 - Consumption monitoring
 - Leak check procedure
- Water conservation Policy

LEED® EBOM:

- Install permanent water meter(s) and track
- Reduce potable water usage of indoor plumbing fixtures below LEED Baseline
- Reduce potable water usage for irrigation
- Reduce potable water usage for cooling tower equipment



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® EBOM Comparison

Waste Reduction Focus

BOMA BEST:

- Recycling program
- Minimize Construction Waste Policy
- Snapshot of current building waste management
 - Batteries
 - Fluorescent lamps
 - Electronic waste
 - Composting
- Conduct waste audit

LEED® EBOM:

- Solid waste management policy (R3)
- Environmentally Preferable Purchasing (EPP) Policy
 - Ongoing consumables
 - Durable goods
 - Facility Alterations/ Additions
 - Reduce Mercury in Lamps
 - Food
- Conduct waste Audit



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® EBOM Comparison

Air Quality Focus

BOMA BEST:

- Ozone depleting substances Management and Phase-out Plan
- Hazardous Building Material Survey and Management Plan
- Snapshot of current building Emissions and Effluents
 - Leak detectors
 - Cooling system maintenance Contractor
 - Chemical Storage
 - Stormwater Management
 - Asbestos/ radon/ PCBs

LEED® EBOM:

- Ozone depleting substance Phase-out Plan
- Indoor Chemical & Pollutant Source Control
- Green Cleaning Policy
 - High Performance Cleaning Program
 - APPA Audit
 - Sustainable Cleaning Material & Products Purchasing
 - Sustainable Cleaning Equipment
 - Indoor Integrated Pest Management (IPM) Plan



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® EBOM Comparison

Air Quality Focus

BOMA BEST:

- Snapshot of Emissions and Effluents Continued
 - WHMIS
 - Pest control inspections
- Snapshot of current building Ventilation system
 - Air intakes
 - CO2 sensors
 - O/A filters (MERV 8)
- Tenant IAQ complaint form/ incident logs
- Building Materials Policy
- Environmental Purchasing Policy

LEED® EBOM:

- Meet or exceed ASHRAE 62.1 2007 Ventilation Rate Procedure
- Tobacco Smoke Control IAQ management Program
- O/A filters (MERV 13)
- Permanent ventilation system monitoring
- Occupant Survey



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® EBOM Comparison

Lighting Focus

BOMA BEST:

- Snapshot of the building lighting
 - High frequency ballasts
 - Controllable blinds / fixtures
 - Levels meet IES guideline
 - Task Lighting
 - Daylight
 - Cleaning schedule
 - Group-relamping program

LEED® EBOM:

- Occupant Control of Ambient and Task Lighting System
- Daylight or Views



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® EBOM Differences



BOMA BEST:

- Site pollution
- Transportation
- Noise
- Emergency Response

LEED® EBOM:

- Sustainable Sites
- Innovation in Operation
- Regional Priority



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® EBOM Differences

BOMA BEST Site Pollution Focus

- Snapshot of Current Building's Status
- Contamination
- Phase 1 Environmental Assessment
- Remediation
- Enhanced ecological value

*Note: Snapshots can be construed as entering current building status as is, or a guideline for changes to pursue to meet the requirement suggested.



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® EBOM Differences

BOMA BEST Transportation Focus

- Snapshot of Current Building's Transportation Accessibility
 - Public Transport within 500m & Frequency
 - Building Occupant Bike Racks & Showers
 - Carpooling / Transit Pass

LEED® EB Transportation Focus

- Survey Occupants to verify what percentage travel to the facility in a sustainable method.



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® EBOM Differences

BOMA BEST Noise Focus

- Snapshot of Current Building's Noise Status
 - Acoustic privacy
 - Sound level meters



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® EBOM Differences

BOMA BEST Emergency Response Focus

- Snapshot of Current Building's Emergency Response
 - Staff trained / signag
 - On-Site Equipment
 - Contingency Plans



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® EBOM Differences

LEED® EBOM Sustainable Sites Focus

- Reward Environmentally sensitive building design
- Exterior and Hardscape Management Plan
- Environmentally Sensitive Management Plan
 - Outdoor Pest Management
 - Erosion and Sedimentation Control
 - Landscape
 - Potential Technologies & Strategies
- Reduction in Conventional Commuting over Performance Period
- Protection and Restoration of Open Habitat
- Stormwater Quantity Control
- Heat Island Reduction – Roof and Non-Roof
- Light Pollution Reduction



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® EBOM Differences

LEED® EBOM Innovation in Operation Focus

- Provide building operations, maintenance and upgrade teams with the opportunity to earn points for additional environmental benefits achieved beyond those already addressed by LEED EBOM



Comparing BOMA BEST & LEED®

BOMA BEST & LEED® EBOM Differences

LEED® EBOM Regional Priority Focus

- Provide incentive for the achievement of credits that address geographically specific environmental priorities.
- Examples:
 - Significant Rainwater Capture in Desert Areas
 - Passive heating in Northern climates

