

# THE EFFECTIVENESS OF BOMA BEST AND LEED CANADA EB:O&M IN GREENING COMMERCIAL BUILDINGS

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## ABSTRACT

*LEED Canada for Existing Buildings: Operations and Maintenance (LEED Canada EB:O&M) and Building Owners and Managers Association's Building Environmental Standards (BOMA BEST) are complex green rating systems that offer owners, managers, consultants, and tenants distinct value propositions for existing buildings. Upon close examination, significant variations between the systems are evident in certification process, cost, rigor, engagement, marketing, accessibility, transparency, management, and program philosophy. Despite the many differences between the systems, they are often seen to be complementary programs and are sometimes used in tandem for the same building. This paper reports on a survey of the industry perceptions of the value and strengths of the LEED Canada EB:O&M and BOMA BEST rating systems with respect to the above criteria. As a result of the fundamentally different nature of the programs, preferences for LEED Canada EB:O&M and BOMA BEST are determined by stakeholder values and the programs are used for a variety of reasons.*

## KEYWORDS

green rating, certification, stakeholder, commercial buildings, sustainability, survey, LEED, BOMA BEST

## INTRODUCTION

The pursuit of “greening” existing commercial buildings is gaining momentum among building owners, managers, consultants, and tenants, and is leading to increased interest in appropriate green rating systems for existing buildings. In Canada this interest is largely being addressed through use of the frameworks of LEED Canada: Operations and Maintenance (LEED EB:O&M) and the Building Owners and the Building Office Managers Association's Building Environmental Standards (BOMA BEST). Both of these green rating systems address energy, water, material inputs, waste, indoor air quality, and pollution, and award certificates to existing commercial buildings that meet certain program requirements. They both also provide frameworks for incremental environmental improvement.

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The direct benefits for commercial building owners of improving environmental performance and pursuing green ratings for their buildings may include lower energy and water costs, improved occupant productivity, and potentially marketing and tenant perception advantages. While there has been considerable discussion and comparison of the various green rating systems focusing on new buildings (Seo 2002, Sangster 2006, and DTZ Barnicke Ltd 2010), there is little information for building owners and managers about the relative merits and weaknesses of rating systems focusing on existing buildings, particularly as they apply to different interest groups in the market such as tenants, owners, designers, etc. A recent study by Ryerson University in Toronto for Bentall Kennedy (Canada) LP aimed to review and contrast the approach of LEED Canada EB:O&M and BOMA BESt in the context of the needs of multiple industry stakeholder groups (Roos, Gorgolewski and Straka, 2011). In addition to assessment of environmental impacts, particular attention was given to aspects such as continual improvement, accessibility, perceived social benefits, and value as a marketing or management tool.

The study used a literature review, interviews, and surveys of industry stakeholders to provide insight into these two green rating systems. The goal was to identify the characteristics of each program and provide industry groups with guidance to make informed decisions about when each program is appropriate for use to improve building environmental performance.

## GREEN BUILDING PROGRAMS

LEED EB:O&M and BOMA BESt are the two programs that most thoroughly address a wide range of green building issues for existing commercial buildings in Canada. Nevertheless, a series of other initiatives in North America address particular aspects of the sustainable performance of existing buildings. Below is a short review of some other initiatives:

- The ASHRAE *Building Energy Quotient* program (currently in its pilot phase) focuses only on energy use and is designed to allow market forces to drive the reduction of energy use by labeling the building according to its energy use (Jarnagin 2009). The labels are similar to the Energy Performance Certificates (EPC) that are required in Europe, and are intended to identify areas for operational improvement by a letter-grade asset rating. The program is divided into an *As Designed* rating which portrays the building according to its potential, on the basis of design analysis and an *In Operation* rating describing the building's operational performance based on real performance through utility bills analysis.
- The well established *Energy Star* program for buildings accounts for both energy and water consumption (EPA, undated). Through the use of the online Portfolio Manager, individual buildings or portfolios can be rated from 1–100, providing an effective national benchmarking tool in the United States. Buildings are benchmarked against statistically representative models that incorporate data collected through the Commercial Building Energy Consumption Survey (CBECS). Buildings that achieve an Energy Star rating of 75 or higher achieve the Energy Star label. LEED Canada EB:O&M uses Energy Star ratings to demonstrate compliance with its energy prerequisites and credits.
- *Green Up*, from the Canada Green Building Council (CaGBC), aims to provide benchmarking data for energy and water use for Canada for certain building types including commercial office buildings (CaGBC, undated). It also allows for individual buildings or portfolios to be assessed, provides a tool for building managers for

continuous improvement, and helps building staff identify opportunities for operational improvements. Although not a certification program, Green Up helps to recognize the LEED Canada EB:O&M potential of the building, and may be seen as a start in the process to a full LEED Canada EB:O&M certification.

- The *20 by 15* initiative from Real Property Association of Canada (REALpac), a national real estate industry association for owners and managers, has challenged the Canadian commercial real estate market to reduce energy use intensity levels to 20 ekWh/sq.ft./year by the year 2015 (Jarvis, 2009). This is equivalent to a 49% reduction in median energy use for commercial office buildings and 31% reduction for government office buildings from current levels in Canada. This target was set based on research work done on the Green Up database of buildings, and is an aggressive target that aims to put the Canadian commercial real estate market in a leading position with regard to climate change. It is seen as important for demonstrating the potential of sector-wide emissions reductions and operating cost savings.
- The *2030 Challenge* initiative from the American Institute of Architects focuses on carbon emissions, and sets a goal of carbon neutrality for new buildings and significant reductions for existing buildings by 2030 (AIA, undated). Many organizations internationally have committed to this stepped reduction in greenhouse gas (GHG) emissions, although real improvements have been limited.
- *Green Globes* is a web-based environmental design and management aid intended to help building operators and managers improve their buildings' environmental impact through a self-study approach, fostering a deeper connection to the nuances of the operations of their buildings (GBI 2005). Licensed in the United States to the Green Building Initiative (GBI), Green Globes automatically generates reports which facilitate the evaluation, documentation, and environmental improvement of buildings. The interactive on-line questionnaire provides instant scoring and helpful feedback to the building operator. The BOMA BEST program is based on the Green Globes methodology.

## INTRODUCTION TO LEED EB:O&M AND BOMA BEST

The underlying philosophies guiding the LEED Canada EB:O&M and BOMA BEST programs are noteworthy as they share the aim of transforming the built environment. The two programs are described in more detail below.

### ***BOMA BEST program***

As an association representing building owners and managers regardless of their buildings' performance levels, BOMA's priority is to provide a program that is meaningful to all building classes under its purview. The BOMA BEST program, launched in 2005, strives toward two primary goals: assessment of how well the building is performing environmentally, and recommendations for improvement. Its unique approach to inclusiveness separates the entry-level (level 1) requirements, which encourage all building owners to engage in the program, and three levels that are linked to performance. Level 1 certification is about engagement and demonstrates that the building stakeholders have articulated their environmental commitments through developing a series of best practices documents. Levels 2 through 4 indicate the level of the building's holistic environmental performance, including utility data analyses demonstrating levels of energy efficiency and a checklist identifying building attributes.

Inputting performance data and answering the questions from the on-line questionnaire determines the building's rating. Subsequently, the program identifies opportunities for improvement and provides immediate recommendations for the building manager. Point score values for environmental categories are published, but the point weighting for individual questions are not published. BOMA BEST is intended to be accessible to a wide spectrum of industry at a low certification cost, yet maintain quality control. With a user-friendly platform the system is intended principally for in-house use, with limited need for consultants. It provides a holistic system that identifies environmental practices and equipment options. Users are alerted to improvements that could be made and the system allows for planning the implementation of the suggestions.

BOMA BEST's framework is divided into six categories: Energy, Water, Waste Reduction and Site, Emissions and Effluents, Indoor Air Quality, and Environmental Management System. Out of 1000 possible points, the weighting of the six categories are arranged as shown in Figure 1.

Benchmarking data collected by BOMA are published in its comprehensive national report on the performance of buildings certified under BOMA BEST (BOMA, 2010). National energy intensity averages for BOMA BEST certified buildings are as follows:

BOMA BEST Level 2 – 33.2 ekWh/s.f./yr (1.29 GJ/m<sup>2</sup>)

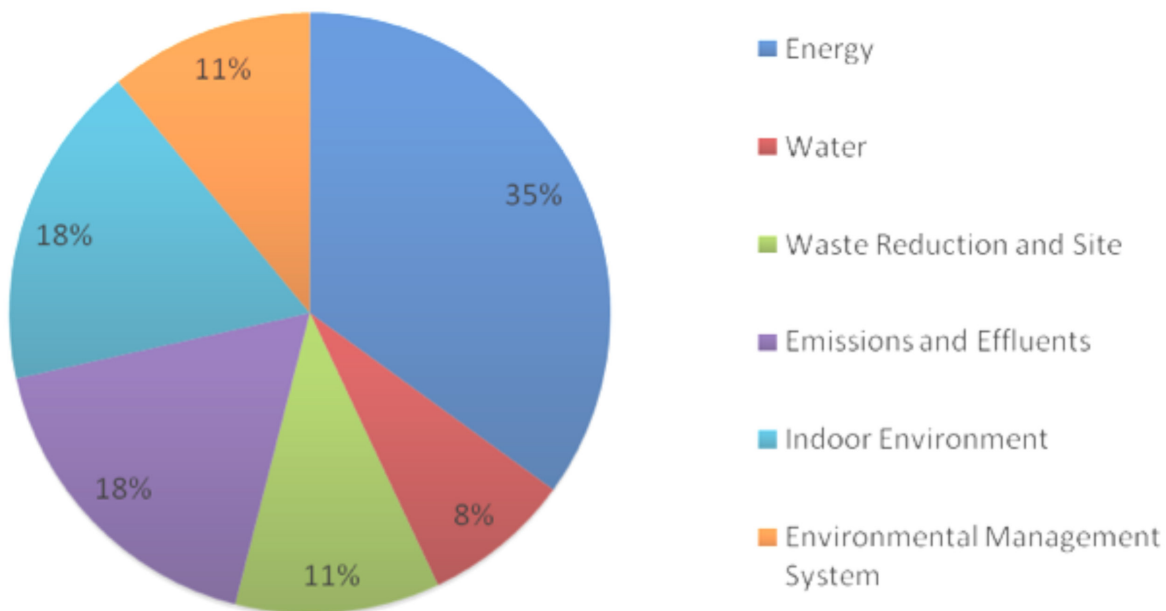
BOMA BEST Level 3 – 29.0 ekWh/s.f./yr (1.12 GJ/m<sup>2</sup>)

BOMA BEST Level 4 – 19.1 ekWh/s.f./yr (0.74 GJ/m<sup>2</sup>)

Overall BOMA BEST – 31.52 ekWh/s.f./yr (1.22 GJ/m<sup>2</sup>)

These figures compare favorably with the Canadian national average energy intensity for office buildings of 36.7 ekWh/s.f./yr. It is interesting, while not surprising, to note that only the level 4 buildings would on average meet the Realpac 20 by 15 challenge mentioned earlier. Similar data is available for water use.

**FIGURE 1.** BOMA BEST Point Category Weighting Distribution (Office Buildings).



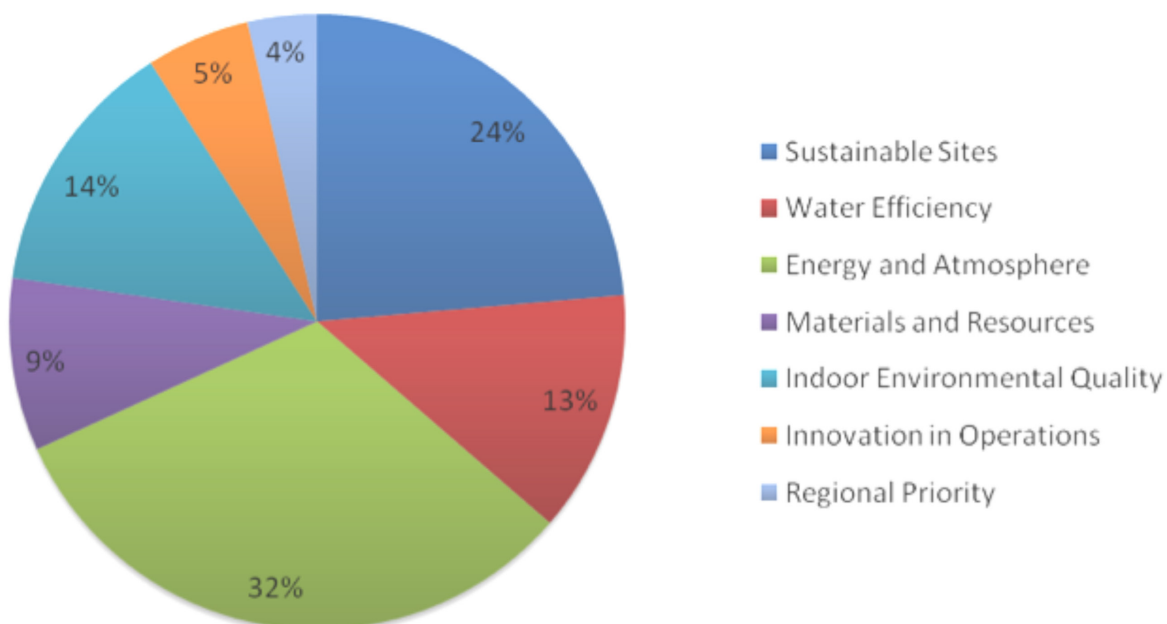
### LEED Canada EB:O&M

The LEED Canada EB:O&M program is an application of the well-established LEED NC green rating system to existing buildings and was introduced in Canada in 2009. It addresses operational efficiency and environmental impacts of existing commercial, institutional, and high-rise residential buildings. LEED's intent is to stimulate healthy, durable, energy efficient, high-performing buildings with responsible environmental management. As with other LEED programs EB:O&M addresses seven environmental categories: Sustainable Sites (SS); Water Efficiency (WE); Energy and Atmosphere (EA); Materials and Resources (MR); Indoor Environmental Quality (EQ); Innovation in Operations (IO); and Regional Priority (RP). Out of a maximum of 110 points, potential scoring per category is shown in Figure 2.

As with all LEED ratings there are some prerequisites that must be met and then points are earned for additional aspects of higher performance, which contribute toward certification at the Certified, Silver, Gold, or Platinum level. Unlike LEED NC, some EB:O&M credits require a performance period to collect detailed operational data. This period is when credit submittal information is documented in detail. The duration of the period is a minimum of three months, with the exception of Energy and Atmosphere credits that require 12 months of utility data tracking. Performance period requirements change upon recertification.

As a management tool, LEED Canada EB:O&M imposes rigorous management practices and has ongoing documentation requirements for building operators and managers. The performance period dictates the methods and performance levels which the building must maintain for initial certification and recertification. LEED Canada EB:O&M is perceived by the industry at large as a program that instills high performance levels and ensures high-level implementation standards, with significant costs associated with the ongoing up-keep of the program's requirements. In addition to the project registration and certification fees, which can be as high as \$22,500, there are significant additional costs such as consulting fees and capital costs associated with reaching prerequisite performance levels and/or achieving performance

**FIGURE 2.** LEED Canada EB:O&M Credit Category Weighting Distribution





credits. These costs vary between projects and are beyond the scope of this paper but they have led to a perception in industry that LEED EB:O&M can be expensive to achieve.

LEED Canada EB:O&M's principal strengths are in its rigorous systemic implementation and market recognition. The LEED brand is increasingly recognized internationally as an indicator of environmental performance and is used in more countries than any other green rating program. Owners and managers opt for LEED, particularly for their class-A or flagship buildings, anticipating higher tenant attraction and retention, as well as commanding higher rental incomes.

## **REVIEW OF THE AREAS OF SIGNIFICANT DIFFERENCE BETWEEN THE SYSTEMS, EQUIVALENCIES, ETC.**

As a result of the fundamentally different nature of the programs, preferences for LEED Canada EB:O&M and BOMA BESt are determined by stakeholder values and the programs are used for a variety of reasons. In the absence of long-term statistical data that would permit a quantitative assessment, industry perception of the two programs was gathered for this study from a cross-section of commercial building stakeholders including tenants, owners, managers, consultants, and partner organizations. An initial survey was distributed asking twenty respondents to rate key criteria from 1 to 5. Twenty seven follow-up interviews were conducted to ascertain the reasons for various responses.

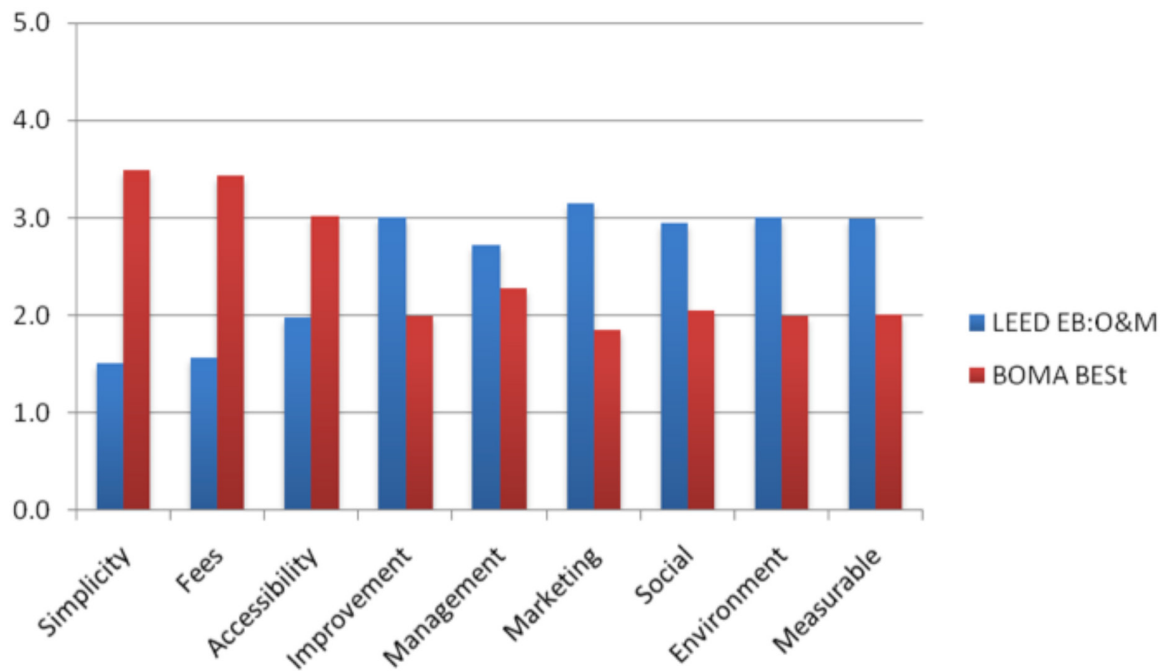
Figure 3 shows averaged ratings of key characteristics relating to BOMA BESt and LEED Canada EB:O&M. Stakeholders rated their perceptions of both programs according to the following criteria from 1 to 5:

- Simplicity of the certification process
- Cost
- Accessibility—ease of engagement in the program
- Potential for ongoing improvement
- Strength as a management tool
- Strength as a marketing tool
- Strength in providing social benefit
- Effectiveness in assessing real environmental benefits
- Ability to reduce measurable resource use

Neither of the programs scored very highly in any of the categories, suggesting that the characteristics being assessed were not perceived to be strong for either program and the industry feels that both programs could improve in a variety of ways. However, caution must be taken when interpreting averaged data as many stakeholders have opinions that are not represented in aggregate form. At a more detailed level, there is disparity about the strengths of the two green rating systems, but average results across the survey criteria suggest an inversely proportional relationship between user-friendliness and performance. BOMA BESt is rated as having a simpler certification process, but has a lower level of ingrained performance in measurable resource use and environmental benefit. Similarly, LEED's systemic rigor tends to yield higher performance levels, at the expense of simplicity, cost, and accessibility.

Survey results and subsequent interviews exposed a wide variety of opinions regarding the relative strengths of the two programs. Although LEED Canada EB:O&M's systemically thorough process shows stronger numbers for criteria such as embedded ongoing improvement,

**FIGURE 3.** Averaged Survey Responses for the 9 Key Criteria.



management, social benefit, environmental benefit, and measurable resource use, the range of opinions across stakeholders groups show that the programs' strengths are highly dependent on participant engagement. Table 1 summarizes the characteristics of each program.

### ***Simplicity of the Certification Process***

Certification process complexity is seen by many stakeholders as being synonymous with rigor, due to the amount of steps and documentation required to prove performance. Others believe that a more streamlined approach with better tools would make LEED Canada EB:O&M easier to achieve with the same performance standards. Several owners and consultants indicated that LEED Canada EB:O&M is more robust than BOMA BEST and more rigid in reporting structure. This may be beneficial from the point of view of ensuring effective environmental improvement, but has to be balanced with cost and practicality of implementation.

### ***Cost***

The total costs of certification are a key issue for widespread industry acceptance of any rating system. It is generally recognized that costs can be an impediment to wider adoption of green ratings. Conversely, lower costs may necessitate less rigor and lead to potential loopholes in the system. The two programs address this in different ways. There were various responses from the industry about the cost issue. Furthermore, the certification costs as charged by each program are only part of the total investment. Aspects that influence the overall costs equation can include: registration fees, application fees, internal staff hours, consulting expenses, and capital costs for upgrades. However, the possible increases in market value of the asset, higher rental rates, tenant retention, or improved market perception may in some cases offset certification costs, thus factoring overall costs for the programs can be complex.

**TABLE 1.** Areas of Significant Differences Between BOMA BEST and LEED Canada EB:O&M.

	<b>BOMA BEST</b>	<b>LEED EB(O&amp;M)</b>
Mission Statement	BOMA BEST—Transforming buildings into environmentally responsible assets.	CaGBC—Lead and accelerate the transformation to high-performing, healthy green buildings, homes and communities throughout Canada.
Energy Benchmarking	Energy Use Intensity—Only concerned with site energy used inside the building without incorporating the effects of climate, source inefficiencies, and delivery losses.	Energy Star—Incorporates site/source/delivery inefficiencies and climate data, but does not reflect Canadian climatic conditions or non-carbon emitting energy sources such as hydro and nuclear.
Stakeholder Participation	User-friendly platform makes it accessible to managers and operators to implement improvement initiatives and use the program as a self-study.	Heavily dependent on external consultants. Involvement of in-house building staff varies. In some cases being significant in others minimal, thereby missing an important means of incorporating ongoing improvement potential.
Marketing	Not well-known to stakeholder communities outside BOMA membership.	Widely seen as the “gold standard” for environmental buildings producing better tenant attraction and retention.
Management	Strong building management program facilitating improvements on an ongoing basis.	Rigorous performance period instills high levels of performance and embeds strong management practices.
Cost	Low administrative costs with varying implementation costs, in-house staff are often able to implement projects without the need for consultants.	Relatively low administrative costs but with many accounts reporting the program to be extremely expensive due to the need for many consultants and onerous documentation requirements.
Quality Assurance	Extent of the improvements is entirely dependent on the level of management and operator engagement.	High levels of performance and quality can be expected due to the rigorous documentation requirements and baseline operation levels set out during the performance period.
Transparency	Points are not disclosed which discourages “point chasing.” Recommended improvements are provided, but does not identify which initiative are more environmentally meaningful.	Points are disclosed and the process is clearly articulated. CaGBC’s review process identifies shortcomings and offers opportunities for improvements to the approaches taken but does not provide recommendations for other environmental initiatives.
Verification	3rd-party verified with rigor expectations varying regionally.	No 3rd-party verification, but substantiation derived from Performance Period and utility data records.

BOMA BEST is targeted to be accessible to a wide spectrum of the industry at a low additional certification cost, yet maintain appropriate quality control. Most interviewees agree that BOMA BEST does not require consultant involvement, which reduces costs to the owner. Furthermore, BOMA BEST has no minimum performance requirements, avoiding the need for expensive capital upgrades in order to achieve basic certification.



Costs associated with the LEED Canada EB:O&M process are often significantly higher, due in part to three things: (1) capital upgrades for achieving the prerequisite levels, (2) consultant fees and (3) the ongoing administrative requirements of operating the building according to the performance levels demanded. LEED Canada EB:O&M is perceived as creating a top performing tier of buildings, but there can be significant costs involved in getting to this level.

### ***Accessibility—Ease of Engagement in the Program***

How accessible the programs are can be viewed in a number of ways, including ease of use, cost, entry-level expectations, and barriers into the programs. Again the programs take contrasting approaches. BOMA BESt is intended to be easy to engage, and to that end, costs are kept low and a building can enter into the program at any performance level. Level 1 is readily achievable because it is policy oriented, not performance focused. BOMA BESt is intended to be used by building managers and is more directed toward them and the user-friendly web-based interface allows certification to be achieved with minimal employment of consultants.

LEED Canada EB:O&M is seen as more of an exclusive program aimed at leading the industry forward by enforcing ambitious targets designed to transform the market. As such, it aims to capture the leading 25% of the market and so by its nature is creating a higher class of building. A variety of consultants are usually necessary, making the program less affordable to many building owners.

### ***Potential for Ongoing Improvement***

Both programs aim to establish responsible sustainability management practices. BOMA BESt is viewed by many to allow for flexibility resulting in a less-rigorous certification platform which can allow for misrepresented intentions. Nevertheless, the BOMA BESt program has proven to facilitate excellent results under the guidance and leadership of committed individuals. The BOMA BESt program has also had some success in creating a peer-driven culture for the improvement of existing buildings while providing comprehensive national and regional benchmarking data on an annual basis. Stakeholders are able to identify the relative performance of their buildings, informing improvement initiatives and driving a continuous improvement cycle.

The clear metrics, defined policies, and strict reporting demands placed upon building managers in LEED have the benefit of enforcing appropriate operational habits, but some consultants have admitted that operations can revert to previous levels in a short amount of time, as witnessed in some buildings in the United States. Tenants often do not have an appreciation for the differences in the ongoing improvement aspects between the programs. This is evident from the fact that they do not engage in the ongoing performance monitoring of the buildings they occupy.

### ***Strength as a Management and Marketing Tool***

A key driver for certification systems among the commercial building industry is the competitive market that is supported by marketable initiatives such as building certification. It is of critical importance for building owners and managers to keep vacancy rates low and it is said that tenants are increasingly demanding environmental performance from buildings they occupy.

The BOMA BESt approach focuses on engaging building management staff and operators, providing a framework for self-study, improvement, and promoting choices that best suit

the building's needs. Conversely, the CaGBC's intention of driving market transformation is evident in the LEED program's exhaustive framework and documentation requirements ensuring that the building performs at its highest potential.

As a trusted association to owners and managers, BOMA has the marketing advantage of promoting its program among its 2500+ membership. However, BOMA is less well known outside its membership and has been less successful in creating a brand recognizable to prospective tenants. One of the reasons for BOMA BEST's lower marketing power is that it is not viewed to be a differentiator among buildings. The large number of BOMA BEST certifications embraces buildings of all classes, resulting in the certification having less marketing value.

The LEED brand is widely seen to be an indicator of high performance and environmental responsibility, which attracts interest from various stakeholders. Enthusiasm for LEED's marketing power is a key reason that owners and managers invest in the LEED brand. Although tenants seem less convinced of LEED's market benefits. Nevertheless, LEED Canada EB:O&M's approach of engaging the best-performing buildings creates a public perception of high performance, leading to powerful marketing potential.

### ***Effectiveness in Assessing Real Environmental and Social Benefits***

Addressing the question of which program delivers a "greener" building is difficult to answer directly because the environmental improvement of buildings is dependent on building stakeholder initial and ongoing engagement levels. BOMA BEST and LEED Canada EB:O&M provide frameworks for broad environmental improvement but cannot account for how well the programs' features are put to use.

Respondents tend to believe that LEED Canada EB:O&M's rigorous approach yields higher levels of social and environmental benefits, but only marginally. The LEED Canada EB:O&M program enforces a high level of rigor into the daily routines of the building's staff, with specific documentation requirements that promote accountability. Recognizing that LEED's prerequisite performance levels are significant, and a large part of building performance is related to occupant behaviour, LEED's systemic rigor instills a high level of operational behaviour.

BOMA BEST can effectively identify areas of improvement but is less able to differentiate between thoroughness of implementation. The flexible framework of BOMA BEST allows for a wide range of outcomes. With encouragement and support from senior-level management, available capital resources, and knowledgeable operations staff, the BOMA BEST program can lead to significant improvements in the environmental performance of a building. Conversely, industry perception suggests that at lower levels of engagement, BOMA BEST can also be used by building owners, managers, and operators who are seeking the marketing value of building certification, without necessarily a commitment to real environmental improvement. It should be recognized however, that although the entry level to BOMA BEST may not be evaluated on the basis of performance, higher certification levels may be indicators of high-performing buildings.

## **CONCLUSIONS**

BOMA BEST and LEED Canada EB:O&M address the sustainability challenges of existing commercial and institutional buildings in different ways. LEED Canada EB:O&M is a performance-focused program that sets high standards in an attempt to create top performers.

BOMA BEST embraces environmental improvement ambitions, regardless of the level of initial performance, allowing building stakeholders to determine their own path to sustainability.

LEED Canada EB:O&M's prerequisites, as well as exhaustive initial and ongoing documentation requirements, do much to ensure high levels of performance and accountability at the expense of being an exclusive program that only addresses the top tier of commercial and institutional buildings. BOMA BEST's inclusive approach potentially addresses most or all of the commercial building stock in Canada, but lacks in systemic rigor. This allows for a large spectrum of possible improvement outcomes.

The LEED brand is accepted throughout the global building industry as a symbol of excellence in "green" building. LEED Canada EB:O&M certification is sought by discerning tenants and is driving owners and managers to engage in the process for their flagship Class-A buildings. Although EB:O&M is well received among top-tier building stakeholders, the exclusive nature of the program has resulted in a limited overall adoption, making the BOMA BEST program more widely adopted and therefore having a bigger impact. Nevertheless LEED Canada EB:O&M is new to the Canadian market and is still in the early stages of becoming established. It is not yet clear how large an impact it will have.

Within the consultant community BOMA BEST is often misunderstood to be an entry-level program. It is important to distinguish between the initial level of BOMA BEST, which is based on adopting best practices, and higher levels, that in some areas requires verification of improved performance. The program's holistic and high-performance levels are frequently misunderstood to indicate lower performance levels than they are in reality. Used effectively, buildings with BOMA BEST certification may reach levels equivalent to the LEED Canada EB:O&M program.

The LEED Canada EB:O&M program is systemically rigorous in instilling stronger management and operation practices, as well as promoting major capital upgrades and re-commissioning of HVAC equipment. These benefits come at a high cost, and if not for the marketing value of the LEED brand, many question the investment value. Direct statements about BOMA BEST's investment benefits are difficult because of the wide range of possible results. Some buildings are certified with little environmental benefit while other buildings accomplish significant improvements.

Together, LEED Canada EB:O&M and BOMA BEST address the needs of the Canadian commercial building stock. Their differences make them complementary programs and as a result, some buildings are certified under both programs. The following bullets summarize the features of each program.

- BOMA BEST is an inclusive program ranging from best practices documentation to very high performance.
- LEED Canada EB:O&M is an exclusive program aiming to create a culture of upper-tier performance.
- Although industry perceives the programs to have differing strengths, neither program scored above 70% in any of the categories identifying an opportunity for improvement.
- The LEED Canada EB:O&M program is seen to achieve higher social and environmental benefits, but only marginally.
- BOMA BEST is often misunderstood to be an entry-level program in the consultant community. The program's holistic and high-performance levels are frequently misunderstood to indicate lower performance levels than they are in reality.

- BOMA BEST is able to identify areas of improvement but is unable to differentiate between thoroughness of implementation.
- LEED's systemic rigor tends to yield higher performance levels, at the expense of simplicity, cost, and accessibility.
- LEED Canada EB:O&M's systemic rigor tends to instill a higher level of operational behaviour and performance than BOMA BEST certification.
- Average results across the survey criteria suggest an inversely proportional relationship between user-friendliness and performance.
- With encouragement and support from senior-level management, available capital resources, and knowledgeable operations staff, the BOMA BEST program can lead to significant improvements in the environmental performance of a building.
- Used effectively, buildings with BOMA BEST certification may reach levels equivalent to the LEED Canada EB:O&M program.
- Difficulties in developing reliable business cases, has caused the industry to currently use LEED Canada EB:O&M for only their flagship buildings.
- There are concerns about slackened practices in the 5-year intervals between LEED EB:O&M re-certifications and the total costs of certification have created a hesitant market, with many organizations unwilling to certify all but their flagship buildings under the program.
- The BOMA BEST program has had some success in creating a peer-driven culture for the improvement of existing buildings while providing comprehensive national and regional benchmarking data on an annual basis.
- Although tenant groups are beginning to seek green certified buildings, a strong preference for BOMA BEST or LEED Canada EB:O&M is not evident.

Because of the short time these programs have been on the market, their continual integration into the industry remains to be seen; however, the rate at which the industry has adopted them is encouraging. Additional initiatives are likely to join the marketplace and future evolutions are likely to adapt to the needs of stakeholders as these programs mature.

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