

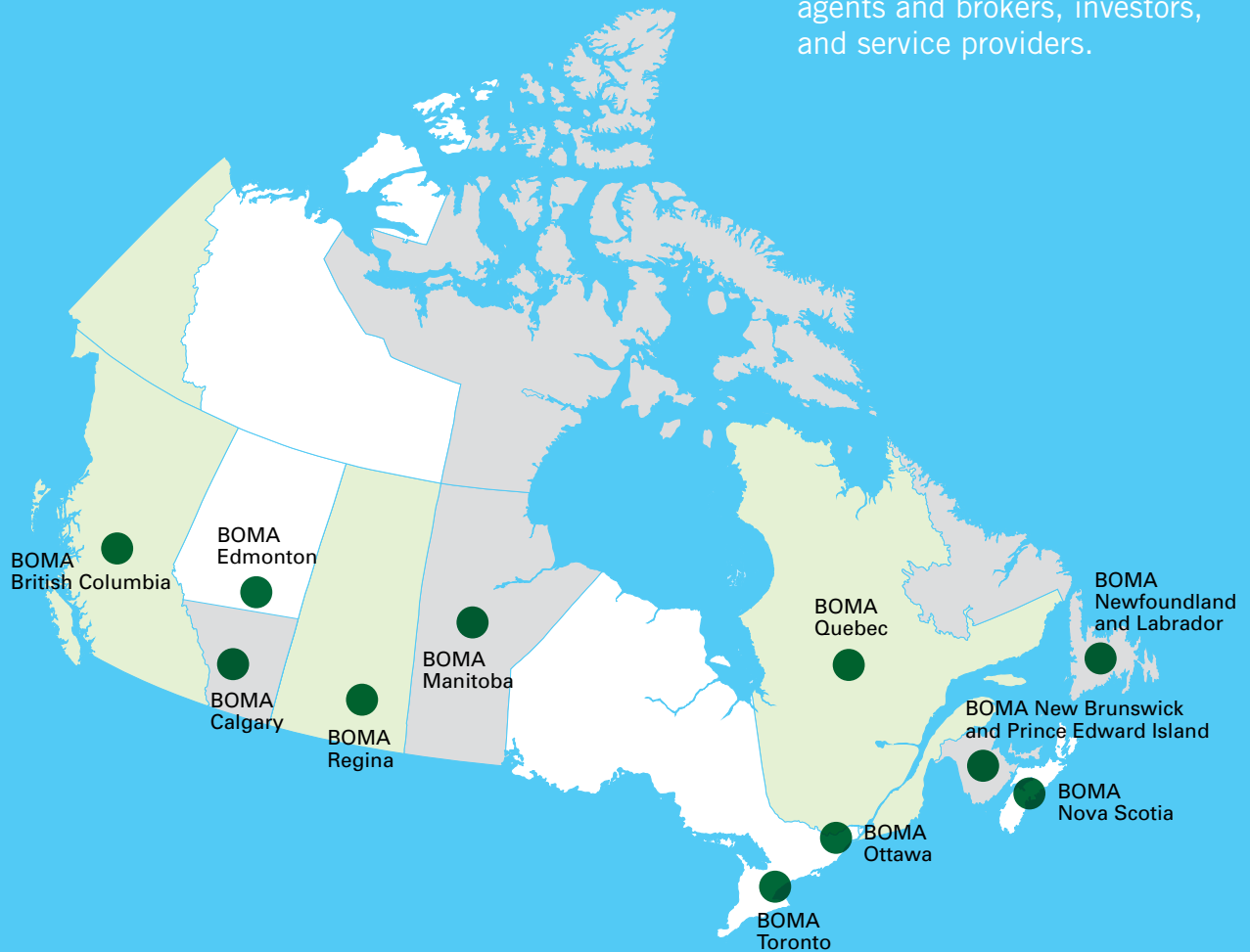


BOMA Canada is the voice of the Canadian commercial real estate industry.

A national not-for-profit association, with strong regional associations across Canada, BOMA Canada is comprised of over 3,200 members. Our members own, manage and operate close to 2.1 billion square feet of commercial space in the country in both the public and private sector.



Members include building owners, managers, developers, facilities managers, asset managers, leasing agents and brokers, investors, and service providers.



BOMA BEST

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BOMA NETWORK IN CANADA

BOMA BC (includes Yukon Territory):

www.boma.bc.ca

BOMA Calgary (includes Southern Alberta from Red Deer to the Montana Border):

www.boma.ca

BOMA Edmonton (includes the area north of Red Deer and the Northwest Territories):

www.bomaedmonton.org

BOMA Regina (includes all of Saskatchewan):

www.bomaregina.ca

BOMA Manitoba (includes Nunavut):

www.bomamanitoba.ca

BOMA Toronto (includes all of Ontario except for the Kingston and Ottawa regions):

www.bomatoronto.org

BOMA Ottawa (includes the regions of Ottawa, Gatineau, and Kingston):

www.bomaottawa.org

BOMA Quebec (includes all of Quebec except for the Gatineau region):

www.boma-quebec.org

BOMA New Brunswick and Prince Edward Island:

www.bomanewbrunswick.com

BOMA Nova Scotia:

www.bomanovascotia.com

BOMA Newfoundland and Labrador:

www.bomanl.com

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1 INTRODUCTION



1.1 ABOUT THE BOMA BEST ENERGY AND ENVIRONMENT REPORT

Welcome to the fifth annual BOMA BEST Energy and Environment Report, the National Green Building Report.

BOMA Canada and the eleven Local BOMA Associations are committed to sharing the data collected through the BOMA BEST program in an effort to help improve the environmental performance of Canada's existing buildings.

The BOMA BEST Energy and Environment Report will showcase a detailed analysis on the performance of buildings that achieved BOMA BEST certification in the 2013 calendar year across the six key environmental impact areas assessed by the BOMA BEST program:

- Energy performance and management
- Water performance and management
- Waste reduction and site enhancement
- Management of emissions and effluents
- Indoor environment
- Environmental management systems

In addition to this benchmarking data, the 2014 BOMA BEST Energy and Environment Report will present real performance and management success stories from buildings across the country. These case studies on issues important to building managers – such as portfolio management, energy reduction and waste reduction – have been included to illustrate the benefits of continuously assessing a buildings' performance and management practices within the context of BOMA BEST.

1.2 ABOUT BOMA BEST

BOMA BEST is Canada's leading environmental certification program for existing buildings. It is used by all sectors of the commercial real estate industry (private and public) to raise performance levels through the adoption of BEST management practices and facilitation of continuous improvement; leading to the reduction of the environmental impact of existing buildings.

BOMA BEST was designed by Canada's leading building owners, managers and operators in conjunction with a wide range of independent external experts to provide a consistent framework for assessing and improving the environmental performance and management of buildings.

The BOMA BEST mission is to create a sustainable environment, one building at a time. This is accomplished by meeting the need for a

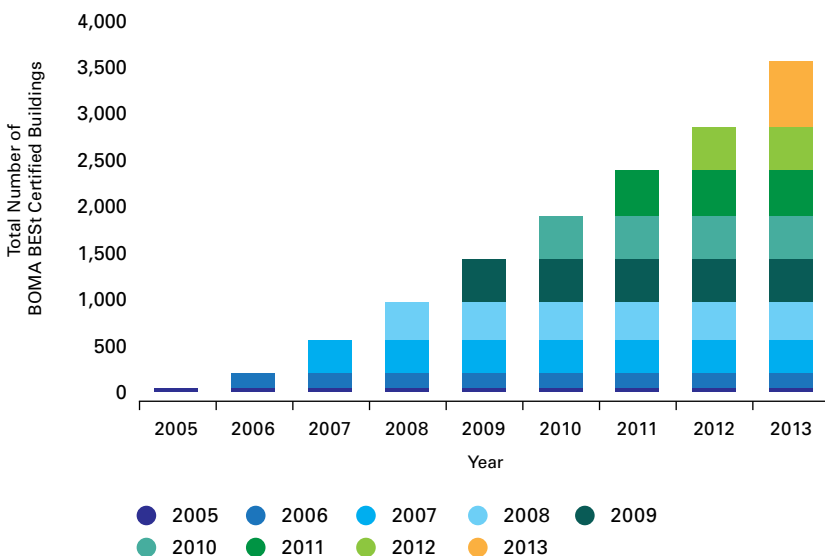
green building rating system that is accessible, accountable, and affordable, and which leads to the adoption of best practices and continuous improvement in all buildings. BOMA BEST is managed by the Building Owners and Managers Association of Canada (BOMA Canada) and is delivered throughout Canada by the eleven local BOMA Associations.

Since the Program's inception, BOMA BEST has seen tremendous uptake by the Canadian real estate industry.

As at December 31, 2013:

- Over 4,400 buildings, representing hundreds of millions of square feet of Canadian commercial real estate, have applied for certification and/or recertification since 2005;
- 3,562 buildings have achieved BOMA BEST certification and/or recertification across Canada since 2005.

FIGURE 1: BOMA BEST CERTIFIED BUILDINGS
(Level 1 to Level 4, Cumulative)



3,562 buildings have achieved BOMA BEST certification and/or recertification across Canada since 2005.

1.3 WHAT'S NEW WITH BOMA BEST?

1.3.1 Introducing BOMA BEST Healthcare

BOMA Canada will be launching a new module, BOMA BEST Healthcare, in summer 2014.

The Healthcare Sector in Canada is committed to reducing its environmental impact. BOMA Canada seeks to build on these efforts by providing managers and operators of hospitals, medical offices, and long term care facilities with a BOMA BEST module specifically designed to assess and certify their healthcare facility's environmental performance and management.

The Healthcare Module will be the sixth BOMA BEST certification module and will be available across the country in both official languages.

Throughout 2013 an expert Technical Advisory Committee has been hard at work developing this new module. The team consists of representatives from the McGill University Health Network, Synergie Santé Environnement, University Health Network (University of Toronto), BOMA Quebec and BOMA Canada.

Participants from across the country were recruited for a three-month Pilot Project to verify the tool's efficacy in meeting the needs of eligible building types.

Although the module will assess the same areas of green building performance and management as our five other BOMA BEST modules, the healthcare sector faces unique opportunities and challenges. New questions to the tool include:

- Global capture rates for waste;
- The presence of a healing environment for patients, such as healing gardens and other patient-centric features; and
- Sustainable food purchasing policies and practices.

1.3.2 Technical Clarification Requests

BOMA Canada is committed to the continuous evolution and improvement of the BOMA BEST Certification Program.

As such, BOMA Canada has created a transparent process which allows BOMA BEST program content to be reviewed to ensure it is clear, up-to-date and on the cutting edge of industry best practices.



Montreal General Hospital, Montreal,
BOMA BEST Healthcare Pilot Building

This new process, called the Technical Clarification Request (TCR) process, is managed by the BOMA BEST Technical Committee.

Completed TCRs will be publicly available to all BOMA BEST users and stakeholders at least 12 weeks before official implementation. The second set of TCRs (8 in all) is due to take effect in June 2014.

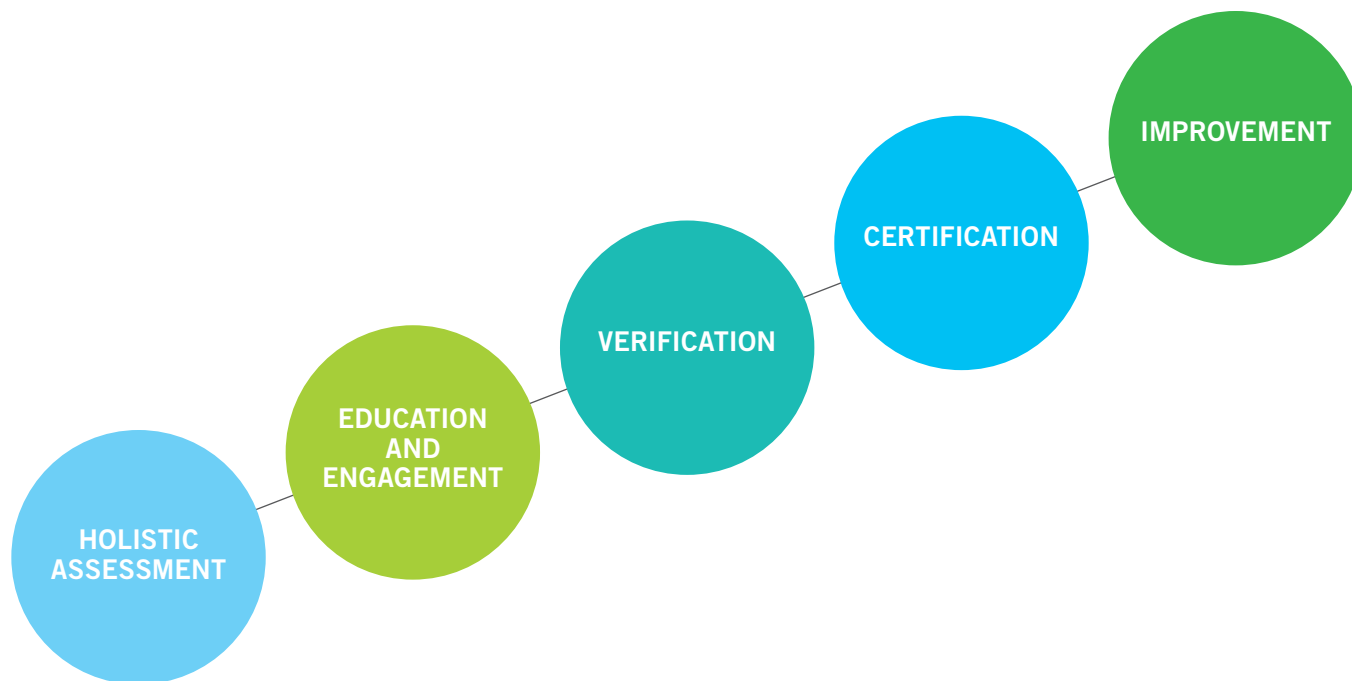
For more information please see the "Technical Clarification Request" section of the BOMA BEST website.

1.3.3 BOMA BEST Newsletter

Get up to date information about the BOMA BEST Healthcare module, Technical Clarification Requests and all other aspects of the BOMA BEST program by subscribing to our electronic newsletter.



To receive more information about any of the initiatives listed above, subscribe to the BOMA BEST Newsletter by visiting the BOMA BEST homepage at www.bomabest.com.



1.4 FIVE PILLARS OF BOMA BEST

1. Holistic assessment

The online BOMA BEST assessment consists of 175 detailed questions distributed across six environmental impact areas: Energy, Water, Waste Reduction and Site enhancement, Emissions and Effluents, Indoor Environment, and Environmental Management Systems. By emphasizing all six areas, BOMA BEST encourages users to consider the building in its entirety, facilitating the implementation of strategies leading to overall performance improvement. Performance data is provided in universally accepted metrics, allowing building owners, managers and facility operators to more effectively benchmark performance. The summary performance report highlights current achievements as well as a range of recommendations for future building improvements.

2. Education and Engagement

BOMA BEST guides managers and operators through a holistic building performance review. In doing so, the program fosters a culture of improvement within the organization by increasing tenant and staff engagement and awareness of environmental impacts. In addition, operational staff will benefit from increased familiarity and comfort with building operations.

3. Verification

Information submitted by BOMA BEST applicants is reviewed by an independent third-party verifier. Documentation must demonstrate that policies have been implemented and a walk-through of the building, including the plant room and a typical occupant space, will further ensure the assessment has been accurately completed.

4. Certification

Four levels of certification allow users to move through the program, regardless of where they might be in their sustainability journey:

BOMA BEST Level 1: The building has met all BOMA BEST Practices: management practices which include implementing an energy reduction program, a water conservation policy and a tenant communication work plan.

BOMA BEST Level 2: The building has met all BOMA BEST Practices AND has achieved a score of 70 to 79% on the BOMA BEST assessment. The building is moving towards better energy and environmental performance through improved management practices.

BOMA BEST Level 3: The building has met all BOMA BEST Practices AND has achieved a score of 80 to 89% on the BOMA BEST assessment. The building is moving towards excellence in energy and environmental performance through excellent management practices.

BOMA BEST Level 4: The highest level of certification. The building has met all BOMA BEST Practices AND has achieved a score of over 90% on the BOMA BEST assessment. These buildings are high performers with low energy consumption, excellent management, and often combine new technologies and industry leadership.

5. Improvement

BOMA BEST certified buildings achieve better energy and water use intensities upon recertification. The program helps building owners, managers and facility operators identify a building's baseline performance. From there, the recommendations provided in the Report highlight the opportunities for improvement which, if implemented, can lead to an improved score upon recertification.



1.5 2013 BOMA CANADA AWARDS WINNERS

The Building Owners and Managers Association (BOMA) of Canada is proud to announce the winners of its prestigious 2013 National Awards presented October 3, 2013 at the Halifax World Trade and Convention Centre in Halifax, Nova Scotia during BOMEX® 2013.



Winners

TOBY AWARDS

The Outstanding Building of the Year (TOBY®) Awards is the most prestigious and comprehensive program of its kind in the commercial real estate industry, recognizing quality in commercial real estate buildings and rewarding excellence in building management. All facets of a building's operations are thoroughly evaluated; entries are judged on everything from community involvement to environmental and sustainability management. Judging is based on the following: building standards; community impact; tenant relations; energy conservation; environmental and regulatory sustainability; emergency preparedness and security standards; and the training of building personnel. BOMA BEST certification is a minimum requirement to be considered for this award.



General Mills,
Mississauga,
BOMA BEST Level 3



Le Windsor, Montreal,
BOMA BEST Level 4



Conestoga Mall,
Waterloo,
BOMA BEST Level 4



Yonge Corporate
Centre, Toronto,
BOMA BEST Level 3



6696 Financial Drive,
Mississauga,
BOMA BEST Level 3



Calgary Board
of Education
Tower, Calgary,
BOMA BEST Level 3



1 Dundas Street West,
Toronto, BOMA BEST
Level 3



25 York Street,
Toronto,
BOMA BEST Level 4



Place Victoria,
Montreal,
BOMA BEST Level 3



Winner

EARTH AWARDS

The National Earth Awards are BOMA Canada's recognition of excellence in resource preservation and environmentally sound commercial building management. Awards are presented to buildings that have made significant efforts to address environmental issues faced by older and newer buildings, including reduction of environmental risk, indoor air quality and green cleaning, recycling, energy conservation, water conservation, interior finish, green purchasing policy, and occupant communications and education. BOMA BEST certification is a minimum requirement to be considered for this award.



1100, Blvd René-Levesque,
Montréal, BOMA BEST Level 4

2 KEY FINDINGS



Conexus Plaza, Regina,
BOMA BEST Level 2 (certified 2013)



The energy consumption of Office Buildings certified in 2013 is 12% lower than those certified in 2012.

- Buildings that achieved BOMA BEST certification in 2013 achieved an overall average score in the mid- to high seventies range (Level 2).
- Overall, 56% of certified buildings achieved Level 2 or higher. Only 3% of the buildings achieved Level 4 certification.
- As in previous years, Office Buildings dominate the data set, comprising 62% (441) of all certified buildings (Level 1 to Level 4). Light Industrial represents 20% (144), Enclosed Shopping Centres 6% (43), MURBs 4% (30) and Open Air Retail 8% (53).
- Average energy use intensity (EUI) for certified Office Buildings is 27.1 kWh/ft²/yr (or 1.05 GJ/m²/yr), an improvement on the NRCan national average of 28.4 kWh/ft²/yr (1.10 GJ/m²/yr).
- 65% of the buildings that achieved recertification saw an increase in their overall score. In addition, the average EUI at recertification was 26.8 kWh/ft²/yr compared to 28.5 kWh/ft²/yr at original certification, a 6% reduction in EUI.
- The average EUI for Office Buildings certified in 2013 was 12% below the average of Office Buildings certified in 2012 – down to 27.1 kWh/ft²/yr from 30.76 kWh/ft²/yr. The EUI of BOMA BEST certified buildings improves every year.
- The average Energy score achieved by certified Office buildings is 67.5%.
- The top energy conservation measures implemented by certified buildings include installing window shading film, temperature setbacks, T8 or T5 fluorescent lamps and reset schedules. In addition to these, energy management measures include implementing an HVAC preventative maintenance program, energy management plan to address issues raised in an energy assessment and an energy management policy endorsed by senior management.
- Average water consumption intensity for certified Office Buildings is 0.68 m³/m² – 31% better than the national average of 0.98 m³/m².
- The average Water score achieved by certified Office Buildings is 68.4%.
- The average Waste Reduction and Site score achieved by certified Office Buildings is 85.5%.
- Just over half (55%) of all the certified Office Buildings achieved waste diversion rates of more than 60%. This same diversion rate is achieved by 36% of Light Industrial buildings and 26% of Enclosed Shopping Centres.
- The average Emissions and Effluents score achieved by certified Office Buildings is 86.9%.
- The range in average Emissions and Effluents scores achieved by the different asset classes is very small (5%). MURBs trail slightly behind with an average score about 4% below the average for all asset classes.
- The average Indoor Environment score achieved by certified Office Buildings is 85.6%.
- Enclosed Shopping Centres and Open Air Retail achieve the highest scores in the Indoor Environment assessment section. MURBs trail behind with an average score about 5% below the average for all asset classes.
- The average Energy Management Systems score achieved by certified Office Buildings is 97.3%.
- All asset classes score relatively high (above the 85th percentile) in the Environmental Management Systems section. The range of averages scores of the different asset classes of certified buildings is proportionally small (11%). Open Air Retail certified buildings trail slightly behind with an average score about 10% below the average for all asset classes.

3 KEY RECOMMENDATIONS



Saskatchewan Legislative Building, Regina, BOMA BESt Level 2 (certified 2013)

- **Energy Efficiency:** Buildings will benefit from retrofits targeting the installation of variable speed drives on heating pump systems, replacing old boilers with high efficiency ones, installing exhaust air heat recovery systems as well as high-efficiency water equipment, daylight sensors and demand response capabilities.
- **Energy Management:** To reduce energy use intensity, building managers and operators are encouraged to install sub-meters and engage in periodic commissioning and/or re-commissioning practices to ensure the building's performance is optimized.
- **Transportation:** Occupants may benefit from the availability of changing facilities and showers in the building as well as initiatives focused on reducing car dependency.
- **Water:** Water consumption can be reduced through the installation of low-flow urinals and toilets, removing all once-through water-cooled units and sub-metering evaporative cooling towers.
- **Waste Reduction:** Understanding a building's waste profile is critical for reducing total waste produced and increasing diversion rates. Conducting annual waste audits as well as engaging in regular waste monitoring will help building managers and operators better understand waste streams. On or off-site composting of organic waste will further increase diversion rates.
- **Site:** Reducing the heat-island effect (such as by installing a green roof, where possible), as well as implementing measures to limit bird fatality, will help reduce a building's impact on the site.
- **Emissions:** Retrofits should include installing boilers with low NO_x emissions, along with installing refrigerant leak detectors and refrigerant recovery systems.
- **Effluents:** Storm water management measures such as reducing run-off from roofs will help minimize the detrimental effect of water effluent leaving the site.
- **Indoor Environment:** Occupant health and well being can be improved by increasing the availability of natural light in the building as well as ensuring ventilation levels are adequate (as confirmed by permanent carbon dioxide monitors).
- **Environmental Management Systems:** A tenant satisfaction survey will help identify key areas requiring improvement. A green lease will ensure that building management and building tenants are working towards shared environmental objectives.



Conducting annual waste audits as well as engaging in regular waste monitoring will help building managers better understand waste streams.

4 OVERVIEW OF BOMA BEST CERTIFICATIONS IN 2013

Of the 711 buildings that registered to the BOMA BEST program in 2013, 56% were certified at Level 2 or higher while 44% of these buildings certified at Level 1, i.e. they met the BOMA BEST Program's stringent BEST Practice requirements.

As in previous years, Office Buildings dominate certifications, comprising 62% (441) of all certified buildings (Level 1 to Level 4). Light Industrial represents 20% (144), Enclosed Shopping Centres 6% (43), MURBs 4% (30) and Open Air Retail 8% (53).

Of the buildings achieving certification at Level 2 and above, Office Buildings comprised 77% of the data set. Certified Light Industrial properties followed with 10% and Enclosed Shopping Centres third at 8%. Table 2 provides the details of number of buildings achieving certification (BEST Practices to Level 4).

In 2013 the largest increase in certifications belongs to the Light Industrial Asset Class – a 105% increase compared to 2012. British Columbia has demonstrated the largest increase in certifications (certified at Level 2 and above) in 2013 compared to 2012 at an impressive 171%. Ontario holds steady in its number of certifications (slight increase compared to 2012) and still has the largest number of overall certifications (40%) in the country.

FIGURE 2: CERTIFIED BUILDINGS BY ASSET CLASS

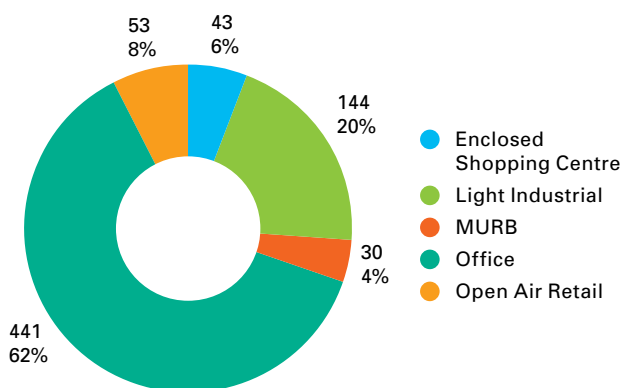


Table 1: Number of 2013 BOMA BEST Certified Buildings, by Asset Class and Level

ASSET CLASS	CERTIFIED LEVEL 1	PROPORTION TO LEVEL 1 TOTAL (%)	CERTIFIED LEVEL 2-4	PROPORTION TO LEVEL 2-4 TOTAL (%)	TOTAL CERTIFICATIONS
Office Buildings	133	62%	308	77%	441
Light Industrial	105	20%	39	10%	144
Open Air Retail	47	8%	6	2%	53
Enclosed Shopping Centres	9	6%	34	8%	43
MURBs	17	4%	13	3%	30
Total	311	100%	400	100%	711



Office buildings represented 77% of the Level 2 to Level 4 dataset

“The BOMA BEST program has been the driving force behind our department in obtaining the “best” level of standard practices, future planning and vision for the Victoria Conference Centre. **We value the process that it takes to obtain this accreditation.**”

Shelley Villanueva, Manager Facility Operations/Events, Victoria Conference Centre

4.1 PERFORMANCE OF RECERTIFIED BUILDINGS

Of the 711 buildings that achieved certification in 2013 (all levels), 198 were recertifications. 65% of recertified buildings achieved an increase in Overall Score.

In 2013, 23% of buildings had improved (reduced) energy use intensity (EUI) upon recertification, 31% of buildings maintained the same levels of energy consumption while 23% saw an increase. The average EUI at recertification was 26.8 ekWh/ft²/yr compared to 28.5 ekWh/ft²/yr at original certification, a 6% reduction in EUI. These results are shown in Figures 3 and 4.



Canada Life Place, Regina,
BOMA BEST Level 2 (certified 2013)



Le 1000 De La Gauchetiere,
Montreal, BOMA BEST Level 4
(certified 2013)

FIGURE 3: BOMA BEST OVERALL SCORES – CERTIFICATION VS. RECERTIFICATION

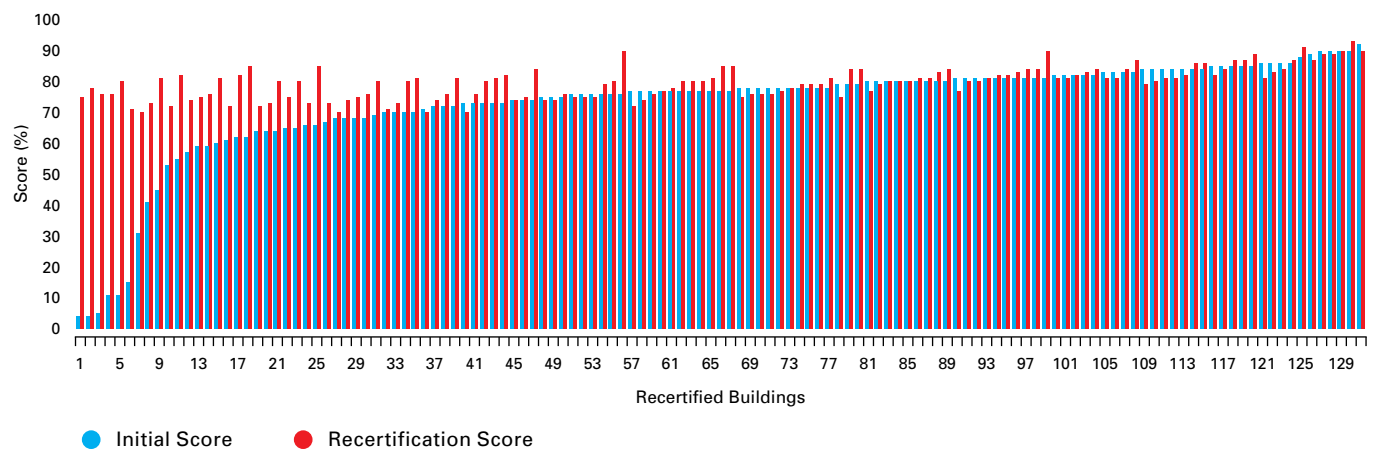
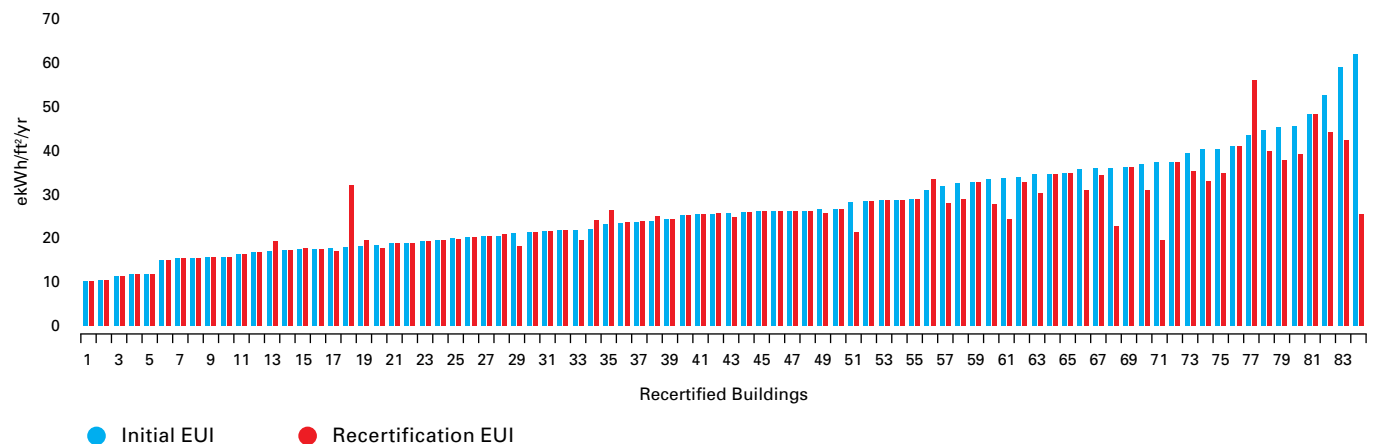


FIGURE 4: BOMA BEST EUI – CERTIFICATION VS. RECERTIFICATION



BOMA BEST RECERTIFICATION LEADS TO IMPROVED BUILDING PERFORMANCE



Light House Sustainable Building Centre, a not-for-profit research firm based in British Columbia, released in February 2014 a comprehensive report entitled *British Columbia Building Performance Study*¹.



“This study validates what we suspected internally. It’s worth certifying not only our new buildings, but we are now considering all our existing buildings.”

– Jonathan Meads Sustainability Manager, Concert Properties²

The first of its kind in Canada, this study examined the energy, water and waste performance of 281 buildings from across the province, including 147 BOMA BEST certified buildings and 134 non-certified buildings.

The following findings emerged from the study:

- “BOMA BEST office buildings that recertified showed a **25% improvement in energy use** intensity (EUI) over buildings that had only gone through the original certification process. Similarly, recertified buildings achieved a **30% reduction in annual building water usage** per square meter of space and an average increase of **8% in diverted waste**.

- “BOMA BEST attracts all types of buildings and performers and is a useful tool not just for high performing buildings but is being used by many lower performing buildings as a means to start benchmarking environmental performance and work towards continual environmental improvement.”

Buildings that certify are more likely to engage in activities linked with continuous improvement and will therefore benefit from operational savings. Recertifying a building is especially strongly associated with improved building performance.

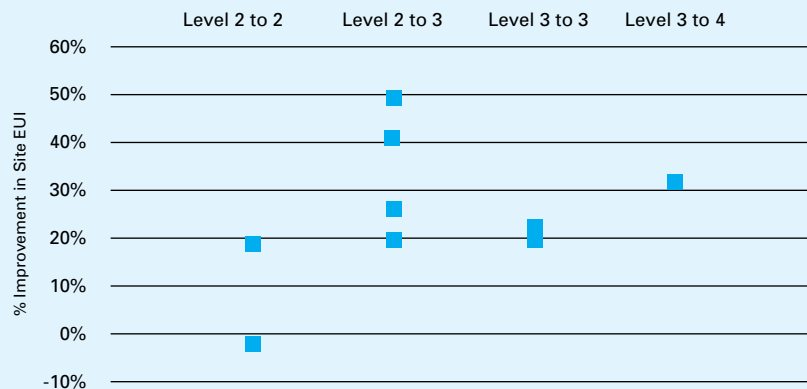


Figure retrieved from British Columbia Building Performance Study

¹ Light House. *British Columbia Building Performance Study*. 2014. Retrieved from <http://www.sustainablebuildingcentre.com/building-performance/>

² Idem

4.2 DISTRIBUTION OF CERTIFICATIONS

As Figure 5 demonstrates, in 2013:

- 44% achieved a Level 1 certification;
- 30% of buildings achieved a Level 2 certification;
- 23% of buildings achieved a Level 3 certification; and
- 3% of buildings achieved a Level 4 certification.

Compared to 2012, the percentage of buildings achieving Level 3 certification is slightly higher in 2013, whereas Level 4 certification numbers are slightly lower.

FIGURE 5: CERTIFIED BUILDINGS BY LEVEL – ALL ASSET CLASSES

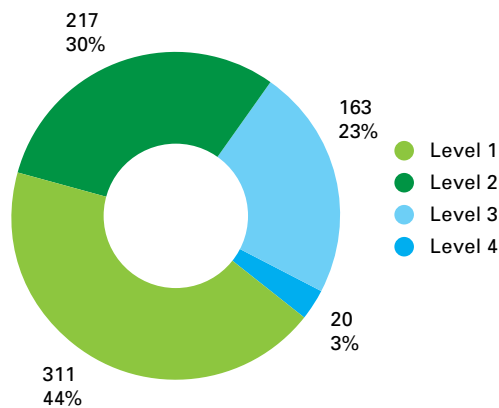
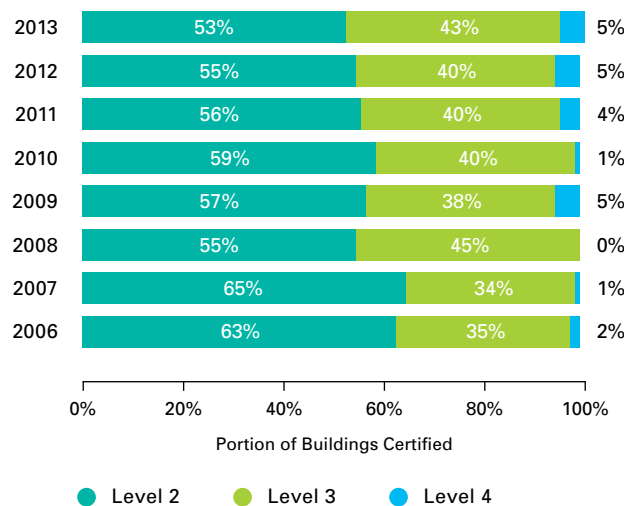


FIGURE 6: DISTRIBUTION OF CERTIFIED BUILDINGS BY LEVEL AND YEAR – OFFICE BUILDINGS



York Mills Gardens, Toronto, BOMA BEST Level 1 (certified 2013)

Table 2: Level of Certification Achieved – All Asset Classes

ASSET CLASS	LEVEL OF CERTIFICATION ACHIEVED				TOTAL
	1	2	3	4	
Office Buildings	133	162	132	14	441
Light Industrial	105	26	13	0	144
Open Air Retail	47	2	4	0	53
Enclosed Shopping Centres	9	15	13	6	43
MURBs	17	12	1	0	30

Of all the asset classes that achieved certification in 2013, Office Buildings achieved the highest number (14) of Level 4 certifications whereas Enclosed Shopping Centres had the highest percentage (14%) of Level 4 certifications within an asset class. MURBs, Light Industrial and Open Air Retail asset classes are dominated by Level 1 certifications (57%, 73% and 89% respectively). In the Enclosed Shopping Centres asset class, the majority (35%) achieved Level 2 certification.



Enclosed Shopping Centres had the highest percentage (14%) of Level 4 certifications within an asset class

PERFORMANCE REPORT DATA SET



FCC Tower, Regina, BOMA BESt Level 2 (certified 2013)

The remainder of the 2014 BOMA BESt Energy and Environment Report will be dedicated to analysis performed on buildings certified Level 2 to Level 4 between January 1, 2013 and December 31, 2013. All figures and tables found in future sections of the report have been created based on this specific data set.

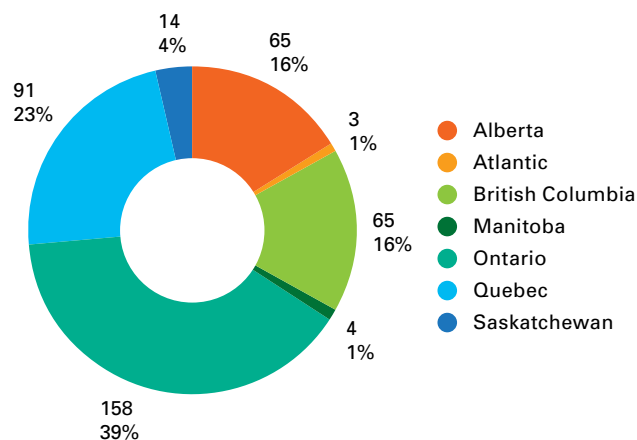
Of the 400 buildings that achieved Level 2 to Level 4 certification in 2013, Office Buildings represent the largest proportion at 77% (308 buildings). The second largest asset class is Light Industrial (39 buildings), followed by Enclosed Shopping Centres (34 buildings). MURBs (13) and Open Air Retail (6), combined, represent 5% of the overall number of Level 2 to Level 4 certified buildings. Based on these numbers, and in the interest of providing significantly representative results, this report will be focusing primarily on the following three asset classes:

- Office Buildings
- Light Industrial
- Enclosed Shopping Centres

5.1 NUMBER OF CERTIFIED BUILDINGS

Figure 7 shows the number of certified buildings in 2013, by region, with the largest proportion located in Ontario, followed by Quebec. British Columbia and Alberta are tied in third.

**FIGURE 7: CERTIFIED BUILDINGS
BY REGION – ALL ASSET CLASSES**



5.2 AVERAGE OVERALL SCORES (%)

Table 3: Average BOMA BEST Overall Scores, 2013 compared to 2012 – All Asset Classes

ASSET CLASS	SCORE ACHIEVED	
	2012	2013
Office Buildings	78.2%	78.6%
Light Industrial	73.1%	77.3%
Enclosed Shopping Centres	79.3%	81.2%
MURBs	78.7%	75.8%
Open Air Retail	78.0%	78.3%

The average BOMA BEST Overall Score achieved by Office Buildings has been improving incrementally since 2010 (Figure 8):

FIGURE 8: AVERAGE BOMA BEST OVERALL SCORE SINCE 2010

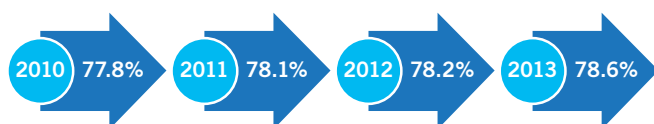


FIGURE 9: BOMA BEST OVERALL SCORES BY REGION – OFFICE BUILDINGS

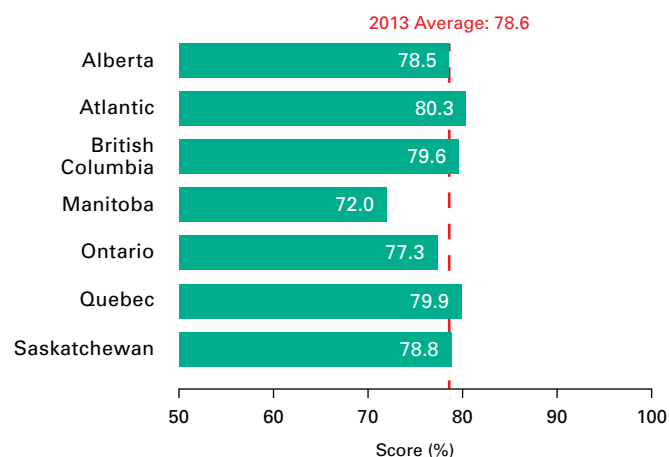


FIGURE 10: BOMA BEST OVERALL SCORES BY REGION – LIGHT INDUSTRIAL

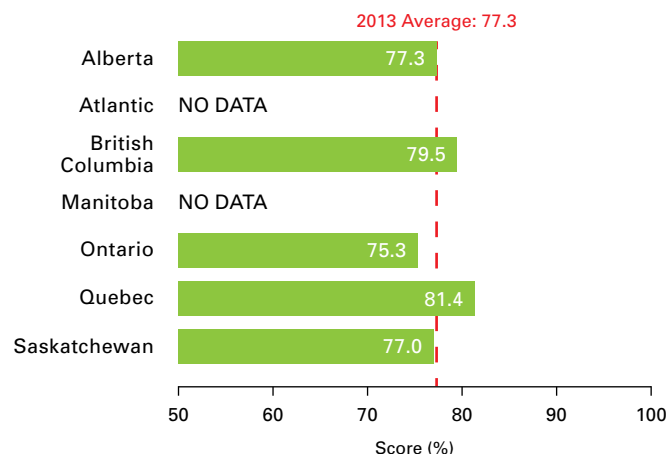
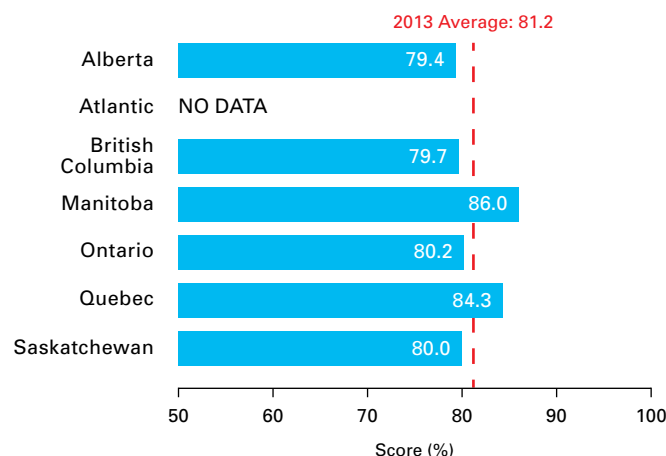


FIGURE 11: BOMA BEST OVERALL SCORES BY REGION – ENCLOSED SHOPPING CENTRES



Kingsway Mall, Edmonton, BOMA BEST Level 2 (certified 2013)

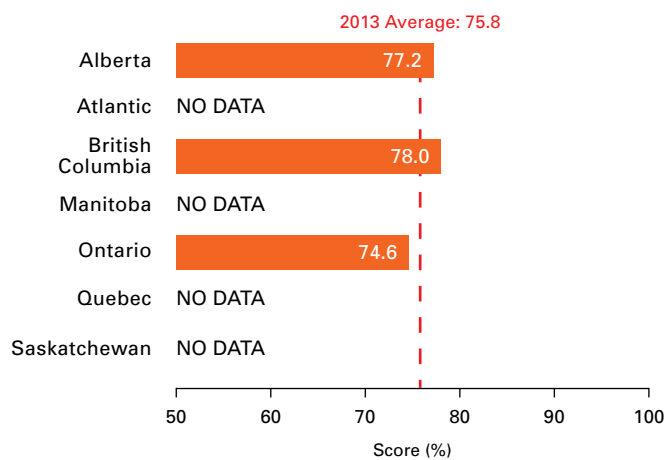


Le 465 McGill, Montreal,
BOMA BEST Level 2 (certified 2013)

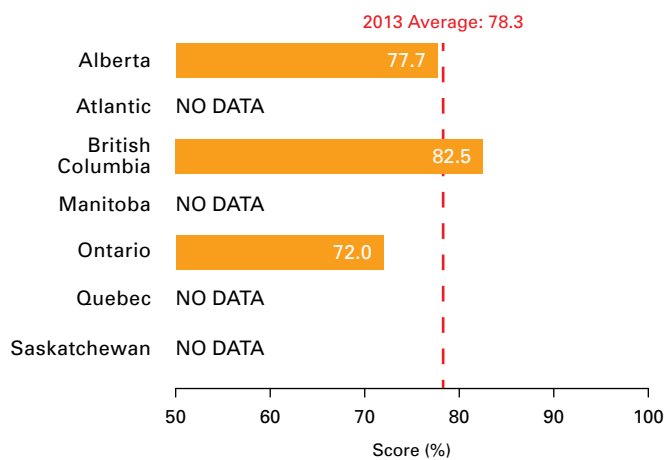


SIAS Wascana Campus, Regina,
BOMA BEST Level 2 (certified 2013)

**FIGURE 12: BOMA BEST OVERALL SCORES
BY REGION – MURBS**



**FIGURE 13: BOMA BEST OVERALL SCORES
BY REGION – OPEN AIR RETAIL**

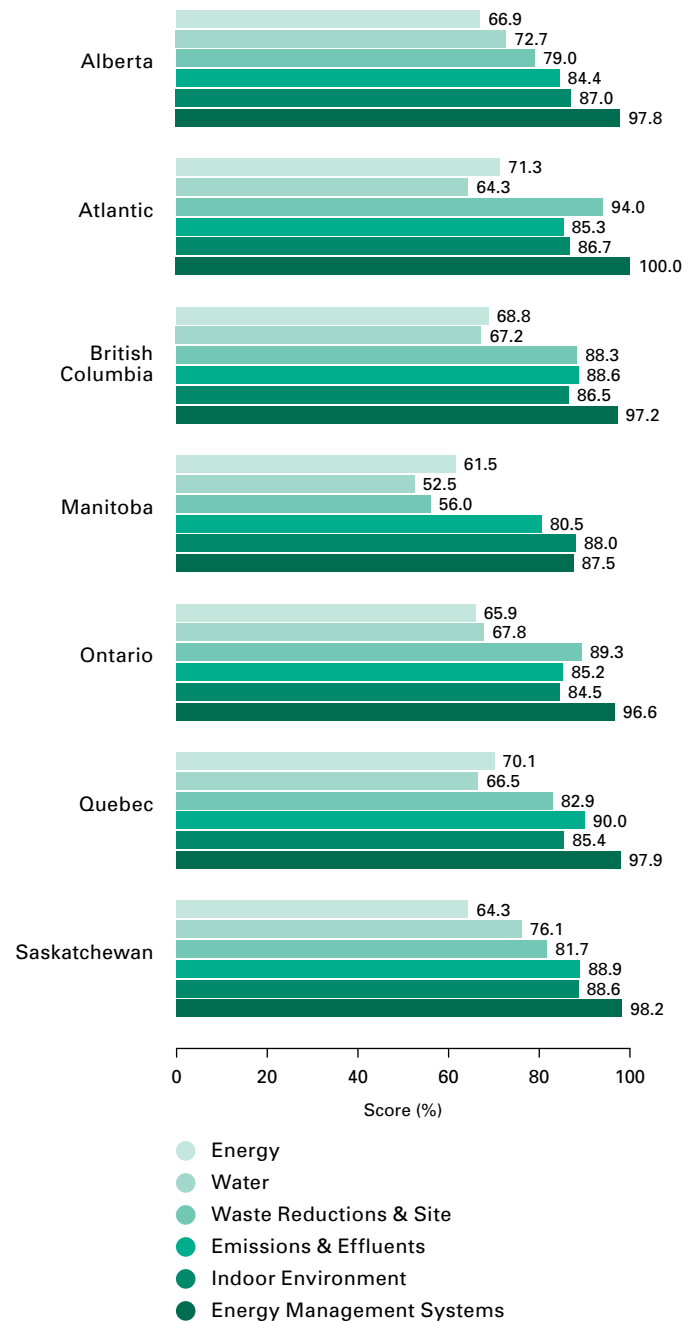


5.3 SCORE RANGE ACROSS ASSET CLASSES AND ASSESSMENT SECTIONS

Table 4: Score Range by Assessment Section and Best Performing Region – Office Buildings

OFFICE BUILDINGS		
ASSESSMENT SECTION	SCORE RANGE (Lowest to Highest Average)	BEST PERFORMING REGION
Energy	61.5%-71.3%	Atlantic
Water	52.5%-76.1%	Saskatchewan
Waste and Site	56.0%-94.0%	Atlantic
Emissions and Effluents	80.5%-90.0%	Quebec
Indoor Environment	84.5%-88.6%	Saskatchewan
Environmental Management Systems	87.5%-100%	Atlantic

FIGURE 14: AVERAGE SCORES BY REGION AND ASSESSMENT SECTION – OFFICE BUILDINGS





Canmet – Bell's Corners Complex, Building 2, Solid Fuels Research, Ottawa, BOMA BEST Level 3 (Certified 2013)

FIGURE 15: AVERAGE SCORES BY REGION AND ASSESSMENT SECTION – LIGHT INDUSTRIAL

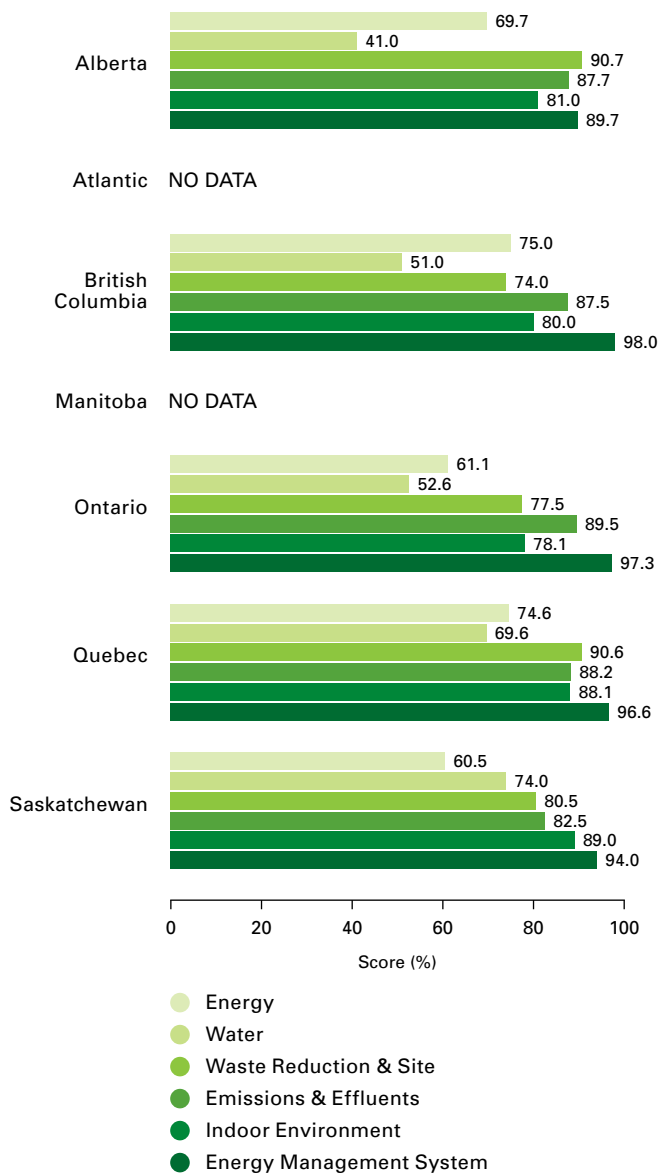


Table 5: Score Range by Assessment Section and Best Performing Region – Light Industrial

LIGHT INDUSTRIAL		
ASSESSMENT SECTION	SCORE RANGE (Lowest to Highest Average)	BEST PERFORMING REGION
Energy	60.4%-74.6%	Quebec
Water	41.0%-74.0%	Saskatchewan
Waste and Site	74.0%-90.7%	Alberta
Emissions and Effluents	82.5%-89.3%	Ontario
Indoor Environment	77.8%-89.0%	Saskatchewan
Environmental Management Systems	89.7%-98.0%	British Columbia



Place d'Orleans Shopping Centre, Orleans,
BOMA BEST Level 3 (certified 2013)

Table 6: Score Range by Assessment Section and Best Performing Region – Enclosed Shopping Centres

ENCLOSED SHOPPING CENTRES		
ASSESSMENT SECTION	SCORE RANGE (Lowest to Highest Average)	BEST PERFORMING REGION
Energy	66.0%-78.0%	Manitoba
Water	61.8%-84.0%	Saskatchewan
Waste and Site	81.0%-90.6%	Quebec
Emissions and Effluents	82.0%-94.0%	Saskatchewan
Indoor Environment	89.0%-96.0%	Manitoba
Environmental Management Systems	93.8%-98.0%	Quebec

FIGURE 16: AVERAGE SCORES BY REGION AND ASSESSMENT SECTION – ENCLOSED SHOPPING CENTRES

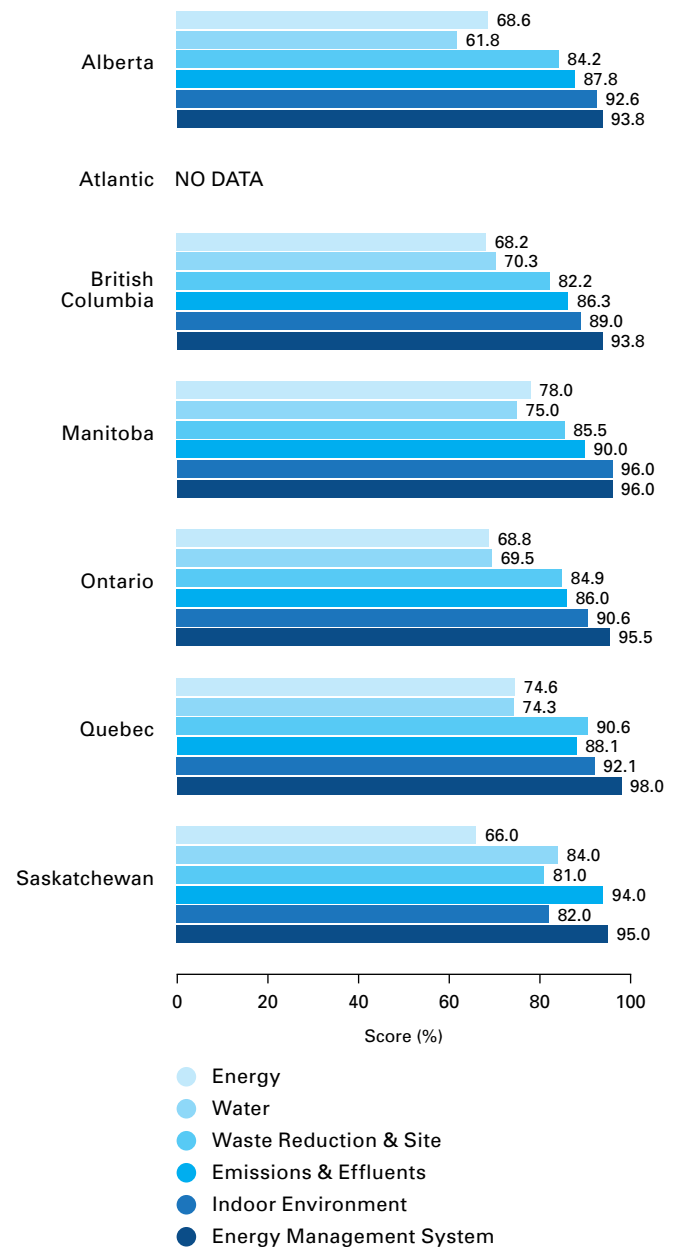


Table 7: Score Range by Assessment Section and Best Performing Region – MURBs

MURBS		
ASSESSMENT SECTION	SCORE RANGE (Lowest to Highest Average)	BEST PERFORMING REGION
Energy	60.7%-74.4%	Alberta
Water	47.6%-74.6%	Ontario
Waste and Site	63.4%-70.4%	Alberta
Emissions and Effluents	78.0%-87.1%	Ontario
Indoor Environment	79.3%-87.0%	British Columbia
Environmental Management Systems	98.7%-100%	Alberta / British Columbia

Table 8: Score Range by Assessment Section and Best Performing Region – Open Air Retail

OPEN AIR RETAIL		
ASSESSMENT SECTION	SCORE RANGE (Lowest to Highest Average)	BEST PERFORMING REGION
Energy	68.0%-71.0%	Alberta
Water	55.0%-59.5%	British Columbia
Waste and Site	80.7%-90.0%	Ontario
Emissions and Effluents	84.0%-95.5%	British Columbia
Indoor Environment	83.0%-95.0%	Alberta
Environmental Management Systems	70.0%-93.0%	British Columbia

FIGURE 17: AVERAGE SCORES BY REGION AND ASSESSMENT SECTION – MURBS

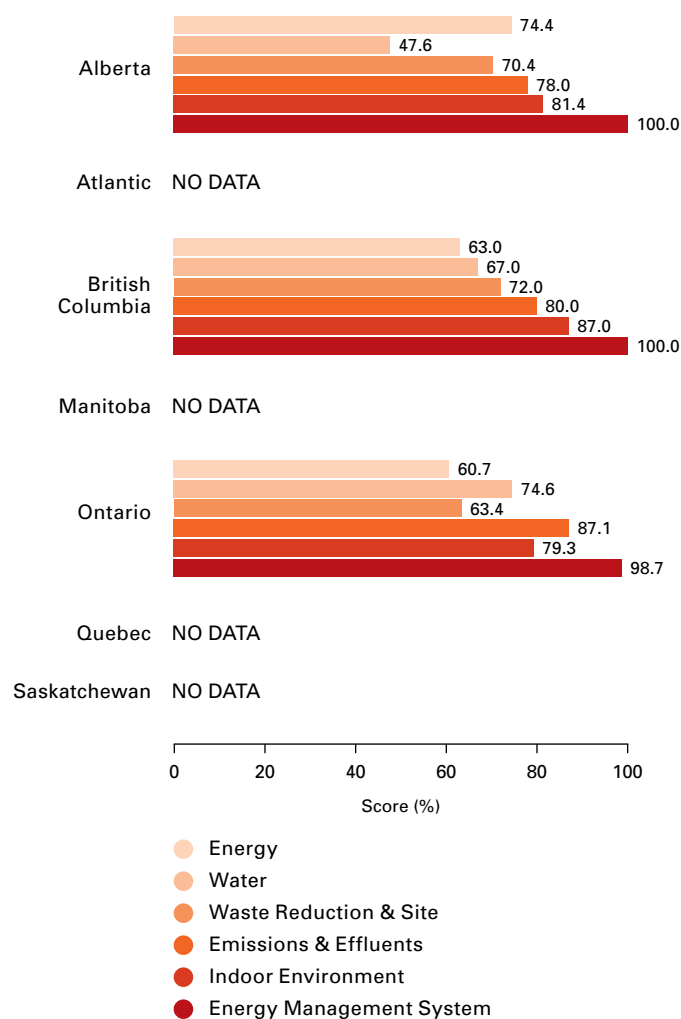
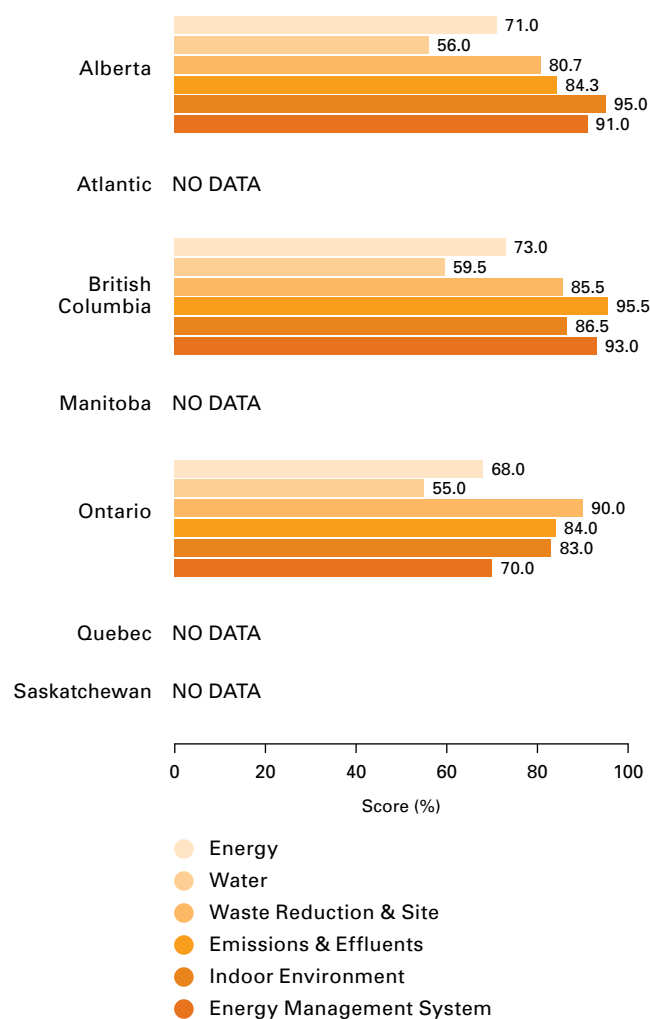
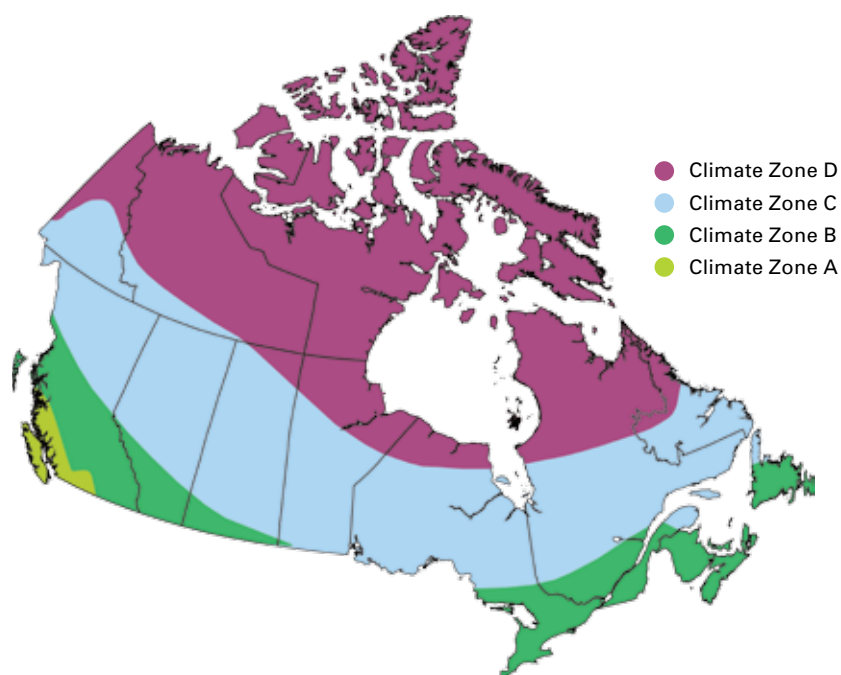


FIGURE 18: AVERAGE SCORES BY REGION AND ASSESSMENT SECTION – OPEN AIR RETAIL



5.4 CERTIFIED BUILDINGS BY CLIMATE ZONE

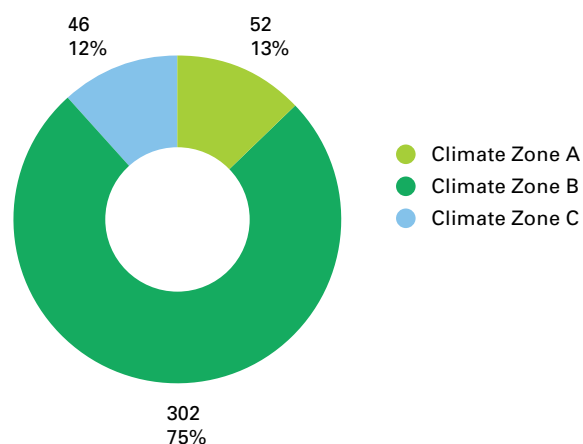
FIGURE 19: CANADIAN CLIMATE ZONES



This is the second year that data has been compared by Canadian climate zone³. All cities in Canada are located in zones A, B, C, and D, and range from the warmer humid climate in southern British Columbia (Climate Zone A), to subarctic (Climate Zone D). Most major Canadian cities are located in Climate Zone B.

Buildings in Climate Zone B represent the majority of certifications, comprising 75% of the data set compared to 59% in 2012. Climate Zone C certifications have decreased to 12% from 35%. There are no buildings in Climate Zone D in 2013 (compared to 3 in 2012).

FIGURE 20: CERTIFIED BUILDINGS BY CLIMATE ZONE – ALL ASSET CLASSES



Given that the climate zones increase in extremity from A to D, it is expected that buildings in Climate Zone A will have a slightly better Overall Score than buildings in other regions. Indeed, for all asset classes except Enclosed Shopping Centres, the highest Overall Scores are achieved in Climate Zone A. The range of Overall Scores achieved across the three different climate zones is still relatively small (less than 6.2%).

Table 9: BOMA BEST Overall Score by Climate Zone – All Asset Classes

ASSET CLASS	OVERALL SCORE BY CLIMATE ZONE		
	A	B	C
Office Buildings	79.9%	78.6%	77.0%
Light Industrial	81.0%	77.1%	76.0%
Enclosed Shopping Centres	79.7%	81.0%	84.0%
MURBs	78.0%	74.6%	77.2%
Open Air Retail	82.5%	76.3%	No Data

³ NRCAN. *ENERGY STAR® Qualified Windows, Doors & Skylights*. 2010. Retrieved from [http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/pdf/energystar/Windows-Doors-and-Skylights-factsheet-eng\(1\).pdf](http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/pdf/energystar/Windows-Doors-and-Skylights-factsheet-eng(1).pdf)

5.5 CERTIFIED BUILDINGS BY SECTOR

In 2013, the ratio of private versus public sector certified Level 2 to Level 4 buildings was approximately 3:1. Of the 296 certified Private Sector buildings, 227 were Office Buildings. Of the 104 certified Public Sector buildings, 81 were Office Buildings.

FIGURE 21: NUMBER OF CERTIFIED BUILDINGS BY SECTOR – ALL ASSET CLASSES

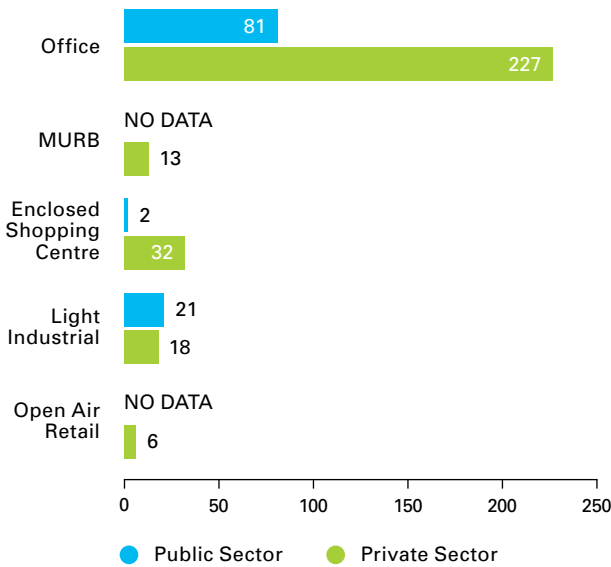


Table 10: Number of Certified Buildings by Sector and Level Certified – Office Buildings

SECTOR – OFFICE BUILDINGS	LEVEL CERTIFIED		
	2	3	4
Private	113	106	8
Public	49	26	6

5.6 CERTIFIED BUILDINGS BY SIZE

Contrary to 2012 where the majority of Office Buildings (48%) were under 100 000 ft², the majority of Office Buildings in this data set (34%) are between 100,000 ft² and 250,000 ft².

FIGURE 22: CERTIFIED BUILDINGS BY SIZE – OFFICE BUILDINGS

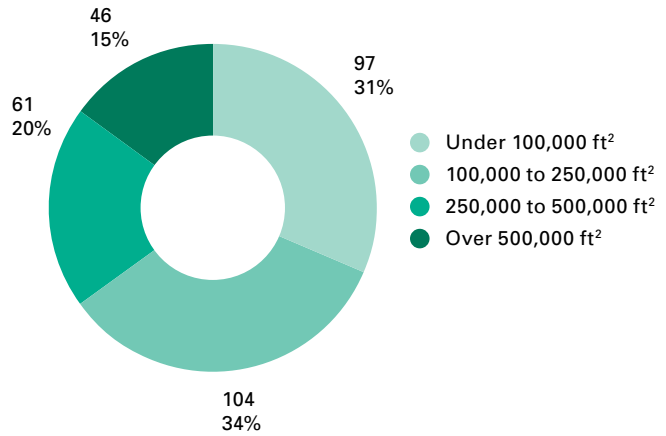
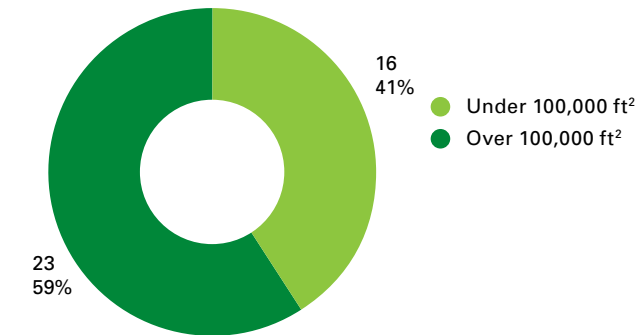
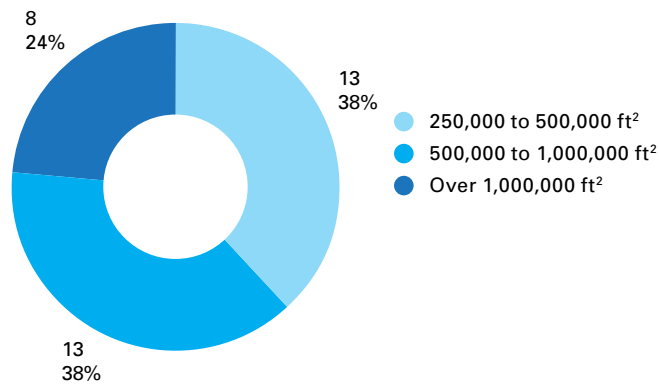


FIGURE 23: CERTIFIED BUILDINGS BY SIZE – LIGHT INDUSTRIAL



Le Complexe Port-Royal, Montreal, BOMA BESt Level 2 (certified 2013)

FIGURE 24: CERTIFIED BUILDINGS BY SIZE – ENCLOSED SHOPPING CENTRES



Cranston Market, Calgary, BOMA BEST Level 1 (Certified 2013)

FIGURE 25: CERTIFIED BUILDINGS BY SIZE – MURBS

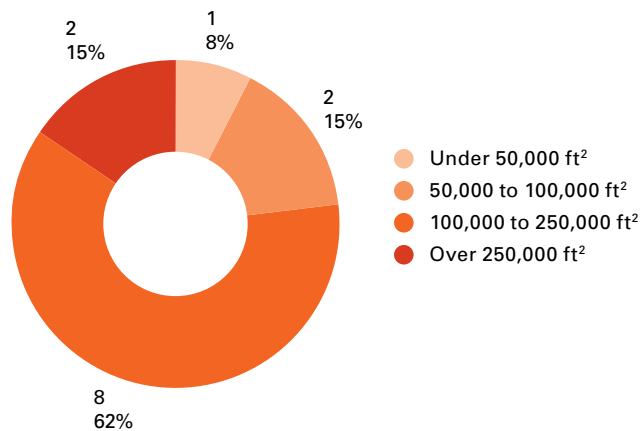
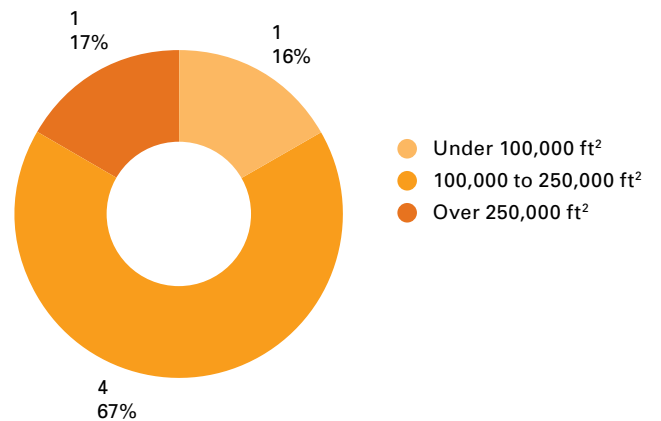


FIGURE 26: CERTIFIED BUILDINGS BY SIZE – OPEN AIR RETAIL



PERFORMANCE REPORT

ENERGY



Complexe Les Ailes Shopping Centre, Montreal,
BOMA BEST Level 3 (certified 2013)

This Assessment Section's weighting accounts for 30 – 35.5% of the total BOMA BEST Score, with the heaviest weight applied to the Enclosed Shopping Centres asset class.

Table 11: BOMA BEST Scoring Weight by Assessment Section

ASSESSMENT SECTION	BUILDING TYPE / ASSET CLASS SCORING WEIGHT				
	OFFICE BUILDINGS	MURBS	ENCLOSED SHOPPING CENTRES	OPEN AIR RETAIL	LIGHT INDUSTRIAL
Energy	35%	35%	35.50%	31%	30%

The energy component of the BOMA BEST assessment is a measure of a building's energy consumption, its energy efficiency features, and the energy management practices that have been put in place. Equipment maintenance and commissioning programs are assessed to ensure there is an opportunity for building operators and managers to continuously improve the energy performance of the building.

Building occupant transportation habits are also considered in the energy section. In doing so, BOMA BEST recognizes the role building management can have on encouraging travel habits that reduce environmental impacts. The Transportation section addresses items such as proximity to public transport and availability of cycling facilities.

Energy is an important environmental parameter; energy use relates directly to climate change as well as to a variety of air emissions (hydrocarbons, CO₂, airborne particles, as well as sulphur dioxide and nitrogen oxides which contribute to acid rain). By reducing energy consumption, managers and operators can reduce a building's environmental impact while also reducing operating costs.

6.1 MEASURES IMPACTING ENERGY PERFORMANCE

Building performance can be influenced by a number of factors:

1. Age of the building;
2. Size of the building;
3. Efficiency features of the buildings;
4. Management practices including operations, monitoring and on-going commissioning; and
5. Occupant engagement.

The 2013 certified buildings data set was analyzed in terms of the BOMA BEST program's Energy performance metrics to identify the most commonly implemented initiatives, least commonly implemented initiative and the initiatives with the most increased presence in high-performing buildings. BEST Practices have been excluded from consideration since these are required by all buildings. Tables 12 – 14 summarize these results.



Victoria Conference Centre, Victoria, BOMA BEST Level 4 (certified 2013)

HOW TO INTERPRET THIS TABLE (AND ALL SUBSEQUENT TABLES OF THIS NATURE):

• Most Common and Least Common:

These tables provide information about the percentage of respondents that stated that a particular initiative was in place in their building. For example, 85% of respondents indicated that the building has window shading to reduce the building's cooling load. Submissions where the question was left unmarked are excluded. Responses indicating "not applicable" are also excluded.

For questions with several possible answers, the highest response was typically considered. For example, respondents had the option of indicating the percentage of T8 or T5 fluorescent lamps present in the building: under 40%, 40-70%, or 70% or more of building areas. This report considers how many buildings incorporate this technology in 70% or more of buildings areas.

• Most Increased Presence:

This section provides information about the increase in response that exists between buildings that achieved Level 2 certification and those that achieved Level 4 certification. For example, 91% of Level 4 respondents compared to 33% of Level 2 respondents stated that most lead boilers in the facility were condensing boilers. This corresponds to a difference of +58%.

Table 12: Energy Conservation Measures impacting Energy Performance Results

ENERGY CONSERVATION MEASURES		AVERAGE SCORE
Most common initiatives:		
1	Window shading installed	85%
2	Implemented temperature setback	82%
3	Boiler control systems operated through wide range of loads	80%
4	T8 or T5 fluorescent lamps	78%
5	Temperature/weather compensation implemented	77%
Least common initiative:		
1	Variable speed drives on more than half of heating pump systems	25%
Initiatives with the most increased presence in high performing buildings (Level 4 vs Level 2):		
1	Condensing boilers	+58%
2	Exhaust air heat recovery	+54%
3	High-efficiency water heating equipment	+54%
4	Daylight sensors	+47%
5	Demand response capabilities	+46%

Table 13: Energy Management Measures impacting Energy Performance Results

ENERGY MANAGEMENT MEASURES		AVERAGE SCORE
Most common initiatives:		
1	Energy management policy endorsed by senior management	88%
2	Readily available operating instructions	85%
3	Energy usage targets have been set	84%
4	Training plan for operations staff	80%
5	Ongoing commissioning practices implemented	80%
Least common initiative:		
1	Sub-meters installed	32%
Initiatives with the most increased presence in high performing buildings (Level 4 vs Level 2):		
1	Periodic re-commissioning	+36%
2	Sub-meters installed	+26%
3	Ongoing commissioning practices implemented	+11%

Table 14: Transportation Measures impacting Energy Performance Results

TRANSPORTATION		AVERAGE SCORE
Most common initiatives:		
1	Access to public transport	87%
2	Bicycle racks installed	75%
3	Bicycles sheltered from rain	60%
Least common initiative:		
1	Walkability index	49%
Initiatives with the most increased presence in high performing buildings (Level 4 vs Level 2):		
1	Changing facilities and showers for staff	+33%
2	Alternate measure to reduce car dependency	+32%
3	Walkability index	+24%

6.2 AVERAGE ENERGY SCORE (%)

In 2013 the average energy score for certified Office Buildings increased to 67.5% (up slightly from 65.7% in 2012). Figure 27 illustrates the average score by region and sector.

FIGURE 27: AVERAGE ENERGY SCORE BY REGION AND SECTOR – OFFICE BUILDINGS

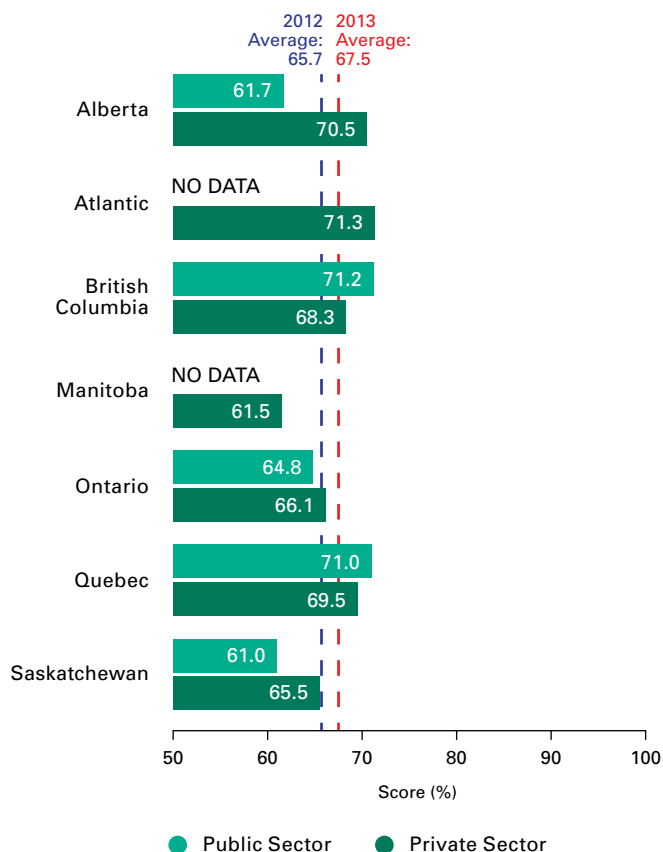


FIGURE 28: AVERAGE ENERGY SCORE BY REGION – LIGHT INDUSTRIAL

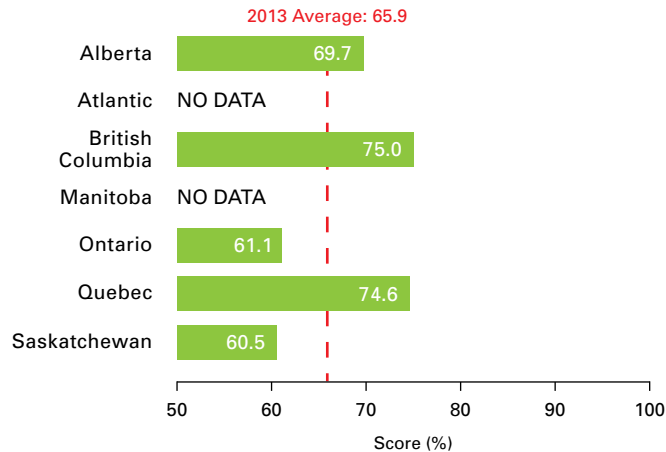
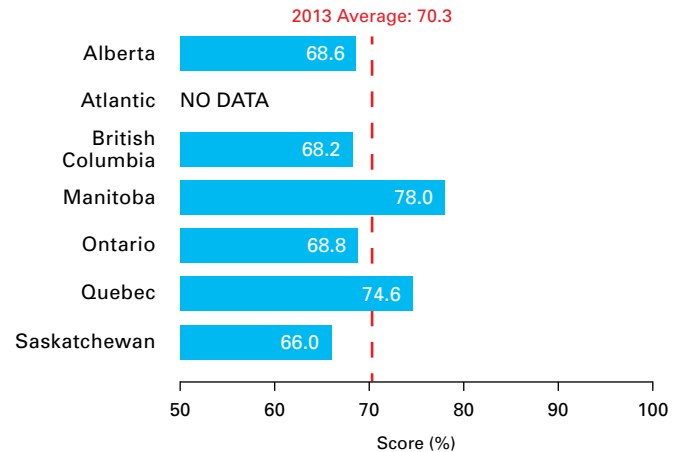


FIGURE 29: AVERAGE ENERGY SCORE BY REGION – ENCLOSED SHOPPING CENTRES



SPOTLIGHT ON ENERGY REDUCTION

BOMA TORONTO EARTH HOUR CHALLENGE



In 2013, BOMA Toronto, in collaboration with the World Wildlife Federation (WWF) Canada – Living Planet @ Work Program, launched its first ever BOMA Toronto Earth Hour Challenge. The objective was simple, a friendly competition between participants to reduce electricity consumption during Earth Hour, as well as maintain the same level of reduction the following weekend.

The inaugural challenge exceeded expectation with over 110 buildings participating. With this success in mind, it was revamped for 2014, and opened up to tenants. This not only provided the opportunity for both building management teams and tenant teams to show their

environmental stewardship and commitment to GHG reduction, but also the opportunity to strengthen the partnership between landlords and their tenants. With new challenges on


the horizon, new approaches and partnerships between tenants and landlords will be required, making this a great step in that direction.

The 2014 participation was unprecedented with 193 registered participants (a 75% increase from 2013). With the introduction of the tenant challenge in 2014, there were four awards offered.

1. Building Challenge
 - a. Best Saver – reduce the most energy during Earth hour, and
 - b. Best Maintainer – maintain the savings the following weekend
2. Tenant Challenge
 - a. Best Saver – reduce the most energy during Earth hour, and
 - b. Best Maintainer – maintain the savings the following weekend

The 2014 BOMA Toronto Earth Hour Challenge awards were handed out at the prestigious BOMA Toronto *Celebration of Excellence Gala* on May 8th at the Ritz Carlton.

The success of the BOMA Toronto Earth Hour Challenge is one example of BOMA's ability within the commercial sector to raise awareness of pressing issues such as climate change and the need to reduce GHG emissions, and leverage its membership to take action.

 Through our collective efforts, the 2014 BOMA Toronto Earth Hour Challenge saved an estimated 19,000 kWh, a 14% reduction from the baseline.



The Concourse, Saskatoon, BOMA BESt Level 3 (certified 2013)

6.3 AVERAGE ENERGY USE INTENSITY

6.3.1 Average EUI by Asset Class

Office Buildings represent the largest proportion of buildings in this sample (77%) and as such their performance has been more thoroughly documented compared to the other asset classes.

Office Buildings certified to Level 2 and above between January 1 and December 31, 2013 have an average EUI of 27.1 ekWh/ft²/yr (BOMA BESt 2013 average) compared to the

BOMA BESt 2012 average of 30.8 ekWh/ft²/yr (Office Buildings certified to Level 2 and above in the 2012 calendar year). This represents an energy intensity reduction of 12% from one year to the next and perpetuates the trend of continued energy performance improvement observable since the BOMA BESt program's inception. Compared to the NRCAN national average⁴ of 28.4 ekWh/ft²/yr, BOMA BESt certified Office Buildings (Level 2 and above) perform slightly better on average (Figure 31).

FIGURE 31: AVERAGE EUI BY YEAR – OFFICE BUILDINGS

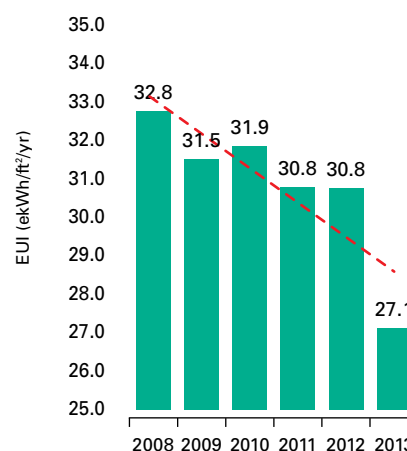
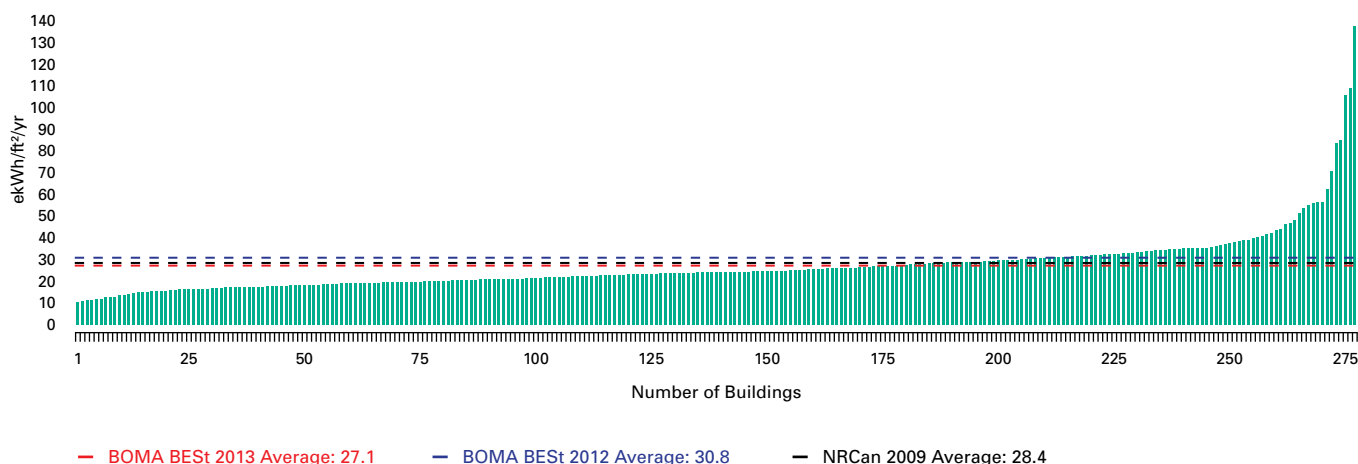


FIGURE 30: AVERAGE EUI VS. NATIONAL AVERAGE – OFFICE BUILDINGS



⁴ NRCAN Survey of Commercial and Institutional Energy Use – Buildings 2009, 2012. Retrieved from http://oee.nrcan.gc.ca/publications/statistics/scieu09/scieu_e.pdf

FIGURE 32: AVERAGE EUI BY CLIMATE ZONE – OFFICE BUILDINGS

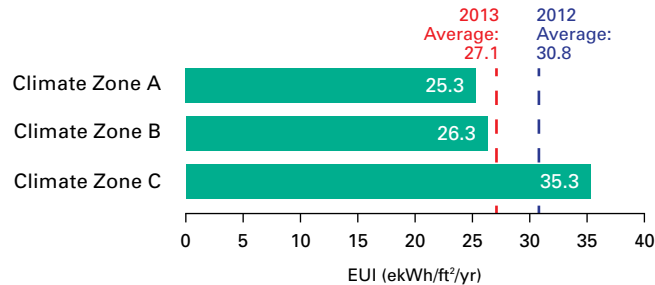
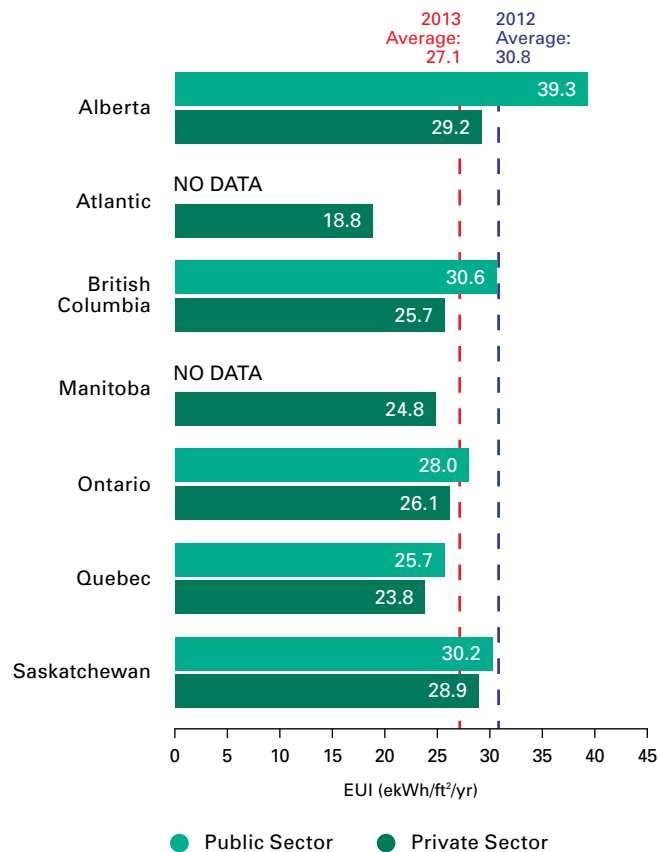
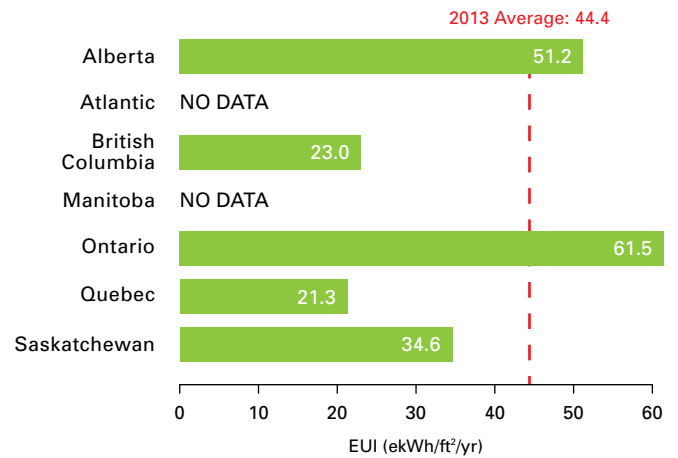


FIGURE 33: AVERAGE EUI BY REGION AND SECTOR – OFFICE BUILDINGS



Light Industrial Buildings certified to Level 2 and above between January 1 and December 31, 2013 have an average EUI of 44.4 ekWh/ft²/yr.

FIGURE 34: AVERAGE EUI BY REGION – LIGHT INDUSTRIAL



Enclosed Shopping Centres certified to Level 2 and above between January 1 and December 31, 2013 have an average EUI of 34.6 ekWh/ft²/yr.

FIGURE 35: AVERAGE EUI BY REGION – ENCLOSED SHOPPING CENTRES

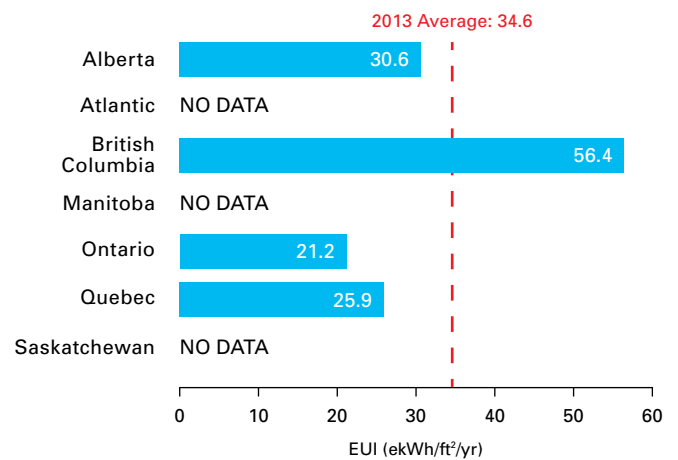


FIGURE 36: CERTIFIED BUILDINGS BY AGE – OFFICE BUILDINGS

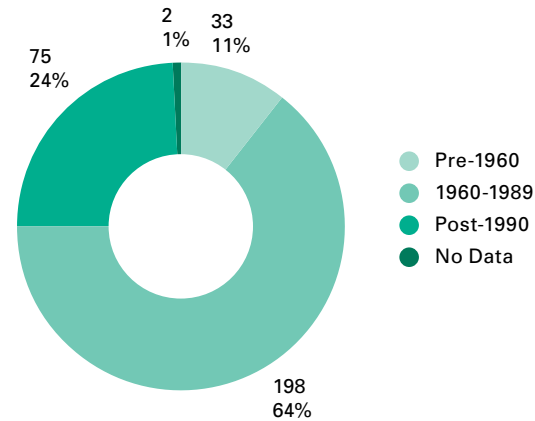


FIGURE 37: CERTIFIED BUILDINGS BY SIZE – OFFICE BUILDINGS

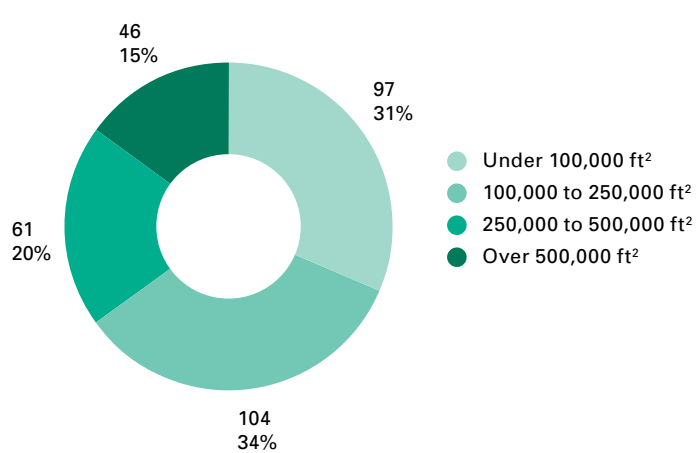


FIGURE 38: AVERAGE EUI BY AGE AND SECTOR – OFFICE BUILDINGS

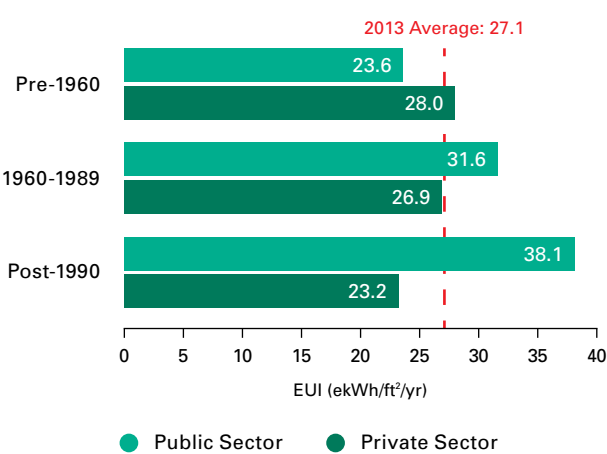
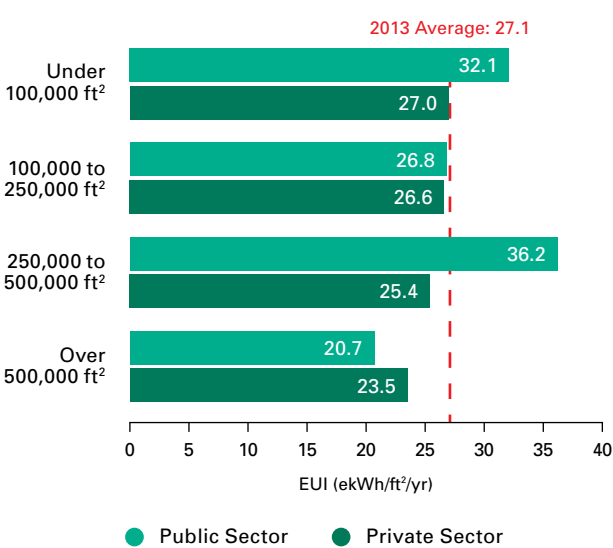


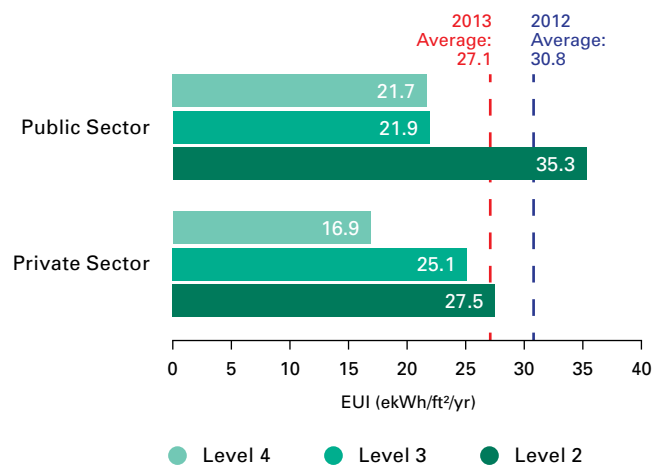
FIGURE 39: AVERAGE EUI BY SIZE AND SECTOR – OFFICE BUILDINGS



As expected, Office Buildings with a higher certification level tend to have lower EUIs. This is true in both public and private sector buildings (Figure 40). In 2013 the Level 3 certified Office Buildings have a significantly lower EUI compared to 2012:

- In the private sector: 25.1 ekWh/ft²/yr in 2013 compared to 36.4 ekWh/ft²/yr (2012)
- In the public sector: 21.9 ekWh/ft²/yr in 2013 compared to 28.3 ekWh/ft²/yr (2012)

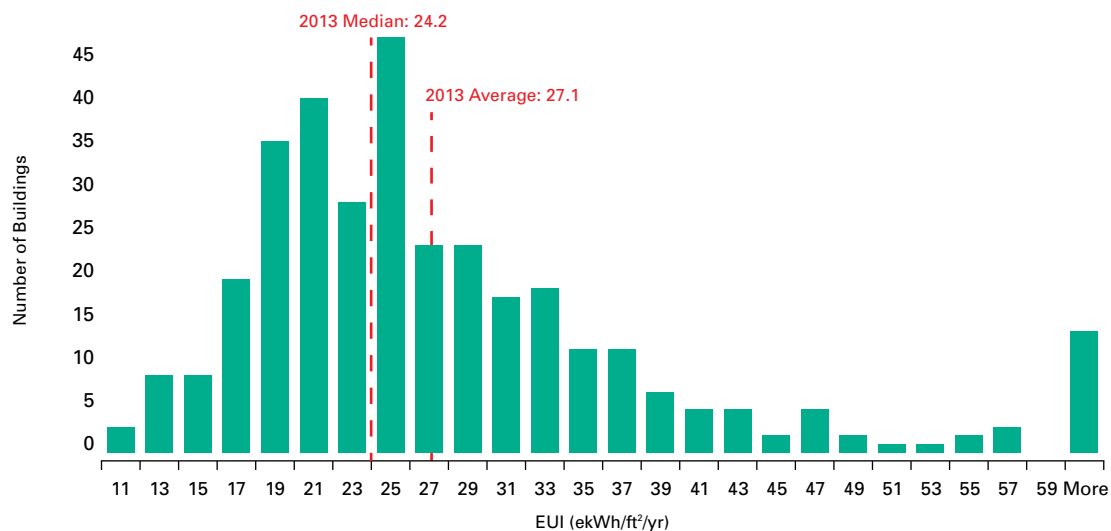
FIGURE 40: AVERAGE EUI BY SECTOR AND LEVEL CERTIFIED – OFFICE BUILDINGS



Le 1001, Boul. De Maisonneuve Ouest, Montreal, BOMA BEST Level 3 (certified 2013)

6.3.2 Average EUI Distribution

FIGURE 41: EUI DISTRIBUTION – OFFICE BUILDINGS



BELL CANADA



Bell Canada Montréal Campus, Montreal

Bell Canada is Canada's largest communications company, and a leading corporate citizen committed to responsibly managing the environmental impact of its buildings, both leased and owned. In 2006, Bell began certifying its buildings to demonstrate responsible building management and followed this up with a corporate *Green Buildings* objective in 2011.

To date, Bell has proactively participated in obtaining BOMA BEST certifications for 41 of the buildings it occupies across Canada: 16 in Quebec, 22 in Ontario, 1 in British-Columbia and 2 in Alberta. Eight buildings in Bell's real estate portfolio have obtained the prestigious BOMA BEST levels 3 or 4, and one has been awarded the BOMA Earth Award.

Overall, Bell is seeking to obtain certification for 67 buildings, hosting 80% of employees, by the end of 2014.

HOW BOMA BEST HELPS SUPPORT BELL CANADA'S GREEN BUILDINGS STRATEGY

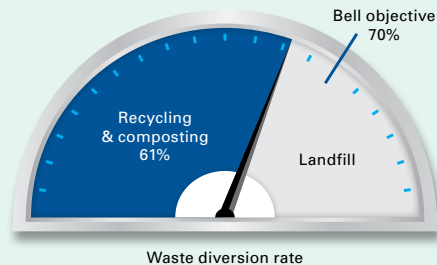
BOMA BEST certification aligns with Bell's *Green Buildings* objective because it integrates credible aspects of environmental building management and helps Bell measure its environmental performance.

Communication with employees and tenants about environmental initiatives is an essential part of the BOMA BEST process. Bell uses the BOMA BEST guidance on tenant engagement to increase employee awareness of Bell's environmental footprint and the role they play in reduction efforts. This allows Bell to set even more ambitious goals for 2015 and beyond.

BOMA BEST also triggers the need to set operational objectives and identify actions to ensure good waste management. A corporate tool was developed to highlight recycling and waste reduction targets and performance on a per building basis.



7,923,736 ft² of
office space are certified
BOMA BEST, representing
37% of all buildings
owned or leased by Bell.



GOAL: To recycle or compost 70% of the waste generated at Bell office buildings by the end of 2015.

PROGRESS SO FAR: At its Montréal Campus headquarters, Bell currently recycles 61% of its waste, an increase of 3% since the end of 2012.

MONTRÉAL CAMPUS

Bell's Montréal Campus, the company's corporate headquarters, won the 2011 TOBY Award from BOMA Québec. The campus consists of five buildings in two complexes, connected by a walkway on the third floor and by underground parking.

A significant portion of Bell team members work at the corporate headquarters, located on Nun's Island in Verdun, just outside of downtown Montréal. This campus provides employees with state-of-the-art, environmentally sensitive facilities that also maximize their productivity.

The design of the campus reflects the changing nature of the workforce and the increasing demands for cross-functional collaboration and access to information anywhere on the property.

REDUCTION EFFORTS

Bell's efforts to reduce its global environmental footprint include energy reduction initiatives such as:

- Energy recovery from cooling systems to provide hot water and space heating.
- Motion sensors to turn lights on and off.
- Green roofs and heat-reflecting roofing materials.
- Energy-efficient lighting and optimized lighting levels.
- Programmable thermostats and optimized heating and cooling systems.
- Damper operation with enthalpy control to reduce the need for mechanical cooling and enhance free-cooling operations.
- Installation of thermostats on standby power diesel generator block heaters.



21,764 employees currently work in buildings certified BOMA BEST.

6.4 CORRELATION OF AVERAGE EUI WITH EEF AND EMS SCORES OF CERTIFIED OFFICE BUILDINGS

In the certified Office Buildings asset class there is a positive, but relatively weak, correlation between energy use intensity (EUI) and energy efficiency features (EEF) and energy management systems (EMS) implemented, i.e. the higher a building’s energy consumption, on average, the more energy efficient features are reported. Although it seems counter-intuitive, it is possible that the implementation of EEF/EMS is used as a priority strategy to help reduce a “high” EUI.

FIGURE 42: AVERAGE EUI AND EEF SCORE – OFFICE BUILDINGS

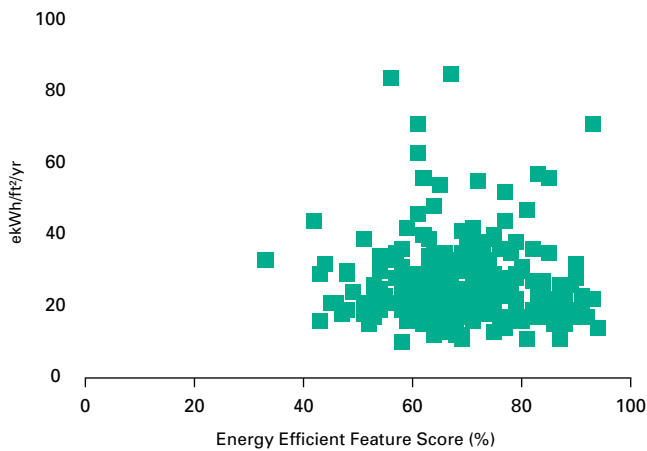
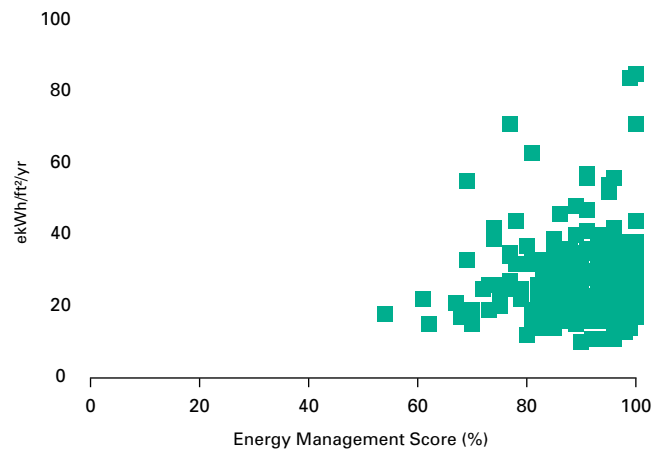


FIGURE 43: AVERAGE EUI AND EMS SCORE – OFFICE BUILDINGS



6.4.1.1 Correlation of Average EUI with EEF and EMS Scores of Office Buildings by Size

FIGURE 44: AVERAGE EUI AND EEF SCORE – OFFICE BUILDINGS UNDER 100,000 ft²

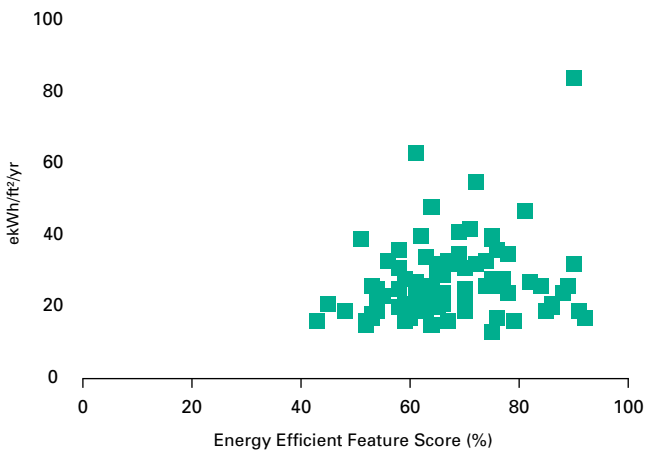
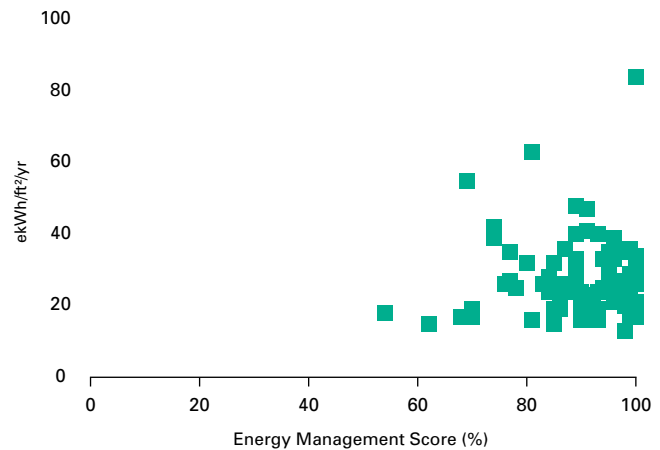
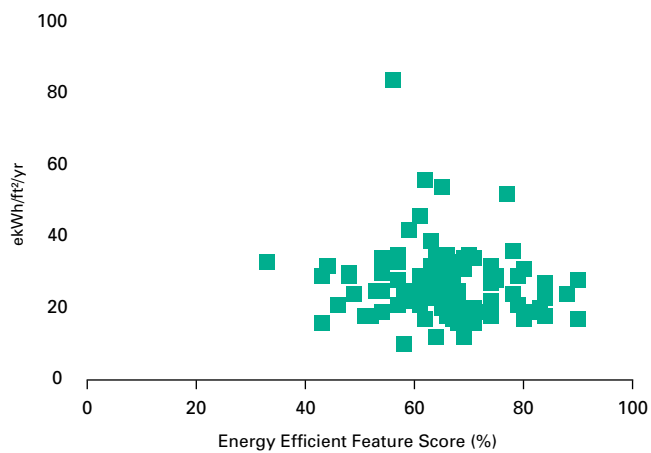


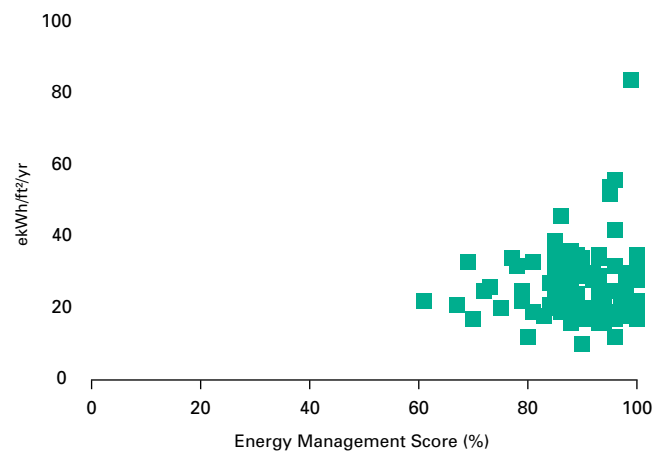
FIGURE 45: AVERAGE EUI AND EMS SCORE – OFFICE BUILDINGS UNDER 100,000 ft²



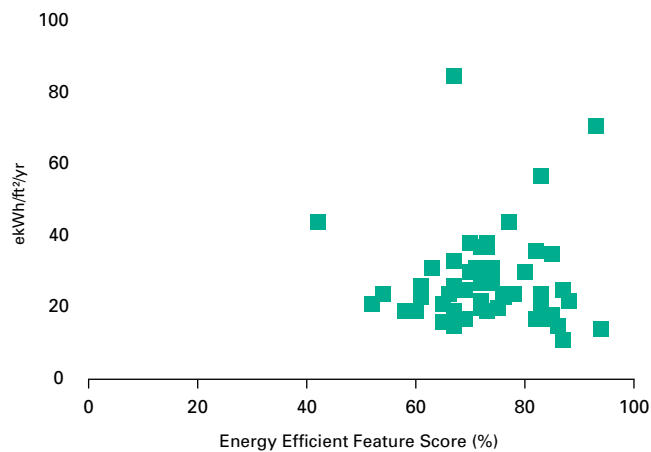
**FIGURE 46: AVERAGE EUI AND EEF SCORE –
OFFICE BUILDINGS FROM 100,000 ft² – 250,000 ft²**



**FIGURE 47: AVERAGE EUI AND EMS SCORE –
OFFICE BUILDINGS FROM 100,000 ft² – 250,000 ft²**



**FIGURE 48: AVERAGE EUI AND EEF SCORE –
OFFICE BUILDINGS FROM 250,000 ft² – 500,000 ft²**



**FIGURE 49: AVERAGE EUI AND EMS SCORE –
OFFICE BUILDINGS FROM 250,000 ft² – 500,000 ft²**

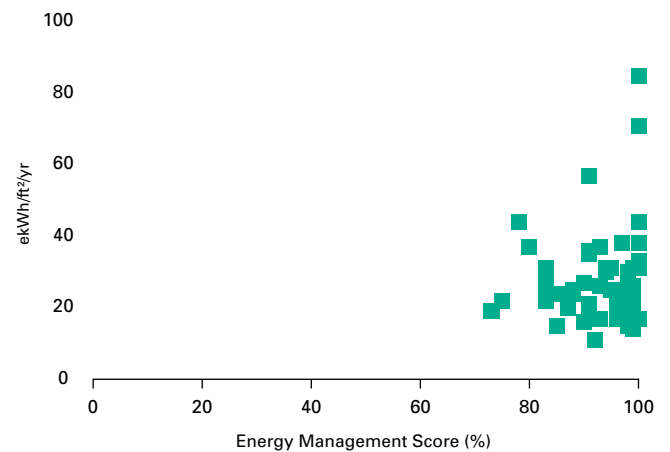


FIGURE 50: AVERAGE EUI AND EEF SCORE – OFFICE BUILDINGS ABOVE 500,000 ft²

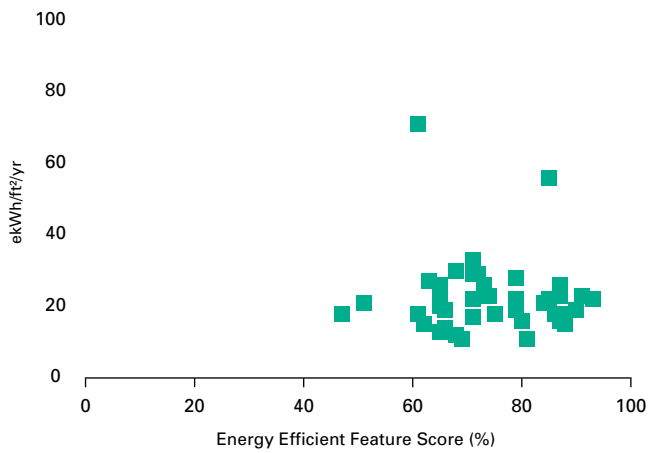
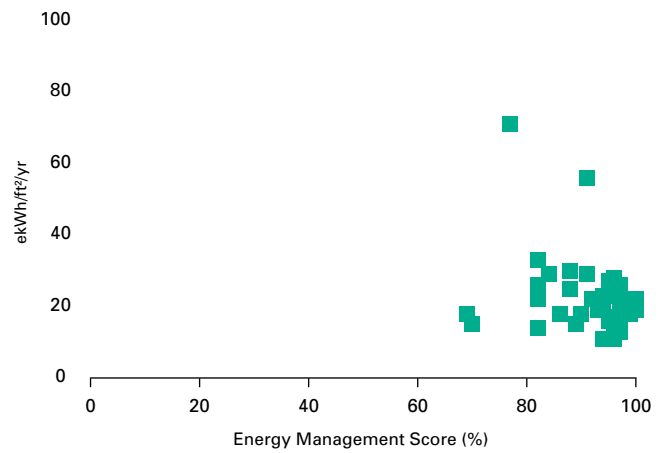


FIGURE 51: AVERAGE EUI AND EMS SCORE – OFFICE BUILDINGS ABOVE 500,000 ft²



6.4.1.2 Correlation of Average EUI with EEF and EMS Scores of Office Buildings by Age

FIGURE 52: AVERAGE EUI AND EEF SCORE – OFFICE BUILDINGS BUILT BEFORE 1960

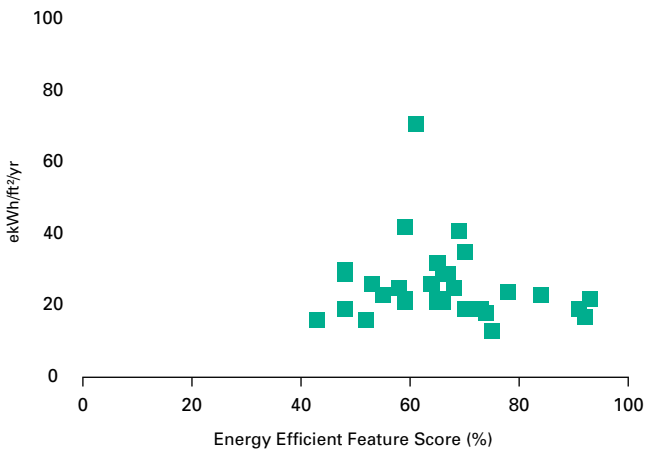


FIGURE 53: AVERAGE EUI AND EMS SCORE – OFFICE BUILDINGS BUILT BEFORE 1960

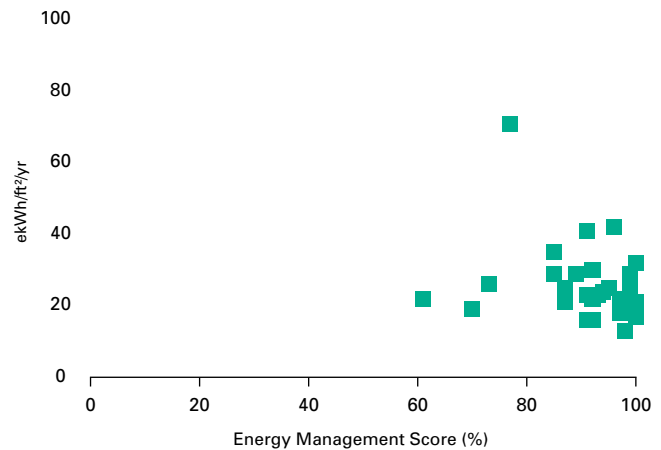


FIGURE 54: AVERAGE EUI AND EEF SCORE – OFFICE BUILDINGS BUILT BETWEEN 1960 AND 1989

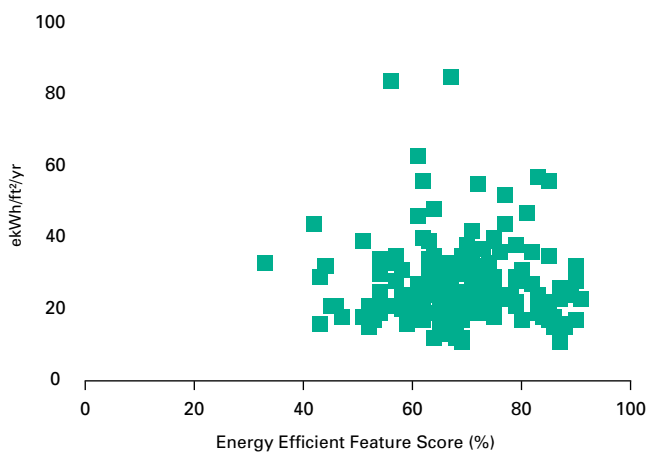


FIGURE 55: AVERAGE EUI AND EMS SCORE – OFFICE BUILDINGS BUILT BETWEEN 1960 AND 1989

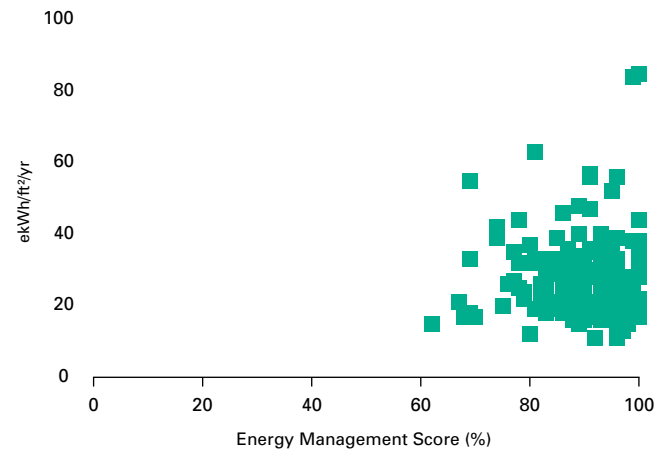


FIGURE 56: AVERAGE EUI AND EEF SCORE – OFFICE BUILDINGS BUILT SINCE 1990 TO PRESENT

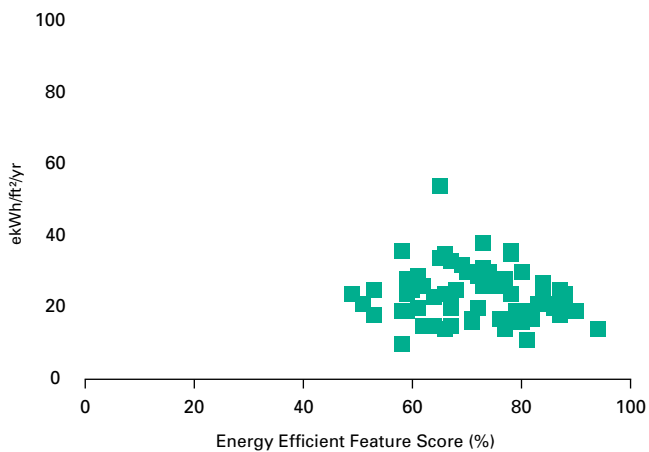
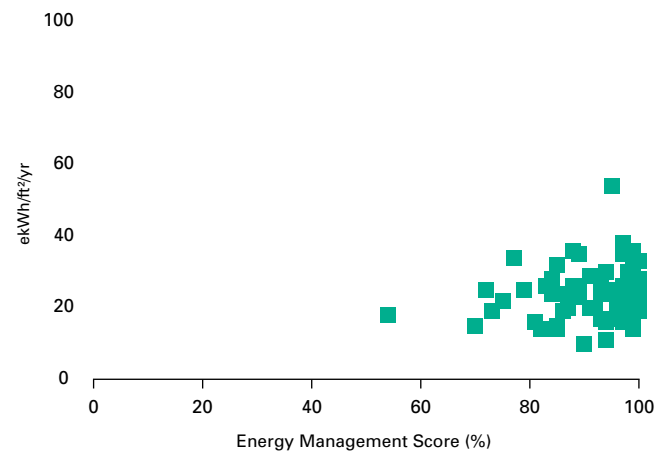


FIGURE 57: AVERAGE EUI AND EMS SCORE – OFFICE BUILDINGS BUILT SINCE 1990 TO PRESENT



6.5 AVERAGE UTILITY USE

6.5.1 Average Utility Use by Climate Zone

There was no data in the 2013 data set for Climate Zone D buildings. Given that the climate zones increase in extremity from A to D, it is expected that buildings in Climate Zone A would use less heating than buildings in Climate Zone B and that Climate Zone C would use the most natural gas for heating. This trend is confirmed in the data set, as seen in the figures below.

FIGURE 58: AVERAGE ELECTRICITY USE BY CLIMATE ZONE AND SECTOR – OFFICE BUILDINGS

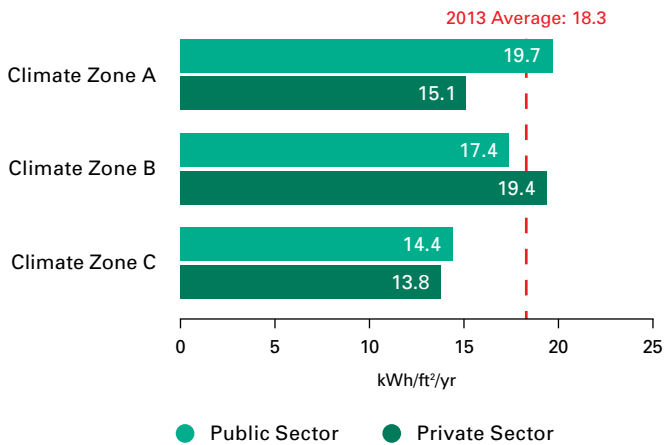
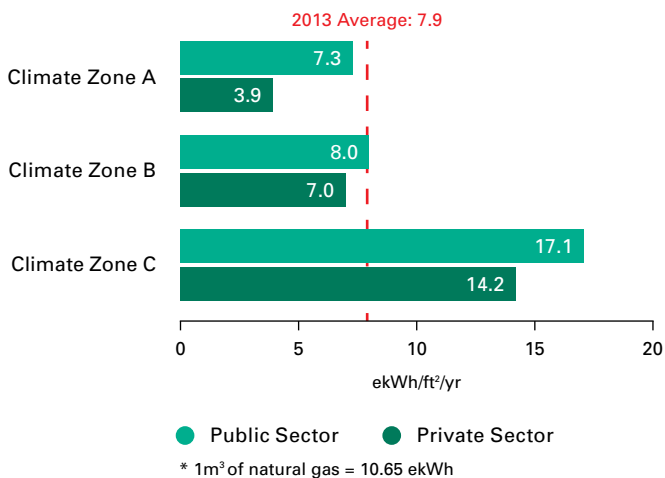
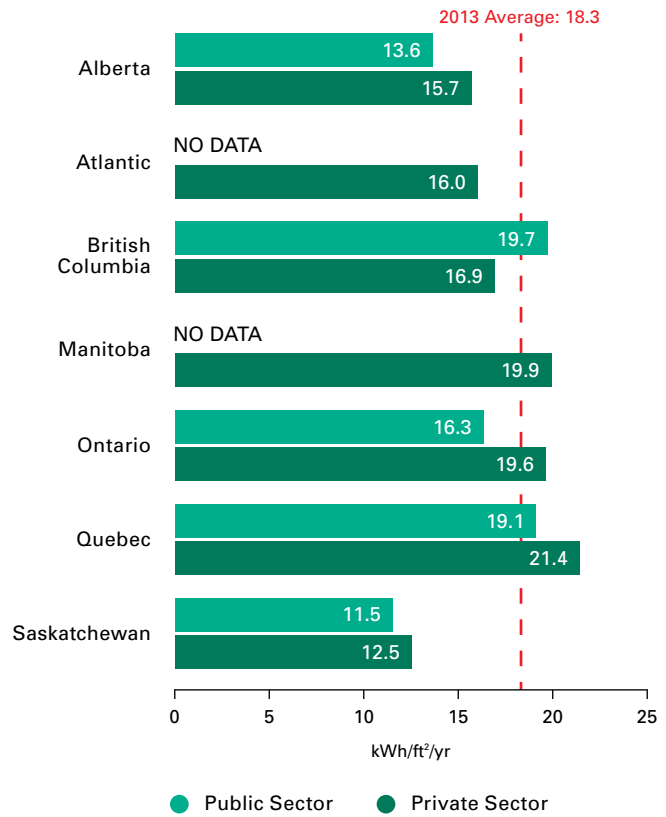


FIGURE 59: AVERAGE NATURAL GAS USE BY CLIMATE ZONE AND SECTOR – OFFICE BUILDINGS



6.5.2 Average Electricity Use

FIGURE 60: AVERAGE ELECTRICITY USE BY REGION AND SECTOR – OFFICE BUILDINGS





Clairfield Commons, Guelph, BOMA BEST Level 1 (certified 2013)

FIGURE 61: AVERAGE ELECTRICITY USE BY REGION – LIGHT INDUSTRIAL

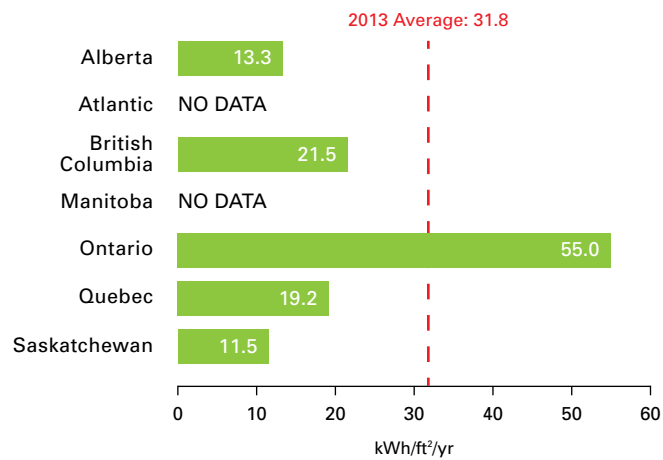
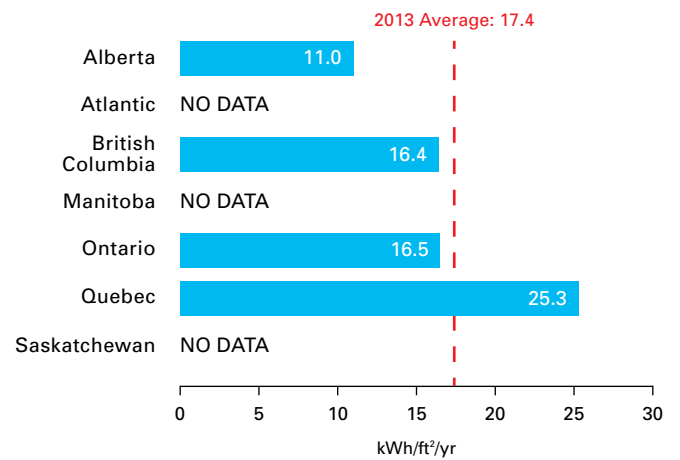


FIGURE 62: AVERAGE ELECTRICITY USE BY REGION – ENCLOSED SHOPPING CENTRES



6.5.3 Average Natural Gas Use

FIGURE 63: AVERAGE NATURAL GAS USE BY REGION AND SECTOR – OFFICE BUILDINGS

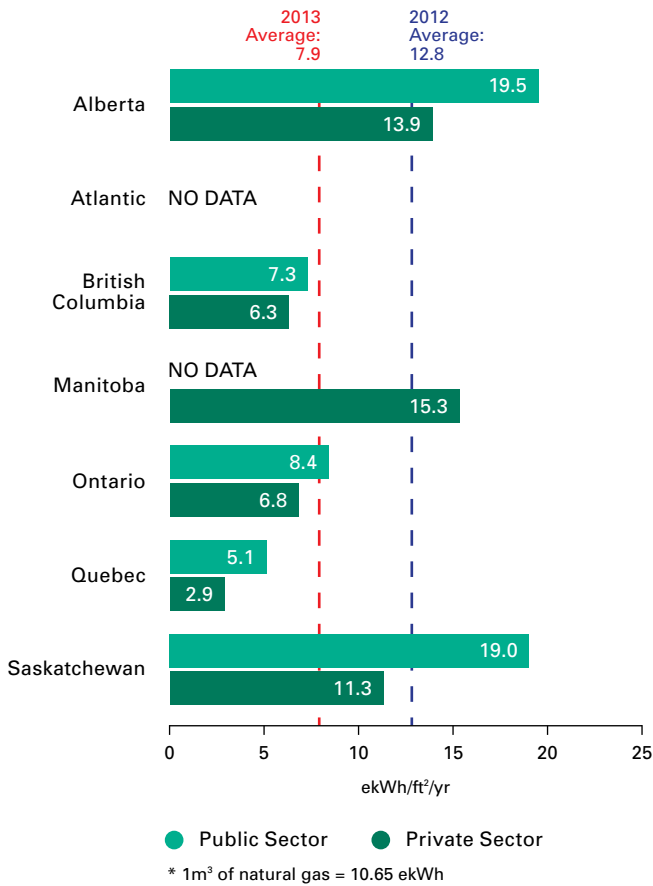


FIGURE 64: AVERAGE NATURAL GAS USE BY REGION – LIGHT INDUSTRIAL

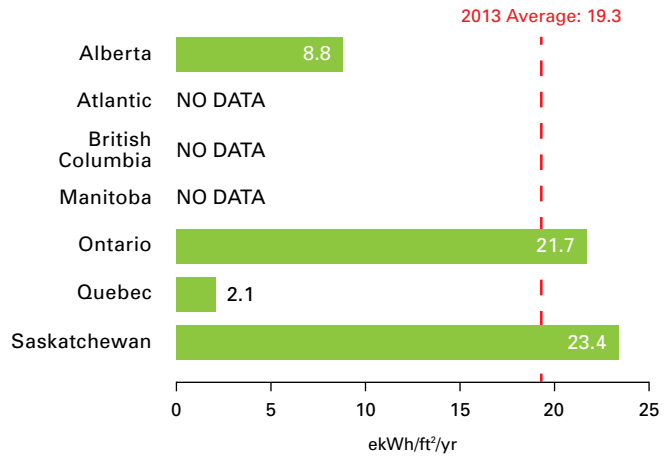
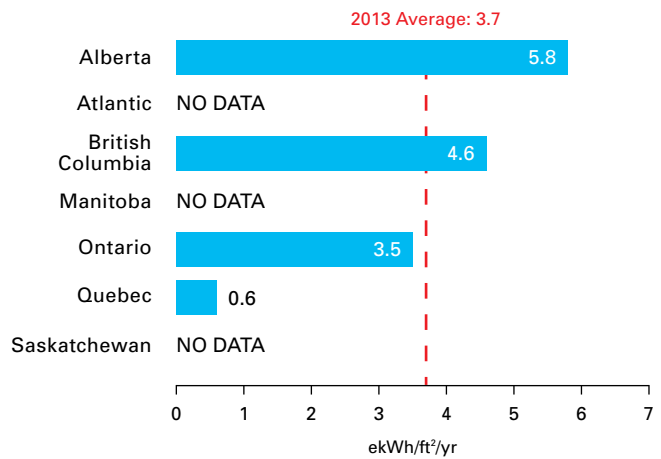


FIGURE 65: AVERAGE NATURAL GAS USE BY REGION – ENCLOSED SHOPPING CENTRES



Norman Vickar Building, Melfort, BOMA BEST Level 2 (certified 2013)

MAISON SYMPHONIQUE DE MONTRÉAL, MONTREAL

BOMA BEST Level 3 (Overall score: 85%)

BUILDING OPERATIONS AND ENERGY MANAGEMENT

The Maison symphonique was officially opened on September 7, 2011 although work was not fully completed until 6 months later.

Before the building could be opened to the public, commissioning was performed on all HVAC systems to ensure that all systems were operating optimally and meeting original design specifications.

Data was collected over several months to identify trends based on real consumption. An analysis of the findings led to a review of the building's operational sequences. In particular, findings related to the energy required for cooling revealed that deeper analysis was required.

By the fall of 2013, better informed and more precise adjustments could be made that enabled the building to reduce its energy consumption and achieve significant financial savings. Beneficial adjustments included reviewing operational sequences for HVAC, lighting intensity and operating schedules, optimization of approved cooling and electricity loads, replacing halogen lights with LED, and constant monitoring of consumption.

Savings achieved from these efforts were remarkable – energy costs associated with electricity consumption and heating and cooling loads were reduced by 19% compared to 2012 energy costs.



Maison symphonique de Montréal, Montreal, BOMA BEST Level 3 (certified 2013)

Key findings:

Although recommissioning a building is a common practice, few property managers have the opportunity to be part of opening a new building and the challenges inherent to this process.

Beyond commissioning, there are a number of checks and reviews that must be performed to ensure that the building is performing at an optimal level and that it is achieving

consumption levels required by the green building certifications it will likely be pursuing once the building is fully operational.

The first year of operation is a critical time that will influence the ageing and performance of the building. Therefore, it is important to fully understand and test all systems in order to detect faults that may have gone unnoticed upon initial equipment delivery, before the warranty expires.

PERFORMANCE REPORT WATER



The Terrace, Regina, BOMA BEST Level 3 (certified 2013)

This Assessment Section's weighting accounts for 8% – 10% of the total BOMA BEST Score, with the heaviest weight applied to the Open Air Retail and Light Industrial asset classes.

Table 15: BOMA BEST Scoring Weight by Assessment Section

ASSESSMENT SECTION	BUILDING TYPE / ASSET CLASS SCORING WEIGHT				
	OFFICE	MURBS	ENCLOSED SHOPPING CENTRE	OPEN AIR RETAIL	LIGHT INDUSTRIAL
Water	8%	8%	8%	10%	10%

This section reports on water consumption, the water-conserving features of buildings as well as water management practices. A successful water management program begins with an understanding of how the facility and its occupants use and dispose of water. This makes it possible to plan effective measures to achieve consumption reductions.

7.1 MEASURES IMPACTING WATER PERFORMANCE

The 2013 certified buildings data set was analyzed in terms of the BOMA BEST program's Water performance metrics to identify the most commonly implemented initiatives, least commonly implemented initiative and the initiatives with the most increased presence in high-performing buildings. BEST Practices have been excluded from consideration since these are required by all buildings. Table 16 summarizes these results.

Table 16: Initiatives impacting Water Performance Results*

WATER		AVERAGE SCORE
Most common initiatives:		
1	Regular leak checks	87%
2	Water reduction targets set	80%
3	Low-flow faucets are installed (< 2 LPM)	55%
Least common initiative:		
1	Once-through water-cooled units in use	7%
Initiatives with the most increased presence in high performing buildings (Level 4 vs Level 2):		
1	Low-flow toilets installed (<4.8 LPF)	+48%
2	Low-flow urinals installed (<1.9 LPF)	+37%
3	Sub-metered evaporative cooling towers	+34%

* See section 6.1 for guidance on interpreting Table 16.

7.2 AVERAGE WATER SCORE (%)

FIGURE 66: AVERAGE WATER SCORE BY REGION AND SECTOR – OFFICE BUILDINGS

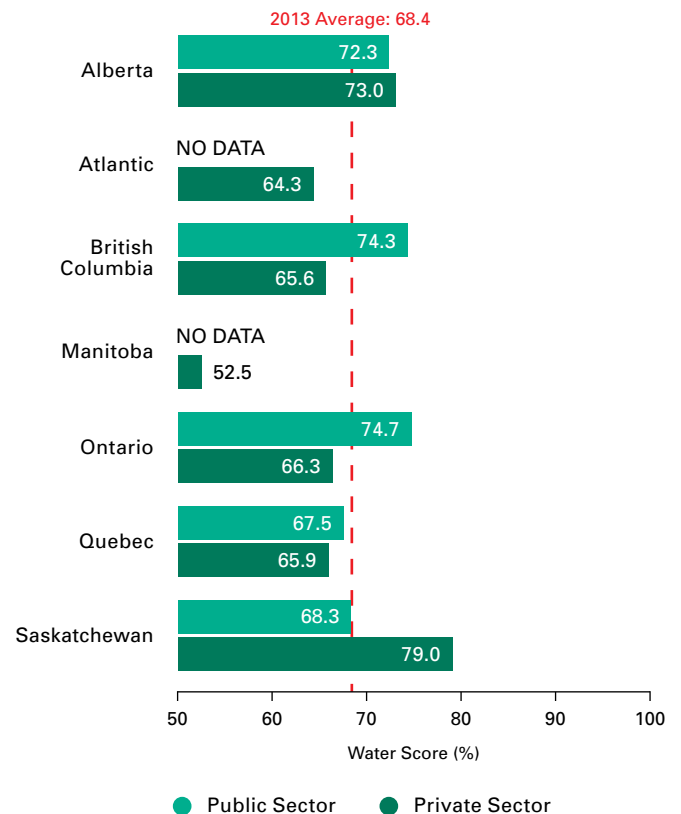


FIGURE 67: AVERAGE WATER SCORE BY LEVEL CERTIFIED AND SECTOR – OFFICE BUILDINGS

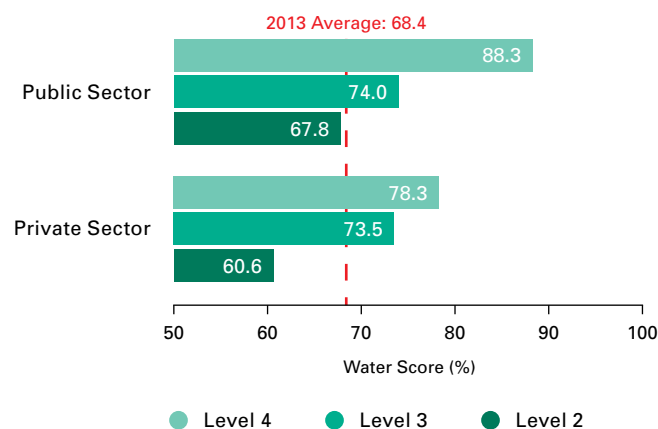
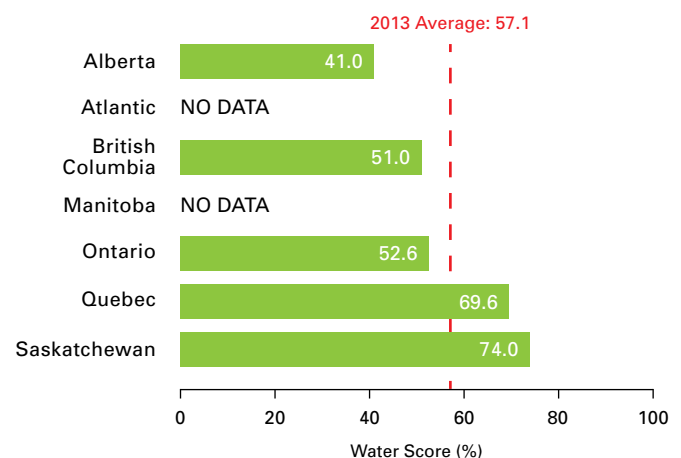


FIGURE 68: AVERAGE WATER SCORE BY REGION – LIGHT INDUSTRIAL





1, 3 Robert Speck Parkway, Mississauga,
BOMA BEST Level 2-3 (certified 2014)

7.3 AVERAGE WATER USE INTENSITY

7.3.1 Average Water Use Intensity by Asset Class

Annual water consumption is given for each building in cubic metres per square metre (m^3/m^2). It is based on water consumption over a 12 month period and is verified through a review of water bills. The Water section rewards low water use.

In 2013, there was a slight increase in the average water use intensity of certified Office Buildings – up to $0.68 \text{ m}^3/\text{m}^2/\text{yr}$ compared to $0.65 \text{ m}^3/\text{m}^2/\text{yr}$ in 2012. However, this slight increase is negligible in the context of the overall downward trend in WUI over the last 6 years (from $1.13 \text{ m}^3/\text{m}^2/\text{yr}$ in 2008).

The average water consumption intensity for certified Office Buildings in 2013 is 31% better than the national average⁵ of $0.98 \text{ m}^3/\text{m}^2$.

FIGURE 70: AVERAGE WATER USE INTENSITY BY YEAR CERTIFIED – OFFICE BUILDINGS

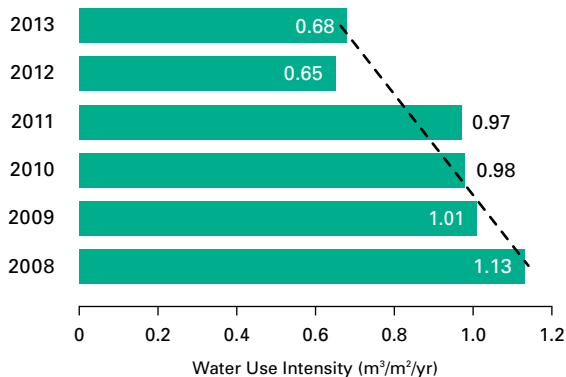


FIGURE 69: AVERAGE WATER SCORE BY REGION – ENCLOSED SHOPPING CENTRE

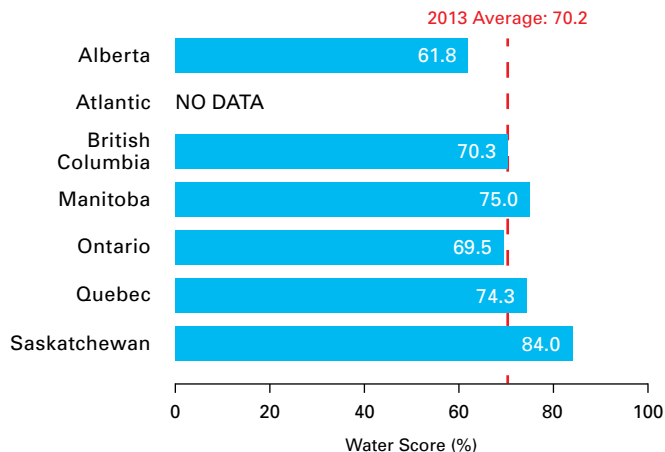
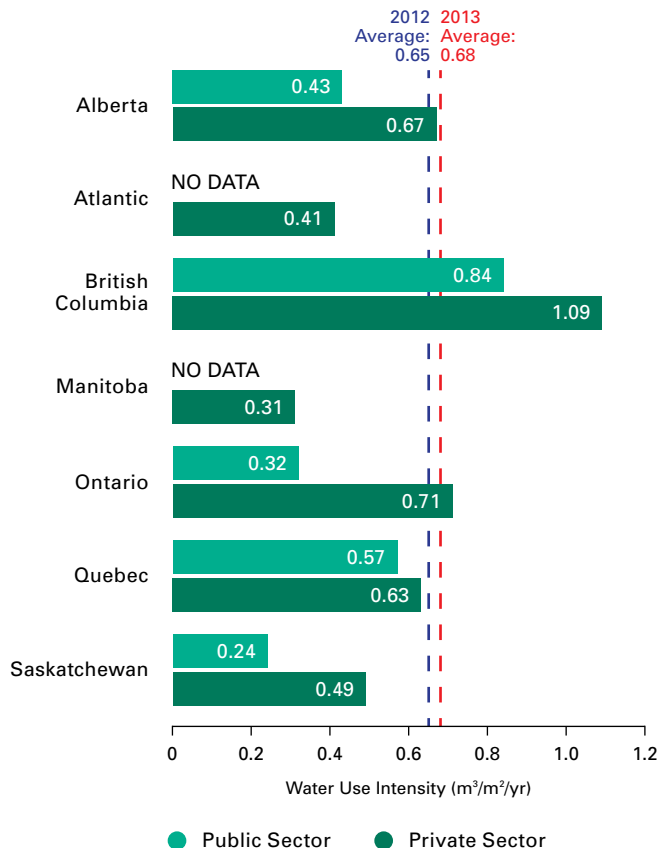


FIGURE 71: AVERAGE WATER USE INTENSITY BY REGION AND SECTOR – OFFICE BUILDINGS



⁵ REALPac Water Benchmarking Pilot Report: Performance in the Canadian Office Sector. 2012.

Retrieved from http://cymcdn.com/sites/www.realpac.ca/resource/resmgr/industry_sustainability_-_water_benchmarking/rp_water_report_05_hr_final.pdf

FIGURE 72: AVERAGE WATER USE INTENSITY BY CLIMATE ZONE – OFFICE BUILDINGS

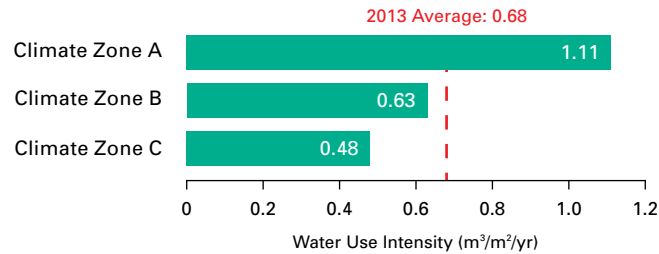


FIGURE 73: AVERAGE WATER USE INTENSITY BY AGE AND SECTOR – OFFICE BUILDINGS

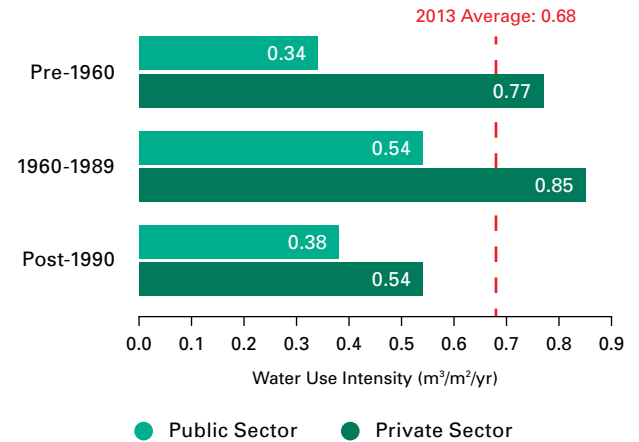


FIGURE 74: AVERAGE WATER USE INTENSITY BY SIZE AND SECTOR – OFFICE BUILDINGS

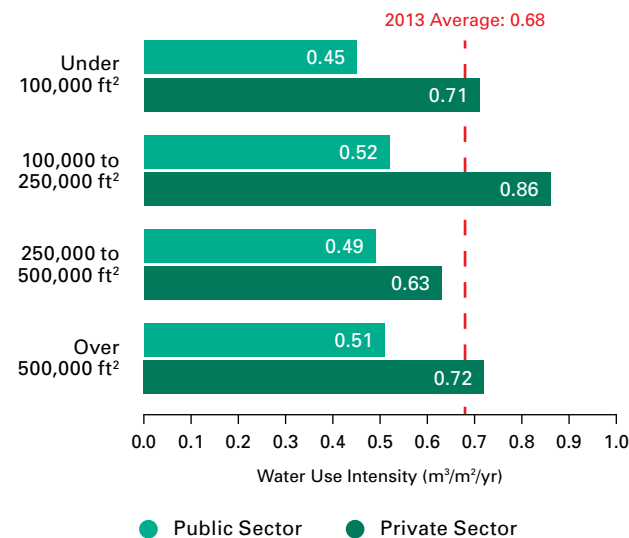
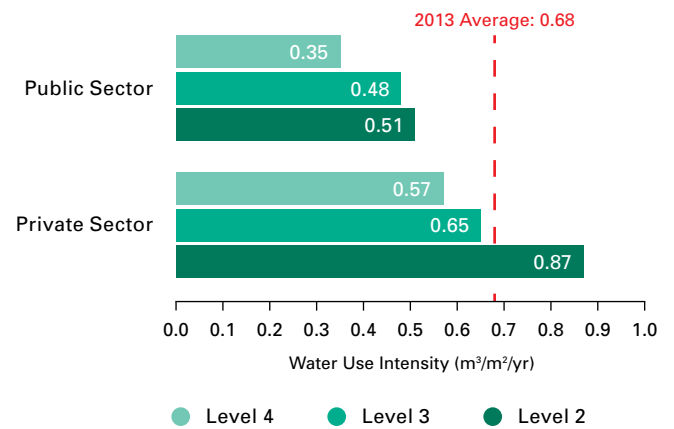


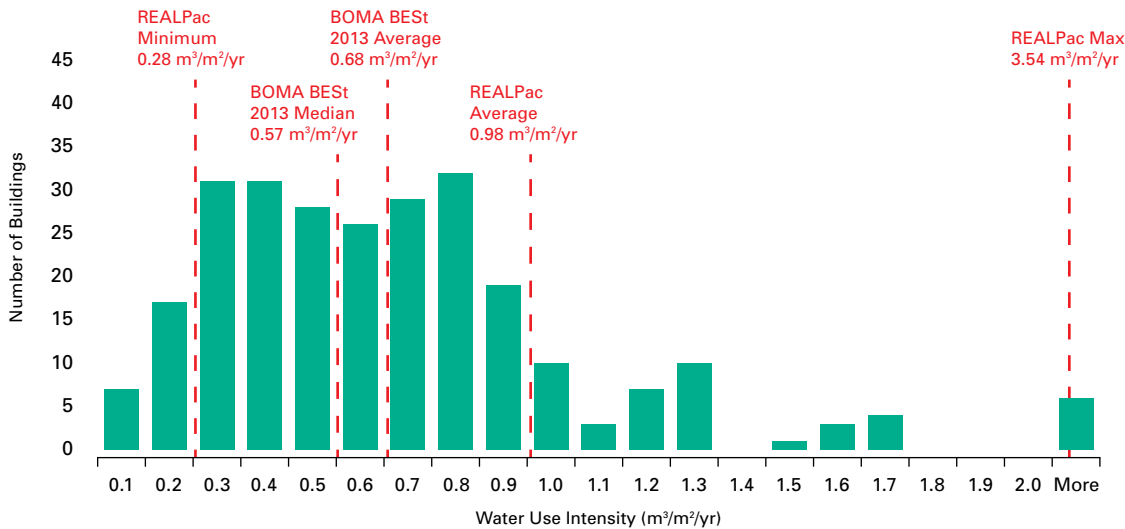
FIGURE 75: AVERAGE WATER USE INTENSITY BY SECTOR AND LEVEL CERTIFIED – OFFICE BUILDINGS



The average water consumption intensity for certified Office Buildings in 2013 is 31% better than the national average of 0.98 m³/m².

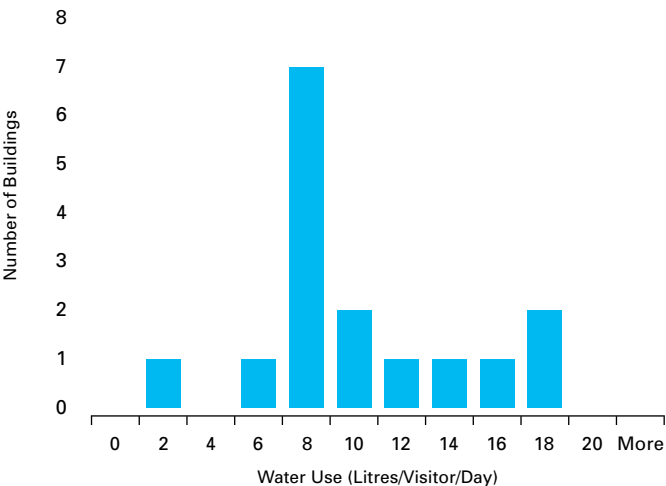
7.3.2 Water Use Distribution by Asset Class

FIGURE 76: WATER USE DISTRIBUTION – OFFICE BUILDINGS⁶



Bank of Montreal, Regina,
BOMA BEST Level 3 (certified 2013)

FIGURE 77: WATER USE DISTRIBUTION –
ENCLOSED SHOPPING CENTRES



⁶ REALPac Water Benchmarking Pilot Report: Performance in the Canadian Office Sector. 2012.
Retrieved from http://cymcdn.com/sites/www.realpac.ca/resource/resmgr/industry_sustainability_-_water_benchmarking/rp_water_report_05_hr_final.pdf

FIRST CAPITAL REALTY INC.



Olde Oakville Market Place, Oakville, BOMA BEST Level 1 (certified 2013)

FIRST CAPITAL REALTY'S COMMITMENT TO BOMA BEST

In 2009, First Capital Realty Inc. (First Capital) made a public commitment to operate to an industry-recognized environmental standard. The company identified the BOMA BEST program as the best fit because it is flexible, offering several levels of certification to various building types, including an open air retail assessment module that suited the portfolio's primary building type.

SUCCESS STORIES SINCE 2011

Since 2011, First Capital has certified 55 retail properties. This represents over 5 million square feet of retail space and 20% of the national portfolio! Over the last three years, momentum for the program has accelerated with the certification of 35 properties in 2013 alone.



By seeking BOMA BEST certification, the entire property management team developed a better understanding of how their properties work and where potential savings exist in their operations.

The process began by delivering awareness training on the BOMA BEST requirements to the property management team. A standardized approach to seeking and obtaining BOMA BEST certification was developed, so that the company and each property management team approached the task in a consistent manner.

Some great wins and lessons learned during the certification process included:

- **Water:** Water audits can identify opportunities to reduce water consumption drastically. For example, Shoppes on Dundas completed a water audit, implemented the recommendations in 2012 and realized a 35% reduction in water consumption in 2013.

- **Energy:** Small changes can have a big impact. Savings were identified and realized with the installation of motion sensors to the lighting controls in utility and mechanical rooms.
- **Tenant Relations:** Tenant engagement improved with proactive communication practices, such as issuing Tenant Talks, (i.e., newsletters). By explaining how water and energy conservation measures could reduce tenants' operating costs, environmental awareness among the tenants in day-to-day operations was enhanced.

EXPERIENCE WITH BOMA BEST AND ITS PROCESS

First Capital approached the process of pursuing certification as team effort—administrators, building operators and property managers—working on a common goal with a tangible end result. By seeking BOMA BEST certification, the entire property management team developed a better understanding of how their properties work and where potential savings exist in their operations, such as lighting retrofits, irrigation controls and waste diversion. First Capital management used the BOMA BEST program as a tool to standardize and document their processes for environmental performance at each property.

First Capital employees are proud to work for a company that is committed to implementing environmental improvements. Prior to participating in BOMA BEST, First Capital was already implementing best-practices in their property operations, so they had a solid platform from which to launch the BOMA BEST certification process. Achieving certification from a third-party, such as BOMA, demonstrates First Capital's commitment to the environment and communicates their environmental message to team members, tenants and stakeholders.

PERFORMANCE REPORT

WASTE REDUCTION AND SITE



65 Lillian/Vivere, Toronto, BOMA BEST Level 3 (certified 2013)

This Assessment Section's weighting accounts for 11 – 15% of the total BOMA BEST Score, with the heaviest weight applied to the Open Air Retail and Light Industrial asset classes.

Table 17: BOMA BEST Scoring Weight by Assessment Section

ASSESSMENT SECTION	BUILDING TYPE / ASSET CLASS SCORING WEIGHT				
	OFFICE	MURBS	ENCLOSED SHOPPING CENTRE	OPEN AIR RETAIL	LIGHT INDUSTRIAL
Waste Diversion and Site	11%	11%	11%	15%	15%

The Waste Reduction section of the BOMA BEST assessment examines whether or not various recycling programs and facilities have been implemented for tenants along with regular waste audit practices.

The Site section assesses site contamination and the presence of site-enhancement measures to improve the site's ecological value.

8.1 MEASURES IMPACTING WASTE REDUCTION AND SITE PERFORMANCE

The 2013 certified buildings data set was analyzed in terms of the BOMA BEST program's Waste Reduction and Site performance metrics to identify the most commonly implemented initiatives, least commonly implemented initiative and the initiatives with the most increased presence in high-performing buildings. BEST Practices have been excluded from consideration since these are required by all buildings. Table 18 and 19 summarize these results.

Table 18: Initiatives impacting Waste Reduction Performance Results*

WASTE REDUCTION		AVERAGE SCORE
Most common initiatives:		
1	Separate storage/handling of different recycling materials	88%
2	Collection points for recycling materials where waste is generated	88%
3	Waste reduction targets exist	79%
Least common initiative:		
1	Composting program for organic waste	53%
Initiatives with the most increased presence in high performing buildings (Level 4 vs Level 2):		
1	Composting program for organic waste	+40%
2	Annual waste audit	+26%
3	Waste volumes regularly monitored	+12%

* See section 6.1 for guidance on interpreting Table 18.

Table 19: Initiatives impacting Site Performance Results*

SITE		AVERAGE SCORE
Most common initiatives:		
1	Site known to be free of contaminants	83%
2	Outdoor lighting designed to minimize light pollution	71%
3	Drought tolerant plants	68%
Least common initiative:		
1	Green roof installed	5%
Initiatives with the most increased presence in high performing buildings (Level 4 vs Level 2):		
1	Storm water management	+76%
2	Program to reduce bird fatalities	+53%
3	Green roof installed	+47%

* See section 6.1 for guidance on interpreting Table 19.



Laurier Québec, Quebec, BOMA BEST Level 3 (certified 2013)

8.2 AVERAGE WASTE REDUCTION AND SITE SCORE (%)

Office Buildings and Enclosed Shopping Centres achieved the highest scores in the Waste Reduction and Site assessment section (Figure 79). MURBs trail far behind with an average score almost 20% below the average for all asset classes.

FIGURE 78: AVERAGE WASTE REDUCTION AND SITE SCORE – ALL ASSET CLASSES

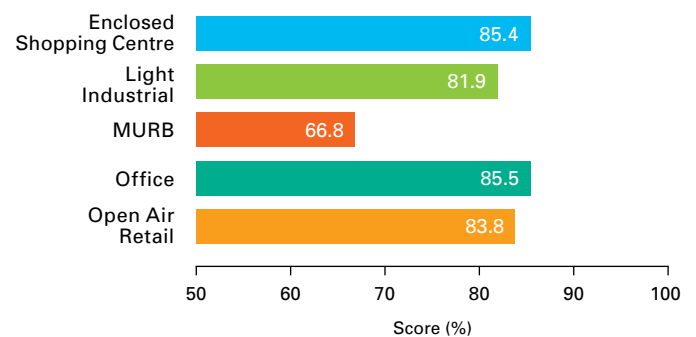


FIGURE 79: AVERAGE WASTE REDUCTION AND SITE SCORE BY REGION AND SECTOR – OFFICE BUILDINGS

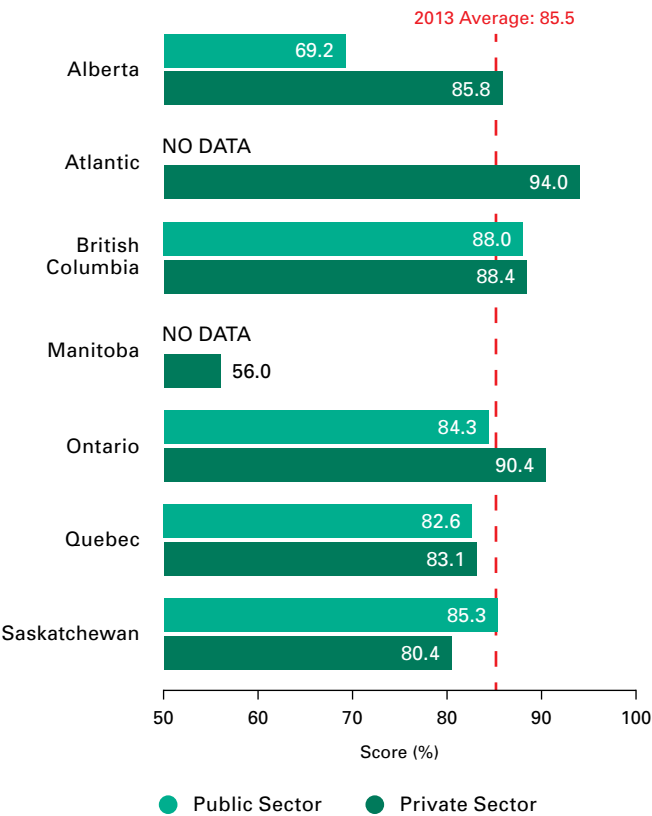


FIGURE 80: AVERAGE WASTE REDUCTION AND SITE SCORE BY REGION – LIGHT INDUSTRIAL

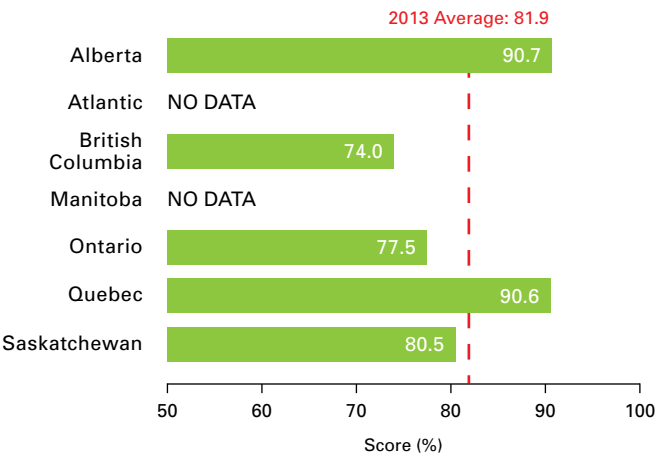
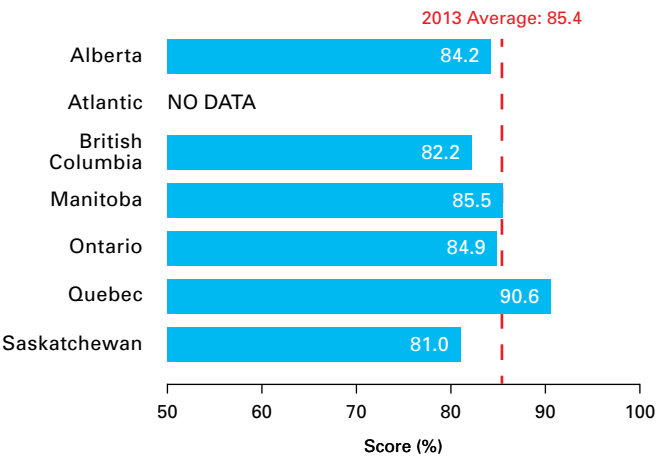


FIGURE 81: AVERAGE WASTE REDUCTION AND SITE SCORE BY REGION – ENCLOSED SHOPPING CENTRES



Forest Centre, Prince Albert, BOMA BEST Level 3 (certified 2013)

ST. VITAL CENTRE, WINNIPEG

BOMA BEST Level 4 (Overall Score of 93%)

REDUCING EMISSIONS AND LANDFILL WASTE AT ST. VITAL CENTRE

St. Vital Centre certified BOMA BEST Level 4 in May of 2013 in part thanks to its achievements in waste reduction (a score of 90% was achieved for waste reduction and site enhancement). To obtain this score, its objectives included implementing a recycling program with a much wider reach as well as maintaining high diversion rates for construction waste during renovations to the common area.

The following measures were put in place:

- To promote recycling, an improved recycling program was created in conjunction with the waste hauler, allowing for collection of Hard Plastics (#1-4), soft plastics (shrink wrap, bags), beverage containers, paper and plastic hangers, and cardboard. The system consists of color coded bins and descriptive signage;
- To reduce the carbon footprint of the building, an automated waste removal system was installed at an initial cost of \$6,219 to reduce the number of hauls needed. In addition, building management worked with the waste management company to combine the cardboard hauling with the wider recycling program to utilize the existing pickups for removal of recyclables;
- To increase diversion rates of construction waste, the above recycling program was maintained in addition to creating a partnership with Habitat for Humanity Manitoba and the City of Winnipeg to allow for the diversion of such material as silk plants, ceiling tiles and bathroom fixtures from landfills.

Benefits associated with the implementation of the above initiatives include:

- Reduction of recyclable waste sent to landfill: Prior to these efforts, only paper and cardboard could be diverted from landfill.
- Reduction of operational costs and the building's carbon footprint by reducing the pick-up frequency: An automated system tracks pressure in the compactors and sends an email when the bin is full and ready to be picked up. Instead of hauling half empty bins, all bins go out with a full load. Hauling frequency has been reduced by 50% to only 10 hauls per month, resulting in a reduction of costs by 50%. The initial return on investment for this project was 244%.
- Reduction of construction waste sent to landfill: Partnering with Habitat for Humanity has allowed for 20,546 lbs of material to be diverted from landfill and redistributed. This initiative gives valuable dollars back to our community and gives new life to used items such as bathroom fixtures and ceiling tiles. Furthermore, work with the City of Winnipeg was successful in diverting 130,000 ft² of old mall tiles to be used in road construction. Working with these important partners allowed St. Vital Centre to complete renovations with a diversion rate of 78%.

Implementing a comprehensive waste management program may take time (over 3 months) as well as financial investment however the returns are more than worth it.



St. Vital Centre, Winnipeg,
BOMA BEST Level 4 (certified 2013)



Working with these important partners allowed St. Vital Centre to complete renovations with a diversion rate of 78%.



4 King Street West, Toronto, BOMA BEST Level 3 (certified 2013)

8.3 AVERAGE WASTE DIVERSION RATES

Just over half (55%) of all the certified Office Buildings achieved waste diversion rates of more than 60%. This same diversion rate is achieved by 36% of Light Industrial buildings and 26% of Enclosed Shopping Centres. The most common waste diversion rate achieved by Enclosed Shopping Centres (74%) is between 30 and 59%. For Light Industrial properties, waste diversion rates were more likely to be unknown (49%).

FIGURE 82: WASTE DIVERSION RATES – OFFICE BUILDINGS

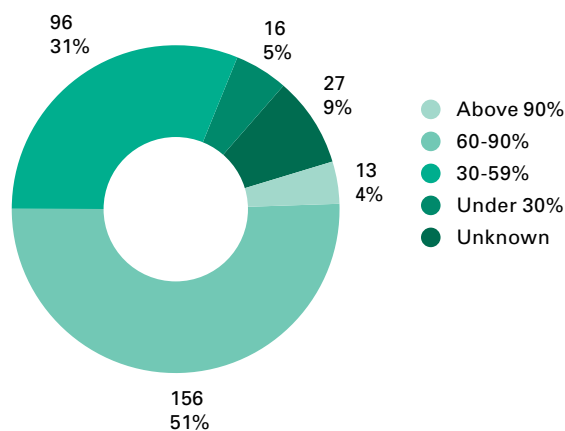


FIGURE 83: AVERAGE WASTE DIVERSION RATES – LIGHT INDUSTRIAL

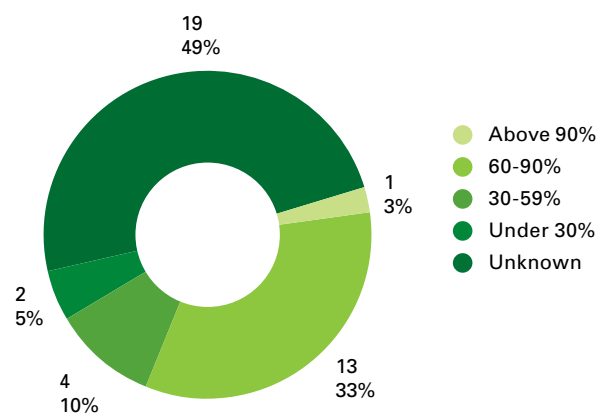
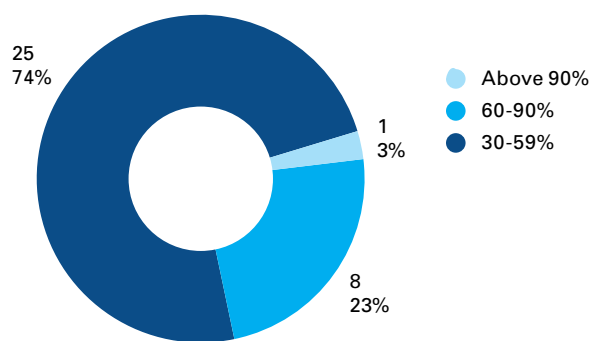


FIGURE 84: AVERAGE WASTE DIVERSION RATES – ENCLOSED SHOPPING CENTRES



CENTRE CDP CAPITAL, MONTREAL

BOMA BEST Level 4 (Overall score: 91%)

COLLECTION OF ORGANIC WASTE FOR COMPOSTING

The Centre CDP Capital is a state-of-the-art building that has been recognized for its architecture, energy efficiency, and environmental initiatives. Commitment to sustainable development was further demonstrated when the collection of organic waste was started in February 2013.

This project's objectives were to implement composting on the building's office floors and leased restaurant spaces thereby reducing the amount of organic waste being sent to landfill.

Major challenges:

1. Engaging management: Management was reluctant to go forward with the initiative due to an unfortunate prior experience with another property (fear of unpleasant odours and attracting fruit flies).
2. Commitment from restaurant tenants and cleaning staff:
 - Financial implications: Tenants were responsible for the cost of waste bins and compost bags;
 - Logistical implications: Store rooms and collection areas in the dining room required updating;
 - Human resource implications: A high level of training was required for staff performing the organic waste collection despite high turnover.
3. Raising awareness with occupants: New waste disposal habits were needed from occupants that respected the new sorting process.

Solutions:

- Targeted education sessions were provided to management to clarify that collecting organic waste was no more likely to cause odours or attract flies than the current situation where occupants disposed of their food and other organic waste in the waste bins;
- A new collection strategy was developed, with waste pick up increased to three times a week for the compost bins. Instead of transferring waste on site into the service provider's trucks, full bins are simply replaced with empty ones which eliminates the risk of unpleasant odours;



Centre CDP Capital, Montreal, BOMA BEST Level 4 (certified 2013)

- Awareness was raised among occupants via training and communication strategies: composting information sessions with waste management experts were provided as part of the "ÉcoÉvénement" (EcoEvent) awareness campaign, decals and signs were posted informing occupants about the new sorting strategy, and awareness squads were deployed in the employee dining rooms to help occupants establish new waste sorting habits;
- An annual waste audit was performed with a specialized firm and continuous data monitoring strategies were established.

Results:

- Organic waste collection increased by 33% compared to a similar period in 2012 (when coffee and paper waste were already collected by hand for composting).
- Organic waste diversion from landfill increased by 10% between 2012 and 2013, despite an overall increase in waste.

Changing habits takes time and requires involving management at all levels, collaborating with partners and suppliers, and maintaining continuous and effective communication strategies across the entire building.

PERFORMANCE REPORT

EMISSIONS & EFFLUENTS



Le 1000 De La Gauchetiere, Montreal, BOMA BEST Level 4 (certified 2013)

This Assessment Section's weighting accounts for 17% of the total BOMA BEST Score, with weighting applied equally across all asset classes.

Table 20: BOMA BEST Scoring Weight by Assessment Section

ASSESSMENT SECTION	BUILDING TYPE / ASSET CLASS SCORING WEIGHT				
	OFFICE	MURBS	ENCLOSED SHOPPING CENTRE	OPEN AIR RETAIL	LIGHT INDUSTRIAL
Emissions and Effluents	17%	17%	17%	17%	17%

BOMA BEST assesses the presence of pollutants in buildings such as emissions from boilers; ozone-depleting substances found in refrigerants; fire-fighting equipment; asbestos; PCBs; radon; pesticides; and hazardous materials such as those found in cleaning products, lubricants, water treatment chemicals, and fuels. The Emissions and Effluents section is broken down into the following sub-categories: air emissions and ozone depleting substances, water effluents, hazardous materials, and hazardous products and WHMIS.

9.1 MEASURES IMPACTING EMISSIONS AND EFFLUENTS PERFORMANCE

The 2013 certified buildings data set was analyzed in terms of the BOMA BEST program's Emissions and Effluents performance metrics to identify the most commonly implemented initiatives, least commonly implemented initiative and the initiatives with the most increased presence in high-performing buildings. BESt Practices have been excluded from consideration since these are required by all buildings. Tables 21 and 22 summarize these results.

Table 21: Initiatives impacting Emissions Performance Results*

EMISSIONS		AVERAGE SCORE
Most common initiatives:		
1	Staff trained on operations and maintenance of ozone-depleting refrigerants	100%
2	Certified contractor responsible for refrigerant maintenance	89%
3	Refrigerant recovery system used	84%
Least common initiative:		
1	75% or more of the building's "lead" boilers have low NO _x emission rates	43%
Initiatives with the most increased presence in high performing buildings (Level 4 vs Level 2):		
1	75% or more of the building's "lead" boilers have low NO _x emission rates	+55%
2	Refrigerant leak detectors installed	+42%
3	Refrigerant recovery system used	+2%

* See section 6.1 for guidance on interpreting Table 21.



Les Promenades Lévis, Quebec, BOMA BEST Level 1 (certified 2013)

Table 22: Initiatives impacting Effluents Performance Results*

EFFLUENTS		AVERAGE SCORE
Top three most common initiatives:		
1	Appropriate storage of hazardous products	88%
2	Material safety data sheets (MSDSs) are present and up to date	86%
3	There is no asbestos or there is an asbestos management program	84%
Least common initiative:		
1	Storm water management measures reduce run-off from roofs and hard surfaces	31%
Initiatives with the most increased presence in high performing buildings (Level 4 vs Level 2):		
1	Storm water management measures reduce run-off from roofs and hard surfaces	+46%
2	Drains are protected from chemical spill	+6%
3	Material Safety Data Sheets are present and up to date	+2%

* See section 6.1 for guidance on interpreting Table 22.



T.C. Douglas Building, Regina, BOMA BEST Level 3 (certified 2013)

9.2 AVERAGE EMISSIONS AND EFFLUENTS SCORE (%)

The range in average Emissions and Effluents scores of the different asset classes of certified buildings is very small (5%). MURBs trail slightly behind with an average score just under 4% lower than the average for all asset classes.

FIGURE 85: EMISSIONS AND EFFLUENTS SCORE – ALL ASSET CLASSES

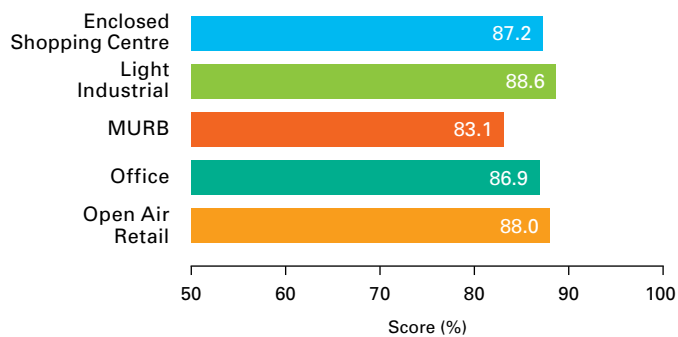


FIGURE 86: AVERAGE EMISSIONS AND EFFLUENTS SCORE BY REGION AND SECTOR – OFFICE BUILDINGS

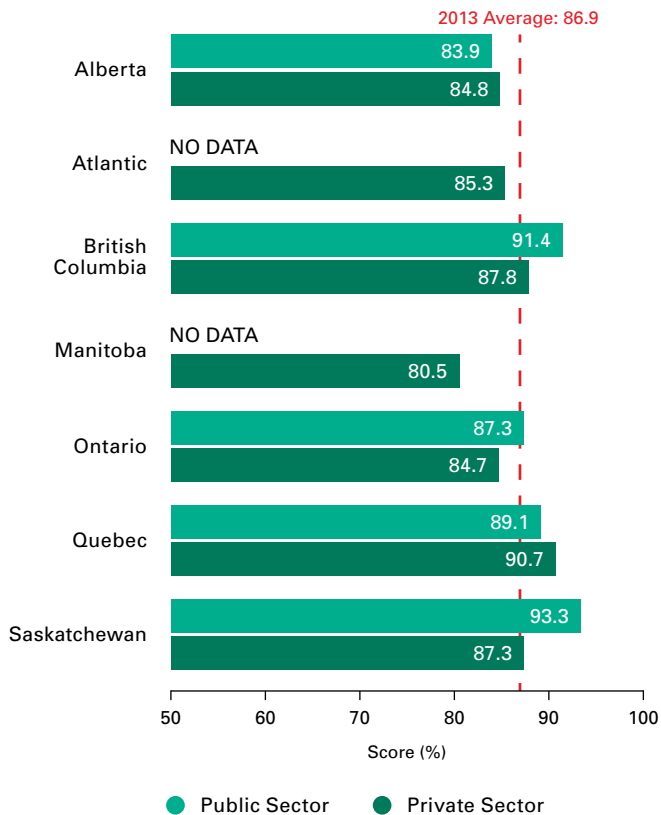
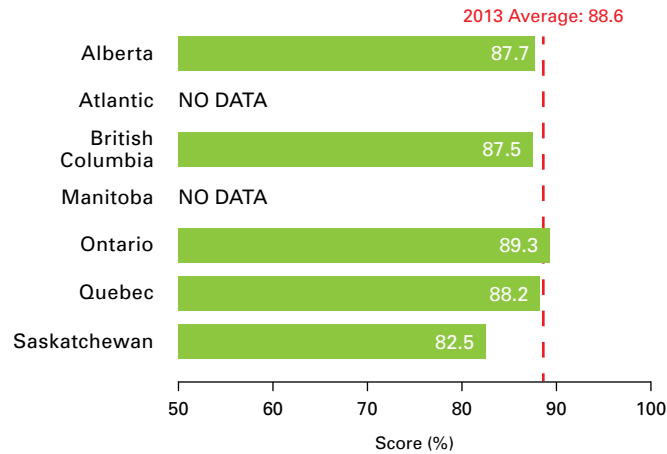
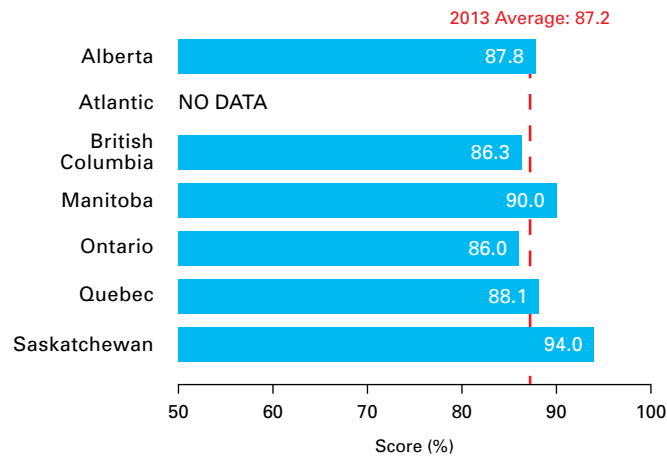


FIGURE 87: AVERAGE EMISSIONS AND EFFLUENTS SCORE BY REGION – LIGHT INDUSTRIAL



444 St Mary Avenue, Winnipeg,
BOMA BEST Level 2 (certified 2013)

FIGURE 88: AVERAGE EMISSIONS AND EFFLUENTS SCORE BY REGION – ENCLOSED SHOPPING CENTRES



Laurier Québec, Quebec,
BOMA BEST Level 3 (certified 2013)

PERFORMANCE REPORT

INDOOR

ENVIRONMENT



Place d'Orleans Shopping Centre, Orleans,
BOMA BEST Level 3 (certified 2013)

This Assessment Section's weighting accounts for 11 – 18% of the total BOMA BEST Score, with the heaviest weight applied to the Office Buildings and MURBs asset classes.

Table 23: BOMA BEST Scoring Weight by Assessment Section

ASSESSMENT SECTION	BUILDING TYPE / ASSET CLASS SCORING WEIGHT				
	OFFICE	MURBS	ENCLOSED SHOPPING CENTRE	OPEN AIR RETAIL	LIGHT INDUSTRIAL
Indoor Environment	18%	18%	13%	11%	11%

Maintaining a good indoor environment requires a comprehensive approach that takes into consideration various aspects of an occupant's health and comfort such as indoor air quality, lighting and noise levels.

10.1 MEASURES IMPACTING INDOOR ENVIRONMENT PERFORMANCE

The 2013 certified buildings data set was analyzed in terms of the BOMA BEST program's Indoor Environment performance metrics to identify the most commonly implemented initiatives, least commonly implemented initiative and the initiatives with the most increased presence in high-performing buildings. BEST Practices have been excluded from consideration since these are required by all buildings. Table 24 summarizes these results

Table 24: Initiatives impacting Indoor Environment Performance Results

INDOOR ENVIRONMENT		AVERAGE SCORE
Most common initiatives:		
1	Cleaning contract requires environmentally preferable cleaning materials	87%
2	Staff trained to implement IAQ program	84%
3	Checklist maintained to control IAQ during renovations and repairs	83%
Least common initiative:		
1	80% or more occupants have outside view from their workstation	38%
Initiatives with the most increased presence in high performing buildings (Level 4 vs Level 2):		
1	80% or more occupants have outside view from their workstation	+51%
2	Permanent carbon dioxide monitoring installed	+48%
3	Lighting levels confirm to IES standards	+24%

* See section 6.1 for guidance on interpreting Table 24.

10.2 AVERAGE INDOOR ENVIRONMENT SCORE (%)

Enclosed Shopping Centres and Open Air Retail achieved the highest scores in the Indoor Environment assessment section (Figure 92). MURBs trail behind with an average score of about 5% below the average for all asset classes.

FIGURE 89: INDOOR ENVIRONMENT SCORES – ALL ASSET CLASSES

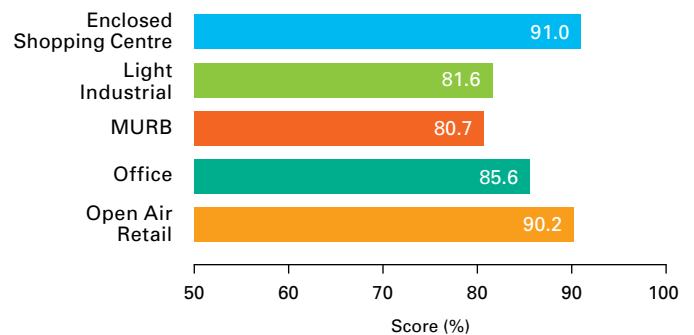
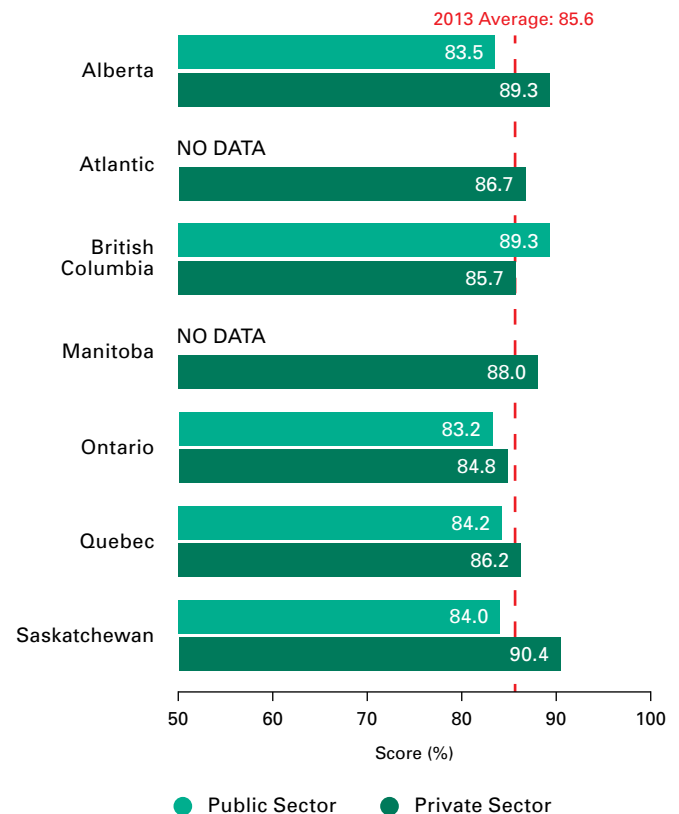


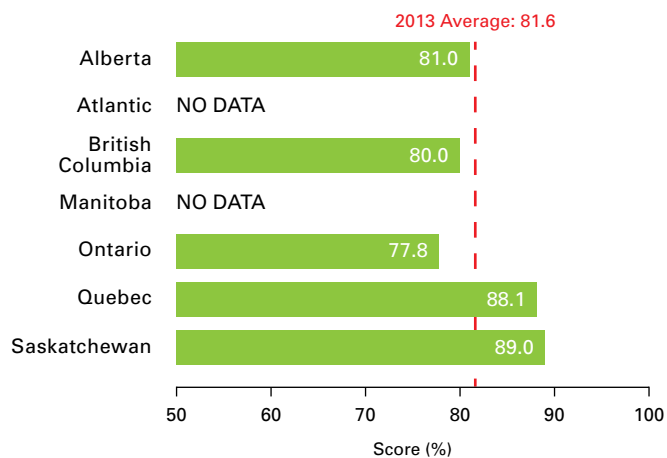
FIGURE 90: INDOOR ENVIRONMENT SCORES BY REGION AND SECTOR – OFFICE BUILDINGS



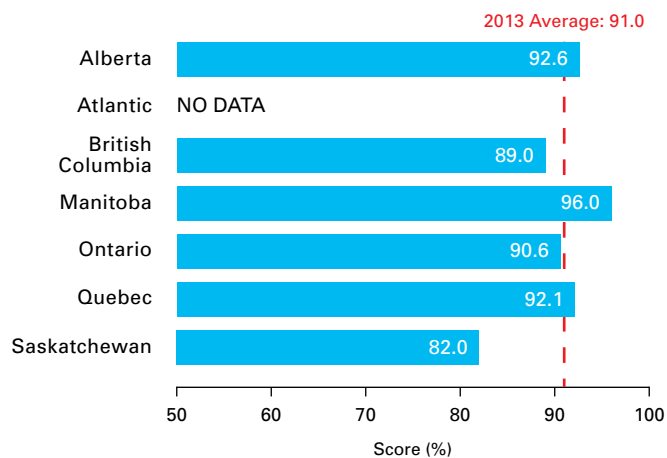


Canmet – Bell's Corners Complex, Building 10, Mining Research,
Ottawa, BOMA BEST Level 2 (Certified 2013)

**FIGURE 91: INDOOR ENVIRONMENT SCORES
BY REGION – LIGHT INDUSTRIAL**



**FIGURE 92: INDOOR ENVIRONMENT SCORES
BY REGION – ENCLOSED SHOPPING CENTRES**



ALBERTA INFRASTRUCTURE

PORTFOLIO MANAGEMENT WITH BOMA BEST FOR IMPROVED RESULTS

Alberta Infrastructure owns and manages a large portfolio of more than 1,600 buildings, more than 21,000,000 ft² in total, comprising of a wide variety of building types. In 2006, BOMA BEST was chosen as the environmental standard on which the Government of Alberta would base its Property Management standards. Currently, 86 government buildings have been certified. While the majority of the certified buildings have been government offices (70), the remaining buildings (16) have consisted of unique, high profile buildings such as Courthouses, Provincial Museums (including a UNESCO World Heritage Site), and Research Facilities that do not fit the available BOMA BEST modules. With so many buildings registered in the program, it is worth examining the value of certifying buildings that do not fit into the categories offered by BOMA BEST.

Energy performance is a good indicator of program effectiveness since it produces a quantifiable number. When energy consumption was examined for Alberta Infrastructure's entire portfolio, it was discovered that BOMA BEST certified buildings consistently outperformed other buildings in the portfolio. From 2009 to 2012, BOMA BEST certified government buildings reduced their energy consumption by 5.8 percent; more than double the reduction observed in the portfolio average of 2.3 percent. With this baseline performance for BOMA BEST buildings identified, Alberta Infrastructure reviewed the energy performance of those certified buildings that did not fit into a BOMA BEST module. During that same period, these buildings reduced their consumption of energy by 9.1 per cent. Reasons for this reduction

could be numerous, but Alberta Infrastructure strongly believes that participating in the BOMA BEST program has resulted in significant improvements in building operations, even in buildings that are not easy to categorize. Aside from regularly scheduled reviews and audits, certifying buildings with BOMA BEST provides Alberta Infrastructure with an excellent management tool with which to examine management practices and building performance in greater detail.

The Calgary Courts Centre, Alberta Infrastructure's most recent certification, was certified as an office building; however it does not fit neatly into the Office category. For example, it has advanced security and surveillance systems as well as the ability to house up to 400 people in holding cells while they await trial or transportation. Even though the Courts Centre was built to the LEED Silver standard, building management was aware that some of these unique features and operations could reduce scores and hurt their chances of achieving a high level of BOMA BEST certification. In the end, the management team found the process of obtaining BOMA BEST certification to be worthwhile. The process produced many suggestions for improving management practices and incorporating new or different technologies that could elevate the operation of the Calgary Courts Centre (e.g. increasing the free cooling capacity to better utilize outdoor air to precool the building). These suggestions have been incorporated into building improvement plans and will be implemented moving forward.



Calgary Courts Centre, Calgary,
BOMA BEST Level 3 (certified 2013)



BOMA BEST certified buildings consistently outperformed other buildings in the portfolio.

PERFORMANCE REPORT

ENVIRONMENTAL MANAGEMENT SYSTEMS



Robson Court, Vancouver,
BOMA BEST Level 4 (certified 2013)

This Assessment Section's weighting accounts for 11 – 17% of the total BOMA BEST Score, with the heaviest weight applied to the Open Air Retail and Light Industrial asset classes.

Table 25: BOMA BEST Scoring Weight by Assessment Section

ASSESSMENT SECTION	BUILDING TYPE / ASSET CLASS SCORING WEIGHT				
	OFFICE	MURBS	ENCLOSED SHOPPING CENTRE	OPEN AIR RETAIL	LIGHT INDUSTRIAL
Environmental Management System	11%	11%	15.50%	17%	17%

The Environmental Management System section assesses how well building management is implementing and documenting its environmental management systems. Such management practices include setting conservation targets, implementing a sustainable purchasing policy, and putting in place an ongoing tenant communication plan which ensures occupants are aware of the building's environmental initiatives as well as opportunities for becoming energy and environmental stewards within the building.

11.1 MEASURES IMPACTING PERFORMANCE THROUGH ENVIRONMENTAL MANAGEMENT SYSTEMS

The 2013 certified buildings data set was analyzed in terms of the BOMA BEST program's Indoor Environment performance metrics to identify the most commonly implemented initiatives, least commonly implemented initiative and the initiatives with the most increased presence in high-performing buildings. BESt Practices have been excluded from consideration since these are required by all buildings. Table 26 summarizes these results.

Table 26: Initiatives impacting Environmental Management Systems Performance Results*

ENVIRONMENTAL MANAGEMENT SYSTEMS		AVERAGE SCORE
Most common initiatives:		
1	Documented emergency response procedure	89%
2	Written environmental policy	88%
3	Written environmental purchasing policy	85%
Least common initiatives:		
1	Tenant satisfaction survey	47%
Initiatives with the most increased presence in high performing buildings (Level 4 Certified vs Level 2):		
1	Tenant satisfaction survey	+45%
2	New leases contain section on energy and environmental responsibilities (Green Lease)	+25%
3	Documented power failure response procedure	+5%

* See section 6.1 for guidance on interpreting Table 26.

11.2 AVERAGE ENVIRONMENTAL MANAGEMENT SYSTEMS SCORE (%)

The range in average Environmental Management Systems scores between the different asset classes is proportionally small (11%) – all buildings score relatively high (above the 85th percentile). Open Air Retail certified buildings trail slightly behind with an average score about 10% below the average.

FIGURE 93: ENVIRONMENTAL MANAGEMENT SYSTEMS SCORES – ALL ASSET CLASSES

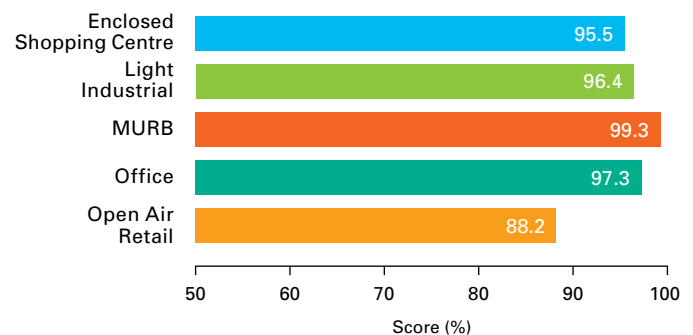
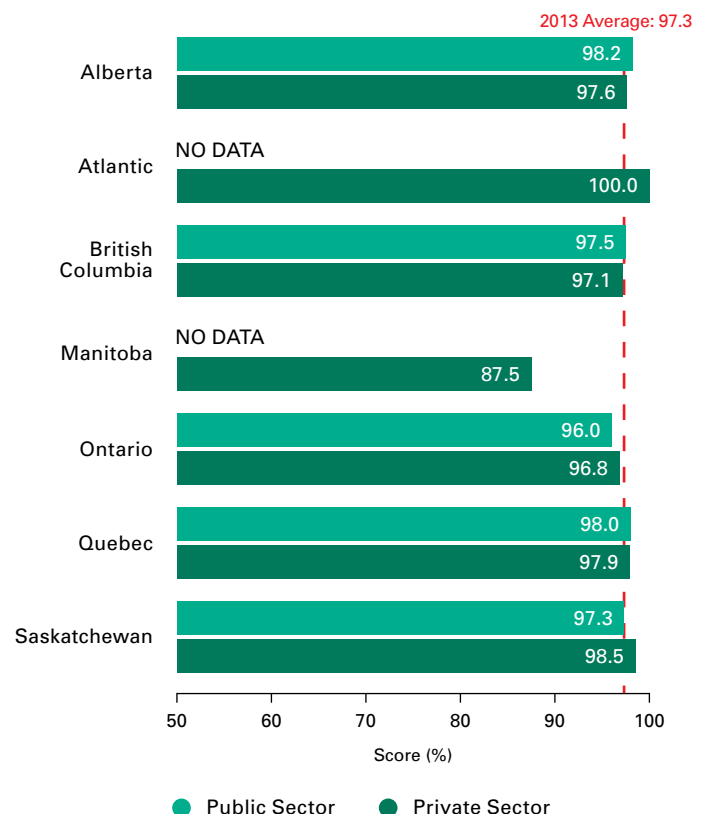


FIGURE 94: AVERAGE ENVIRONMENTAL MANAGEMENT SYSTEMS SCORES BY REGION AND SECTOR– OFFICE BUILDINGS





Place d'Orleans Shopping Centre, Orleans,
BOMA BEST Level 3 (certified 2013)

FIGURE 95: AVERAGE ENVIRONMENTAL MANAGEMENT SYSTEMS SCORES BY REGION – LIGHT INDUSTRIAL

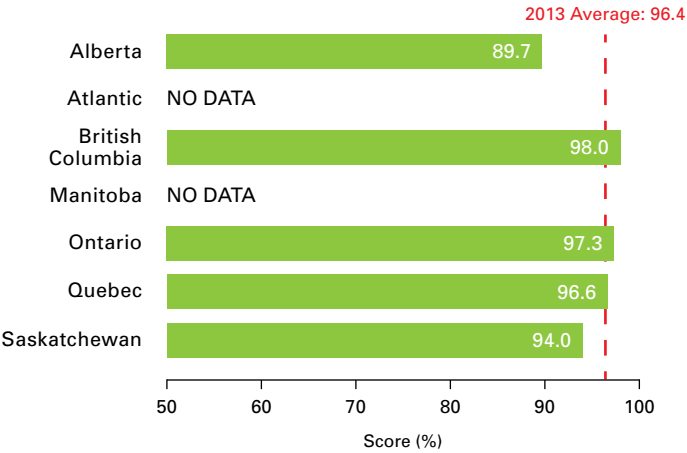
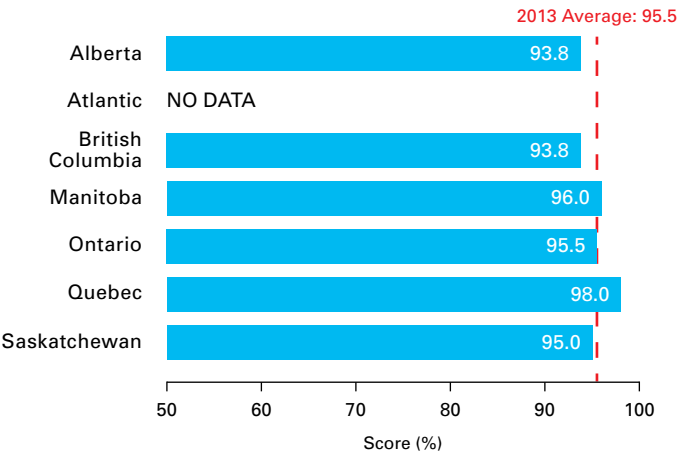


FIGURE 96: AVERAGE ENVIRONMENTAL MANAGEMENT SYSTEMS SCORES BY REGION – ENCLOSED SHOPPING CENTRES



PLACE MONTRÉAL TRUST, MONTREAL



Place Montréal Trust, Montreal, BOMA BEST
Level 4 (certified 2013)

BOMA BEST Level 4 (Overall score: 91%)

AWARENESS CAMPAIGN FOR TENANTS AND CUSTOMERS AT PLACE MONTRÉAL TRUST

Place Montréal Trust is a shopping centre in downtown Montreal, serving over 15 million visitors per year. A selective collection program has been in place at the centre for 7 years. Since its results failed to meet expectations, Place Montréal Trust needed to take action. In 2009, an awareness raising campaign was introduced for tenants and customers of the centre. In 2011, Place Montréal Trust then set up the program: “Écho – chaque action engendre une réaction” (Echo – every action creates a reaction).

The Écho program aims to establish direct links with tenants offering them personalized support in implementing the waste management program and other environmental measures. The details of the Écho program and the environmental measures are included in the tenant’s guide and a guide for waste management is sent to all retailers. By putting up posters about the Écho program throughout the mall, customers are informed of the environmental measures in place. News and statistics on the Écho program are also posted on the Place Montréal Trust website, Facebook page and Twitter account.

When the program was introduced, an Écho ambassador was assigned to be responsible for all environmental activities and programs at Place Montréal Trust. The Écho ambassador meets with tenants on a weekly basis to answer any questions or requests about environmental practices and may be contacted by telephone at any time for further information.

Many tenants take part in the shopping centre’s collection efforts: some shops collect cell phones and alkaline batteries, others collect glasses or shoes. Furthermore, Place Montréal Trust takes part in Earth Day every year.

To avoid contaminating the waste collected, the maintenance staff was trained in sorting the contents of the recycling bags. Organic waste collection was added in February 2013.

In 2013, a survey distributed to tenants by the Écho ambassador on their level of satisfaction with the work environment and the environmental measures implemented by Place Montréal Trust recorded a participation rate of 77%. This survey provided tips for improving the environmental program, which will be taken into consideration for 2014. Place Montréal Trust plans to survey retailers every two years.

As a result of these measures, Place Montréal Trust was certified BOMA BEST Level 4, which is a major industry achievement. The waste diversion rate rose from 50 to 70% between 2011 and 2013, representing a significant 20% increase.

A personal and professional approach is without doubt the key to achieving a high participation rate and increased cooperation from tenants. The Écho ambassador is proud to represent the environmental activities of Place Montréal Trust, and additional efforts to sort waste have definitely produced conclusive results.



A personal and professional approach is without doubt the key to achieving a high participation rate and increased cooperation from tenants.



Écho recycling bin

12 CONCLUSION

The 2014 BOMA BEST Energy and Environment Report demonstrates that buildings participating in the program over several recertification cycles achieve higher scores than at baseline.

Program recommendations provide building owners and managers with measurable data useful for internal benchmarking and for informing future initiatives. However, while scores increase and consumption intensities decrease every year, the rate of improvement of Canada's existing building stock remains slow overall, with comparatively few buildings achieving the higher levels of performance (Level 4). It is BOMA Canada's hope that the case studies featured in this year's report, as well as those in previous reports, will help inspire and motivate building owners and managers to continue to persevere, seeking continuous improvement of their building's performance year after year.

In order to reach these higher levels of performance it is critically important to understand that no single variable can be effective in isolation. In the case of energy, installing new technologies will likely only lead to a reduction in energy demand if it is also implemented in conjunction with effective

management practices and tenant engagement strategies. This message is consistent with industry studies that reveal that relying only on automated energy efficient technologies for achieving energy reductions may in fact be a leading cause of energy inefficiencies.

BOMA BEST building managers and operators are especially consistent in their implementation of management practices surrounding environmental management systems, emissions and effluents, and the indoor environment.

Thanks to the practices listed above becoming solidly established across the BOMA BEST sample, Canadian existing buildings are on their way to achieving reductions in environmental impacts and operational costs while improving building performance.

BOMA Canada and all Local BOMA Associations would like to congratulate members for their commitment to improving Canada's existing building stock.

13 METHODOLOGY

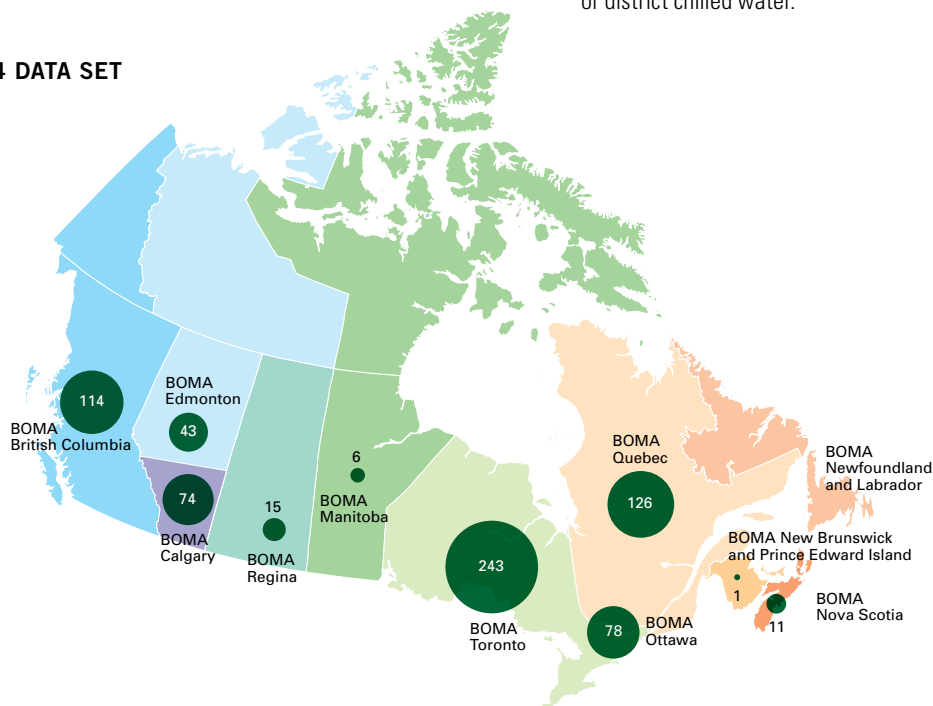
- The study includes combined data from both BOMA BEST Versions 1 and 2. Though there is some difference in reporting between the two versions, the fields used to inform this report were shared between the two versions.
- Regions were grouped in the following way:

BBEER 2014 Data Set (Level 2-4)

REGIONS	BOMA LOCAL & NUMBER OF BUILDINGS
Alberta	BOMA Calgary – 41 certified buildings BOMA Edmonton – 24 certified buildings
Atlantic	BOMA New Brunswick & PEI – 1 certified building BOMA Nova Scotia – 2 certified buildings BOMA Newfoundland – 0 certified buildings
British Columbia	BOMA British Columbia – 65 certified buildings
Manitoba	BOMA Manitoba – 4 certified buildings
Ontario	BOMA Toronto – 110 certified buildings BOMA Ottawa – 50 certified buildings
Quebec	BOMA Quebec – 89 certified buildings
Saskatchewan	BOMA Regina – 14 certified buildings

- From Section 5 onwards, all Level 1 buildings were excluded from the performance report since BEST Practices/Level 1 certification does not require that the detailed questionnaire be completed. As such, Energy Use Intensity (EUI), Water Use Intensity (WUI), and BOMA BEST scores can only be calculated for buildings certified to Level 2 and above.
- The BOMA BEST questionnaire does not include a field to identify to which sector the property belongs. Public/Private sectors were determined based on the name of the owner.
- Climate Zones were determined by cross-referencing the city name with a table created from NRCAN's Energy Star climate zones⁷.
- Entries with no EUI data or a value of zero were excluded from the EUI analysis.
- Statistical outliers in the dataset were excluded: EUI values were considered to be outliers if greater than 200 ekWh/ft²/yr or less than 10 ekWh/ft²/yr).
- In calculating the Waste Diversion Rate, the values of N/A and 0 for "no data" are treated as "unknown".
- In all tables, values of N/A were excluded from the dataset. This may lead to some variability in the sample size. For example, the reporting sample for high efficiency chillers had 189 reported cases of "N/A" since 189 buildings in the sample set cooled their buildings with a means other than chillers, such as heat pumps or district chilled water.

BBEER 2014 DATA SET



⁷ NRCAN. *ENERGY STAR® Qualified Windows, Doors & Skylights*. 2010. Retrieved from [http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/pdf/energystar/Windows-Doors-and-Skylights-factsheet-eng\(1\).pdf](http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/pdf/energystar/Windows-Doors-and-Skylights-factsheet-eng(1).pdf)

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BBER: BOMA BESt Energy and Environment Report

BOMA: Building Owners and Managers Association

BOMA BESt: BOMA Building Environmental Standard

CO₂: Carbon Dioxide

ekWh/ft²/yr: Equivalent kilowatt hour per square foot per year

EEF: Energy Efficiency Features

EMS: Energy Management System

EUI: Energy Use Intensity

GJ/m²/yr: Gigajoules per square metre per year

HVAC: Heating, Ventilation, and Air-Conditioning

IAQ: Indoor Air Quality

IC&I: Industrial, Commercial and Institutional

LPF: Litres per Flush

LPM: Liters per Minute

m³/m²: Metre cubed by square metre

MSDS: Material Safety Data Sheets

MT: Metric Tonnes

MURB: Multi-Unit Residential Building

NO_x: Nitrogen Oxide

NRCan: Natural Resources Canada

ODS: Ozone Depleting Substances

OH&S: Occupational Health and Safety

WHMIS: Workplace Hazardous Materials Information System

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