

Building on Sustainability

2021 National Green Building Report



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вома везт Sustainable Buildings

BOMA BEST™ Sustainable Buildings is North America's most widely used environmental assessment and certification program.

It recognizes excellence in energy and environmental management and performance in the commercial real estate industry.

> Building Photo: 95 St. Clair Avenue West Managed by Colliers International BOMA BEST Platinum





Starting September 1st, 2019, for every building certified or verified under BOMA BEST Sustainable Buildings, we planted 25 trees. Our goal is for our BOMA community to collectively plant at least 20,000 trees per year as they certify and recertify under BOMA BEST Sustainable Buildings.



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List of AcronymsBOMA: Building Owners and Managers AssociationBOMA BEST: BOMA Building Environmental StandardsEUI: Energy Use IntensityekWh/ft²/yr: Equivalent kilowatt-hour per square foot per yearWUI: Water Use Intensitym³/m²/yr: Cubic metre per square metre per yearkgC02e/ft²/yr: Equivalent kilogram C02 per square foot per yearMURB: Multi-Unit Residential BuildingNGBR: National Green Building ReportP.E.I.: Prince Edward Island



Sustainability across Canada— The BOMA BEST Impact



We analyzed the performance of

747 BUILDINGS

certified between April 1, 2019 and March 31, 2020, 462 of which achieved a Bronze level or higher.

165,000,000 ft²

Certified Space

287 Office

Buildings Certified

337 Light Industrial/ Open Air

Buildings Certified

33 Shopping Centre

Buildings Certified

55 Universal

Buildings Certified

35 Health Care/MURB

Buildings Certified



The Results Speak for Themselves



BOMA BEST Office Buildings saved enough energy to power over **17,000 HOMES**

Equivalent to saving¹:

ENERGY

• 8.1 ekWh/ft²/yr •\$0.64 per square foot in energy costs²

Energy Use Intensity is at a Record Low

The national average office EUI decreased 17% from 2018. Only about 2-7% is due to the milder winter conditions in major Canadian cities. BOMA BEST Buildings are implementing more energy related initiatives such as energy control strategies to help them save on energy.

Office Buildings Reduce Energy by 25%

BOMA BEST Office buildings have reduced their energy use by 25% since 2008. They now average 24.7 ekWh/ft²/yr. Which is 3% lower compared to the national average³. Of this, approximately







Energy Reductions Impacts the Bottom Line

Gold certified BOMA BEST buildings save on average 50,000\$ a year on energy costs⁵

Did you know?

An Innovative Sea Water Heat Pump Can Save 35% in Energy Consumption

351 Water, located within steps of the St. John's Harbour, installed a harbour coupled heat pump system unique to this location. It was designed to maximize on energy efficiency while being economically feasible for the overall construction project. The amount of energy required from the grid is reduced by 36% since it is instead "freely" obtained from the ocean water. This reduces operating costs, lowers energy bills for tenants and reduces the building's environmental impact.



> Building Photo: III Fifty One 351 Water Street, St. John's, NL. Managed by East Port Properties Limited. BOMA BEST Platinum

BOMA BEST Office buildings prevented

CARBON



27,000 tonnes

of GHG emissions

Equivalent to

- taking 8,300 cars off the road for one year
- planting 900,000 trees⁶





Buildings on Low-Carbon Electric Grids Have Opportunities to Save on Heating

British Columbia, Manitoba, Ontario, Quebec

In these regions, there are opportunities to reduce heating consumption by installing:

🜢 Efficient Heating Systems 📲 Efficient Windows 🛛 😂

C Heat Recovery

Did you know?

BOMA BEST Office Buildings in Manitoba Lead in Heat Recovery Installations

- 50% of certified buildings in Manitoba
- 14% of certified buildings in Ontario
- 5% of certified buildings in British Columbia

Buildings on High-Carbon Electric Grids Have Opportunities to Save on Electricity

Alberta, Saskatchewan, Nova Scotia

In these regions, there are opportunities to reduce electricity by installing:

3 Variable Speed Drives O Lighting Control 9 LED Common Areas

Did you know?

BOMA BEST Office Buildings in Alberta Lead in Variable Speed Drive Installations

- 77% of certified building in Alberta
- 45% of certified buildings in Saskatchewan
- 33% of certified buildings in Nova Scotia

BOMA BEST Office buildings saved enough water to fill

3 BILLION WATER BOTTLES

Equivalent to saving¹:

WATER

• 0.41 m³/m²/yr • • \$0.09/ft²/yr in water costs⁷



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Office Buildings Reduce Water by 36%

BOMA BEST Office buildings have reduced their water use by 36% since 2008. They now average 0.72 $m^3/m^2/year$ – 27% lower than the REALPAC National Average.





Lower Levels of Certification Have an Opportunity to Take Advantage of High-Efficient Water Fixtures





High-Efficiency Urinals⁹

84% 45% Platinum Other Levels



High-Efficiency Lavatory or Kitchen Faucets¹⁰

96% 47% Platinum Other Levels

) Did you know?

Installing High Efficiency Toilets Can Save Nearly 4.5 Million Litres of Water and Nearly

\$10,000 per Year ¹¹

Taking Advantage of Water Efficient Initiatives Impact the Bottom Line

A Platinum Certified BOMA BEST Building saves on average \$260,000 per year on water costs.

New Trends are Emerging in Water Use Intensity

Reported water use intensity at office buildings has increased for three years in a row, an increase from $0.60 \text{ m}^3/\text{m}^2/\text{yr}$ in 2017 to $0.72 \text{ m}^3/\text{m}^2/\text{yr}$ in 2019. It may be caused by a higher volume of low-performance properties reporting water use to BOMA BEST for the first time as they begin their water efficiency journey. They can now begin to make changes to improve water efficiency.

26%

Ŵ

of buildings achieved a diversion rate of 70% or higher

ī **51%**

of buildings achieved a capture rate of 70% or higher



of buildings implemented 6 or more diversion practices

89% of BOMA BEST Office Buildings are taking advantage of diversion programs.

These programs include: ballasts and fluorescent tubes, electronics and batteries.





Did you know?

Diversion Opportunities exist for Coffee Pods, Merchandise Bulk Packaging and Grease/Cooking Oil

Now More Than Ever Recycling Diversion Programs Matter

Over half of office buildings reported capture rates of 70% or higher, demonstrating the effectiveness of the existing diversion programs at these buildings. When the number of available waste management programs increases, so do property waste diversion rates. Buildings reporting diversion rates of 90% implemented 13 specialty diversion programs.



Buildings Have Found New Creative Ways to Recycle

Hilton Lac-Leamy is leading by example through their environmental operation strategies and innovative sustainability practices. This 349-room hotel, complete with five restaurants, pools and spas, and casino have implemented a creative waste reuse initiative. Sculptor Marc-Antonie Côté turns metal parts from old casino machines into unique art pieces installed in every hotel room.

Circular Economy Strategies Support Better Waste Management

Applying circular economy principles to management and operational practices can help building managers drastically reduce waste, create a healthier environment, and ensure that corporate sustainability objectives are met. Stay tuned for BOMA Canada's new resources and strategies for advancing the circular economy in Canada!





BOMA BEST SNAPSHOT BRITISH COLUMBIA

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Did you know?

British Columbia has seen an increase of 80% in BOMA BEST certified buildings since 2018. This year also saw a 30% reduction in water use intensity at BOMA BEST certified office properties in the province.

119 26,000,000 WATER ENERGY **Total Certified Total Certified** Buildings Square Footage 30% 23% decrease in annual water increase in annual energy 65 27 use intensity¹³ use intensity¹³ Office Light Industrial & AVERAGING AVERAGING **Open-Air Retail 0.81** m³/m²/yr 23.4 ekWh/ft²/yr 3 13 Health Care Shopping Centres 4 7 Universal Multi-Unit Residential ASTE ARBON 5 38 AVERAGING in 5 Platinum Gold 1 kgCO₂e/ft²/yr buildings achieved a diversion rate 34 6 of 70% or higher Silver Bronze 36 Certified

BOMA BEST SNAPSHOT

(?) Did you know?

The total number of BOMA BEST certified properties in Alberta increased by 25% compared to last year.

ENERGY	WATER	136 Total Certified Buildings	24,000,000 Total Certified Square Footage
decrease in annual energy use intensity ¹³ AVERAGING	decrease in annual water use intensity ¹³ AVERAGING	35 Office	83 Light Industrial & Open-Air Retail
23.5 ekWh/ft²/yr	0_5 m³/m²/yr	1 Health Care	3 Shopping Centres
CARBON	WASTE	10 Universal	4 Multi-Unit Residential
INSUFFICIENT DATA	1 in 4 buildings achieved a diversion rate	3 Platinum	16 Gold
	of 70% or higher	Silver 64 Certified	Bronze

BOMA BEST SNAPSHOT PRAIRIES

(?) Did you know?

The total number of certified properties nearly doubled this year. Part of this success is due to an upsurge in light industrial and open-air retail property certifications.

Another point of Prairie pride is a 59% decrease in this year's average energy use intensity, despite a colder winter.

ENERGY 59%	WATER 136%	42 Total Certified Buildings	4,000,000 Total Certified Square Footage
decrease in annual energy use intensity ¹³ AVERAGING	increase in annual water use intensity ¹³ AVERAGING	17 Office	19 Light Industrial & Open-Air Retail
30_2 ekWh/ft²/yr	0.59 m³/m²/yr	O Health Care	2 Shopping Centres
CARBON	WASTE	4 Universal 0	0 Multi-Unit Residential 5
INSUFFICIENT DATA	6% of buildings achieved a diversion rate of 70% or higher	Platinum 27 Silver	Gold 7 Bronze
		3 Certified	

BOMA BEST SNAPSHOT

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Did you know?

Ontario saw a 25% increase in the total number of BOMA BEST certified properties this year. In particular, the number of certified light industry and open air retail properties was over three times the number in 2018.

ERERGY 10% decrease in annual energy use intensity¹³ AVERAGING 24.4 ekWh/ft²/yr

CARBON

AVERAGING

1.6 kgCO₂e/ft²/yr 30% decrease in annual GHG emissions¹³



decrease in annual water use intensity¹³

AVERAGING

0.76 m³/m²/yr



28% of buildings achieved a diversion rate of 70% or higher¹³

278	63,000,000
Total Certified	Total Certified
Buildings	Square Footage
101	147
Office	Light Industrial &
	Open-Air Retail
1	10
Health Care	Shopping Centres
11	8
Universal	Multi-Unit Residential
19	52
Platinum	Gold
<i>LI</i>	11
Cilver	
Silver	BIONZE
132	
Cortified	

BOMA BEST SNAPSHOT

(?)

Did you know?

Quebec's BOMA BEST Certified properties doubled this year.



6% increase in annual energy use intensity¹³

AVERAGING





250% increase in annual GHG emissions¹³

AVERAGING

0.7 kgC0₂e/ft²/yr

\bigcirc			
W	A	ΓE	R

3% decrease in annual water use intensity¹³

AVERAGING

0.64 m³/m²/yr



8% of buildings achieved a diversion rate of 70% or higher

124	40,000,000
Total Certified	Total Certified
Buildings	Square Footage
52 Office	52 Light Industrial & Open-Air Retail
3	4.
Health Care	Shopping Centres
10	3
Universal	Multi-Unit Residential
2	23
Platinum	Gold
41	21
Silver	Bronze
37 Certified	

BOMA BEST SNAPSHOT ATLANTIC CANADA

(?) Did you know?

The number of BOMA BEST certified properties in Atlantic Canada this year was seven times the number in 2018. Due to an increase in office and universal property certifications, regional water and energy intensities can be reported this year for the first time.

AVERAGING	EXACTER AVERAGING	48 Total Certified Buildings	7,000,000 Total Certified Square Footage
29.7 ekWh/ft²/yr	0_45 m³/m²/yr	17 Office	9 Light Industrial & Open-Air Retail
		O Health Care	1 Shopping Centres
BBBBBBBBBBBBB		16 Universal	5 Multi-Unit Residential
INSUFFICIENT DATA	1 in 4	3 Platinum	11 Gold
	buildings achieved a diversion rate of 70% or higher	20 Silver	1 Bronze
		13 Certified	

APPENDIX

Figure 1 Number of Active

Certifications



Table 2

Number of 2019 Certifications by Property Type and Level

	PLATINUM	GOLD	SILVER	BRONZE	CERTIFIED	TOTAL
Office	19	103	121	12	32	287
Universal	5	20	24	2	4	55
Enclosed Shopping Centre	7	13	8	1	4	33
Light Industrial	0	1	46	23	142	212
Open Air Retail	1	4	28	13	79	125
Multi-Unit Residential Building	0	2	4	0	21	27
Health Care	0	2	3	0	3	8
Grand Total	32	145	234	51	285	747



Program at a Glance

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Table 3

Number of Buildings Included in the Performance Analysis, by Region and Property Type

REGION	OFFICE	UNIVERSAL	ENCLOSED SHOPPING CENTRE	LIGHT INDUSTRIAL & OPEN AIR RETAIL	HEALTH CARE	MULIT-UNIT RESIDENTIAL BUILDING	GRAND TOTAL
British Columbia	61	4	12	4	2	0	83
Alberta	30	9	2	28	1	2	72
Saskatchewan	11	3	1	0	0	0	15
Manitoba	5	0	1	18	0	0	24
Ontario	82	10	9	41	0	4	146
Quebec	49	9	3	24	2	0	87
Nova Scotia, New Brunswick & P.E.I.	15	16	1	1	0	0	33
Newfoundland & Labrador	2	0	0	0	0	0	2
The Territories	0	0	0	0	0	0	0
Grand Total	255	51	29	116	5	6	462

Figure 2

Distribution of Certification Level Achieved for Buildings Included in Performance Analysis







Figure 3

Annual Energy Use Intensity – Office

Figure 4

Energy Use Intensity by Certification Level – Office



■ Platinum ■ Gold ■ Silver

Figure 5

Average Greenhouse Gas Intensity by Certification Level for All Regions – Office



AVERAGE GREENHOUSE GAS INTENSITY (kgCO₂e/ft²)

Water



Figure 8

Annual Water Use Intensity – Office

Figure 9

Water Use Intensity by Certification Level - Office buildings



Waste

Figure 10

Waste Diversion Rates by Number of Buildings per Region – Office



Figure 11

Waste Capture Rates by Number of Buildings per Certification Level – Office



METHODOLOGY

Analysis Period and General Notes

The 2021 National Green Building Report (NGBR) includes certifications awarded between April 1, 2019 and March 31, 2020. For ease of reference, buildings analyzed in this report are simply referred to as the "2019" data set.

All buildings included in this report completed the BOMA BEST 3.0 assessment.

Light Industrial and Open Air Retail property types are reported as a combined property type; therefore, their reported performance is an average of all Light Industrial and Open Air Retail buildings. The combined property type is noted as Light Industrial / Open Air Retail throughout the report.

Unless specifically stated, changes to percentage scores discussed in this report are absolute, and not relative. For example, a change in score of 78% to 80% would be calculated as "80% minus 78%" and reported as +2%. This is consistent with reporting in previous years.

The percentages in some charts may not add up to 100% due to rounding.

Analysis Inclusion Requirements

The "Active Certifications" section includes all 747 buildings certified within the period of April 1, 2019, to March 31, 2020.

The detailed performance analysis "Scores & Performance" and "Performance by Property Type" sections include only the 458 buildings that met all of the following criteria:

- 1. Certified between April 1, 2019 and March 31, 2020
- 2. Achieved a score of 20% or higher (Bronze, Silver, Gold, Platinum, but not Certified)
- 3. Were verified in the current year (only 20% of buildings in the Portfolio Stream are verified each year)

At a regional level for a given property type, if fewer than 5 buildings achieved Bronze or higher level of certification, performance results were not reported and "insufficient data" is indicated when possible.

Number of Buildings Included in the Performance Analysis, by Level and Property Type

	PLATINUM	GOLD	SILVER	BRONZE	TOTAL
Office	19	103	125	12	259
Universal	5	20	27	2	54
Enclosed Shopping Centre	7	13	8	1	29
Light Industrial & Open Air Retail	1	5	74	36	116
Grand Total	32	141	234	51	458

Performance Analysis

Energy use intensity (EUI) results consider 214 of the 259 office buildings that achieved Bronze and higher (Certified level buildings are excluded), filtered to meet the following criteria:

- 1. Exclude entries with no EUI data, or no entered value
- 2. Exclude statistical outliers: EUI values greater than 200 ekWh/ft²/yr or lower than 10 ekWh/ft²/yr

Water use intensity (WUI) results consider 197 of the 259 office buildings that achieved Bronze and higher (Certified level buildings are excluded), filtered to meet the following criteria:

- 1. Exclude entries with no WUI data, or no entered value
- 2. Exclude statistical outliers: WUI values greater than 5 m³/m²/yr or lower than 0.1 m³/m²/yr
- 3. Exclude entries with inconsistent WUI value and WUI range

Greenhouse Gas intensity (GHGI) results consider 58 of the 259 office buildings that achieved Bronze and higher (Certified level buildings are excluded), filtered to meet the following criteria:

- 1. Buildings with reasonable EUI (10 200 $ekWh/ft^2/yr$)
- 2. The difference between BOMA EUI and ENERGY STAR EUI is within +/- 15%
- 3. Weather Normalized Site Natural Gas Intensity (ekWh/ft²) and Electricity Intensity (kWh/ft²) are available

Greenhouse gas intensity data was calculated using electricity and natural gas use intensity reported on ENERGY STAR Portfolio Manager, converted with emission factors.

Endnotes

- ¹ Reduction of BOMA BEST Office buildings between 2008 and 2019
- ² Reduction of BOMA BEST Office Buildings between 2008 and 2019
- ³ SCIEU 2014
- ⁴ Average breakdown of electricity and natural gas consumption is estimated using ENERGY STAR Portfolio Manager data
- ⁵ 250,000 ft² Office Building compared to SCIEU 2014
- ⁶ Reduction of BOMA BEST Office Buildings between 2008 and 2019

- ⁷ Reduction of BOMA BEST Office Buildings between 2008 and 2019
- ⁸ 4.8 L per flush or less
- ⁹ 1.9 L per flush or less
- ¹⁰ 5.7 L per flush or less
- ¹¹ For a 10-story office building with 1,000 occupants EPA, 2018
- $^{\rm 12}$ 250,000 ft $^{\rm 2}$ Office Building compared to the REALPAC 2012 National Average
- ¹³ Compared to 2018



Yorkdale Shopping Centre 3401 Dufferin Street, Toronto, ON. Managed by Oxford Properties Group. BOMA BEST Platinum

This report was prepared with assistance from Purpose Building Inc.



With Thanks to our Generous Sponsors:



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