

EDMONTON'S YEAR 6 BUILDING ENERGY BENCHMARKING REPORT. □

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**CHANGE
BUILDINGS
FOR CLIMATE**

Edmonton

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The City's Building Energy Benchmarking program continues to grow every year, with over 1,000 buildings participating in the program in year six. Edmonton's business community has embraced a climate leadership role and measuring the energy performance of buildings is an acknowledgement that we need to act now in order to make an impactful change in pursuit of our climate goals.

Commercial and institutional buildings still account for more than 20 percent of Edmonton's emissions. With last year's City Council approval of the updated Energy Transition Strategy and Action Plan, Edmonton is poised to be a leader in reducing GHG emissions with the ambitious target to become net zero by 2050. That can only happen with your help. Empowerment of Edmonton businesses starts with Benchmarking and understanding where we are at today, so we know how far we have to go to reach net zero. Buildings that have participated in all six years of the Benchmarking program have seen an average decrease in energy use of ~20%; a positive step in the right direction.

As we begin a new year of the Building Energy Benchmarking program, we continue to see benchmarking programs grow across the country with new exciting initiatives aimed at reducing building energy use emerging. Edmonton is a leader in benchmarking and will continue to lead the way to a clean energy future.

On behalf of the City of Edmonton, thank you for your participation in Edmonton's energy transition!

Councillor Ashley Salvador
Ward Métis

Councillor Michael Janz
Ward papastew

Council Advisors, Energy Transition and Climate Resilience Committee



Congratulations on year six of the Edmonton's Building Energy Benchmarking Program. As evidenced by another successful year of this important program, benchmarking continues to be an important method for collectively and individually improving building energy efficiency and reducing greenhouse gas emissions from the built environment.

BOMA Edmonton is a founding partner of this program because it is important for building owners and managers to fully understand their buildings' operations and make moves towards better performance. Doing so positively impacts one's business, the community, and the environment. Information is powerful to have, and the Benchmarking Program provides building data and context, as well as technical support, customized reports, and access to financial incentives to offset costs of retrofits.

We encourage commercial properties to join Edmonton's Building Energy Benchmarking Program. We also encourage them to sign their buildings up for BOMA BEST, a complementary program that significantly cuts operations costs – by 35% on average – and contributes emissions reductions that policymakers, investors, and tenants continue to seek. Since 2005, BOMA BEST is North America's largest environmental assessment and certification program for existing buildings. It is a unique, voluntary program designed by industry for industry; it provides owners and managers with a consistent framework for assessing the environmental performance and management of existing buildings of all sizes and types.

BOMA BEST has evolved into a series of three programs that are both certifications and building management tools. They encourage smart and sustainable solutions for existing buildings, promoting health, efficiency, cost-effectiveness, and low-carbon performance. Its certification represents a globally recognized symbol of sustainability achievement and is driving change. Did you know that green-certified buildings have a resale value 13.8% higher than non-certified buildings and have 35% lower vacancy rates? Did you know that the City of Edmonton's building portfolio is BOMA BEST certified?

We thank the City of Edmonton for its contributions to making buildings better, and we especially thank those owners and managers who are doing the work to get to the next level. You're on the right track and we're here to help.

Sincerely,

A handwritten signature in cursive script that reads "Lisa Baroldi".

Lisa Baroldi
President & CEO
BOMA Edmonton



PROGRAM OVERVIEW

PROGRAM OVERVIEW

BUILDING ENERGY BENCHMARKING IN EDMONTON YEAR 6

The City of Edmonton's Building Energy Benchmarking program has helped to lay the foundation for Edmonton's transition to a low-carbon, sustainable energy future by making building energy performance information accessible to interested stakeholders. We are in the sixth year of the program, with 1014 participating buildings and are positioned to make energy transition a reality. It should be noted that the Year 6 buildings have been benchmarked on their annual (January 1 to December 31) energy use for the year 2021.

WHAT IS BUILDING ENERGY BENCHMARKING?

The process of comparing a building's energy and emissions performance to similar buildings, and to itself, over time.

MOVING FORWARD

In April of 2021, Edmonton's City Council approved [Edmonton's Community Energy Transition Strategy and Action Plan](#). The update of *Edmonton's Community Energy Transition* is an opportunity to re-imagine our city and represents a once in a life-time opportunity to create a new era of economic growth in the region. This will require transformational change including the emergence of more energy efficient commercial buildings.

A first step in creating lasting change is knowing how energy efficient our buildings currently are, and that begins with benchmarking.



Terwillegar Community Recreation Centre



PARTICIPANT OVERVIEW

PARTICIPANT OVERVIEW

HIGHLIGHTS

2021 saw some return to offices and changes to building occupancy. As such, we see changes in building energy use. Some work from home continued but we saw an increase in the traffic to commercial spaces. The detailed analysis and understanding of this data will likely take several years as it will be difficult to attribute energy use changes to one specific thing. However, this does present an opportunity to understand how occupancy changes can alter how we use energy in our buildings.

Please keep this in mind as you look at the data for this year. Our analysis reflects the data that was submitted and we know that, over time, trends may begin to emerge that will help us understand the data we see today.

Year 6 of the Building Energy Benchmarking (BEB) Program was a success by various measures:

- **Number of Properties/Buildings:** Once again, the BEB program saw a significant increase in participation over previous years. The Year 6 dataset includes 468 properties (representing 1014 individual buildings), an increase of 12% from Year 5 (419 properties representing 704 buildings).

- **Diversity of Properties:** Year 6 properties represented different end-uses such as offices, multifamily residential, libraries, retail stores, and many more, which were then grouped into 25 unique property categories for comparison.
- **Sample Size of Categories:** As participation continues to grow, the peer comparison groups for each property category become more robust. The Multifamily Residential category increased from 101 properties in Year 5 to 139 properties in Year 6.
- **Retention:** In the program, 75% of properties that participated in Year 1 continued to participate in Year 6, while 71% of Year 5 properties returned to participate in Year 6.

Participation Summary: Years 1 to 6 (2016 to 2021)

	Year 1 [2016]	Year 2 [2017]	Year 3 [2018]	Year 4 [2019]	Year 5 [2020]	Year 6 [2021]
Properties	83	159	249	328	419	468
Buildings	99	184	278	424	704	1,014
Primary Property Uses	20	30	37	40	41	39
Floor Area (sq m)	2,017,000	2,763,000	3,451,000	4,750,000	5,899,754	7,870,000
Organizations	21	30	36	56	73	81

PARTICIPANTS

- Year 6 included 468 properties (representing 1014 individual buildings) and 25 unique comparison categories.
- The largest category was Multifamily Residential buildings (139 properties), representing 1,865,615 square metres of gross floor area.
- The Office category was the second largest category with 54 properties, representing 1,049,068 square metres.
- Year 6 properties represent a combined gross floor area of 7,869,390 square metres.

Participating Properties by Category

Categories	# of Properties	# of Buildings	Sum of Gross Floor Area (m ²)
Adult Education	14	32	397,957
Distribution Center	7	10	149,215
Fire Station	32	32	36,791
Fitness Center/Health Club/Gym	11	11	164,707
Heated Swimming Pool	6	6	3,006
Ice/Curling Rink	13	13	44,250
Laboratory	5	5	68,156
Library	10	10	22,341
Manufacturing/Industrial Plant	8	9	38,536
Mixed Use Property	3	3	32,316
Multifamily Housing	139	643	1,865,615
Non-Refrigerated Warehouse	15	18	44,305
Office	54	59	1,049,068
Other	16	16	183,221

Categories	# of Properties	# of Buildings	Sum of Gross Floor Area (m ²)
Other - Education	1	1	4,427
Other - Entertainment/Public Assembly	8	9	195,681
Other - Public Services	13	14	190,081
Other - Recreation	7	8	2,704,600
Other - Services	5	5	7,329
Parking	5	5	203,722
Police Station	8	8	53,535
Repair Services (Vehicle, Shoe, Locksmith, etc.)	24	24	227,525
Retail Store	14	14	20,864
Social/Meeting Hall	39	47	112,330
Transportation Terminal/Station	11	12	49,812
Grand Total	468	1,014	7,869,390

PARTICIPANT OVERVIEW

ENERGY USE

MEDIAN ENERGY USE INTENSITY (EUI)

Median EUI reflects the mid-point of the EUI performance, where exactly 50% of the properties perform better and the remaining 50% perform worse.

- The average weather normalized source EUI of all Year 6 properties was 1.3 GJ/m².
- Distribution centers, social/meeting halls and multifamily housing buildings categories had the lowest median source EUIs at 0.9, 0.9 and 1.0 GJ/m² respectively.

- The average greenhouse gas (GHG) emissions intensity of the Year 6 properties was 125 kg of CO₂e per m², down from 129 kg of CO₂e per m² in Year 5. The lower the emissions intensity, the better the environmental performance.
- Multifamily housing buildings had the lowest GHG emissions intensity among the Year 6 buildings at 68 kgCO₂e/m².

YEAR-OVER-YEAR IMPROVEMENTS

Year-over-year performance compares the most recent year's EUI of a building with its EUI from the previous years.

- The average year-over-year change in weather-normalized source EUI for buildings that participated in Year 5 and Year 6 was 4.02%, and the median change was -0.67%. The increase in average EUI is likely due to changes related to occupancy because of COVID-19.
- Due to effects of COVID-19, we have also compared Year 4 (2019 data) to Year 6 (2021 data) to get a better understanding of how energy use may have changed.
- There are several properties that have participated in the BEB program in all six years of its existence. For buildings for which source EUI information is available for all six years, the average Year 1 to Year 6 change in EUI is -20.2%.

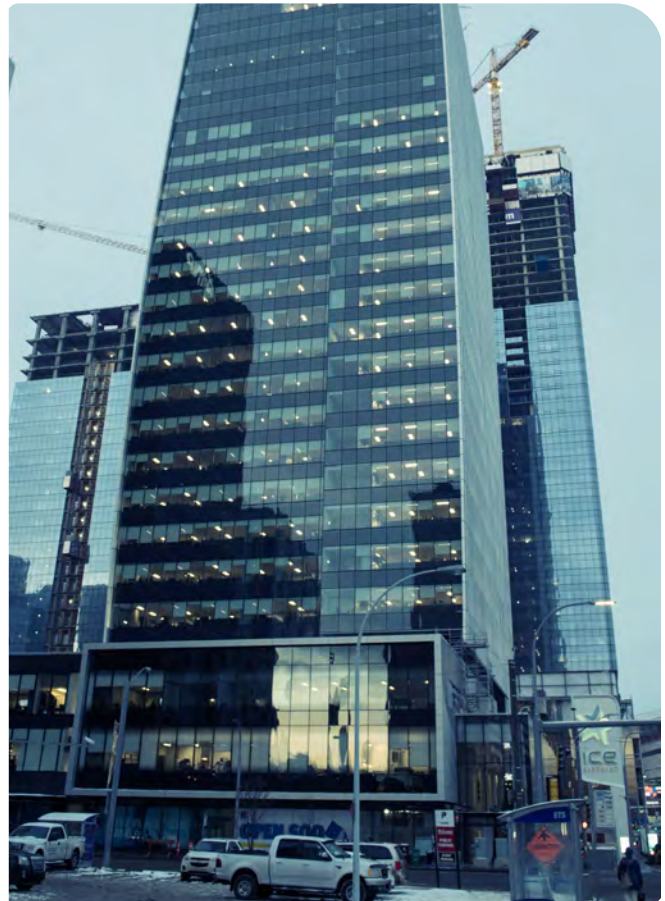
EUI	Y5 to Y6 Change	Y4 to Y6 Change	Y1 to Y6 Change
Average	4.02%	-2.86%	-20.2%
Median	-0.67%	n/a	-4.42%
			<i>Average annualized Y1 to Y6 change</i>

Reductions in energy use cannot be directly attributable to benchmarking specifically, and are instead a result of specific operational improvements or equipment upgrades. However, the year-over-year results presented here suggest that benchmarking is a key organizational best practice that can help identify opportunities for energy performance improvements, and motivate building owners and operators to implement efficiency projects.

CITY OF EDMONTON

The City of Edmonton continues to be a leader in benchmarking its own buildings and has submitted 165 buildings to this year's program. We expect to increase this number each year as more data becomes available.

Category	# of Properties	# of Buildings
Adult Education	1	1
Fire Station	32	32
Fitness Center/Health Club/Gym	11	11
Heated Swimming Pool	6	6
Ice/Curling Rink	12	12
Laboratory	2	2
Library	10	10
Mixed Use Property	1	1
Multifamily Housing	1	1
Non-Refrigerated Warehouse	10	12
Office	6	6
Other	5	5
Other - Entertainment/ Public Assembly	6	7
Other - Public Services	7	8
Other - Recreation	6	7
Other - Services	2	2
Parking	3	3
Police Station	8	8
Repair Services (Vehicle, Shoe, Locksmith, etc.)	14	14
Social/Meeting Hall	9	9
Transportation Terminal/ Station	8	8
Total	160	165



Edmonton Tower



151

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credit union

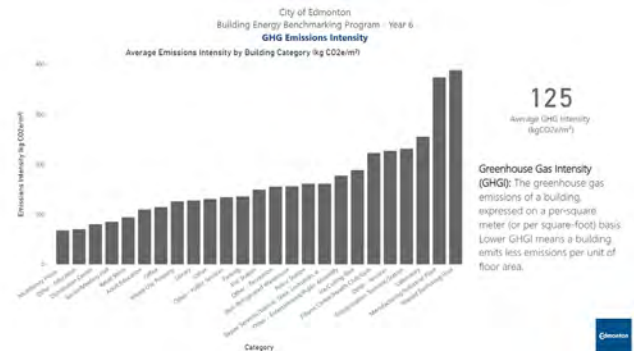
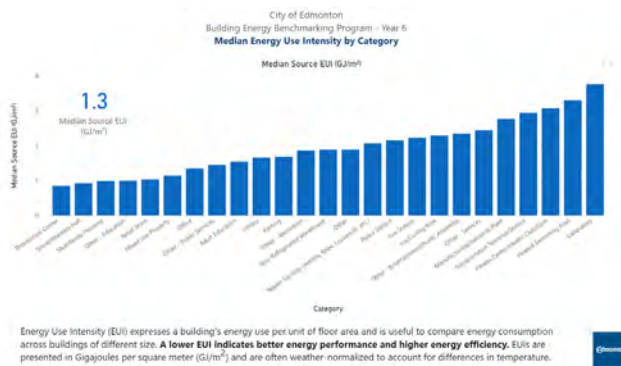
ENERGY PERFORMANCE RESULTS

YEAR 6 ONLINE DASHBOARD

Three years ago we introduced an online dashboard as an interactive tool to share building benchmarking data for all the buildings in the program. It offered an easy way to look at the data, understand some trends, and to find category and building-specific detail. This year, we have continued with this format as a way to share our benchmarking data and have included additional analysis that is accessible to all participants and allows users to easily explore energy performance data and compare it to their own buildings.

We encourage you to [explore this tool](#) to see your building energy performance in comparison to other similar buildings. We have also sent out building-specific scorecards to all participating buildings to provide some insight and detail about each one with potential recommendations to improve energy performance.

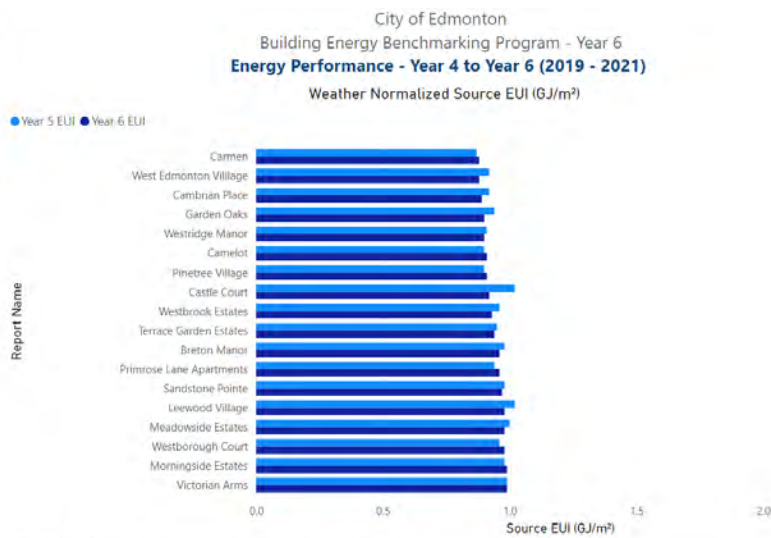
For the most current year's dashboard, visit: edmonton.ca/energybenchmarkingdashboard



- Category**
- Search
- Adult Education
 - Distribution Center
 - Fire Station
 - Fitness Center/Health Club/Gym
 - Heated Swimming Pool
 - Ice/Curling Rink
 - Laboratory
 - Library
 - Manufacturing/Industrial Plant
 - Mixed Use Property
 - Multifamily Housing
 - Non-Refrigerated Warehouse
 - Office
 - Other

-3.43%
Average of Y4 to Y6 Change for Buildings with Full Consent

-0.76%
Average of Y5 to Y6 Change for Buildings with Full Consent



Comparisons are made against Year 4 (2019) in addition to Year 5 (2020) to account for the impact of COVID lockdowns on energy consumption data.



RECOGNITION AWARDS

The City of Edmonton would like to recognize and acknowledge all Year 6 participants. The annual recognition of participants through our awards is intended to demonstrate top performers in various categories and acknowledge improved and sustained building energy performance. The program aims to highlight leadership in not only energy performance, but in understanding that the first step to decreasing energy use, is to create awareness.

The creation of a peer group with similar sustainability goals is a valuable networking tool for shared learning. The findings from the data analysis as well as performance and leadership recognition awards are outlined below in the following categories:

HIGHEST PERFORMING OFFICE CATEGORY

Winner: Commerce South Office Park, Building A (Sun Life Assurance Company of Canada)

HIGHEST PERFORMING MULTI-UNIT RESIDENTIAL BUILDING CATEGORY

Winner: Crescent Trails (Converge Condo)

HIGHEST PERFORMING COLLEGE / UNIVERSITY CATEGORY

Winner: NorQuest College CELT/ SCFL Building (NorQuest College)

HIGHEST PERFORMING VOCATIONAL / ADULT EDUCATION CATEGORY

Winner: Winnifred Stewart School (Alberta Infrastructure)

HIGHEST PERFORMING RETAIL CATEGORY

Winner: Barbecue Country (Barbecue Country)

HIGHEST PERFORMING LIGHT INDUSTRIAL CATEGORY

Winner: 50th Street Business Park (Hopewell Real Estate Services)

HIGHEST PERFORMING GARAGES, SERVICE YARDS, WAREHOUSES CATEGORY

Winner: Goodwill Impact Centre Edmonton (Goodwill Industries of Alberta)

BEST OVERALL ENERGY PERFORMANCE

Winner: 50th Street Business Park (Hopewell Real Estate Services) (EUI: 0.02 GJ/m²)

LEADERSHIP IN TRANSPARENCY AWARD

Winner: Boardwalk Rental Communities (86 properties representing 344 buildings)

Runner-up: Converge Condo (31 properties representing 267 buildings)

WHAT'S NEXT



PLANS FOR YEAR 7

YEAR 7 RECRUITMENT

The City of Edmonton is prepared to continue our community's strong engagement and participation in the Benchmarking program for Year 7 and beyond. By signing up for the Building Energy Benchmarking Program, participants will join a group of industry leaders that are working to understand the energy and greenhouse gas impacts and performance of their buildings and incorporate this into decision making.

The online registration link for Year 7 was activated in January 2023 to enable BEB participants to register for Edmonton's Benchmarking program. Below are a few date reminders:

Year 7 Launch	January 2023
Year 7 Registrations Close	October 15, 2023
Year 7 Data Submission (in EnergyStar Portfolio Manager)	November 15, 2023

JOIN YOUR PEERS ALREADY PARTICIPATING

If you are interested in participating in Year 7 of the benchmarking program, please visit the Building Energy Benchmarking Program website (edmonton.ca/energybenchmarking). Here you will find program updates, details on benchmarking support services, timelines and the registration form. If you have any questions, please email energystar@edmonton.ca.



Winspear Centre



Building Energy Benchmarking Program is a City of Edmonton initiative to support building owners and operators to reduce energy consumption.

For more information about this program, please visit edmonton.ca/energybenchmarking or email energystar@edmonton.ca.

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