The Corporation of the Township of Southgate

Energy Management Policy and Plan

Policy #56

10.5.3 PW2025-028 - Energy Management Plan and Policy

No. 2025-389

Moved By Councillor John
Seconded By Councillor Singh Soares

Be it resolved that Staff Report PW2025-028 be received for information; and
That Council approve the updated Policy #56 Energy Management Policy and Plan; and
That Council approve the Energy Management Policy Schedule A and Schedule B Annual report documents for 2024.

Carried

Revision: 2025-1

Township of Southgate
Energy Management Policy
Policy # 56

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Section 1: Southgate's Declaration of Commitment:

The Corporation of the Township of Southgate declares commitment to reduce energy consumption and greenhouse gases by ensuring the efficient use of energy that will continue to be a priority within all municipal facilities, by creating policies, generating reports to identify efficiencies and implement energy reduction strategies to provide leadership to the community.

Section 2: Southgate's Vision:

The Township of Southgate's vision is to be an environmentally sustainable community by striving towards future goals and objectives while providing valuable services to our residents. The Township will express the importance of conserving energy and decreasing the amount of emissions through managing the use of consumption throughout the municipal facilities.

Section 3: Southgate's Goals and Objectives:

The Township of Southgate has established the following Goals:

- Periodically audit facilities to ensure that Southgate's vision is being complied with;
- Communicate with Southgate staff the importance of conserving energy and decreasing the GHG Emissions within the municipality;
- Maintain the Township's equipment to provide dependability and security for staff;
- Providing a positive outlook for delivering and supporting Township culture while conserving Southgate's vision.

The Township of Southgate has established the following Objectives:

- Enhance the use of energy throughout the municipality;
- Set energy use reduction targets for the Township to strive towards;
- Provide an optimistic corporation culture with Township staff and residents within the community of Southgate;
- Research all applicable funding opportunities that are made available to the municipality pertaining to energy management.

Section 4: Southgate's Energy Reduction Target:

The importance for an efficient future with the **energy conservation and demand management (CDM)** vision is to have progressive and attainable targets.
The Township's Declaration of Commitment is to reduce energy consumption and greenhouse gases. With this declaration the Township will:

- Establish 2020 as the Township's foundation year in which the decrease of energy use and greenhouse gases will be measured.
- The targets are 1% reduction in energy consumption, greenhouse gases and cost savings on an annual basis between now and going forward with a 5-year plan to 2025.

Section 5: Southgate's Renewable Energy

The Township finds that it is necessary to enhance the vision mentioned in Section 2 of this policy by ensuring that the municipality is an environmentally sustainable community while providing valuable services to our residents.
The Township built the Southgate Community Services Building including the Ruth Hargrave Memorial Library in 2010 with geothermal, which is ground source energy. This facility also has a grey water supply from a rain collection tank under the parking lot for the use of toilet water.
The Township has set out future guidelines for asset improvements at facilities throughout the municipality which will enhance the use of energy and greenhouse gases. Table Section 5 attached as Schedule A: Represents the Township's annual energy asset plan.

Section 6: Southgate's Energy Leader

The Township of Southgate has delegated CAO Jim Ellis as the person responsible for providing the corporate culture in energy management.

CAO Jim Ellis is an employee who has taken the LAS Energy Management courses through AMO and understands the importance of why energy consumption should be lowered, and the greenhouse gases depreciated.

Section 7: Southgate's Energy Use at the Municipal Level

The Township of Southgate staff will carry out the responsibility of effective energy consumption and reduce the greenhouse gases with direction from their supervisors with information provided at Department Head meetings. The information provided will enhance the corporate culture by providing an optimistic review of how the municipality is achieving its goals and objectives. The Energy Leader will provide staff training with energy management tools to create an energy savings culture and awareness. Department heads will receive information to view their annual results and report to their department staff.

Section 8: Southgate's Energy Asset Level Execution

Providing education to all municipal staff is essential to conserve energy consumption and greenhouse gases.

The initial action in executing the energy management plan will be to complete facility energy audits for all facilities. Each energy audit will include a technical review of the facility, its energy consumption and greenhouse gas reduction. These audits will assist the municipality to determine the future needs of each facility and what their budget requirements will be.

Section 9: Southgate's Energy Plan Review

The Township of Southgate will have annual Energy Committee meetings to evaluate and update the requirements throughout the municipality.

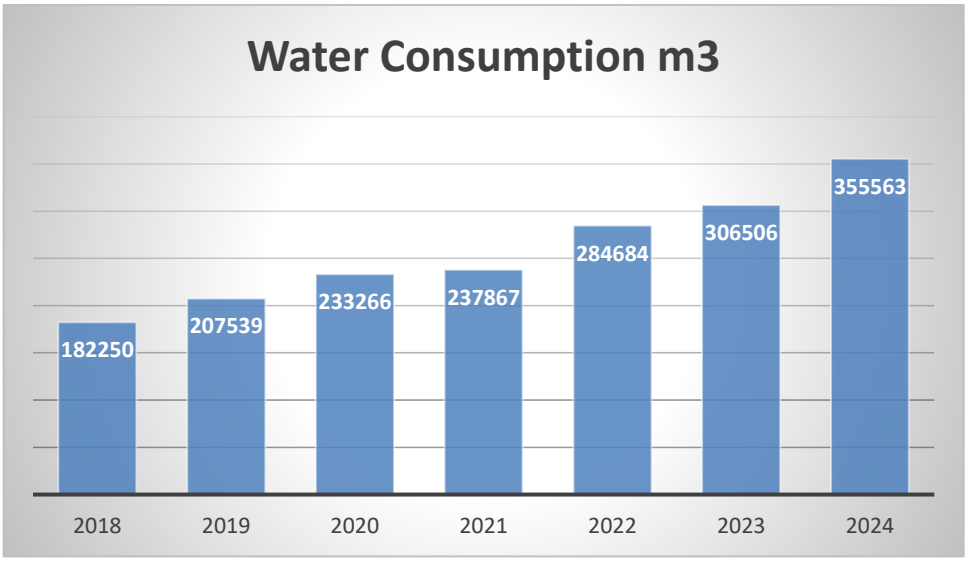
The Energy Committee will promote corporate culture and will take a positive approach to decreasing energy consumption and greenhouse gases. The Public Works Manager and other Department Heads will provide all facilities with the goals and objectives of the Energy Management Plan.

Section 10: Summary of current energy consumption, cost and GHG's

The total annual energy consumption in municipal building operations is 2,233,560 ekWh, at a cost of $319,380.44 per year and GHG emission of 214,697 kg/year eCO2.

Section 11: Growth and weather factors

a) Increase in water consumption over time – Dundalk Drinking Water System



b) Continued population growth and new housing & commercial buildings coming online in Southgate in 2024 equals more draw on public services.

c) Water Tower install in summer 2023 – runs off the same electrical meter for Well D4 and the addition of the bulk water filling station in 2024 at Well D4 location – this has caused a significant spike in hydro costs for this location.

d) Renovation for the rear storage shed for vehicle storage and the additional propane tank in 2024 increased the square footage & energy usage footprint.

e) Additional staffing to meet growth requirements may make a minor impact with new computers and electronics/appliance use.

f) Installation of reverse geothermal heating for the Dundalk pool drove down gas but slightly increased hydro for an overall decrease in all energy costs for this location.

g) Weather impacts 2024 – Heating Degree Days (HDD) and Cooling Degree Days (CDD). The HDD for winter weather for 2024 showed an increase in heating requirements and the CDD for cooling in the summer stayed the same as in 2023. This is an overall energy increase for 2024.

Year	HDD (winter)	CDD (summer)
2019	4254	190
2020	3763	284
2021	4004	206
2022	4329	174
2023	3937	134
2024	3996	134

Degree days measure the amount of heating or cooling necessary at your property. Degree days are measured relative to a base of 65°F(18°C). Above 65°F(18°C) it is assumed that your property will need to have cooling and below 65°F(18°C) it is assumed that your property will need to have heating.

- **Heating Degree Days (HDD)** - HDD is the equivalent number of days you would have to heat your building by 1 degree to accommodate the heating requirement. For example, if you have a day on which the temperature is 55°F degrees, that day is worth 10 Heating Degree Days because it is 10 degrees below 65°F. HDD is calculated in this way for each day of the year and summed up to get the total annual HDD.
- **Cooling Degree Days (CDD)** - CDD is the equivalent number of days you would have to cool your building by 1 degree to accommodate the cooling requirement. For example, if you have a day on which the temperature is 80°F degrees, that day is worth 15 Cooling Degree Days because it is 15 degrees above 65°F. CDD is calculated in this way for each day of the year and summed up to get the total annual CDD.

Source PM Degree Day Calculator
https://portfoliomanager.energystar.gov/pm/degreeDaysCalculator

*HDD – Heating Degree Days
*CDD – Cooling Degree Days

Schedule A
Annual Energy Asset Plan

Schedule A is updated on an annual basis.

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Table: Section 5:A

Historical Energy Asset Plan

Facility	Project	Year	Completed	Target Energy	Target GHG	Capital Costs	Projected Savings
All municipal facilities	Fluorescent light replacement	2010	2010				
All municipal facilities	Programmable thermostats and temp setting	2013	2013	1%	1%		
Public Works							
Township Streetlights	Convert all lights to LED	2017	2017	60%		$182,481.00	**$ 32,073.00**
All municipal facilities	Replace outside buildings with LED wall packs	2017	2017	1%	1%	$16,610.00	
Holstein Works Garage	Oil furnace replaced with propane	2018	2018	2%	5%	$8,544.00	
Dundalk Works Garage	LED Lighting upgrade	2019		1%	1%	$0.00	**($182.97)**
Hopeville Works Garage and Office	Insulate Attic	2020		1%	1%	$8,356.00	
Egremont Landfill Shop	LED light replacement	2018		1%	1%	$8,000.00	
Wastewater	LED Lighting upgrade	2019		1%	1%	$0.00	**$625.08**
Holstein Works Garage	Overhead Door	2023	2023	1%	1%	$52,000	
Hostein Works Garage	Insulate Ceiling	2017	2017	1%	1%	$3,135.00	
Water Tower	Reduce pumping costs	2022	2022				
Sewage Lagoon	New Furnace	2023	2023	1%	1%		
Sewage Lagoon	Influent pumps converted to VFD control, Aeration Blower Replacement	2014	2014	5%	3%	$200,000.00	
Recreation							
Dundalk Arena and Community Centre	Gas Boiler in Lobby and Olympia Room	2014	2014			$4,000.00	
Dundalk Arena and Community Centre	Dehumidifier Replacement	2018	2018			$21,000.00	
Dundalk Arena and Community Centre	Better insulation and heating/cooling system	2019		1%	1%	$15,000.00	
Hopeville Park	LED Lighting upgrade	2019		1%	1%	$0.00	**$14.67**
Arena	LED Lighting upgrade	2019		1%	1%	$0.00	**($1,219.38)**
Dundalk Pavillion and Pool	LED Lighting upgrade	2019		1%	1%	$0.00	**($948.17)**
MacIntyre Building	LED Lighting upgrade	2019		1%	1%	$0.00	
Swinton Park	New Boiler	2018	2018			$3,000.00	
Pool Building	Reduced light fixtures by 50%	2022	2022	1%	1%	TBA	
Dundalk Pool	Grant to reduce Natural Gas consumption	2024		1%	1%	$4,000.00	
Dundalk Arena and Community Centre	LED Lighting over Ice Surface Area	2024		1%	1%	$4,000.00	
Municipal Office							
Administration Offices	LED Lighting throughout office	2019	2019	1%	1%	$761.30	**($1,010.77)**
Fire							
Fire Hall	Add weather stripping	2021	2021	1%	1%	TBA	
Fire Hall	New front door	2022	2022	1%	1%	TBA	
Fire Hall	New Furnace install upstairs	2022	2022	1%	1%	TBA	
Fire Hall	New LED strip lights	2023	2023	1%	1%	TBA	

Annual Energy Asset Plan

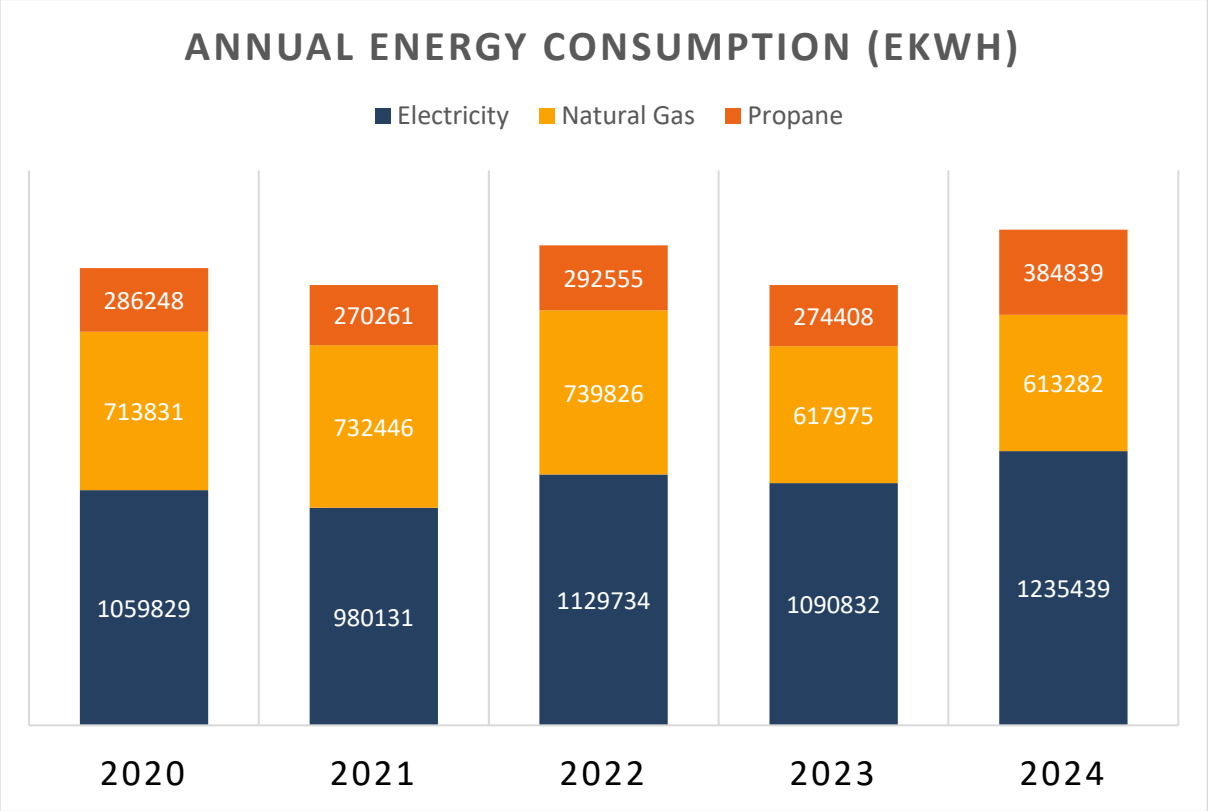
Facility	Project	Year	Completed	Target Energy	Target GHG	Capital Costs	Projected Savings
Municipal Office							
Administration Offices	New Admin/Multi-use Building	2027		TBD	TBD	TBD	
Public Works							
Wastewater	Wastewater upgrades	2025		TBD	TBD	$4,700,000.00	
Waste Garage	Overhead Door	2025		1%	1%	$60,000.00	
Hopeville Works Garage	Overhead Door	2025		1%	1%	$55,000.00	
Dundalk Works Garage	Insulate Overhead Doors	TBD		1%	1%	$45,000.00	
Fire							
Fire Hall	Upgrade AC	2026		1%	1%	TBD	
Total over 5 year EAP				**4%**	**4%**	**$4,860,000.00**	**$ 2,109.53**
Average Annual Savings				**0.8%**	**0.80%**	**$ 972,000.00**	**$ 421.91**

Schedule B

Schedule B is updated on an annual basis.

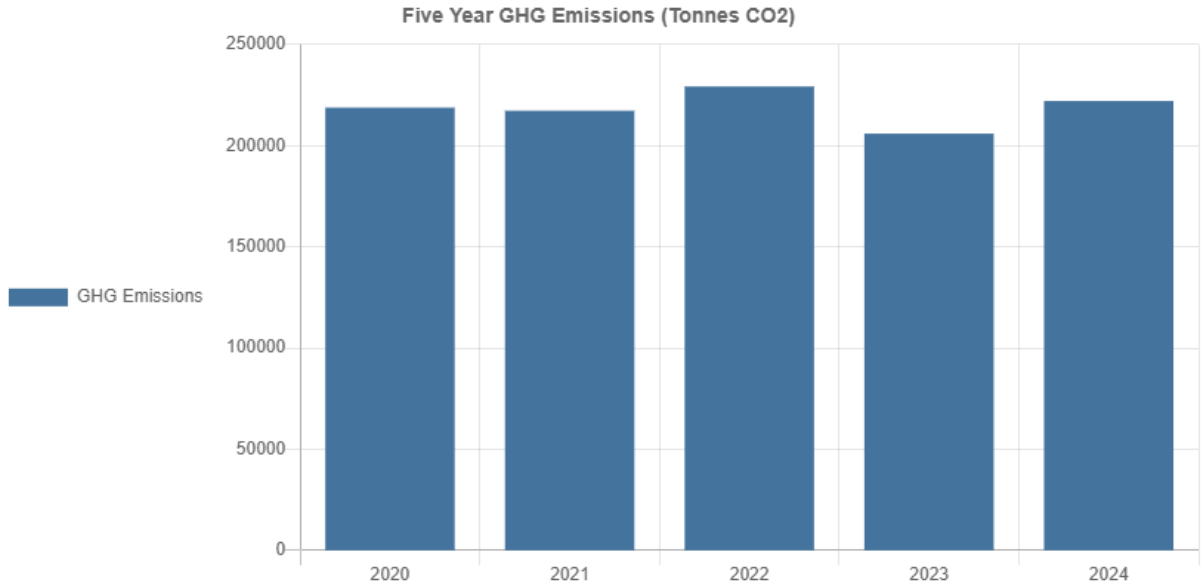
Southgate's Energy Consumption – Greenhouse Gas Emissions

SECTION 1 – Annual Energy Consumption

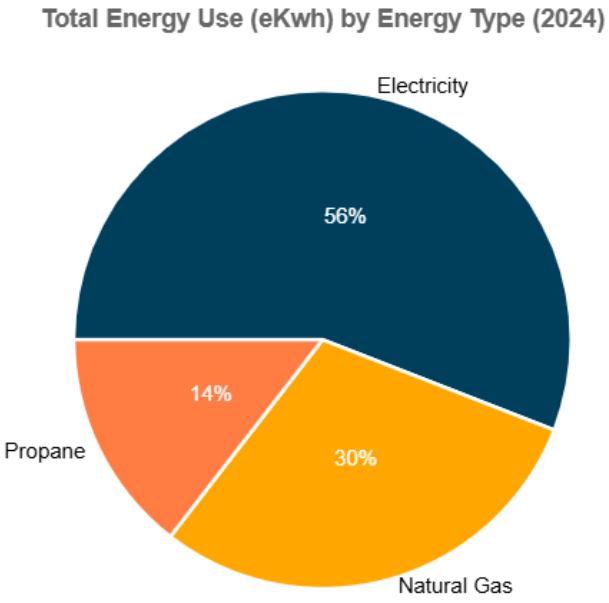


Over the past 5 years the total building energy consumption has increased by 7.4%.

SECTION 2 – GHG Emissions



SECTION 3 – Facility Details



Administration Office & Works Garage

185667 Grey Rd 9

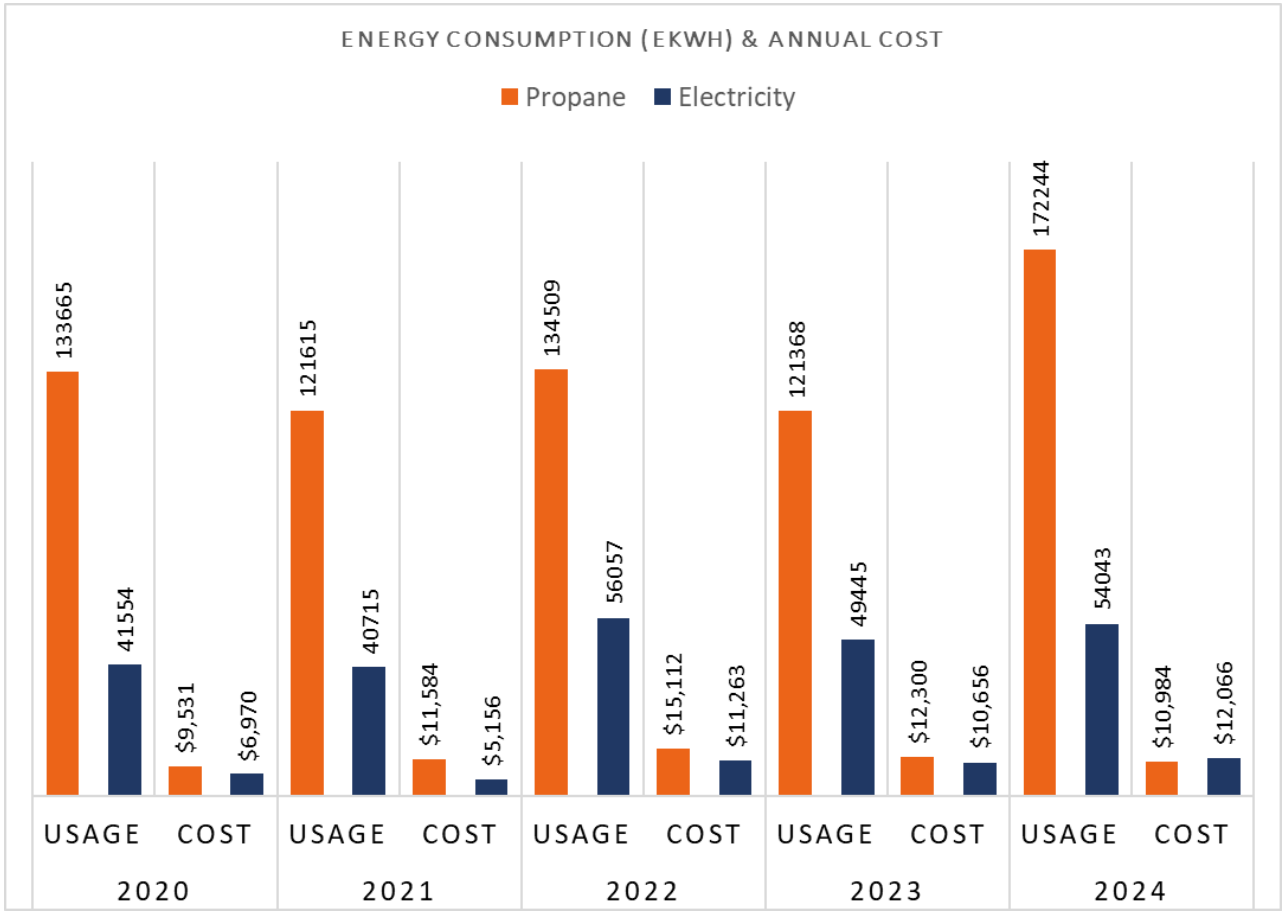
Dundalk ON

N0C 1B0

951 square meter floor space

2085 Annual Hours of Operation, cost per operating hour in 2024 was $11.06.

Over the past year this building has increased energy consumption by 2.29%



Dundalk Arena and District Community Centre

550 Main St E

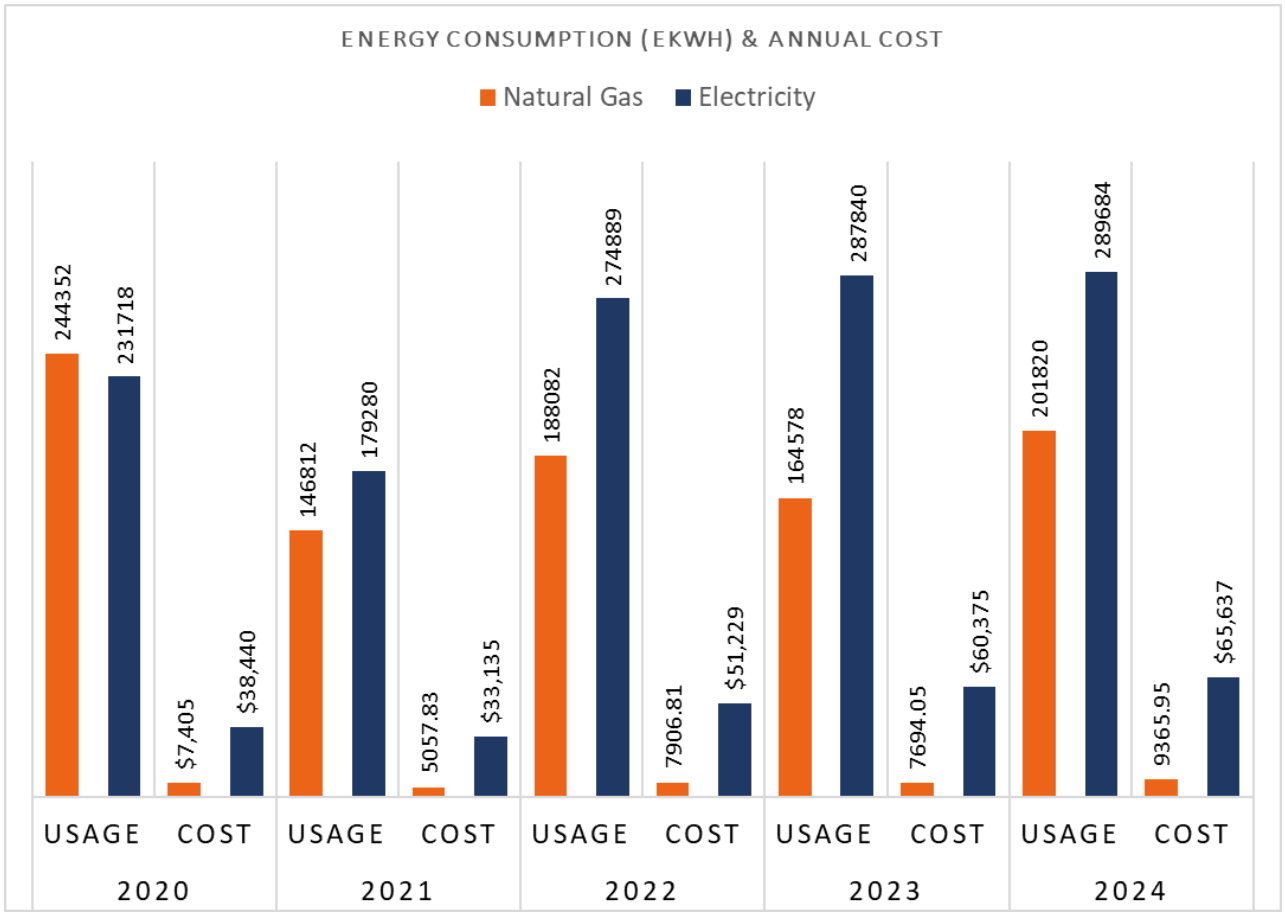
Dundalk ON

N0C 1B0

2302 square meter floor space

2919 Annual Hours of Operation, cost per operating hour in 2024 was $32.58.

Over the past year this building has increased energy consumption by 5.09%



Dundalk Fire Hall

85 Dundalk St

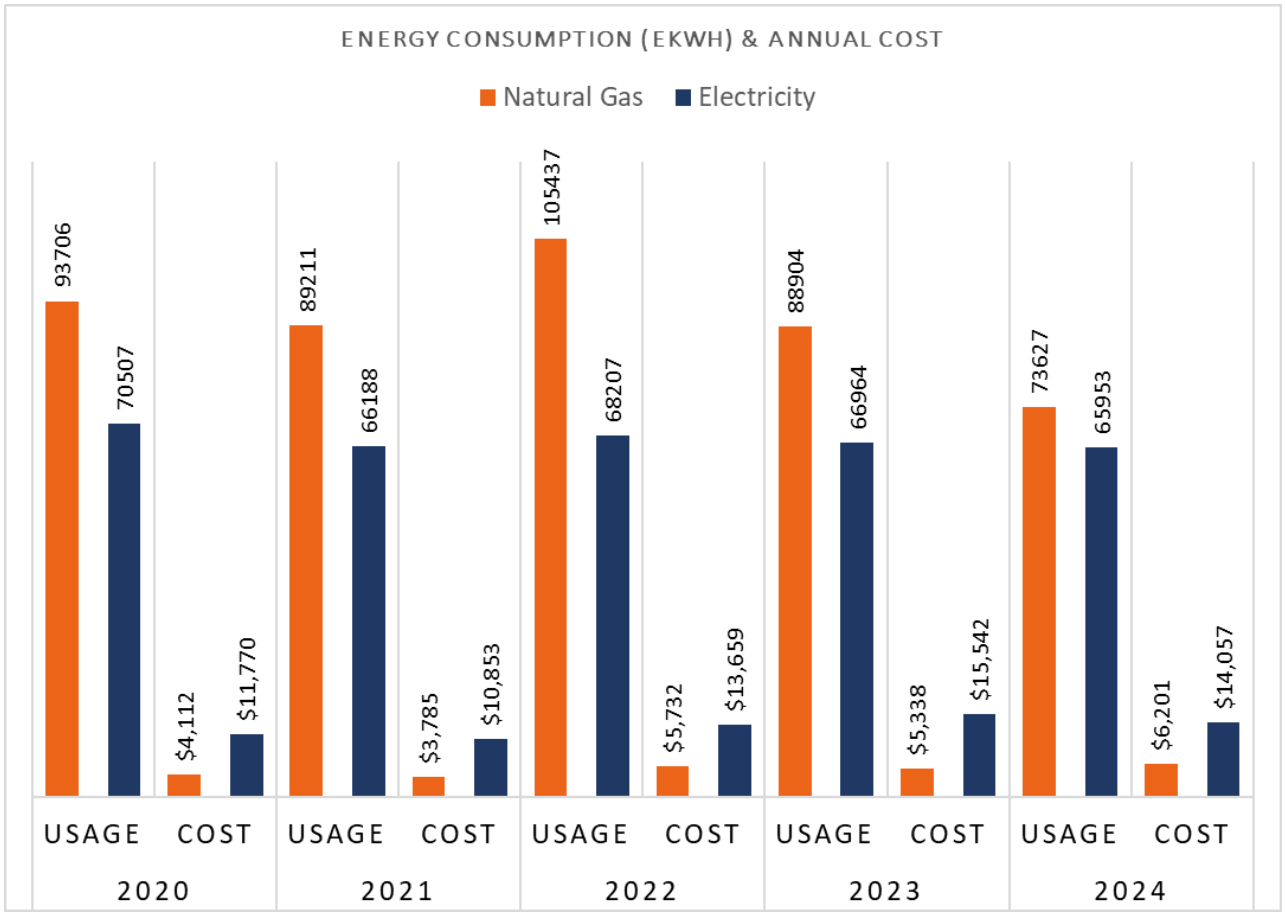
Dundalk ON

N0C 1B0

736 square meter floor space

8760 Annual Hours of Operation, cost per operating hour in 2024 was $2.31.

Over the past year this building has decreased energy consumption by 4.11%



Dundalk Works Garage

75 Dundalk St

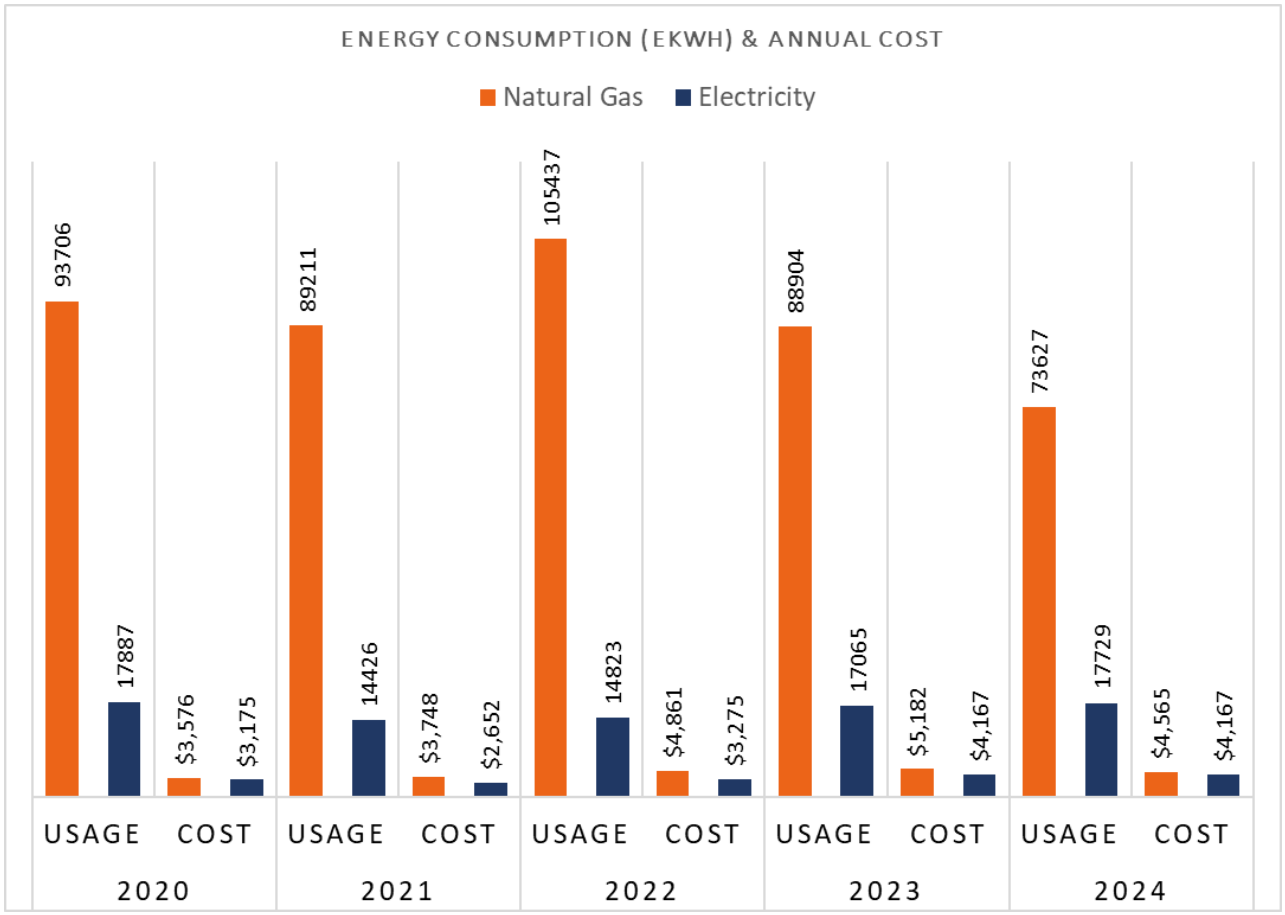
Dundalk ON

N0C 1B0

736 square meter floor space

2085 Annual Hours of Operation, cost per operating hour in 2024 was $4.19.

Over the past year this building has decreased energy consumption by 4.14%



Egremont – Hunt Camp

413013 Southgate Sideroad 41

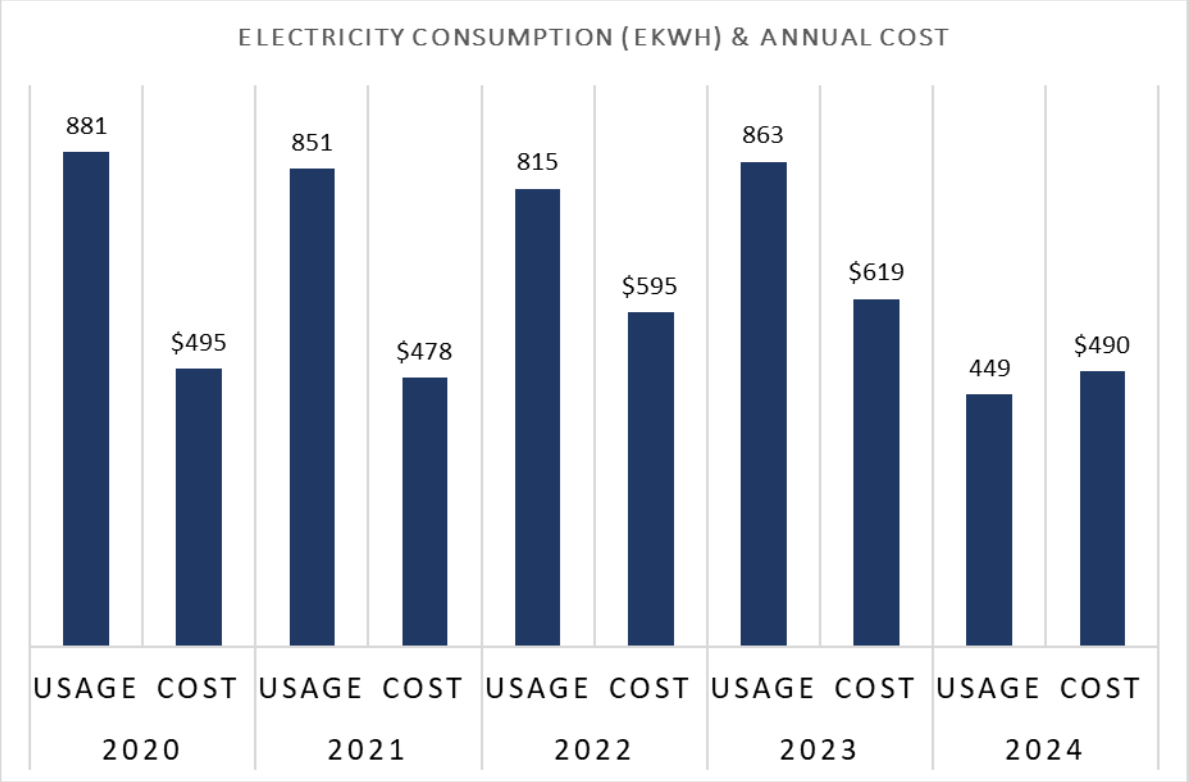
Durham ON

N0G 1R0

52 square meter floor space

469 Annual Hours of Operation, cost per operating hour in 2024 was $1.05.

Over the past year this building has decreased energy consumption by 47.3%



Holstein Works Garage

Holstein

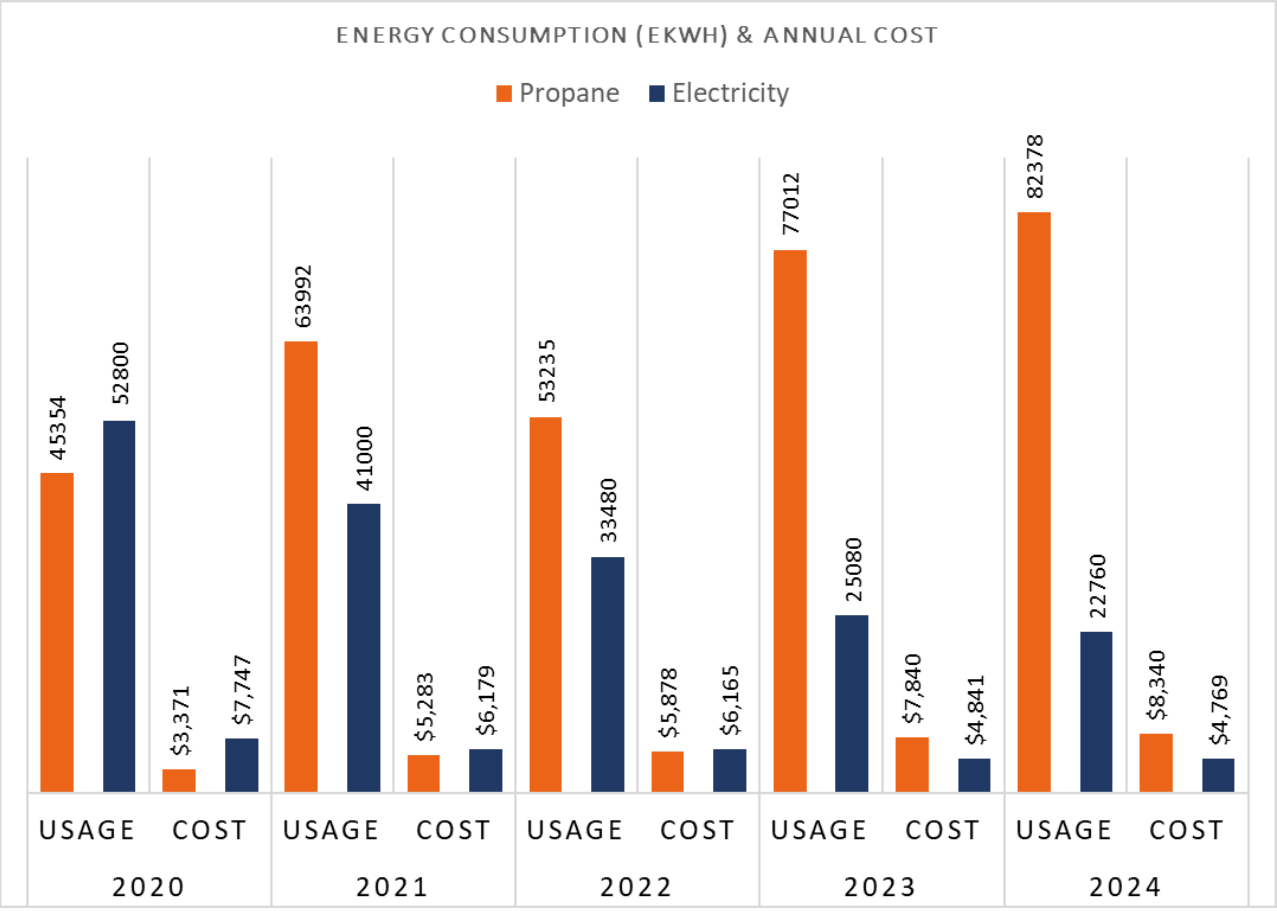
Holstein ON

N0C 1B0

798 square meter floor space

2086 Annual Hours of Operation, cost per operating hour in 2024 was $6.28.

Over the past year this building has increased energy consumption by 4.0%



Landfill Scale House

413013 Southgate Sideroad 41

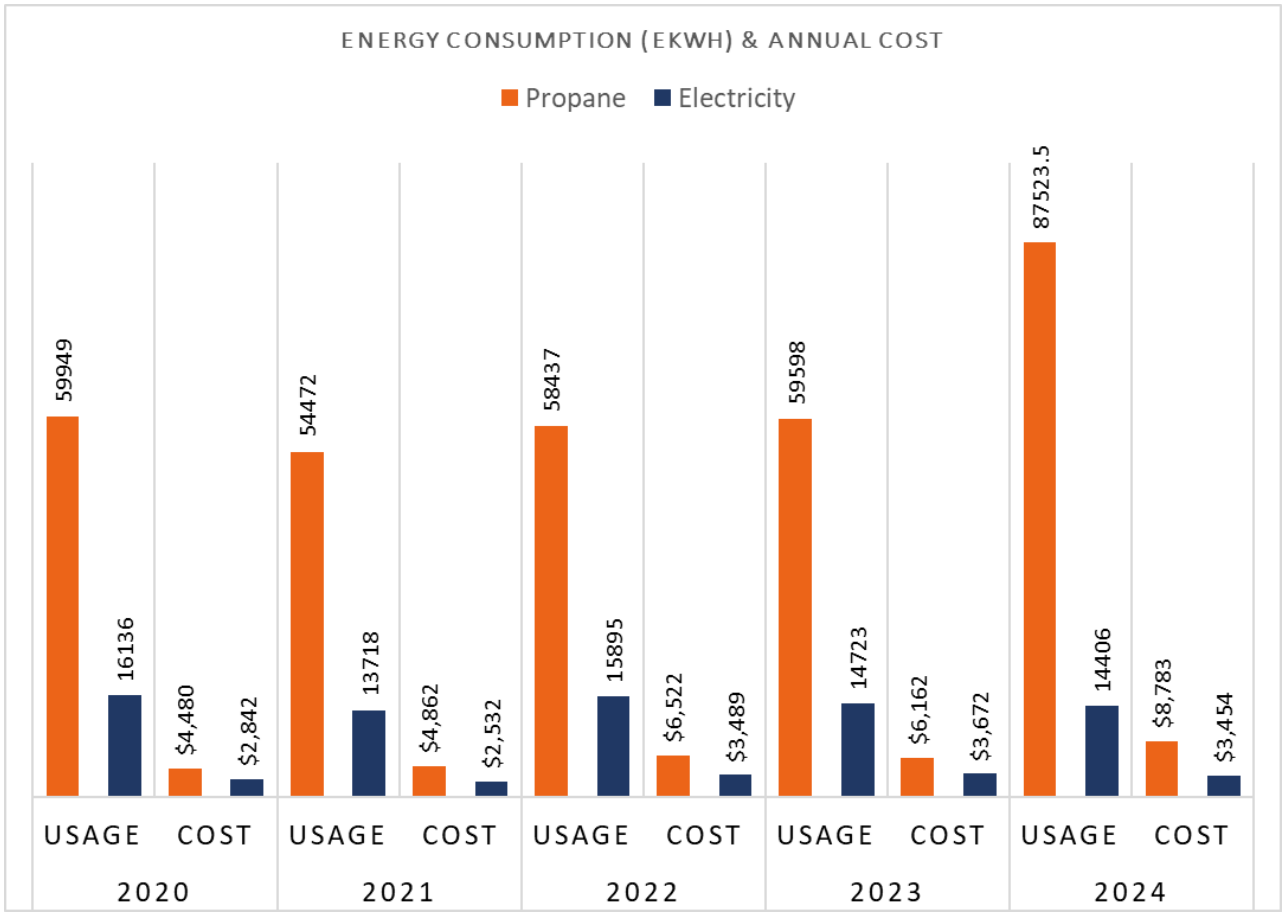
Egremont ON

N0C 1B0

369 square meter floor space

625 Annual Hours of Operation, cost per operating hour in 2024 was $19.58.

Over the past year this building has increased energy consumption by 39.2%



Hopeville Pavilion & Park

185450 Grey Road 9

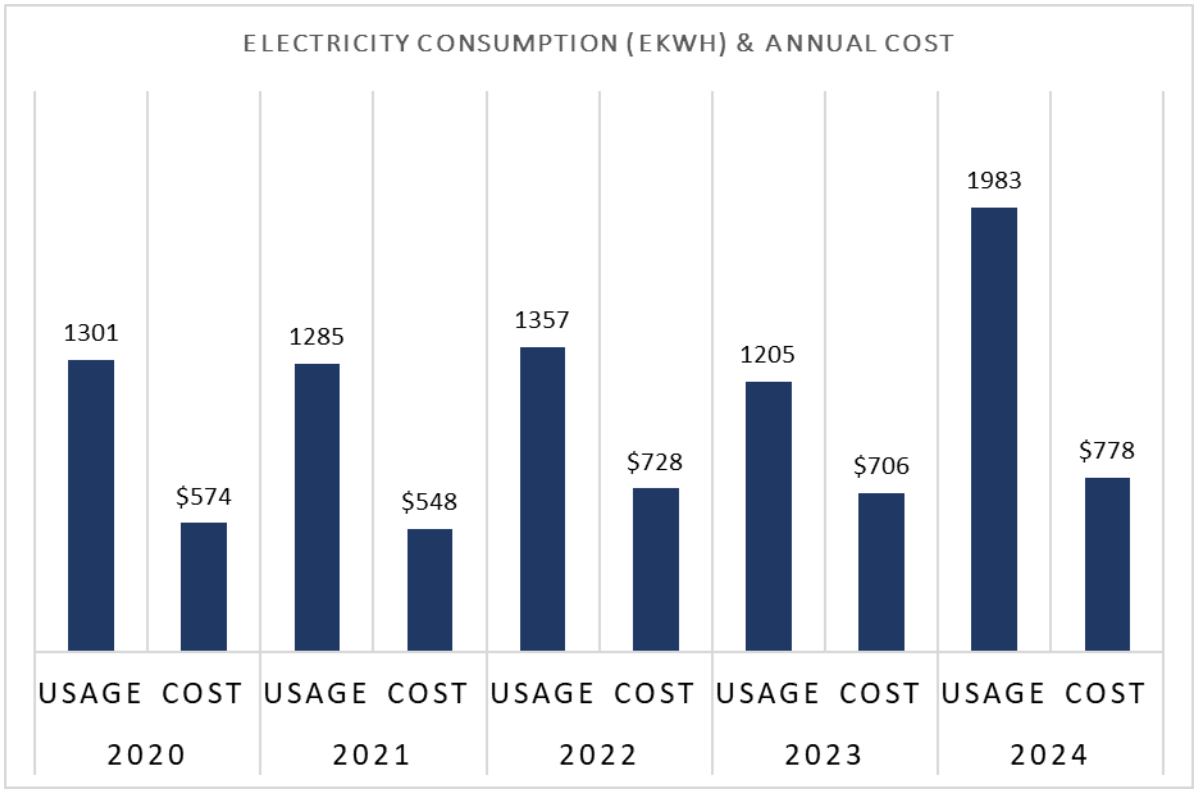
Dundalk ON

N0C 1B0

125 square meter floor space

156 Annual Hours of Operation, cost per operating hour in 2024 was $4.99.

Over the past year this building has increased energy consumption by 54.1%



Library

80 Proton Street North

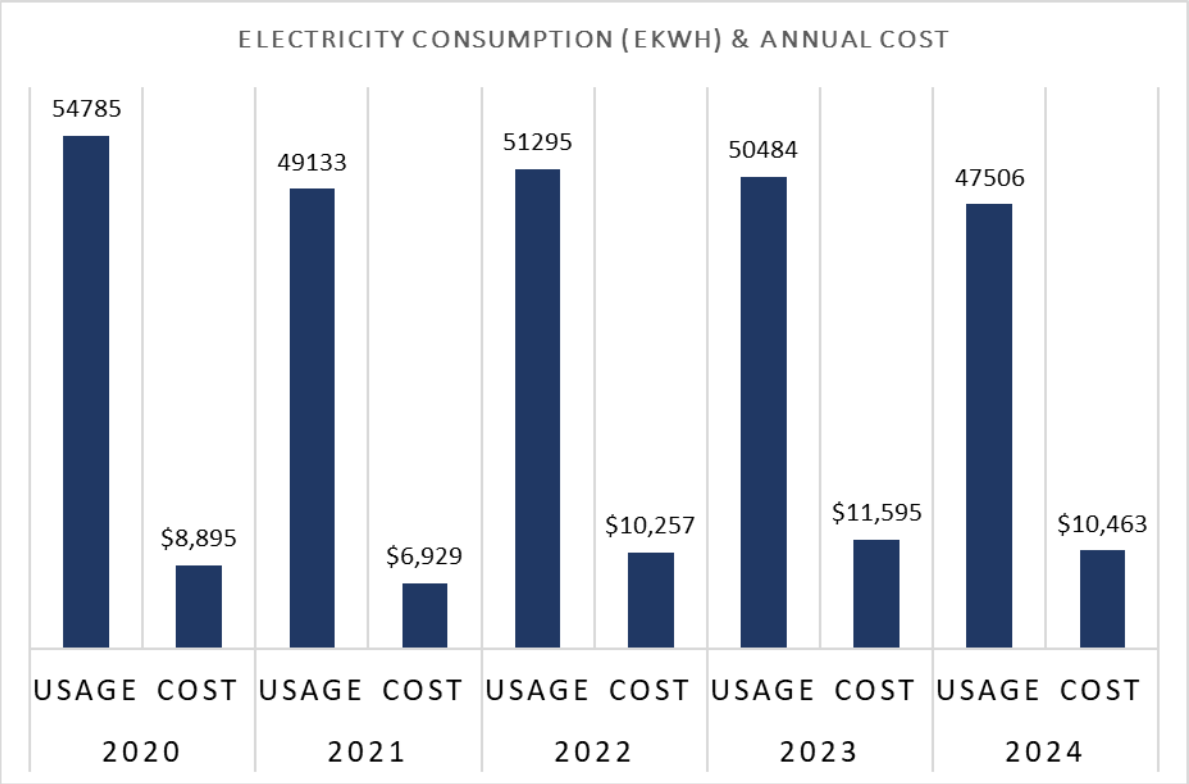
Dundalk ON

N0C 1B0

610 square meter floor space

2502 Annual Hours of Operation, cost per operating hour in 2024 was $4.18.

Over the past year this building has decreased energy consumption by 13.9%



Memorial Park

250 Owen Sound St

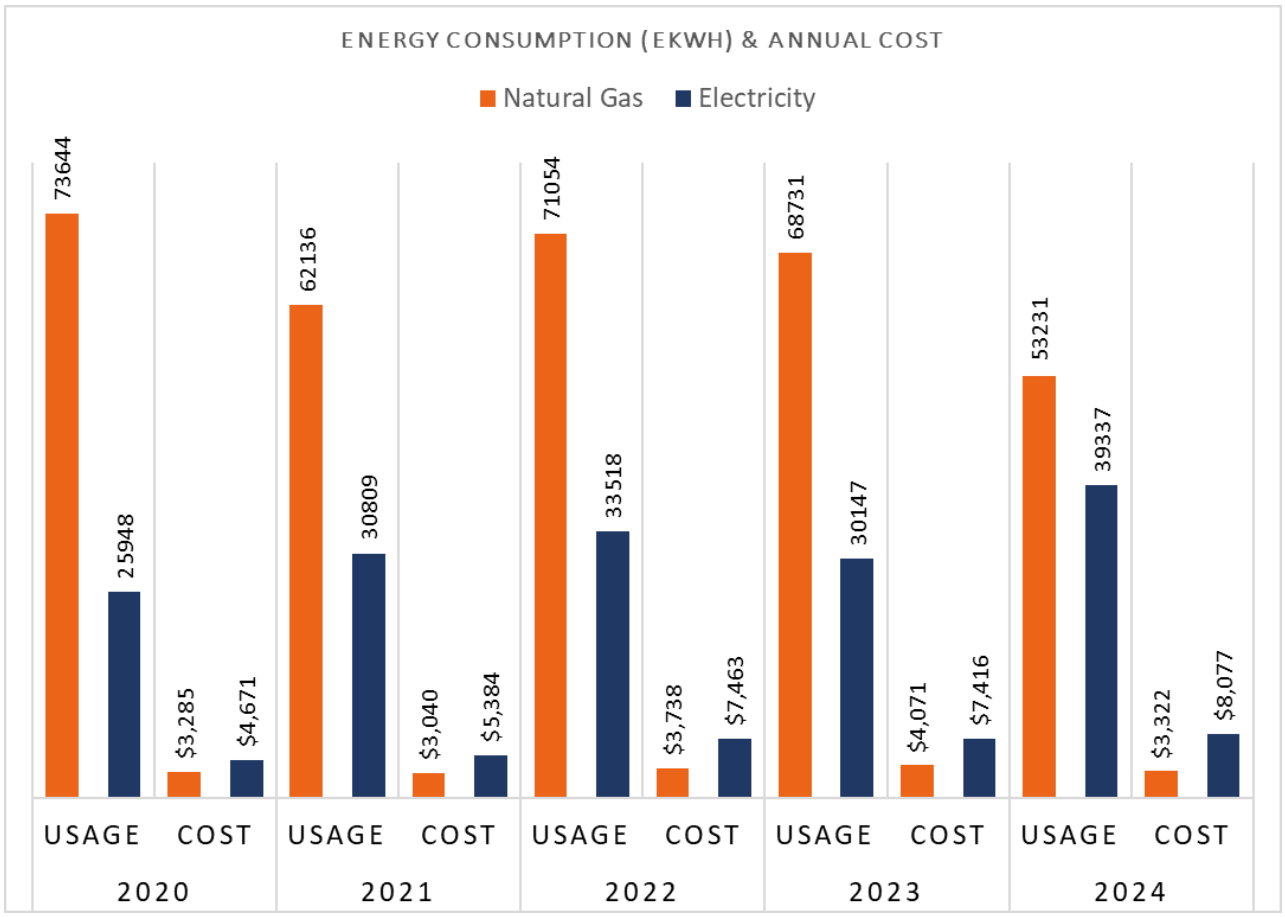
Dundalk ON

N0C 1B0

105 square meter floor space – Frank McIntyre Building

5000 Annual Hours of Operation (including all park facilities), cost per operating hour in 2024 was $2.28.

Over the past year this location has decreased energy consumption by 6.5%



Olde Town Hall

90 Main St E

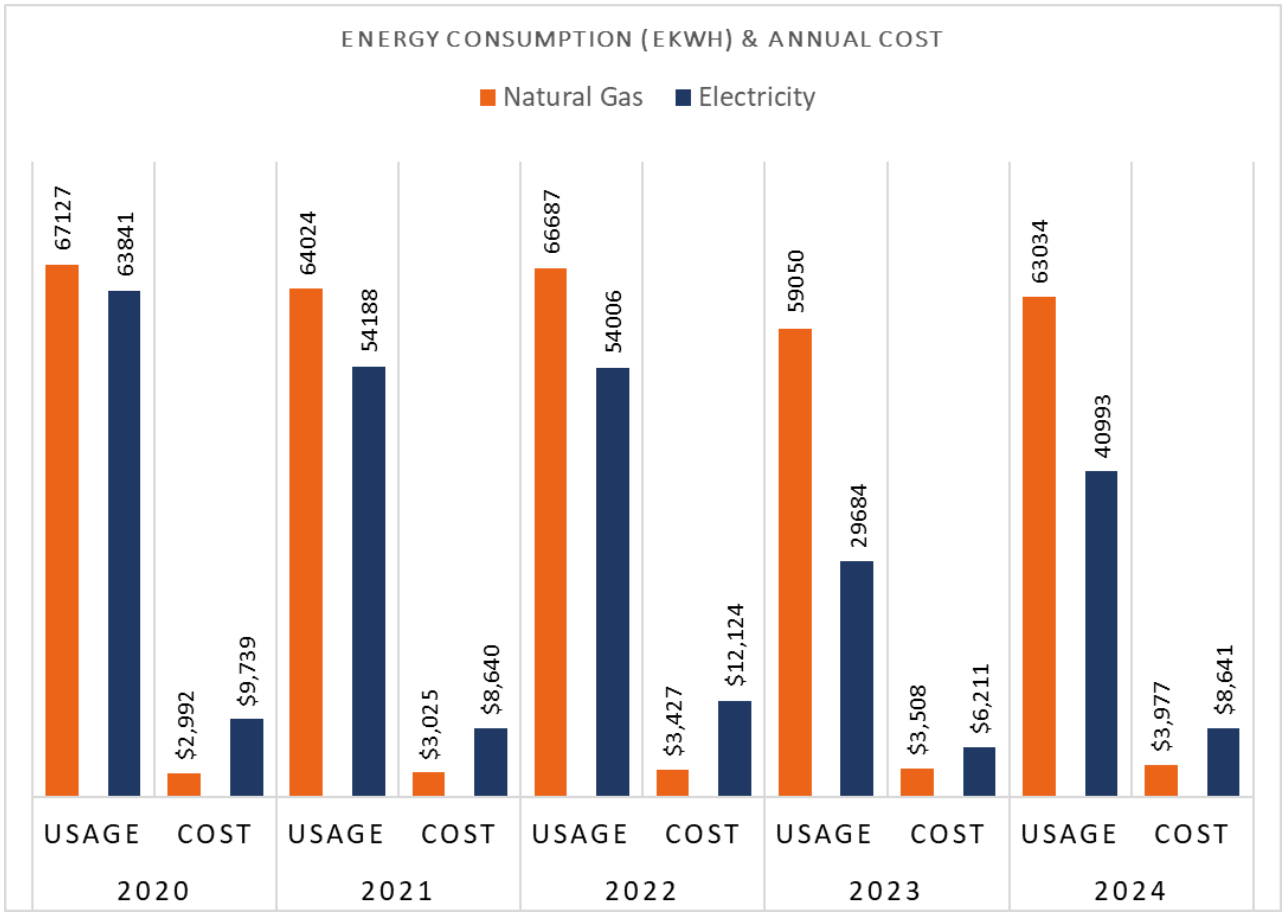
Dundalk ON

N0C 1B0

518.4 square meter floor space

2919 Annual Hours of Operation, cost per operating hour in 2024 was $4.32.

Over the past year this building has decreased energy consumption by 9.3%



Sewage Lagoon

752051 Ida St

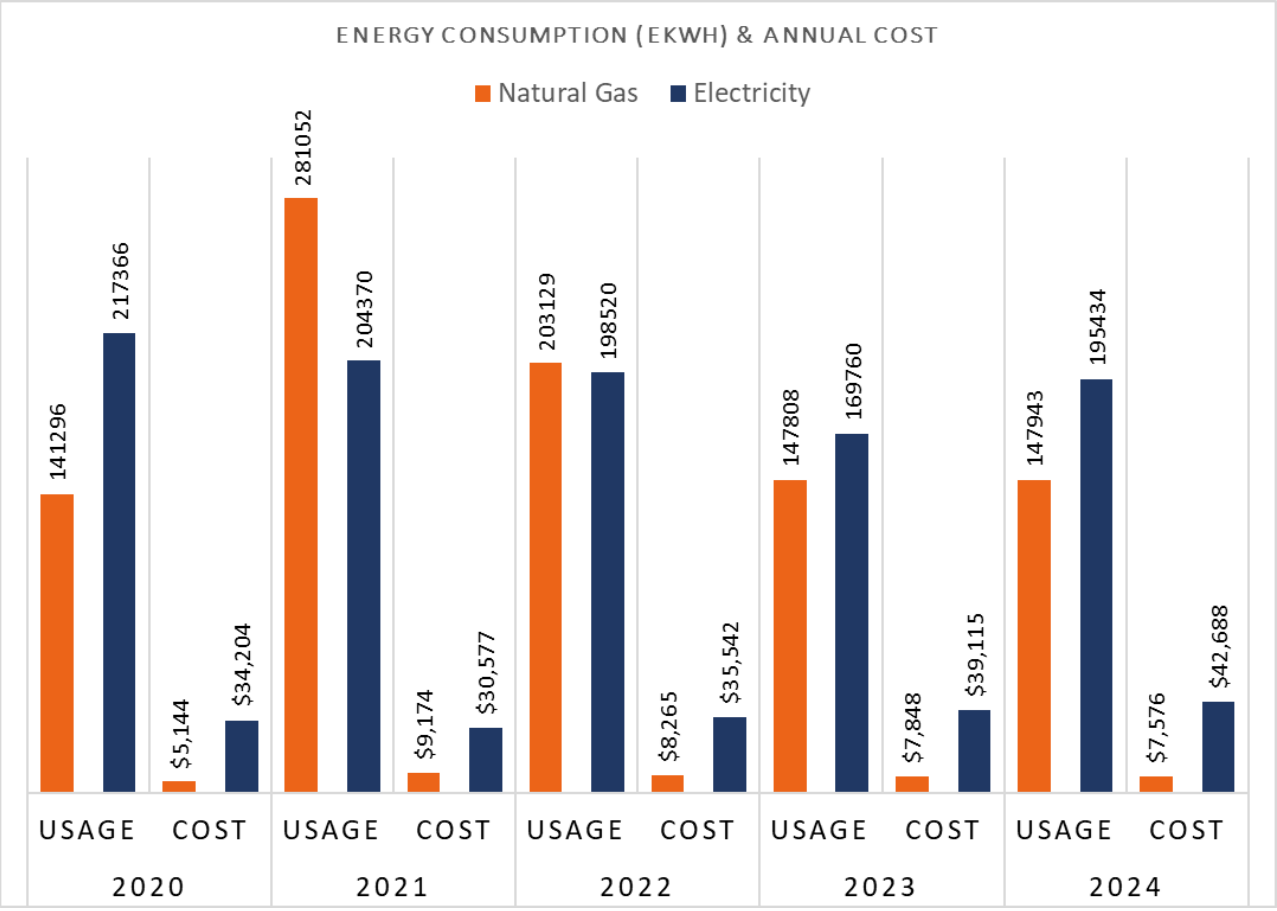
Dundalk ON

N0C 1B0

277.6 square meter floor space

8760 Annual Hours of Operation, cost per operating hour in 2024 was $5.74.

Over the past year this building has decreased energy consumption by 12.14%



Swinton Park

245308 Southgate Rd 24

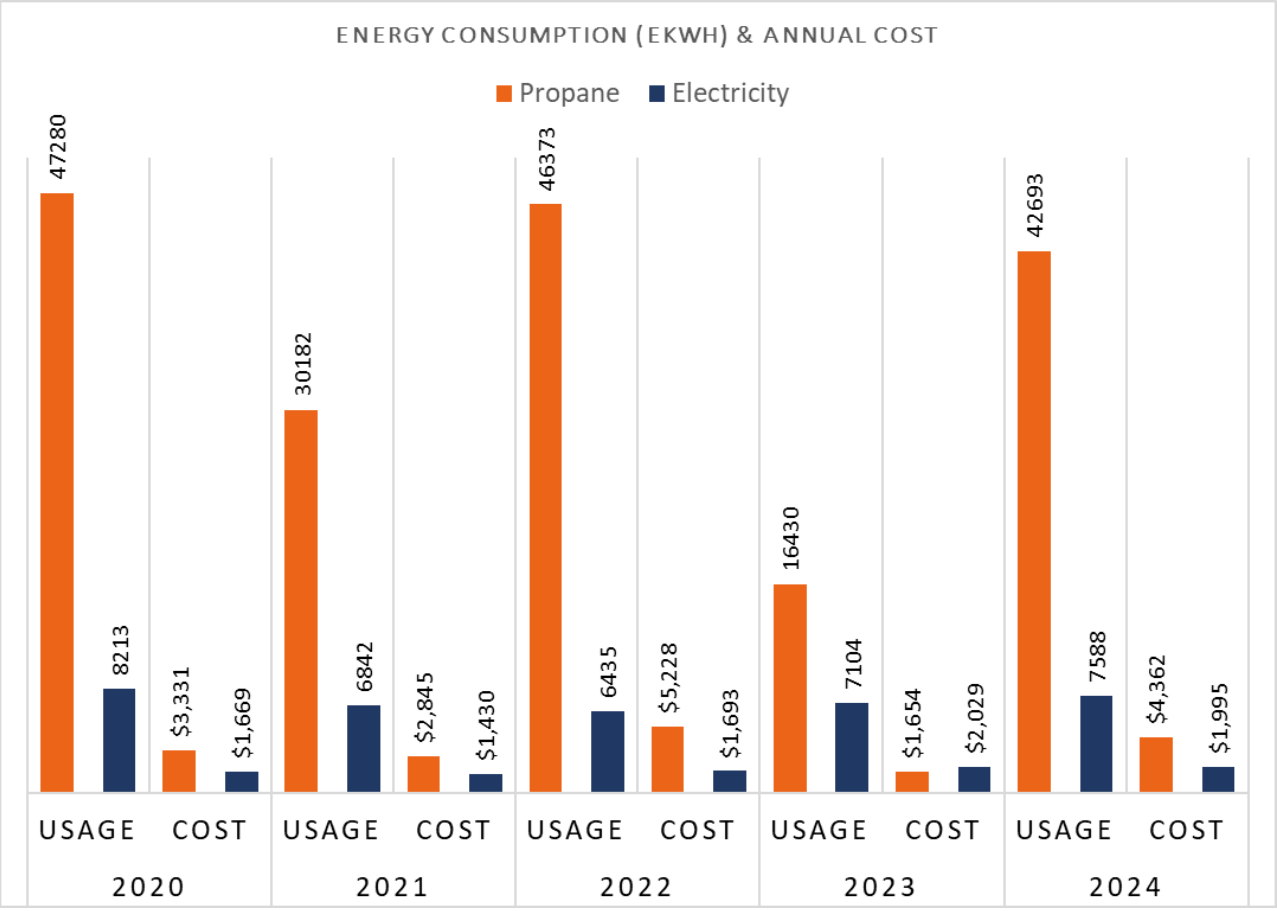
Dundalk ON

N0C 1B0

166.4 square meter floor space

388 Annual Hours of Operation, cost per operating hour in 2024 was $16.38.

Over the past year this building has increased energy consumption by 19.1%



Well #3

280 Victoria Street West

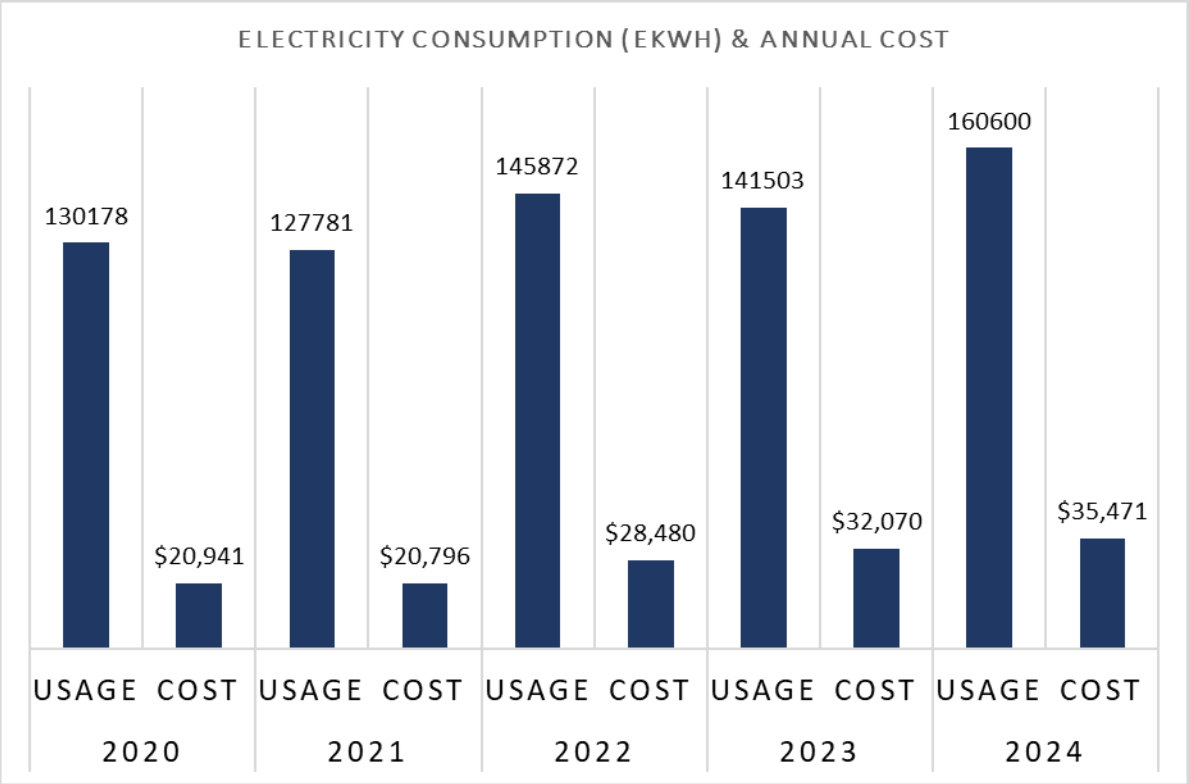
Dundalk ON

N0C 1B0

70.6 square meter floor space

8760 Annual Hours of Operation, cost per operating hour in 2024 was $4.05.

Over the past year this building has increased energy consumption by 17.8%



Well #4

550 Main Street East

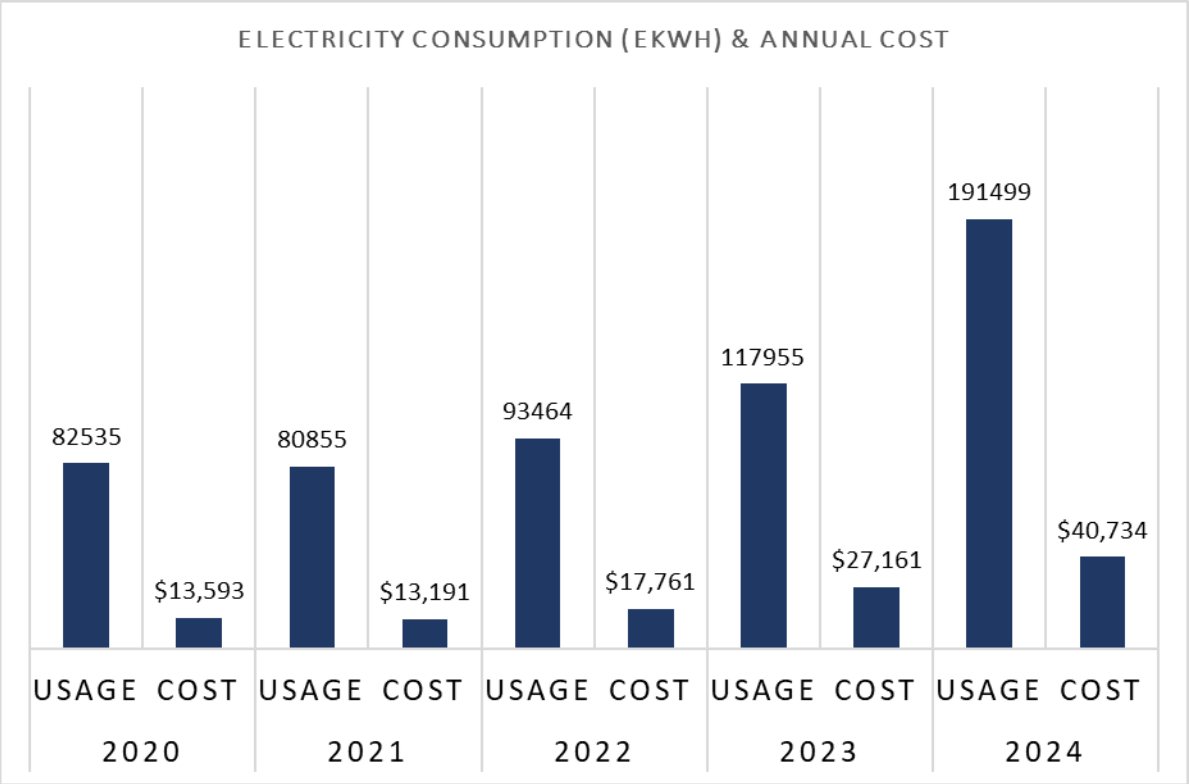
Dundalk ON

N0C 1B0

134.7 square meter floor space

8759 Annual Hours of Operation, cost per operating hour in 2024 was $4.65.

Over the past year this building has increased energy consumption by 104.4%



Well #5

250 Hagen Street East

Dundalk ON

N0C 1B0

202.3 square meter floor space

8760 Annual Hours of Operation, cost per operating hour in 2024 was $2.21.

Over the past year this building has increased energy consumption by 24.9%