

WESCO - Energy Management Report

Large Health Care Facility



Commercial/Institutional - Health Care

Prepared for:

Large Health Care Facility
123 Nowhere Rd.
Health Care Facility, ON, A1B 2C3
Canada

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About WESCO

WESCO Distribution is a leader in industrial supply with an extensive offering of electrical, data communications, general maintenance, repair, and operating (MRO) and electrical OEM products. We are more than just an electrical distributor; we are a company of procurement specialists, helping customers lower supply chain costs, increase efficiency through WESCO Value Creation and save energy with green and sustainability initiatives. Our network of branches deliver industrial supply products fast, and our vast catalog of supplier partners enables WESCO to be your one-stop shop for electrical and MRO products. As a Fortune 500 company, our industrial supply solutions leverage our buying power and extensive procurement experience that leaders across a broad range of industries trust to deliver value, service and results that exceed customer expectations.

Our Energy Saving Solutions

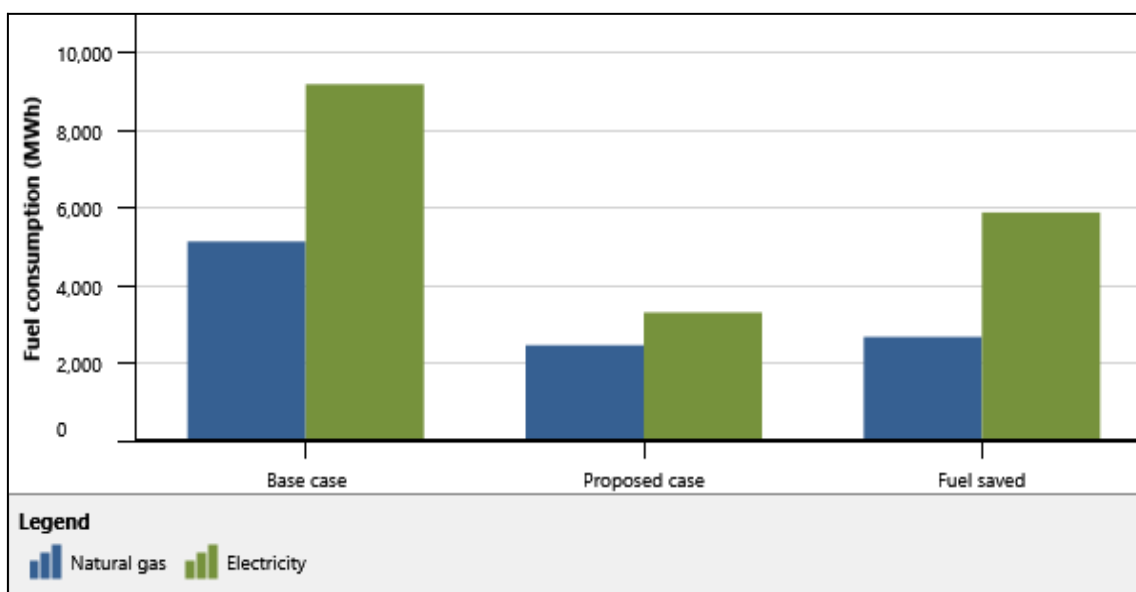
- LED Lighting Solutions for Interior and Exterior
- Lighting Controls
- Lighting Photometrics and Design Layout
- Energy Audits
- Billing Analysis
- EV Charging Stations
- Motors and Motor Controls
- HVAC Fan Motors and Controls
- Power Factor Correction

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Executive Summary

	Energy Consumption kWh	Energy Cost \$	GHG emission tCO ₂
Base Case	14,320,501	\$1,431,117	1,854
Proposed Case	5,763,367	\$532,000	777
Savings	8,557,134	\$899,117	1,077
%	59.8%	62.8%	58.1%

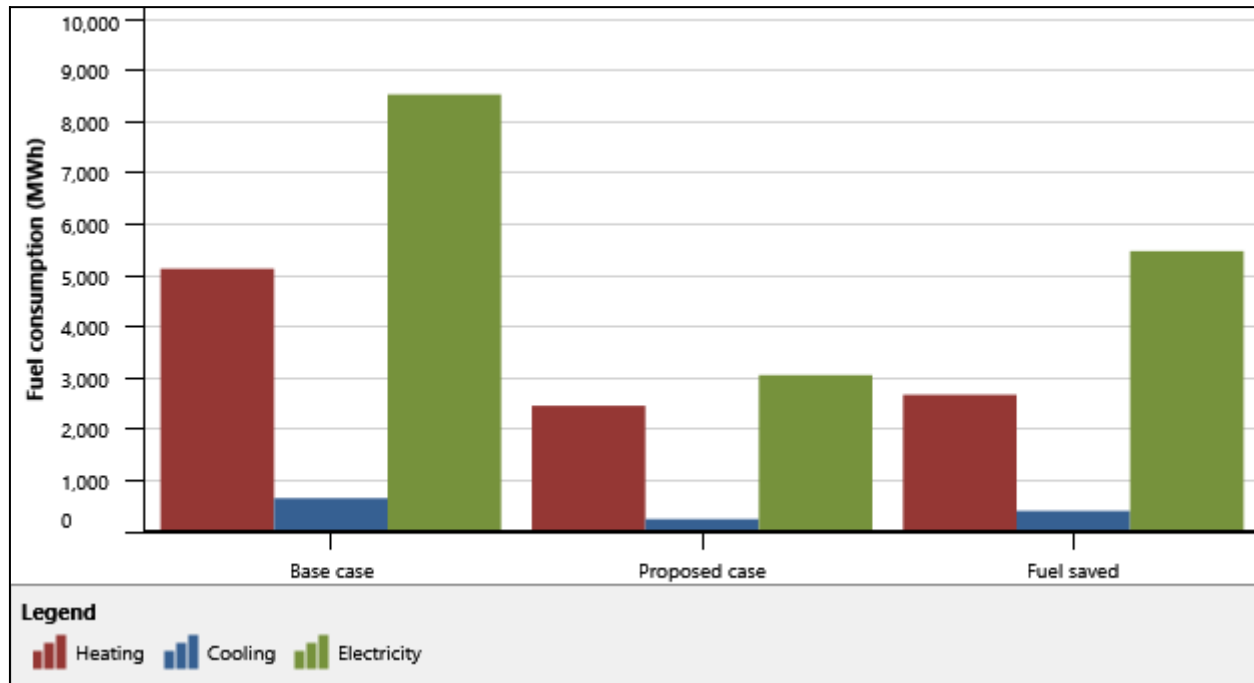
Energy Summary



Energy Type	Energy	Base Case	Proposed Case	Savings
	Unit	Energy Consumption	Energy Consumption	Energy Saved
Natural Gas	m ³	483,002	231,395	251,607
Electricity	kWh	9,187,258	3,304,153	5,883,105
Energy Type	Energy	Base Case	Proposed Case	Savings
	Energy Rate	Energy Cost	Energy Cost	Savings
Natural Gas	0.30 \$/m ³	\$ 144,901	\$ 69,418	\$ 75,482
Electricity	0.14 \$/kWh	\$ 1,286,216	\$ 462,581	\$ 823,635
Total		\$ 1,431,117	\$ 532,000	\$ 899,117

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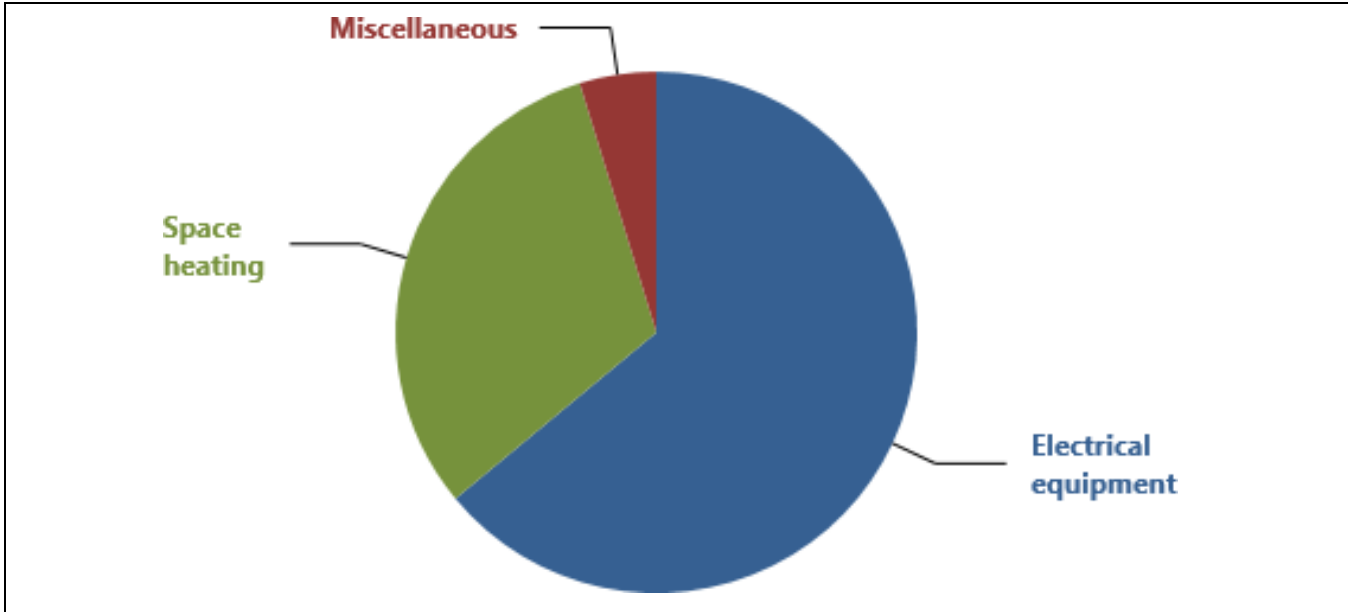
Energy Savings



	Heating kWh	Cooling kWh	Electricity kWh	Total kWh
Energy Consumption				
Base Case	5,133,243	653,721	8,533,537	14,320,501
Proposed Case	2,459,214	246,914	3,057,238	5,763,367
Energy Saved	2,674,029	406,807	5,476,299	8,557,134
Energy Saved (%)	52.1%	62.2%	64.2%	59.8%

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End-Use



Section	Energy Saved	
	kWh	%
Electrical Equipment	5,476,299	64%
Space Heating	2,674,029	31.2%
Miscellaneous	406,807	4.8%
Space Cooling	406,807	4.8%

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Financial Metrics

Cost Metrics

Lighting Material	\$	706,881	20.3%
Controls Component	\$	1,145,216	32.8%
Commissioning/Training	\$	500,354	14.3%
Estimated Install/Labour	\$	1,500,000	43%
BACnet Integration	\$	35,060	1%
Data Comm.	\$	78,000	2.2%
Measurement & Verification (M&V)	\$	10,000	0.29%

Total Costs	\$	3,975,512	100%
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Incentives and Grants	\$	485,381	
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Yearly Cash Flows - Year 1

Annual Costs

O&M Costs (Savings)	\$	(26,721)
Energy Cost - Proposed Case	\$	532,000
Total Annual Costs	\$	505,279

Annual Savings and Revenue

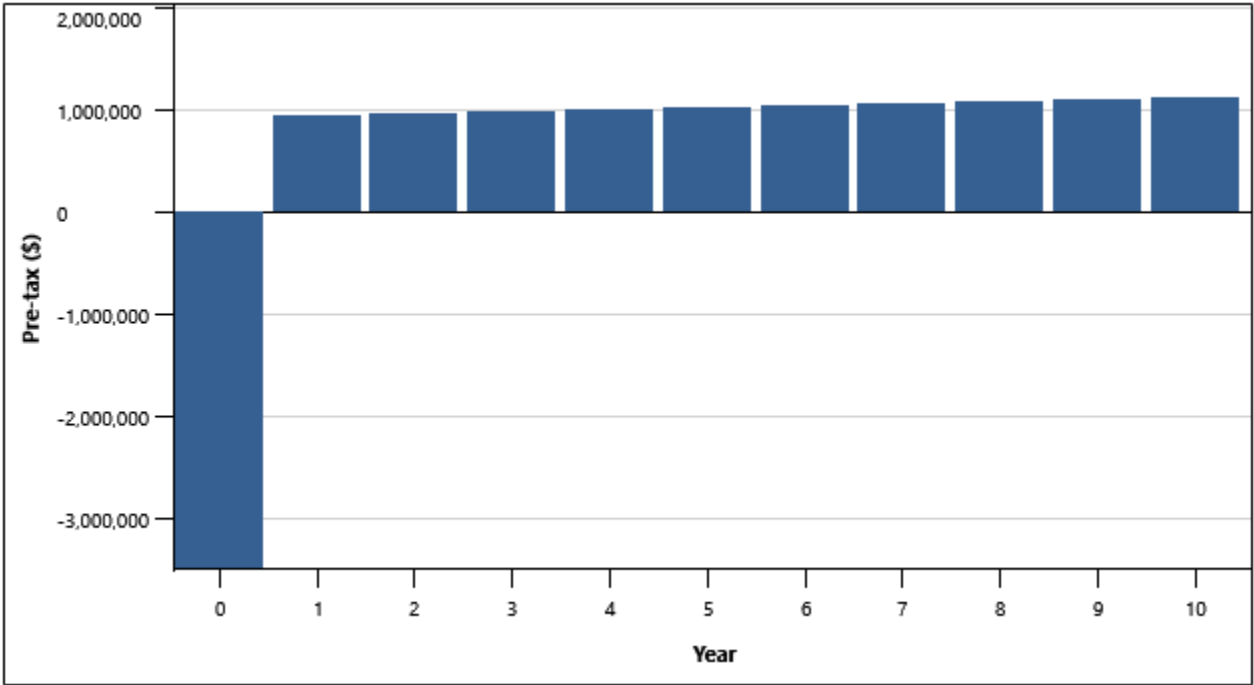
Energy Cost - Base Case	\$	1,431,117
GHG Reduction Revenue	\$	0
Other Revenue (Cost)	\$	0
Total Annual Savings and Revenue	\$	1,431,117

Net Yearly Cash Flow - Year 1	\$	925,838
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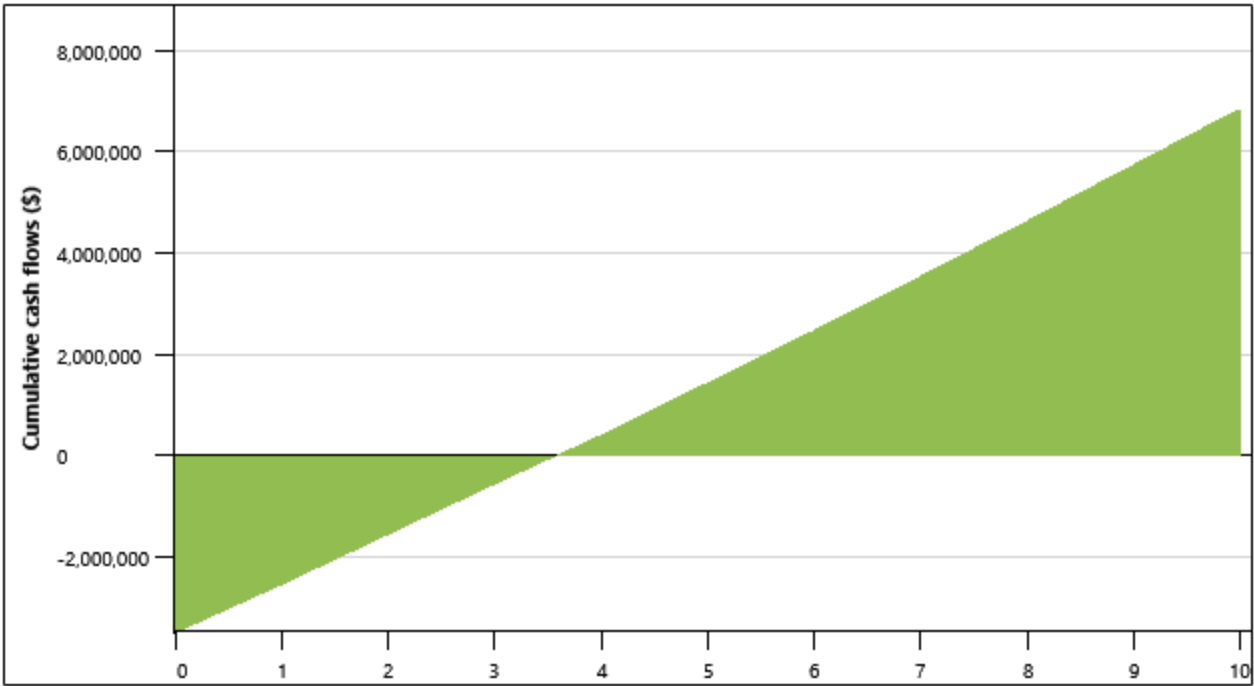
Pre-tax IRR - assets	%	25.7%
Simple payback	Years	3.8
Equity payback	Years	3.6

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Annual Cash Flow



Cumulative Cash Flow



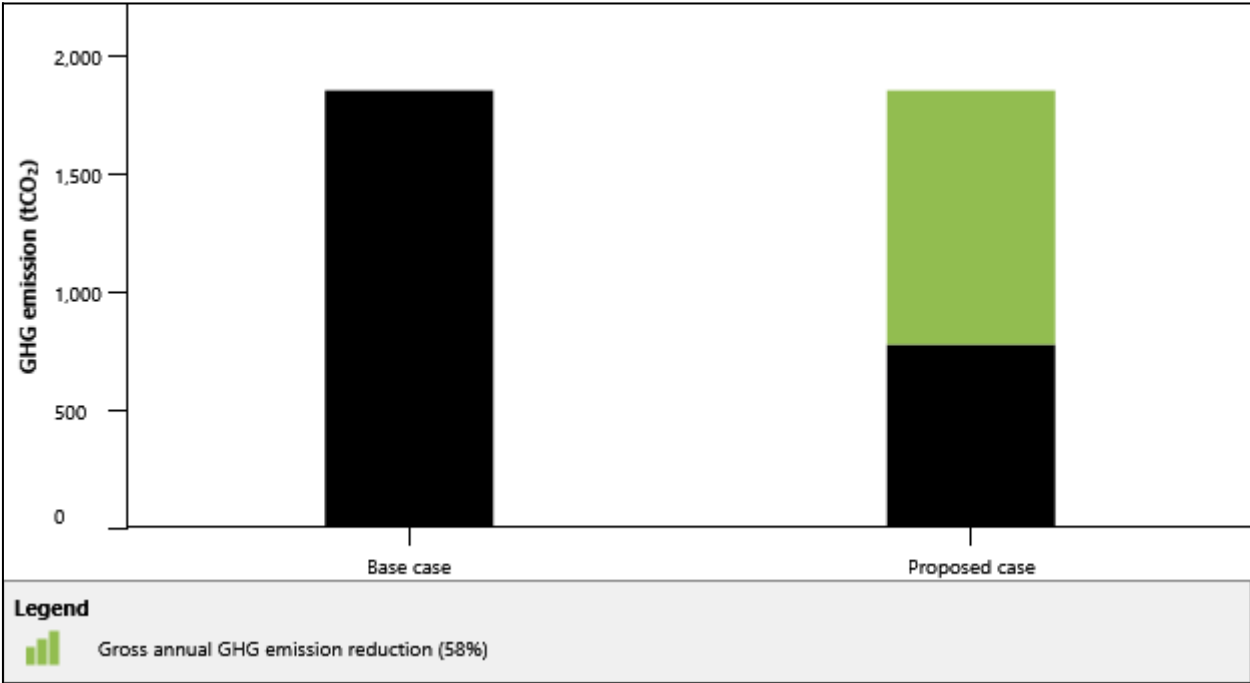
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Yearly Cash Flow

Year #	Pre-tax \$	Cumulative \$
0	-3,490,131	-3,490,131
1	944,355	-2,545,776
2	963,242	-1,582,534
3	982,507	-600,027
4	1,002,157	402,129
5	1,022,200	1,424,329
6	1,042,644	2,466,973
7	1,063,497	3,530,470
8	1,084,767	4,615,237
9	1,106,462	5,721,699
10	1,128,591	6,850,290

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GHG Emission

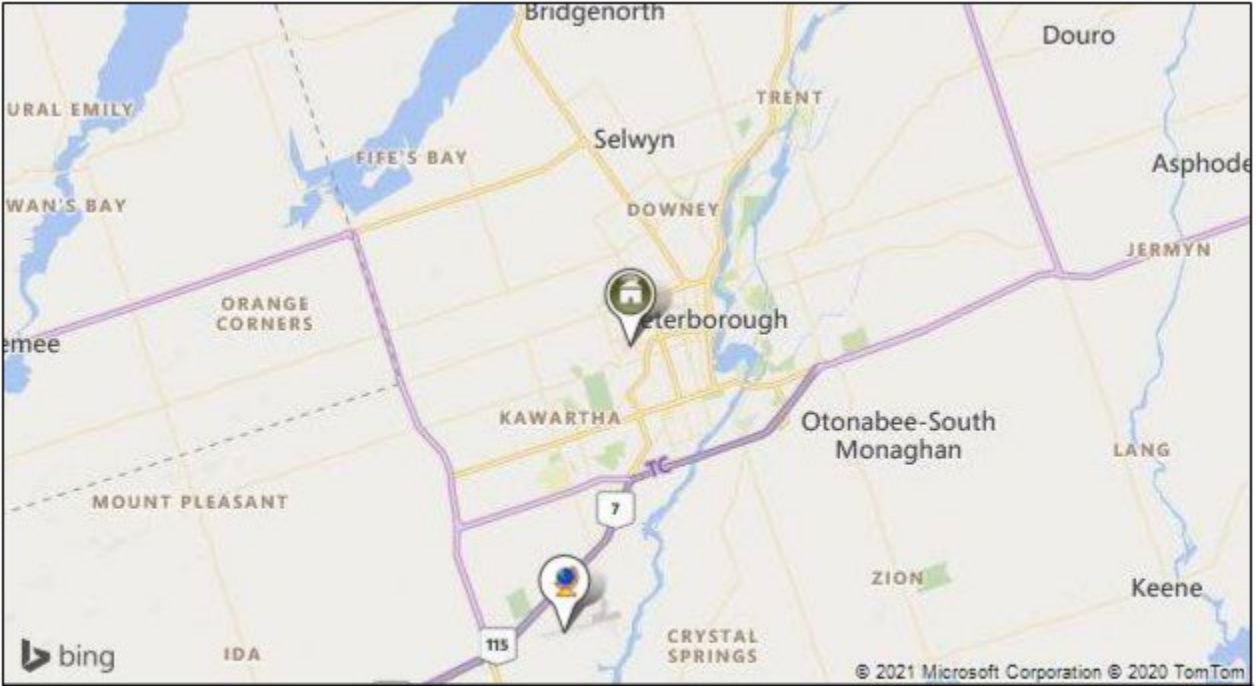


1,077.5 tCO₂ is Equivalent to 197.3 Cars & Light Trucks not used

GHG Emission		
Base case	1,854.4	tCO ₂
Proposed case	776.9	tCO ₂
Gross annual GHG emission reduction	1,077.5	tCO₂

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Climate Data



Legend



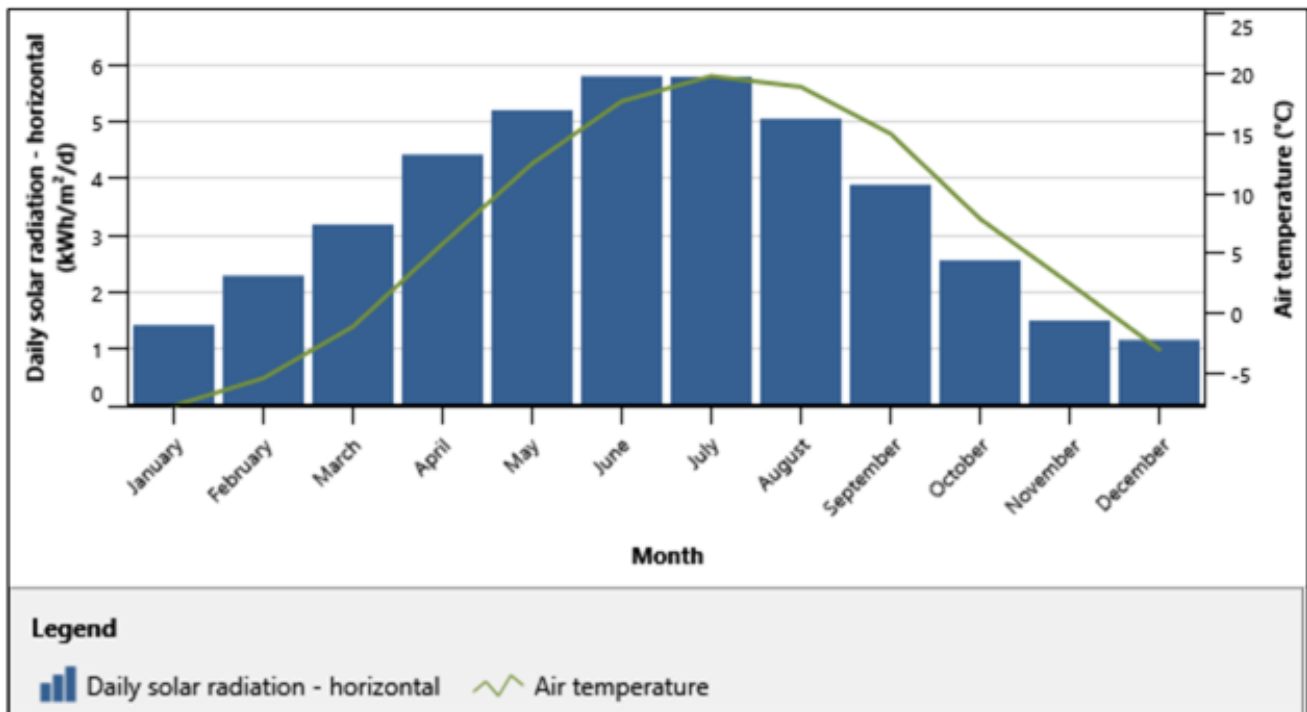
Facility Location



Climate Data Location

	Unit	Climate Data Location	Facility Location
Name		Canada - ON - Peterborough A	Canada - ON - Peterborough
Latitude	°N	44.2	44.3
Longitude	°E	-78.4	-78.3
Climate Zone		6A - Cold - Humid	6A - Cold - Humid
Elevation	m	191	237

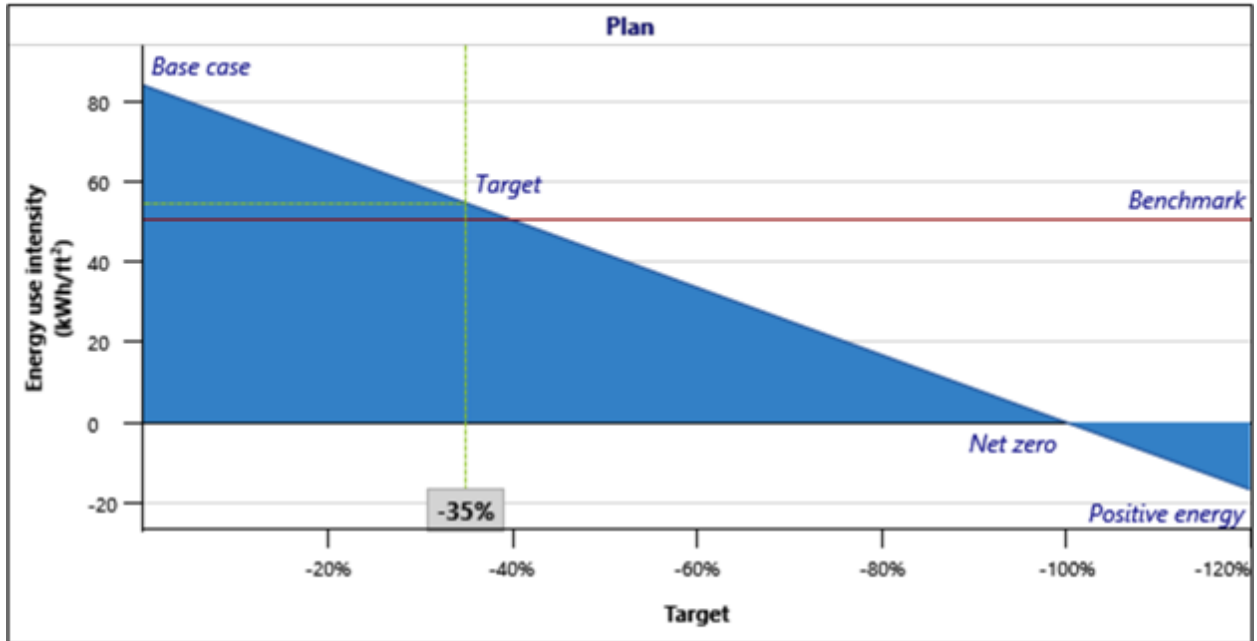
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Heating design temperature	-20.4								
Cooling design temperature	28.1								
Earth temperature amplitude	22.3								
Month	Air Temperature	Relative Humidity	Precipitation	Daily Solar Radiation - horizontal	Atmospheric Pressure	Wind Speed	Earth Temperature	Heating degree-days	Cooling degree-days
	°C	%	mm	kWh/m ² /d	kPa	m/s	°C	°C-d	°C-d
January	-7.7	74.5%	44.64	1.42	99.1	3.4	-6.4	797	0
February	-5.4	71.9%	36.96	2.29	99.1	3.2	-5.8	655	0
March	-1.1	69.3%	45.26	3.19	99.1	3.4	-1.0	592	0
April	5.8	65.1%	57.30	4.42	99.0	3.3	5.3	366	0
May	12.5	71.1%	65.41	5.20	99.0	3.0	11.5	171	78
June	17.7	76.2%	66.30	5.80	98.9	2.5	17.4	9	231
July	19.8	76.0%	63.86	5.79	99.0	2.5	21.0	0	304
August	18.9	79.4%	59.83	5.05	99.1	2.1	20.6	0	276
September	15.0	81.4%	69.30	3.89	99.2	2.3	16.1	90	150
October	7.9	79.1%	64.17	2.56	99.2	2.7	9.1	313	0
November	2.5	79.2%	63.30	1.50	99.2	3.0	2.8	465	0
December	-3.0	79.0%	52.70	1.16	99.1	3.2	-3.2	651	0
Annual	7.0	75.2%	689.03	3.53	99.1	2.9	7.4	4,109	1,038

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Facility Benchmark



Facility Size	675,000	ft ²
Benchmark	50.6	kWh/ft ²
Minimum - Average	19.9	kWh/ft ²
Maximum - Average	64.4	kWh/ft ²
Base Case	84.1	kWh/ft ²
Set Target	Target	
Year		
Target	-35%	
Proposed case	54.7	kWh/ft ²
Facility - Plan		
Energy Consumption	Annual	
Base Case	56,767,500	kWh
Proposed Case	36,898,875	kWh
Energy Saved	19,868,625	kWh

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Energy Contact(s)

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