TOWNSHIP OF ESQUIMALT

BUILDING RETROFIT STUDY

MUNICIPAL HALL,1229 ESQUIMALT RD

JANUARY 2026

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TOWNSHIP OF ESQUIMALT

PROJECT NO.: CA0051294.1761
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1 EXECUTIVE SUMMARY

ENERGY AND GHG ANALYSIS

The Municipal Hall is a three-storey building that includes the council chamber, administrative offices and satellite police offices with an area of 935 m^2. The site used approximately 278,000 ekWh of energy at a cost of $33,500, for an energy intensity of 27.6 ekWh/ft^2.

The current GHG emissions are approximately 8 tCO2e, which is higher than the 2010 baseline of 6 tCO2e but less than the 2023 baseline of 10.5 tCO2e. The emissions are very low when compared to other municipal buildings such as the Recreation Centre.

ENERGY CONSERVATION AND GHG REDUCTION MEASURES

We identified a number of measures; these have been split up into the following categories:

— Energy Conservation measures

— Capital Measures

— GHG Emissions Reduction Strategies

The following table summarizes the potential energy conservation measures.

MEASURE		POTENTIAL SAVINGS			COST/PAYBACK	
#	ENERGY CONSERVATION MEASURE	Energy (ekWh[1]/Yr)	Utility Cost ($/Yr)	Emissions Reduction (eCO_2 T/Yr)	Opinion Of Cost	Simple Payback (years)
Energy Conservation Measures						
6.1	LED Lighting Retrofit	5,500	$650	-0.02	$5,000	8
6.2	Schedule RTUs	15,500	$1,300	1.1	$5,000	4
6.3	BAS Recommissioning	10,000	$900	0.6	$8,000	9
	ECM Totals (Rounded)	**31,000**	**$2,800**	**1.6**	**$18,000**	**6**
Capital Measures						
7.2	PV Panels	15,300	$1,650	0.2	$45,000	27
GHG Reduction Measures						
8.1	Replace RTUs with Electric Heat Pumps	3,500	-$975	3.1	$151,500	NA

[1] ekWh – equivalent kilowatt hour.

The total potential savings will not equal the simple addition of the individual values. The “integrated” totals represent an estimate of the combined savings.

Cost savings are based on historic utility rates. Future utility rates are on the rise in many jurisdictions. Higher utility rates result in higher, more attractive cost savings from energy conservation.

To realize the benefits outlined in this report, the measures identified must be implemented. We have recommended a next step for each measure. Depending on the size, complexity, and volume of projects, you may need to prepare engineering designs and/or specifications, develop bid documents for competitive quotes, manage construction review and/or contract administration, commission systems, verify installation as intended, train operators on system changes, measure performance improvement, and analyze/prepare/administer incentive applications and associated reporting. WSP can provide the expertise and services that will lead to successful implementation of energy conservation measures.

2 INTRODUCTION

2.1 AUTHORIZATION

This report was prepared at the request of Steve Knoke, Director, Parks and Recreation Services at the Township of Esquimalt, in accordance with our proposal dated February 28, 2025.

2.2 BACKGROUND

Esquimalt Council has made climate action a strategic priority, declared a climate emergency, and set ambitious targets to reduce corporate greenhouse gas emissions (GHGs) by 45% from 2010 levels by 2030, and to becoming a 100% renewable energy community by 2050. Recently, Council resolved to complete a **GHG Reduction Building Feasibility Study** that would meet Federation of Canadian Municipalities (FCM) goals to identify a sequence of GHG reduction measures to reduce GHG emissions for community buildings by at least 50% within 10 years and by at least 80% (i.e. near net-zero GHG emissions) within 20 years from 2023 (the base year), while managing capital costs and reducing operating costs.

The completion of the Retrofit Feasibility Study would ultimately enable the municipality to integrate reductions in GHG emissions and energy use into longer-term asset management plans for managing the municipal buildings and attain future FCM funding to complete innovative capital projects.

The Township of Esquimalt contracted WSP to conduct Building Retrofit Studies on a portfolio of 5 buildings, with the primary focus on the two largest energy consumers and GHGs emitters.

- **Esquimalt Recreation Centre** (527 Fraser Street): Built in 1973. Gross floor area = 4828. Heated with gas. A community recreation facility with an aquatics centre, weight room, gymnasium, and multi-purpose spaces.
- **Archie Browning Sports Centre** (1151 Esquimalt Road): Built in 1960. Gross floor area = 6050 m^2. Heated with gas. This facility includes an ice arena, a six-sheet curling rink, lounge areas, and Esquimalt Parks and Recreation administrative offices.
- **Municipal Hall** (1229 Esquimalt Road): Built in 2002. Gross floor area = 935 m^2. Heated with gas and electric heat pumps. The Hall, a three-storey building includes a council chamber, administrative offices, and satellite police offices.
- **Public Works** building (601 Canteen Road) Built in 1996. Gross floor area = 1150 square metres. Heated with gas. Home to Esquimalt's public works staff and the municipal fleet, including administration offices, mechanics shop, and stores.
- **Parks Nursery** building (1100 Craigflower Road) Built in 1979. Gross floor area = 223 m^2. Heated with gas. Home to Esquimalt's parks staff, including administrative offices, meeting /lunchroom and storage.

This report focuses on the **Municipal Hall,** 1229 Esquimalt Road.

2.3 OPINION OF COSTS

The opinions of probable costs presented in this report should be considered preliminary budgets. They are intended to be sufficient for making educated investment decisions and obtaining preliminary project approval. Significant projects will typically require further investigation and design to accurately determine construction budgets and timing. Unless noted otherwise, we have assumed that all the measures identified in our report will be implemented as a single project. Actual costs may be higher if projects are implemented individually. Costs do not include HST.

For each option where an incentive may be available, we have included an estimate of the potential eligible incentive value, less the anticipated cost of incentive administration. You would need to apply for incentives before proceeding with any work. Incentive programs periodically change. The values presented are based on the program in effect at the time of our investigation. The incentives considered are described below.

2.4 PROJECT SAVINGS

Savings were developed using tabulated data, energy handbooks, the ASHRAE Handbook, weather data, WSP's previous project experience, supplier data sheets, and background information gathered during the site visits, as well as mechanical, electrical, and architectural plans provided by the clients. Equipment operation was based on schedules and control sequences provided by the client during the site visit.

2.5 UTILITY RATE

The utility rates used throughout this project to assess the savings from implementing energy conservation and decarbonization measures were the current rates published by the supplier. The rates used are summarized in the table below.

Table 2-1 Summary Utility Savings Rates

Electricity	BC Hydro: Medium General Service Rate 1500 Consumption rate = $0.1080/kWh, Demand rate = $6.030/kW
Natural Gas	FORTIS BC: Small Commercial Rate Total rate (Supply, Delivery, Storage& transport) = $8.80/GJ
Water	City of Victoria Rate = $5.30 /100 ft^3, or $1.87 /$m^3$

2.6 INCENTIVES

The Federation of Canadian Municipalities (FCM) Community Buildings Retrofit (CBR) initiative helps to optimize the energy performance and reduce greenhouse gas (GHG) emissions of community buildings owned by municipalities and not-for-profit organizations. The CBR initiative is administered through FCM's Green Municipal Fund (GMF).

FCM's Community Buildings Retrofit initiative is a $167 million initiative that was made possible through a federal government contribution of $950 million in its 2019 budget. Applicants can stack CBR funding with funding from other programs, including programs available through provincial and territorial governments.

Grants for GHG reduction pathway feasibility studies help to integrate energy and GHG reductions into longer-term plans for managing community buildings. These studies will enable municipalities to identify a sequence of GHG reduction measures—the "GHG reduction pathway"—that will help to reduce GHG emissions for community buildings by at least 50% within 10 years and by at least 80% (i.e. near net-zero GHG emissions) within 20 years while managing capital costs and reducing operating costs. For a full list of eligibility requirements for the CBR initiative and GHG reduction pathway feasibility studies, see the application guide.

2.7 EMISSION ENERGY & CONVERSIONS FACTORS

The emission energy factors and conversion factors used in this report comes from NRCan and are summarized below:

Table 2-2 Emission Energy Factors and Conversions Factors

ENERGY	EMISSION FACTOR (TCO2/EKWH)	EMISSION FACTOR (TCO2E/GWH)	CONVERSION FACTOR
Electricity	0.000014	14.0	
Natural Gas	0.000185995	185.995	0.05167 tCO2/GJ

Updated projections for the future emissions factors for electricity were published in December 2025. The projected factors for British Columbia are listed below.

Table 2-3 Projected Emission Energy Factors for Electricity

YEAR	REGION	EMISSION FACTOR (TCO2E/GWH)*
2025	British Columbia	5.8
2026	British Columbia	7.2
2027	British Columbia	7.7
2028	British Columbia	8.2
2029	British Columbia	8.5
2030	British Columbia	5.7
2031	British Columbia	5.8
2032	British Columbia	5.4
2033	British Columbia	6.5
2034	British Columbia	7.4
2035	British Columbia	2.2

** Excluding Biomass and RNG CO2 emissions*

See ECCC Data Catalogue

3 BUILDING DESCRIPTION

GENERAL DESCRIPTION

The Municipal Hall is an office building located at Esquimalt in British Columbia. Built in 2002, the building has an area of approximately 10,060 ft^2 (935 m^2), spread over 3 floors. The building houses mainly administrative offices but also includes a satellite police department on the ground level. The summary description of the building is presented in the following table.

Table 3-1 General description of the Municipal Hall

COMPONENTS	
Name and Address	Municipal Hall – 1229 Esquimalt Road, Esquimalt, BC, V9A 3P1
Gross Floor Area	935 m^2
Year Constructed	2002
Number of Levels	3 Storey building, Police and municipal hall at first floor, and offices on the 2nd and 3rd floors
Cladding	The exterior walls are clad with acrylic stucco, stone veneer, and exposed cast-in-place concrete. Assemblies are generally constructed over steel stud framing with exterior sheathing along with, continuous rigid insulation outboard of the sheathing, and a self-adhered air/vapour barrier membrane, according to the architectural drawings. Shading elements are installed at various wall areas and consist of steel framing and corrugated metal panels mounted above glazed openings.
Parking	surface
Current Occupancy	full
Building Usage	Mainly administrative offices with police services

Figure 3-1. Aerial view of the Municipal Hall

GENERAL SCHEDULES

The schedules considered for the Municipal Hall were retrieved from the documentation received and the site visit.

Table 3-2 Summary of the Schedule for the Municipal Hall

	ON	OFF	DAYS/WK	WK/YR
Public Hours	8:30	16:30	5	52
Ventilation	6:00	23:00	5	52
Lighting	6:00	23:00	5	52

3.1 BUILDING ENVELOPE

Walls

The majority of the exterior walls are clad with acrylic stucco. Most exterior wall assemblies consist of steel stud framing with exterior gypsum sheathing, continuous rigid insulation outboard of the sheathing, and trowel applied air/vapour barrier membrane as part of an EIFS (Exterior Insulation and Finish System). The assembly includes a drainage cavity behind the rigid insulation to manage moisture.

Exposed cast-in-place concrete is used at the stair cores and portions of the building base.

Acrylic stucco is applied in horizontal bands across the upper levels, with visible control joints and terminations at parapet edges and vertical transitions. Painted metal flashings are installed at these terminations and transitions.

Dressed rubble granite cladding is present at the main entrance and portions of the lower elevations. The stone is laid in a random mosaic coursed pattern and capped with painted metal flashing.

Sealant joints are present around windows, exterior doors, and the curtain wall system, including at interfaces between glazing frames and surrounding cladding, as well as at metal flashing joints such as parapet caps and window sills. The joints appear to be constructed using elastomeric sealant, intended to prevent water ingress at penetrations and cladding transitions.

Curved and horizontal metal canopies and sunshades are present at the south and east sections of the building. These assemblies consist of painted steel framing and corrugated or flat metal panels, supported by round steel pipe columns or mounted directly to the façade. Some include integrated lighting fixtures or bird deterrent spikes, serving both decorative and shading functions.

Windows

Glazing systems at the Municipal Hall primarily consist of aluminum-framed assemblies with sealed double-glazed insulating glass units (IGUs). Two main types of glazing systems are present:

Curtain wall systems are used primarily at the main public entrances on the north and south elevations. These assemblies are full-height systems extending continuously past floor lines, supported at the slab edges and independently from the surrounding walls. According to drawings, aluminum frames have thermal breaks and low-e tinted glazing.

Storefront glazing systems are used at select low-height locations such as vestibules or secondary entries. These are also aluminum-framed systems with thermally broken profiles but are typically limited to one storey and structurally supported at their base and head.

Strip windows are used extensively throughout the upper floors, horizontally aligned units in punched openings. Frames are thermally broken aluminum with sealed double-glazed IGUs, and blinds are installed in most interior spaces.

Roof

The roofing consists of a recently installed 2-ply SBS membrane over a concrete topping on corrugated metal deck. A cold-applied liquid membrane and gravel ballast cover all horizontal surfaces, providing extra UV protection. Roof slope is achieved through the sloped structural framing.

Sloped roofing sections are present around the perimeter of the third-level roof as part of the cornice assembly, finished with 2-ply SBS waterproofing membrane, overflow drains, and painted metal flashings at the edges.

3.2 ELECTRICAL INFRASTRUCTURE

Electricity is supplied underground via a pad-mounted transformer on the south side of the building.

The main switchgear was manufactured by Siemens and is located in the main electrical room on the lowest level. The switchgear is rated at 800A, 120/208V, three-phase, four-wire and contains two cells.
- Cell 1: Main disconnect switch, rated at 800A
- Cell 2: eight 200A disconnects for various subpanels, one 180A disconnect for a HVAC unit, and one 175A disconnect for the elevator.

The main electrical room also contains two subpanels, each rated at 250A, and the house meter.

Power is distributed to various subpanels located throughout the common area corridors and IT rooms before being supplied to the end fixtures. The circuit-breaker-type panels are rated at 200A or 250A, 120/208V.

3.3 HVAC SYSTEMS

Heating, cooling, and ventilation for the building are primarily provided by packaged rooftop units (RTUs) and a series of split-system heat pumps. The RTUs were installed in April 2022. The heat pumps and condensing units were installed between 2020 - 2022.

Heating is supplemented by electric baseboard heaters, electric wall-mounted heaters, electric duct heaters. Ventilation is supplemented by desertification fans, exhaust fans, and heat recovery ventilators.

- 2 destratification fans in the dropped ceiling space on the third level, serve the lobby atrium area
- 2 HRVs manufactured by Lifebreath, installed in the dropped ceiling space on the second level
- 5 electric duct heaters in dropped ceiling spaces serving the second and third levels
- 11 exhaust fans serving washrooms, meeting rooms, staff rooms, and service rooms.
- Electric baseboard heaters throughout the building
- Two electric unit heaters, located at the bottom of the stairwells

The major HVAC systems are controlled by the BAS but smaller systems are on local thermostats.

Table 3-3 HVAC Equipment

SYSTEM ID	AREA SERVED	SCHEDULE	FLOW	NGAS	Refrig	COOLING	DESCRIPTION
			CFM	MBH		TONS	
RTU-1	Main Floor South	0600-2300	3000	85	R-410A	7.5	Trane - DHC092H3RHA
RTU-2	Main Floor Interior	0600-2300	2000	56	R-410A	5	Trane - DHC060H3RHA
RTU-3	Council Chamber	0600-2300	1600	43	R-410A	4	Trane - DHC048H3RHA
RTU-4	Council Chamber	0600-2300	1600	43	R-410A	4	Trane - DHC048H3RHA
RTU-5	Upper Floor South	0600-2300	2400	74	R-410A	6	Trane - DHC074H3RHA
RTU-6	Upper Floor North	0600-2300	2000	56	R-410A	5	Trane - DHC060H3RHA
HRV-1	Main Floor Washrooms	M - F 0700-1800	110				Lifebreath - 195DCS
HRV-2	Main Floor Room 211	0600-2300	225				Lifebreath - 350DCS
HP-1	Lower-Level Police Office	M W F 0830-1800 Tue Thur 0830-1930 Sat 0830-1700, Sun off			R-410A	5	Mitsubishi: PEFY-P54NMHSU-E
HP-2	Lower-Level Police Office				R-410A	5	Mitsubishi: PEFY-P54NMHSU-E
HP-3	Lower-Level Police Office				R-410A	8	Mitsubishi: PEFY-P96NMHSU-E
HP-4	Lower-Level Police Office				R-410A	5	Mitsubishi: PEFY-P54NMHSU-E
CU-1	With HP-1	M W F 0830-1800 Tue Thur 0830-1930 Sat 0830-1700, Sun off			R-410A	5	Mitsubishi: PUMY-P60NKMU3
CU-2	With HP-2				R-410A	5	Mitsubishi: PUMY-P60NKMU3
CU-3	With HP-3				R-410A	8	Mitsubishi: PUHY-P96TNU-A
CU-4	With HP-4				R-410A	2	Mitsubishi: MUZ-GL24NAH

Figure 3-2 RTU-4 and Condensing Units

3.4 BUILDING AUTOMATION SYSTEM BAS

A Delta Controls *enteliWEB* building automation system (BAS) monitors and controls the operation of the central HVAC in the building. The equipment is controlled by direct digital control (DDC) actuation. The BAS is operated remotely by the service contractor, Island Temperature Controls.

As previously mentioned, the major HVAC systems are controlled by the BAS but smaller systems are on local thermostats such as the IT main server room, the elevator room and mechanical room. This may cause issues with simultaneous heating and cooling or competing systems.

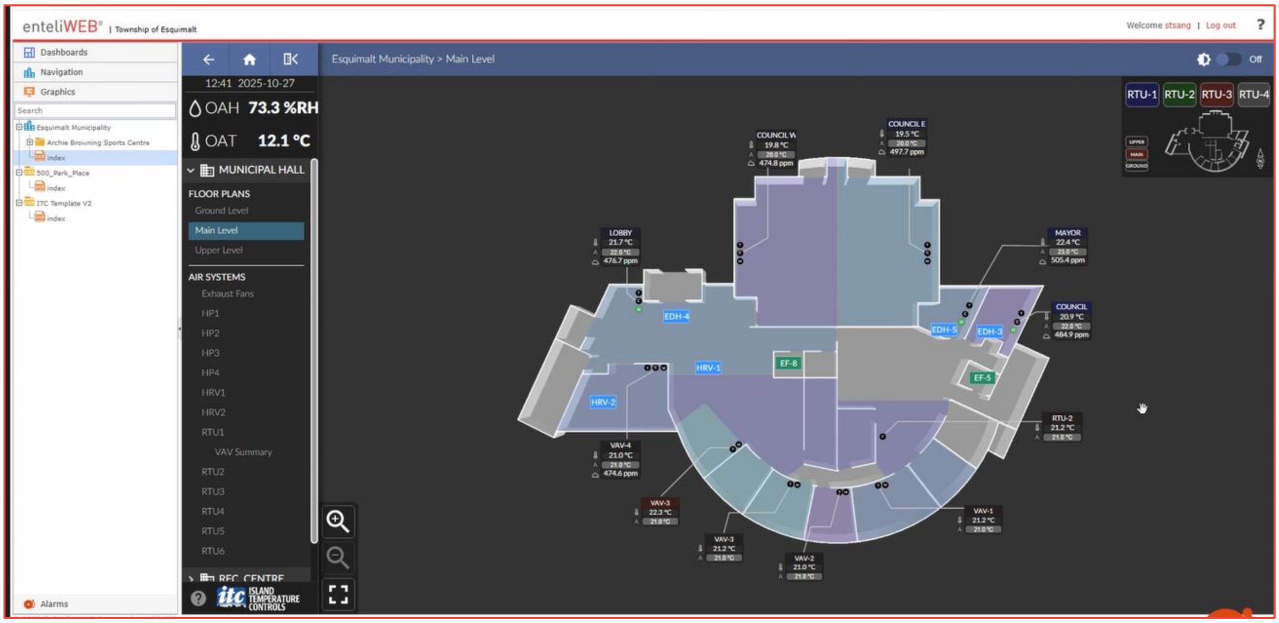


Figure 3-3 BAS Screenshot

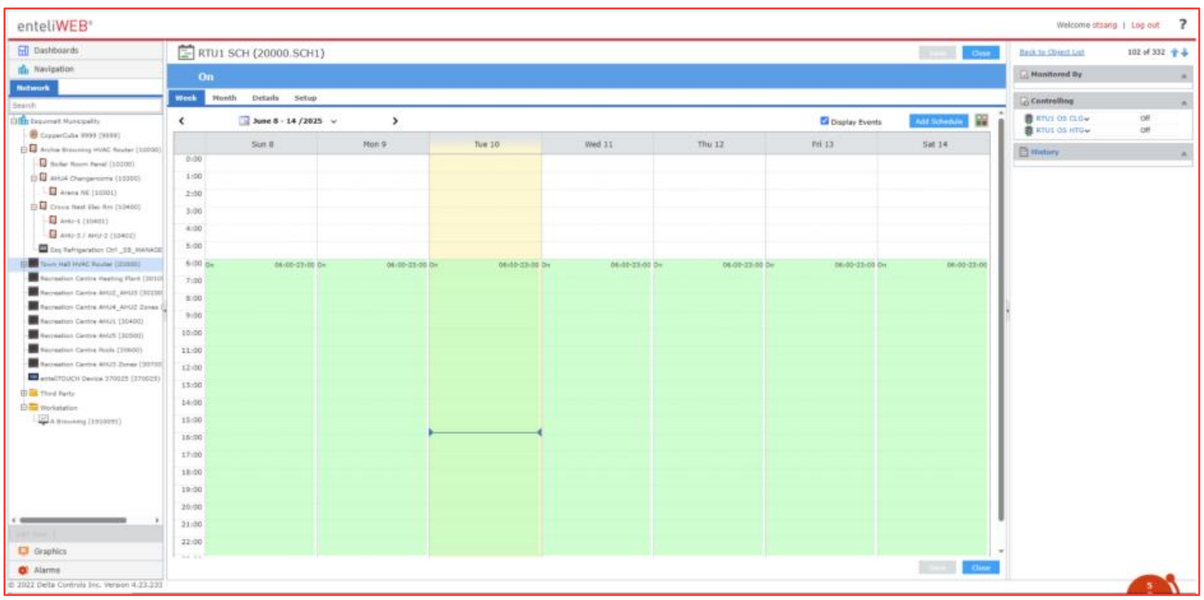


Figure 3-4 RTU-1 BAS Schedule

3.5 DOMESTIC HOT WATER

Domestic hot water is generated by two local electric hot water tank heaters located in the dropped ceiling spaces above the janitor's closets.

Table 3-4 Domestic Hot Water System Summary

SYSTEM ID	AREA SERVED	CAPACITY		YEAR INSTALLED	ENERGY TYPE	DESCRIPTION
		LITRES	KW			
WH-1	Building	182	11	2022	Electric	John Wood (Model No. E50TEM-30240250)

SYSTEM ID	AREA SERVED	CAPACITY		YEAR INSTALLED	ENERGY TYPE	DESCRIPTION
		LITRES	KW			
WH-2	Building	182	11	2022	Electric	John Wood (Model No. E50TEM-30240250)

3.6 LIGHTING

Interior lighting includes:

- Strip fluorescent fixtures with primarily T8 lamps
- Variety of lamp types including some twenty 2 ft by 2 ft fixtures with U-tubes fluorescents
- Recessed pot lights with primarily incandescent lamps

The lighting in the police offices has all been converted to LEDs in 2022. Interior lighting is controlled by motion sensors and manual switches.

Exterior lighting includes:

- Staircase/ramp lights off the main north entrance with LED lamps
- Decorative sconce lights adjacent to the main north entrance doors with incandescent lamps
- Street-lamp-style lights with incandescent lamps along the south elevation
- Pot lights on the south entrance canopy with incandescent lamps
- Roof-mounted LED lights to illuminate the wall-mounted signage on the north elevation

The exterior lights are controlled by timers.

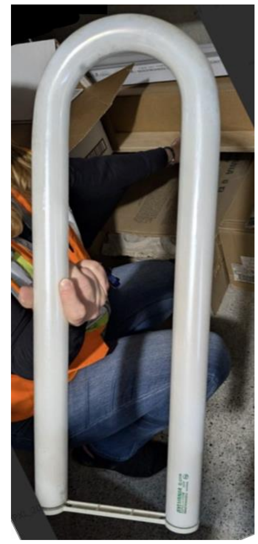


Figure 3-5 Sample U-Tube Lamp

3.7 PLUG LOADS

The plug loads include office equipment, local IT servers and small kitchen appliances.

ELEVATORS

The building has a single hydraulic elevator with relay-type controls, serving all levels. The elevator was manufactured by Elmo around 2003.

4 EXISTING ENERGY PERFORMANCE

4.1 EXISTING ENERGY PERFORMANCE AND GHG EMISSIONS

4.1.1 ANNUAL UTILITY USAGE AND COSTS

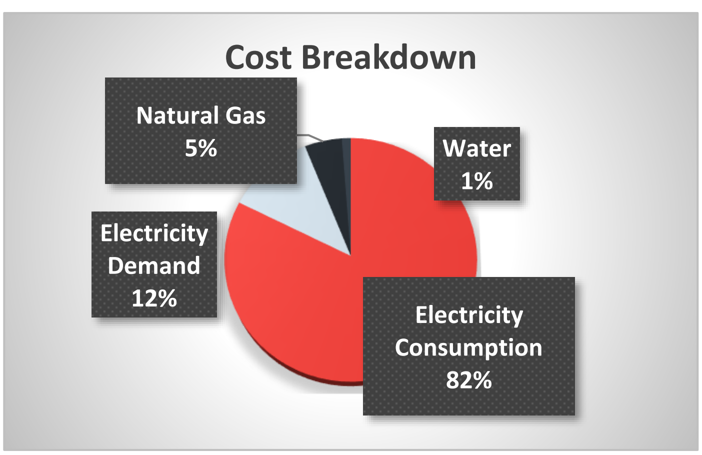
The Municipal Hall is supplied with energy and water from these sources:

- Electricity from BC Hydro
- Natural gas from Fortis BC
- Water from the City of Victoria

The utility usage and costs are summarized below. A baseline period of May 2024 through April 2025 was selected to match the baseline of the other facilities.

Table 4-1 Baseline Data (May 2024 – April 2025)

Utility	Consumption		Equivalent Consumption		% of total energy	Rate		Cost	Energy Use Intensity (ekWh/ft^2)
Electricity Consumption	252,998	kWh	252,998	kWh	91%	0.1080	$/kWh	$27,654	25.15
Electricity Demand	645	kW				6.03	$/kW/mo	$3,889	
Natural Gas	89	GJ	24,678	ekWh	9%	8.80	$/GJ	$1,650	2.45
Water	617	m^3				1.87	$/m3	$397	
Total Equiv. Energy Consumption			**277,676**	**ekWh**	**100%**	**Total Cost**		**$33,589**	**27.60**



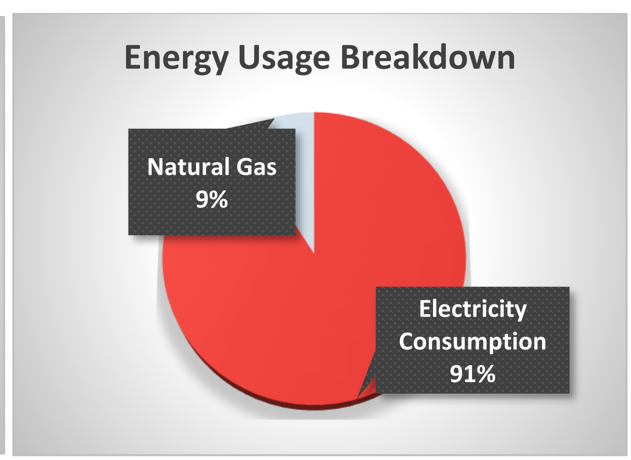


Figure 4-1 Utility Cost and Energy Usage Breakdown

The monthly energy usage shows a typical heating profile where the usage is high in the winter and low in the summer. Surprisingly, the summer energy usage is low, there is no visible cooling or summer extra. This indicates that the majority of the energy consumption is for heating. Cooling is not significant. Natural gas consumption is very low, only a minor component of the energy consumption.

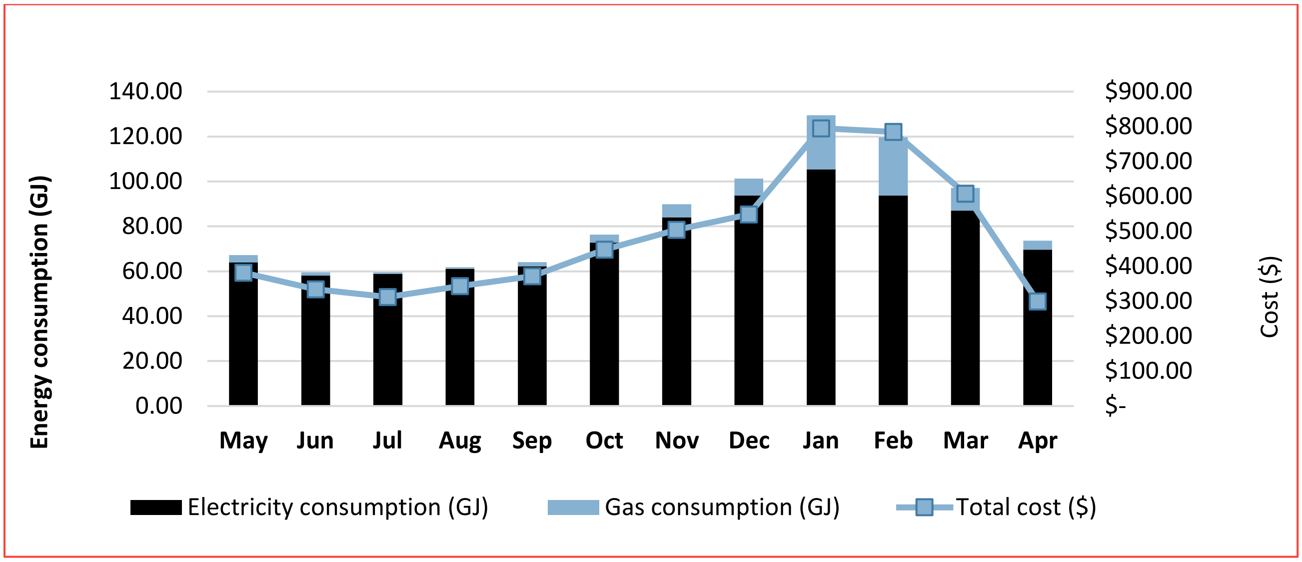


Figure 4-2 Monthly Energy Consumption and Cost

4.1.2 ANNUAL GHGS

The annual GHG emissions for the Municipal Hall during the baseline period of May 2024 through April 2025 is summarized below. Most of the emissions come from natural gas consumption even though it is a small portion of the energy usage. The overall GHG emissions are very low.

Table 4-2 4-3 GHG Emissions Data (May 2024 – April 2025)

Utility	Consumption		GHG Emissions (tCO_2e)	% of total GHG emissions	GHG Emissions Intensity (kg CO_2e/ft^2)
Electricity	252,998	kWh	3.5	44%	0.35
Natural Gas	89	GJ	4.6	56%	0.46
Total			**8.1**	**100%**	**0.81**

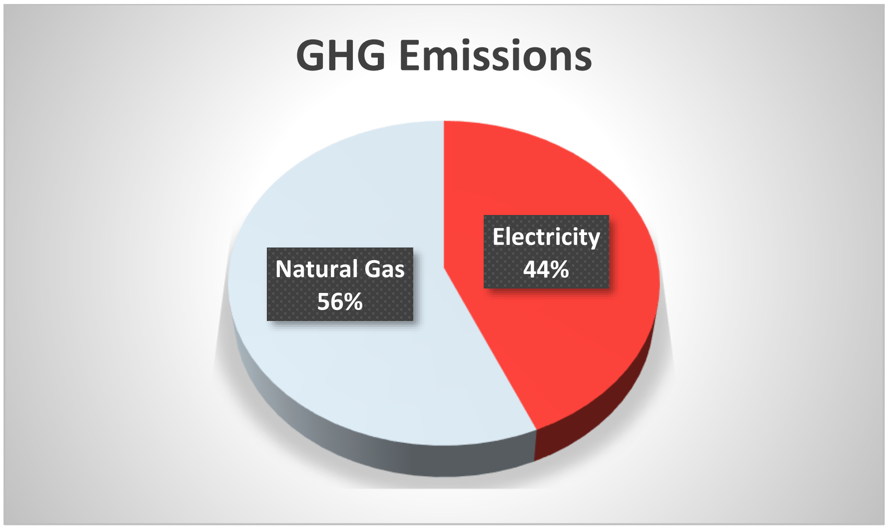


Figure 4-3 GHG Emissions Breakdown

4.1.3 ELECTRICITY

Electricity consumption at the Municipal Hall was assessed starting from December 2022. The baseline was selected as May 2024 to April 2025 to match the other facilities. The usage clearly shows a high baseload but also electric heating. This is expected as the building is heated with heat pumps.

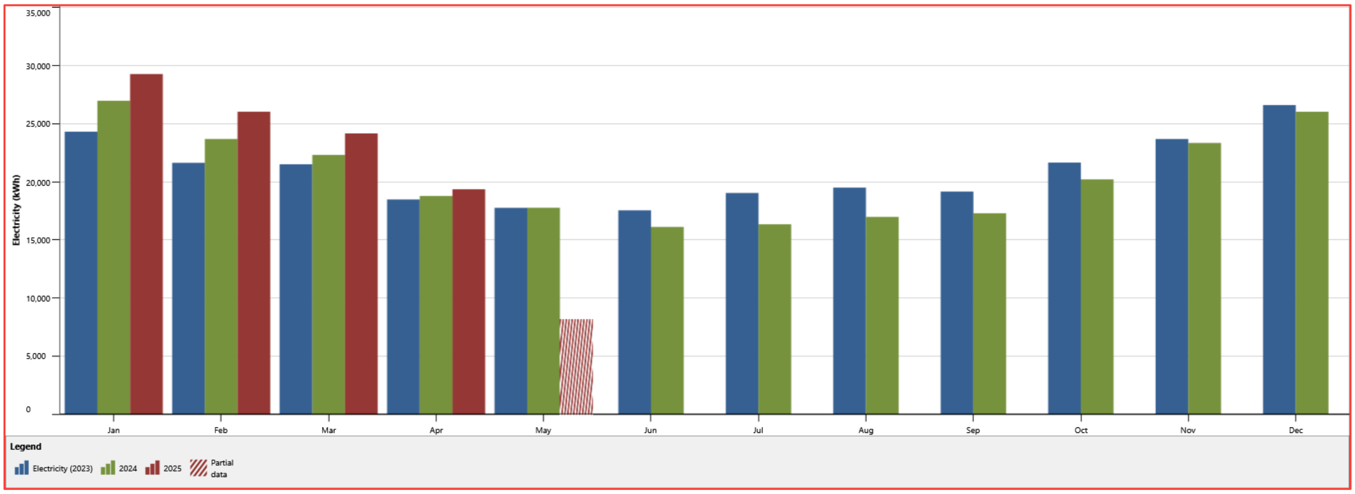


Figure 4-4 Monthly Electricity Consumption January 2023 to April 2025

The Municipal Hall consumed around 253,000 kWh of electricity from May 2024 to April 2025 with a peak power demand of 74 kW in January and a total cost of $31,500.

The following figure shows the monthly electricity consumption and power demand. Electricity and demand follow typical the seasonal heating pattern. Consumption and demand are lowest in the summer.

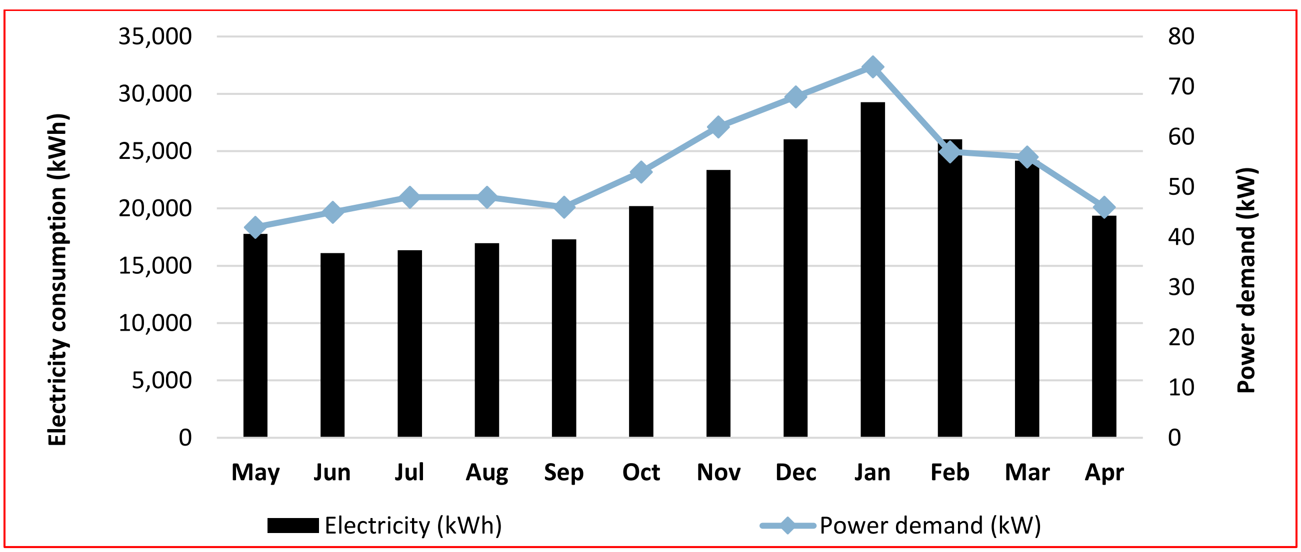


Figure 4-5 Monthly Electricity Consumption and Demand

The electricity consumption correlates very well with heating degree days with a balance point of 11°C. The electricity consumption does not correlate with cooling degree days, indicating that cooling is not a significant load.

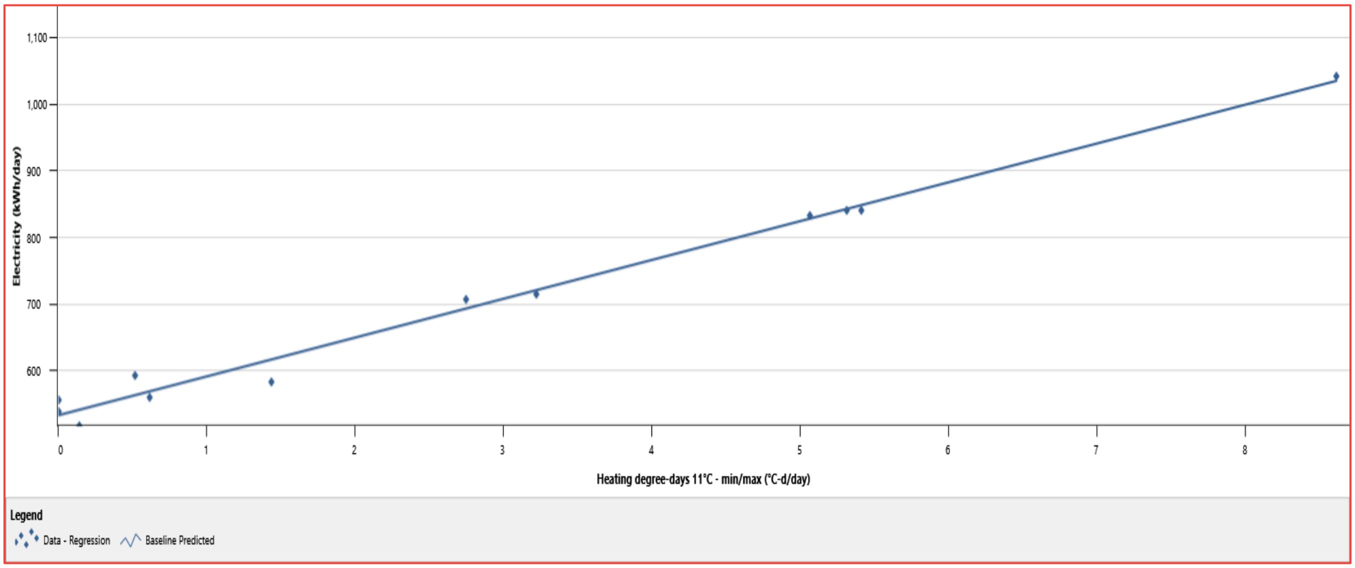
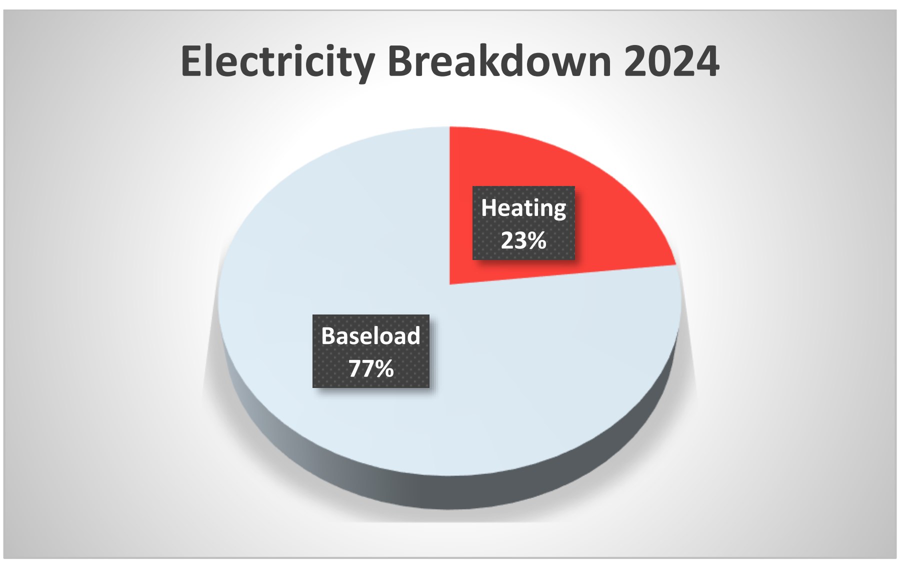


Figure 4-6 Electricity Consumption vs Heating Degree Days

The regression indicates that the majority of the consumption is baseload but with a significant amount of electric heating.



Regression results

$Y = 58.2963*x+533.1169$

$R^2 = 0.988$

Figure 4-7 Electricity Regression Breakdown

Interval Data

Hourly meter interval data was obtained from BC Hydro and analyzed. Data was only available from January 1 to June 6, 2025. When the data is graphed on a weekly basis, there is a faint daily pattern but not a clear profile. This indicates that equipment is operating long hours and during unoccupied hours. Electricity is used for heating, so after hours usage is expected. But there may be room for improvement.

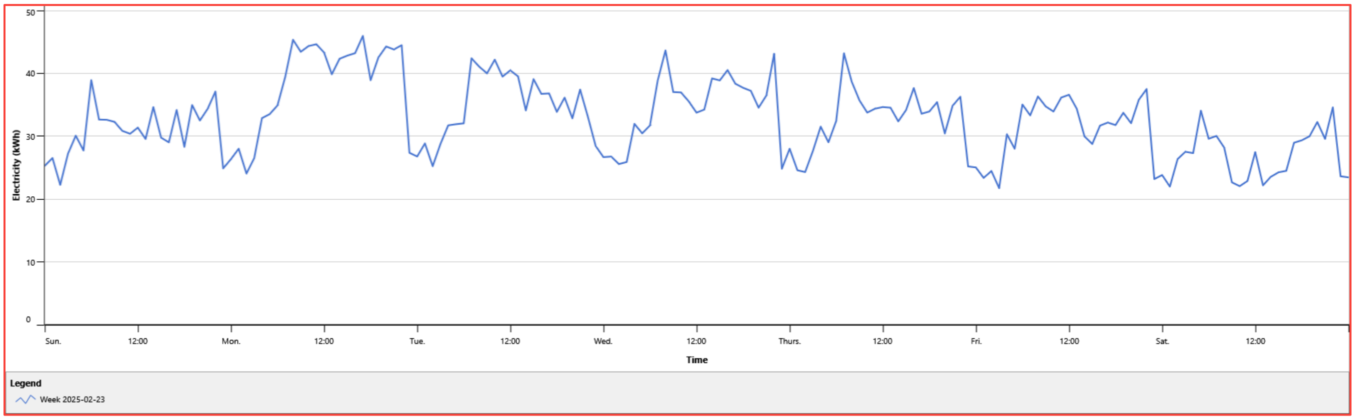


Figure 4-8 Electricity Interval Data Week Starting Feb 23, 2025

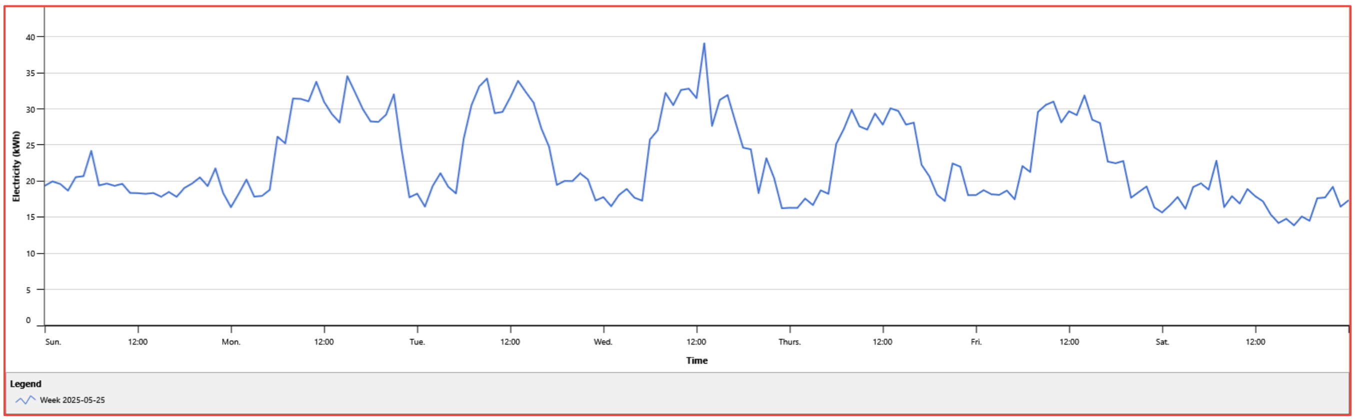


Figure 4-9 Electricity Interval Data Week Starting May 25, 2025

Heatmap

The interval data was also graphed as a heatmap, where all of interval data is displayed. The top right shows the beginning, Jan 1, ending in the bottom right with June 6. The days of the week run along the bottom.

Darker squares indicate higher consumption; lighter squares indicate lower consumption. The graph shows a faint daily pattern, indicating that there is some scheduling but not a clear daily pattern. The building uses a lot of energy at night and during unoccupied hours. There is little difference between weekdays and weekends, which is unexpected for this site. The usage is higher in the winter months which is expected.

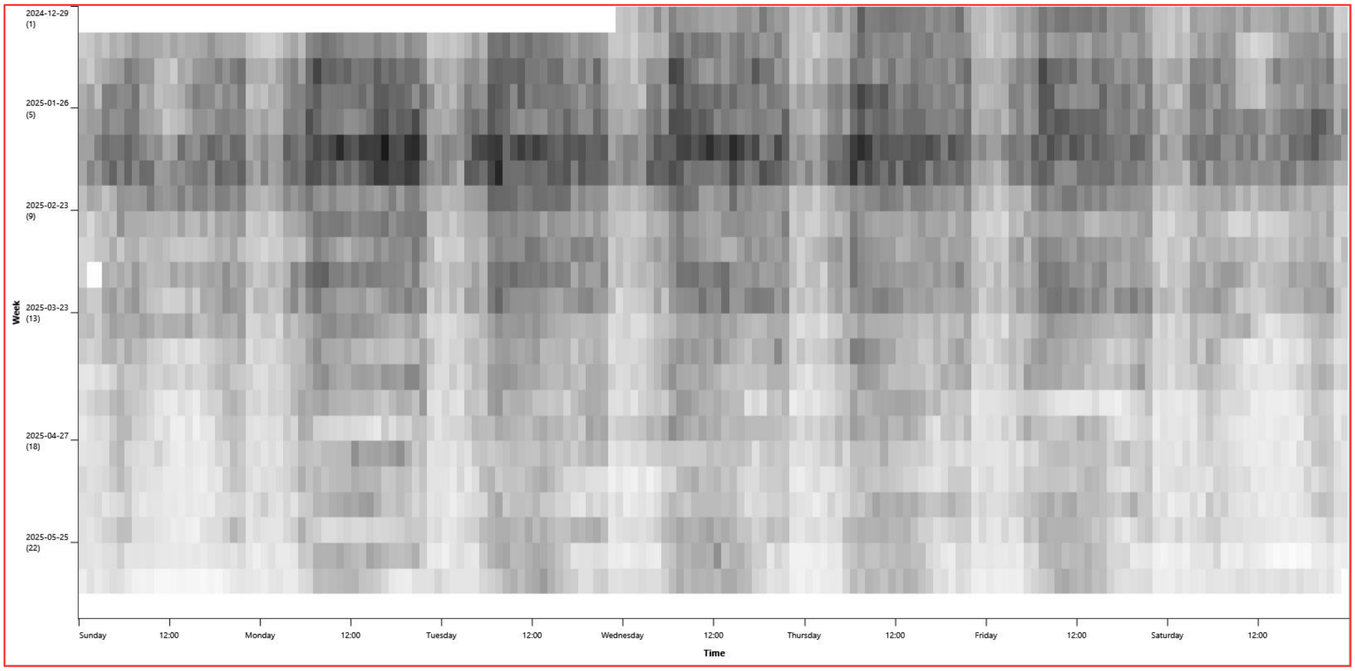


Figure 4-10 Heatmap of Electricity Interval Data January to June 2025

An example of clear daily scheduling of equipment is seen in the Esquimalt Recreation Centre heatmap. Dark and light bands indicate operation of equipment.

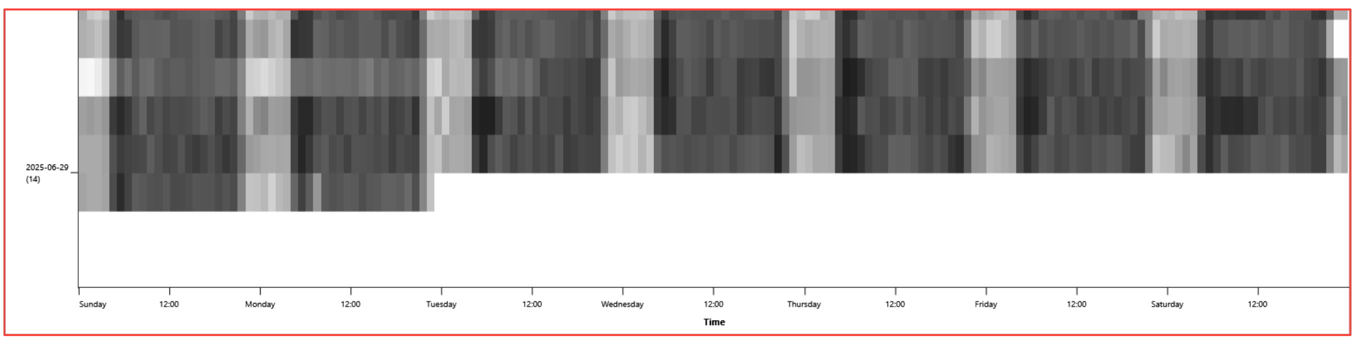


Figure 4-11 Example Recreation Centre Heatmap of Electricity Interval Data

4.1.4 NATURAL GAS

Natural gas consumption at the Municipal Hall was assessed starting from December 2022. The baseline was selected as May 2024 to April 2025 to match the other facilities. The Municipal Hall consumed only 89 GJ of natural gas at a cost of $1,650. Natural gas is only used for supplementary heating and is a small amount of the energy consumed in the facility.

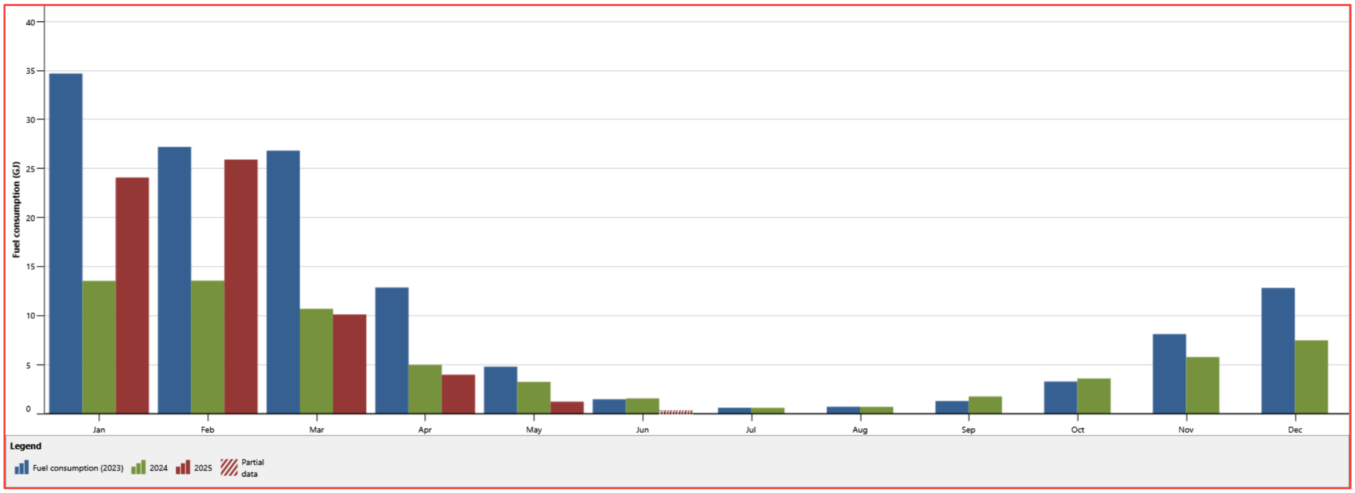


Figure 4-12 Monthly Natural Gas Consumption January 2023 to May 2025

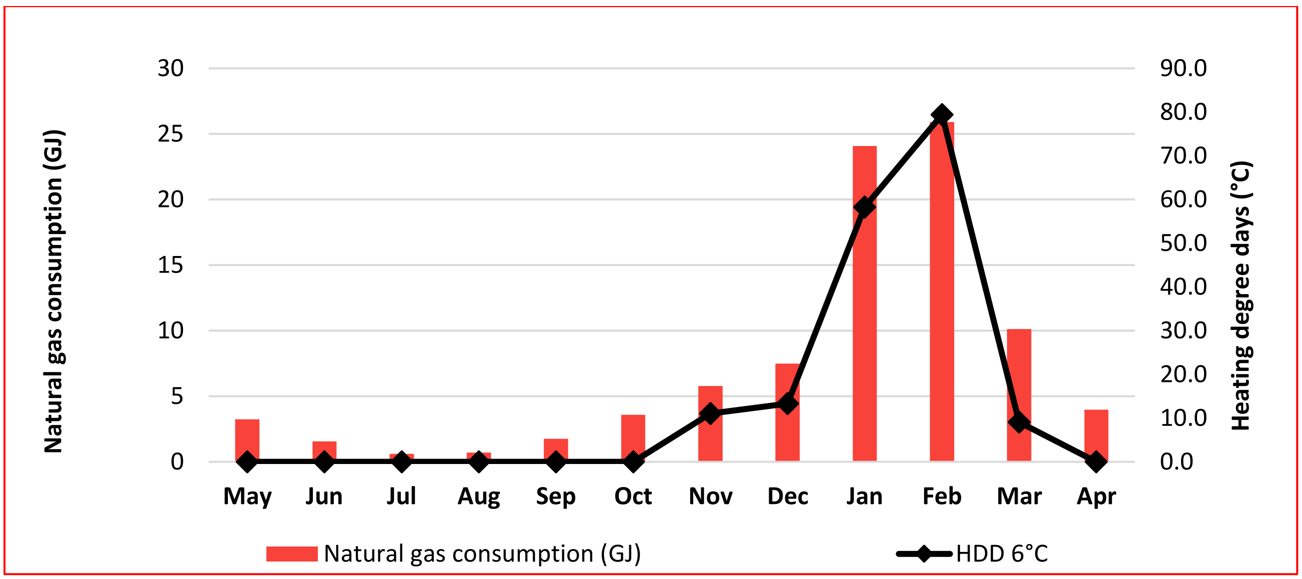


Figure 4-13 Baseline Natural Gas Consumption and HDD

The usage has an excellent correlation with heating degree days. The balance point is only 6°C, indicating good control.

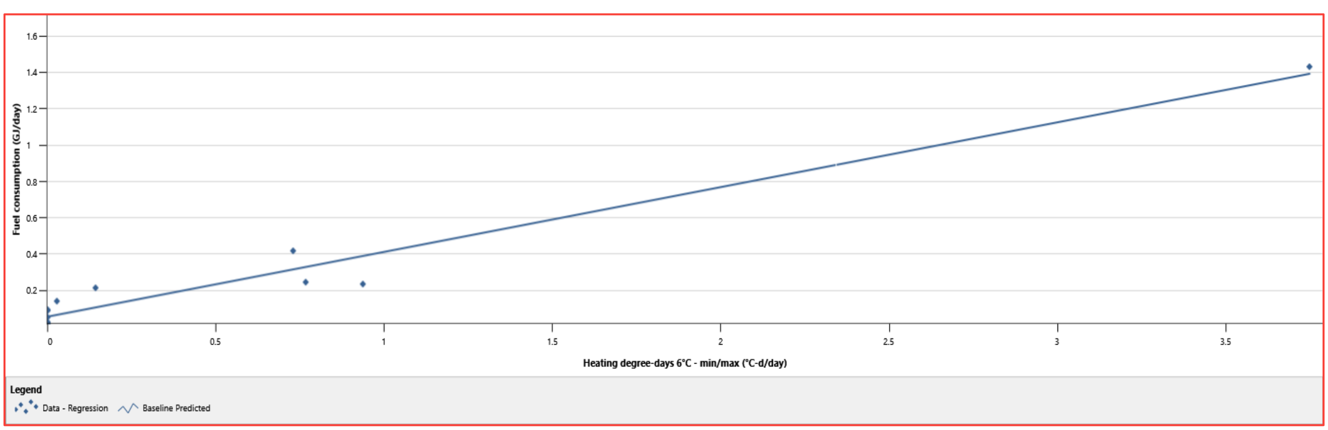
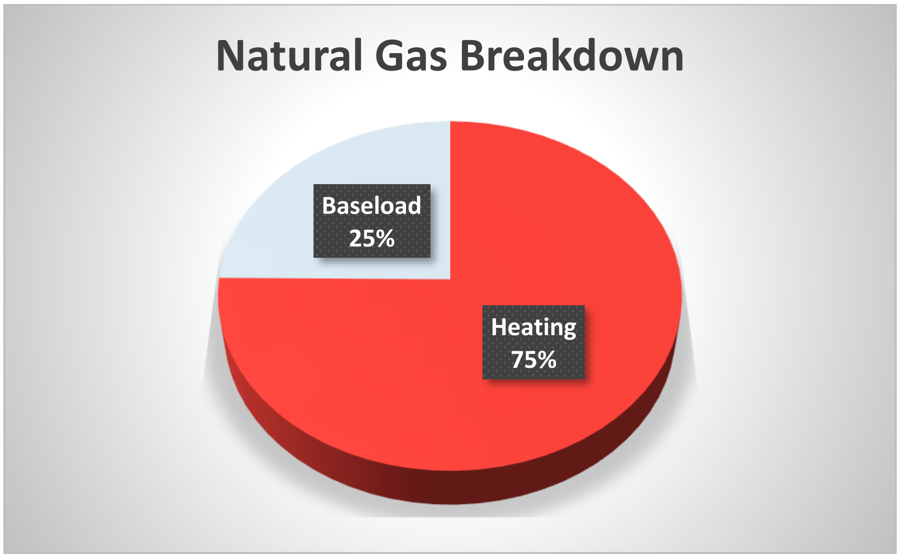


Figure 4-14 Natural Gas Consumption vs HDD

The results of the regression analysis indicate that approximately 25% is baseload and 75% is heating.



Regression results

$Y = 0.3563*x+0.0555$

$R^2 = 0.9585$

Figure 4-15 Natural Gas Regression Breakdown

4.1.5 WATER

Water consumed at the building is provided by the City of Victoria through a local distribution network. There is 1 account with 2 water meters associated with this address (account #400118, meter A-70100990 and B-70100990B). Water is only invoiced 3 times per year, generally every 120 days.

Table 4-4 4–5 Water Invoice Data (Oct 2022 – Feb 2025)

Begin	End	Duration (Days)	A-70100990 (100 ft³)	B-70100990B (100 ft³)	Total (100 ft³)
10-25-2022	02-14-2023	113	4	45	49
02-15-2023	06-16-2023	122	11	54	65
06-17-2023	10-24-2023	130	53	88	141
10-25-2023	02-21-2024	120	5	40	45
02-22-2024	06-18-2024	118	17	43	60
06-19-2024	10-16-2024	120	39	57	96
10-17-2024	02-18-2025	125	7	59	66

The annual water consumption (from calendarized data) is 617 m^3 at a cost of \$397. With total floor area of 935 m^2, this total annual water consumption amounts to a water use intensity of 0.66 m^3/m^2 and water cost index of \$0.42/m^2.

The invoice data from Feb 2023 - Feb 2025 was analyzed and found to correlate with cooling degree days.

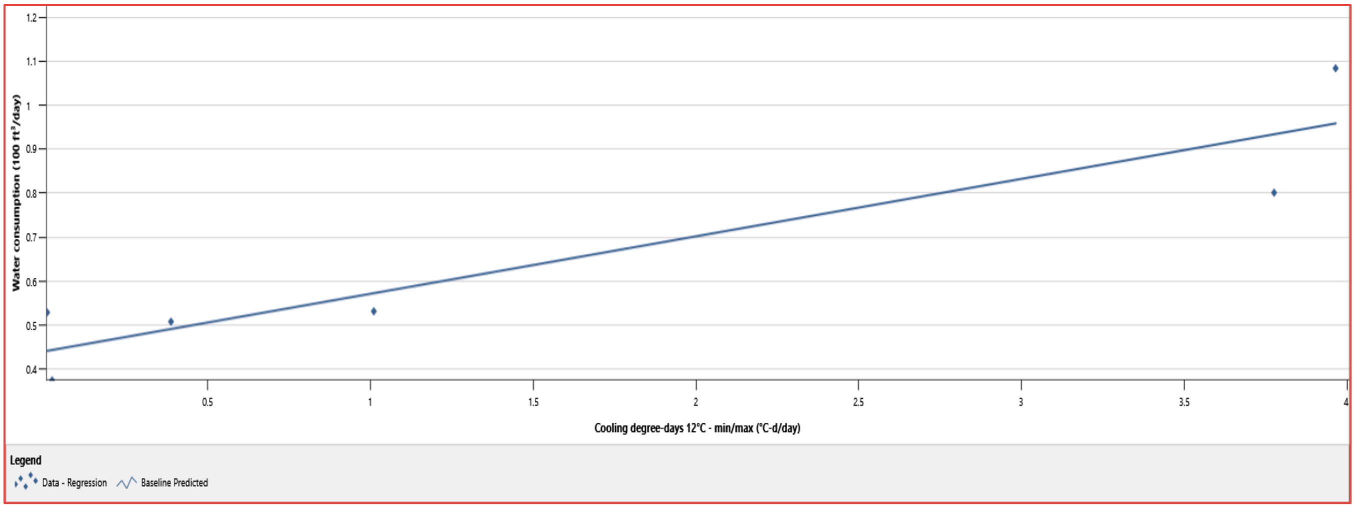
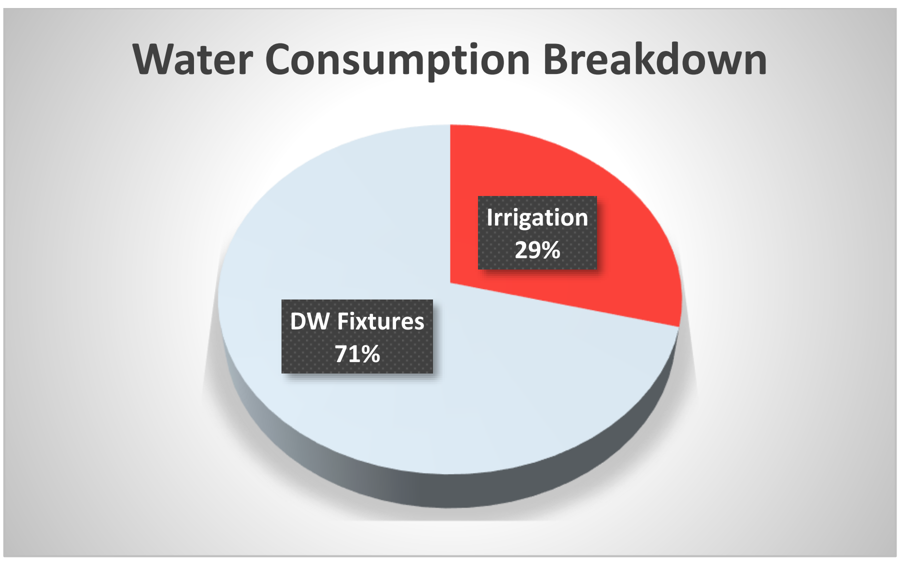


Figure 4-16 Water Consumption vs Cooling Degree Days

The results of the regression analysis indicate that approximately 71% is baseload and 29% is related to cooling degree days. Since there is no water cooled equipment, it represents the water usage in warmer months related to irrigation. There are significant gardens and planters on site that require watering in summer.



Regression results

$Y = 0.1306*x+0.4409$

$R^2 = 0.8591$

Figure 4-17 Water Breakdown

The following water consuming sub-systems exist in the building:

Table 4-6 4–7 Water Use by Sub-System

Sub-Systems	Water Consumption	
	m^3	%
Domestic Water Fixtures	450	70%
Irrigation	185	30%
Total	635	

4.2 ENERGY PERFORMANCE BENCHMARKING

For context, we have compared the building's energy use intensity (EUI) with the 2019 Survey of Commercial and Institutional Energy Use for office buildings in British Columbia of 24 ekWh/ft^2. The EUI of Municipal Hall is worse than this average. This means that the building uses more energy for its size than the average office building in BC.

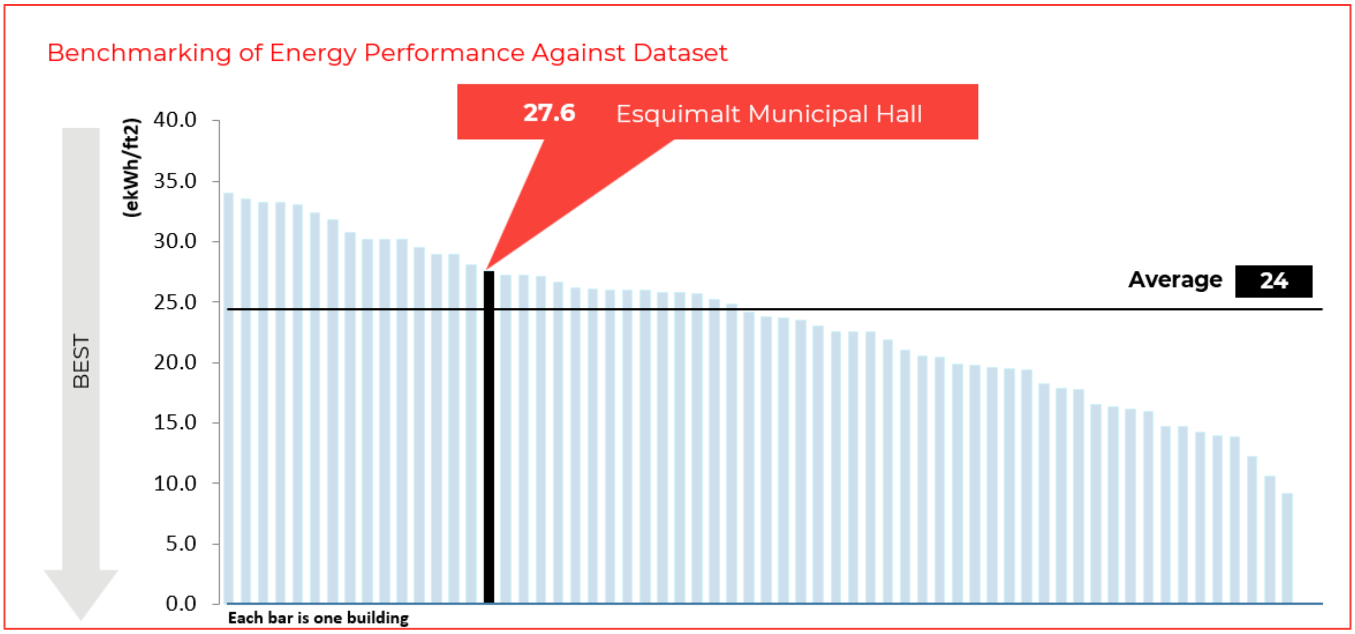


Figure 4-18 Benchmark of Office Buildings

4.3 END-USE-BREAKDOWN

The following graph shows the estimated energy end-use breakdown for the Municipal Hall.

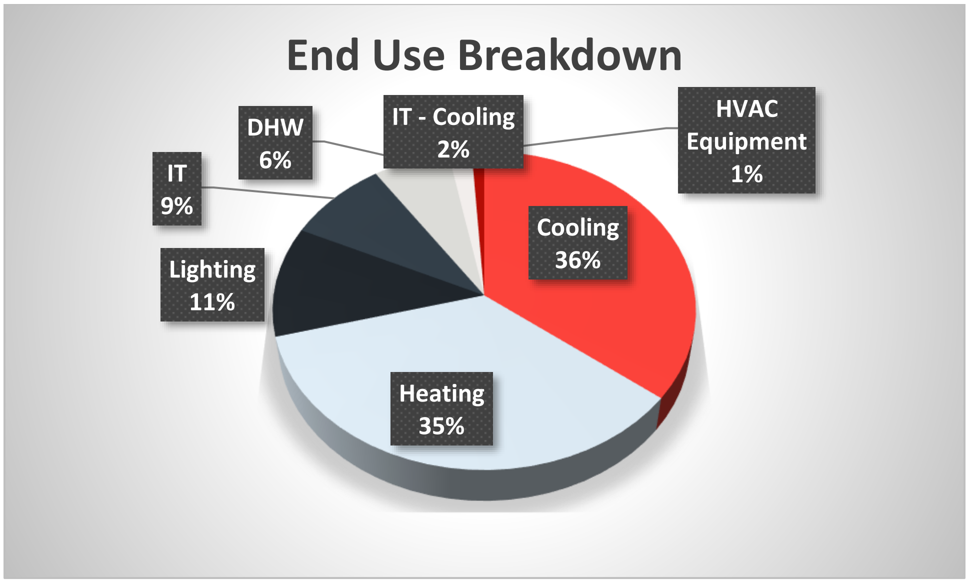


Figure 4-19 End Use Breakdown

5 KEY FINDINGS

The key findings of the Building Retrofit Study are captured below. The findings from our investigation have been divided into the following categories:

1. Operational Energy Conservation Measures

   Operational energy reduction strategies that do not require extensive equipment replacement but instead optimize existing systems for efficient operation.

2. Capital Measures

   Retrofit opportunities that require a capital investment.

3. GHG Reduction Strategies

   Strategies that will reduce carbon or GHG emissions.

6 ENERGY CONSERVATION MEASURES

6.1 LED RETROFIT

6.1.1 OPPORTUNITY

Some of the interior lighting still uses less efficient lamps including

- strip fluorescent fixtures with primarily T8 lamps
- approximately twenty U-tubes fluorescent fixtures
- recessed pot lights with primarily incandescent lamps

The lighting in the police offices has all been converted to LEDs in 2022. Interior lighting is controlled by motion sensors and manual switches.

Figure 6-1 Sample U-Tube Fixture

6.1.2 SCOPE OF MEASURE

It is recommended to replace the remaining T8s with LED lamps. For the U-tube fixtures, LED lamps are costly, it may be more economical to replace with new LED fixtures.

Table 6-1 LED Retrofit Savings Summary

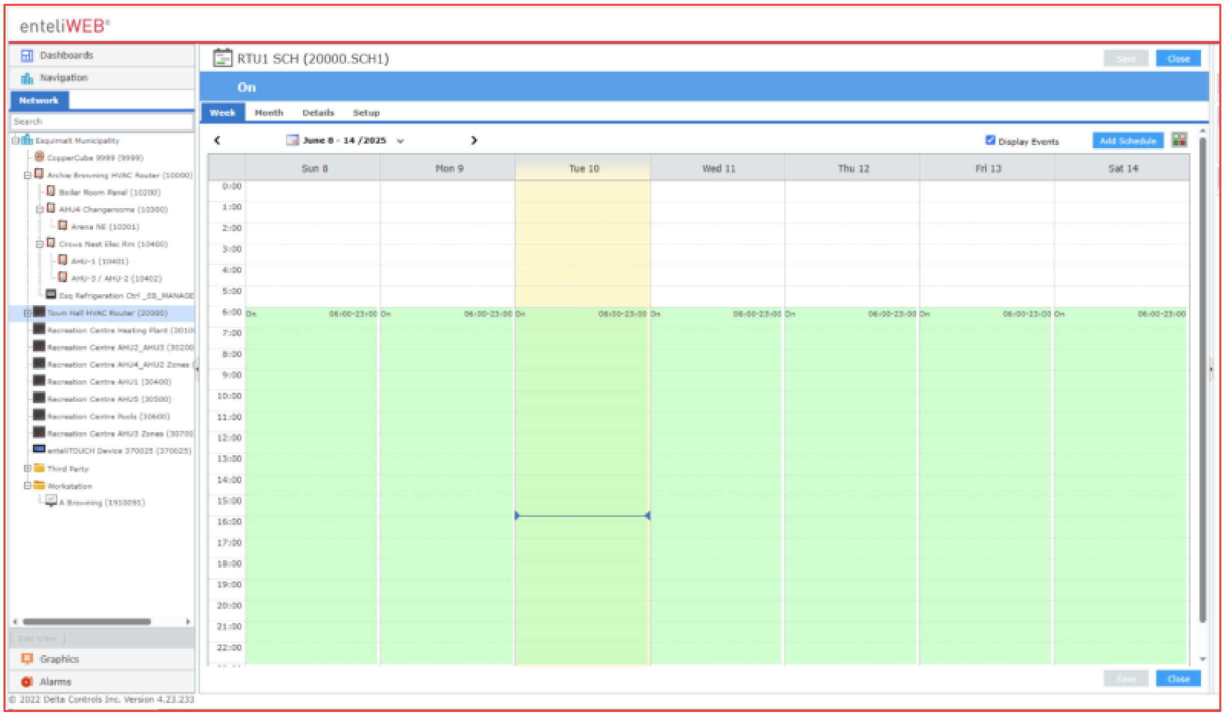
ENERGY SAVINGS	% ENERGY SAVINGS	COST SAVINGS	GHG SAVINGS	% GHG SAVINGS	OPINION OF COST	SIMPLE PAYBACK
5,500 ekWh/yr	2%	$650 /yr	-0.02 tCO2e	0	$5,000	8 years

6.2 SCHEDULE RTUS

6.2.1 OPPORTUNITY

Currently, the RTUs operate on long hours; 6 am to 11 pm daily. The building is typically open only business hours; 8:30 to 4:30 on weekdays. There are occasional after-hours events such as Council Meetings.

The RTUs are scheduled by the BAS. The schedules are long because the BAS is not readily accessible, and changes are not easily made.



6.2.2 SCOPE OF MEASURE

It is recommended that the time-of-day schedules be revised to match the occupancy. It is also recommended that an override capability be added. This could take the form of override buttons as well as temporary override programming that is accessible by the maintenance staff.

Table 6-2 Schedule RTUs Savings Summary

ENERGY SAVINGS	% ENERGY SAVINGS	COST SAVINGS	GHG SAVINGS	% GHG SAVINGS	OPINION OF COST	SIMPLE PAYBACK
15,500 ekWh/yr	6%	$1,300 /yr	1.1 tCO2e	14%	$5,000	4 years

6.3 BAS RECOMMISSIONING

6.3.1 OPPORTUNITY

Over time, inefficiencies or poor operating practices can creep into the control system setpoints and sequencing. This can take the form of heating/ cooling issues or just less than optimal performance.

Also, a portion of the supplementary HVAC equipment located throughout the building have manual thermostats that are not connected to the BAS. All controls should be digital where possible to allow for improved building operator control which can improve occupant comfort and energy efficiency.

6.3.2 SCOPE OF MEASURE

We recommend recommissioning the HVAC equipment and controls. This would consist of reviewing the overall operation of the systems and identifying energy-saving opportunities. We recommend regular re-commissioning and BAS upgrades to keep pace with changing technology, including software and head-end system upgrades and partial point device replacements.

Energy saving strategies include unoccupied setback of space temperatures, optimized start/stop of equipment, and supply air temperature reset based on space temperatures.

Also, there is likely improvements to be made in the use of natural gas in the RTUs. Natural gas is the back up heating for these units. But there is minor natural gas consumption in the warmer months and the summer. The default settings for some of these units might be switching to natural gas sooner than is required. Natural gas should only be used in very cold days when the heat pumps are not able to provide sufficient heating.

Table 6-3 Savings

ENERGY SAVINGS	% ENERGY SAVINGS	COST SAVINGS	GHG SAVINGS	% GHG SAVINGS	OPINION OF COST	SIMPLE PAYBACK
10,000 ekWh/yr	4%	$900 /yr	0.6 tCO_2e	6%	$8,000	9 years

7 CAPITAL MEASURES

The following observations do not directly impact energy consumption but may be worth considering for other reasons as noted.

7.1 PV PANELS

7.1.1 OPPORTUNITY

Currently, there are no PV or other solar panels. The roof area is not shaded or obstructed by other structures.

7.1.2 SCOPE OF MEASURE

Installing PV panels on the roof areas would provide clean electricity for the site. The roof area could accommodate approximately 18.90 kW of PV panels. The calculation for this measure is carried out by simulating the site renewable energy potentials in Helioscope software.

Figure 7-1 Potential PV Panel Layout

Table 7-1 Savings

ENERGY SAVINGS	% ENERGY SAVINGS	COST SAVINGS	GHG SAVINGS	% GHG SAVINGS	OPINION OF COST	SIMPLE PAYBACK
15,300 ekWh/yr	6%	$1,650 /yr	0.2 tCO2e	3%	$45,000	27 years

8 GHG REDUCTION STRATEGIES

Esquimalt Council has made climate action a strategic priority, declared a climate emergency, and set ambitious targets to reduce corporate greenhouse gas emissions (GHGs).

As part of this report, it is required to develop and evaluate the following six GHG reduction pathway scenarios:

1) Short-term retrofit (5 years) – Achieving a 45% GHG reduction from **2010** levels.
2) Medium-term retrofit (10 years) – Achieving a 50% GHG reduction from **2023** levels.
3) Long-term retrofit (20 years) – Achieving an 80% GHG reduction from **2023** levels (near net-zero).
4) Short-term deep retrofit (5 years) – Achieving a 50% GHG reduction from **2023** levels.
5) Maximum site potential – Identifying the greatest possible GHG reductions, regardless of cost.
6) Optimized outcome – Balanced approach of aggressive GHG reduction with asset management objectives.

From the **2010** Energy Audit report, the GHG emissions were **6** tCO2e. From the utility data, the **2023** GHG emissions were **10.5** tCO2e. The most current GHG emissions were **8.1** tCO2e.

Given the very low emissions in the baseline years, all scenarios require substantial reductions from the current levels.

The largest part of the GHG emissions (56%) come from natural gas consuming equipment. Major reductions can be achieved by measures that replace this equipment.

Table 8-1 List of Natural Gas Consuming Equipment

SYSTEM ID	AREA SERVED	DESCRIPTION
RTU-1	Main Floor South	Trane - DHC092H3RHA
RTU-2	Main Floor Interior	Trane - DHC060H3RHA
RTU-3	Council Chamber	Trane - DHC048H3RHA
RTU-4	Council Chamber	Trane - DHC048H3RHA
RTU-5	Upper Floor South	Trane - DHC074H3RHA
RTU-6	Upper Floor North	Trane - DHC060H3RHA

8.1 REPLACE RTUS

8.1.1 OPPORTUNITY

The only natural gas consuming equipment is the 6 packaged high-efficiency rooftop units (RTUs). These provide heating, cooling, and ventilation to the administrative areas of the building across the top two building levels. The units each have an electric heater and gas-fired burners for heating, and a DX cooling coil that uses R410A refrigerant.

8.1.2 SCOPE OF MEASURE

The rooftop units are all operating well, with no major issues noted or reported. The typical service life of rooftop units can range from 20 to 30 years but this may be impacted by the phase out of the refrigerant.

The cooling equipment uses R-410A refrigerant, which is a hydrofluorocarbon (HFC)-based refrigerant. The phase-out of R-410A includes an 85% reduction in HFC production by 2036. Like with the previous R-22 phase-out, this is expected to make R-410A refrigerant less available and more expensive, although the extent of these changes is not yet known.

Refrigerant is needed to top-up equipment where some has been lost due to repairs or leaks. As such, the phase-out is expected to affect mainly older equipment with greater repair needs.

Based on the age of the equipment, escalating repair needs should be expected in the future, likely affected by the phase-out of R-410A, such that replacement of the units will occur before the end of their useful life.

Replacement of the units with fully electric equipment will reduce GHG emissions.

Table 8-2 Replace RTUs with Electric Heat Pumps

ENERGY SAVINGS	% ENERGY SAVINGS	COST SAVINGS	GHG SAVINGS	% GHG SAVINGS	OPINION OF COST	SIMPLE PAYBACK
3,500 ekWh/yr	1%	-$975 /yr	3.1 tCO2e	38%	$151,500	NA

8.2 SUMMARY OF GHG REDUCTION MEASURES

Since the GHG emissions baselines (2010 and 2023) are very low, there is little benefit in reviewing the 6 individual scenarios. Applying the various measures already described, the following pathway to low GHG emissions is outlined below.

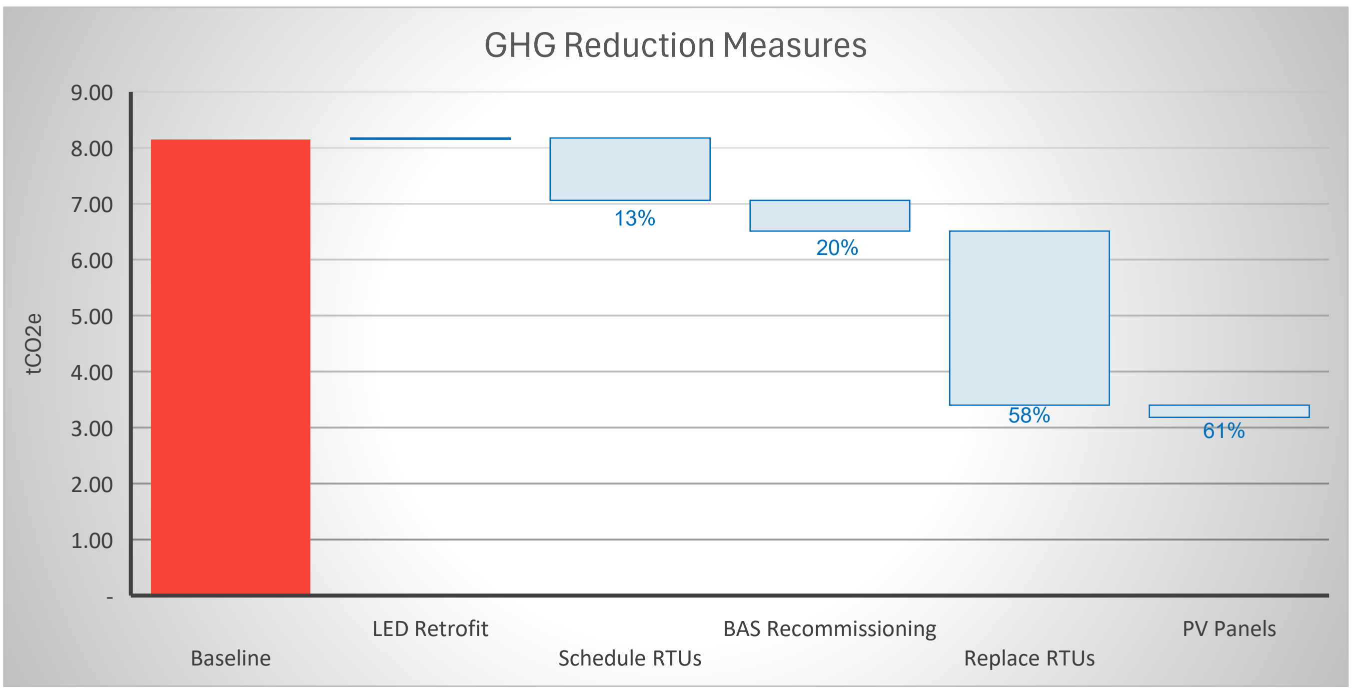


Figure 8-1 GHG Reduction Pathway

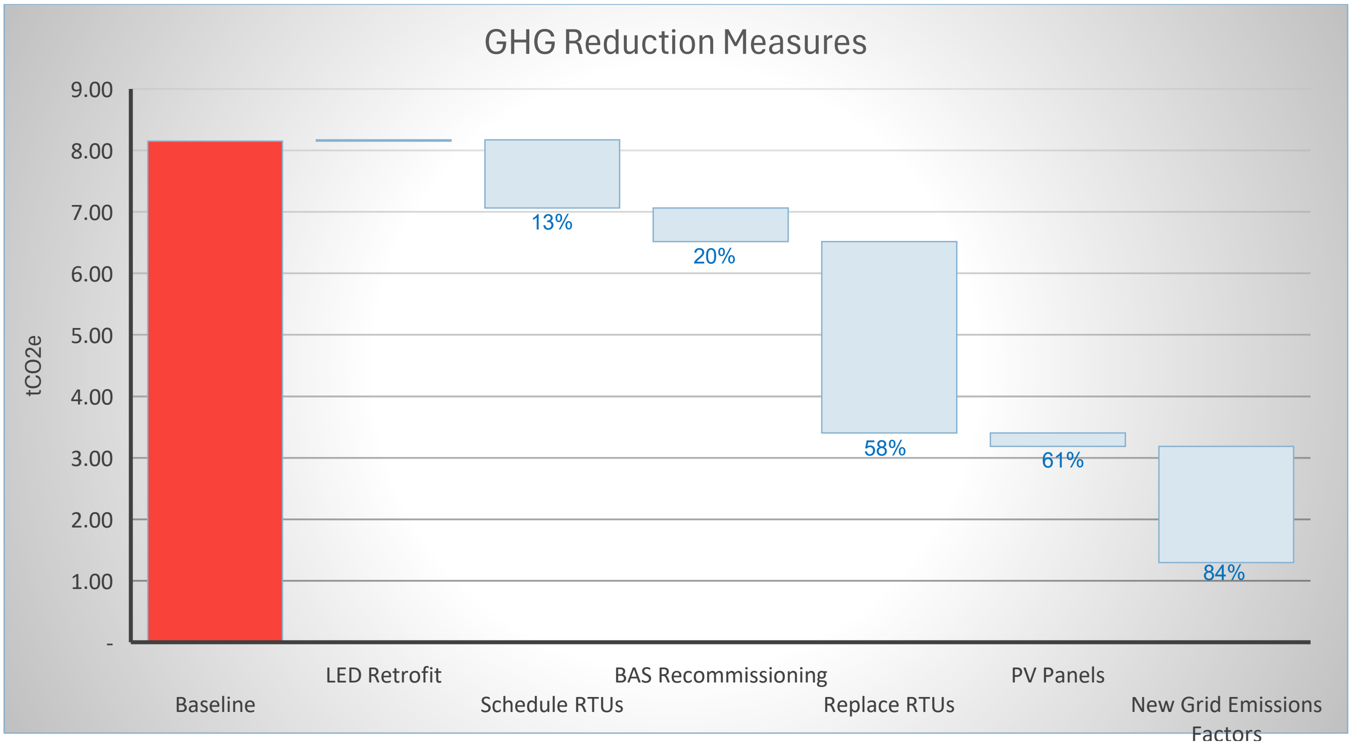


Table 8-3 Measures Summary and Implementation Year

MEASURE	YEAR OF IMPLEMENTATION
LED Lighting Retrofit	2026
Schedule RTUs	2026
BAS Recommissioning	2026
Replace RTUs with Electric Heat Pumps	2030
PV Panels	2033

Pathways

Since the GHG emissions baselines (2010 and 2023) are very low, there is little benefit in reviewing the 6 individual scenarios. The following pathway to low GHG emissions is outlined below

- ***Business As Usual Pathway.*** This is a reference case reflecting the planned (or already completed) energy-related capital renewal projects planned for this building.
- ***GHG Reduction Pathway.*** This Pathway features a combination of the BAU as well as GHG reduction measures. The GHG emissions reductions in this pathway are achieved over the life-cycle performance of 20 years.

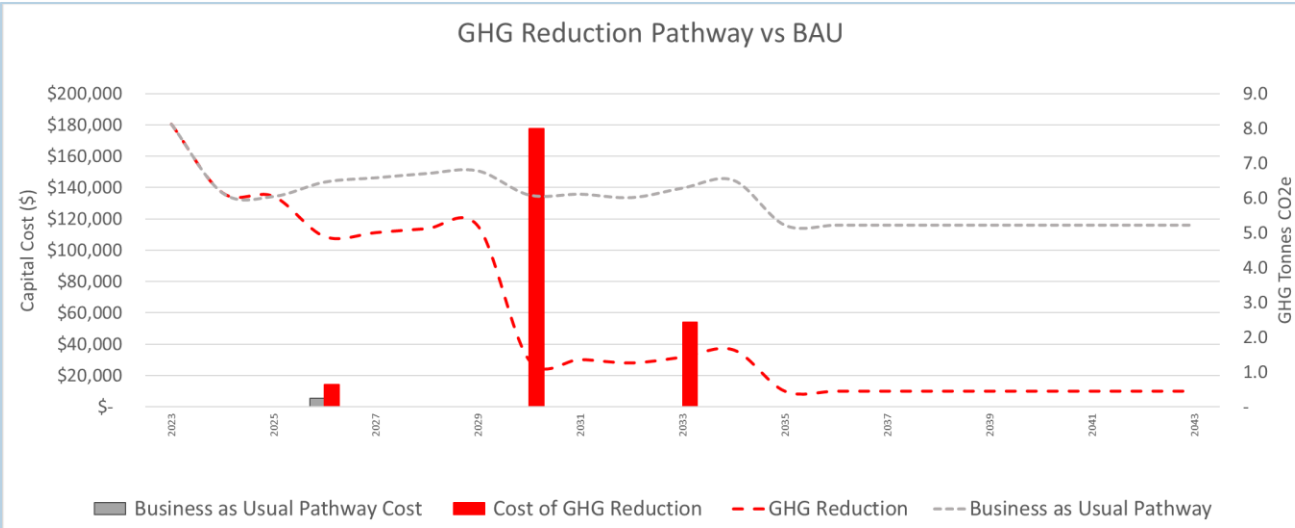


Figure 8-2 GHG Reduction Pathway vs BAU

Incremental Life-Cycle Cost (ILCC) is used as the financial metric in this analysis because it captures the greater financial impact over the design option's lifespan as opposed to capital cost or simple payback analysis alone.

Key ILCC parameters include:

- First/capital costs of measures
- 20-year study period, with construction starting in 2026;
- Utility costs, with appropriate escalation rates;
- System service life estimates and associated replacement over the study period
- Standard inflation rates and discount rates

Key assumptions for the LCC analysis include:

- Residual costs of equipment (i.e., equipment service lives longer and shorter than 20 years will result in a linearly-depreciated residual value at the end of the study period);
- The 20-year study starts in 2025 and lasts until 2044 (inclusive). All values in 2025 dollars will be escalated using the rates summarized in the table below.

Figure 8-2 illustrates the greenhouse gas (GHG) reduction pathway relative to the Business-as-Usual (BAU) scenario, while simultaneously presenting the associated capital costs and cost-effectiveness of each intervention over the study period. The figure integrates three key elements: the cumulative GHG reductions achieved through the proposed measures, the incremental capital investment required, and the BAU emissions trajectory for comparison.

Under the BAU scenario, emissions remain relatively constant over the analysis period, reflecting continued operation of existing systems with no major efficiency or fuel-switching interventions. In contrast, the proposed pathway demonstrates a stepwise reduction in emissions as measures are sequentially implemented. Early reductions are driven primarily by low-cost energy conservation measures, including LED lighting retrofits, RTU scheduling improvements, and building automation system (BAS) recommissioning. These measures collectively deliver modest but cost-effective GHG reductions with relatively low capital investment, establishing a strong foundation for subsequent decarbonization actions.

The most significant emissions reduction occurs with the replacement of existing gas-fired rooftop units (RTUs) with electric heat pumps. As shown in Figure 8-2, this measure results in a substantial downward shift in the GHG trajectory, reflecting the elimination of on-site combustion emissions. However, this step also corresponds to the largest capital cost in the pathway, highlighting the financial implications of deep decarbonization measures when implemented in isolation.

The addition of on-site photovoltaic (PV) panels provides a further incremental reduction in emissions by offsetting grid electricity consumption. While the absolute GHG impact of the PV system is smaller compared to the heat pump conversion, it contributes to long-term emissions mitigation and supports alignment with broader net-zero objectives. The figure also illustrates diminishing marginal returns in GHG reductions as higher-cost measures are layered onto the pathway, reinforcing the importance of sequencing and integration.

Overall, Figure 8-2 demonstrates that the proposed pathway achieves meaningful emissions reductions relative to BAU, while clearly illustrating the trade-off between capital investment and GHG abatement. The visualization underscores the value of prioritizing low-cost efficiency measures early, followed by targeted capital upgrades that enable deeper decarbonization over time. Proposed pathway would reduce the GHG emissions by 92%.

Table 8-4 LCC Assumptions

Rate Name	Value (%)
Energy Inflation (ENER)	2.00%
Long Term Construction Costs (Capital Costs) Escalation (LTCC)	2.00%
Operations and Maintenance Escalation (O&M)	2.00%
Discount Rate (DISC)	2.00%

- An ***incremental*** LCC analysis as opposed to a ***comparative*** LCC analysis is provided. The difference is that the absolute LCC of the options is not calculated, just the differences in LCC between them; the result will be similar and just as useful for decision-making.
- As discussed above, the Pathway is compared to the life-cycle cost of taking all energy-related capital renewal items identified and executing them as a single construction project. Though this approach is not reflective of how the capital plan proposes execution of the work, it offers a fair comparison of the various programs of work compared to the baseline.

SUMMARY OF PATHWAY ANALYSIS

The pathway analysis confirms that a phased approach to emissions reduction offers the most balanced strategy for achieving meaningful GHG reductions while managing financial risk. Energy conservation measures, including lighting upgrades, RTU scheduling, and BAS recommissioning, provide an immediate and cost-effective reduction in energy use, utility costs, and emissions. These measures improve system performance and reduce baseline demand, thereby enhancing the effectiveness of future electrification and renewable energy investments.

Capital-intensive measures, particularly the replacement of gas-fired RTUs with electric heat pumps, are critical to achieving substantial long-term emissions reductions. However, their high upfront costs and limited short-term financial returns highlight the importance of lifecycle cost analysis rather than reliance on simple payback metrics alone. When evaluated through incremental life-cycle cost (LCC), these measures represent a strategic investment in long-term decarbonization rather than purely an energy cost-saving initiative.

The integration of on-site solar PV further strengthens the pathway by reducing grid electricity consumption and supporting emissions reductions associated with electrification. While PV contributes a smaller share of total GHG reductions, it enhances resilience against future utility price escalation and aligns with broader sustainability and net-zero commitments.

In summary, the analysis demonstrates that no single measure delivers optimal outcomes on its own. Instead, the proposed pathway balances cost-effective efficiency improvements with targeted capital upgrades to deliver sustained emissions reductions over the study period. This staged approach provides a clear, financially informed roadmap toward decarbonization, enabling decision-makers to align capital planning, funding opportunities, and climate objectives in a practical and achievable manner.

9 TIMELINE

Based on the building condition assessment and discussions with staff, the following timeline is expected for business-as-usual measures.

Table 9-1 Time for Business-as-Usual Measures

MEASURE	YEAR OF IMPLEMENTATION
LED Lighting Retrofit	2026

The following timeline for implementing the GHG reduction measures is proposed.

Table 9-2 Time for GHG Reduction Measures

MEASURE	YEAR OF IMPLEMENTATION
Schedule RTUs	2026
BAS Recommissioning	2026
Replace RTUs with Electric Heat Pumps	2030
PV Panels	2033

10 REJECTED MEASURES

The following measures were considered but rejected due to high costs, low impact or other reasons.

10.1 BUILDING ENVELOPE

10.1.1 OPPORTUNITY

The building envelope is relatively new when compared to the other buildings assessed. Because modern assemblies typically perform well and because they are not nearing the end of their service lives, the majority of building envelope ECMs would likely have little cost benefit. However, the concrete walls are largely contributing to the heat loss in the building, therefore it would be recommended to overclad the walls with an exterior insulated system.

10.1.2 SCOPE OF MEASURE

Over cladding the concrete walls would improve the building's overall performance, as these areas are the main heat loss contributor. Completing this work may require relocation of the windows to align with the new cladding assembly.

The cost for such measures is very high compared to the energy savings and does not payback.

11 RECOMMENDATIONS

11.1 SUMMARY OF SAVINGS

Due to the interactive nature of building systems, it is difficult to determine the total savings with precision. However we estimate that the results of implementing the energy conservation measures outlined in this report would be as follows.

- You will save about 31,000 ekWh of annual energy consumption (11%)
- You will save about $2,800 in annual energy cost (8%)
- It will cost you about $18,000 (HST/GST not included) to implement the measures
- The simple payback will be about 6 years overall
- The building's EUI will drop to about 24.5 ekWh/ft2/year

11.2 NEXT STEPS

This report presents measures that can reduce energy use at your building. To realize the benefits outlined in this report, the measures identified must be implemented. Our description of each measure includes our recommendation on how to proceed.

We recommend the following next steps:

1. **Review the proposed measures** listed in section 6;
2. **Decide which measures to implement** and your implementation timeline;
3. **Select your incentive program enrolment strategy**. The preferred incentive program for this property will depend on the measures you choose to implement, and the timeline for implementation.
4. **Decide how implementation will be managed** (and engage support, if desired);
5. **Implement operational measures** that are quick or low-cost. Plan to verify that measures are completed and that the expected benefit is achieved;
6. **Implement retrofit measures, or add them to your capital plan** if they cannot be completed in the current capital year. Develop a formal scope of work and request quotes for more detailed or costly measures. You may need to prepare engineering designs and/or specifications, develop bid documents for competitive quotes, manage construction review and/or contract administration, commission systems, verify installation as intended, train operators on system changes, and measure performance improvement;
7. **Train operators** on system changes and update building documentation; and
8. **Measure performance improvement** and verify measures are completed as planned.

WSP can provide the expertise and services that will lead to successful completion of any or all of these operational and retrofit measures. We anticipate the portion of implementation cost related to the management, engineering, and incentive acquisition support described above for all measures identified in this report will be on the order of **$*** ** (already included in ECM cost estimates found earlier in this report).

We trust this report meets your needs and would be pleased to discuss our findings further with you at your convenience. We would also very much like to help you implement these measures, and look forward to taking these next steps with you.

APPENDIX

A METHODOLOGY

APPENDIX A

METHODOLOGY

Work completed for this assessment included:

1 Preliminary System Review: We performed this review prior to visiting the site using existing mechanical, electrical, and structural drawings and report. We review past equipment maintenance, repair, and replacement details;

2 Facility Walkthrough: Our team was on site to assess the current condition of equipment and associated components;

3 Fossil-fuelled asset : We developmented an asset inventory profile including model and serial numbers, age, installation date, capacities, dimensions, photographs, etc;

4 Identification : We Identified key issues relevant to project scope related to the state of current fossil-fuelled assets;

5 Analysis: We performed various calculations to estimate both the potential of electrification and implementation costs associated with potential fuel switching measures; and

6 Reporting: We summarized our findings and the recommended next steps in this report.

APPENDIX

B MEASUREMENT AND VERIFICATION OPTIONS

APPENDIX B

MEASUREMENT AND VERIFICATION OPTIONS

For each measure presented in this report, we recommend a measurement and verification approach based on the International Performance Measurement and Verification Protocol (IPMVP): Concepts and Options for Determining Energy and Water Savings. The Protocol defines techniques for reviewing and confirming savings in various situations. The following is an excerpt from the Protocol which outlines the four primary M&V options available:

OPTION A. PARTIALLY MEASURED RETROFIT ISOLATION: Savings are determined by partial field measurement of the energy use of the system(s) to which an ECM was applied; separate from the energy use of the rest of the facility. Measurements may be either short-term or continuous. Partial measurement means that some but not all parameter(s) may be stipulated, if the total impact of possible stipulation error(s) is not significant to the resultant savings. Careful review of ECM design and installation will ensure that stipulated values fairly represent the probable actual value. Stipulations should be shown in the M&V Plan along with analysis of the significance of the error they may introduce.

OPTION B. RETROFIT ISOLATION: Savings are determined by field measurement of the energy use of the systems to which the ECM was applied; separate from the energy use of the rest of the facility. Short-term or continuous measurements are taken throughout the post-retrofit period.

OPTION C. WHOLE FACILITY: Savings are determined by measuring energy use at the whole facility level. Short-term or continuous measurements are taken throughout the post-retrofit period.

OPTION D. CALIBRATED SIMULATION: Savings are determined through simulation of the energy use of components or the whole facility. Simulation routines must be demonstrated to adequately model actual energy performance measured in the facility. This option usually requires considerable skill in calibrated simulation.

APPENDIX

C LIMITATIONS

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WSP Canada Inc. is the "Consultant" referenced throughout this document.

- The scope of our work and related responsibilities related to our work are defined in our project authorization ("Conditions of Assignment").
- Any user accepts that decisions made, or actions taken based upon interpretation of our work are the responsibility of only the parties directly involved in the decisions or actions.
- No party other than the Client shall rely on the Consultant's work without the express written consent of the Consultant, and then only to the extent of the specific terms in that consent. Any use which a third party makes of this work, or any reliance on or decisions made based on it, are the responsibility of such third parties. Any third party user of this report specifically denies any right to any claims, whether in contract, tort and/or any other cause of action in law, against the Consultant (including Sub-Consultants, their officers, agents and employees).The work reflects the Consultant's best judgement in light of the information reviewed by them at the time of preparation. It is not a certification of compliance with past or present regulations. Unless otherwise agreed in writing by the Consultant, it shall not be used to express or imply warranty as to the fitness of the property for a particular purpose. No portion of this report may be used as a separate entity; it is written to be read in its entirety.
- Only the specific information identified has been reviewed. No physical or destructive testing and no design calculations have been performed unless specifically recorded. Conditions existing but not recorded were not apparent given the level of study undertaken. Only conditions actually seen during examination of representative samples can be said to have been appraised and comments on the balance of the conditions are assumptions based upon extrapolation. Therefore, this work does not eliminate uncertainty regarding the potential for existing or future costs, hazards or losses in connection with a property. We can perform further investigation on items of concern if so required.
- The Consultant is not responsible for, or obligated to identify, mistakes or insufficiencies in the information obtained from the various sources, or to verify the accuracy of the information.
- No statements by the Consultant are given as or shall be interpreted as opinions for legal, environmental or health findings. The Consultant is not investigating or providing advice about pollutants, contaminants or hazardous materials.
- The Client and other users of this report expressly deny any right to any claim against the Consultant, including claims arising from personal injury related to pollutants, contaminants or hazardous materials, including but not limited to asbestos, mould, mildew or other fungus.
- Budget figures are our opinion of a probable current dollar value of the work and are provided for approximate budget purposes only. Accurate figures can only be obtained by establishing a scope of work and receiving quotes from suitable contractors.
- Time frames given for undertaking work represent our opinion of when to budget for the work. Failure of the item, or the optimum repair/replacement process, may vary from our estimate.