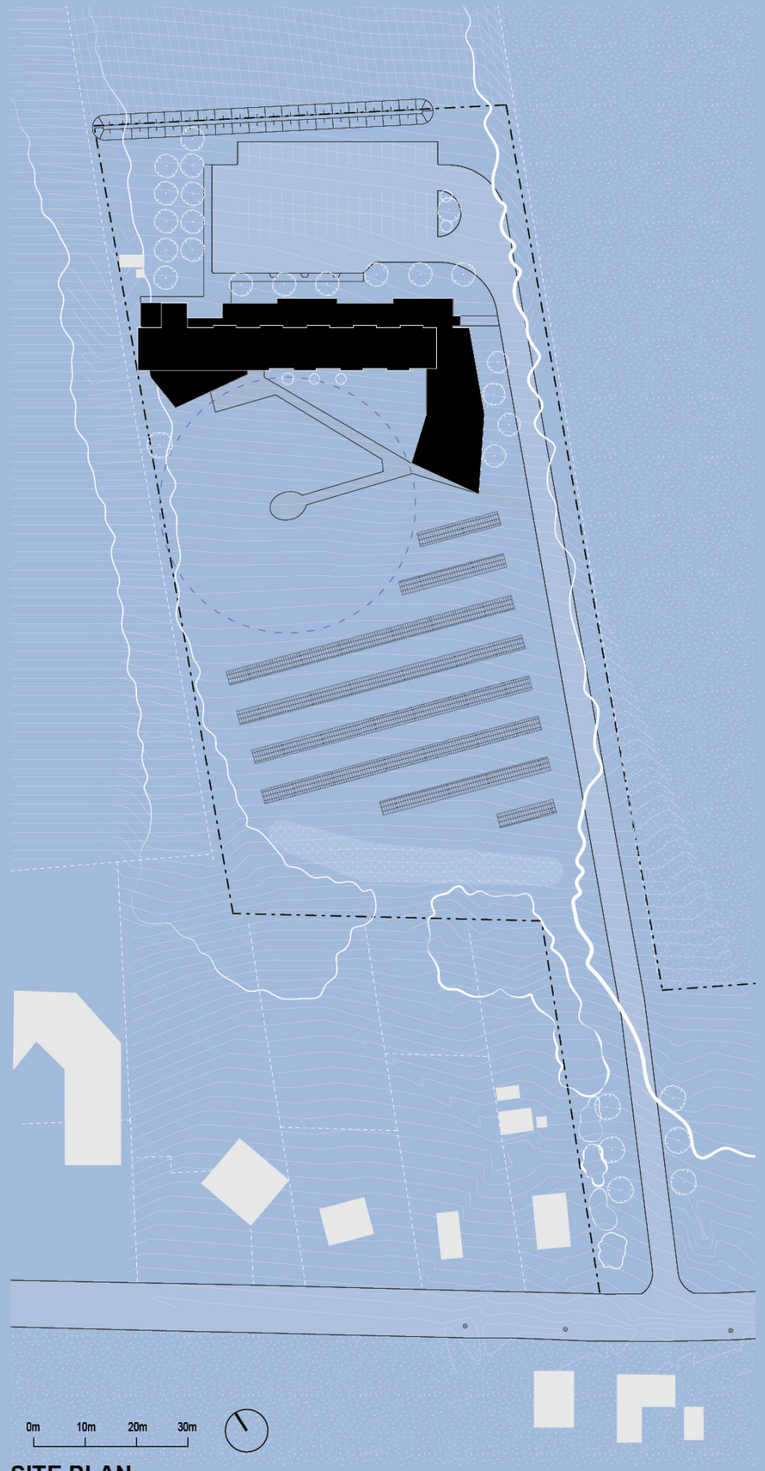
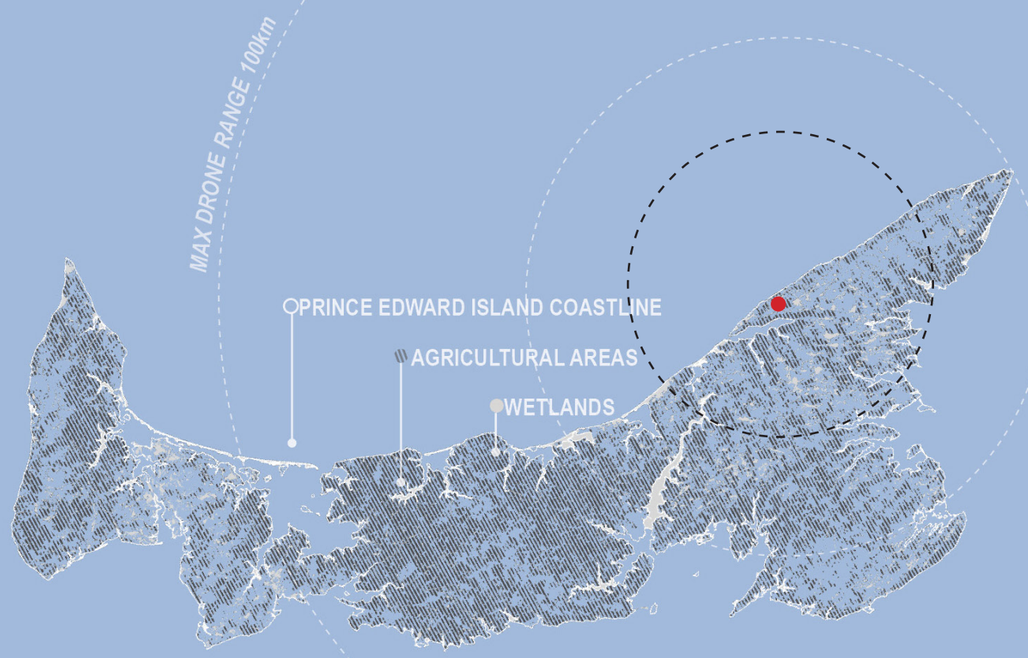
PART 1: PROJECT DESCRIPTION

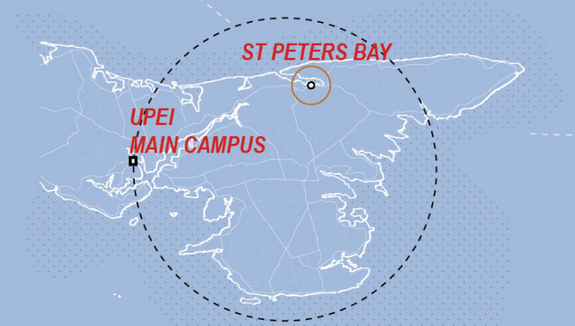
CANADIAN CENTRE FOR CLIMATE CHANGE AND ADAPTATION
UNIVERSITY OF PRINCE EDWARD ISLAND



SITE PLAN



RESEARCH SCOPE / INVESTIGATIONS



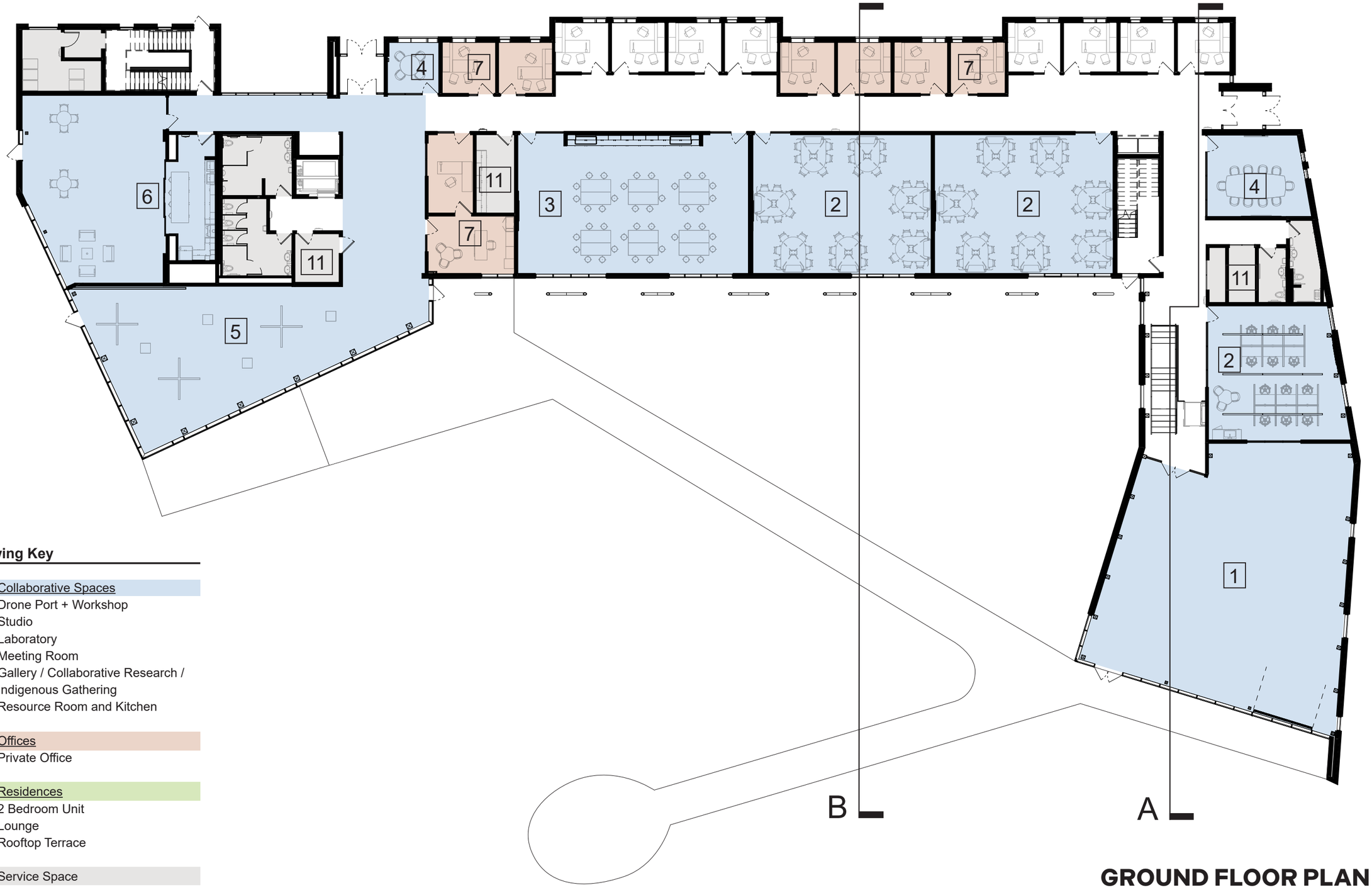
REGIONAL CONNECTIONS

COMMUNITY FABRIC

PROJECT SUMMARY

The University of Prince Edward Island's (UPEI) Canadian Centre for Climate Change and Adaptation is a living laboratory and educational destination that enables world-class sustainability focused research and experiential learning that serves as a hub and activator for local community engagement. Its living-learning concept provides an immersive environment that includes active spaces for teaching, research, experimentation, socialization, and spaces for personal contemplation and rest. Envisioned as a gathering place, the Centre incorporates a multi-purpose community room with commanding views of Saint Peters Bay and Village.

While not formally certified under CaGBC's Net Zero Carbon standard, the project is incrementally tracking towards realizing a holistic net zero carbon and net zero energy outcome. Its all-electric system design approach includes ground source heating and cooling for the building's thermal loads, heat recovery ventilation, and on-site renewable energy production (100Kw solar array). The project's sequestered carbon approach includes the extensive use of wood, prefabricated thermally broken wood wall panels, and locally harvested wood cladding. Triple-glazed and operable windows provide daylight, views and passive ventilation for regularly occupied spaces. Independently evaluated by a 3rd party shadow review process using Athena Impact Estimator, embodied carbon exceeds the Zero Carbon Building Design V3 benchmark by 59%.



Drawing Key

Collaborative Spaces
1 - Drone Port + Workshop
2 - Studio
3 - Laboratory
4 - Meeting Room
5 - Gallery / Collaborative Research / Indigenous Gathering
6 - Resource Room and Kitchen

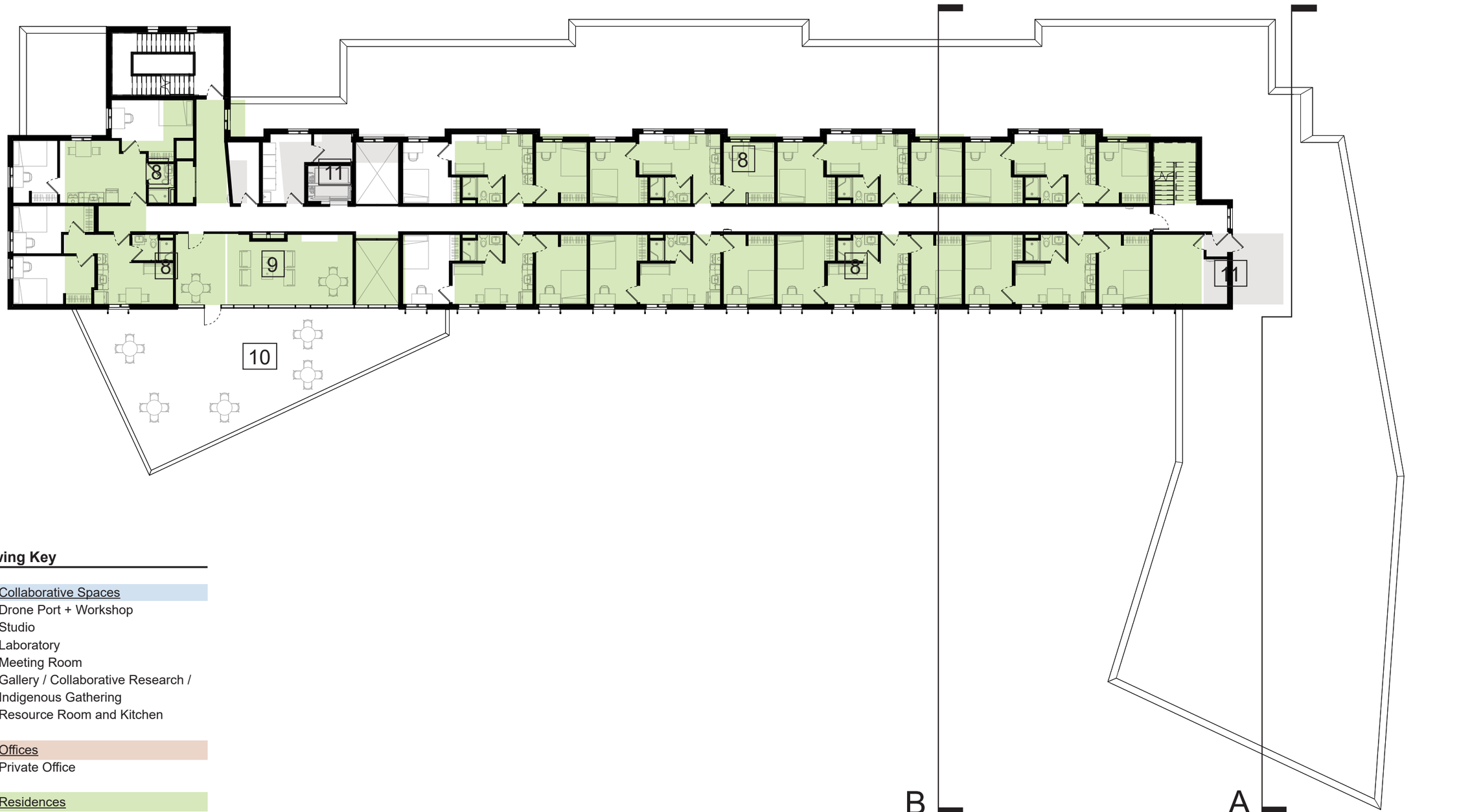
Offices
7 - Private Office

Residences
8 - 2 Bedroom Unit
9 - Lounge
10 - Rooftop Terrace

11 - Service Space

GROUND FLOOR PLAN

N



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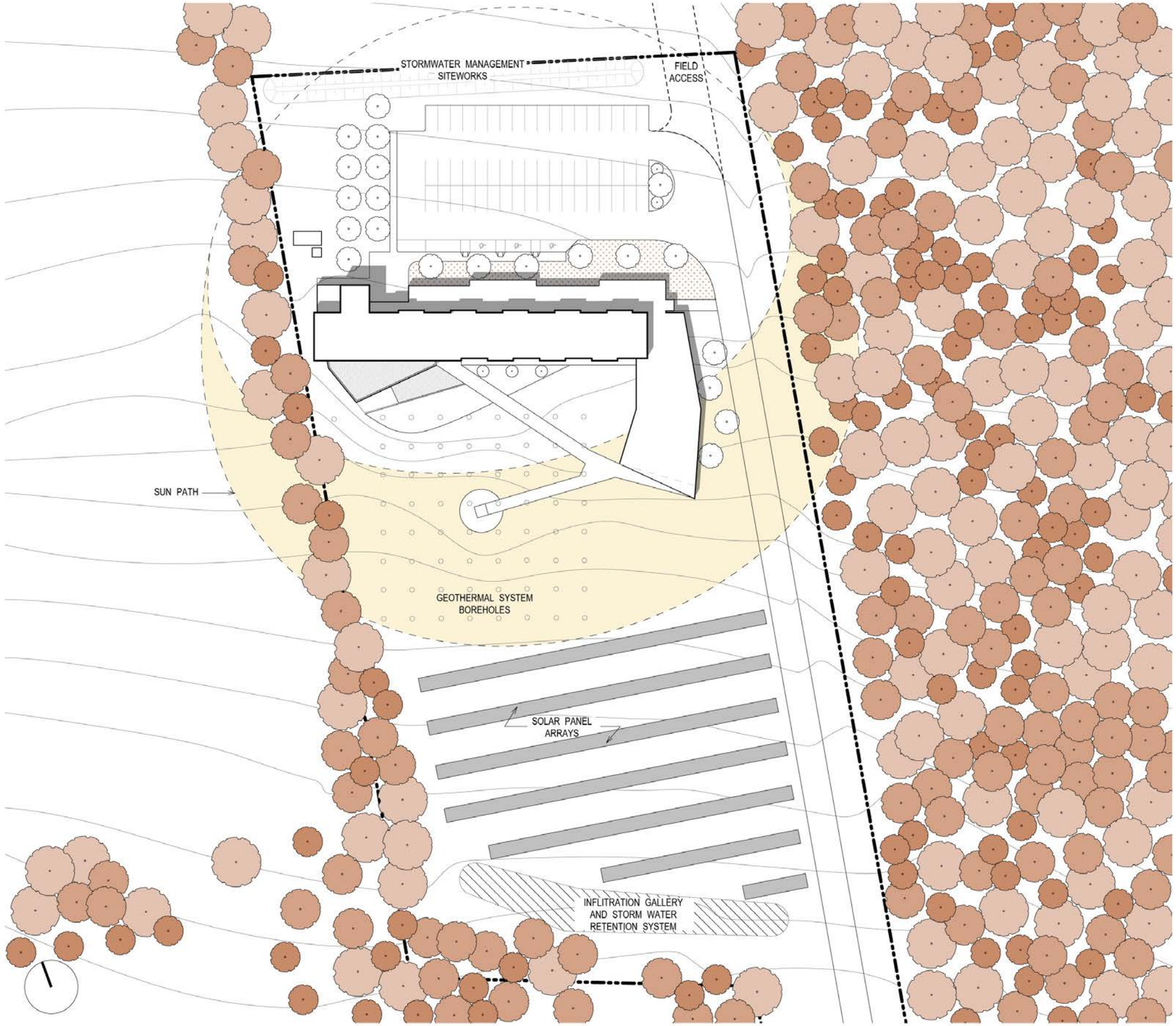
2ND FLOOR PLAN

N



STRATEGIC DIRECTION

Overlooking the village of Saint Peters Bay (pop. 231), the Centre intertwines local Indigenous, settler, and world-class research communities within an immersive 24-hour live–learn landscape. Supporting focused climate change research and experiential engagement, its active learning, academic, lab and social spaces inflect to create a wind sheltered, south-facing courtyard that is central to the project's social and research mission.

A 'think global/act local' placemaking and resiliency strategy leverages local skills and materials to achieve exceptional economy and environmental performance. Demonstrating that design excellence, high-performance sustainable design and affordability can coexist, its all-electric systems approach includes ground source heating/cooling, a 100Kw solar array, and a low-embodied carbon structure and envelope design, achieving a zero-carbon design outcome and pathway for a net-zero energy future.

COMMUNITY

Constructed upon land donated by a local farmer, the Centre serves as a community hub for residents and neighboring Abegweit First Nation. A multipurpose space is used by these communities for workshops, public meetings and outreach events which opens/ extends to the terraced courtyard. Due to its remote location from UPEI's campus, researchers are provided with modest 'micro-suites' with generous bedrooms and personal study space to reduce commuting.

SITE

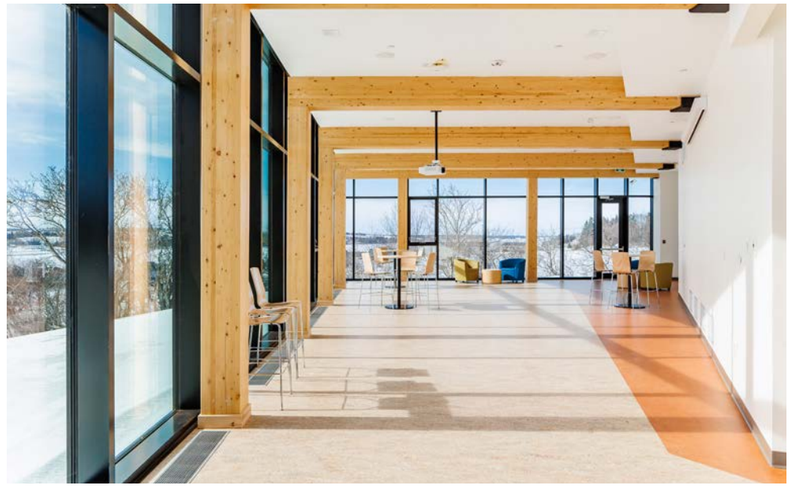
The site planning approach is responsive to bioclimatic, topographic and vegetated conditions. The linear building extends east-west along the ridge of the hillside, accommodating parking to the north, enabling the creation of a wind protected south-facing courtyard, solar harvesting opportunities, while minimizing site disturbance. Existing vegetated hedge rows flanking the site were retained and reinforced.

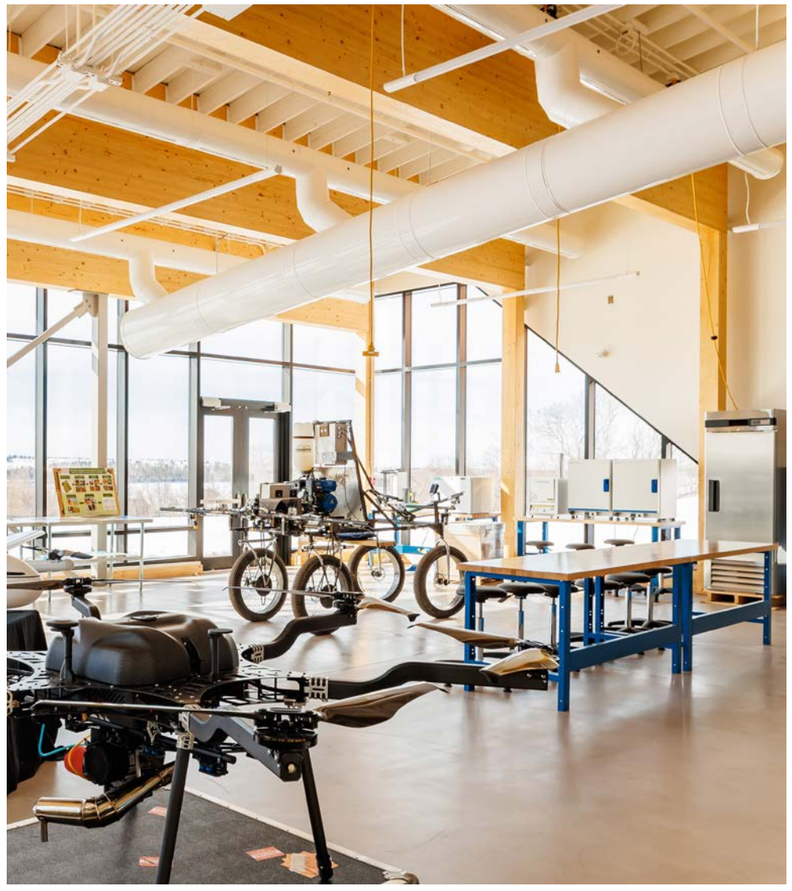
LIGHT & AIR

Leveraging its privileged hillside site, the Centre provides compelling views for 100% of regularly occupied spaces with +90% of interior space located within 7m of windows. Energy efficient LED lighting and occupancy sensors are used throughout, with task-specific lighting and energy demand varying between 5-15 kWh/m2. Manually operable windows are provided in every occupied space providing user controllability, resiliency, daylight and fresh air. Enhanced ‘on-demand’ ventilation of up to 6 ACH is provided for the Drone Port maker space.

WELLNESS

Panoramic views and compelling indoor-outdoor connections are key elements of the Centre’s design, wellness and placemaking strategy. Extends at the detail level, the strategy includes the extensive use of wood in response to the community context and as a biophilic ‘signature element’ for the Centre. Regionally harvested wood siding is used/ oriented vertically in homage to the idea of forest, while selective use of interior wood beams and columns punctuate the interior. Social, maker and learning spaces interconnect with the exterior to promote engagement with the landscape and with social and research activities occurring within the courtyard. Similarly, community wellness, sociability and public access are enhanced by the ‘immediate’ connection between front entry and community kitchen, which is designed to enable concurrent use by students and for community events.





WATER CONSERVATION

Cost effective water conservation strategies are employed using low and ultra-low flow toilets (3.0 L/ 50% reduction), showers (7.6L/min -20%) and faucets (5.7L/min - 31.3%), with overall estimated potable water reductions of 30.5% below reference building standards. Stormwater is directed to grade for infiltration.

MATERIALS AND RESOURCES

The Centre’s think local sustainability approach is rooted in local supplier and trade capabilities wherever feasible/ available. Examples include the use of all-wood, carbon sequestering construction using locally sourced stick-frame construction, glue-laminated columns/beams in fire/exposed locations (and selective use of steel where dictated by economy/maintenance and durability considerations), locally assembled/ prefabricated wood wall panels, regionally harvested wood cladding and locally manufactured Passive House Certified windows (Koltech: Debert N.S.) which are manufactured within the LEED V4 ‘local’ radius of 160km from the site. ‘Local’ and regionally sourced materials (within 400Km) account for an exceptional 20% and 65% (respectively) of overall costs.

OPERATING ENERGY

PRESENT & FUTURE

Operating Energy and Carbon Present and Future

The project's holistic design approach embeds sustainability outcomes through siting, daylighting of interior spaces, cost-effective carbon-sequestering wood stick construction, enhanced envelope design and by its all-electric concept that incorporates ground source geothermal and on-site renewable energy generation to offset embodied and source 2 carbon emissions.

Total Energy Use Intensity (TEUI) is modelled at 109.6kWh/m2/year and reflects building's unique 24-hour live/learn operational cycle which significantly impacts/increases TEUI. The lower floor level operates as a post secondary education/research facility with extended hours of operation and energy demand. This is further aggravated by the absence of transient occupancy cycles that form the basis of EUI targets which are connected to standard occupancy profiles (i.e. the total occupant load profile is not aligned with benchmarking standards).

Energy and Carbon reduction measures were independently evaluated using a 'shadow review' process using tender documents against CaGBC's NZC program by William Marshall—one of CaGBC's zero carbon workshop leaders. Summary comments from this review process indicates the project "would qualify for ZCB Design Certification …would easily be certified under the ZCB Performance path, and…exceeds the minimum performance of absolute embodied carbon intensity requirements by 59%."

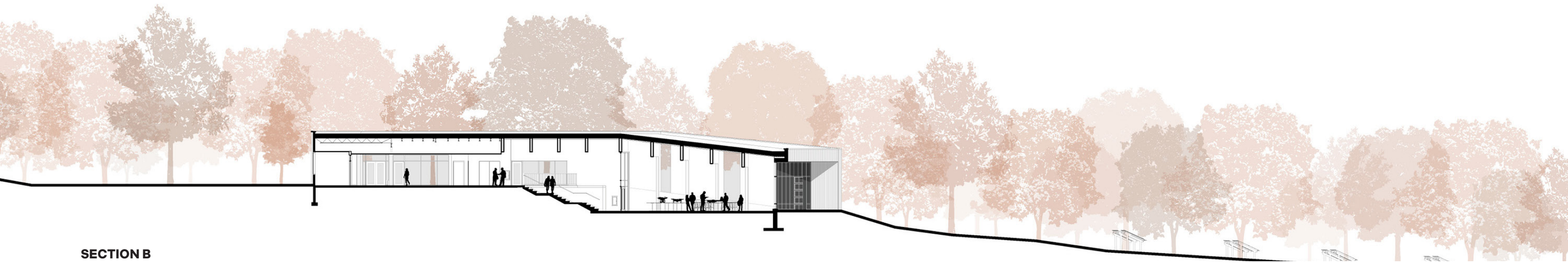
LIFE CYCLE CONSIDERATIONS

A complete embodied carbon analysis for the University of Prince Edward Island's new building CCCCA was carried out using Athena's Impact Estimator for Buildings. The analysis was performed to confirm that the Canadian Center for Climate Change and Adaptation building would comply with the embodied carbon reduction requirements of the ZCB-Design V3. The Life Cycle Analysis results indicate that the building's 60-year embodied carbon impact is 204.7 kgCO2e/m2, which is significantly below the ZCB-Design V3 threshold limit of 500 kgCO2e/m2.

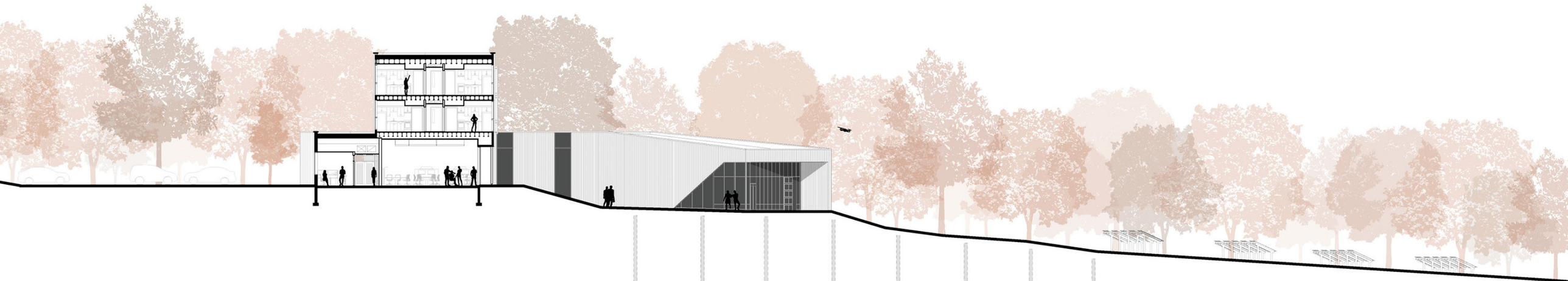
EDUCATION AND INFORMATION SHARING

As a destination for world-class research and learning, education and information sharing are integral to the Centre's mandate and mission. It advances and provides access to high-quality datasets, multidisciplinary research teams, outstanding graduate and postdoctoral fellows, and engaged industry, community, and government partners. Collaborations within this highly participatory environment foster new knowledge and research through dedicated research labs for Food Security and Sustainability, Climate Action Smart Lab, Drone Mapping & Monitoring and Climate Policy. Its digitally connected living, learning, and research environment enables globally important research within a rural setting that engages and enables the aspirations of its local communities.

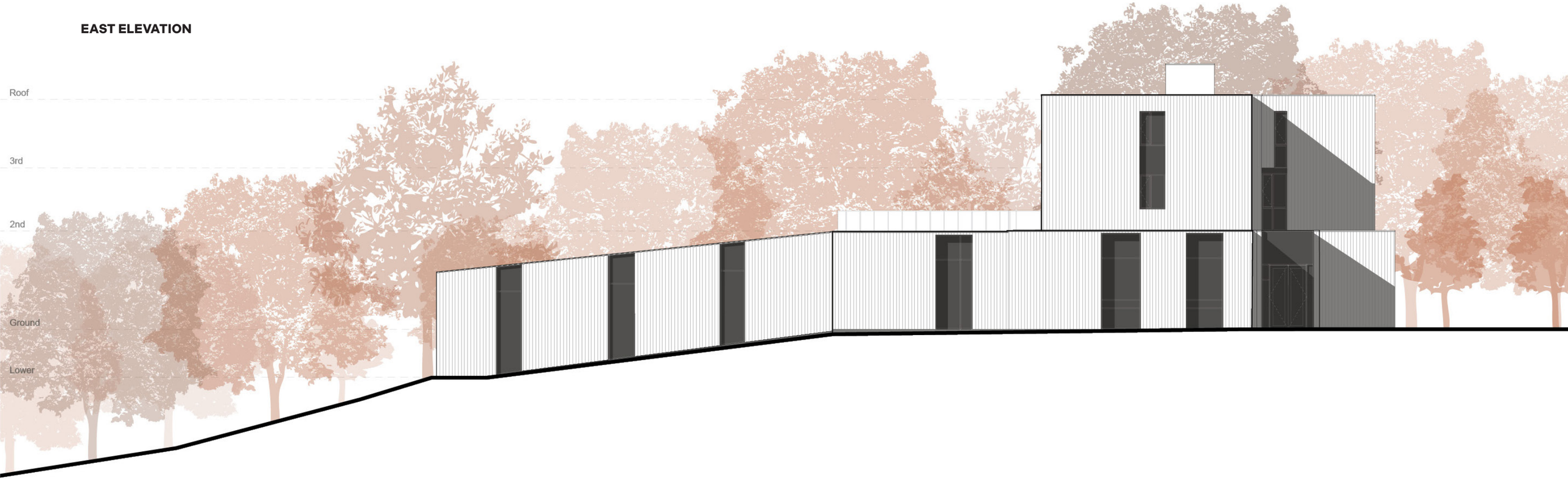
SECTION A



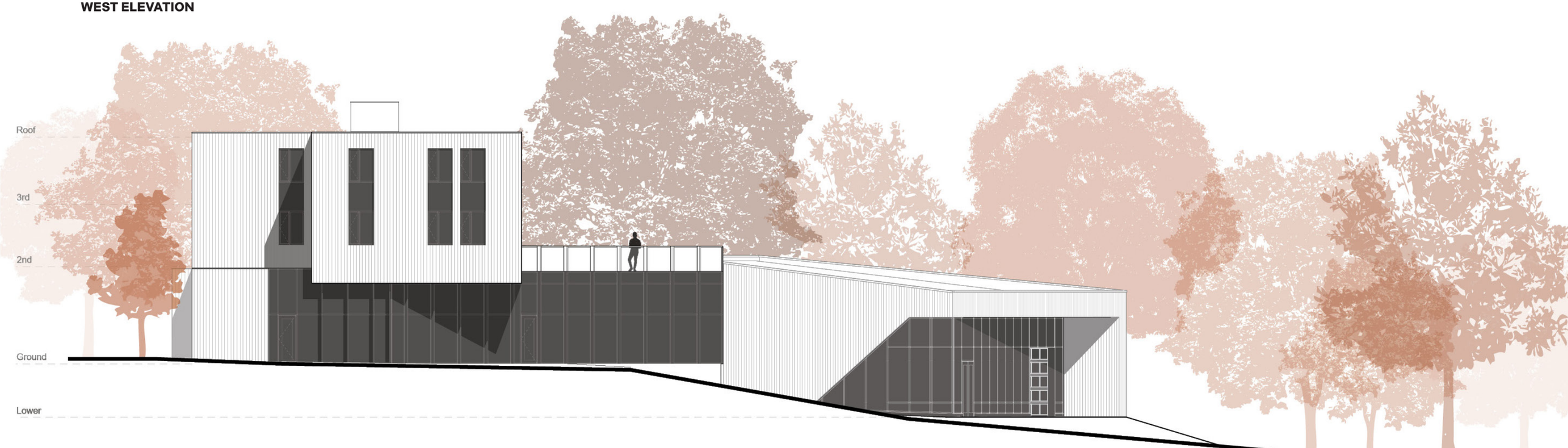
SECTION B



EAST ELEVATION



WEST ELEVATION



TECHNICAL APPENDIX

DATE: December 7, 2023

TO: To Whom it may concern.

CO: Canadian Center for Climate Change and Adaptation, Charlottetown PEI

RE: Canadian Center for Climate Change and Adaptation Buildings (CCCCA) Embodied Carbon Summary

Embodied carbon emissions represent approximately 10 percent of all energy-related carbon emissions globally and are derived from the manufacturing, transport, installation, use, and end-of-life of building materials. There is an increasing awareness by countries in addressing the embodied carbon to contribute to relevant climate action around the world.

The Zero Carbon Building (ZCB) – Design Standard by CAGBC is used as a point of reference to present the embodied carbon emissions. ZCB – Design Standard focuses on carbon emissions through the entire life cycle of the building. The metrics stated by ZCB - Design Standard for the following life cycle stages are illustrated in Figure 1:

- Upfront carbon (life cycle stages A1-5)
- Use stage embodied carbon (life cycle stages B1-5)
- End of life carbon (life cycle stages C1-4)

Figure 1: Embodied Carbon Life Cycle Stages

In addition to the metrics, the projects should also meet a minimum performance threshold for embodied carbon which dictates the embodied carbon intensity is at or below the set target, or to meet a percentage reduction target as given below in Figure 2.

Compliance options	
Percent improvement over a baseline	Absolute embodied carbon intensity
≥10%	≤500 kg CO_2e/m^2

Figure 2: Minimum Performance Compliance Options

A complete embodied carbon analysis for the University of Prince Edward Island's new building CCCCA was carried out using Athena's Impact Estimator for Buildings. The analysis was performed to confirm that the Canadian Center for Climate Change and Adaptation building would comply with the embodied carbon reduction requirements of the ZCB-Design V3. The Life Cycle Analysis (LCA) results indicate that the building's 60-year embodied carbon impact is 204.7 kgCO2e/m2, which is less than the ZCB-Design V3 threshold limit of 500 kgCO2e/m2. From the embodied carbon perspective, the proposed building exceeds the minimum performance of absolute embodied carbon intensity requirements by 59%. The carbon emissions intensity by stages is presented in Figure 3 below.

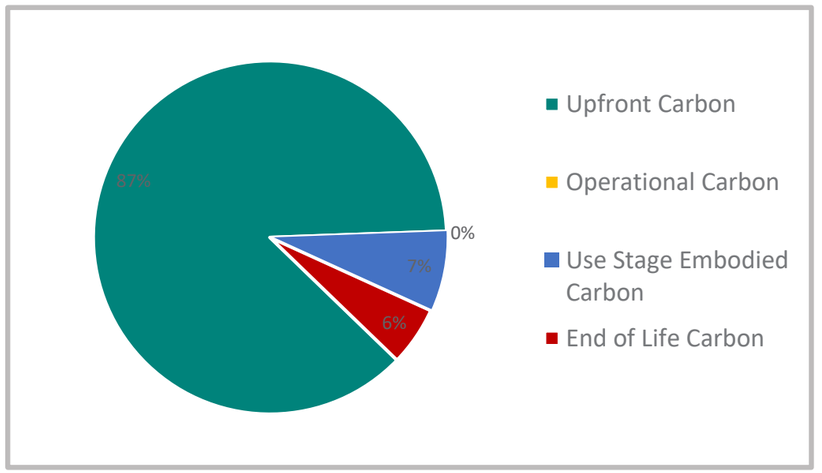
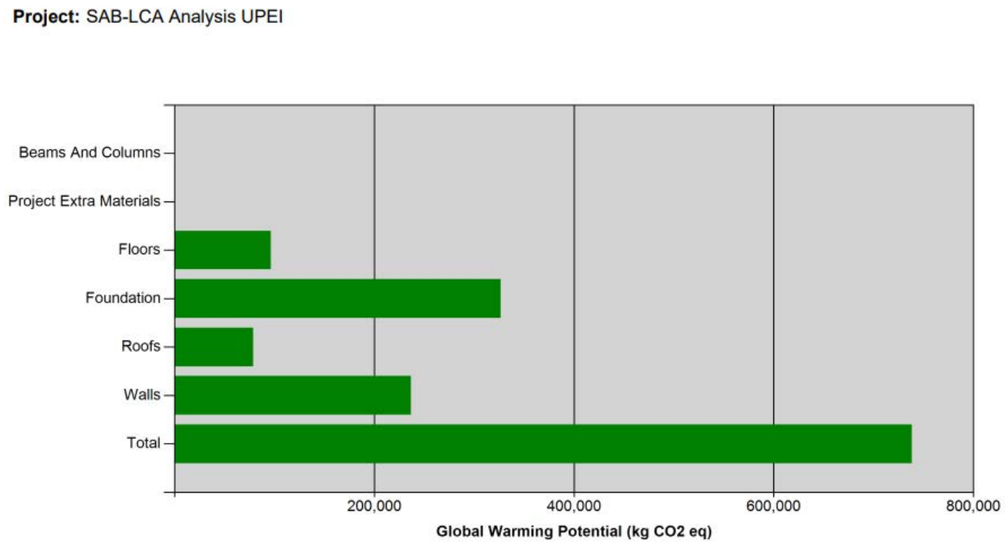


Figure 3: Whole Life Carbon Emissions Intensity (60 Years)

A chart and table of the detailed LCA results with global warming potential (GWP) measure for the assemblies of the building is given in Figure 4 below.



Assembly Group	Unit	Total
Beams And Columns	kg CO2 eq	0.00E+00
Floors	kg CO2 eq	9.65E+04
Foundation	kg CO2 eq	3.27E+05
Project Extra Materials	kg CO2 eq	0.00E+00
Roofs	kg CO2 eq	7.87E+04
Walls	kg CO2 eq	2.37E+05
Total	**kg CO2 eq**	**7.38E+05**

Figure 4: Global Warming Potential LCA Measure Chart by Assembly Group (A to C)

In short, Equilibrium's review and analysis of the proposed new Canadian Center for Climate Change and Adaptation building's envelope meets all the embodied carbon intensity requirements of the CaGBC's ZCB-Design V3 standard.

If there are any further information required, please feel free to contact at william.marshall@lmmw.ca or varsini.manoharan@lmmw.ca.

Sincerely,

Varsini Manoharan, ESET

Energy Efficiency Technologist, Equilibrium Engineering Inc.

Annual Cost Summary

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Table 3. Component Cost as a Percentage of Total Cost

Component	NECB Prescriptive Baseline (%)	Proposed Building Geothermal (%)
Air System Fans	22.2	11.5
Cooling	3.1	6.6
Heating	61.6	46.8
Pumps	0.0	5.2
Heat Rejection Fans	0.0	0.0
HVAC Sub-Total	**86.9**	**70.2**
Lights	6.3	11.0
Electric Equipment	6.8	18.8
Misc. Electric	0.0	0.0
Misc. Fuel Use	0.0	0.0
Non-HVAC Sub-Total	**13.1**	**29.8**
Grand Total	**100.0**	**100.0**

Table 1. Annual Costs

Component	NECB Prescriptive Baseline ($)	Proposed Building Geothermal ($)
HVAC Components		
Electric	173,891	52,282
Natural Gas	0	0
Fuel Oil	0	0
Propane	0	0
Remote HW	0	0
Remote Steam	0	0
Remote CW	0	0
HVAC Sub-Total	**173,891**	**52,282**
Non-HVAC Components		
Electric	26,175	22,195
Natural Gas	0	0
Fuel Oil	0	0
Propane	0	0
Remote HW	0	0
Remote Steam	0	0
Non-HVAC Sub-Total	**26,175**	**22,195**
Grand Total	**200,066**	**74,477**

Annual Energy and Emissions Summary

20-111 UPEI Climate Change
MCA

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Table 2. Annual Energy Consumption

Component	NECB Prescriptive Baseline	Proposed Building Geothermal
HVAC Components		
Electric (kWh)	952,705	278,363
Natural Gas (na)	0	0
Fuel Oil (na)	0	0
Propane (na)	0	0
Remote HW (na)	0	0
Remote Steam (na)	0	0
Remote CW (na)	0	0
Non-HVAC Components		
Electric (kWh)	142,317	116,906
Natural Gas (na)	0	0
Fuel Oil (na)	0	0
Propane (na)	0	0
Remote HW (na)	0	0
Remote Steam (na)	0	0
Totals		
Electric (kWh)	1,095,022	395,269
Natural Gas (na)	0	0
Fuel Oil (na)	0	0
Propane (na)	0	0
Remote HW (na)	0	0
Remote Steam (na)	0	0
Remote CW (na)	0	0

Table 3. Annual Emissions

Component	NECB Prescriptive Baseline	Proposed Building Geothermal
CO2 Equivalent (lb)	0	0

NOTE TO REVIEWERS:

The following 2020 analysis erroneously identified the Conditioned Floor Area as being the same the Gross Floor Area.

The highlights and markups shown below, and on the following pages, correct this oversight. This correction is addressed in the accompanying NZB v3 workbook, which was completed as a certification 'shadowing' and validation exercise - not certification.

Table 4. Annual Cost per Unit Floor Area

Component	NECB Prescriptive Baseline ($/ft²)	Proposed Building Geothermal ($/ft²)
HVAC Components		
Electric	5.387	1.620
Natural Gas	0.000	0.000
Fuel Oil	0.000	0.000
Propane	0.000	0.000
Remote HW	0.000	0.000
Remote Steam	0.000	0.000
Remote CW	0.000	0.000
HVAC Sub-Total	**5.387**	**1.620**
Non-HVAC Components		
Electric	0.811	0.688
Natural Gas	0.000	0.000
Fuel Oil	0.000	0.000
Propane	0.000	0.000
Remote HW	0.000	0.000
Remote Steam	0.000	0.000
Non-HVAC Sub-Total	**0.811**	**0.688**
Grand Total	**6.198**	**2.307**
Gross Floor Area (ft²)	32281.7	32281.7
Conditioned Floor Area (ft²)	32281.7	32281.7

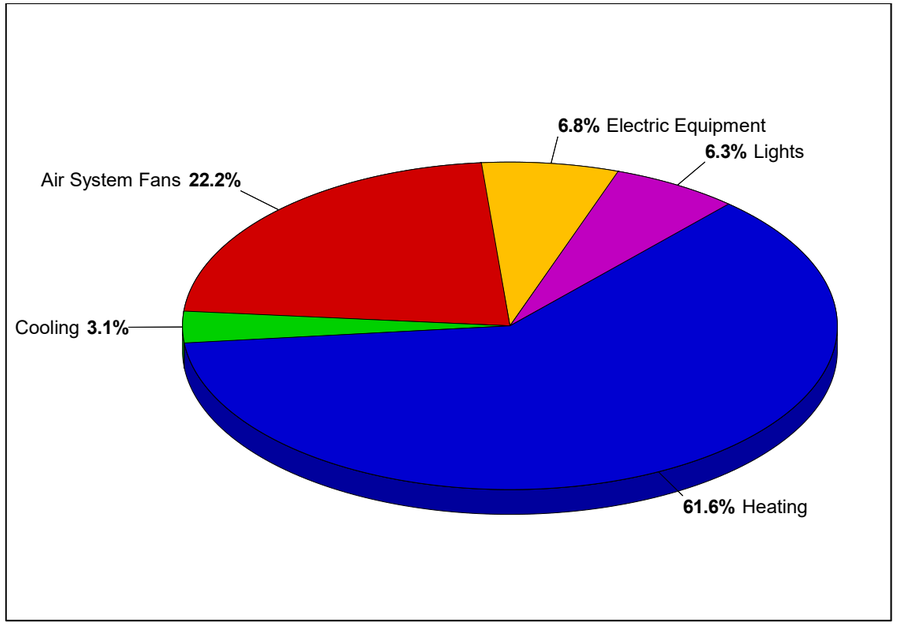
Note: Values in this table are calculated using the Gross Floor Area.

correct Gross Floor Area to read: 38,825 gsf (3,607gsm)

correct to read: Conditioned Floor Area

Table 5. Component Cost as a Percentage of Total Cost

Component	NECB Prescriptive Baseline (%)	Proposed Building Geothermal (%)
HVAC Components		
Electric	86.9	70.2
Natural Gas	0.0	0.0
Fuel Oil	0.0	0.0
Propane	0.0	0.0
Remote HW	0.0	0.0
Remote Steam	0.0	0.0
Remote CW	0.0	0.0
HVAC Sub-Total	**86.9**	**70.2**
Non-HVAC Components		
Electric	13.1	29.8
Natural Gas	0.0	0.0
Fuel Oil	0.0	0.0
Propane	0.0	0.0
Remote HW	0.0	0.0
Remote Steam	0.0	0.0
Non-HVAC Sub-Total	**13.1**	**29.8**
Grand Total	**100.0**	**100.0**



1. Annual Costs

Component	Annual Cost ($)	($/ft²)	Percent of Total (%)
Air System Fans	44,356	1.374	22.2
Cooling	6,226	0.193	3.1
Heating	123,306	3.820	61.6
Pumps	0	0.000	0.0
Heat Rejection Fans	0	0.000	0.0
HVAC Sub-Total	**173,888**	**5.387**	**86.9**
Lights	12,598	0.390	6.3
Electric Equipment	13,578	0.421	6.8
Misc. Electric	0	0.000	0.0
Misc. Fuel Use	0	0.000	0.0
Non-HVAC Sub-Total	**26,176**	**0.811**	**13.1**
Grand Total	**200,064**	**6.197**	**100.0**

Note: Cost per unit floor area is based on the ~~gross building floor area~~.

Gross Floor Area ..... **~~32281.7~~** ft²
Conditioned Floor Area ..... **32281.7** ft²

correct to read: Conditioned Floor Area

correction to Gross Floor Area to read 38,825 gsf (3,607gsm)

Annual Cost Summary

20-111 UPEI Climate Change
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Table 1. Annual Costs

Component	NECB Prescriptive Baseline ($)	Proposed Building Geothermal ($)
Air System Fans	44,356	8,569
Cooling	6,226	4,940
Heating	123,306	34,878
Pumps	0	3,895
Heat Rejection Fans	0	0
HVAC Sub-Total	**173,888**	**52,282**
Lights	12,598	8,177
Electric Equipment	13,578	14,017
Misc. Electric	0	0
Misc. Fuel Use	0	0
Non-HVAC Sub-Total	**26,176**	**22,194**
Grand Total	**200,064**	**74,475**

Table 2. Annual Cost per Unit Floor Area

Component	NECB Prescriptive Baseline ($/ft²)	Proposed Building Geothermal ($/ft²)
Air System Fans	1.374	0.265
Cooling	0.193	0.153
Heating	3.820	1.080
Pumps	0.000	0.121
Heat Rejection Fans	0.000	0.000
HVAC Sub-Total	**5.387**	**1.620**
Lights	0.390	0.253
Electric Equipment	0.421	0.434
Misc. Electric	0.000	0.000
Misc. Fuel Use	0.000	0.000
Non-HVAC Sub-Total	**0.811**	**0.688**
Grand Total	**6.197**	**2.307**
Gross Floor Area (ft²)	32281.7	32281.7
Conditioned Floor Area (ft²)	32281.7	32281.7

Note: Values in this table are calculated using the ~~Gross Floor Area~~.

correction to read Gross Conditioned Area

Annual Energy Costs - NECB Prescriptive Baseline

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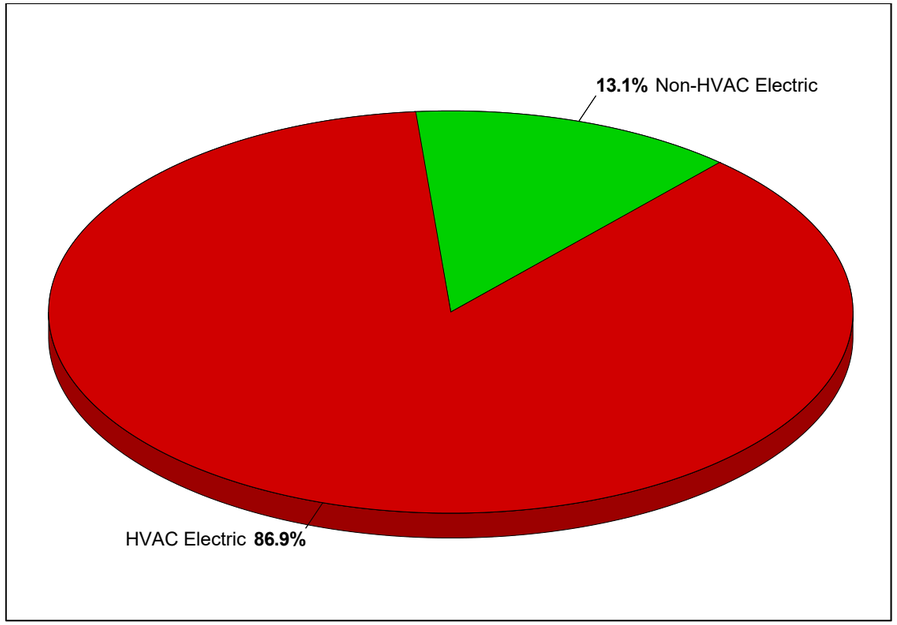


1. Annual Costs

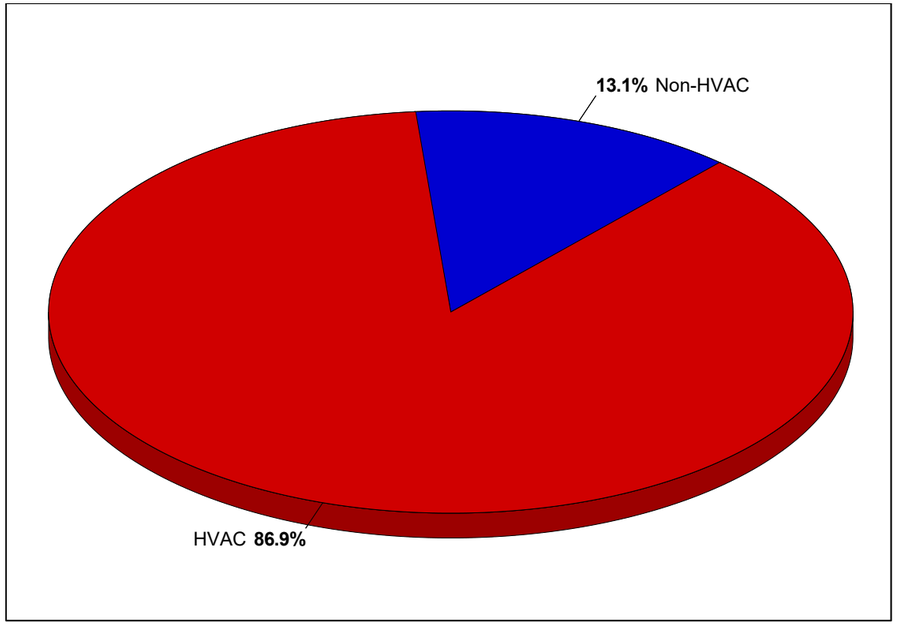
Component	Annual Cost ($/yr)	($/ft²)	Percent of Total (%)
HVAC Components			
Electric	173,891	5.387	86.9
Natural Gas	0	0.000	0.0
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Remote Chilled Water	0	0.000	0.0
HVAC Sub-Total	**173,891**	**5.387**	**86.9**
Non-HVAC Components			
Electric	26,175	0.811	13.1
Natural Gas	0	0.000	0.0
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Non-HVAC Sub-Total	**26,175**	**0.811**	**13.1**
Grand Total	**200,066**	**6.198**	**100.0**

Note: Cost per unit floor area is based on the ~~gross building floor area~~.

Gross Floor Area ..... **32281.7** ft²
Conditioned Floor Area ..... **32281.7** ft²

correct to read: Conditioned Floor Area

correction to Gross Floor Area to read: 38,825 gsf (3,607gsm)



1. Annual Costs

Component	Annual Cost ($/yr)	($/ft²)	Percent of Total (%)
HVAC	173,888	5.387	86.9
Non-HVAC	26,176	0.811	13.1
Grand Total	**200,064**	**6.198**	**100.0**

Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area ..... ~~32281.7~~ ft²
Conditioned Floor Area ..... 32281.7 ft²

correct to read: Conditioned Floor Area

correction to Gross Floor Area to read 38,825 gsf (3,607gsm)

1. Annual Coil Loads

Component	Load (kBTU)	(kBTU/ft²)
Cooling Coil Loads	709,985	21.993
Heating Coil Loads	2,256,319	69.895
Grand Total	**2,966,303**	**91.888**

2. Energy Consumption by System Component

Component	Site Energy (kBTU)	Site Energy (kBTU/ft²)	Source Energy (kBTU)	Source Energy (kBTU/ft²)
Air System Fans	822,636	25.483	2,937,985	91.011
Cooling	113,190	3.506	404,250	12.523
Heating	2,314,742	71.705	8,266,934	256.087
Pumps	0	0.000	0	0.000
Heat Rejection Fans	0	0.000	0	0.000
HVAC Sub-Total	**3,250,567**	**100.694**	**11,609,168**	**359.621**
Lights	233,705	7.240	834,662	25.856
Electric Equipment	251,899	7.803	899,640	27.868
Misc. Electric	0	0.000	0	0.000
Misc. Fuel Use	0	0.000	0	0.000
Non-HVAC Sub-Total	**485,605**	**15.043**	**1,734,302**	**53.724**
Grand Total	**3,736,172**	**115.737**	**13,343,470**	**413.345**

Notes:
1. 'Cooling Coil Loads' is the sum of all air system cooling coil loads.
2. 'Heating Coil Loads' is the sum of all air system heating coil loads.
3. Site Energy is the actual energy consumed.
4. Source Energy is the site energy divided by the electric generating efficiency (28.0%).
5. Source Energy for fuels equals the site energy value.
6. Energy per unit floor area is based on the gross building floor area.
   Gross Floor Area ..... **32281.7** ft²
   Conditioned Floor Area ..... **32281.7** ft²

correct to read: Conditioned Floor Area

correct Gross Floor Area to read: 38,825 gsf (3,607gsm)

Energy Budget by Energy Source - NECB Prescriptive Baseline

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1. Annual Coil Loads

Component	Load (kBTU)	(kBTU/ft²)
Cooling Coil Loads	709,985	21.993
Heating Coil Loads	2,256,319	69.895
Grand Total	**2,966,303**	**91.888**

2. Energy Consumption by Energy Source

Component	Site Energy (kBTU)	Site Energy (kBTU/ft²)	Source Energy (kBTU)	Source Energy (kBTU/ft²)
HVAC Components				
Electric	3,250,630	100.696	11,609,393	359.628
Natural Gas	0	0.000	0	0.000
Fuel Oil	0	0.000	0	0.000
Propane	0	0.000	0	0.000
Remote Hot Water	0	0.000	0	0.000
Remote Steam	0	0.000	0	0.000
Remote Chilled Water	0	0.000	0	0.000
HVAC Sub-Total	**3,250,630**	**100.696**	**11,609,393**	**359.628**
Non-HVAC Components				
Electric	485,585	15.042	1,734,232	53.722
Natural Gas	0	0.000	0	0.000
Fuel Oil	0	0.000	0	0.000
Propane	0	0.000	0	0.000
Remote Hot Water	0	0.000	0	0.000
Remote Steam	0	0.000	0	0.000
Non-HVAC Sub-Total	**485,585**	**15.042**	**1,734,232**	**53.722**
Grand Total	**3,736,215**	**115.738**	**13,343,625**	**413.350**

Notes:
1. 'Cooling Coil Loads' is the sum of all air system cooling coil loads.
2. 'Heating Coil Loads' is the sum of all air system heating coil loads.
3. Site Energy is the actual energy consumed.
4. Source Energy is the site energy divided by the electric generating efficiency (28.0%).
5. Source Energy for fuels equals the site energy value.
6. Energy per unit floor area is based on the ~~gross building floor area~~.
   Gross Floor Area ..... ~~32284.7~~ ft²
   Conditioned Floor Area ..... 32281.7 ft²

correct to read: Conditioned Floor Area

correct Gross Floor Area to read:
38,825 gsf (3,607gsm)

Monthly Component Costs - NECB Prescriptive Baseline

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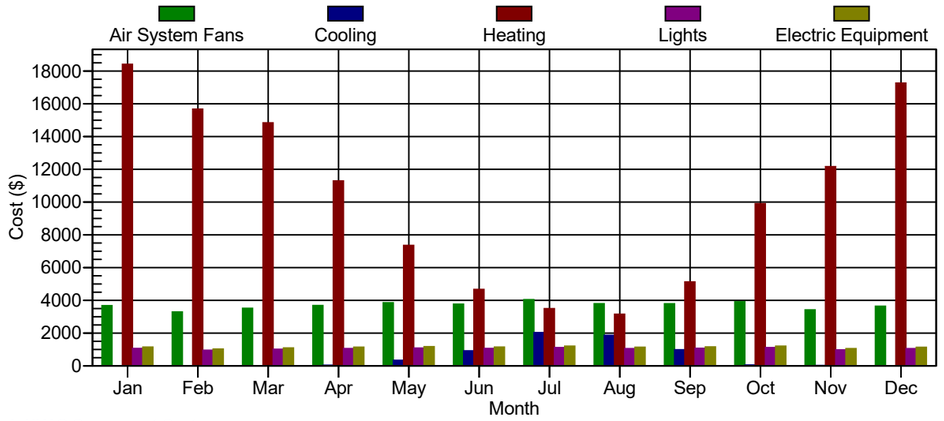

1. HVAC Component Costs

Month	Air System Fans ($)	Cooling ($)	Heating ($)	Pumps ($)	Heat Rejection Fans ($)	HVAC Total ($)
January	3,673	0	18,406	0	0	22,079
February	3,289	0	15,671	0	0	18,960
March	3,513	0	14,835	0	0	18,348
April	3,682	34	11,290	0	0	15,006
May	3,850	338	7,353	0	0	11,541
June	3,766	915	4,665	0	0	9,346
July	4,039	2,027	3,493	0	0	9,559
August	3,793	1,862	3,151	0	0	8,806
September	3,791	982	5,122	0	0	9,895
October	3,908	49	9,899	0	0	13,856
November	3,415	20	12,159	0	0	15,594
December	3,637	0	17,261	0	0	20,898
Total	**44,356**	**6,226**	**123,306**	**0**	**0**	**173,888**

2. Non-HVAC Component Costs

Month	Lights ($)	Electric Equipment ($)	Misc. Electric ($)	Misc. Fuel Use ($)	Non-HVAC Total ($)	Grand Total ($)
January	1,062	1,145	0	0	2,207	24,286
February	950	1,024	0	0	1,975	20,935
March	1,011	1,090	0	0	2,101	20,449
April	1,054	1,136	0	0	2,190	17,196
May	1,085	1,170	0	0	2,255	13,796
June	1,061	1,143	0	0	2,204	11,550
July	1,113	1,200	0	0	2,313	11,872
August	1,051	1,133	0	0	2,184	10,990
September	1,071	1,155	0	0	2,226	12,121
October	1,114	1,201	0	0	2,315	16,171
November	975	1,051	0	0	2,025	17,619
December	1,050	1,132	0	0	2,182	23,080
Total	**12,598**	**13,578**	**0**	**0**	**26,176**	**200,064**

Monthly Energy Costs - NECB Prescriptive Baseline

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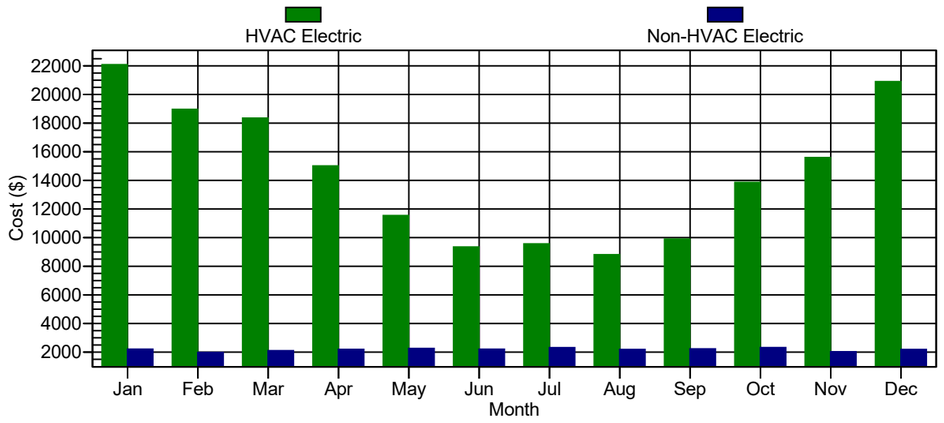

1. HVAC Costs

Month	Electric ($)	Natural Gas ($)	Fuel Oil ($)	Propane ($)	Remote Hot Water ($)	Remote Steam ($)	Remote Chilled Water ($)
January	22,080	0	0	0	0	0	0
February	18,961	0	0	0	0	0	0
March	18,348	0	0	0	0	0	0
April	15,006	0	0	0	0	0	0
May	11,540	0	0	0	0	0	0
June	9,346	0	0	0	0	0	0
July	9,559	0	0	0	0	0	0
August	8,806	0	0	0	0	0	0
September	9,895	0	0	0	0	0	0
October	13,857	0	0	0	0	0	0
November	15,594	0	0	0	0	0	0
December	20,899	0	0	0	0	0	0
Total	**173,891**	**0**	**0**	**0**	**0**	**0**	**0**

2. Non-HVAC Costs

Month	Electric ($)	Natural Gas ($)	Fuel Oil ($)	Propane ($)	Remote Hot Water ($)	Remote Steam ($)
January	2,207	0	0	0	0	0
February	1,975	0	0	0	0	0
March	2,101	0	0	0	0	0
April	2,190	0	0	0	0	0
May	2,255	0	0	0	0	0
June	2,203	0	0	0	0	0
July	2,313	0	0	0	0	0
August	2,184	0	0	0	0	0
September	2,226	0	0	0	0	0
October	2,315	0	0	0	0	0
November	2,025	0	0	0	0	0
December	2,182	0	0	0	0	0
Total	**26,175**	**0**	**0**	**0**	**0**	**0**

Monthly Energy Use by Component - NECB Prescriptive Baseline

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1. Monthly Energy Use by System Component

Component	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Air System Fans (kWh)	20731	18170	19356	20074	20532	19631	21750	20099	20333	21027	18646	20754
Cooling												
Electric (kWh)	0	0	0	187	1801	4767	10913	9868	5268	263	107	0
Natural Gas (na)	0	0	0	0	0	0	0	0	0	0	0	0
Fuel Oil (na)	0	0	0	0	0	0	0	0	0	0	0	0
Propane (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote HW (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote Steam (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote CW (na)	0	0	0	0	0	0	0	0	0	0	0	0
Heating												
Electric (kWh)	103883	86570	81742	61556	39213	24319	18811	16697	27473	53254	66394	98500
Natural Gas (na)	0	0	0	0	0	0	0	0	0	0	0	0
Fuel Oil (na)	0	0	0	0	0	0	0	0	0	0	0	0
Propane (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote HW (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote Steam (na)	0	0	0	0	0	0	0	0	0	0	0	0
Pumps (kWh)	0	0	0	0	0	0	0	0	0	0	0	0
Heat Rej. Fans (kWh)	0	0	0	0	0	0	0	0	0	0	0	0
Lighting (kWh)	5994	5250	5570	5746	5788	5528	5994	5570	5746	5994	5322	5994
Electric Eqpt. (kWh)	6460	5658	6004	6193	6239	5958	6460	6004	6193	6460	5737	6460
Misc. Electric (kWh)	0	0	0	0	0	0	0	0	0	0	0	0
Misc. Fuel												
Natural Gas (na)	0	0	0	0	0	0	0	0	0	0	0	0
Propane (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote HW (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote Steam (na)	0	0	0	0	0	0	0	0	0	0	0	0

Monthly Energy Use by Energy Type - NECB Prescriptive Baseline

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1. HVAC Energy Use

Month	Electric (kWh)	Natural Gas (na)	Fuel Oil (na)	Propane (na)	Remote HW (na)	Remote Steam (na)	Remote CW (na)
Jan	124,619	0	0	0	0	0	0
Feb	104,744	0	0	0	0	0	0
Mar	101,102	0	0	0	0	0	0
Apr	81,818	0	0	0	0	0	0
May	61,545	0	0	0	0	0	0
Jun	48,716	0	0	0	0	0	0
Jul	51,472	0	0	0	0	0	0
Aug	46,662	0	0	0	0	0	0
Sep	53,073	0	0	0	0	0	0
Oct	74,546	0	0	0	0	0	0
Nov	85,150	0	0	0	0	0	0
Dec	119,259	0	0	0	0	0	0
Totals	952,705	0	0	0	0	0	0

2. Non-HVAC Energy Use

Month	Electric (kWh)	Natural Gas (na)	Fuel Oil (na)	Propane (na)	Remote HW (na)	Remote Steam (na)
Jan	12,453	0	0	0	0	0
Feb	10,908	0	0	0	0	0
Mar	11,574	0	0	0	0	0
Apr	11,938	0	0	0	0	0
May	12,027	0	0	0	0	0
Jun	11,486	0	0	0	0	0
Jul	12,453	0	0	0	0	0
Aug	11,574	0	0	0	0	0
Sep	11,938	0	0	0	0	0
Oct	12,453	0	0	0	0	0
Nov	11,059	0	0	0	0	0
Dec	12,453	0	0	0	0	0
Totals	142,317	0	0	0	0	0

Billing Details - Electric - NECB Prescriptive Baseline

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1. Component Charges

Billing Period	Energy Charges ($)	Demand Charges ($)	Customer Charges ($)	Taxes ($)	Total Charge ($)
Jan	16,124	4,970	25	3,168	24,286
Feb	13,652	4,527	25	2,731	20,935
Mar	13,309	4,448	25	2,667	20,448
Apr	11,126	3,802	25	2,243	17,196
May	8,797	3,174	25	1,799	13,795
Jun	7,254	2,765	25	1,506	11,550
Jul	7,684	2,615	25	1,549	11,872
Aug	7,027	2,505	25	1,433	10,990
Sep	7,809	2,707	25	1,581	12,121
Oct	10,346	3,691	25	2,109	16,171
Nov	11,409	3,887	25	2,298	17,619
Dec	15,506	4,540	25	3,010	23,080
Totals	130,042	43,631	295	26,095	200,063

2. Totals

Billing Period	Total Charges ($)	Total Consumption (kWh)	Avg Price ($/kWh)
Jan	24,286	137,068	0.1772
Feb	20,935	115,648	0.1810
Mar	20,448	112,671	0.1815
Apr	17,196	93,755	0.1834
May	13,795	73,573	0.1875
Jun	11,550	60,202	0.1918
Jul	11,872	63,927	0.1857
Aug	10,990	58,237	0.1887
Sep	12,121	65,012	0.1864
Oct	16,171	86,998	0.1859
Nov	17,619	96,206	0.1831
Dec	23,080	131,708	0.1752
Totals	200,063	1,095,005	0.1827

3. Consumption Totals

Billing Period	Peak (kWh)	Mid-Peak (kWh)	Normal Peak (kWh)	Off-Peak (kWh)	Overall (kWh)
Jan	0	0	0	0	137,068
Feb	0	0	0	0	115,648
Mar	0	0	0	0	112,671
Apr	0	0	0	0	93,755
May	0	0	0	0	73,573
Jun	0	0	0	0	60,202
Jul	0	0	0	0	63,927
Aug	0	0	0	0	58,237
Sep	0	0	0	0	65,012
Oct	0	0	0	0	86,998
Nov	0	0	0	0	96,206
Dec	0	0	0	0	131,708
Totals	0	0	0	0	1,095,005

Billing Details - Electric - NECB Prescriptive Baseline

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4. Billing Demands

Billing Period	Peak (kW)	Mid-Peak (kW)	Normal Peak (kW)	Off-Peak (kW)	Overall (kW)
Jan	0.0	0.0	0.0	0.0	390.0
Feb	0.0	0.0	0.0	0.0	357.1
Mar	0.0	0.0	0.0	0.0	351.2
Apr	0.0	0.0	0.0	0.0	303.1
May	0.0	0.0	0.0	0.0	256.4
Jun	0.0	0.0	0.0	0.0	225.9
Jul	0.0	0.0	0.0	0.0	214.7
Aug	0.0	0.0	0.0	0.0	206.5
Sep	0.0	0.0	0.0	0.0	221.5
Oct	0.0	0.0	0.0	0.0	294.8
Nov	0.0	0.0	0.0	0.0	309.5
Dec	0.0	0.0	0.0	0.0	358.0

5. Maximum Demands

Billing Period	Peak (kW)	Mid-Peak (kW)	Normal Peak (kW)	Off-Peak (kW)	Overall (kW)
Jan	0.0	0.0	0.0	0.0	390.0
Feb	0.0	0.0	0.0	0.0	357.1
Mar	0.0	0.0	0.0	0.0	351.2
Apr	0.0	0.0	0.0	0.0	303.1
May	0.0	0.0	0.0	0.0	256.4
Jun	0.0	0.0	0.0	0.0	225.9
Jul	0.0	0.0	0.0	0.0	214.7
Aug	0.0	0.0	0.0	0.0	206.5
Sep	0.0	0.0	0.0	0.0	221.5
Oct	0.0	0.0	0.0	0.0	294.8
Nov	0.0	0.0	0.0	0.0	309.5
Dec	0.0	0.0	0.0	0.0	358.0

6. Time Of Maximum Demands (Date/Hour)

Billing Period	Peak	Mid-Peak	Normal Peak	Off-Peak	Overall
Jan	n/a	n/a	n/a	n/a	1/27 07:00
Feb	n/a	n/a	n/a	n/a	2/24 07:00
Mar	n/a	n/a	n/a	n/a	3/10 07:00
Apr	n/a	n/a	n/a	n/a	4/9 07:00
May	n/a	n/a	n/a	n/a	5/5 07:00
Jun	n/a	n/a	n/a	n/a	6/12 08:00
Jul	n/a	n/a	n/a	n/a	7/17 09:00
Aug	n/a	n/a	n/a	n/a	8/15 08:00
Sep	n/a	n/a	n/a	n/a	9/25 08:00
Oct	n/a	n/a	n/a	n/a	10/28 08:00
Nov	n/a	n/a	n/a	n/a	11/20 07:00
Dec	n/a	n/a	n/a	n/a	12/24 07:00

Annual Component Costs - Proposed Building Geothermal

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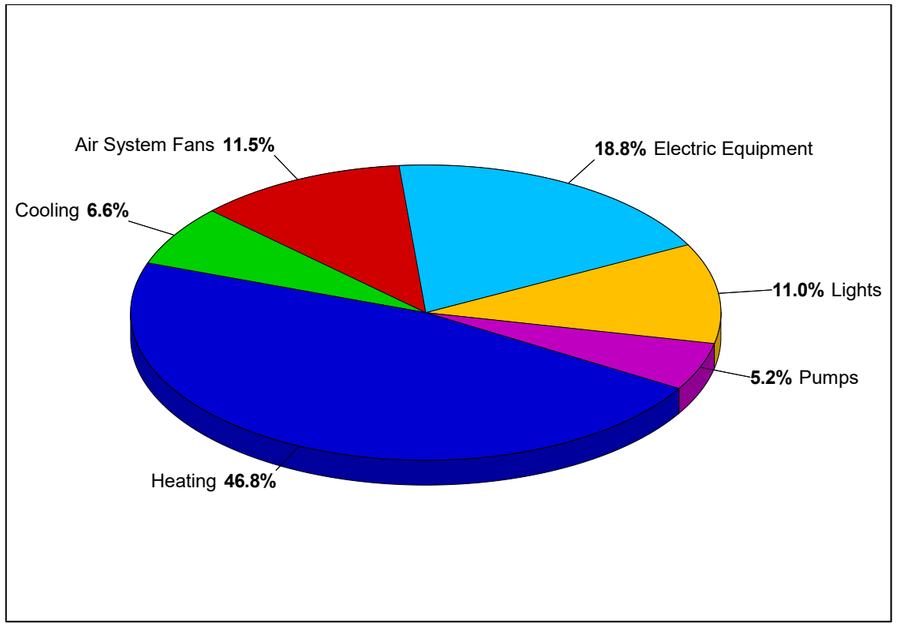


1. Annual Costs

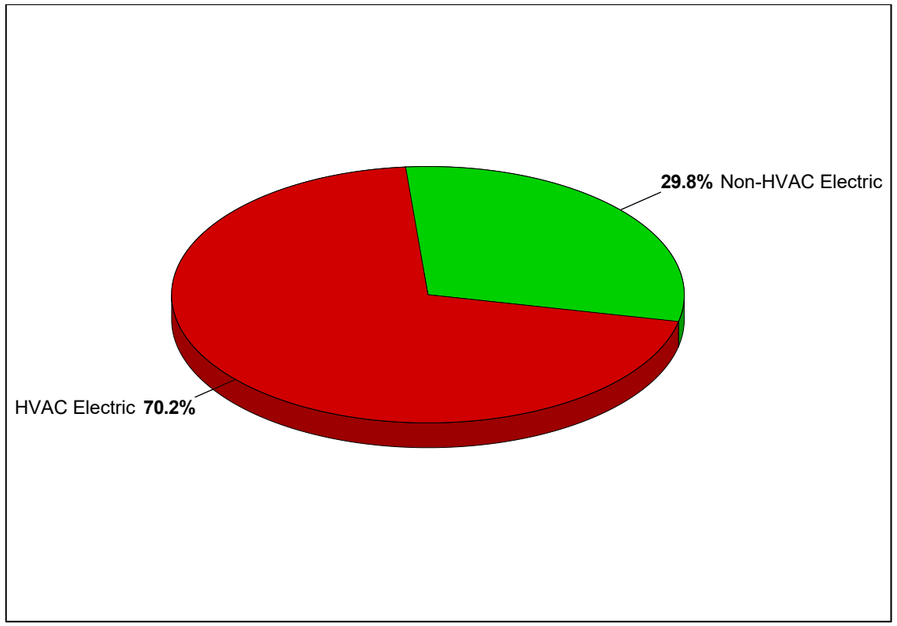
Component	Annual Cost ($)	($/ft²)	Percent of Total (%)
Air System Fans	8,569	0.265	11.5
Cooling	4,940	0.153	6.6
Heating	34,878	1.080	46.8
Pumps	3,895	0.121	5.2
Heat Rejection Fans	0	0.000	0.0
HVAC Sub-Total	**52,282**	**1.620**	**70.2**
Lights	8,177	0.253	11.0
Electric Equipment	14,017	0.434	18.8
Misc. Electric	0	0.000	0.0
Misc. Fuel Use	0	0.000	0.0
Non-HVAC Sub-Total	**22,194**	**0.688**	**29.8**
Grand Total	**74,475**	**2.307**	**100.0**

Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area ..... **32281.7** ft²
Conditioned Floor Area ..... **32281.7** ft²

correct to read: Conditioned Floor Area

correct Gross Floor Area to read 38,825 gsf (3,607gsm)



1. Annual Costs

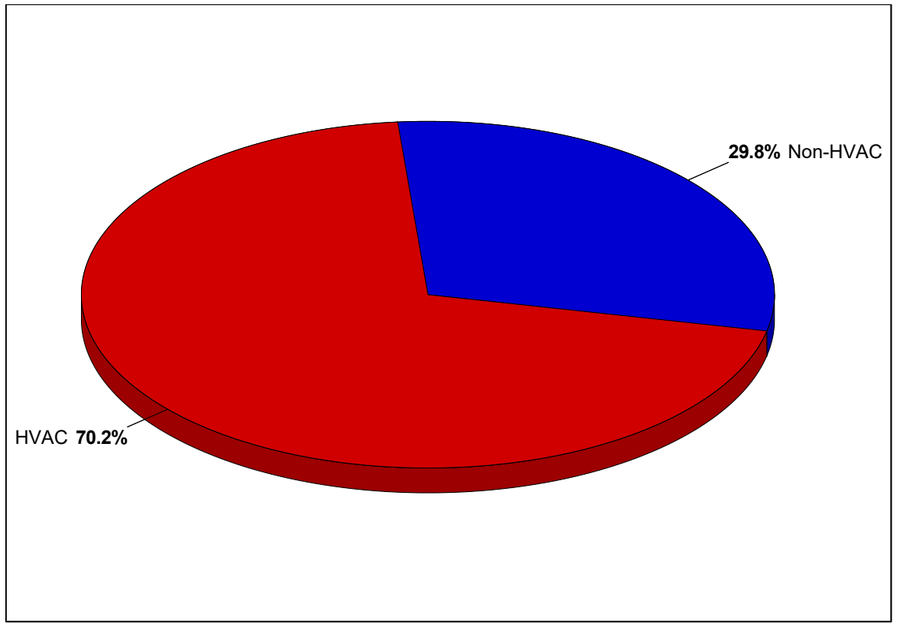
Component	Annual Cost ($/yr)	($/ft²)	Percent of Total (%)
HVAC Components			
Electric	52,282	1.620	70.2
Natural Gas	0	0.000	0.0
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Remote Chilled Water	0	0.000	0.0
HVAC Sub-Total	**52,282**	**1.620**	**70.2**
Non-HVAC Components			
Electric	22,195	0.688	29.8
Natural Gas	0	0.000	0.0
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Non-HVAC Sub-Total	**22,195**	**0.688**	**29.8**
Grand Total	**74,477**	**2.307**	**100.0**

Note: Cost per unit floor area is based on the ~~gross building floor area~~.

Gross Floor Area ..... ~~**32281.7**~~ ft²
Conditional Floor Area ..... **32281.7** ft²

correct to read: Conditioned Floor Area

correction to Gross Floor Area to read 38,825 gsf (3,607gsm)



1. Annual Costs

Component	Annual Cost ($/yr)	($/ft²)	Percent of Total (%)
HVAC	52,282	1.620	70.2
Non-HVAC	22,194	0.687	29.8
Grand Total	**74,475**	**2.307**	**100.0**

Note: Cost per unit floor area is based on the ~~gross building floor area~~.

Gross Floor Area ..... ~~**32281.7**~~ ft²
Conditioned Floor Area ..... **32281.7** ft²

correct to read: Conditioned Floor Area

correct Gross Floor Area to read 38,825 gsf (3,607gsm)

Energy Budget by System Component - Proposed Building Geothermal

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1. Annual Coil Loads

Component	Load (kBTU)	(kBTU/ft²)
Cooling Coil Loads	437,756	13.560
Heating Coil Loads	1,145,699	35.491
Grand Total	**1,583,455**	**49.051**

2. Energy Consumption by System Component

Component	Site Energy (kBTU)	Site Energy (kBTU/ft²)	Source Energy (kBTU)	Source Energy (kBTU/ft²)
Air System Fans	154,128	4.775	550,458	17.052
Cooling	87,066	2.697	310,950	9.632
Heating	638,461	19.778	2,280,218	70.635
Pumps	70,119	2.172	250,425	7.758
Heat Rejection Fans	0	0.000	0	0.000
HVAC Sub-Total	**949,774**	**29.422**	**3,392,050**	**105.077**
Lights	146,955	4.552	524,839	16.258
Electric Equipment	251,899	7.803	899,640	27.868
Misc. Electric	0	0.000	0	0.000
Misc. Fuel Use	0	0.000	0	0.000
Non-HVAC Sub-Total	**398,854**	**12.356**	**1,424,479**	**44.127**
Grand Total	**1,348,628**	**41.777**	**4,816,529**	**149.203**

Notes:
1. 'Cooling Coil Loads' is the sum of all air system cooling coil loads.
2. 'Heating Coil Loads' is the sum of all air system heating coil loads.
3. Site Energy is the actual energy consumed.
4. Source Energy is the site energy divided by the electric generating efficiency (28.0%).
5. Source Energy for fuels equals the site energy value.
6. Energy per unit floor area is based on the ~~gross building floor area~~.
   Gross Floor Area ..... ~~32281.7~~ ft²
   Conditioned Floor Area ..... **32281.7** ft²

correct to read: Conditioned Floor Area

correct Gross Floor Area to read 38,825 gsf (3,607gsm)

Energy Budget by Energy Source - Proposed Building Geothermal

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1. Annual Coil Loads

Component	Load (kBTU)	(kBTU/ft²)
Cooling Coil Loads	437,756	13.560
Heating Coil Loads	1,145,699	35.491
Grand Total	**1,583,455**	**49.051**

2. Energy Consumption by Energy Source

Component	Site Energy (kBTU)	Site Energy (kBTU/ft²)	Source Energy (kBTU)	Source Energy (kBTU/ft²)
HVAC Components				
Electric	949,774	29.421	3,392,050	105.077
Natural Gas	0	0.000	0	0.000
Fuel Oil	0	0.000	0	0.000
Propane	0	0.000	0	0.000
Remote Hot Water	0	0.000	0	0.000
Remote Steam	0	0.000	0	0.000
Remote Chilled Water	0	0.000	0	0.000
HVAC Sub-Total	**949,774**	**29.421**	**3,392,050**	**105.077**
Non-HVAC Components				
Electric	398,883	12.356	1,424,583	44.130
Natural Gas	0	0.000	0	0.000
Fuel Oil	0	0.000	0	0.000
Propane	0	0.000	0	0.000
Remote Hot Water	0	0.000	0	0.000
Remote Steam	0	0.000	0	0.000
Non-HVAC Sub-Total	**398,883**	**12.356**	**1,424,583**	**44.130**
Grand Total	**1,348,657**	**41.778**	**4,816,633**	**149.206**

Notes:
1. 'Cooling Coil Loads' is the sum of all air system cooling coil loads.
2. 'Heating Coil Loads' is the sum of all air system heating coil loads.
3. Site Energy is the actual energy consumed.
4. Source Energy is the site energy divided by the electric generating efficiency (28.0%).
5. Source Energy for fuels equals the site energy value.
6. Energy per unit floor area is based on the ~~gross building floor area~~.
   Gross Floor Area ..... ~~32281.7~~ ft²
   Conditioned Floor Area ..... **32281.7** ft²

correction to Gross Floor Area to read 38,825 gsf (3,607gsm)

correct Gross Floor Area to read 38,825 gsf (3,607gsm)

Monthly Component Costs - Proposed Building Geothermal

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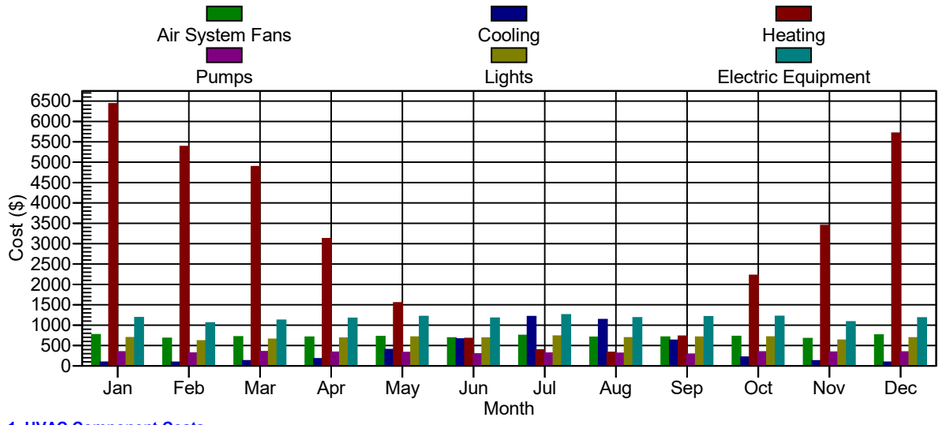

1. HVAC Component Costs

Month	Air System Fans ($)	Cooling ($)	Heating ($)	Pumps ($)	Heat Rejection Fans ($)	HVAC Total ($)
January	764	90	6,433	344	0	7,631
February	677	89	5,384	315	0	6,465
March	712	125	4,889	349	0	6,075
April	704	175	3,122	334	0	4,335
May	720	400	1,547	328	0	2,995
June	686	661	672	294	0	2,313
July	748	1,209	390	313	0	2,660
August	702	1,136	331	309	0	2,478
September	706	629	728	287	0	2,350
October	722	214	2,222	342	0	3,500
November	670	123	3,446	338	0	4,577
December	758	90	5,712	342	0	6,902
Total	**8,569**	**4,940**	**34,878**	**3,895**	**0**	**52,282**

2. Non-HVAC Component Costs

Month	Lights ($)	Electric Equipment ($)	Misc. Electric ($)	Misc. Fuel Use ($)	Non-HVAC Total ($)	Grand Total ($)
January	691	1,184	0	0	1,875	9,506
February	614	1,053	0	0	1,667	8,132
March	653	1,119	0	0	1,772	7,847
April	680	1,166	0	0	1,847	6,182
May	707	1,212	0	0	1,919	4,914
June	683	1,171	0	0	1,854	4,167
July	731	1,253	0	0	1,984	4,644
August	688	1,180	0	0	1,868	4,346
September	704	1,206	0	0	1,910	4,260
October	709	1,215	0	0	1,923	5,423
November	630	1,080	0	0	1,709	6,286
December	687	1,178	0	0	1,865	8,767
Total	**8,177**	**14,017**	**0**	**0**	**22,194**	**74,475**

Monthly Energy Costs - Proposed Building Geothermal

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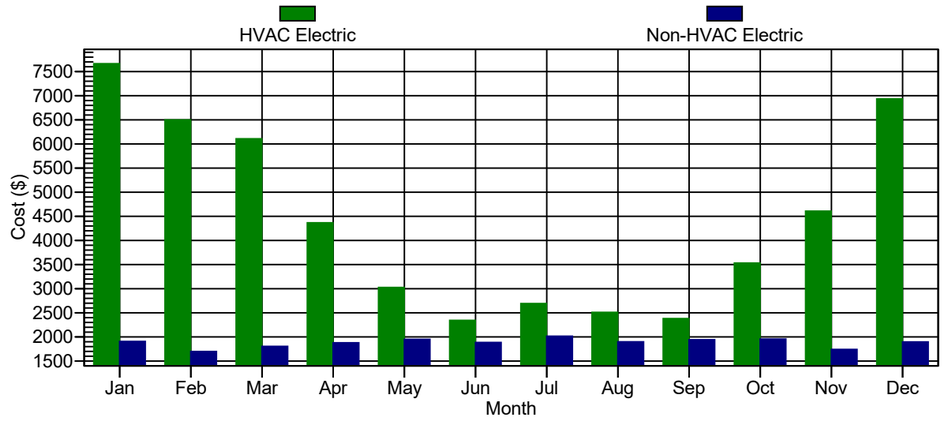

1. HVAC Costs

Month	Electric ($)	Natural Gas ($)	Fuel Oil ($)	Propane ($)	Remote Hot Water ($)	Remote Steam ($)	Remote Chilled Water ($)
January	7,632	0	0	0	0	0	0
February	6,466	0	0	0	0	0	0
March	6,076	0	0	0	0	0	0
April	4,335	0	0	0	0	0	0
May	2,994	0	0	0	0	0	0
June	2,312	0	0	0	0	0	0
July	2,660	0	0	0	0	0	0
August	2,478	0	0	0	0	0	0
September	2,350	0	0	0	0	0	0
October	3,501	0	0	0	0	0	0
November	4,576	0	0	0	0	0	0
December	6,902	0	0	0	0	0	0
Total	**52,282**	**0**	**0**	**0**	**0**	**0**	**0**

2. Non-HVAC Costs

Month	Electric ($)	Natural Gas ($)	Fuel Oil ($)	Propane ($)	Remote Hot Water ($)	Remote Steam ($)
January	1,875	0	0	0	0	0
February	1,667	0	0	0	0	0
March	1,772	0	0	0	0	0
April	1,847	0	0	0	0	0
May	1,919	0	0	0	0	0
June	1,854	0	0	0	0	0
July	1,984	0	0	0	0	0
August	1,868	0	0	0	0	0
September	1,910	0	0	0	0	0
October	1,924	0	0	0	0	0
November	1,710	0	0	0	0	0
December	1,865	0	0	0	0	0
Total	**22,195**	**0**	**0**	**0**	**0**	**0**

Monthly Energy Use by Component - Proposed Building Geothermal

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1. Monthly Energy Use by System Component

Component	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Air System Fans (kWh)	4170	3639	3820	3738	3705	3489	3856	3573	3622	3840	3560	4159
Cooling												
Electric (kWh)	492	479	673	928	2058	3362	6233	5779	3228	1140	653	492
Natural Gas (na)	0	0	0	0	0	0	0	0	0	0	0	0
Fuel Oil (na)	0	0	0	0	0	0	0	0	0	0	0	0
Propane (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote HW (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote Steam (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote CW (na)	0	0	0	0	0	0	0	0	0	0	0	0
Heating												
Electric (kWh)	35093	28943	26228	16574	7966	3419	2012	1683	3738	11818	18311	31336
Natural Gas (na)	0	0	0	0	0	0	0	0	0	0	0	0
Fuel Oil (na)	0	0	0	0	0	0	0	0	0	0	0	0
Propane (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote HW (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote Steam (na)	0	0	0	0	0	0	0	0	0	0	0	0
Pumps (kWh)	1875	1694	1874	1774	1687	1494	1616	1575	1474	1819	1793	1875
Heat Rej. Fans (kWh)	0	0	0	0	0	0	0	0	0	0	0	0
Lighting (kWh)	3769	3301	3503	3613	3640	3476	3769	3503	3613	3769	3347	3769
Electric Eqpt. (kWh)	6460	5658	6004	6193	6239	5958	6460	6004	6193	6460	5737	6460
Misc. Electric (kWh)	0	0	0	0	0	0	0	0	0	0	0	0
Misc. Fuel												
Natural Gas (na)	0	0	0	0	0	0	0	0	0	0	0	0
Propane (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote HW (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote Steam (na)	0	0	0	0	0	0	0	0	0	0	0	0

Monthly Energy Use by Energy Type - Proposed Building Geothermal

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1. HVAC Energy Use

Month	Electric (kWh)	Natural Gas (na)	Fuel Oil (na)	Propane (na)	Remote HW (na)	Remote Steam (na)	Remote CW (na)
Jan	41,631	0	0	0	0	0	0
Feb	34,756	0	0	0	0	0	0
Mar	32,595	0	0	0	0	0	0
Apr	23,014	0	0	0	0	0	0
May	15,417	0	0	0	0	0	0
Jun	11,764	0	0	0	0	0	0
Jul	13,717	0	0	0	0	0	0
Aug	12,610	0	0	0	0	0	0
Sep	12,061	0	0	0	0	0	0
Oct	18,617	0	0	0	0	0	0
Nov	24,318	0	0	0	0	0	0
Dec	37,863	0	0	0	0	0	0
Totals	278,363	0	0	0	0	0	0

2. Non-HVAC Energy Use

Month	Electric (kWh)	Natural Gas (na)	Fuel Oil (na)	Propane (na)	Remote HW (na)	Remote Steam (na)
Jan	10,230	0	0	0	0	0
Feb	8,960	0	0	0	0	0
Mar	9,507	0	0	0	0	0
Apr	9,807	0	0	0	0	0
May	9,879	0	0	0	0	0
Jun	9,435	0	0	0	0	0
Jul	10,230	0	0	0	0	0
Aug	9,507	0	0	0	0	0
Sep	9,807	0	0	0	0	0
Oct	10,230	0	0	0	0	0
Nov	9,084	0	0	0	0	0
Dec	10,230	0	0	0	0	0
Totals	116,906	0	0	0	0	0

Billing Details - Electric - Proposed Building Geothermal

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1. Component Charges

Billing Period	Energy Charges ($)	Demand Charges ($)	Customer Charges ($)	Taxes ($)	Total Charge ($)
Jan	6,291	1,951	25	1,240	9,507
Feb	5,351	1,696	25	1,061	8,132
Mar	5,165	1,635	25	1,024	7,848
Apr	4,094	1,257	25	806	6,181
May	3,226	1,022	25	641	4,913
Jun	2,753	846	25	543	4,167
Jul	3,070	944	25	606	4,644
Aug	2,859	896	25	567	4,346
Sep	2,830	850	25	556	4,260
Oct	3,635	1,057	25	707	5,424
Nov	4,161	1,280	25	820	6,286
Dec	5,856	1,742	25	1,143	8,767
Totals	49,291	15,175	295	9,714	74,475

2. Totals

Billing Period	Total Charges ($)	Total Consumption (kWh)	Avg Price ($/kWh)
Jan	9,507	51,860	0.1833
Feb	8,132	43,715	0.1860
Mar	7,848	42,102	0.1864
Apr	6,181	32,820	0.1883
May	4,913	25,295	0.1942
Jun	4,167	21,198	0.1966
Jul	4,644	23,946	0.1939
Aug	4,346	22,117	0.1965
Sep	4,260	21,867	0.1948
Oct	5,424	28,846	0.1880
Nov	6,286	33,401	0.1882
Dec	8,767	48,092	0.1823
Totals	74,475	395,259	0.1884

3. Consumption Totals

Billing Period	Peak (kWh)	Mid-Peak (kWh)	Normal Peak (kWh)	Off-Peak (kWh)	Overall (kWh)
Jan	0	0	0	0	51,860
Feb	0	0	0	0	43,715
Mar	0	0	0	0	42,102
Apr	0	0	0	0	32,820
May	0	0	0	0	25,295
Jun	0	0	0	0	21,198
Jul	0	0	0	0	23,946
Aug	0	0	0	0	22,117
Sep	0	0	0	0	21,867
Oct	0	0	0	0	28,846
Nov	0	0	0	0	33,401
Dec	0	0	0	0	48,092
Totals	0	0	0	0	395,259

Billing Details - Electric - Proposed Building Geothermal

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4. Billing Demands

Billing Period	Peak (kW)	Mid-Peak (kW)	Normal Peak (kW)	Off-Peak (kW)	Overall (kW)
Jan	0.0	0.0	0.0	0.0	165.3
Feb	0.0	0.0	0.0	0.0	146.3
Mar	0.0	0.0	0.0	0.0	141.7
Apr	0.0	0.0	0.0	0.0	113.6
May	0.0	0.0	0.0	0.0	96.1
Jun	0.0	0.0	0.0	0.0	83.0
Jul	0.0	0.0	0.0	0.0	90.3
Aug	0.0	0.0	0.0	0.0	86.7
Sep	0.0	0.0	0.0	0.0	83.3
Oct	0.0	0.0	0.0	0.0	98.7
Nov	0.0	0.0	0.0	0.0	115.3
Dec	0.0	0.0	0.0	0.0	149.7

5. Maximum Demands

Billing Period	Peak (kW)	Mid-Peak (kW)	Normal Peak (kW)	Off-Peak (kW)	Overall (kW)
Jan	0.0	0.0	0.0	0.0	165.3
Feb	0.0	0.0	0.0	0.0	146.3
Mar	0.0	0.0	0.0	0.0	141.7
Apr	0.0	0.0	0.0	0.0	113.6
May	0.0	0.0	0.0	0.0	96.1
Jun	0.0	0.0	0.0	0.0	83.0
Jul	0.0	0.0	0.0	0.0	90.3
Aug	0.0	0.0	0.0	0.0	86.7
Sep	0.0	0.0	0.0	0.0	83.3
Oct	0.0	0.0	0.0	0.0	98.7
Nov	0.0	0.0	0.0	0.0	115.3
Dec	0.0	0.0	0.0	0.0	149.7

6. Time Of Maximum Demands (Date/Hour)

Billing Period	Peak	Mid-Peak	Normal Peak	Off-Peak	Overall
Jan	n/a	n/a	n/a	n/a	1/27 09:00
Feb	n/a	n/a	n/a	n/a	2/24 08:00
Mar	n/a	n/a	n/a	n/a	3/10 08:00
Apr	n/a	n/a	n/a	n/a	4/9 09:00
May	n/a	n/a	n/a	n/a	5/12 09:00
Jun	n/a	n/a	n/a	n/a	6/12 09:00
Jul	n/a	n/a	n/a	n/a	7/21 10:00
Aug	n/a	n/a	n/a	n/a	8/5 11:00
Sep	n/a	n/a	n/a	n/a	9/16 11:00
Oct	n/a	n/a	n/a	n/a	10/28 09:00
Nov	n/a	n/a	n/a	n/a	11/19 10:00
Dec	n/a	n/a	n/a	n/a	12/24 09:00