



✓ CMHC MLI Select - Level 3		Multi-Unit Residential Building (4 Units) - Main Building							
Created on: 2026-01-11									
 Upgrade against NBC Downgrade against NBC		Reference NBC 2020 Tier 1 NBC Climate Zone 5 / OBC Climate Zone 1	Proposed Building Design: Current, 40% Target - Baseline	Proposed Building Design: New, 70% Target - Option 1	Proposed Building Design: New, 70% Target - Option 2				
BUILDING ENVELOPES *									
Ceiling with Attic Space		Effective RSI 6.91 / R39.2	N/A	N/A	N/A				
Ceiling without Attic Space		Effective RSI 4.67 / R26.5	R31	R31	R31				
Exposed Floor		Effective RSI 4.67 / R26.5	N/A	N/A	N/A				
Above Grade Walls	Front & Back, 15%	Effective RSI 2.97 / R16.9	2x6 Wood Stud @16" O.C. R24 Batt	2x6 Wood Stud @ 16" O.C. R24 + R8 C.I.	2x6 Wood Stud @ 16" O.C. R24 + R12 C.I.				
	Left & Right, 85%		2x6 Steel Stud @16" O.C. R24	2x6 Steel Stud @ 16" O.C. R24 + R8 C.I.	2x6 Steel Stud @ 16" O.C. R24 + R12 C.I.				
Rim Joist		Same as Above Grade Walls	Same as Above Grade Walls	Same as Above Grade Walls	Same as Above Grade Walls				
Tall Walls (2x2x6 @ 12" O.C.)									
Basement Walls Below Grade (B.G.)		Effective RSI 2.98 / R16.9	2x4 @16" O.C. R12 Batt + R10 C.I.	2x4 @16" O.C. R12 Batt + R10 C.I.	2x4 @16" O.C. R12 Batt + R10 C.I.				
Below Grade Slab Entire Surface > 600 mm		-	R10 C.I.	R10 C.I.	R10 C.I.				
Heated Slab or Below Grade Slab ≤ 600 mm		Effective RSI 1.96 / R11.1	N/A	N/A	N/A				
Edge of Below Grade Slab ≤ 600 mm B.G.									
WINDOWS & DOORS									
Windows/Sliding Glass Doors		U _{ip} 0.32 (U _{ii} 1.84) / ER 21 (SHGC-0.26)	U _{ip} 0.25 (U _{ii} 1.4) / ER 29 (SHGC-0.26)	U _{ip} 0.25 (U _{ii} 1.4) / ER 29 (SHGC-0.26)	U _{ip} 0.18 (U _{ii} 1.0) / ER 38 (SHGC-0.26)				
Skylights		U _{ip} 0.51 (U _{ii} 2.92)	U _{ip} 0.49 (U _{ii} 2.8)	U _{ip} 0.49 (U _{ii} 2.8)	U _{ip} 0.49 (U _{ii} 2.8)				
Doors (1 Door permitted to be at RSI 0.38 / R2.16)		As Per NBC (RSI 1.10 / R6.25)	Steel Polystyrene Core (RSI 0.98 / R5.56)	Steel Polystyrene Core (RSI 0.98 / R5.56)	Steel Polystyrene Core (RSI 0.98 / R5.56)				
MECHANICALS **									
Space Heating Equipment		92% AFUE	ASHP (7.5 HSPF _{2,iv} , 14.5 SEER2) - 18,000 Btu/h x 4 Units	ccASHP (4.57 COP _h , 3.82 COP _c) - 18,000 Btu/h x 4 Units	ccASHP (4.57 COP _h , 3.82 COP _c) - 18,000 Btu/h x 4 Units				
Space Cooling Equipment		14.5 SEER	w/ 96% AFUE Furnace	[Reference AHRI # 207702763 / 207702810]	[Reference AHRI # 207702763 / 207702810]				
HRV/ERV Efficiency		60% SRE	75% SRE @ 0°C	75% SRE @ 0°C	90% SRE @ 0°C				
Domestic HWH (Thermal Eff. Or EF)		0.67 EF	NG Condensing Tankless, 0.95 EF	Electric Heat Pump HWT, 50 US Gal, 3.75 UEF	Electric Heat Pump HWT, 50 US Gal, 4.50 UEF				
Combined Space and Water		N/A	N/A	N/A	N/A				
Duct Work		As Per NBC	As Per NBC	As Per NBC	As Per NBC				
Thermostat		Programmable	Programmable	Programmable	Programmable				
ELECTRICALS									
Lighting (1 Bulb can be non-ENERGY STAR Certified)		As Per NBC	100% Energy Efficient Lighting	100% Energy Efficient Lighting	100% Energy Efficient Lighting				
Exhaust Fans		As Per NBC	As Per NBC	As Per NBC	As Per NBC				
Electrical Savings		As Per NBC	As Per NBC	As Per NBC	As Per NBC				
BASELOADS									
Shower Flow Rate (L/min)		9.5	5.7	5.7	5.7				
Bathroom Faucet Flow Rate (L/min)		8.3	3.8	3.8	3.8				
Clothes Dryer (kWh/year)		916	460	460	133				
Clothes Washer (kWh/year)		197	123	123	90 (Cold Water Only)				
Dish Washer (kWh/year)		260	260	260	240				
Range (kWh/year)		565	565	195	195				
Refrigerator (kWh/year)		639	639	574	310				
OTHERS									
Drain Water Heat Recovery		N/A	N/A	N/A	42% Efficiency				
Solar PV System		N/A	N/A	Solar PV Capped at 15% of the Total Energy Reduction (20.48 GJ / 5,688.89 kWh)	N/A				
Air Tightness Target (ACH@50Pa)		2.5 ACH	3.2 ACH @ 50 Pa - Default, Blower Door Test Not Required	3.2 ACH @ 50 Pa - Default, Blower Door Test Not Required	1.5 ACH @ 50 Pa - Blower Door Test Required				
RESULTS		Reference NBC 2020 Tier 1		Proposed Building Design: Current, 40% Target - Baseline		Proposed Building Design: New, 70% Target - Option 1		Proposed Building Design: New, 70% Target - Option 2	
Annual Energy Consumption (GJ/year)		224.2	-	134.3	40.1% lower	67.1	70.1% lower	67.0	70.1% lower
GHG Emissions (tonnes/year)		8.72	-	3.40	61.0% lower	0.93	89.3% lower	0.93	89.3% lower

Components	Baseline - Current, 40% Target	Energy Efficient Measures	Energy Consumption (GJ)	Energy Saving (GJ)	Energy Saving (%)
Ceiling without Attic Space	R31	R31	134.33	0.00	0.00%
		R40	133.95	0.38	0.28%
		R31 + R10 C.I.	133.82	0.50	0.37%
		R31 + R20 C.I.	133.58	0.75	0.56%
Above Grade Walls	Front & Back, 15%: 2x6 Wood Stud @ 16" O.C. R24 Left & Right, 85%: 2x6 Steel Stud @ 16" O.C. R24 + R6 C.I.	Front & Back, 15%: 2x6 Wood Stud @ 16" O.C. R24 + R6 C.I. Left & Right, 85%: 2x6 Steel Stud @ 16" O.C. R24 + R6 C.I.	134.33	0.00	0.00%
		Front & Back, 15%: 2x6 Wood Stud @ 16" O.C. R24 + R8 C.I. Left & Right, 85%: 2x6 Steel Stud @ 16" O.C. R24 + R8 C.I.	119.99	14.34	10.67%
		Front & Back, 15%: 2x6 Wood Stud @ 16" O.C. R24 + R10 C.I. Left & Right, 85%: 2x6 Steel Stud @ 16" O.C. R24 + R10 C.I.	116.41	17.91	13.34%
		Front & Back, 15%: 2x6 Wood Stud @ 16" O.C. R24 + R12 C.I. Left & Right, 85%: 2x6 Steel Stud @ 16" O.C. R24 + R12 C.I.	115.50	18.82	14.01%
		Front & Back, 15%: 2x6 Wood Stud @ 16" O.C. R24 + R15 C.I. Left & Right, 85%: 2x6 Steel Stud @ 16" O.C. R24 + R15 C.I.	113.92	20.41	15.19%
Basement Walls Below Grade (B.G.)	2x4 @16" O.C. R12 Batt + R10 C.I	2x4 @16" O.C. R12 Batt + R10 C.I	134.33	0.00	0.00%
		2x4 @16" O.C. R14 Batt + R12 C.I	133.83	0.49	0.37%
		2x4 @16" O.C. R14 Batt + R15 C.I	133.47	0.85	0.63%
		2x4 @16" O.C., 2" offset from wall, R30 Spray Foam	133.56	0.77	0.57%
Under Slab Insulation	R10 C.I.	R10 C.I.	134.33	0.00	0.00%
		R12 C.I.	134.22	0.10	0.08%
		R15 C.I.	134.08	0.25	0.18%
		R20 C.I.	133.86	0.47	0.35%
Windows/Sliding Glass Doors	U _w 0.25 (U _w 1.4) / ER 29 (SHGC-0.26)	U _w 0.25 (U _w 1.4) / ER 29 (SHGC-0.26)	134.33	0.00	0.00%
		U _w 0.21 (U _w 1.2) / ER 34 (SHGC-0.26)	133.22	1.11	0.82%
		U _w 0.18 (U _w 1.0) / ER 38 (SHGC-0.26)	132.10	2.23	1.66%
Skylights	U _w 0.49 (U _w 2.8)	U _w 0.49 (U _w 2.8)	134.33	0.00	0.00%
		U _w 0.38 (U _w 2.16)	133.92	0.41	0.30%
Doors	Steel Polystyrene Core (RSI 0.98 / R5.57)	Steel Polystyrene Core (RSI 0.98 / R5.57)	134.33	0.00	0.00%
		Steel Medium Density Spray Foam Core (RSI 1.14 / R6.47)	134.05	0.28	0.21%
Space Heating / Cooling Equipment	ASHP (7.5 HSPF _{2,0} 14.5 SEER2) - 18,000 Btu/h x 4 Units w/ 96% AFUE Furnace	ASHP (7.5 HSPF _{2,0} 14.5 SEER2) - 18,000 Btu/h x 4 Units w/ 96% AFUE Furnace	134.33	0.00	0.00%
		ccASHP (3.51 COP _s , 3.52 COP _j) - 18,000 Btu/h x 4 Units [Reference AHRI # 217483607]	126.37	7.96	5.92%
		ccASHP (4.48 COP _s , 3.19 COP _j) - 18,000 Btu/h x 4 Units [Reference AHRI # 205663351]	116.76	17.56	13.08%
		ccASHP (4.57 COP _s , 3.82 COP _j) - 18,000 Btu/h x 4 Units [Reference AHRI # 207702763 / 207702810]	115.62	18.70	13.92%
		ccASHP (4.57 COP _s , 3.82 COP _j) - 18,000 Btu/h x 4 Units w/ 15% Operable Window Area [Reference AHRI # 207702763 / 207702810]	113.03	21.30	15.86%
HRV / ERV Efficiency	75% SRE @ 0°C	75% SRE @ 0°C	134.33	0.00	0.00%
		81% SRE @ 0°C	133.89	0.44	0.33%
		84% SRE @ 0°C	133.70	0.63	0.47%
		90% SRE @ 0°C	133.07	1.25	0.93%
Domestic HWH (Thermal Eff. Or EF)	NG Condensing Tankless, 0.95 EF	NG Condensing Tankless, 0.95 EF	134.33	0.00	0.00%
		Electric Heat Pump HWT, 50 US Gal, 3.00 UEF	122.95	11.38	8.47%
		Electric Heat Pump HWT, 50 US Gal, 3.75 UEF	121.86	12.47	9.28%
		Electric Heat Pump HWT, 50 US Gal, 4.50 UEF	121.13	13.20	9.83%
Lighting (1 Bulb can be non-ENERGY STAR Certified) ³	100% Energy Efficient Lighting	100% Energy Efficient Lighting	134.33	0.00	0.00%
Shower Flow Rate (L/min)	Ultra Low flow: 5.7	Ultra Low flow: 5.7	134.33	0.00	0.00%
Bathroom Faucet Flow Rate (L/min)	Ultra Low flow: 3.8	Ultra Low flow: 3.8	134.33	0.00	0.00%
Clothes Dryer (kWh/year) - ENERGY STAR Certified	460	460	134.33	0.00	0.00%
		380	133.83	0.49	0.37%
		317	133.45	0.88	0.65%
		266	133.12	1.21	0.90%
		217	132.82	1.51	1.12%
		133	132.30	2.03	1.51%
Clothes Washer (kWh/year) - ENERGY STAR Certified	123	123	134.33	0.00	0.00%
		110	134.25	0.08	0.06%
		100	134.18	0.14	0.11%
		90	134.12	0.20	0.15%
		123 (Cold Water Only)	128.06	6.27	4.67%
		90 (Cold Water Only)	127.86	6.47	4.82%
Dish Washer (kWh/year) - ENERGY STAR Certified	260	260	134.33	0.00	0.00%
		240	133.74	0.59	0.44%
		210	133.59	0.74	0.55%
Range (kWh/year) - ENERGY STAR Certified	565	565	134.33	0.00	0.00%
		195	129.88	4.45	3.31%
		185	129.75	4.57	3.40%
Refrigerator (kWh/year) - ENERGY STAR Certified	639	639	134.33	0.00	0.00%
		574	133.53	0.80	0.59%
		510	132.72	1.60	1.19%
		446	132.08	2.24	1.67%
		380	131.24	3.08	2.29%
		310	130.38	3.94	2.94%
Drain Water Heat Recovery	-	-	134.33	0.00	0.00%
		42% Efficiency	131.66	2.66	1.98%
		46% Efficiency	131.35	2.98	2.22%
		58% Efficiency	130.77	3.55	2.65%
Solar PV System	-	Solar PV Capped at 15% of the Total Energy Reduction (20.48 GJ / 5,688.89 kWh)	113.85	20.48	15.25%
Air Tightness Target (ACH@50Pa)	3.2 ACH @ 50 Pa - Default, Blower Door Test Not Required	3.2 ACH @ 50 Pa - Default, Blower Door Test Not Required	134.33	0.00	0.00%
		2.5 ACH @ 50 Pa - As Per NBC Section 9.36.5.10.(9)(b)	128.82	5.50	4.10%
		2.0 ACH @ 50 Pa - Blower Door Test Required	125.39	8.94	6.65%
		1.5 ACH @ 50 Pa - Blower Door Test Required	122.32	12.00	8.94%