



✓ CMHC MLI Select - Level 3		Single Detached House - Laneway Suite						
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	N/A			
Ceiling without Attic Space	Effective RSI 4.67 / R26.5	R31	R31	R31 Spray Foam + R20 C.I.				
Exposed Floor	Effective RSI 4.67 / R26.5	N/A	N/A	N/A				
Above Grade Walls	Effective RSI 2.97 / R16.9	2x6 Wood Stud @16" O.C. R22 Batt	2x6 Wood Stud @16" O.C. R22 Batt + R10 C.I.	2x6 Wood Stud @16" O.C. R31 Spray Foam + R20 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	N/A	N/A	N/A				
Below Grade Slab Entire Surface > 600 mm	-	N/A	N/A	N/A				
Heated Slab or Below Grade Slab ≤ 600 mm	Effective RSI 1.96 / R11.1	R10 C.I.	R10 C.I.	R20 C.I.				
Edge of Below Grade Slab ≤ 600 mm B.G.								
WINDOWS & DOORS								
Windows/Sliding Glass Doors	U _{ip} 0.32 (U _{si} 1.84) / ER 21 (SHGC-0.26)	U _{ip} 0.25 (U _{si} 1.4) / ER 29 (SHGC-0.26)	U _{ip} 0.25 (U _{si} 1.4) / ER 29 (SHGC-0.26)	U _{ip} 0.14 / U _{si} 0.79 (SHGC-0.26)				
Skylights	U _{ip} 0.51 (U _{si} 2.92)	U _{ip} 0.49 (U _{si} 2.8)	U _{ip} 0.49 (U _{si} 2.8)	U _{ip} 0.38 (U _{si} 2.16)				
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 Medium Density Spray Foam Core (RSI 1.14 / R6.47)				
MECHANICALS **								
Space Heating Equipment	92% AFUE	ASHP (7.5 HSPF ₂ , 14.5 SEER2) - 18,000 Btu/h w/ 96% AFUE Furnace	ccASHP (4.57 COP _{hp} , 3.82 COP _c) - 18,000 Btu/h [Reference AHRI # 207702763 / 207702810]	ccASHP (4.57 COP _{hp} , 3.82 COP _c) - 18,000 Btu/h w/ 15% Openable Window Area [Reference AHRI # 207702763 / 207702810]				
Space Cooling Equipment	14.5 SEER							
HRV/ERV Efficiency	60% SRE @ 0°C	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	687	257	133				
Clothes Washer (kWh/year)	197	145	123 (Cold Water Only)	90 (Cold Water Only)				
Dish Washer (kWh/year)	260	260	260	210				
Range (kWh/year)	565	565	195	185				
Refrigerator (kWh/year)	639	639	446	310				
OTHERS								
Drain Water Heat Recovery	N/A	N/A	N/A	58% Efficiency				
Solar PV System *	N/A	N/A	Solar PV Capped at 15% of the Total Energy Reduction (7.43 GJ / 2,064.51 kWh)	N/A				
Air Tightness Target (ACH@50Pa)	2.5 ACH	3.2 ACH @ 50 Pa - Default, Blower Door Test Not Required	2.5 ACH @ 50 Pa - As Per NBC Section 9.36.5.10.(9)(b)	1.0 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)	81.3	-	48.4	24.3	70.1% lower	24.3	70.1% lower	
GHG Emissions (tonnes/year)	2.95	-	1.17	0.34	88.5% lower	0.34	88.5% lower	

	Components	Baseline - Current, 40% Target	Energy Efficient Measures	Energy Consumption (GJ)	Energy Saving (GJ)	Energy Saving (%)
BUILDING ENVELOPES	Ceiling without Attic Space	R31	R31	48.44	0.00	0.00%
			R40	48.20	0.24	0.49%
			R31 + R10 C.I.	48.11	0.33	0.68%
			R31 + R20 C.I.	47.87	0.57	1.17%
			2x6 Wood Stud @16" O.C. R22 Batt	48.44	0.00	0.00%
	Above Grade Walls	2x6 Wood Stud @16" O.C. R22 Batt	2x6 Wood Stud @16" O.C. R22 Batt + R6 C.I.	46.30	2.14	4.41%
			2x6 Wood Stud @16" O.C. R22 Batt + R8 C.I.	45.95	2.48	5.13%
			2x6 Wood Stud @16" O.C. R22 Batt + R10 C.I.	45.32	3.12	6.43%
			2x6 Wood Stud @16" O.C. R22 Batt + R12 C.I.	44.95	3.49	7.20%
			2x6 Wood Stud @16" O.C. R22 Batt + R15 C.I.	44.66	3.78	7.80%
			2x6 Wood Stud @16" O.C. R31 Spray Foam + R20 C.I.	43.73	4.71	9.72%
			Under Slab Insulation	R10 C.I.	R10 C.I.	48.44
R12 C.I.	48.18	0.26			0.54%	
R15 C.I.	48.09	0.34			0.71%	
R20 C.I.	48.01	0.43			0.89%	
WINDOWS & DOORS	Windows/Sliding Glass Doors	U _g 0.25 (U _g 1.4) / ER 29 (SHGC-0.26)	U _g 0.25 (U _g 1.4) / ER 29 (SHGC-0.26)	48.44	0.00	0.00%
			U _g 0.21 (U _g 1.2) / ER 34 (SHGC-0.26)	47.94	0.50	1.03%
			U _g 0.18 (U _g 1.0) / ER 38 (SHGC-0.26)	47.44	1.00	2.07%
			U _g 0.14 / U _g 0.79 (SHGC-0.26)	46.42	2.02	4.18%
	Skylights	U _g 0.49 (U _g 2.8)	U _g 0.49 (U _g 2.80)	48.44	0.00	0.00%
			U _g 0.38 (U _g 2.16)	48.35	0.09	0.18%
Doors	Steel Polystyrene Core (RSI 0.98 / R5.56)	Steel Polystyrene Core (RSI 0.98 / R5.57)	48.44	0.00	0.00%	
		Steel Medium Density Spray Foam Core (RSI 1.14 / R6.47)	48.41	0.03	0.07%	
MECHANICALS	Space Heating / Cooling Equipment	ASHP (7.5 HSPF2 _w , 14.5 SEER2) - 18,000 Btu/h w/ 96% AFUE Furnace Backup	ASHP (7.5 HSPF2 _w , 14.5 SEER2) - 18,000 Btu/h w/ 96% AFUE Furnace Backup	48.44	0.00	0.00%
			ccASHP (3.51 COP _s , 3.52 COP _s) - 18,000 Btu/h [Reference AHRI # 217483607]	46.10	2.33	4.82%
			ccASHP (4.48 COP _s , 3.19 COP _s) - 18,000 Btu/h [Reference AHRI # 205663351]	44.33	4.10	8.47%
			ccASHP (4.57 COP _s , 3.82 COP _s) - 18,000 Btu/h [Reference AHRI # 207702763 / 207702810]	43.42	5.02	10.37%
			ccASHP (4.57 COP _s , 3.82 COP _s) - 18,000 Btu/h w/ 15% Openable Window Area [Reference AHRI # 207702763 / 207702810]	41.79	6.65	13.72%
	HRV / ERV Efficiency	75% SRE @ 0°C	75% SRE @ 0°C	48.44	0.00	0.00%
			81% SRE @ 0°C	48.25	0.19	0.39%
			84% SRE @ 0°C	48.21	0.23	0.48%
			90% SRE @ 0°C	48.06	0.38	0.79%
	Domestic HWH (Thermal Eff. Or EF)	NG Condensing Tankless, 0.95 EF	NG Condensing Tankless, 0.95 EF	48.44	0.00	0.00%
Electric Heat Pump HWT, 50 US Gal, 3.00 UEF			44.03	4.41	9.11%	
Electric Heat Pump HWT, 50 US Gal, 3.75 UEF			43.50	4.94	10.19%	
Electric Heat Pump HWT, 50 US Gal, 4.50 UEF			43.16	5.28	10.90%	
BASELOADS & ELECTRICALS	Lighting (1 Bulb can be non-ENERGY STAR Certified) ³	100% Energy Efficient Lighting	100% Energy Efficient Lighting	48.44	0.00	0.00%
	Shower Flow Rate (L/min)	Ultra Low flow: 5.7	Ultra Low flow: 5.7	48.44	0.00	0.00%
	Bathroom Faucet Flow Rate (L/min)	Ultra Low flow: 3.8	Ultra Low flow: 3.8	48.44	0.00	0.00%
	Clothes Dryer (kWh/year) - ENERGY STAR Certified	687	687	48.44	0.00	0.00%
			460	48.07	0.37	0.76%
			380	48.03	0.41	0.85%
			257	47.98	0.46	0.94%
			133	47.67	0.77	1.60%
	Clothes Washer (kWh/year) - ENERGY STAR Certified	145	145	48.44	0.00	0.00%
			123	48.39	0.05	0.11%
			110	48.35	0.09	0.18%
			100	48.33	0.11	0.23%
			90	48.30	0.14	0.28%
			123 (Cold Water Only)	46.04	2.40	4.96%
			90 (Cold Water Only)	45.95	2.49	5.13%
	Dish Washer (kWh/year) - ENERGY STAR Certified	260	260	48.44	0.00	0.00%
			240	48.15	0.29	0.61%
			210	48.06	0.37	0.77%
Range (kWh/year) - ENERGY STAR Certified	565	565	48.44	0.00	0.00%	
		195	47.83	0.61	1.25%	
		185	47.78	0.66	1.36%	
Refrigerator (kWh/year) - ENERGY STAR Certified	639	639	48.44	0.00	0.00%	
		574	48.22	0.21	0.44%	
		510	48.02	0.42	0.87%	
		446	48.00	0.44	0.91%	
		310	47.97	0.47	0.98%	
OTHERS	Drain Water Heat Recovery	-	48.44	0.00	0.00%	
		42% Efficiency	47.44	1.00	2.06%	
		46% Efficiency	47.32	1.12	2.31%	
	Air Tightness Target (ACH@50Pa)	3.2 ACH @ 50 Pa - Default, Blower Door Test Not Required	58% Efficiency	47.11	1.32	2.73%
			3.2 ACH @ 50 Pa - Default, Blower Door Test Not Required	48.44	0.00	0.00%
			2.5 ACH @ 50 Pa - As Per NBC Section 9.36.5.10.(9)(b)	47.77	0.67	1.38%
			2.0 ACH @ 50 Pa - Blower Door Test Required	46.74	1.70	3.50%
			1.5 ACH @ 50 Pa - Blower Door Test Required	46.33	2.11	4.35%
1.0 ACH @ 50 Pa - Blower Door Test Required	45.84	2.60	5.37%			