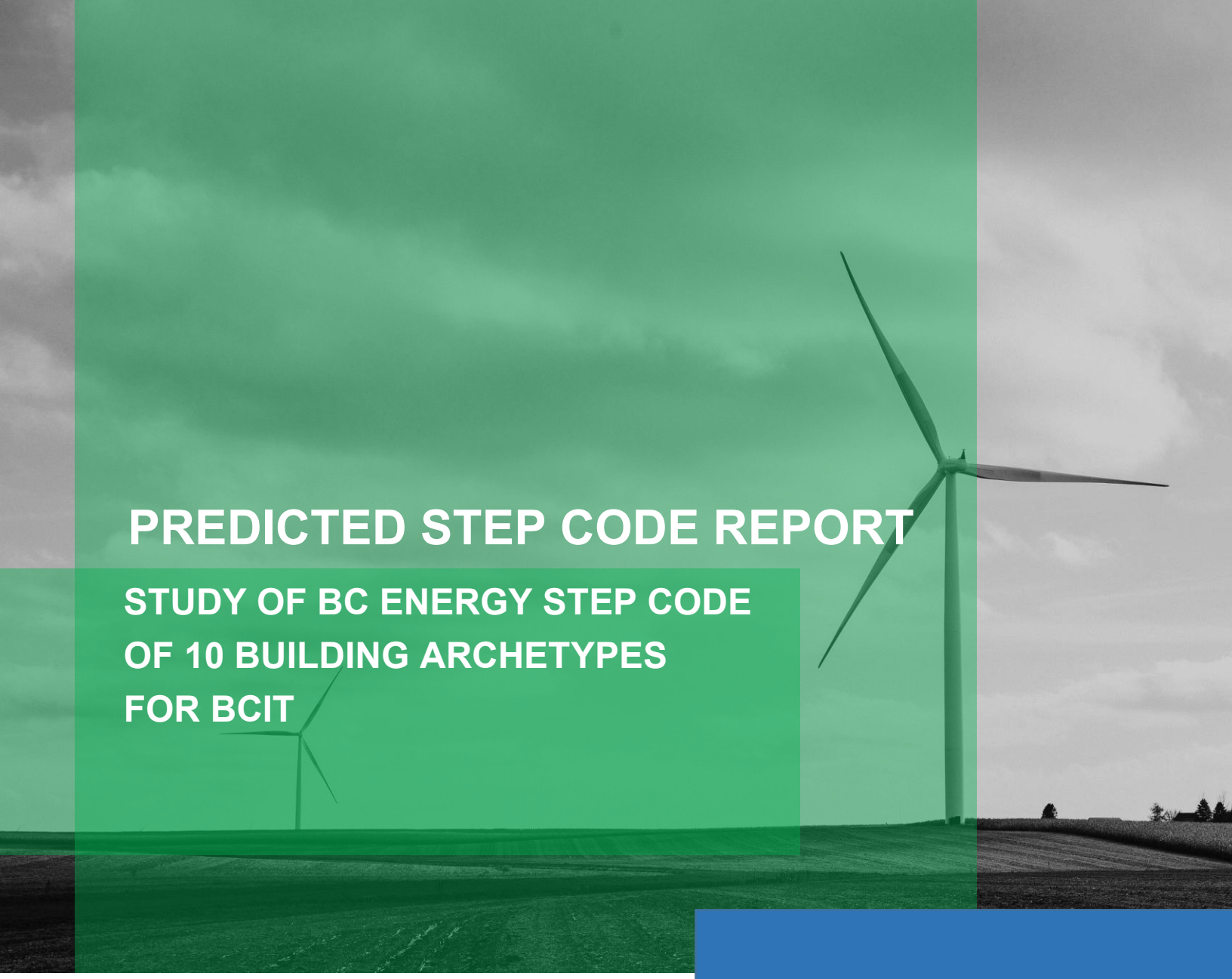

PREDICTED STEP CODE REPORT

STUDY OF BC ENERGY STEP CODE OF 10 BUILDING ARCHETYPES FOR BCIT

August 29, 2025

E3 ECO GROUP INC.
BUILDING BLOCKS OF SUSTAINABILITY

E3 Project Number – 03867

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INTRODUCTION

E3 Eco Group Inc. was asked to perform HOT2000 energy evaluation for 10 archetypes located in 4 different Climate Zones. First, E3 Eco Group is to confirm that the current modelled archetypes meet the minimum Energy Step Code 3 and to provide upgrade solutions to achieve Energy Step Code 5. Each housing Archetype will be modelled with two different mechanical systems, one fully electric and one with a dual fuel supplementary natural gas furnace for space heating. The models were carried out according to the format defined by Energy Step Code 9.36.6 and the EnerGuide Rating System for New Homes evaluation procedures Version 15, using HOT2000 Version 11.12.

Weather Locations:

Vancouver INTL (HDD 2768)

Kelowna (HDD 3715)

Prince Rupert (HDD 3684)

Prince George (HDD 4965)

Housing Archetypes:

Single family house 1

Single family house 2

Single family house 3

Duplex 1

Duplex 2

Duplex 3

Triplex 1

Quadplex 1

Quadplex 2

Townhouse (4-Units)

PROPOSED CONSTRUCTON SPECIFICATIONS:

Construction Specifications	
Crawlspace Slab	3” XPS (R15) full under slab
Below Grade Wall Construction	ICF: 3” EPS (R12), 8” Concrete, 3” EPS (R12)
Above Grade Wall Construction	Minimum Effective R22.42
Rim Joists	Minimum Effective R22.00
Floors Over Unheated Space	Minimum Effective R30.98
Roof Construction	Minimum Effective R32.01
Window Specification	Triple Pane: USI 1.30, SHGC 0.25 Skylights: USI 1.96, SHGC 0.47
Door Specification	USI 0.91 (Effective R6.25)
Ventilation Specification	Heat Recovery Ventilation with 65% SRE BC Building Code 9.32 minimum flow rates vary based on heated floor area & number of bedrooms/dens
Air Tightness	1.5 ACH@50Pa; as required by BC Energy Step Code Step 4
Space Heating System	Electric Air Source Heat Pump, HSPF 7.1 Dual Fuel System: Supplementary Natural Gas Furnace 95% AFUE, Switchover Temperature set to 5°F
Space Cooling System	Electric Air Source Heat Pump, SEER 14.5
Domestic Hot Water Heating System	Electric, Conserver hot water tank (Standby Loss <70W) 1-2-bed: 50 US Gal, EF 0.89 3-bed: 65 US Gal, EF 0.88

RESULTS:

Archetype	Climate Zone			
	Vancouver INTL (2768)	Kelowna (3715)	Prince Rupert (3684)	Prince George (4965)
ADU_01 Electric	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4
ADU_01 Gas	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4
ADU_02 Electric	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4
ADU_02 Gas	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4
ADU_03 Electric	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4
ADU_03 Gas	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4	Step4/EL-3
Duplex_01 Electric	Step 3/EL-4	Step 3/EL-4	Step 3/EL-4	Step 3/EL-4
Duplex_01 Gas	Step 3/EL-4	Step 3/EL-4	Step 3/EL-4	Step 3/EL-4
Duplex_02 Electric	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4	Step 3/EL-4
Duplex_02 Gas	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4	Step4/EL-3
Duplex_03 Electric	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4
Duplex_03 Gas	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4	Step4/EL-3
Triplex_01 Electric	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4
Triplex_01 Gas	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4	Step 4/EL-4
Quadplex_01 Elec	Step 3/EL-4	Step 3/EL-4	Step 3/EL-4	Step 3/EL-4
Quadplex_01 Gas	Step 3/EL-4	Step 3/EL-4	Step 3/EL-4	Step3/EL-3
Quadplex_02 Elec	Step 3/EL-4	Step 3/EL-4	Step 3/EL-4	Step 3/EL-4
Quadplex_02 Gas	Step 3/EL-4	Step 3/EL-4	Step 3/EL-4	Step 3/EL-4
Townhouse_01 Elec	Step 3/EL-4	Step 3/EL-4	Step 3/EL-4	Step 3/EL-4
Townhouse_01 Gas	Step 3/EL-4	Step 3/EL-4	Step 3/EL-4	Step3/EL-3

For questions or comments please contact the undersigned.

Sincerely,

Emma Conway

Energy Advisor #5184

E3 Eco Group Inc.

End of Report