

Attachment-10 Community Energy Initiative Energy Modelling Summary

Huron Street Residential Development, Energy Modelling Report

Executive Summary

An energy model of the proposed 5 story apartment building located at 120 Huron Street Guelph, was produced. This energy model was created using eQuest 3.65 to show environmental efficiency requirements for the CHMC funding. CMHC Social Outcome 2: Energy-efficiency requirements state the proposed building model must exceed the reference building constructed to Div 2 of SB-10 & NECB 2015 efficiencies by 15% to qualify.

This proposed building illustrates energy reduction of 20.38% compared to that of the NECB 2015 reference model. Total annual CO₂e emissions resulted in 21.44% fewer emissions than the NECB 2015 reference model.

The proposed modeled building consisted of 107 suites each with a hybrid heat pump system fed from a gas fired condensing boiler plant. Every suite is provided with an ERV for further energy savings. Two condensing gas boilers are used to provide heat for the heat pump loop, and DHW to each suite. A closed-circuit cooling tower is used to reject heat from the heat pump loop. Each suite utilizes energy saving from LED lighting, energy star appliances and ERV's to reclaim heat from the washroom exhaust. Make-up air is provided to the building via gas fired roof top unit. The amenity spaces are heated using the same units as the suite.