



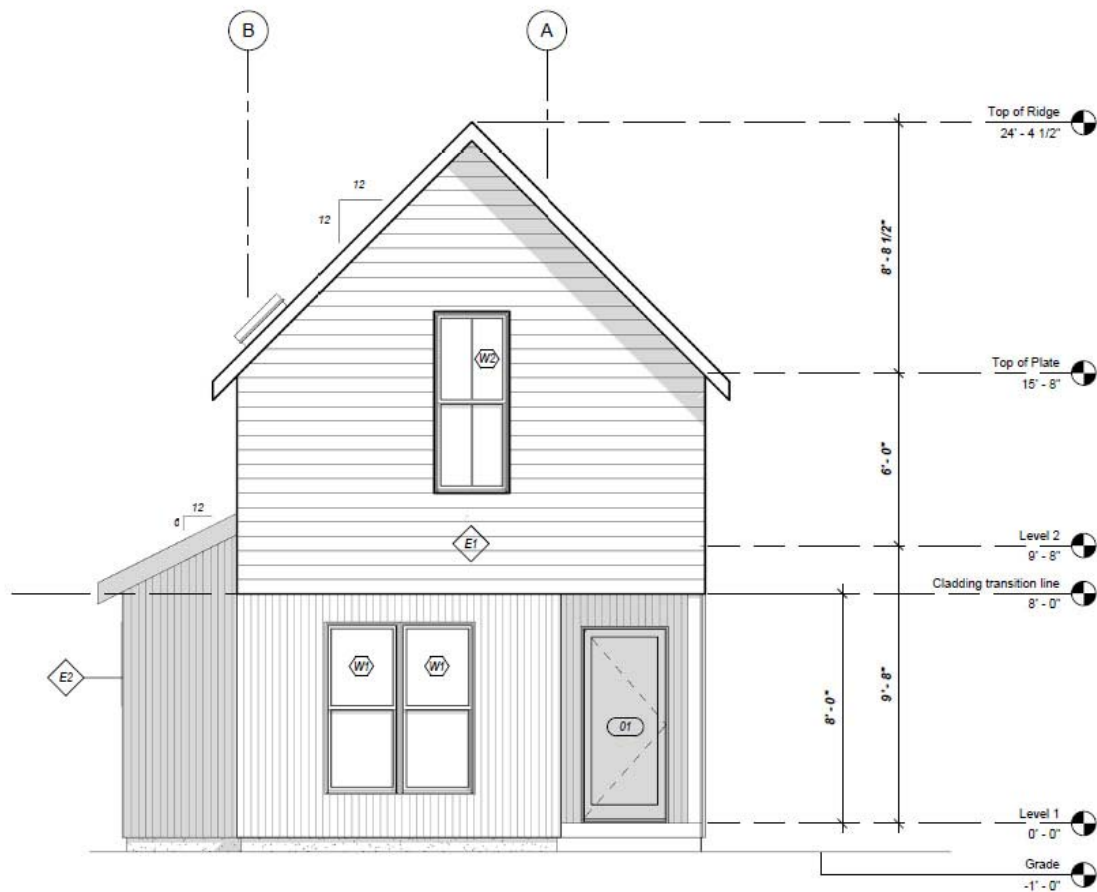
ThermalWise

BUILDING ENERGY SAVINGS

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5677 Stanley Street

New Home Construction Report



Evaluation: Jordan MacDonald

Date: November 10, 2016



AS SUBMITTED ENERGY MODELLING RESULTS

Please see APPENDIX A for the “as-submitted” energy modelling results 5677 Stanley Street. The house is projected to achieve an EnerGuide rating of 81, as submitted.

UPGRADES TO MEET EFFICIENCY NS REBATE THRESHOLDS

The Design Evaluation Summary table below indicates some possible changes that could be considered to improve the energy efficiency of 5677 Stanley Street and to meet the Efficiency Nova Scotia Rebate Thresholds. The “As Planned” column represents the home modeled from the plans and specifications provided in the application. The next two columns outline possible upgrade options that may allow the project to meet Efficiency NS Rebate Thresholds. These thresholds are based on the house’s final EnerGuide rating.

Design Evaluation Summary

Home Component	AS PLANNED EnerGuide 81	\$1000 ENS Rebate EnerGuide 85	\$2000 ENS Rebate EnerGuide 88
Building Assembly			
Ceilings below attics	n/a	n/a	n/a
Cathedral ceilings/flat roofs	2x10 rafters R-40 spray foam	2x10 rafters R-40 spray foam	2x10 rafters R-40 spray foam
Exterior walls	2x6, 16” OC, R-20 FG, 1” XPS	2x6, 16” OC, R-20 FG, 1.5” XPS	2x6, 16” OC, R-20 FG, 2” XPS
Shared walls	n/a	n/a	n/a
Rim joists	R-20 plus 1” XPS	R-20 plus 1.5” XPS	R-20 plus 2” XPS
Floors over unheated spaces	2x10, 16” OC, R-32 insulation	2x10, 16” OC, R-32 insulation	2x10, 16” OC, R-32 insulation
Foundation wall	n/a	n/a	n/a
Foundation pony walls	n/a	n/a	n/a
Foundation slab	2” XPS R-10	3” XPS R-15	3” XPS R-15
Windows	Double Glazed Low-E Argon Wood Windows	Double Glazed Low-E Argon Wood Windows	Triple Glazed Low-E Argon Wood Windows
Orientation	S	S	S



Air tightness ACH@50 PA	3.57	2.5	1.5
Heating, Cooling, Ventilation and Domestic Hot Water			
Heating system	Electric boiler	18,000 BTU Heat Pump, HSPF 8, SEER 20	18,000 BTU Heat Pump, HSPF 8, SEER 20
Ventilation system	Fantech VHR 150	Fantech VHR 150	High Efficiency HRV
Water heater	Electric boiler	Consaver Hot Water Tank	Heat Pump Hot Water Heater
Other Efficiency Additions			
Drain water heat recovery	n/a	n/a	n/a
Domestic hot water tank blanket	n/a	R-4 Tank Blanket	R-4 Tank Blanket
Solar thermal	n/a	n/a	n/a
Solar PV (photovoltaic)	n/a	n/a	n/a
Electricity Savings			
Air conditioning	n/a	n/a	n/a
Electronic Prog. T-Stats	n/a	n/a	n/a
Lighting	All CFL	All CFL	All CFL
Ventilation	667 kWh	667 kWh	667 kWh
Estimated Evaluation			
Electric (kWh)	19,059	15,648	12,747
Annual fuel costs (\$)	\$2,820.73	\$2,315.90	\$1,886.56
Annual savings from "AS PLANNED"	n/a	\$504.83	\$934..17



NEXT STEPS

After the house is constructed (move in ready with ALL equipment installed including appliances and lighting) please contact the office to set up a time for us to conduct the final onsite evaluation. This will include the following:

1. Verify that the house was constructed as per the final house specs. (If the house is constructed to different specs than to what was agreed to, you must let us know prior to the site visit).
2. Take pictures and get make and model numbers of any and all things relating to the efficiency of the house.
3. Undertake a Blower Door Test. The actual house air change rate will be inputted in the energy model to determine the accurate as-built evaluation and EnerGuide rating for the house. Please be advised that the ACH rate will affect the rating of the house, therefore the “as built” house will have to achieve the ACH from the package that you choose.

Since you are participating in Efficiency Nova Scotia's New Home Construction Program you have 12 months from the time of registration to have the final inspection. If you cannot complete the house before the 12 month deadline you can call before the deadline to re-register for an extra 12 months, however you will be subjected to whatever rebate structure exists at the time of re-registration.

Thank you very much for choosing ThermalWise and we will see you soon!



APPENDIX A – ENERGY MODELLING RESULTS



Energy Efficiency Evaluation Report

Lynch, Kerry
5677 Stanley Street
Halifax, Nova Scotia
B3K 2G1

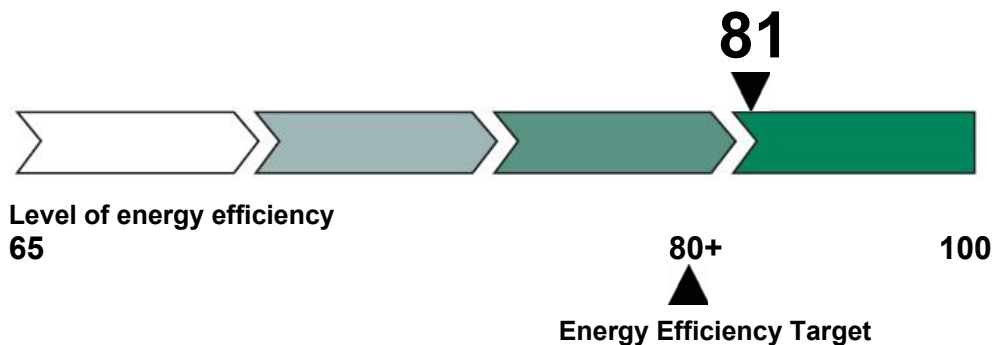
File Number: 8502P00008
Year Built: 2016
Date of Evaluation: Nov. 10, 2016
Builder Name:

Congratulations on the purchase of your new house!

This report contains information on how your new house will consume energy. Anyone can claim that a house is energy efficient, but the EnerGuide label and this report shows how efficient your house is. Any energy efficiency upgrades that you and your builder decided to include in your house will reduce energy consumption for years to come and will help protect our environment.

Your House's Energy Efficiency Rating

A qualified energy advisor has assessed the energy efficiency of your house by using Natural Resources Canada's EnerGuide Rating System procedures. **Based on this evaluation, your house has an energy efficiency rating of 81**



The EnerGuide scale ranges from 0 to 100. It accommodates millions of houses across Canada - from older houses in need of renovation to newer, more energy-efficient ones. A "0" on the scale would represent an uncomfortable house that has major air leakage, no insulation and extremely high-energy consumption. At the other end of the scale, "100" represents a house that is very well insulated, airtight yet well ventilated, and heated by renewable energy sources, such as wind or solar power. Several factors, such as the size of a home's windows and the direction they face, can affect the rating. Even if two houses appear identical, their ratings can be very different if they have different levels of insulation, types of heating equipment, etc.

For many older houses, meeting 65 or higher on the scale would be quite an achievement. New houses typically receive a rating of 65 or higher, simply because of improvements in building standards and practices over the years. Relatively few houses achieve a rating of 80 or higher, and those that do represent the most energy-efficient houses on the market. Therefore, the EnerGuide rating scale shown ranges from 65 to 100.

Typical Energy Efficiency Ratings

Typical Rating

New house built to building code standards	65--72
New house with some energy-efficiency improvements	73--79
Energy-efficient new house	80--90
House requiring little or no purchased energy	91--100

Estimated Annual Energy Consumption

Below, you will find the estimated annual energy consumption of electricity, natural gas, propane or oil for your house. These estimates are based on a number of standard assumptions, such as a family of four living in the home, specific thermostat settings, and usage rates for hot water, lighting and appliances.

These assumptions may not reflect your lifestyle but, since they are the same for all houses, they allow you to compare your house's rating with similar-sized houses built in similar regions. The number of occupants and their day-to-day habits and overall lifestyle may significantly influence your house's actual energy consumption and your future savings.

This house, as currently rated, has an estimated annual energy consumption of 69 GJ*.

* One GJ is the amount of energy that would be consumed by a 100-Watt light bulb lit continuously for four months.

Table 1. Estimated Annual Energy Consumption

	Electricity (kilowatt-hours)	Natural Gas (cubic metres)	Oil (litres)	Propane (litres)	Total (gigajoules)
Current estimate	19059	0	0	0	69

Did you know?

Today, 17 percent of all energy used in Canada goes toward running our homes. By using less energy in your home, you can help reduce the production of greenhouse gas (GHG) emissions that contribute to climate change and harm the environment. Your house produces 7.2 tonnes per year less GHGs than a similar house built to minimum building code requirements.

Estimated Energy Consumption by End Use

All houses lose heat to the outdoors during the heating season through air leakage, ventilation (e.g. exhaust fans in bathrooms and kitchen) and the transfer of heat through the basement, walls, roof, windows and doors. Lost heat must be replaced by your main heating device (furnace, boiler, fireplace, etc.). This is called space heating. Generally, space heating, domestic hot water, and lights and appliances make up most of the energy consumption in a house.

Figure 1 shows the breakdown of space heating, domestic hot water, and lights and appliances for your house.

Figure 1. Energy Consumption Estimates by End Use

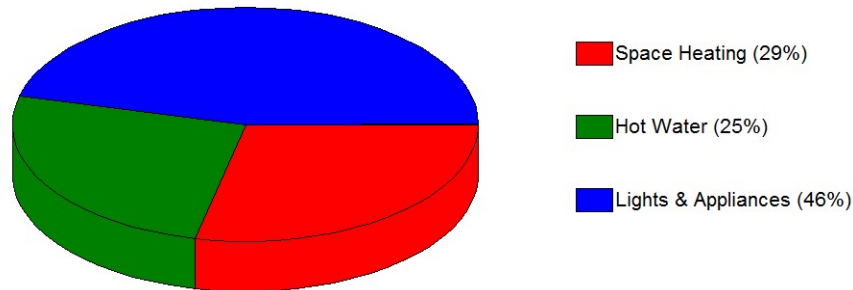
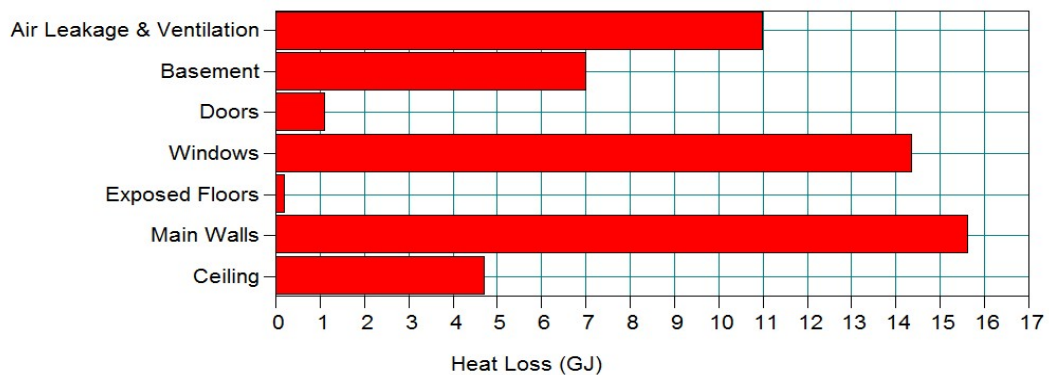


Figure 2 shows how the energy for the "space heating" segment shown in Figure 1 actually gets used in the heating of your home. A long bar indicates where your house will lose more heat; a short bar indicates where it will lose less heat. If you decide to renovate your home, look at the long bars on this graph and consider improving those areas.

Figure 2. Estimated Heat Loss



Maintenance tip

The building envelope is made up of a house's exterior walls, basement, exposed floors, ceilings, windows, roofs and doors. As houses age in Canada's severe climate, tiny cracks open in the building envelope. Any future renovations you undertake may also affect your house's building envelope. Since increased air leakage through cracks or holes decreases your house's energy efficiency and the comfort of the occupants, keep this in mind over time so that you can protect your investment.