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CLIMATE**

Edmonton



*Butterwick*



# Eco-Solar Home Tour 2020

Sunday 7 June, Noon to 4:30 pm

## Belgravia NZE Home

**Tour Day:** Sunday 7 June

**Address:**

**Hosts:** Rosecrest Homes

**Parking:** On street

**Energuides Rating:** 0

**Summary:**

- Unique combination of active and passive ingredients in achieving 'net-zero'.
- A modern 'full sized family home' achieving 'net-zero' without general design compromises, by maximizing energy efficient construction methods with superior mechanical components.
- With legal secondary suite in the basement the total energy profile for two families is very economical



**What will people see and learn about at your home?**

- Large scale drawings illustrating the construction methodology
- Building envelope (extensive displays)
- Mechanical components
- Solar P.V. as already installed on roof of house & garage and information on display, with actual data to date.
- Video tour of mechanical room

**What are the main things people can't see at your home?**

The main items that cannot be seen are the insulation components, but there will be explicit drawings on display supplemented by a take home highlight brochure.





# Eco-Solar Home Tour 2020

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## Belgravia NZE Home

### Why is this home on the tour?

We are showing this house on tour to show homes can combine a modern family lifestyle while being 'green', net-zero, and relatively cost efficient. This home has a legal secondary suite. The combination of passive solar construction with the technologies used, offered the maximum cost benefit ratio at the time we selected them.

The monthly savings in utility payments will pay for the monthly principal and interest payments attributable to the extra investment for energy efficiency and the solar system. To create these special 'green' and 'energy' features, while a healthier space to live in and helping the environment and planet in general, we hope to encourage more people to do likewise.



### What features save on energy costs?

There are two fundamentally different measures that save energy costs however, they complement each other in making this a net zero home. The passive elements are embodied in the construction material used and design elements of the house. These include extra insulation for all exterior surfaces (i.e. building envelope), superior windows and doors and air tight construction. The attic insulation is rated at R100. The exterior walls on the main and upper floor have R40 insulation. The basement walls have R40 insulation and there is R24 insulation under the basement slab. The windows are triple glazed, double coated and Argon filled. The air-exchange rate is 0.8 per hour. The combination of these features by themselves reduces the energy needs by about 10 gigajoules per year. The active energy savings features are as follows:

- 1) Heat recovery venting, minimizes heat loss of exhaust air
- 2) Heat from main hot water tank is from air sourced heat pump, harvesting heat molecules from the mechanical room inside the house. As a large portion of the heat in most mechanical rooms is generated by the operation of the furnaces and heat loss from hot water in storage, this is a very elegant solution converting the furnace room into a 'cool' room.
- 3) Air source heat pump – main furnace. The main furnace harvests heat from the outside air and is efficient to very low temperature. When it gets too cold (-20 degrees), it has an electric coil back-up built in. These active features combine to bring down the annual gigajoule energy requirement to 57 gigajoules.
- 4) The solar PV system is expected to generate sufficient energy on a year-round basis to provide an equal amount of energy used by the house.

### What features save on water costs?

Water saving feature include low flow faucets, low flush toilets and a hot water circulation system to the upper floor.

### Are there any other special features you want to highlight?

This house is certified 'Built Green Platinum' and as a 'NET ZERO' home.