general information [net-zero 101]

To reduce paper waste we have not printed copies of all of the information posters in the house., rather we have made them easily accessible on the internet. Use the QR codes below or go to the web addresses below to access all of the information on display.

www.net-zero.ca/downloads

Parkland County

Habitat Studios

Net-Zero Energy Use

A net-zero energy use home is designed so that annually, on average, the consumption of electrical energy from utility sources is offset, or equaled by the production of electrical energy from renewable sources. In our home the renewable electrical energy is supplied from photovoltaic (PV) generators located in the south meadow.

General Features of A Net-Zero Home

For the most part, a net-zero home in central Alberta would have the following building components factored into the design:

- High levels of wall and roof insulation
- Attention to air-sealing
- Passive solar energy collection
- High thermal mass
- Very high efficiency heating and cooling equipment
- Window optimization for insulation and solar gain
- High efficiency appliances and electronics
- High efficiency lighting and day-lighting strategies

Energy Flows in the Parkland Net-Zero

Our strategy to net-zero included mapping the energy flows of the home and implementing these three strategies:

Strategy #1—Minimize and control the usage of electricity
Strategy #2—Minimize and control the house heat loss
Strategy #3—Maximize and control the energy gains

How Do We Know What "Zero" Is?

To achieve the goal of a net-zero energy consumption home, it is crucial to understand the energy use of each design subpart of the home. The design subparts include the heating and cooling energy, ventilation fan energy, water heating energy, and all other small appliance, lighting, and variable loads. These estimates are performed on a basis of an "average" use with various assumptions incorporated and modeled in a computer simulation.