ThresholdHouse – Ryerson University

Strategic Approach:

- Type of Project:
  Two and Half Story Detached Home
  Location/Climate: Mississauga, ON, CZ 7
- Design Strategy:

The home was centralized around the masonry heater, with the bedrooms located on the lowest level of the home in order to take advantage of the thermal mass of the earth. Sun's solar energy and daylight potential were fully utilized in the design

- Technical Strategy
  Enclosure: Strawbale, ICF Wall, SIP panels, shallow Frost-Protected Footing, R-5 Window
  HVAC: Masonry Heater, Earth tubes, Integrated ERV System
  IAQ: Low chemical materials and high-Merv filtrations, continuous moisture diffusion and Energy Star rated ventilation fans
- Construction Cost Strategy: Producing more than enough energy to cover all energy costs while creating a profit.

Technical Specifications:

Ex1 Wall R-Value: **R-175**
Ex3 Wall R-Value: **R-30**
Roof R-Value: **R-48**
Floor R-Value: **R-154**
Window R-Value: 2.7
Window SHGC: **0.67**
Heat Pump HSPF: 77%
Heat Pump SEER: 65%
Water Heater EF: 0.62

Key Statistics:

Location: **Mississauga, Ontario**
2009 IECC Climate Zone: **(not sure)**
Square Feet: **2,450**
Number of Stories: **2.5**
Number of Bedrooms: **3**
Number of Bathrooms: **2.5**
Estimated Construction Cost: **Cd$291,000**
HERS Index Score: **35 (& 0 with PV)**
Estimated Monthly Energy Cost: **$0 (Cd$290 profit from clean energy)**