Eco-Solar Home Tour – 2011

Saturday, June 4, noon to 4pm

Better Choices
Better Homes
Better Lives

Site #5: Beverly Heights House – Ready for Net Zero

Address: 3626 Ada Boulevard
Hosts: Manasc Isaac Architects, Shafraaz Kaba
Parking: available on street
Rating: EnerGuide 94+

A. See Sustainable Architecture In Action

- Come learn lots from the owner/architect on what it takes to design and build a house that is ready to reach the net zero energy goal.
- This very interesting 2,400 ft^2 house incorporates many important sustainable design features:
  - It considers its footprint in the neighbourhood and saves space on the lot by being a tall and narrow house. As a result, the house maximises passive solar heating and allows refreshing solar daylighting into all rooms.
  - The plan of the house leaves as much of the lot as possible for edible landscaping and a large fruit and vegetable garden.
  - A basement suite increases the occupancy density and economics.
  - The flat roof was designed to lessen the impact of the house's height. Its large overhang on the south side provides summer shade.
  - Lots of south-facing walls with excellent solar exposure.
- This house is designed to be all ready to achieve the net zero energy goal. It includes ultra-high levels of insulation, passive solar space heating and a solar-electric system. The addition of a larger solar-electric system in the future will allow the house to become net zero.
- The house will achieve the EnerGuide 86 rating and receive the Alberta government's progressive $10,000 energy efficient housing incentive.

- See the stair landings that use pine wood that has been killed by the mountain pine beetle. The wood had been treated in an experimental vacuum kiln to prevent further degradation.
- This house is under construction. You should be able to see the wall framing details, and roughed-in mechanical systems.

B. Why this house is on the Eco-Solar Home Tour…

- To show sustainable modern architecture in action.

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Note: Items with a "➔" symbol here are presented on the Tour. "❖" will not be presented. "•" are information points.

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C. Features that save on heating costs

- ➔ Solar collection: Passive solar space heating with large triple-glazed, fibreglass, south-facing windows
- ➔ Heat storage: Thermal mass inside the house including a concrete floor, a concrete counter top, and a special high-mass staircase.
- ➔ Heat retention: Highly efficient. R90 roof. 380 mm (15") double-stud R60 walls with non-toxic rock wool insulation. Roof contains 150 mm (6") of poly-isocyanurate insulation on top and 300 mm (12") of rock wool insulation below the roof deck.
- Heat recovery: Two heat recovery ventilators (one for each suite). These HRVs ventilate the house ensuring good indoor air quality while reducing the heat lost to the outside.
- Solar control: An awning shades the large 2nd-floor windows in the summer to prevent overheating.

D. Features that save on electricity costs

- Solar daylighting reduces the use of lighting during the daytime.
- High efficiency lighting is installed throughout.
- 4.8 kW grid-connected solar-electric system. The photovoltaic modules for the system will be the awning.

E. Features that save on food costs and increase food security

- To maximize the space on the 8,900 ft^2 lot for growing fruits and vegetables, the house has a footprint of only 1,000 ft^2. This leaves a substantial area for gardening.