



Better Choices
Better Homes
Better Lives

Eco-Solar Home Tour – 2009

Saturday, June 6, noon to 4pm

Site #7: "The Judy" House Modern Green Building

Address: www.alkmedesign.com

Host:

Parking:

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Climate Change Central

www.climatechangecentral.com



Solar Energy Society
of Canada Inc.

Northern Alberta Chapter

www.solaralberta.ca



www.cmhc.ca



A. Totaling 4040 square feet with only a ¼ of the footprint

- The designer comments: "The home, known affectionately as The Judy, is an innovative new home in Edmonton's historic Highlands neighbourhood. It was designed to balance a healthy respect for the environment with a great sense of style. The Judy was my first attempt at an "Eco" home and I think we have learned a tremendous amount on what can be done right here in Edmonton."
- "I wanted to create a home that was eco-friendly and packed with clever and functional design features. This home brings those elements together but many challenges existed right from conception with architects, trades and suppliers trying to convert those ideas into reality. In the end I'm extremely happy how the home turned out."
- "I simply wanted to try; try to make a change and a change for the better. With the amount of information and investment into new technologies and education the decision to take the first step in the right direction was the most nerveing. After that all you can do is turn, face the sun and smile."

B. Solar Domestic Hot Water (SDHW) – using the sun to heat our water!

- The Judy has flat-plate collectors, which are the most common type of solar collectors. These consist of a flat, insulated, weatherproof box containing a dark absorber plate. Ordinary water runs through tubes in the absorber plate, absorbing the sun's heat, and transferring it into the domestic hot-water tank.
- The solar collectors used in the house are developed and manufactured here in Edmonton.
- The house also uses the solar heat to provide supplemental heat to three zones of tile floors and basement concrete slab.
- A solar domestic hot water (SDHW) system uses the sun to heat water for home use. A SDHW system connects to the home's existing gas or electric water heating system, providing a supplemental source of heat for all hot water needs including showers, dishwashing, clothes washing and cooking.
- SDHW systems are a proven technology that works well even in cold climates. A SDHW can provide 40-80 percent of a household's annual hot water needs.

(continued on other side)

Note: Items with a "➔" symbol here are presented on the Tour.

"❖" will not be presented. "•" are information points.



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(continued from other side)

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

- To show that “Green Buildings” can be remarkably modern and cutting edge.
- To show that you do not need a large footprint to build a beautiful home. The Judy has a small footprint of 1048 sq ft but yet 4040 sq ft of living space. It even includes an 829 sq ft roof garden to grow vegetables and herbs. It shows the reuse of lots in older developed areas vs. clear cutting new suburban lots.
- To show a well thought-through tight building envelope.

D. What is a Solar Domestic Water Heating (SDWH) System?

- It consists of four main components: solar thermal collectors, differential temperature controller, circulating pump, and hot water storage tank.
- See how the SDWH plumbing connects into a small boiler system to complete a full household hot water system, how to make it work in a tight space, and how it operates.
- See the water lines in and out, the differential temperature controllers that monitor tank and collector temperatures, the dual chamber hot water holding tank, and the circulating pumps that make the system work.



E. Energy-efficient features that save on heating costs

- ❖ The house envelope was built with:
 - Insulated concrete form walls
 - Air infiltration points deadened with use of Enviro Foam
 - Triple-pane low-e windows
- Heat Recovery Ventilator with heated intake booster
- EVO Micro High-Efficiency Water Heater & Heating Boiler
- TrueSTEAM eco-friendly humidity system uses 70% less water, Accuclean air filter.

F. Features that include sustainable materials

- Greenwork LEED tile, carpet made from recycled pop bottles, recycled concrete and glass countertops, Duro-Last roofing and more.

G. Features that reduce emissions

- All solar and energy efficiency measures reduce carbon emissions by reducing the need to buy natural gas and electricity from the grids.

H. Features that save on water

- 3-litre button-operated low dual flush toilet
- ❖ House and garage roof permit a roof top garden. A portion of rainfall is absorbed on the roof instead of run-off down sewer drains.

