

Progress Report

Factor 9 Home: A New Prairie Approach

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Report Number 9

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1. Framing of the house has been completed. As of August 16, windows and doors are being installed. In figures 1 and 2 photos of the construction are presented.



Figure 1. Factor 9 Home Under Construction—August 3, 2006
View of the North Face of the House
Photo Credit: Rolf Holzkaemper



Figure 2. Factor 9 Home Under Construction—August 3, 2006

View of the South Face of the House

Note how the roof overhang successfully shades the windows at that time of the year.

Photo Credit: Rolf Holzkaemper

2. Additional photos of the construction are being added to the www.factor9.ca web site.
3. Two of the specialty items for the house have arrived in Regina. An innovative air to air heat exchanger provided by Venmar (www.Venmar.ca) will be used. It is a new, high effectiveness HRV that incorporates brushless direct current motors for low electricity consumption and ease of setting of flow rates. Special thanks are extended to Rick Olmstead of Interlink Research for his help in arranging for the special HRV. A Saskatchewan built product, a waste water heat exchanger, has been supplied to the project by Watercycles. This unit uses the heat in the outgoing waste water to preheat the incoming potable water before it goes to the water heating systems (solar and auxiliary). Special thanks are extended to Andre Cayer of Watercycles (www.watercycles.ca) for his assistance.
4. A monitoring proposal for the Factor 9 Home that was submitted to Natural Resources Canada and Canada Mortgage and Housing Corporation has been successful. Thanks are extended to John Gusdorf of NRCan and Woytek Kujawski of CMHC for their help with developing the contract. The monitoring will include quantification of the energy and water flows in the house, along with indoor air quality parameters such as ventilation rate, relative humidity and carbon dioxide. A National Instruments Field Point Data Logging System will be used. The data logging system will

monitor the active solar system energy production, the space heating and water heating usage from the solar system, the waste water heat exchanger performance, and the amount of auxiliary energy used for space and water heating. For cost reasons, the electrical usage of the appliances will be monitored using manual meters.

A relatively new and low-cost piece of technology called The Energy Detective™, which provides a user-friendly readout of the purchased electrical consumption from the utility, will be used to provide instant feedback to the residents on their use of electricity. A view of The Energy Detective Readout is shown in Figure 3.



Figure 3. The Energy Detective Readout Device
(A 2 dollar coin is shown below the unit for scale.)

All of the instrumentation for the house has now been ordered.

SaskPower, the electric utility, has agreed to place a digital meter at the service entrance that can emit pulses to the data logging system. Thanks are extended to SaskPower staff including Garry Tollefson and Ben Farahani for their assistance with the meter.

Next steps

1. Instrumentation for the monitoring equipment will be installed later in August, 2006.
2. Preparations will start for the Grand Opening and Open House.
