FACTOR 9 HOME: A PRAIRIE APPROACH

The Factor 9 Home: A New Prairie Approach is a home that is expected to reduce energy consumption to be 9 times less than the average existing Saskatchewan home.

The Factor 9 Home has two mechanical systems that are substantially different than a conventional home: the active solar space and water heating system, and the rainwater capture and storage system.

The active solar heating system captures the sun's energy to heat a water/glycol mixture. Heat is transferred from the panels to a 2350-litre water storage tank in the basement. The hot water in the tank is then used to heat domestic hot water and to provide some space heating via a forced air system.

Rainwater and melt water from the roof will be stored in two 9,500-litre storage tanks in the crawl space beneath the basement floor. This non-potable water will be used for toilets and exterior water usage. Landscaping will be designed to require less water.

The house has an energy-conserving envelope, with attic insulation levels of RSI 14.1 (R80), above grade walls of RSI 7.3 (R42) and basement wall insulation levels of RSI 7.7 (R44). The bricks, provided by Pan-Brick Incorporated, are also an insulating product with an RSI value of 2.27 (R12.9) which is better than a 2 x 4 stud wall. In comparison, standard bricks have an RSI value of .14 (R0.8).

The Factor 9 Home uses passive solar heating will be used to provide space heating. To provide mechanical cooling in the summer, a network of plastic pipes were installed in 22 of the concrete pilings to extract cooling from the ground. The approximate annual ground temperature at the base of the pilings is about 5^{o}C. The water in the plastic pipes will provide space cooling during hot summer months.

Energy-efficient lights and appliances as well as water- and energy-conserving appliances such as clothes and dish washers will be used.

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