



Conservation House

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The Saskatchewan Research Council built a Conservation House in Regina in 1977.

It combined passive solar heating, active solar heating and heat generation from people and the use of electrical equipment. There was also a back-up electrical system.

The house was heavily insulated and had an air-to-air heat exchanger for ventilation. It was intended to provide comparative data, and it served as a basic model for 300 other conservation homes in the province (including the Lange home described below.)

A family of four moved in in 1979, and the house's performance was monitored from June 30 of that year to June 30, 1980.

The house proved to be highly energy efficient when compared with one fully heated by electricity.

Most (70.9 per cent) of the electricity used was for lighting and appliances, a sizeable fraction (16.8 per cent) for hot water heating and a smaller part (12.5 per cent) for backup space heating.

The overall annual electrical bill was \$511.92, compared with \$1,296.29 for a similar, fully electric house. The cost of space heating alone was \$62.96, compared with \$844.63 for the fully electric house. (The comparison with a house entirely heated by natural gas is much less striking since natural gas is cheap in Saskatchewan and electricity is not. The cost of backup electricity alone was more than the cost for a full gas system.) The passive solar heating system and the use of insulation proved much more efficient than the active system.

A Snug Home in Regina

Leland Lange, a founding partner in Enercon Holdings, Ltd., lived in his company's prototype house for three years.

In his first eight months—which included the last weeks of one of Saskatchewan's worst winters—he spent a total of \$40 heating his 1,760-square-foot home.

After that, Mr. Lange estimates, his house's heating needs were about 80 per cent below normal.

Heating costs are normally cheaper in Saskatchewan than in many places, but the normal cost of heating a house that size for a full year still runs about \$125.

Mr. Lange and his brother David had worked in the Saskatchewan Office of Energy Conservation, and they adapted lessons learned at Conservation House.

The house combines heavy insulation with a simple passive solar system. It has no collector panels on the roof and no fluids circulating through pipes.

It faces south, and the sun comes in through a large, insulated window to heat the air in a plant-filled alcove of the living room.

An exhaust fan sends the heated air down through a grille, to a heavily insulated basement storage room, which is filled with sealed plastic bottles of water. The water stores the heat until a thermostat turns on a fan which circulates the warm air through the house.

The solar system is, however, an almost incidental part of the system.