

# Solar heating, built as hedge against inflation, begins to pay for itself as hydro costs rise

By GEORGE EVASHUK  
Herald staff writer

Energy from the sun, even on the coldest day of winter, helps warm the home of a Terra Cotta family.

Rick and Sandy Symmes heat about half their 2,000 square-foot home with a solar space heater that Rick, an engineer, designed, then built with help from friends. Electricity heats the rest.

The decision to build a solar space heater came about, Mr. Symmes said, as a hedge against inflation, rising oil prices, a Hydro strike—although there was no interference at the time—an unrewarding experience fighting transmission lines and a desire to be more independent.

"I was getting the feeling of being plugged into a central system that made me more vulnerable," he said in a recent interview. "But the only way to minimize our vulnerability was to reduce the demand for electricity, or non-renewable energy. Solar heating was one way to cut down the demand."

He said he also wanted to find out if no grant economies could build the device. "I had to work without plans."

Besides two \$50,000 projects

in Canada, most solar energy research is small potatoes compared to nuclear research. But development in the field is mushrooming as aero-space companies bring their design talents to solar energy while waiting for man to return to the moon.

Solar space heaters were rare when he started out, Mr. Symmes said. "Now there's getting to be a lot of them."

With the help of the Sierra Club of Ontario, Rick has sent out over 3,000 copies, an information pamphlet he wrote describing how he built his solar heater. Requests have come from Sackville, New Brunswick, to Vancouver Island.

"Sandy said 'Don't make the house look funny,'" Mr. Symmes said, when it came time to decide where to put the unit. It was too heavy for the roof, which was at the wrong angle as well, and as the house is built on bedrock, there is no basement. The unit facing south, is built on the short end of their L-shaped house.

A collector to trap sunlight and convert the light to heat, a heat transfer medium to transfer the heat to a storage battery—in Mr. Symmes' case, 20,000 pounds of 1/2 to three-inch water-washed gravel—

two furnace fans and a control system are the elements of the solar space heater.

For this collector, Rick used eight picture window frames, double glazed, and backed with black-enamelled aluminum. As the collectors were to be fixed in position, the latitude was computed to determine the best angle to place them, in this case, 60 degrees for ease of construction.

The collectors make up one wall of an A-frame insulated shed which covers the storage battery or rock pile and contains the air used as a transfer medium. At either end of the shed is a 1/4 h.p. furnace motor.

The unit works when sunlight strikes the blackened aluminum and turns to heat. The air in the shed is in turn heated, then circulated by one of the fans through the rock pile where the heat is stored. When the rock pile is hotter than 86 degrees F, and the house is 66 degrees F, or cooler, a thermostat turns on the house supply fan. Ducts carry hot air to the house and cool air back to the unit.

The heater 24 feet long, seven feet high, cost \$1,300 in materials and produces heat equivalent to 7,900 kilowatt hours. He assumed a 25 per cent annual

increase in Hydro rates—an assumption borne out in 1976, the first full year of operation—to make his investment pay for itself by 1980.

Mr. Symmes estimates that his home-made solar heater is about 50 per cent efficient and uses less electricity than a 100 watt bulb.

Canada's climate is not suited to a totally heated solar house. From December to March, the amount of sunshine per day drops and solar heating is practical only as a supplement.

Mr. Symmes collects the heat straight from the air before it has a chance to heat the rock pile from mid-October to mid-March. It takes too long to heat up the rockpile otherwise, he said.

Water or antifreeze can also be used to store the heat but costs more money because a heat exchange is needed. With

rocks, there is the advantage that the pipes don't split (because there aren't any).

"Solar heating is capital intensive," Rick said. "You've got to put a lot up front." However, once the system is paid for, "you've still got that



RIK SYMMES IS REFLECTED IN THE SOLAR HEATING COLLECTORS OUTSIDE HIS TERRA COTTA HOME.

### Clan Donald

The Grand River Valley Branch of the Clan Donald Society of Canada held their annual meeting recently in the Guelph Armouries. New members Mr. and Mrs. William Dickie of Fergus were welcomed. Roy McLeod, Guelph was appointed delegate to Clan Donald Council and Alastair Beaton, Kitchener was elected a director of the

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JENNIFER SYMMES AND HER MOTHER SANDRA RELAX IN THE LIVING ROOM OF THEIR SOLAR HEATED HOME.

### CVCA committees

The Credit Valley Conservation Authority held its inaugural meeting two weeks ago and elected a executive.

A Grant Clarkson of Mississauga was re-appointed chairman while Howard Stewart, Brampton was elected Vice-Chairman. Ken Whillans, Brampton, and Harold Kennedy, Mississauga were elected chairman and vice-chairman of the water management advisory board. Frank Leavers, Mississauga and Gail Malby, Halton Hills, were elected to the parks and recreation advisory board.

Robert Harrison, Mississauga and J.B. Dodd, Orangeville were elected to the information and education advisory board. Harold Darragh, Orangeville and Charles Bryan, Amaranth Township, were elected to the reforestation land use and wildlife advisory board.

Henry Wheeler, Erin, and Evelyn O'Sullivan, Erin Village, were elected to the historical records advisory board.

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### Youth 'brain-drain'

Ron Coupland, executive director of Halton Children's Aid Society, told members of the Youth Service Network, there is a brain-drain in Halton.

"In this region we can't keep youth," he said. The leaders leave and go to college, and don't return because the good jobs are not found here. Larger urban centers offer higher positioned jobs with more money.

College is demanding, and the student becomes involved in a whole new world, he said. The student has nothing left to give the community, resulting in a drain on the youth level.

"The service network should offer programs retraining youth to supply leadership all the time," he said.

Mr. Coupland feels sorry for the youth today. He feels everyone is stricken by a poverty of purpose. Youth is trying to figure out what to do with their lives.

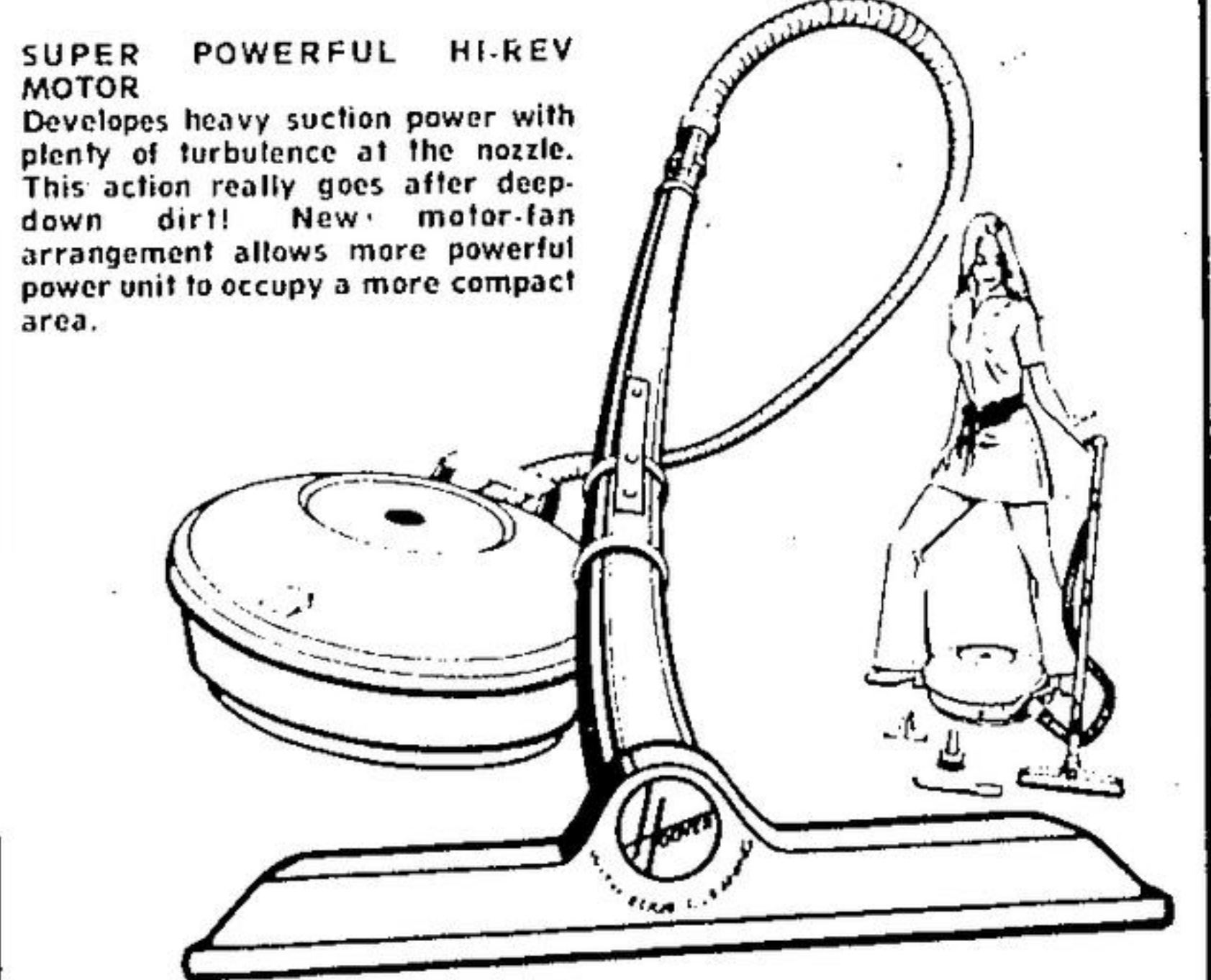
Most of the families in Halton are middle-class and not suffering financially. The children know their "father started at the bottom of the business sweeping floors, but he worked his way to the top."

This rarely happens in our society. There is an over-flow of people looking for work, yet the myth in families persists, "if Dad did it so can I."

Youth solve the problems by acting-out, drinking too much and driving too fast. Others however, act in, and break down emotionally inside.

Some children who act-in decide to help other people and yearn to become social workers. But, "it is very hard to relate to people on a lower level, and many social workers burn themselves out quickly."

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