

# 4 build solar, wind-powered ecology center

By LETHA D. WILLIAMS

Founders of Upland Hills Ecological Awareness Center know civilization is aware of its endangered world status.

But Wayne Appleyard, Richard McMath, Kim Yamasaki and Phil Moore still harbor deep concerns about their world.

They worry about environmental toxins, dangerous energy policies and the public's apparent willingness to give physicians total responsibility for health.

Although they discussed it, the four men decided against writing a book about salvaging the environment. Instead, they built an example.

"We thought how wonderful it would be to build a building that would be a symbol of those concerns," Moore said.

Three years ago, architects Appleyard and McMath, building consultant Yamasaki and educator Moore began the complicated construction process.

They designed and erected the solar and wind-powered ecological center. And although some finishing touches remain incomplete, the center has begun public workshops and tours.

Moore, who heads Upland Hills Farm School, co-directs the Ecological Awareness Center with Ann Franklin. With the other founders and as many as 300 volunteers, Moore and Ms. Franklin shared the hands-on construction experience.

cement, lay stones and install solar windows. The trapezoidal building is nestled in the south side on an Addison Township hill on Indian Lake Road near Upland Hills Farm School.

The building's north side is protected by the earth which, according to Ms. Franklin, always remains at 55 degrees or warmer beneath Michigan's 42-inch freeze line. The natural sod roof doesn't require shingles and will last forever, she said.

On the building's north side are windows with overhangs designed to draw in the maximum amount of sunlight in the winter and the minimum amount in summer.

"If you're going to use solar energy to heat your home, you want to orient your windows to the south," Ms. Franklin said.

In the winter, the sun's rays are drawn into the building through huge windows. Heat is stored beneath the glass in absorbent black panels.

Natural turbulence warms the air and rolls it around through basement ducts. Eventually, a blower pulls the hot air through a room filled with small rocks.

The heat is stored naturally in the rocks. "So in one day of sun we get three days of heat," Ms. Franklin said.

That solar energy system is called "active" because it utilizes mechanical devices. But space heat can also be produced in a passive, or non-mechanical, solar energy system.

IN THE PASSIVE system, the sun's rays beam through the windows and heat is absorbed by the room's natural cement floor and fieldstone north wall. At night, insulating screens are drawn over the windows. As the air in the room cools, the floor and stones emit the absorbed heat.

Both the active and passive solar energy systems are used in conjunction with a wood-burning furnace. It's unreasonable, Ms. Franklin said, for Michigan residents to expect more than 40-60 percent solar space heating.

A solar water-heating system is attached to the center's roof, with windows and absorbent black panels also facing south. The system operates like the space heating and provides hot water.

The center is lighted naturally through skylights carefully angled to allow maximum illumination. However, the center's wind generator also produces electricity.

Ms. Franklin said the center can gain up to three days of electricity on a windy day. It's stored in six forklift truck batteries.

Planned workshops will begin at the Ecological Awareness Center in September. Participants can share a three-pronged educational program designed to respond to the founders' ecological concerns.

Moore said one workshop will focus on energy conservation. Techniques for home energy audits and constructing

insulating window screens will be taught.

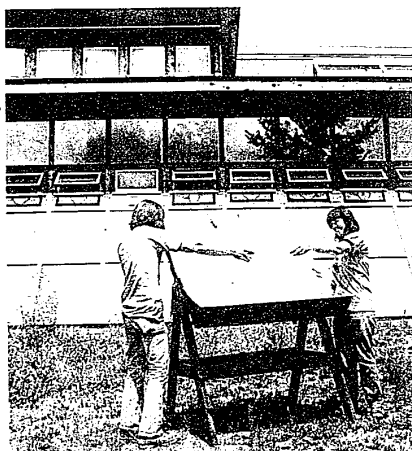
ANOTHER workshop will deal with holistic health. Medical doctors will be on hand to discuss various aspects of

good health and demonstrate natural self-help activities.

"Our mission is educational," Moore said. "If we would begin to conserve as a society, we would be in such good shape it would boggle your mind."

Sunday tours are already underway at the Ecological Awareness Center. Visitors can tour the facility and browse its library and gift shop. Additional information is available by calling the center at 693-1021.

ALL JOINED FORCES to pour



Outside Upland Hills Ecological Awareness Center, co-director Phil Moore and staff member Julie Brockman demonstrate a parabolic collector that absorbs solar heat to warm foods. (Staff photo by David Frank)

## AMC records quarterly loss

American Motors Corp. last week reported a net loss of \$84.9 million, or \$2.65 a share, for the third fiscal quarter which ended June 30.

A year ago, the Southfield-based company reported a net earnings of \$15.1 million for the same quarter, or 49 cents a share.

Net sales for the current quarter were \$543 million, down 32 percent from a record \$798 million a year ago. "The U.S. automobile industry has been severely affected by the current economic downturn and our company was no exception," said Gerald Meyers, chairman and chief executive officer of AMC.

"We performed substantially better than the industry earlier in the year because of our product and marketing strengths. But the effects of recession, inflation, high fuel prices, credit controls and other external factors turned out to be inescapable."

MEYERS SAID an important factor in the reported loss was due to a company decision to reduce dealer stocks and protect AMC's distribution net-

work from what he termed "the extraordinary costs of carrying inventory during a period of record high interest rates."

The company cut capital spending on non-product programs by 15 percent, but left future product programs intact. The salaried personnel also felt the bite, with more than 10 percent receiving pink slips.

Meyers said company financial experts do not foresee much improvement in the fourth fiscal quarter, which ends Sept. 30.

Net sales for the first nine months were \$2.1 billion, compared with a record \$2.5 billion in 1979.

Combined worldwide auto and Jeep wholesale sales in the third quarter of the current fiscal year were 74,387 units compared to 111,988 units in 1979. Auto wholesale sales were 54,861 units compared with 62,322 a year ago, down 12 percent. Sales of the imported Renault autos were pegged at 8,223, up 12 percent from 7,327 in 1979. Jeeps wholesale sales were 19,526 units, compared with 49,556 in fiscal 1979, a decline of 61 percent.

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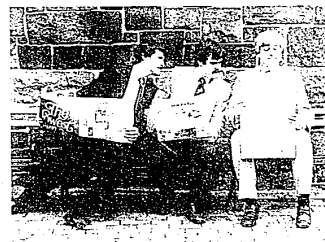
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