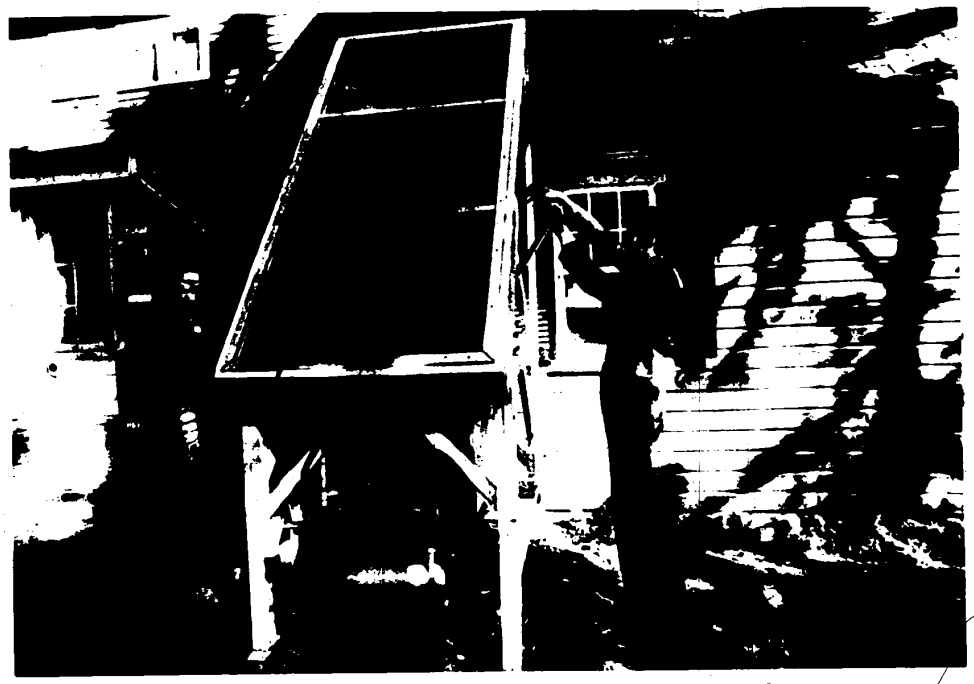
Gas reserves are running short ...winter is coming; meanwhile, the sun is shining



Joseph M. Salvaggio and Richard J. Wiack ponder the future. (Staff photograph by Mitchell Booth)

Is this the time and place for solar heat?

By DAN McCOSH

If solar energy is the wave of the future, it has been a tricky wave to catch. Bulky, expensive to install, generally marginal economically, it remains a recurrent dream of engineers who look up at the sun and see a free, inexhaustible source of energy.

Propped up in the back yard of a house on a side street near downtown Birmingham, looking something like a cold frame for early summer vegetables, is one such dream.

RICHARD J. WIACK and Joseph M. Salvaggio are very cautious dreamers.

Wiack is a former aerospace engineer. Salvaggio a physicist. Both work on automotive design today, after space work lagged in Long Island for Wiack and academic research palled on Salvaggio. Together they make up most of Scorpio Solar Systems, one of about 40 small research firms now working in the U.S. on solar energy.

"The timing is right for us now," Salvaggio says of the enterprise, qualifying that to say wide-spread use of solar heat is probably 10 years in the future.

The timing he refers to is in part a willingness of small, independant companies to develop and market systems competitively with more grandiose efforts of the government and big business.

"It's a small market. Without the volume, we are in as good a position as anyone," Salvaggio said. "Overhead kills the larger companies now, and we can pick up the volume as we grow."

"If you ever entered a car after it was sitting in the sun for a long time, you are already familiar with the basics," Salvaggio says.

Their system involves an aluminum water-filled collector plate housed in a glass-covered frame. An electronic sensing unit controls the flow of the heated water into a storage tank, where it is used to heat the home or a swimming pool.

In fact, swimming pool heating is the most direct, economic application they see right now. For an estimated $2,500, a system which will heat a pool can be installed.

This compares with a $400 to $800 gas system, and will save about $100 a month on gas bills, according to Salvaggio.

It should amortize itself in 6-10 years, and you can use the collectors to roof your cabana.

An entire house could be heated with a $6,000-$7,000 installation, which would still require a backup heating system about 30 per cent of the time.

There is nothing basically new in the system, but the details and costing are seen as a potential to enter the market sooner than others in the same field.

The sensing unit alone is being marketed in two models, at $330 and a stripped version at $120. The collector panels are approximately $8-12 per square foot and ready-to-install modules are being developed, according to Wiack.

WIACK HAS a methodical, precise, manner, at least partly traceable to his work on the Vanguard rocket project, one of the first United States space ventures.

But solar energy has been an idea partially kept alive in a kind of scientific underground.

Dating back to Archimedes, who was supposed to have set enemy ships on fire with a sort of giant magnifying glass, it was picked up as a possibility for underground communes and heating pools in California. Recently it has been granted more sober support by a state law exempting solar installations from the tax assessor.

This leaves the two scientists simultaneously corresponding with members of a techonological commune in Detroit, discussing the installation of a pilot unit in a model house in Plymouth, and waiting.

They feel the economic incentive can come from the rising cost of fossil fuels, new legislation or both.

A ban could be coming soon on use of gas for non-essential purposes such as barbecues and swimming pools, according to Salvaggio. Also being considered is a federal bill for lower interest loans and tax deductions for solar heating.

"It's all a function of economics. That will be the determining factor," Wiack said.

THE DETROIT area has a heavy cloud cover which inhibits the effeciency of solar systems. They see their market as being better in clearer sections, even Canada.

But the industrial complex surrounding the auto industry is welcome. "You can get anything you need here -there's someone building every kind of tinker toy for the auto industry. Transportation is good, it's centrally located."

MEANWHILE, the pilot unit is silently collecting heat in Wiack's back yard. Heavy shade from the oak trees keep it from working at peak efficiency. Regardless, he woke up one morning at 7:30 a.m. on an overcast day to find it had clicked itself on. It heats his garage a bit, and provides some data.

In a way, it's an article of faith Salvaggio is looking for a new home, and one Tudor design he found has the roof pitched at 40 degrees.

This coincidentally, is close to the degree of latitude of Birmingham, which means if the house is placed so, a solar collector on the roof will be tilted at approximately the correct angle.

Now all he needs is a place in the sun.

The heater in Wiack's backyard in Birmingham.

Area firm on the moon

Without the help of wind or rain, dust particles move along the surface of the moon. The Apollo 17 Lunar Ejecta and Meteorites (LEAM) experiment in the foreground has uncovered an unexpected phenomenon of low velocity charged dust particles in sending data down to Earth. The equipment, developed by Southfield-based Bendix, and used by NASA, shows the existence of very slow moving highly charged particles on the moon's surface in addition to the particles it was designed to study. The LEAM was designed to detect meteorites and ejecta material, but has surprised scientists by detecting materials with a significant electrical charge.