

ENGINEERING

Build Solar House

One solution to the problem of diminishing fuel resources is to utilize the sun's heat. Believed practical only in southern climates, a northern solar house has been built.

► THE FIRST full-scale sun-heated house to meet today's living requirements has been built by a Massachusetts Institute of Technology team of engineers and architects.

Located in Lexington, Mass., a Boston community suburb, the M.I.T. "hot house" is a sleek two-story, three bedroom residence ready for occupancy. It will be sold to a private family.

When this happens, both the house and family will become part of a unique and continuing experiment into the practical applications of solar energy. M.I.T. engineers will still retain separate access to a basement equipment and instrument room to gather data on the solar heating system.

The most striking feature of the house is its solar collector, the equipment used to trap the sun's energy for heating purposes. The collector consists of 640 square feet of glass, two layers thick, over a similar area of thin (.025 of an inch thick) aluminum sheet painted black to help absorb heat. The great expanse of glass forms all of the visible roof and wall of the building's south side.

According to the M.I.T. solar house builders, "while the aluminum sheet absorbs the solar energy, the glass serves the same purpose it does in a greenhouse—it lets the sunshine in, but keeps the longer waves of heat energy from passing right back out again."

Once the energy is trapped it must then be stored for use. To do this, water is circulated through copper tubes attached to the aluminum sheet and the captured solar energy is transferred from the sheet to the water. The hot water is stored, in turn, in a 1,500-gallon basement tank.

To heat the house, the engineers explain, the hot water in the tank is pumped through a heat exchanger, that functions like an automobile radiator, to transfer the heat from the water to a stream of air. It is this warm air that heats the living spaces of the house.

The house is the result of 20 years of research and was built to show that enough facts and equipment are now available to construct a solar house for modern living in a northern climate.

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SOLAR HOUSE—A snow-swept view of the first solar house designed to meet modern living requirements in a northern climate shows part of the mechanism for "catching" the sun's heat. At the right is the glass-faced solar collector that forms all the visible south side of the house. At the extreme left is part of the screened porch that provides outdoor living space for the second-story living room. The house is seen from the southwest.

ASTRONOMY

Use Binoculars to See Year's First New Comet

► THE YEAR'S first new comet can now be seen high in the southern sky using binoculars, if weather permits.

The diffuse object has been named Comet Burnham after its discoverer, Robert Burnham Jr., of Prescott, Ariz., who found it while working at Lowell Observatory, Flagstaff, Ariz. It is the second comet Mr. Burnham has spotted within five months.

Miss Elizabeth Roemer of the U. S. Naval Observatory, Flagstaff, confirmed the discovery within two hours and reported the details to fellow astronomers at the U. S. Naval Observatory, Washington, D. C.

Comet Burnham's overall brightness rates as magnitude nine on the astronomer's scale, much too faint to be seen without optical aid. The central condensation, or nucleus, is considerably fainter, rating magnitude 15 when photographed.

The object was discovered at 10:00 p.m., EST, Feb. 21. Its position on Feb. 25 was five hours, 54.47 minutes in right ascension and plus 11 degrees, 9.13 minutes in declination. Miss Roemer reported Comet Burnham's daily motion is plus 51 minutes in right ascension and plus 22 minutes in declination.

Whether Comet Burnham will brighten or become fainter will not be known until further observations are made. It is moving slowly north and east in the sky.

The object is described as diffuse, with central condensation or nucleus; nothing was reported about its tail.

News of the comet's discovery was cabled to Harvard College Observatory, Cambridge, Mass., clearing house for astronomical information in the Western Hemisphere. Dr. E. C. Slipher, acting director of the Lowell Observatory, reported the discovery.

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ELECTRONICS

Electronic "Book" Shows Off in Ten Languages

► AN ELECTRONIC history "book," an International Business Machines 305 RAMAC computer, is destined to perform its feats of historical marvel at the Brussels World's Fair beginning April 17 as part of the U. S. Pavilion exhibit.

The outline of world history, dating from the Fourth Century B. C. down to the present is recorded in the computer's memory in ten languages, including Russian and Interlingua, a universal language that can be readily understood by most visitors to the Fair regardless of their national language.

In less than two-thirds of a second, the insertion of a random year on the RAMAC keyboard, is followed by an electric typewriter printing out a concise statement of the major events of that year.

In addition to Russian and Interlingua, RAMAC will answer historical dates in English, French, Italian, Dutch, Spanish, Swedish, Portuguese, and German.

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