

Underground home has no windows or skylights in bedrooms or bathrooms.

EARTH HEAT COMBINES WITH SOLAR

Energy Efficient Underground Home

The exhibit that drew the biggest crowd at the recent Wisconsin Farm Progress Show was a 5-bedroom, \$100,000 modern underground home that uses just 25% of the energy needed to operate a conventional home above ground.

Built against a gently rolling hill, the home is entirely covered on three sides and the roof with at least 4-ft. of soil. Only the south side, lined with windows and solar collectors, remains exposed. Those collectors, along with a black linoleum floor inside (to absorb heat), and the constant earth temperature which both cools and heats, supply most of the building's energy. Back-up heat is electrical.

"The outside shell is poured, reinforced concrete, with a 10-in., 4000 psi reinforced roof slab. The entire building was waterproofed and covered with a 1½ to 3-in. cover of foam insulation before being buried. Triple-glazed windows, insulated-steel doors with weather stripping, and a brick southern exposure make

the home nearly energy "leak-proof", says Robert Munger, of Coulee Region Caves, Sparta, Wis., a division of Davis Caves, Inc., the company that built the home.

The 1876 sq. ft. home, with attached double garage, has two bathrooms, five bedrooms, a living area, kitchen, shop, a "mudroom", and a rock solar storage area to hold heat for off-peak hours.

The building is 28 ft. wide by 93 ft. long, with no windows or skylights in the four bedrooms and bathrooms in back.

Davis Caves has franchises throughout the country that can design a home to fit your farm, and do as little or as much of the construction work as you like. The first Davis home was built several years ago by Andy Davis in Arlington, Ill. (featured in FARM SHOW, Vol. 2, No. 4).

For more information, contact: FARM SHOW Followup, Davis Caves, Inc., 200 West Monroe St., Chicago, Ill. 60606 (ph 312 346-9846).

AN ELECTRO-PNEUMATIC SOLENOID SWITCH ACTIVATES AIR CYLINDER TO RAISE GATE

Unique Gate Operates When Horn Is Sounded

If you've ever wanted an automatic gate opener for your farm, ranch or private driveway, check out this Horn Gate from Irontech of Twin Falls, Idaho.

When you honk (for about 2 seconds), an electro-pneumatic solenoid activates a compressed air cylinder which lifts the gate and allows you 15 seconds to pass. If you need more time, honk again and the gate remains open.

Friends and neighbors can operate the gate, too. You simply tell them to sound their horn when they get to the gate and they can drive right through. No special horn is required. A combination of volume and duration of the sound is all that's required. There have been no problems with cattle bellying and opening the gate, reports Wayne Skeem, the inventor. Intruders are kept out.

Should you need extra security, the horn gate can be equipped with a "pattern mode" which allows you to program the solenoid so it opens the gate only after a certain pattern is sounded, such as a long honk followed by a short honk followed by another long honk. It can also be operated manually and it can be locked.

The Horn Gate is designed to work with electric fences, primarily. When the gate closes, its crossbars fit into slotted brackets which are electrified so that the entire fence and gate remains hot.

Power for the solenoid comes from GEL cells, sold by Sears. They are lead-acid batteries in a gel form, according to Skeem. They can be recharged up to 200 times from a standard 12V automobile cigarette lighter. The solenoid itself draws just 1.5 milliamps, so the GEL cells don't need to be recharged very often.



Revving up engine on a "hornless" tractor will activate sensor to automatically open or close the gate.

Skeem uses a compressed air tank that holds 125 psi of air. The air operates the lift on the gate. Since it moves a piston just 7 in. to operate, Skeem says he can get 250 openings on one cylinder of air.

He has tested and improved the Horn Gate for 10 years. He started with a light-activated model but found it to be impractical. He also tried a radio-controlled model similar to a garage door opener but decided it defeats the purpose of the gate since friends and neighbors can't get in and each vehicle you own would need a control unit, thus making it cost prohibitive.

The Horn Gate is currently selling for \$389 FOB for a standard 14 ft. gate. For each additional foot needed, an extra \$10 is charged.

For more information, contact: FARM SHOW Followup, Irontech, 1742 Targhee, Twin Falls, Idaho 83301 (ph 208 734-8296).

New "Stoker Stick" For Loading Wooden Stoves

Save wear and tear on your fingers with this new "Stoker Stick" for filling wooden stoves.

Inventor Walter Yaworski, Jordanville, N.Y., got the idea for his new invention several years ago after crunching and burning his thumb while loading his wooden stove. Deciding that there must be a less destructive way to fill his stove, Yaworski came up with the Stoker Stick.

It consists of an adjustable gripping piece attached to a handle that comes in 4½, 5, and 5½ ft. lengths. The gripping piece, made of metal square tubing, is spring-driven and can be adjusted to fit size of the log. Logs can be loaded either length-wise or across their diameter.

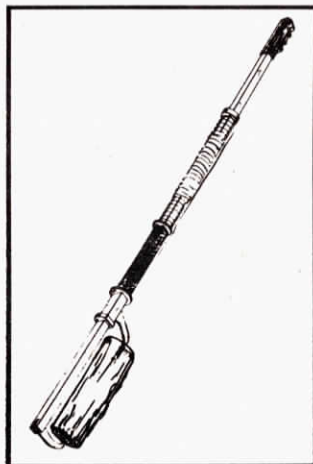
The stoker is self-adjusting for logs

within 3 in. of being the same size. Otherwise, adjusting wing nuts on the handle takes about 30 seconds.

The stoker weighs about 4 lbs., can handle logs weighing up to about 40 lbs., and is designed so that it adds only about an inch to the diameter of the log, making it easy to "feed" stoves with narrower or smaller doors.

Yaworski is just beginning to develop marketing plans for his invention, on which he has a patent pending. He estimates that retail price of his Stoker Stick will be about \$37.

For more information, contact: FARM SHOW Followup, Walter Yaworski, Rt. 1, Jordanville, N.Y. 13361 (ph 315 823-2008).



Logs can be loaded either lengthwise or across their diameter.