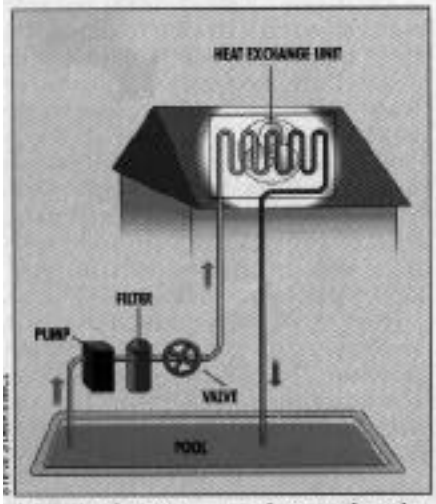
HOME TECHNOLOGY

EDITED BY SANDY FRITZ



Using attic heat to warm pool water takes advantage of solar heat without using solar panels.

HOME ENERGY

THE HOT STUFF

You probably equate the stifling heat that builds up in your attic with the dusty old junk up there—useless stuff. But some simple technology from a small Elk River, Minn., company taps into this clean, reliable, and virtually free energy source to heat a pool, several rooms, and even water for showers.

Attic Technology's pool heating system works like this: Using the pool's existing filtration pump, water is pulled through PVC piping up to the attic. There, inside a heat exchanger the size of a home air conditioner, hot attic air is blown across cool pool water. Gravity then draws the warmed water back down to the pool. The system works best when the roof receives some direct sunlight each day and when the attic space is approximately the same area as the pool. An independent assessment of the technology by a Florida utility shows that it does work.

The company's space heating system is even simpler. When the attic temperature exceeds an owner-controlled temperature, say 68 degrees, a blower kicks on and sends warm attic air down through a series of ducts into the house. Tests in Minnesota show that the system helps heat homes in all months except December and January.

In the Sun Belt, attic heat could save home owners even more, according to the company. Both the pool and space heating systems are simple enough for a do-it-yourselfer to install. A domestic water heater is due out next year.—*P. J. Skerrett*

BUILDING COMPONENTS

MODULAR ROOFS

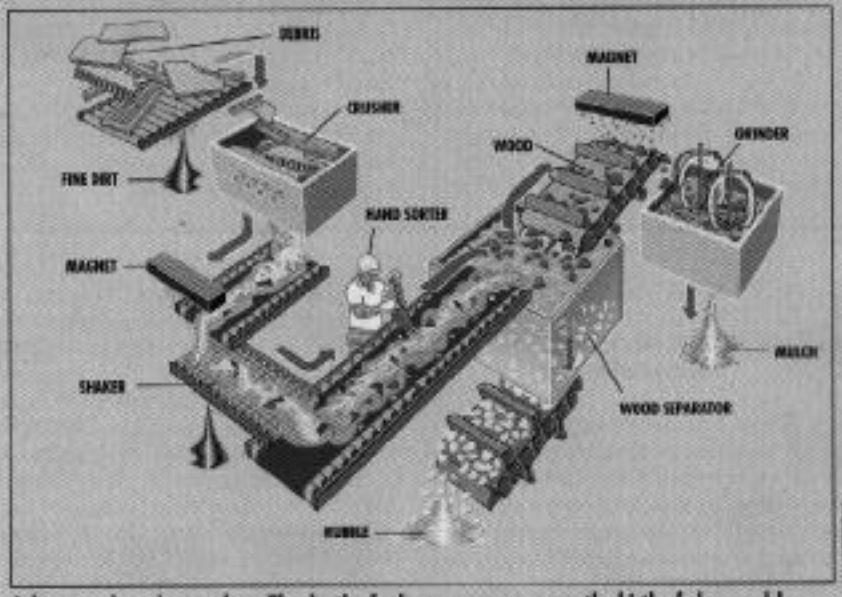
Skilled workers need about a week to build a roof for a single-family house, but unskilled workers can now do the same thing in just a day—and do a better job than the pros.

The Innovative Housing Construction Technology Program at the Massachusetts Institute of Technology has given birth to a new modular roofing system that is composed of two layers of oriented strand board sandwiching a core of fiberglass insulation. The roof is actually a series of panels from two to four feet wide and up to 24 feet long. The panels are manufactured off-site and simply hauled up onto the rafters and nailed in place.

According to John Crowley, a research associate at MIT's department of architectural planning, the university's panel roof approach boasts better insulation ratings (R-38) than conventional roofs and has fewer gaps and defects that result in heat loss.

On top of that, the panel system should be cheaper—between 30 and 50 percent savings over conventional roofs—and won't erode the dwindling supply of old-growth trees because oriented strand board is made from thin strips of lumber glued together. About ten manufacturers have shown interest in the system.—*Jerry Shine*

RECYCLING



Ashes to ashes, dust to dust: The death of a house can now mean the birth of clean mulch, thanks to the creative arrangement of preexisting technology.

THIS OLD HOUSE

A machine devised by a Pennsylvania landfill owner has given the term "home recycling" a new meaning. Taking advantage of the fact that demolished houses are mostly wood and concrete, Ted Laukemann has developed a machine that converts 90 percent of such structures into mulch and rubble. "This thing'll process about 80 tons—about four tractor-trailer loads—an hour," says Laukemann. "We've done a couple of hundred houses and some big hotels in Harrisburg."

Buildings usually contain small quantities of unrecyclable materials, such as carpeting and pipe, that are difficult to separate. After finding commercial machines to smash the debris, Laukemann designed a system to sort the different materials. "There are two sets of magnets, two shakers, one crusher, one tub grinder, one wood separator, and a pump," he says of his recycling machine. "It's very involved."

One part is simple. Laukemann's daughter started a company to sell the mulch, which is clean enough to satisfy state regulators—and cheap enough to entice gardeners.—*Mark D. Uehling*