

village view

by Andrea Leonard

With the price of heating oil at an all-time high, with the coal strike promising higher prices for our most abundant fuel and the inevitable result of higher costs for electricity, and finally, with the probable de-regulation of natural gas prices, harnessing the sun's energy looks more and more attractive.

While many of us hesitate to shell out \$5,000 to \$10,000 for the initial installation on our present houses of solar collectors - collectors that do little to enhance the architectural features of our homes, it's possible to utilize the sun's energy and cut heating bills without spending large sums. By implementing one or more simple and inexpensive methods and devices, we can help ourselves and the nation as well.

Your house is a solar collector as it stands. Whenever the sun shines, it warms every surface its rays touch. Without disposing of your present heating system - a move that might leave your home uncomfortably chilly at times even with a complete solar system installed - you can relieve the system of part of the load - and save fuel.

One of your housewalls faces south or nearly so. In most south-facing housewalls there's at least one window. A well-constructed wooden box with a glazed top and plywood bottom, painted black, attached to the frame of a south-facing window will help warm your house.

Cool air from inside the house will enter the box if the sash is raised a few inches from the bottom. The black surface of the back of the box will absorb a lot of heat. That cold air will warm rapidly and rise to the top of the box.

If the top sash is lowered a few inches, the hot air from the box will flow back into the house while cooler air flows out into the box at the bottom.

Experiments show that, depending on the size of such a windowbox, as much as 50% of a room's heat needs can be supplied with this device when the sun is shining on it. On cloudy days and at night, of course, you'd want to close the sash and rely on your conventional heating system.

You could test this theory by having a black wooden panel fitted to a top window sash, extending nearly to the bottom of the lower sash and right to the top of the top sash, inside the storm window. This would permit both top and bottom sashes to be opened a few inches. If you've a south-facing bedroom window or a south-facing window in another little-used room, or where there's adequate light from other windows in the room, you wouldn't feel you're living in a cave.

Another possibility is a wall collector. Any handy-man can build one to fit any house, but it's particularly well-suited to a part of the house without windows on the south side.

Cover a portion of the south-facing exterior wall with a sheet of glass mounted in a frame, backed with black painted plywood, leaving a couple of inches of airspace between plywood and glass.

Once the location of the frame is chosen, holes near the top of the frame and close to its base would have to be cut in the housewall. This should be done so that the holes can be closed and insulation provided at night and on days the sun doesn't shine.

Air circulation through such a wall collector will keep a room well heated throughout daylight hours even though the outside temperature is well below the freezing point.

Homeowners in cold climates like ours are finding they can not only supplement their heat sources but their pantries with a more costly, but far more interesting and attractive addition.

Greenhouses.

Vegetables as well as flowers will grow in greenhouses, and the solar action through the glass will help heat your house throughout daylight hours.

At considerably less than \$1,000 a do-it-yourselfer can attach a 500 square-foot greenhouse to his dwelling. By "farming" the new addition intensively, the homeowner will more than earn back the construction costs with savings on food and heating bills in the first year.

If the greenhouse isn't used at all for supplementing the larder, it will take several years to pay for itself in savings on fuel bills alone.

That's at today's fuel prices. Since we can expect them to continue to spiral, savings will be realized more quickly as time passes. Of course, the size of the greenhouse determines how much captured solar heat is involved; the bigger, the better.

If you're feeling cramped in your present home and thinking of building on, consider the advantages of heating a new addition with the sun's energy. With proper planning, your remodeling could help supplement heat in other areas of your house.

Start with a concrete floor in a dark color. Brick is nice, too. The floor will capture and hold plenty of solar heat if the windows are planned to allow direct sunlight to strike the floor. Be prepared to use heavy draperies on the windows at night.

Trapping heat and releasing it slowly is the goal of solar energy enthusiasts; that's why color counts. The darker the color, the more heat from the sun is absorbed. This is as true in summer as in winter, and because none of us can afford to paint our houses a different color twice a year, the importance of providing light-colored floor coverings on a dark floor, removing the black windowboxes, and providing shade for south-facing windows, in summer months, shouldn't be overlooked.

In summer, when additional heat is the last thing you'll want trapped inside, cover the dark floor with a carpet or straw rug to reflect rather than absorb heat.

Since summer's sun is more nearly overhead, and winter sun's rays reach us at a lower angle, more of the concrete floor area will be exposed in winter to absorb the sun's heat.

A house that's elongated from west to east will serve more efficiently as a solar collector than a square or rectangular one that runs from north to south. If you're thinking of building a new home, this could be an important consideration in future years when fuel may be even more costly than it is today.

Your house will store heat even on cloudy days; anyone who spends much time out-of-doors appreciates the potential for sunburn whether the sun is out or not. Houses built of concrete or stone absorb solar heat and store it for release during evening hours more efficiently than wooden houses.

Awnings, overhangs, or trellises to support deciduous leafy vines should be used with an eye to the sun's angles at different seasons. Deciduous trees planted to shade south-facing windows keep the house cool in summer while their bare branches allow the sun's rays to do their work in winter.

Are any of these suggestions something you might put to work to help heat your home? It might be worth a try. The savings could be considerable.