



It's less than two years since the Great Energy Crisis brought home to Americans the facts of an impending end to traditional waste in our society.

Although gasoline shortages were apparently contrived by combined efforts of the big oil companies, the shortage of energy resources our nation faces is real enough.

We're all feeling it in our tenderest area -- the pocketbook -- paying higher prices for gasoline and heating fuels; and we'll soon be forced to pay an even higher price when new federal and state gasoline taxes go into effect.

Although none of us likes paying higher fuel bills, starts are being made to improve the energy situation. Experiments are beginning to pay off in some unexpected ways.

One of these concerns a study two industries have conducted to find new energy-saving ways to build homes.

While the joint venture was undertaken in Little Rock, Arkansas, by two local home-building firms and the Arkansas Power and Light Company, its findings are applicable to home construction throughout the country.

Since cooling houses in summer in our southern states is a heavy user of electrical energy, just as heating homes of northern states during the winter months consumes large quantities of oil, gas or electricity, the results are as applicable here as there.

The study, closely monitored by the local HUD-FHA office, (Housing & Urban Development-Federal Housing Authority), involved houses containing 1,200 square feet of living space. The key to reducing heating and cooling bills, it revealed, is wood-frame construction combined with twice as much insulation as is commonly used.

To those of us living in rural or suburban New England where most homes are of wood-frame construction, this is of particular interest.

HUD-FHA insulation standards (which became effective in 1974) require a minimum of 3-1/2 inches of insulation in the exterior side walls of houses framed with 2 x 4 inch wood studs, and six inches of insulation in the ceiling below the roof.

In the Little Rock experiment these specifications were increased to 2 x 6 inch wood studs with six inches of insulation in the side walls and 12 inches in the ceiling below the roof.

In Little Rock, it was found houses of this type of construction use only 39 per cent of the energy for heating and air conditioning as those built to HUD-FHA standards.

Even more impressive are savings realized from construction changes developed at the same time as the changes in insulation.

To begin with, smaller and less expensive heating and air conditioning equipment can be used. This results in a savings of some \$300, initially, almost offsetting the added cost of heavier construction.

The real saving, of course, is realized month-after-month in heating and cooling costs. In Little Rock these savings average 155 per cent, or from \$30.17 a month to \$18.36.

Other economies result from design and construction changes. The 2 x 6 inch wall studs are spaced 24 inches apart instead of the usual 16 inch intervals. Fewer studs are required.

Significant savings in labor are possible by not stapling the

insulation to the wall studs since the thicker insulation fits friction tight between the 2 x 6's.

In addition, the second plate atop the wall framing can be eliminated since roof trusses can be placed directly over the heavier and stronger studs.

All these add up to less expensive construction with no loss of structural strength.

The effort in Little Rock demonstrates ways builders can hold down construction expenses and home-owner heating and cooling costs with only slight changes in building techniques.

In areas of high energy costs, these changes mean significant savings annually. The cost of thicker insulation and larger lumber framing was almost offset by the savings realized in the use of smaller, less costly heating and cooling equipment.

Efforts are underway, nationwide and at all levels of government, to develop insulation requirements for reducing the energy needed to heat and cool public buildings as well as homes.

President Ford has proposed national energy consideration measures to extend the 1974 HUD-FHA insulation standards to all new home construction and to develop insulation requirements for high-rise buildings, as well.

It may be that the HUD-FHA standards will soon be reviewed and revised as a result of the Little Rock study.

The American Society of Heating, Refrigerating and Air Conditioning Engineers is preparing a complex set of insulating standards for residential and high-rise construction at the request of the National Conference of States Building Codes and Standards.

These recommendations of standards could hasten the adoption of improved insulation requirements by state and local building codes.

The National Forest Products Association has conducted tests to compare the performance of wood frame with masonry structures. The results show wood-frame construction requires less energy for heating and cooling buildings than does masonry construction.

A new Energy Conservation report by this association may be obtained by sending .50 to National Forest Products Association, 1619 Massachusetts Avenue, N.W., Washington, D.C. 20036.

It's reassuring to learn of the efforts being made by engineers, scientists, and experts in many fields to do something to conserve the energy resources we still have.

As time passes and people become concerned enough -- only because of the rising costs, perhaps, but still concerned enough -- our industries will respond.

Ways to meet the needs of the country's population -- whether energy needs, food needs, or employment needs -- will be found and developed. It will mean changes in the ways we do things.

Changes have come before; some for the better, some for the worse; people make the necessary adjustments. For more than a century Americans have made adjustments to industrialization at the expense of a stable environment.

The changes we will begin to see coming in the near future will come as a result of long-range planning and foresight, perhaps. Not only because it's economically sound, but also because it's a much healthier way to grow and expand.

These are the kinds of changes we should look for, seek to incorporate into our lives, and welcome with open minds, for without them, survival in the world as we know it becomes a more remote possibility with each passing day.