

2 What Is An All-Seasons Comfort Home?

In 1988, specialists in the fields of energy usage, insulation and building standards got together to try and devise a uniform set of construction guidelines for Kentucky. Their aim was to develop a program in which consumers could enjoy maximum comfort for minimal energy costs. Their recommendations evolved into the All-Seasons Comfort Home program.

It features insulation recommendations designed specifically for Kentucky's fickle climate. In addition, it takes advantage of state-of-the-art building techniques and also features the unmatched efficiency of geothermal heating and cooling.

The men and women who set out two years ago to create a program in the best interest of consumers did their job. Now electric cooperatives are doing theirs—bringing you the message about year-round comfort, year-round convenience and year-round savings.

The All-Seasons Comfort Home is a better value today and tomorrow.

Insulation

The best advice for you when the weather turns cold is to bundle up. The same is true for your house. A good blanket of insulation prevents heat from

being lost through ceilings, walls and floors and it keeps you more comfortable. The same is true in summer. Adequate insulation means your cooling system can operate more efficiently, less expensively and keep you cool.

Insulation material varies, but the most common types are fiberglass batts or loose fill foam or fiberglass that is blown into place by special equipment.

The type you use depends largely on your builder or insulation contractor. What's important to remember is the R-value of the insulation. R-value means the insulating material's ability to block heat loss. The higher the R-value, the better it is in blocking heat loss.

The recommended levels for the All-Seasons program are:

Ceiling — R-38
Walls — R-18
Floors — R-19

"Our Mom Gets Half Her Hot Water Free"

(Thank Goodness)

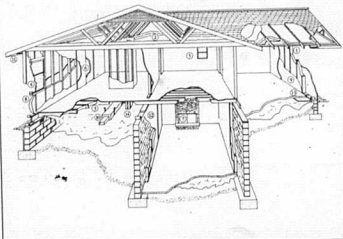
When it comes to kids, hot water is real important!

With a geothermal heating and cooling system, you can heat up to half your hot water free.

Geothermal heating and cooling and hot water heating, part of the All-Seasons Comfort Home program from your electric cooperative.

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1. Walls, R-18
2. Headed basement walls, R-11
3. Floors, R-19 insulation
4. Windows, double-pane or single-pane with storm windows
5. Window area, less than 10% of total floor area
6. Doors, sealed doors with foam core or wood with storm doors
7. Fireplace, tight-fitting glass screen and tight damper
8. All outside openings are sealed or caulked
9. Vapor barrier on inside of wall and all openings sealed
10. Ductwork, R-4 insulation
11. Attic roof ventilation
12. Basement, R-11 wall insulation
13. Slab floor, R-6 perimeter insulation
14. Geothermal heating and cooling systems sized according to heat load/heat gain of home.



Geothermal Heating and Cooling

The other major key to the All-Seasons program is geothermal heating and cooling. It's the most efficient system on the market and higher efficiency means lower operating costs.

How much lower? Consider this: A geothermal system will meet the heating requirements of an 1,800 sq. ft. house for about \$130 per year. Heating the same house with a standard heat pump will cost \$532 and a propane furnace will run \$576. (We should add here that the propane rate is based on 85 cents per gallon—the \$122 price some distributors charged in December, 1989. At that price, it would cost \$647 to heat the home with propane!)

Geothermal systems capture free heat from the earth and transfer it to your home with

clean, safe electricity. A loop of field-filled plastic pipe is buried underground and attached to a heat exchange system. By drawing heat from the constant temperature of the earth, the system works more efficiently than any other—bar none. In fact, most geothermal systems are rated by ASHRAE (American Society of Heating and Refrigeration Engineers) at a minimum 300 percent efficiency. That means for every dollar you spend on fuel, you get three dollars worth of heat.

Geothermal systems are equally impressive when it comes to cooling. The yardstick by which cooling system performance is measured is EER (Energy Efficiency Ratio)

or SEER (Seasonal Energy Efficiency Ratio). The higher the EER or SEER the better. A standard central air conditioning system has an EER of about 8 or 9. A heat pump in the cooling cycle has an SEER of 10. A geothermal system has a SEER of 12—30 to 50 percent more efficient than the central air system.

There's more! Geothermal systems are so efficient, they can heat up to half your hot water absolutely free. For the average family of four, that can represent savings of about \$150 a year—every year you own the home.

Geothermal helps put comfort, convenience and savings right at your fingertips.

Read a good book and other ways to trim your fuel bills

So you've added insulation, turned down the thermostat and water heater, and used the most efficient appliances available. Yet you think the monthly fuel bill is still too high. Maybe it's time to examine your home to identify the real problems.

The first place to look is in the kitchen. If you use an electric range for most cooking, time and money are being wasted because specialty appliances can handle most chores less expensively and more conveniently. Roasting a turkey in the oven for four hours will cost 72 cents. Cooking the same bird in a microwave oven will cost only 12 cents and take less than half the time. Simmering a big pot of vegetable soup on the range for five hours will cost about 60 cents. Cook the soup in a crock pot or slow cooker and you'll save 54 cents.

Why split hairs over a few pennies? Well, those pennies soon add up. The average family of four spends about \$72 each year to cook meals. By making use of microwave ovens and other specialty

appliances in the kitchen, that expense can be cut in half.

While we're in the kitchen, let's look at the refrigerator and dishwasher. About \$9 worth of electricity is used to operate a refrigerator each month. In fact, under normal conditions, refrigerators and freezers use more electricity monthly than any other household appliance. Make sure they are operating efficiently. Check the rubber gaskets around doors. Loose, cracked or broken gaskets allow cold air to escape, so the unit must operate more. Freezers are most efficient when filled. On the other hand, refrigerators need open space inside so cool air can circulate.

The dishwasher has some control over energy usage. In certain older models, almost half of the energy is used during the drying cycle. A few water spots are a small price to pay for the reduced cost. So, just shut the unit off and let the dishes dry naturally.

Next stop, the laundry room. An electric clothes dryer costs almost 30 cents for each hour of operation. Make sure it is

operating efficiently. Check the door gasket. If broken, hot air can escape, which means a longer drying time for a load of clothes. Clean the filter regularly; a lint-covered filter can cut down on dryer efficiency. Follow manufacturer's recommendations for the size load; it isn't very efficient to run through a cycle for a single piece of clothing. By the same token, a load too large will require additional drying time, which costs money.

Final stop, the living room. Most Americans spend more than six hours each day in front of a television, sometimes watching, sometimes not.

On those occasions when the TV set is little more than background noise, why not turn it off and read a book, instead?

A book we highly recommend is the *Home Energy Advisor* published by the University of Kentucky Cooperative Extension Service. It is full of energy saving ideas for the home. Information about the book is available from your county extension agent.

Keep your cool

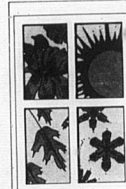
Did you ever wonder why your neighbors' air-conditioning costs are lower than yours? There are a lot of factors, including the amount of insulation the two of you have and personal lifestyle. They may keep the thermostat at 76 during the summer, while you put yours at 70. Obviously, they will use less energy.

But, with all other factors being equal, the efficiency of your central air system will determine who saves money on cooling costs. Cooling efficiencies are expressed as EER (Energy Efficiency Ratio) or SEER (Seasonal Energy Efficiency Ratio). The higher the number, the better. How much better?

The chart below shows how much is saved when cooling an 1,800 sq. ft. home with various cooling systems. The efficiency ratios range from 7.5 — common for standard central air conditioning systems — to 11.5. Equipped with many geothermal systems. As you can clearly see, geothermal cooling saves you money.

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Type system	EER or SEER	Annual Cooling Costs
Sid air conditioner	7.5	\$149.50
Sid heat pump	8.5	\$131.88
High eff. air cond.	9.0	\$124.55
High eff. heat pump	10.0	\$112.80
Geothermal system	11.5	\$ 97.50



Put All-Seasons Comfort to work for you. Just call your electric cooperative for more information.

Savings Are Important Today and Tomorrow

Everybody likes a bargain. Quality is important, too. And with electricity, you get the best of both worlds through dependable, time-saving electrical appliances that do a woman's job around your house for only pennies a day.

But there are ways to make electricity work even better by considering the efficiency of appliances. They might cost a little more immediately, but in years to come, they'll save you money — a lot more than you

might expect! Manufacturers always are improving the appliance's efficiency.

The typical household uses about \$700 worth of electricity to operate lights, refrigerator, freezer, water heater, range, washer and dryer. Add another \$800 for heating and cooling and an average electric bill for the year is \$1,500. However, if the most energy efficient appliances were used in that same household, the bill could be reduced by about \$670!

Building a new home?

"An All-Seasons Comfort Home combines optimum levels of insulation with the efficiency of geothermal heating and cooling.

And you qualify for a \$1,000 rebate from participating rural electric cooperatives.

Call your co-op for more information."

Conn Abbe



Conn Abbe Home Energy Advisor