

## QUESTIONS & ANSWERS

### Smoke Pencils

**Q:** Where can I buy a smoke pencil?—*Jerry Fry, Monterey, Calif.*

**A:** Smoke pencils, valuable for detecting where air infiltrates buildings, can be obtained from National Draeger, P.O. Box 120, Pittsburgh, Pa. 15230 (412) 787-8383. Smoke guns are available from E. Vernon Hill, Inc., P.O. Box 14248, San Francisco, Calif. 94114 (415) 665-6628. These are manufacturers. They can refer you to local distributors. Also, if there are any "house doctors" in your area, they should be able to give you the names of local suppliers of these products.

### Finding Efficient Appliances

**Q:** I'm frequently asked about the energy efficiencies of appliances by those for whom I'm building a house. Usually I suggest they check Consumer Reports or the label on the product. This is pretty poor help.

I have just been asked about energy efficiencies again, this time for domestic water heaters. Can you, will you, or will anyone give me a list of names (without favoritism) of the most energy-efficient electric water heaters? — *M. Felix Marti, Marti Construction, Monroe, Ore.*

**A:** Checking the Dept. of Energy's Energy Guide on each appliance is one way to find the most efficient one, but it can be time-consuming. Several organizations publish compilations of those Energy Guide ratings for certain appliances. A recent arrival is "The Most Energy-Efficient Appliances: Spring 1984," a pamphlet published by the American Council for an Energy-Efficient Economy. It's available from that group (1001 Connecticut Ave., N.W., Suite 530, Washington, D.C. 20036) for \$2. Top-rated heat pump water heaters (the most efficient water heaters and the only kind listed in the pamphlet) include many models from Mor-Flo, Therma-Star Products, E-Tech, Ruud, and Rheem.

Other sources of directories include the Association of Home Appliance Manufacturers, 20 North Wacker Dr., Chicago, Ill. 60606 (312) 984-5800 (refrigerators, freezers, room air conditioners); the Air-Conditioning and Refrigeration Institute, 1501 Wilson Blvd., Arlington, Va. 22209 (703) 524-8800 (central air conditioners); and the Gas Appliance Manufacturers Association, 1901 North Fort Myer Dr., Arlington, Va. 22209 (703) 525-9565 (furnaces, boilers, water heaters). The Department of Energy, Con-

sumer Products Efficiency Branch, Appliance Labeling Section, Washington, D.C. 20585 (202) 252-9127 has fact sheets and information on appliance labeling.

### Log Homes: All Bark?

**Q:** We are planning to build a new home in several years and want our project to be totally successful and energy-efficient. We have always had leanings towards rustic structures and have almost settled on a log building. All the manufacturers of log buildings stress their tremendous energy efficiency. Confused would be describing our state lightly. Have you ever done a study on this type of structure, or compared it with a conventional highly insulated structure?—*David Cartuyvelles, Norwood, Ohio*

**A:** Although log home manufacturers would like the public to believe log homes are energy-efficient, they have not impressed us yet. While any home can be made energy-efficient with enough insulation and tightening up of the envelope, log houses have some built-in inefficiencies.

First, wood by itself is a poor insulator at about R-8 for a 6-inch-thick (average) cedar log wall. Insulation must be added to such a wall even to bring it up to the R-11 level of a standard 2x4 wall insulated with fiberglass batts. Of course you can't add insulation without diminishing some of the log house's original rustic appeal on the inside or outside.

Second, log houses invite air infiltration because they have many yards of between-log gap. It's true that manufacturers have come up with ingenious gasketing that should stop infiltration between logs. But if you're looking for energy-efficiency, why not choose a design that doesn't have such a large infiltration problem to be solved in the first place?

Log homes *are* more massive than lightweight insulated structures, but a National Bureau of Standards study found that the energy they save in the swing seasons (spring and fall) through added mass doesn't amount to much on an annual basis.

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