



# E<sup>3</sup>A: Energy Management for Home

## Steps in the Home Energy Series

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### Mobile homes

Mobile homes can be found throughout Missouri. Their low cost (compared to site-built houses) enables more people to own homes. Unfortunately, about half of existing mobile homes were built with little or no insulation or other energy-efficient features. Many were manufactured before 1976, when a federal housing code was passed requiring mobile homes to be built more efficiently. However, there are many ways to increase a mobile home's energy efficiency that will in turn lower your utility bills and make your home more comfortable. You can do some of these things yourself, but others require the skills of trained weatherization professionals.

### Mobile home construction

The construction process for mobile homes is radically different from that of site-built homes. The floors, walls and roof are built in assembly line fashion to form the home. Manufacturers achieve portability by mounting the home on a steel frame with wheels and using strong but lightweight materials for framing.

First, the floor — complete with water lines, waste lines, ductwork and insulation — is fastened to the steel frame foundation. The floor is protected by a rodent barrier, which is a sheet of heavy cloth or paper, that keeps animals out. Next, the furnace (typically a sealed combustion type) and plumbing fixtures are added, followed by the interior walls. The homes are assembled from the inside out, with the ceiling portion being the last major component.

Once the home arrives at its destination, it must be secured on a level foundation on dry ground with proper drainage. If the home is not level or the ground below too moist, weatherization and repair measures will be ineffective. Enlist the help of a qualified professional for these siting tasks.

### Conservation measures

In the late 1980s, the U.S. Department of Energy sponsored a two-year study to determine the most cost-effective energy conservation measures for mobile homes in cold climates. It identified five measures:

- Sealing air leaks and furnace ducts.
- Tuning up the furnace.
- Blowing insulation into the home's underside (called the belly).
- Installing interior storm windows.
- Blowing insulation into the roof.

With the exception of installing plastic storm window kits (found at many hardware stores), these measures will likely require the skills of trained professionals because of widely varying construction. Although you can easily seal noticeable leaks around your home's windows and doors, these efforts will have little effect on your energy consumption if the big hidden leaks go untouched — leaks which are most easily found using a blower door, equipment commonly used by professional weatherization crews.

If you are on a limited income, you might qualify for free weatherization assistance. Contact your local utility or Community Action Agency for details.

### Do-it-yourself tips

If you cannot enlist professional help, you can still go after some big leaks. Plug holes around chimneys, vents, water pipes and heating system ductwork. Seek out hidden air passageways in closets and cabinets. Make sure the rodent barrier is intact; patch it if

it is torn. Once you have stopped all the big leaks you can find, turn your attention to the little ones, such as around windows, doors, electrical outlets and light switches.

For more information on these and other low-cost energy conservation tips, see the *Top Ten Tips* guide. There are guides on water heaters and storm windows, too.

### **Air quality cautions**

Ensure all combustion appliances — such as furnaces, stoves and water heaters — are in good working order and

are properly vented before working on tightening your home. Failure to do so could lead to the accumulation of dangerous amounts of carbon monoxide in your home. This is another good reason to consult with a weatherization professional before taking on a major weatherization job yourself.

It is also important to regularly use exhaust fans in the kitchen and bathroom to maintain good indoor air quality and minimize moisture problems. Remember to ventilate constantly when using paints and other chemical compounds in the house.

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