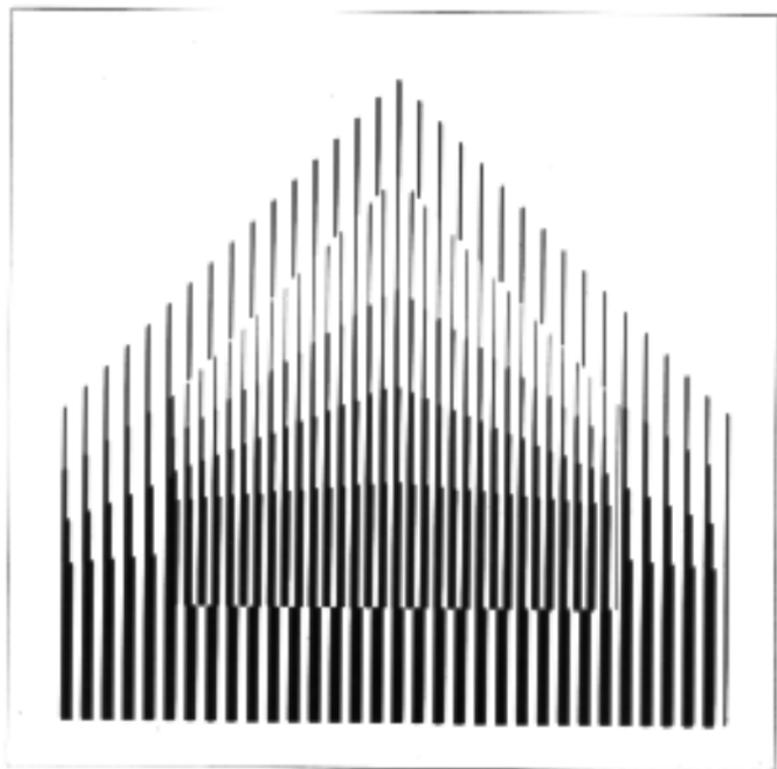


An Owners Guide to Energy Efficiency in Single Family Rental Housing

**Improve Cash Flow
Enhance Property Values
Increase Tenant Satisfaction
Reduce Maintenance Cost and Hassles**



The U.S. Department of Energy and the
U.S. Department of Housing and Urban Development



The DOE-HUD Initiative on Energy Efficiency in Housing

This brochure is a product of the DOE-HUD Initiative on Energy Efficiency in Housing. The Initiative was created in 1990 as a collaborative framework to harness the technical skills of DOE's laboratories and programs for making energy efficiency improvements in Federally-aided housing. This multi-year Initiative supports both the Department of Energy's National Energy Strategy and the Department of Housing and Urban Development's mission to make low- and moderate-income housing more affordable.

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Energy Efficiency is a Good Investment!

As a prospective owner and rehabilitator of rental housing, you have a unique opportunity to improve the energy efficiency of your property while making other necessary improvements.

*There are many good reasons for including energy efficiency in your rehabilitation plans, but probably those most important to you are **saving money and improving the long-term value of your property.***

This brochure is designed to answer some basic questions on energy efficiency and explain how these improvements can be of financial benefit to you as well as your tenants.



What's in it For Me?

It is well known that improving energy efficiency -- in homes, appliances, cars, office buildings, and so forth -- is worthwhile. It means we use less of our limited energy resources, reduce our dependence on foreign oil, improve the national and local economy, and produce less pollution. Today, households use about one-fifth of the energy resources that are consumed in the U.S. each year. By making a nominal investment in energy efficiency, you really can cut energy use significantly.

For most people, however, the bottom line is whether energy improvements are affordable to install and if they really provide the owner with any direct benefits. The short answer to these questions is "Yes" -- as long as you employ appropriate energy-saving measures and don't expect big returns overnight. When considering the economics of energy efficiency, there is both a "simple payback" period, in which the cost of improvements is returned in energy savings, and a life-cycle payback, in which tax-free returns on the investment, in the form of energy savings and increased property value, continue over the life of the measure. It is these life-cycle cost benefits that can provide the most significant, but sometimes overlooked, incentive for pursuing energy efficiency.

Improving the energy efficiency of the rental housing you own will:

Lower Your Fuel Bills

If you pay the cost of utilities, the benefit of lower fuel bills that will result from energy efficiency is obvious. Even if you pass on utility costs to the tenant, keeping fuel bills low is important. For example, your ability to qualify as a HUD Section 8 Rental Assistance Program participant depends on keeping tenant costs within allowable limits. Under the Section 8 program, the tenant can pay no more than 30 percent of his/her income for housing. The tenant's share is calculated by the housing agency based on the 30 percent rule, and includes a portion of the fair market rent for the house plus a set utility allowance. If you are holding your utility costs down, your ability to keep tenant costs within the 30 percent limit will be improved.

Increase Your Property Value

An energy efficient home is more comfortable and less expensive to live in, and therefore more valuable, than a comparable home that is not energy efficient. Energy-saving features can serve as selling points, both to prospective tenants and future buyers. *Remember, while most home improvements enhance property value, only energy efficiency improvements can actually make money for you through lower fuel bills year after year.*

Improve Tenant Satisfaction

Complaints from tenants about draftiness, high utility bills, cold or warm spots, and similar problems can be minimized if basic energy efficiency measures are installed during housing rehabilitation. In addition, the use of space heaters, which increases fire and indoor air quality risks, may be reduced if the home is more comfortable.

Reduce Maintenance Problems and Unexpected Repair Bills

One of the more common maintenance requirements in rental housing is the repair or replacement of furnaces and appliances. By replacing old, marginally effective appliances and heating systems with new, energy-efficient equipment, you will not only greatly improve the energy efficiency of your property, but you will also reduce troublesome maintenance calls and unexpected repair or replacement bills down the road. Market research shows that energy-efficient appliances, soon to be required by law, are not much more costly than less efficient ones.



Which Energy Efficiency Measures are Best?

The best way to find out which measures will provide you with the most "bang for your buck" is to have a trained professional conduct an energy audit of your house. An energy audit will tell you where your major problem areas are and what you should do about them. Audits also sometimes include cleaning, tune-up and testing of the heating system. The best audits will include a "blower door" air seal procedure and an economic assessment to determine the most appropriate and cost-effective measures. Call your local utility company to determine the availability of free or minimal-cost audits. If your utility company does not offer audits, call your state energy office for a list of qualified energy service companies, which will usually perform an audit for \$50 to \$100 — money well-spent.

If you are receiving public assistance for the rehabilitation, you should also consult with the rehabilitation and weatherization specialists at your community development agency. The measures that can be installed will depend on the condition of the housing, the basic structural repairs that must be done, and available funding for the rehabilitation work, among others.

A list of generally recommended energy efficient measures is provided in the following section. Some of these measures are free or are inexpensive to carry out. Some will require a larger up-front investment. All of them, however, have been demonstrated to be cost-effective.



What Can You Do?

Here is a quick reference guide to the cost-effective energy efficiency measures that are briefly described in the succeeding pages. Use this checklist as a guide when

considering energy improvements to your property.

House Weatherization

- Caulk and/or weatherstrip leaky windows and doors
- Seal holes and cracks in walls, floors and ceilings
- Check attic insulation
- Provide attic venting
- Install insulation in floors over unheated crawl spaces or basements
- Add wall insulation
- Consider storm windows and doors
- Use energy-efficient replacement windows

Appliances, Fixtures and Lighting

- Reset water heater thermostat
- Install low-flow showerheads
- Add water heater wrap
- Replace water heater with an energy-efficient model
- Repair leaky faucets and toilets
- Consider use of fluorescent lighting
- Replace old refrigerator with an energy-efficient model
- Examine efficiency of other appliances

Heating Systems

- Maintain existing heating system
- Inspect/repair/insulate ductwork
- Replace old heating system with properly sized, energy-efficient system



House Weatherization

Caulk and/or weatherstrip leaky windows and doors. Install weatherstripping material between window sash and frame and around the top and sides of exterior door frame. Install door thresholds and door sweeps at the bottom of exterior doors. Caulking is a more time-intensive process that is most cost-effective if done yourself, although a contractor may be able to do a better job, particularly if a "blower door" is used to guide the process. To check the condition of your windows and doors, you can make a simple "draft detector" by attaching a piece of tissue paper or light plastic to the end of a coat hanger. On a windy day, hold the coat hanger in front of a suspected leak; movement of the paper indicates air leakage.

Seal holes and cracks in walls, floors and ceilings. Repair large holes with new siding, drywall, plaster, flooring or roofing, along with proper insulation. Also, seal all penetrations through walls, ceilings and floors made for piping, wiring or ductwork with silicone caulk or spray foam. The sill plate along the top of the foundation wall can also be a major source of air leakage. (Avoid using spray foam around window and door frames, since this can cause "sticking" problems when opening and closing.)

Provide attic venting. Good air circulation in the attic will reduce heat build-up during hot weather. Use vent panels under the eaves, and ridge or gable vents, rather than motor-driven fans.

Install insulation in floors over unheated crawl spaces or basements. Insulate these floor areas to R-19, which is about 5-1/2 to 6-1/2 inches of rolled blanket or batt insulation. Cover exposed soil surfaces in crawl spaces with a continuous layer of vapor retardant material.

Check attic insulation. If your winters are cold and your attic currently has less than 5 inches of old insulation, additional insulation should be installed. The proper thickness of the insulation will depend on the climate and the type of insulation you are using; check the manufacturer's instructions for specifics. In