



Public Housing Energy Conservation Clearinghouse News

October 2005

This special e-mail update is brought to you by HUD's Public Housing Energy Conservation Clearinghouse (PHECC). It features news and resources to help public housing authorities manage energy and water costs. Visit the Public Housing Energy Conservation Clearinghouse Website at <http://www.hud.gov/offices/pih/programs/ph/phecc/>.

Disaster Recovery Edition

Housing authorities and residents in the Gulf States and across the country are experiencing the impacts of hurricanes Katrina and Rita. The hurricanes' destruction will contribute to soaring energy prices nationwide. This special update outlines steps that PHAs and residents can take to protect against rising prices.

Energy Price Outlook: Heating Bills Expected to Soar

Heating bills for all fuel types are forecast to rise significantly this winter. Households heating primarily with natural gas can expect to spend about \$350 (48 percent) more, on average, this winter on fuel. Households heating primarily with heating oil can expect to pay, on average, \$378 (32 percent) more this winter. The cost to households heating primarily with propane is expected to rise by \$325 (30 percent), on average, and for electricity, by \$38 (5 percent). View a presentation on [EIA's Winter Fuels Outlook](#).

Insulate Against Rising Prices - Reduce Consumption Now

PHAs should carefully assess the most effective ways to reduce energy use and protect residents against rising prices. Consider these immediate steps for improving energy efficiency:

- Seal air leaks around windows, doors, plumbing and electrical penetrations.
- Tune-up heating systems, check for duct leaks.
- Reduce water heater temperature to 120 degrees F.
- Turn down thermostats in unoccupied areas. Check programmable thermostats for winter settings.

PHAs are encouraged to use [energy performance contracts](#) for energy-saving upgrades and to implement self-financed [energy conservation measures](#). Additional energy efficiency measures may include the following:

- Check for recommended insulation levels.
- Install programmable thermostats.
- Install energy-efficient lighting.

Find more tips for immediate and long-term measures to reduce energy consumption on the PHECC Website: <http://www.hud.gov/offices/pih/programs/ph/phecc/index.cfm>.

PHAs are encouraged to work closely with their State Energy Offices for efficiency solutions and potential funding resources tailored to their location. PHAs can explore the availability of [weatherization funding to implement energy conservation measures](#).

Empower Residents to Reduce Their Energy Use

In addition to the projected rise in energy prices, temperatures are projected to be 3.2% colder than last winter. The resulting increased heating cost poses a heavy burden on low-income Americans. Arm your residents with energy-saving tips to minimize the impact of rising energy costs. Please print the flyer from the [PHECC Resident Education page](#), post it in common areas and distribute it to your residents. The flyer is available in both English and Spanish.

Operate Efficiently

Proper operations and maintenance (O&M) is an essential part of any successful energy management program. Often, PHAs can save 10 to 25 percent of the energy used in their developments by improving O&M practices at little or no cost.

PHECC's [Cost-Reduction Toolbox](#) lists the key elements of a good O&M program. One of these key elements is training. HUD is offering a free one-day course for Multifamily Building Operators. The course will cover the concepts of the whole building systems approach, energy analysis, and basic steps that can be taken to save on energy usage and maintenance costs. The course will be held in Boston, Chicago, and Denver. View this [training flyer](#) to learn more.

Improve Efficiency, Durability in Renovation, Construction

The PHECC Website provides information on improving disaster-resistance, energy efficiency and durability in construction and renovation. The following information will assist all PHAs-and especially those in the Gulf States-to construct more energy-efficient and durable buildings.

Design It Right

Specify efficiency and durability from the start, ensuring that new designs incorporate current best practices. Several free publications can help.

The HUD Partnership for Advancing Technology in Housing (PATH) publication ***Durability by Design*** provides clear guidance for constructing durable buildings, including diagrams for gutter design, weather barrier construction, window and roof flashing, insulation and more. It shows how basic design features like roof overhangs can protect against water infiltration and also reduce solar heat gain in the summer, thereby improving comfort and reducing energy use. Simple steps to improve energy efficiency and durability, such as thorough air sealing, also protect against unwelcome pests like termites, roaches and mice. [Download the publication](#).

The Department of Energy's Building America best practices guides detail techniques for durable and energy-efficient construction that can save 30% on energy bills in hot-dry and hot-humid climates. This publication has special sections for builders, designers, trades and others:

Design to Minimize Flood Damage

- Install HVAC blowers, electrical receptacles and water heaters at elevated locations
- Consider the use of back-flow preventers to reduce risk of sewer backup
- Do not use moisture-sensitive building materials and finishes below the first above-grade floor

— *Durability by Design*

- *Volume 1: Builders and Buyers Handbook for Improving New Home Efficiency, Comfort, and Durability in the Hot and Humid Climate, [available online](#).*
- *Volume 2: Builders and Buyers Handbook for Improving New Home Efficiency, Comfort, and Durability in the Hot-Dry and Mixed-Dry Climates, [available online](#).*

PHAs can also download the HUD publication ***A Builder's Guide to Marketable, Affordable, and Durable Entry-level Homes (MADE) To Last***, which includes preliminary home plans. [This publication is available online](#).

Reach for the ENERGY STAR®



If you can build an energy-efficient home for about the same price as a typical home, why wouldn't you? By building to ENERGY STAR specifications, PHAs will improve comfort and indoor air quality while reducing energy use. The average ENERGY STAR qualified home saves more than \$500 per year in utility bills.

PHAs should always purchase ENERGY STAR qualified appliances and equipment when they are cost-effective. These products incorporate advanced technologies that use 10%-50% less energy and water than standard models. Incorporating ENERGY STAR reduces utility bills and avoids pollution. Learn more at www.energystar.gov.

When buying refrigerators, consider purchasing in bulk to reduce up front cost. See PHECC's [ENERGY STAR Bulk Purchasing for HUD](#) to set up a bulk purchase. Through this initiative, some ENERGY STAR suppliers have agreed to provide housing authorities with a discount on bulk purchases of ENERGY STAR qualified products.

Guard Against Wind and Water

The PATH program's evaluation of buildings hit by hurricanes uncovered some surprising results:

- The greatest damage was caused by water infiltration, not catastrophic structure failure.
- Wind damage accounts for only a fraction of the destruction.

Basic construction strategies, like outward-swinging doors and baffled ridge vents, limit wind-driven water intrusion. Wind resistance can be improved with hurricane straps, proper nailing schedules, secondary roof covering, storm shutters and other simple steps. [Learn about these strategies](#).

5 Steps to Improve Disaster-Resistance of Existing Buildings

Strengthen existing buildings to minimize damage from wind and water:

1. Install hurricane shutters or impact resistant glazing
2. When replacing shingles secure roof sheathing to trusses
3. Reinforce garage doors
4. Strengthen exterior doors
5. Reinforce gable trusses

[Read more.](#)

Choose Technologies and Materials Carefully

Several proven technologies can speed the rehab process, including panelized or modular systems, manifold plumbing systems with flexible piping, and air admittance valves. They also increase a building's energy efficiency and durability. [Find technologies to speed the construction process.](#)

In flood-prone regions, seek building materials that:

- Absorb little or no moisture
- Dry without long-term damage
- Are assembled with minimal or no voids
- Integrate insulation that does not absorb moisture

Materials like fiber-cement siding withstand flood damage more effectively than wood-based products and are also termite resistant. Spray polyurethane foam insulation is an effective alternative to fiberglass batts because it resists moisture and air-seals the walls, further increasing efficiency.

Before choosing materials for rebuilding, read the results of PATH's field tests of flood-resistant materials, performed by Oak Ridge National Laboratory. [The study is available online.](#)



This affordable home in Florida withstood the damage of Hurricane Charley in 2004. It was built with fiber-cement-faced structural insulated wall panels and survived 145 mph winds. The insulated panels are also highly energy efficient.

Protect Construction in Progress

If a hurricane approaches during construction, protect your site. Stop processes that severe weather is likely to damage, such as window installations, housewrap, or landscaping. Complete tasks that will likely prevent damage, such as concrete work, closing in a building, or filling in foundation excavations. [Read more on ToolBase.](#)

Recover from Flood Damage

Think that punching holes in the wall after a flood will promote drying? Think again. Poking holes in the walls does not help the drying process and could disturb lead-based paint (see sidebar). Follow guidance in the American Red Cross's *Repairing Your Flooded Home* on when and how to re-enter a home after a flood, and how to assess the damage. [The guide is available online.](#)

Encourage airflow and promote drying throughout the building by opening windows, interior and exterior doors, crawl space vents and access doors, attic access panels, bath and kitchen cabinet doors and drawers.

Any material or surface that has been wet or near something wet is a likely candidate for mold growth. Absorbent materials such as ceiling tiles, drywall, fiberglass batt insulation, and carpet that become moldy may have to be replaced. The longer the material was wet, the more likely it will need to be discarded.

Do Not Disturb: Lead, Asbestos

When renovating or deconstructing buildings, be aware of hazards from asbestos and lead-based paint. Asbestos was used in thermal insulation and floor tiles before 1980; any home or multifamily building built before 1978 may contain lead-based paint. Lead and asbestos can cause serious health problems if inhaled or ingested. [Follow HUD regulations for lead-based paint abatement.](#)

Asbestos that is kept intact and properly sealed will not pose a danger. If the material is in good condition, leave it alone. If the material is even slightly damaged, do not touch or move the material yourself. Call a professional to perform this work. [EPA provides guidance for hiring an asbestos professional.](#)

Remove water-soaked materials from the building. Salvageable materials should be spread to dry in a carport or well-ventilated garage. Unsalvageable material should be moved away from the building to a debris pile.

Wash mold off hard surfaces with detergent and water and dry completely. Be aware that exposure to mold can occur during cleanup. To minimize exposure, consider using a protective mask or respirator, wearing rubber gloves and taking breaks in a well-ventilated area. [Find more mold resources on the EPA's Website.](#)

Do not turn the power back on until a qualified electrician has inspected the electrical equipment. If you see frayed wiring or sparks when you restore power or detect a burning odor, immediately shut off the electrical system at the main circuit breaker. Consult your utility company about using electrical equipment, including power generators. Do not connect generators to a building's electrical circuits without the approved, automatic-interrupt devices.

Generator Safety

Always keep generators outdoors in well-ventilated spaces. Never use a generator in a basement, garage, or even outside near an open window, which can cause carbon monoxide to spill into a home. Install carbon monoxide detectors to protect residents from health hazards.

Make the Most of Existing Materials

Due to the scale of the flooding and wind damage from recent hurricanes, many buildings will have to be demolished. Before looking for a wrecking ball, consider whether any materials can be salvaged. Deconstruction saves energy and money by avoiding the production, delivery and installation of new materials. Many materials can be salvaged during deconstruction, from architectural components having historic and craft value to millwork; bathtubs and sinks; studs, beams, joists, decking and flooring; and bricks, block and tile. If these materials are clean and sound, consider harvesting and reusing them in another project or selling them to a materials exchange. [Learn more.](#)

Find additional [resources from the Building Deconstruction Consortium.](#)

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