

# Seal Up and \$ave

## Tuning Up a Home's Performance - Fixing a Cold, Drafty House

No matter where one starts, the elements of home energy efficiency are connected. Drafty doors, walls and leaky attics are letting air out of a household's budget as homeowners pay the price to wrangle the warmth in the winter (and cool in the summer) that freely escapes their homes. These homes lack a good thermal envelope (well insulated, air-resistant perimeter between the inside air and outside air). Often homeowners resign themselves to high bills as the price to pay for a comfortable home ... without recognizing the benefits of weatherization.

Tuning up a home's performance provides the opportunity to improve energy efficiency, which translates to savings.

Recognizing the need for a more energy-efficient home, one Monmouth County couple took the necessary steps to make their home more efficient and comfortable. Joanna and Anthony D., residents of the Shark River Hills community in Neptune, took a whole-house approach to their home's performance, starting with a home energy audit, to assess how much energy their home was consuming and to evaluate what measures they could take to improve the overall efficiency of their home.

## One Couple's Introduction to Energy Efficiency

"The nearly 20-year old furnace in our three-story townhouse was original to the home. As we were thinking about replacing our furnace, we wondered what other energy-efficiency measures needed to be addressed," Joanna said. The couple realized that other potential problems might make any upgrades to their natural gas equipment counterproductive. That prompted the couple to have a Home Performance with ENERGY STAR® (HPwES) comprehensive audit performed by a certified home energy auditor before simply replacing their home's HVAC equipment.

The audit identified potential savings from planned measures as well as comprehensive improvements that would yield the best results. A blower door test measured the extent of leaks in the home's envelope and an infrared camera revealed hard-to-detect areas of air infiltration and missing insulation throughout the home. In a nutshell, the audit helped the couple assess how much energy their home was losing and evaluated what actions they could take to improve efficiency. The audit revealed that recommended energy-efficiency measures would yield more than 30 percent energy savings.

"I often complained to my husband that the house was drafty in the winter and too warm in the summer. There were uneven temperatures between rooms. I would be hot upstairs and he would be wearing a sweater to keep warm downstairs. Not to mention that the heating and cooling systems ran constantly," Joanna noted.



*"The energy-efficiency measures we implemented are paying for themselves."*

*Joanna and Anthony D. - Neptune, N.J.*

### Challenge:

*An aging furnace and uneven temperatures throughout the house made the home uncomfortable and resulted in high heating and cooling bills.*

### Solution:

*Joanna and Anthony D. of Neptune implemented seal up and insulation measures to improve the overall energy efficiency of their home.*

### Result:

*A year later, the couple realized nearly 34.3 percent overall energy savings while increasing the comfort of their home and creating a healthier indoor environment.*

## Seal Up and Insulation: The Key to Tuning Up a Home's Performance

The couple was surprised to learn that heat was escaping from places they least suspected, such as the high hats in their bathroom, which they sealed up.

The audit also revealed that insulation throughout the home had broken down over the years and was getting into the furnace and, subsequently, the air. "This was a sick house," Joanna stressed. In fact, over the past few years she found herself faced with increasing asthma attacks. "Never did we think it was the insulation." Joanna and Anthony quickly addressed the problem, "we had cellulose insulation blown into our attic."

Seal up and proper insulation can improve overall energy efficiency, improve durability, increase comfort and create a healthier indoor environment. A year later, Joanna reported that her health and comfort had vastly improved. Once the insulation and seal up were complete, the homeowners installed a 98 percent AFUE high-efficiency natural gas furnace and a 96 percent high-efficiency natural gas water heater. ENERGY STAR qualified heating equipment can be up to 15 percent more efficient than standard models.

## The Affordable Means to a Whole-House Approach

To help make the implementation of energy-efficiency measures more affordable, the couple took advantage of New Jersey Natural Gas' (NJNG) 10 year, fixed 0% APR On-Bill Repayment Program (OBRP)<sup>†</sup>. Homeowners who take a whole-house approach to energy efficiency with HPwES may receive up to \$5,000 in rebates and borrow up to \$10,000 with NJNG's OBRP for the approved costs of HPwES eligible home improvements. <sup>††</sup>Taking into account total rebates and incentives, Joanna and Anthony's monthly payments are \$83.33 for all their upgrades. "The energy-efficiency measures we implemented are paying for themselves," the couple emphasized.

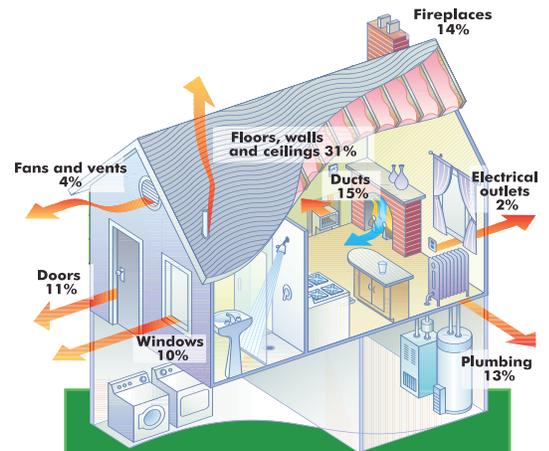
## The Results Pay Off

"Our home is much more comfortable," the couple reported. "In fact, the furnace does not run as often as it used to. And the insulation has quieted the house." The couple estimates they yield total energy savings of approximately 35 percent following the implementation of their energy-efficiency measures. Joanna and Anthony are finally comfortable in their home ... gone are the cold, drafty winter nights and higher energy bills.

<sup>†</sup> For complete terms and conditions of NJNG's On-Bill Repayment Program, visit [www.savegreenproject.com](http://www.savegreenproject.com).

<sup>††</sup> For complete terms and conditions of HPwES benefits and incentives, visit [www.njcleanenergy.com/residential/programs/home-performance-energy-star/benefits-and-incentives](http://www.njcleanenergy.com/residential/programs/home-performance-energy-star/benefits-and-incentives).

## How Heat Escapes



Areas that leak air into and out of your home can cost you a lot of money. The areas listed in the illustration above are the most common sources of air leaks.



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