

DOE Building America Partnership with Habitat for Humanity



The U.S. Department of Energy's five Building America teams have provided energy analysis, hands-on training, and building-science recommendations to Habitat for Humanity International and more than 30 of its domestic affiliates. This partnership, formed in 1995 at Habitat's Environmental Initiative Kickoff, has brought Building America into the design, construction, and evaluation processes of more than 600 Habitat homes in 16 states.

When working with Habitat affiliates, Building America researchers strive to develop energy efficiency packages that can be easily implemented as standard design and construction strategies that also maintain or improve durability, indoor air quality, and moisture control. Building America recommendations to Habitat align with the need to work with equipment and techniques that are

- volunteer friendly,
- readily available in today's market place,
- proven and cost effective,
- maintainable using currently available service procedures.

Habitat recently adopted ENERGY STAR® as a Construction Best Practice and many affiliates have built ENERGY STAR homes, which save 30% heating, cooling, and water heating energy use.

Some, such as the affiliates in Pittsburgh (Pennsylvania), Lakeland (Florida), and Alachua County (Florida) have achieved the higher Building America goal of saving 30% of whole house energy use. A few affiliates have built demonstrations of what the future may hold for all housing: Metro Denver (Colorado) and Loudon County (Tennessee) affiliates have built zero energy homes that produce about as much energy as they use. Readers can find out more about these projects at www.buildingamerica.gov on the "Affordable Housing Research" page.

Building America's systems engineering approach supports two of Habitat's prime goals: building affordable housing and eliminating poverty housing. By making homes energy efficient, affiliates are making them more affordable to operate. By improving building-science details related to moisture movement, heat gain, and ventilation, affiliates are striving to build homes that will last for generations.

Habitat affiliates working with Building America generally adopt an energy package that combines equipment efficiency (heating, cooling, water heating, lighting and appliances) and load reduction (improved insulation and air-sealing details, improved windows, and high-quality duct installation). Building America researchers then work with the affiliate to refine their strategies for moisture management, ventilation, and excellent indoor air quality.

Habitat Resources

Examples of ENERGY STAR packages (30% savings in heating, cooling, and water heating energy use) for typical Habitat construction are available at www.baihp.org on the "Case Studies" page. Newly developed, climate-specific packages to achieve 30% *whole house* energy savings are available from Janet McIlvaine, Building America's liaison to Habitat.

Energy analysts from many different organizations, including Building America and DOE laboratories, have worked with Habitat International to develop a variety of Habitat-specific energy bulletins, fact sheets, and construction checklists. These are

A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.

Research and Development of Buildings

Our nation's buildings consume more energy than any other sector of the U.S. economy, including transportation and industry. Fortunately, the opportunities to reduce building energy use—and the associated environmental impacts—are significant.

DOE's Building Technologies Program works to improve the energy efficiency of our nation's buildings through innovative new technologies and better building practices. The program focuses on two key areas:

• Emerging Technologies

Research and development of the next generation of energy-efficient components, materials, and equipment

• Technology Integration

Integration of new technologies with innovative building methods to optimize building performance and savings

For more information contact:

EERE Information Center
1-877-EERE-INF (1-877-337-3463)
www.eere.energy.gov



U.S. Department of Energy
**Energy Efficiency
and Renewable Energy**

An electronic copy of this publication is available on the Building America Web site at www.buildingamerica.gov

available through Habitat's Department of Construction and Environmental Resources and on *PartnerNet*. Building America researchers also participate in Habitat training at conferences and fast-paced "blitz" builds, including the Jimmy Carter Work Project.

Habitat affiliates who want to partner with Building America's should contact Janet McIlvaine, Building America liaison to Habitat for Humanity at 321-638-1434 or via e-mail at janet@fsec.ucf.edu.

Visit our Web sites at:

www.buildingamerica.gov

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