



Affordable Homes rise to DOE's Builders Challenge in Brownsville, Texas

The U.S. Department of Energy's (DOE) Building America program is a private/public partnership that develops energy saving solutions for new and existing homes. Building America research teams work with industry leaders to demonstrate that 30-50% energy savings can be achieved in community scale, production pace construction, often with improved indoor air quality, durability, and comfort, at little or no first cost. This is particularly important in the affordable housing sector.

Building America industry partner, the Brownsville Affordable Homeownership Corporation (BAHC) in conjunction with the City of Brownsville, Texas has undertaken a project to build 14 affordable houses that meet the U.S. DOE's Builders Challenge. Launched in February of 2008, the Builders Challenge encourages and recognizes builders that produce high performance homes – defined by achieving an E-Scale (same as HERS Index) of 70 or below and meeting other specifications and performance criteria, further described at: <http://www1.eere.energy.gov/buildings/challenge/>

The Building America Industrialized Housing Partnership (BAIHP), one of the BA research teams, provided simulation analysis, recommendations, and worked with BAHC to identify a way to meet their Builders Challenge goal within the context of their established construction practices.

BAIHP contracted a local (Brownsville TX) certified home energy rater, Chris Carroll of Carroll's Inspection Services, to carry out the necessary training, inspections and testing to assist BAHC and their builder, Bougambilias Construction, in implementing the package of recommendations. To date (May '08) two houses have been rated, scoring HERS indexes of 70 and 69, meeting the HERS Index requirement of the DOE Builders Challenge. The homes feature:

- 1062-1144 square feet, single story, slab on grade
- Single family detached dwellings
- Wood frame construction
- 85% or more fluorescent lighting
- 100% tile floor (thermal mass)
- SEER 16 Air Conditioner
- Electric resistance heating (*very small heating load*)
- Manual J mechanical system sizing
- ENERGY STAR refrigerator
- R-30 or R-44 attic insulation
- R-13 Wall Insulation
- Low-E windows
- Leak-free duct work, sealed and tested to ensure $Q_{n,out} < 0.03$
- Tight building envelope, thermal bypass inspection and tested to ensure natural ach < 0.35
- Radiant Barrier Decking
- HERS Index = 69-70

More BAIHP case studies: <http://www.baihp.org/casestud/index.htm>



One of 14 Affordable Homes in Brownsville, Texas that Meet DOE's Builders Challenge



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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
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