



## BUILDING AMERICA TOP INNOVATIONS HALL OF FAME PROFILE

# Building America's Top Innovations Propel the Home Building Industry toward Higher Performance

Building America research has resulted in over 30 major innovations that are critical to high-performance new and existing homes. Building America teams have directly helped deliver over 42,000 high-performance new homes, working with more than 300 production home builders. Over 325,000 industry stakeholders have accessed Building America guidance in the last four years alone. As a result, the housing industry is actively engaged in a substantial market transformation process to exponentially higher performance homes. This includes energy codes that are now 30% more stringent than six years ago, over 150,000 whole-house retrofits with Home Performance with ENERGY STAR, over 1.3 million ENERGY STAR-certified homes, and thousands of zero net-energy-ready homes on the horizon with DOE Challenge Home.

*Innovations sponsored by the U.S. Department of Energy's (DOE's) Building America program and its teams of building science experts continue to have a transforming impact, leading our nation's home building industry to high-performance homes.*

The U.S. home building industry represents a significant opportunity for energy savings, accounting for nearly one-fourth of U.S. energy consumption, but the industry as a whole has been slow to adopt new energy-saving technologies. This is largely due to the industry's unique disaggregation, with thousands of small business owners lacking adequate resources and capabilities to invest in research and development. DOE established the Building America program in 1995 to address both the huge energy-saving opportunity and the critical research gap associated with high-performance new and existing homes. Building America research results provide leading-edge builders with the technical guidance they need to transform their homes to 30% to 50% above minimum code and even to zero net-energy performance. Similarly, Building America know-how is guiding home performance contractors to routinely achieve whole house retrofit reductions in energy consumption of 30% or more.

Building America laboratory and field research has yielded critical proven performance that has paved the way for continually more stringent building codes, standards, and voluntary labeling programs (e.g., ENERGY STAR and DOE Challenge Home). Articles, guides, and web-based tools based on Building America research are helping production builders up their game to meet these new challenges. In every facet of the home construction and retrofit industry, Building America-sponsored innovations have helped encourage housing industry adoption of high-performance techniques and technologies. As a result, the U.S. housing industry has dramatically increased the energy efficiency of its product, while improving comfort, air quality, and durability, and without sacrificing affordability.

Building America is now telling this important story by selecting more than 30 game-changing legacy achievements for the Top Innovations "Hall of Fame." In years to come, new Top Innovation Awards will be presented annually for the latest and greatest Building America research results and the prior year's Top Innovations will be added to the "Hall of Fame." It is our hope that shining a light on these exceptional program accomplishments will help demonstrate the value of investing in high-performance home research and development and guide the industry in its move toward more energy-efficient, healthier, and longer lasting homes.



**BUILDING AMERICA  
TOP INNOVATIONS**

*Recognizing Top Innovations  
in Building Science*

## A Snapshot of Top Innovations Hall of Fame Winners

Here are a few of the nearly three dozen Building America top innovations recognized so far.



Building America research in the lab and in the field helped identify which high-R-value wall assemblies really perform at R-30 or higher.



Thanks to Building America's emphasis on quality assurance and testing, many builder partners have reported cutting their callback rates 50% or more.



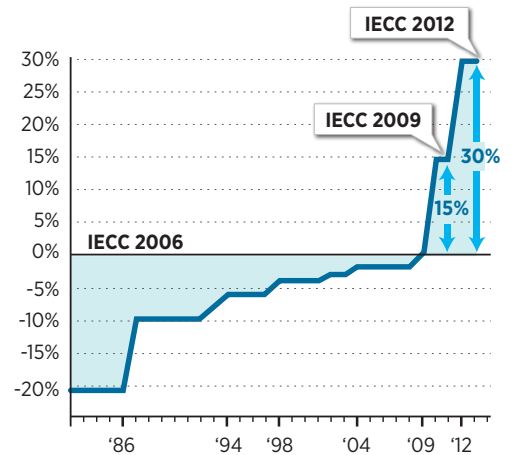
In neighborhood after neighborhood, builders participating in Builders Challenge (now DOE Challenge Home) and Building America research projects have outsold their competitors with faster sales, even during the recession.



Building America's whole house approach and energy analysis software help builders to put together a package of measures that achieve high-performance goals with minimal or no increased cost to the builder. Moreover, utility savings outweigh increased mortgage costs to reduce home ownership cost starting at move-in day.

## Building America innovations cover every facet of the building industry

1. **Advanced Technologies and Practices**
  - 1.1 Building Science Solutions
  - 1.2 Energy-Efficient Components
  - 1.3 Assured Health, Safety, & Durability
2. **House-as-a-System Business Case**
  - 2.1 New Homes with Whole-House Packages
  - 2.2 Existing Homes with Whole-House Packages
  - 2.3 Program Support
3. **Effective Guidance and Tools Solutions**
  - 3.1 High-Performance Home Solutions
  - 3.2 High-Performance Home Metrics
  - 3.3 Research Tools
4. **Infrastructure Development**
  - 4.1 Educating Professionals
  - 4.2 Recognize Value in Transaction Process
  - 4.3 Informing Codes & Standards Process



As building energy codes get tougher, Building America helps production builders meet and exceed the new requirements, with innovations like climate-specific builders guides.