***Building America Update – February 8, 2013***

This announcement brings you the latest information about news, activities, and publications from the U.S. Department of Energy's Building America program. Please forward this message to colleagues who may be interested in subscribing to future *Building America Update* newsletters.

## Introducing the Solution Center: Easy Access to World-Class Research

Be sure to check out the new Building America Solution Center, an online resource that links you to fast, free, and expert building science and energy efficiency information based on Building America research results. The user-friendly interface delivers a variety of resources for key construction topics such as air sealing and insulation, HVAC components, windows, indoor air quality and much more. Find helpful tools including: contracting documents and specs; installation guides; codes information; CAD drawings; how-to videos; case studies; and technical reports.

## Build Knowledge and Teamwork at 2013 RESNET Building Performance Meeting

Mark your calendar for the 2013 RESNET Building Performance Conference on February 27-March 1, 2013, in Orlando, Florida—the premier national forum on home energy ratings, energy modeling, and energy efficiency of homes. This year's theme is *Building Knowledge, Building Teamwork* and includes a DOE Challenge Home/Building America Track that features presentations on the Challenge Home, Top Innovations, the Solution Center, and DOE activities. In addition, the RESNET meeting will be co-located with the Air Conditioner Contractors of America and Indoor Air Quality Association, expanding the opportunity to network with industry peers.

## Register Now for the 2013 Technical Update Meeting

There is still time to register for Building America's 2013 Technical Update Meeting scheduled for April 29-30, 2013, in Denver, Colorado. This meeting will showcase Building America's world-class building science expertise for high performance homes, presented in a dynamic format of expert presentations, panel discussions, and audience participation. This meeting is free and open to the public. Space is limited, so please register as soon as possible!

## "Enlightened Engineering" Article Highlights Latest Research from Building America

See the January 2013 issue of *GreenBuilder* magazine for an article outlining the latest recommendations from Building America experts on key building and remodeling challenges facing the industry today. This guidance is the result of dynamic discussions held at the Summer 2012 Building America Technical Update meeting, which brought together research experts and industry partners to identify the current best solutions for high performance homes. The article addresses topics such as super-efficient building envelopes, HVAC, hot water systems, insulation, green codes, and ventilation—and defines key issues, Building America guidance, and future research goals.

## New Publications from Building America

The Building America Publications Library offers an extensive collection of technical reports, measure and strategy guidelines, case studies, and other resources to help you boost energy efficiency in new and existing homes. Here is a sampling of some of our most recent publications:

Strategy Guideline: Partnering for High Performance Homes

High performance houses require a high degree of coordination and have significant interdependencies between various systems in order to perform properly, meet customer expectations, and minimize risks for the builder. For high performance homes, traditional partnerships need to be expanded to all members of the project team including trades, suppliers, manufacturers, HERS raters, designers, architects, and building officials, as appropriate. This guide is intended for use by all parties involved in the design and construction of high performance homes. It serves as a starting point and features initial tools and resources for teams to collaborate to continually improve the energy efficiency and durability of new houses.

High-R Walls for New Construction Structural Performance: Integrated Rim Header Testing

Two prominent approaches within the Building America Program to construct higher R-value walls include use of larger dimension framing and exterior rigid foam insulation. These approaches have been met with some success; however, for

many production builders, where the cost of changing framing systems is expensive, the changes have been slow to be realized. In addition, recent building code changes have raised some performance issues for exterior sheathing and raised heel trusses, for example, that indicates a need for continued performance testing for wall systems. The testing methods presented in this report evaluate structural rim header designs over openings up to 6 ft wide and applicable to one- and two-story homes.

Assessing the Energy Savings of Tankless Water Heater Retrofits in Public Housing

This report describes the methodology, analysis, and findings from a case study of a 110-unit retrofit of gas tankless water heaters in a hot/humid climate in Alachua County, Florida. The gas-fired tank type water heaters in the housing units were replaced with gas-fired tankless water heaters as part of a federal program that targeted reduced energy use in public housing.

Guide to Closing and Conditioning Ventilated Crawlspaces

This how-to guide explains the issues and concerns with conventional ventilated crawlspaces and provides prescriptive measures for improvements that will create healthier and more durable spaces. The methods described in this guide are not the only acceptable ways to treat a crawlspace but represent a proven strategy that works in many areas of the United States. The designs discussed in this guide may or may not meet the local building codes and as such, will need to be researched before beginning the project.

External Insulation of Masonry Walls and Wood Framed Walls

The use of exterior insulation on a building is an accepted and effective means to increase the overall thermal resistance of the assembly that also improves water management and increases air tightness of building assemblies. For thin layers of insulation (1 in. to 1½ in.), the cladding can typically be attached directly through the insulation back to the structure. For thicker insulation layers, furring strips have been added as a cladding attachment location. This approach has been used in the past on numerous Building America test homes and communities (both new and retrofit applications), and has been proven to be an effective and durable means to provide cladding attachment. However, the lack of engineering data has been a problem for many designers, contractors, and code officials. This research project developed baseline engineering analysis to support the installation of thick layers of exterior insulation on existing masonry and frame walls. Furthermore, water management details necessary to integrate windows, doors, decks, balconies and roofs were created to provide guidance on the integration of exterior insulation strategies with other enclosure elements.

Additional reports published recently are:

- Hybrid Wall Evaluation for Ten New Construction Homes in Wyandotte, Michigan
- Expert Meeting Report: Optimized Heating Systems Using Condensing Boilers and Baseboard Convectors
- Comfort, Indoor Air Quality, and Energy Consumption in Low Energy Homes
- Energy Efficient Crawlspace Foundation Retrofit: Mixed Humid Climate
- Short-Term Test Results: Multifamily Home Energy Efficiency Retrofit
- Byggmeister Test Home: Analysis and Initial Results of Cold Climate Wood-Framed Home Retrofit
- Cold Climate Building Enclosure Solutions
- High-R Walls for New Construction Structural Performance: Wind Pressure Testing
- Hygric Redistribution in Insulated Assemblies: Retrofitting Residential Envelopes Without Creating Moisture Issues

Visit the Building America Publications Library to access the entire catalog of publications to help improve efficiency of new and existing homes.

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