

## 2014 RESNET Building Performance Conference Energy Smart Builders Track Sessions



### **HERS Ratings as Compliance Option in the 2015 International Energy Conservation Code – Builders' Perspectives**

The International Code Council adopted an energy rating index as a performance compliance option of the 2015 International Energy Conservation Code. The new option sets maximum HERS Index Scores on a regional basis and also requires that a builder must meet the mandatory envelope requirements of the 2009 IECC. The new performance option will serve to both increase the energy performance of new homes and give builders more flexibility in complying with the 2015 version of the International Energy Conservation Code. This session will be a roundtable of builders on the implications of the new provision.

Presenters: Jacob Atalla, KB Home, Jim Petersen, Pulte Group & Dean Potter K. Hovnanian Homes

### **Extend and Amend – Breathing New Life into the Federal Energy Efficient New Homes Tax Credit**

The \$2,000 tax credit for builders for building energy efficient homes was a popular market transformation tool. At its peak in 2011, 32,000 homes qualified for the credit. In 2012 the credit expired. In 2013 Congress retroactively extended the credit and changed the basis of the credit from the 2003 IECC to the 2006 IECC. This action resulted in the number of homes qualifying for the credit falling to 3,780 in 2012 and 7,506 in 2013. The credit expires again on December 31, 2013.

Clearly the credit needs to be amended if it is to prove to be an effective market transformation tool. RESNET, the Natural Resources Defense Council, the Leading Builders of America and the American Council for an Energy Efficient Economy are working on legislation to be introduced that would, among other things, base the credit on a whole house assessment such as the HERS Index Score.

Presenters: Steve Baden, RESNET; David Goldstein, Natural Resources Defense Council & Clayton Traylor, Leading Builders of America

### **Mainstreaming the HERS Index in the Market Place – Incorporating HERS Index into the Multiple Listing Service**

In states from Washington to Maine, local Multiple Listing Services (MLS) are including the HERS Index Score in the listing of a home for sale. Including the HERS Index Score in the MLS is a significant push to the mainstreaming of the HERS Index Score in the housing market. REALTORS® rely on the MLS to guide potential homebuyers and appraisers use the service to locate comparable properties. Having this information will make it easier for builders to market their HERS Index Scores and appraisers to calculate the market value of rated homes. This session will explore how HERS Index Scores were incorporated in Colorado, Minneapolis and Oklahoma. It will look into the role that home builder associations and HERS Raters played in getting HERS Index Scores into MLS.

Presenters: Mike Means, Oklahoma State Home Builders Association; Daniel Siegel, Builders Association of the Twin Cities & Pete Rusin, Colorado Energy Office

### **Increasing Confidence in the HERS Index Through Consistency**

Across the nation homebuilders are using the HERS Index Score to market the energy performance of their homes and building codes are using the Score as a compliance method. It is even more critical that there is consistency in how the HERS Index Scores are issued. In 2013 RESNET formed a task force aimed at improving the consistency of the HERS Index Score. The task force was composed of representatives of the nation's large builders, rating providers and rater software tools. This session will explain what the task force has recommended.

Presenters: Jim Petersen, Pulte Group; CR Herro, Meritage Homes & Jacob Atalla, KB Home

### **Appraisal Institute's Residential Green & Energy Efficient Addendum**

The Appraisal Institute has adopted the new Form 820.04: Residential Green and Energy Efficient Addendum. This is the first residential green and energy efficient appraisal report addendum made by appraisers, for appraisers. The addendum includes the HERS Index Score of the home.

RESNET has entered into an agreement with the Appraisal Institute to incorporate the Residential Green and Energy Efficient Addendum into rating software programs. Raters will be able, with a push of a button, to complete the addendum in addition to the rating report. It will also be a very cost effective way for builders to have appraisers consider the energy efficiency features of the home.

This session will focus on completing the Appraisal Institute Green Addendum. Now is the chance to ask questions on how the information should be presented on the addendum. A walk through the addendum will be followed by a Q & A Session.

Presenter: Sandra K. Adomatis, Adomatis Appraisal Service

### **Powerful New Tool for Builders - Guaranteed Energy Performance**

Now builders can be even more comfortable having their homes rated and marketing the energy performance of the homes they build. Bonded Builders Warranty Group is offering affordable insurance to builders that will allow them to guarantee the energy bills of the home. The insurance is based on the calculations of a Home Energy Rating conducted by a certified RESNET Home Energy Rater. This session will explain the insurance coverage and what it will mean in the market place.

Presenter: Roger Lange, Bonded Builders Warranty Group

### **Energy Efficient Homes Represent Lower Mortgage Risk - The Evidence**

It's a well-known fact that energy efficient homes save their owners money but now a new study shows that they're also better mortgage investments. The report, titled, "Home Energy Efficiency and Mortgage Risks", found that homes with lower HERS Index Scores were deemed as low mortgage default risks. It found that, on average, mortgage default risks were 32 per cent lower on ENERGY STAR labeled homes that were rated by a certified RESNET Home Energy Rater. The study was conducted by the University of North Carolina's Center for Community Capital, and sponsored by the Institute for Market Transformation (IMT). This session will explain the results and explore the implications in the mortgage underwriting process.

Presenter: Robert Sahadi, Institute for Market Transformation

### **Current and Future State of Solar PV in New Residential Construction**

The economics for incorporating solar into new residential construction has never been better. This year over 10,000 new homes will incorporate solar PV into their design. Solar PV is being used in new residential construction in 20 plus states including California, Arizona, Colorado, Texas, Florida, Washington, Oregon, Maryland and New Jersey to name a few.

Also, the option for incorporating solar into new residential construction has never been more diverse. Home buyers and builders have the option to purchase solar or do a 20 year prepaid lease or in some states they can even offer solar for zero up front costs.

Currently, in the Orlando, Florida market, two national home builders (Shea and Pulte) have decided to incorporate solar as a standard feature into their communities. They

will speak about why and how they decided to make solar a standard feature in their homes. SolarCity is the largest solar installer and financier in the country. This session will give an update on the current and future status of solar across the US.

Presenters:Walter Cuculic, SolarCity; Katie Everett, Shea Homes & Sean Strickler, Pulte Homes

### **Air Leakage Testing: What's New and What's Coming?**

Energy Codes are moving towards requiring verification for building air leakage performance. To more effectively meet these evolving code requirements, test methods and specifications are also evolving. This presentation will review code requirements for air barrier and air leakage testing in the 2009 IECC, 2012 IECC and what will be in the 2015 IECC. In addition to energy code updates, this presentation will also review progress on ASTM air leakage test method and air barrier specification standards and how they will aid in Energy Code compliance.

Learning Objectives:

- Understand Energy Code air barrier and building air leakage requirements
- Learn air leakage requirement changes coming in the 2015 IECC
- Understand the different air leakage test method standards
- Learn what developments in ASTM air leakage test methods are underway

Presenter: Theresa Weston, DuPont Building Innovations

### **More Bang for Your Buck: Combining Thermal, Air and Water Barriers**

As continuous exterior insulation becomes a more common part of high performance buildings and energy efficient homes, builders and contractors can simplify their assembly by choosing sheathing which can comply with the energy code, weather resistive barrier, and air barrier requirements. This presentation will explore the code requirements, testing and how to choose the right products to maximize performance while simplifying installation and reduce cost.

Presenter: Linda Jeng, Dow Building Solutions

### **High-Performance Fiberglass Insulation Systems; What to Know and How to Know It**

Increasing demand for high-performance wall systems brings new questions on proving performance. Join us for an in-depth discussion of the many high-performance insulation systems on the market and what tools are available for energy professionals to prove their performance. Learn what to look for on the insulation job site, what you and your client should expect from the contractor, and how to earn the High-Performance Insulation Analyst Certification. This certification is the new credential offered by BIBCA to prove that you know good insulation work when you see it.

Presenters: Dean Moody, President, BIBCA; Steve Malon, Vice President, BIBCA & Kristin Bennett, Executive Director, BIBCA

### **IAQ, Ventilation, and Airtightness in High Performance New and Existing Homes**

Stringent ventilation and airtightness requirements are becoming commonplace in the high performance homes industry, and green building rating systems are starting to encourage and sometimes require aggressive IAQ provisions, including use of low-emitting materials, chemical avoidance, and enhanced air filtration. But do these challenging requirements result in better indoor air quality for home occupants? Researchers at LBNL have recently completed two projects addressing these issues. One was a study of Volatile Organic Compounds (VOCs) in LEED certified new homes in New Mexico, and the other was an assessment of IAQ in 24 high performance new and deep retrofit homes in California. In this session, learn how air pollutants found in these homes compare with health-relevant guidelines, and how they compare to those measured in conventional new California homes. Most importantly, learn what factors contribute to IAQ in high performance homes, such as kitchen exhaust fans, commissioning and source control, as well as how raters, contractors and designers can improve what they promise and deliver to homeowners.

Presenters: Brennan Less & Iain Walker, Lawrence Berkeley National Laboratory

### **Indoor Air Quality Concerns When Building Energy Efficient Homes**

Building and energy code compliance requirements continue to demand that homes are tightly sealed, which can inadvertently lead to moisture and microbial issues. This session will demonstrate how builders can maximize energy efficiency while maintaining acceptable levels of indoor environmental conditions. In this panel discussion, attendees will learn how to identify potential areas of indoor air quality concern; how to respond to moisture intrusion and/or visible mold growth; how to document builder best practices for maximum liability protection; and how to effectively market the strategy to home buyers.

Presenter: John Warren, SkyeTec

### **The Building Shell Game: How to Find the Winner for Your Project**

Why keep constructing buildings the same way, just because it is the way it has always been done? There are plenty of other construction methods for the exterior shell of a building now available to homeowners that don't necessarily cost more but have countless benefits. Just because builders have typically used wood doesn't mean it is the only or best answer. EPS and steel, ICF, spray foam etc. are alternatives to the traditional building envelope that are proven and beginning to be cost comparable to wood. In this panel discussion, industry experts representing various building methods

will discuss specific topics related to their area of expertise. The audience can come away learning more about the various building methods and their advantages, including:

- Myths vs. Facts
- Energy Benefits
- Cost Implications
- Real World Examples
- What Does it Mean to be Green?

Presenter: David Carolan, Solid Green Systems

### **The Value of Foamed Plastic as a Residential Sheathing**

As seen in the recent energy codes, insulated sheathings are recognized for their ability to reduce energy loss from a residential wall through both a reduction in conductive heat loss and air infiltration. Less well known is the capacity of such sheathings to reduce the probability of condensation moisture problems within the cavity. This talk will review the physics and methods for reducing condensation potential and increasing drying potential within residential walls.

Presenter: Dan Tempas, Dow Building Solutions

### **Beyond Mini-Splits: An Introduction to Variable Capacity Equipment for Whole-House HVAC Designs**

As building envelopes improve, dealing effectively with part load conditions for heating and cooling becomes a priority. Variable capacity heating and cooling equipment is one answer to this important performance consideration. Combining inverter technology with variable refrigerant flow (VRF) allows the equipment's delivered capacity to adjust to meet changing building loads. Many know that mini-splits are efficient and VRF is why. What is not commonly known is that there are ducted versions of VRF air handlers that are capable of handling high (up to 0.6" w.c.) static pressures for whole-home, ducted designs with completely independent zone control. This session will present the basic principles of VRF technology and the VRF design process with real-world examples.

Presenters: Kristof Irwin, Positive Energy & Allison Bailles III, Energy Vanguard

### **2012 National Green Building Standard®: A Road Map for Performance**

In its first four years, the ICC 700 National Green Building Standard® (NGBS) has begun transforming the residential marketplace by providing single and multifamily builders, remodelers and land developers with ANSI-approved guidance on going green. The latest version features significant increases in energy efficiency requirements and new sections devoted to improving the performance of existing homes. This session will begin with a summary of the green building and remodeling market outlook and provide an overview of the 2012 NGBS and the different compliance methods.

#### Learning Objectives:

- Explain the various methods for compliance in the 2012 National Green Building Standard®
- Identify the major differences between the 2012 and 2008 versions
- Discuss the significant increases to the energy efficiency section
- Learn what the minimum requirements are for new construction as well as renovations

Presenters: Matt Belcher, Verdatek Solutions

#### **Changes to LEED for Homes Certification – Introducing LEED v4 for Homes**

The US Green Building Council released their newest version of LEED, LEED v4, in late 2013. LEED v4 for Homes or LEED v4 for Homes Multifamily Midrise will be required on all residential buildings up to 8 stories. Other major updates include adopting ENERGY STAR v3, and creating new total water use and total energy use calculators. Learn about these changes and more to the nation's leading green building program. This is a "must attend" session for LEED Green Raters.

Presenter: Asa Foss, USGBC

#### **Cost-effective Building Practices for Building ENERGY STAR Certified Homes**

The new version of the ENERGY STAR Certified Homes Program covers more details than ever before. Many partners jump to the most obvious default compliance option to reduce analysis paralysis, even when other options might suit them better. This session will highlight the most common default compliance options, along with alternative compliance options successfully used by partners to ease both the cost and effort of obtaining certification.

#### **Cost & Savings of the ENERGY STAR Certified Homes Program**

EPA has updated the program Cost & Savings document using feedback obtained from Partners in the time in which the Version 3 program requirements were released. This session will walk attendees through the estimated additional cost over code to constructing ENERGY STAR certified homes in various climates. Additionally, attendees will be provided with energy savings estimates (kWh, kW, and therm) for ENERGY STAR certified homes in their climate.

#### **What are Zero Energy Ready Homes and What is the Business Case Today for Constructing Them**

#### **What Technical Specifications Ensure Zero Energy Ready Home Performance**

#### **Home Builder Panel Discussing Their Zero Energy Ready Homes, Business Decision Leading Them to This Level of Excellence, and Their Business Outcomes**

## **Resources for Verifying, Constructing, and Marketing Zero Energy Homes**

**How to certify Zero Energy Ready Homes using RESNET Accredited Software and Participating in DOE Challenge Home**

**Zero Energy Ready Home Technical Solutions: High-R Walls and Air-Tight Construction**

**Zero Energy Ready Home Technical Solutions: Ducts in Conditioned Space**

**Zero Energy Ready Home Technical Solutions: Low-Load High-Efficiency HVAC**

**Zero Energy Ready Home Technical Solutions: Indoor Air Quality .**

**Zero Energy Ready Home Technical Solutions: Disaster Resistant Construction**