February 24 - 26, 2014

RESNET Atlanta

2014 RESNET Conference Breakout Sessions

Developing Trends

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 while giving 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

HERS Ratings as Compliance Option in the 2015 International Energy Conservation Code – Raters' Perspectives

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Presenters: Brett Dillion, IBS Advisors & Nancy St. Hilaire, Home Energy Group

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 Institure to incorporate the Residential Green and Energy Efficient Addendum into rating softtware programs. Raters will be able with a push of a button 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

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; David Siegel, Builders Association of the Twin Cities & Pete Rusin, Colorado Energy Office

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. 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 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 introduce that would among other things based 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

Ensuring the Practical Knowldege of of Home Energy Raters – New RESNET Simulation Based HERS Rater Practical Test

Currently RESNET requires that the accredited Rater Training Provider provide field testing of home energy rater candidates. This has been unevenly applied and raises doubt over the RESNET rater certification process. As RESNET Standards are codified and adopted by more municipalities and communities, the requirement for a defensible field testing procedure becomes more paramount. Further, the risk of litigation of persons being denied a profession because of inconsistent testing practices becomes a larger threat. Currently, there exists inconsistency across training providers in the application of the Graded Field Evaluations of candidates. A more consistent Graded Field Evaluation vehicle or procedure is necessary. To date, despite a number of efforts over the last three years, the Training and Education Committee has been unable to formulate an effective strategy or reasonable execution plan to address this issue. Three dimensional computer desktop simulation offers a potential solution that is consistent, defensible, scalable and cost-effective. To address this issue the RESNET Training and Education Committee has proposed a cost-effective, scalable practical field exam solution that requires HERS Rater candidates to demonstrate a level of

competency outlined in its standards. The exam will allow the evaluation of different construction methods and multiple regional climatic conditions.

This session will explain what the new test will operate and an update on the status of the development of the test.

Presenters: Doug Donovan, Interplay Energy; Rob Moody, Organic Think & Kathy Spigarelli, RESNET

The Future of the Quality Assurance of Ratings

With the increasing of the HERS Index Scores entering into the mainstream of the nation's market and the growth on ratings into the regulatory environment through being accepted as an option to building energy codes it is essential that there is a national consistency of home energy ratings.

In 2014 RESNET will be undertaking a significant enhancing of RESNET quality assurance protocols. Options being considered include:

- Development of tools for quality assurance protocols and procedures for RESNET Quality Assurance Designees (QAD)
- Enhancing the RESNET National Building Registry to serve quality assurance functions for Rating Providers
- Improvements to rating software programs
- Development of a standardize HERS Rater Quality Assurance Evaluation Form
- Evaluating the independence of QADs

This session will explore the necessity of enhancing RESNET's quality assurance procedures and explain the changes being considered.

Presenters: Ben Adams, MaGrann Associates; Steve Baden, RESNET; Brett Dillon, IBS Advisors & Dean Potter, K. Hovnanian Homes

Building Science

Field Testing Nightmares and How to overcome them with Ease

Problems encountered while testing with Blower Doors and Duct Testers can sneak up on new Raters or experienced providers and waste a lot of time and money but are easy to solve if you know how to identify the issue and field test your equipment.

No matter what brand you use, most problems have to do with the gauge and connecting tubes. They can be baffling but easy to solve and corrected on site if you follow the test procedures laid out in this session. Everyone who has seen this live trouble shooting presentation have said it was the most valuable and time saving training they have ever received, that includes new Raters and experienced trainers.

This fast-paced course is entirely visual. Participants will see the problem created, identified and corrected in seconds for every major issue that can befall air leakage test equipment.

- Blocked tubes, Leaking tubes, locating and correcting
- Gauge out of calibration?

- Duct tester or blower door out of calibration?
- Common problems caused by gauge settings such as @ Pressure and Time Averaging?
- Identifying unstable results and how to correct Baseline and wind problems
- Is it me, the gauge or fan or the building?
- Set up for optimum results every time
- Pressurization blower door testing. What do the results mean. When should I use it?
- What are meaning of all the acronyms EqLA, EfLA, SLA, XZY?

21 night mare scenarios and how to avoid them

The presentation will cover nightmares from "Every time you take a reading, you get a really different result" to "The gauge won't zero no matter what you do to "I have a tube blockage; how can I locate it?

As a result of this training, participants will be able to:

- Confidently setup blower door and duct tests with unique conditions
- Identify and correct equipment problems in the field.
- Eliminate the need for unnecessary gauge and fan calibration.
- Create QA/QC for your tests and reduce liability.
- Understand each manufacturers recommended calibration procedures.
- Know when your equipment needs to get sent back for repair (almost never) and when it is advisable to do so.

Presenter - Colin Genge, Retrotec Inc.

Blower Door Pressurization Test? - Homes with "Suspect Conditions"

Blower Door Testing - Pressurization or Depressurization.
What are the inherent risk factors in performing a blower door test on an existing home? Construction materials that have been covered over or non-visible water damage is a health risk waiting to be created by a depressurization blower door test.

Are you testing leakage or for compliance / Rating.
The course will cover some of the visible and not visible conditions that warrant a pressurization test?
The overview will include the technical procedures for a pressurization test and suggestions for compensating for building challenges.
The presentations focus is- that the bottom line is reducing infiltration and improving the performance of the home and options on how this can be verified.

We will discuss the results of pressurized test vs depressurized test, and compare the results to testing standards in Large Building Air Barrier testing which include pressurization & depressurization.

The class will include a section on the liabilities that should be addressed in the "Client Agreement", client interview, scope of work and what are the responsibilities for disclosure from the Auditor and Client.
The most important disclosure is what you cannot see or have access to evaluate.

Learning objectives
#1 Blower Door testing with suspect conditions
#2 Technical application of a Blower Door test thru Pressurization

#3 Reducing liability thru testing options and procedures
#4 Reducing liability thru disclosure and educated conclusion of what may not be visible.

Presenters - Joe Medosch, EEC llc & Corbett Lunsford, Green Dream Group

Ducted Heat Pump Water Heaters Open Opportunities for Tight Spaces

Water heating is the second largest energy load in most homes. Heat pump water heaters (HPWH) deliver high energy efficiency performance compared to alternative hot water storage systems. However, most HPWH systems require large room volumes (e.g., basement) for effective heat exchange with the heat pump. Using a duct kit will allow builders to install HPWH's in confined spaces and duct the incoming and outgoing air to larger areas such as enclosed attics or ambient air. Ducted HPWHs were tested for energy efficiency and impact on the indoor temperature and humidity in three separate single family homes. Energy and comfort data are compared to manufacturer specifications and energy models.

Presenters - Sydney Roberts, Southface & Tom Butler, LORD, AECK & SARGENT ARCHITECTURE

Evidence of Energy Savings Produced by Radiant Barriers and Interior Radiation Control Coatings: Experiments and Modeling

By attending this session, participants will understand both radiant barrier (RBs) and interior radiation control coating (IRCCs) technologies, the physics that make these technologies work in buildings, and the energy savings produced by each technology. Results of energy savings produced by these technologies, extracted from experiments and theoretical studies carried out by several research organizations over a 50 year period, will be presented. Parameterization results that affect the performance of these technologies will also be presented. These include climate, existing building insulation level, RB and IRCC installation configuration, and building construction.

Presenters: Mario A. Medina, University of Kansas and William Lippy, Fi-Foil Company, Inc.

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

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.

Presenters - Linda Jeng, Dow Building Solutions

Pushing the Limits of Thermal Imaging - Unique Challenges That Thermographers Face

There is no question that infrared thermography is a valuable tool which helps energy auditors and home performance professionals better evaluate the thermal performance of residential buildings. From examining the effectiveness of insulation to locating air leakage bypasses, this technology allows individuals to work more intelligently and efficiently.

Key to this success, however, is understanding the entire building system and environmental conditions that one encounters during an infrared inspection. Differences in construction materials, varying weather conditions, and limitations of the technology can all make inspecting buildings with IR a challenging endeavor.

While this presentation will address instances where thermal imaging is used successfully, it will focus more on showcasing numerous examples of where thermography did not yield desirable results due to difficult conditions or situations that limited the technology's effectiveness. These limitations will be explained and outlined so that attendees will learn how to recognize, and work with, these circumstances. Best inspection practices and techniques will be covered so that participants can learn to better evaluate data captured in challenging situations.

Learning Objectives:

- Upon completion, participants will be able to understand how IR is successfully applied to residential building envelope inspections.
- Learn about challenging conditions and situations that thermographers encounter where thermal imaging is difficult to use.
- Participants will discover ways to better approach these situations and get the most out of their camera.

Presenter – Ron Conner, The Snell Group

Testing 1-2-3: A New Testing Method for Software

An industry working group is developing a standardized accuracy test for residential energy analysis tools using energy consumption and building description data. Empirical data collected from around the United States have been translated into a uniform Home Performance Extensible Markup Language (HPXML) Standard format that provides software developers efficient access to the data and facilitates modeling lots of homes. This provides an opportunity to implement a software test case made up of many homes where predicted energy usage can be compared to measured energy usage en masse. This session will provide an overview of the working group's progress toward developing an empirically-based method of test for residential energy analysis tools.

Presenters – Ben Polly, National Renewable Energy Laboratory & Joel Neymark, Neymark & Associates

Advanced Energy Lessons Learned: Closed Crawlspaces Revisited

After working with industry to do the research, create the closed crawl install protocols and literally writing the book on it we decided to revisit and take a second look to see how things were holding up. Come see what Advanced Energy found years later, aside from spiders, lawnmowers and kids toys.

Presenters - David Treleven & Maria Mauceri, Advanced Energy

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; the new credential offered by BIBCA to prove that you know good insulation work when you see it.

Presenter s – Jeff Boone, NorthStar Comfort Systems

IAQ Expert: "Backdrafting Hazard is Overblown" [or Rethinking Combustion Appliance Safety]

Release of combustion gases into homes represents a potential hazard. But current combustion safety test protocols use excessively conservative hazard thresholds that fail many appliances that present very low or no risk. Combustion safety failures can limit air sealing or direct energy efficiency improvement funds into unnecessary repairs and equipment replacement. At the same time, serious combustion appliance hazards are not being addressed in many cases. LBNL and other researchers are rethinking the standard combustion safety diagnostics and developing new approaches to more assuredly reduce risk at lower cost. This session will describe the fundamental factors that determine combustion appliance hazards and preview our thinking on cost effective hazard identification and risk mitigation.

Presenter - Brett Singer, Lawrence Berkeley National Lab

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

Modeled vs. Measured Energy Consumption for Single Family Homes

This presentation will compare HERS Index to actual measured energy used in a designed community of 12 single family homes. The research homes are built in Midland, Michigan, the northern part of Climate Zone 5. Energy use, hygrothermal data and qualitative information are being collected as part of the 5 year study. Three different floor plans were built to four different energy

performance levels to determine which designs have the greatest impact on actual energy savings. We will present data from the first heating and cooling seasons.

Presenters - Brian Lieburn, Gary Parsons, & Matt Erdmann, Dow Building Solutions

The Building Science Fight Club Roars – ASHRAE 62.2 vs. Building Science Corporation's New Ventilation Standard

The only game in town since 1989 for a residential ventilation standard has been ASHRAE 62. In 2003, it became ASHRAE 62.2 and has been the subject of much discussion, debate, grumbling, and outright animosity. In 2013, Joseph Lstiburek and Building Science Corporation introduced their own ventilation standard, BSC-01, to compete against ASHRAE 62.2. In this session, we'll take an objective look at the research, the debate, and the two standards. We'll also look at how the new standard is faring since its introduction in August 2013.

Presenters - Allison A Bailes III, PhD, Energy Vanguard & Kristof Irwin, Positive Energy

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(s) - Dan Tempas, Dow Building Solutions

WiFi Enabled Gauges: Test Faster & Smarter with Built-in QA/QC

WiFi enabled gauges are the new rage! What are the logistics, limitations and benefits? This demonstration will show the latest and greatest from Retrotec and TEC. There will be live gauges and equipment and that show how this technology will change the industry.

Digital Manometers are getting smarter and reducing the common mistakes in the field. This increases QC and is a smarter business model, Time Is Money. The new interface on todays gauges are touchscreen, provide an image of the fan or device, calculate the results in the gauge and are WiFi capable.

The gauges today can be operated from a PC, mobile phone or tablet thru Apps on Android and Apple devices. This allows Raters to be free from the cables and tubes of the manometer. When these features are combined with a hot-spot in the field QA/QC is now on a level never achieved before. The Provider or QAD can see the live test from their office and confirm compliance and settings. This will can eliminate re-testing significantly reduce liability.

Smart Gauges are reducing the time it takes for blower door and duct test training and increasing the success rate in field testing. This allows Providers to feel confident the challenging test procedures are not a stumbling block for new Raters. This technology provides real virtual gauge simulation, allowing anyone with a PC to practice with a gauge and get results without being connected to a gauge. This will allow online and classroom assignments that can be verified.

The live presentation will have gauges operating equipment from Retrotec & TEC demonstrating mobile/tablet Apps; it will also provide a demonstration on how to confirm the gauge results from a remote location.

Retrotec proudly promotes Universal Training, “knowledge first, then equipment”. Retrotec incorporates Energy Conservatory equipment in the demonstrations, trainings and presentations, providing Universal Training
Learning objectives (provide at least four):
#1 Testing smarter with more accurate results.
#2 Technology can increase production and decrease field time.
#3 QA/QC verification from remote locations
#4 Making training smarter with reduced equipment requirements and increase success rates.

Presenters - Colin Genge, Retrotec Inc. & Joe Medosch, Energy & Environmental Consulting LLC

Home Energy Ratings

HERS Index and Utility Brand Make a Powerful Partnership

Join us to take an in depth look into how Georgia Power designed and launched a comprehensive consumer awareness campaign focused on educating customers about energy efficient construction and specifically the value of the HERS Index in a Georgia Power EarthCents® New Home.

Presenters - Tim Carter, Georgia Power & Tony Donald, Georgia Power & Danna Clary, Georgia Power

Are You Getting Your Fan Flows Right?

This section will discuss some of the ways that fan flow testing can be done, how the testing is conducted, and the advantages and pitfalls of the techniques. Using anemometers, fan flow meters, flow hoods, amongst other devices or methods, will be covered.

Presenters - Eurihea Speciale, Building Efficiency Resources & Stan Harbuck, A Better School of Building Inspection

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 and issued. In 2013 RESNET formed a task force aimed at improving the consistency of the HERS Index Score. The task force is composed of representatives of the nation's large builders, rating providers and rater software tools. This session will explain what the task force is recommending.

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

HERS Ratings - Transforming the market with Builder Private Labeling

This session will discuss how HERS Ratings are transforming the South Carolina new homes building industry. The discussions will include why Builders choose to use HERS Ratings over other programs; how the HERS score was used to determine construction features and how the HERS score is being used in marketing the Builder Private labels.

Presenters- Claude St. Hilaire and Nancy St. Hilaire, Home Energy Group and Thom Chumney, Mungo Homes

Making the Grade: HERS Indices for Code and Above-Code Programs

Everyone’s always looking for a super decoder ring to compare code-compliant, EPA Energy Star and DOE Challenge Homes on the HERS Index Scale. This is because the HERS Indices for homes meeting code and program requirements vary by climate, heating fuel and other design elements. While the decoder rings are not yet available, this session will present a colorful, graphical overview of HERS Indices for homes meeting requirements of recent versions of the IECC, Energy Star Qualified Home Program and DOE’s Challenge Home Program. The content will help rating professionals understand and communicate the relationships between code and above-code programs in a common metric – the HERS Index.

Presenters - Dave Roberts, National Renewable Energy Laboratory

Mobile Data Collection and Ratings: Touch and Go

The tablet has changed expectations for data collection and communications in the field, and allows significant time (and cost) savings over traditional paper-based methods. PSD's Quality Assurance team uses iPads for all of their field work, and Architectural Energy is moving REM/rate into the cloud, while the emerging HPXML standard is opening up possibilities for more tools and easier communication between programs, providers, and raters.

This session will address the possibilities, and limitations, of mobile data collection, and strategies for synchronization with a central data system. We offer real-world experiences in deploying such systems.

Presenters - Ethan MacCormick, Performance Systems Development & Rob Salcido, Architectural Energy Coporation

Peak Performance – Why Installation Matters with Insulation

Learn about the RESNET grading criteria for insulation and how the quality of the installation affects performance. There are many types of insulation available to today's builders. Most builders use some combination of cellulose, fiber glass, rock wool or spray foam to insulate homes today. Every material has unique factors that affect performance and HERS raters need to understand what to look for when inspecting and grading insulation to the RESNET grading criteria. Experts from the cellulose, mineral fiber and spray foam industries will discuss specific factors that make their products work as advertised and what issues can reduce product performance.

Presenters: Bill Hulstrunk, National Fiber & John Tooley, Advanced Energy & Rick Duncan, SFPA

Powerful New Tool for Builders - Guaranteed Energy Performance

Now builders can even more comfortable having their homes rated and marketing the energy performance of the homes they build. Bonded Builders Warranty Group is offing 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.

Presenters - Roger Lange, Bonded Builders Warranty Group

RESNET's CAZ Simulation Test

Beginning on January 1, 2014, in order to be certified as a Home Energy Rater a candidate must have passed the RESNET CAZ simulation test. Existing raters have until January 1, 2015 to pass the test. This means that in order to train raters all Rater Trainers must also have passed the test. This session will demonstrate the new RESNET test and provide resources for raters and rater trainers to be prepared to pass the test.

Presenter) - Doug Donovon, Interplay Energy & Andy Gordon, Washington State University Energy Program

Introducing the RESNET – ASNT MOU: Certification in Infrared Thermography for Building Diagnostics

On May 3, 2013, RESNET entered into a memorandum of understanding with the American Society for Nondestructive Testing to develop and offer the ASNT NDT Level II certification in infrared thermography for building diagnostics. RESNET will require HERS Raters who wish to utilize infrared thermography in the evaluation of residential structures to be certified in accordance with the ASNT certification. This session will provide an overview of the agreement, the process for becoming certified and the timeline for implementation.

Presenter – L. Terry Clausing, P.E., American Society for Nondestructive Testing

Sampled Ratings: As Clear as We Can Make Them

The RESNET Sampling Standard has been carefully crafted to provide a high level of confidence for a high volume of ratings. Significantly rewritten in 2006, and currently being refined to strengthen and clarify, it is still one of the most misunderstood and commonly misapplied standards in use by raters.

This session will clearly describe the current standard with vivid examples, walking participants through cases involving the simplest 1-in-7 testing situations, all the way through complications of scheduling, and followup to testing failures. Further, the details of upcoming changes to the standard will be carefully spelled out.

The presenters administer 2 different Accredited Sampling Providers; PSD has independent raters throughout the Northeast, most of whom do a minority of their work as sampled ratings, while D.R. Wastchak has successfully applied sampling to many thousands of homes in the Southwest.

Presenters - Emelie Cuppernell, PSD & Daran Wastchak, D.R. Wastchak, L.L.C

The Future - HERS in 2024

Ten years from now, where will we be collectively? What will the state of the industry be? Can you plan for ten years from now? How about ten days from now? This panel discussion will have each member give a short personal perspective on where the industry is going to be. The moderator will then ask directed questions of the panel and the audience together.

Presenters - Laura Capps, Southface Energy Institute; Ben Adams, Magrann Assciates & Jesse Krivolavek, American Energy Auditors

What Your HERS Provider Wishes You Knew

Would you like your rating files to get approved quicker? Ever wonder exactly what's required when your Provider does your RESNET-mandated 10% file QA? Have you spent hours looking up HVAC or appliance info and wished you knew of more resources or how to use the ones you have better? In this session, we'll give you an inside look at what your provider really wishes you knew when you work on HERS ratings:

- Quality assurance requirements
- What's included in the 'rating data file'
- Resources: Provider policies & procedures, HERS Standards, ENERGY STAR, AHRI Directory, energy codes
- Documentation: field notes, photos, record-keeping
- Software tips and techniques (REM/Rate)

We'll go into the details on these issues and more as we show you the most common problems that can slow down the rating process and lead to trouble. When you leave this session, you'll have the knowledge and tools to help you be a better rater.

Presenters - Allison A Bailes III, PhD & Jeffrey L Sauls, Energy Vanguard

Do You Want Them To Pass a Test - OR - Learn How To Do Their Job Right?

In the days of social media and drinking from a firehose, the old school classroom methods of long lectures and death by bullets are outdated. Learn how to learn through dynamic Facebook-style online education, on the job training, self-learning from your mobile device and computer simulated Home Energy Ratings.

Presenters - Rob Moody, Organic Think Inc; Doug Donovan, Interplay Energy & Brett Dillon, IBS Advisors, LLC

RESNET Annual QAD Roundtable: Results of QA Reviews, Strategies for Success in 2014 and Quality Assurance Amendment

This session will share the findings of the 2012 annual Rating Provider Quality Assurance reviews. We'll discuss common issues identified and simple strategies to ensure compliance for 2013. This session will provide valuable information for all QADs and Provider managers.

This session will also review the changes that resulted in the recent Quality Assurance amendment to the RESNET Standards.

Presenters – Abe Kruger, Kruger Sustainability Group; Daran Wastchak, DR Wastchack & Laurel Elam, RESNET

Tips & Tricks for being a more effective QAD

This will be a 90 minute interactive session that focuses on how to actually perform QA in accordance with the RESNET Standards. The first 30 minutes will be dedicated for small group activities. The goal will be to get QADs talking and sharing experiences without disrupting the whole group. The next 30 minutes will be dedicated to allowing the groups to present their findings and the last 30 minutes will be reserved for Q&A and discussions.

Presenters – Abe Kruger, Kruger Sustainability Group

Business Development and Marketing

Current and Future State of Solar PV in New Residential Construction

The economics for incorporating solar into new residential construction have 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 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 have 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 2 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. We will be giving 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

Habitat for Humanity's Sustainable Building Strategy: A Business Opportunity for Raters

Habitat for Humanity is launching a new sustainable building strategy that encourages affiliates to certify homes to a national or regional program that includes a HERS Rating. Come learn more about opportunities to assist your local Habitat affiliate in building sustainable affordable homes.

Presenters - Rob Howard & Mike Mongeon, Habitat for Humanity International & Scott Lee, Southface

Social Media Essentials: A Guide for RESNET Members

When used correctly, social media can be an incredibly powerful marketing tool, getting your message out exactly where it needs to be: directly to consumers. But what is social media and how does it work? In this session, RESNET's digital agency, Fourth Dimension, will talk about what social media is and how RESNET is using it to promote member services and educate homeowners about the benefits of home energy efficiency. RESNET members can learn how they can take advantage of RESNET's ongoing social media campaigns to market their services effectively to their target audience.

Presenters - Dru Vagale & Rejoy Chatterjee, Fourth Dimension Inc

Lead Generation 101 for Raters, Auditors and Home Performance Companies

As the web increasingly replaces traditional forms of marketing, raters, auditors and Home Performance companies face the challenge--and opportunity--of understanding this complex and ever changing landscape. This workshop, aimed at those just starting to understand internet marketing, will cover the bases from managing your primary company web presence, understanding search engine optimization, the keyword landscape in our field, the rapidly evolving local search landscape, social media opportunities such as blogging, Facebook, Twitter and Google+, as well as paid internet advertising options--lead generation services, pay per click advertising, and more. But it's not just about the internet--we'll also review proven "old school" techniques that still work. The workshop will cover both consumer and business to business strategies, reflecting the reality that successful raters need to market their services to multiple audiences.

Presenters - Peter Troast, Energy Circle and Allison Bailes III, Energy Vanguard

Energy Codes

2012 Code: the Good, the Bad, and the Ugly from Maryland, the first state to adopt 2012 IECC

On July 1st 2012, all homes permitted in the state of Maryland were required to meet the stringent IECC 2012 code requirements. After going through the seven stages of grief, builders, Raters, and utilities figured out ways to use the code to each of their respective advantages. This presentation will discuss real world business solutions for raters, compliance options for builders, and methods utilities can use to capture savings above and beyond the 2012 code to keep the program relevant.

Presenters - Rick Gazica, ICF International

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

Presenters - Theresa Weston, DuPont Building Innovations

Business Opportunities in Energy Codes and Performance Testing

As building energy codes rapidly advance, performance testing of new homes and major renovations is poised to become the norm rather than the exception. More than half of U.S. states have implemented the 2009 IECC and several more have adopted, or are slated to adopt, the 2012 IECC in the next few years. Raters can capitalize on this growing market by understanding energy code requirements and how to market their services to builders. This session will cover air sealing verification, envelope leakage and duct leakage requirements of the 2009, 2012 and 2015 IECCs, including blower door testing, duct testing, and required inspections. This session will also provide guidance on how Raters can turn these requirements into money in their pockets. Energy codes are the new home performance program – don't be left behind.

Presenters - Robby Schwarz, EnergyLogic, Mike Turns, Performance Systems Development, Sydney Roberts, Southface & Pam Cole, PNNL

HVAC

ACCA's Residential Service and Installation Program
ACCA's new RSI program opens a new range of services that a properly skilled Rater can perform with regards to objective evaluation of an HVAC system installation. This session reviews the RSI Program and the special role that Verifiers will fill in the delivery of this program. Additionally, this session will discuss special tools and training for those interested in this new opportunity.

Presenters - Wes Davis, ACCA

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 know 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 Bailes III, Energy Vanguard

How to Verify Manual-J Accuracy and Properly Select Equipment

You're being asked to review Manual-J's and S's as part of your job. But how do you know what the HVAC contractor entered into the software? Did they pick the right sized unit? How do you read "detailed cooling capacity" data? How do you adjust the listed capacity for your location's outdoor design temperature?

This session will cover the basic load reports from both RightSuite Universal (Wrightsoft) and RHVAC (Elite) in detail, helping you understand where you need to go to find the info you're looking for. We'll also cover the Manual-S process, working through an example from start to finish, while exploring detailed cooling capacity data from a few of the main HVAC equipment manufacturers.

Presenters - Isaac Savage, Home Energy Partners

Performance Rater Certification by NATE

Attend and have all your questions answered about and why the NATE Rater Certification will take your business to the next level.

Presenters – Denny Smith, NATE; Brett Dillon, IBS Advisors & Dennis Stroer, Calcs Plus

Ventilation: Effective Strategies & Lessons Learned

Complying with ASHRAE Standard 62.2 is critical for program compliance. This session will provide a review of the requirements and answer the question “How much air do you need?”. Also, different ventilation strategies will be presented, including a review of the benefits (effectiveness, ease of installation) and drawbacks (cost, complexity) of each one. Additionally the presenter(s) will provide information on duct sizing and pressure drop calculations – how to design to achieve the necessary performance. Case studies of real installations will be presented, and lesson-learned will be shared, to assist contractors, builders and raters in avoiding costly mistakes.

Presenters - Doug McCleery, MaGrann Associates

Real Estate Transactions and Mortgage Financing

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, and 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(s) - Robert Sahadi, Institute for Market Transformation

The SAVE Act, or How Energy Raters Play A Crucial Role in Updating our Housing Stock

The SAVE Act is proposed federal legislation to update HUD's underwriting guidelines by including a home's expected energy cost savings when determining the value and affordability of energy efficient homes. While only voluntary, the demand for both energy audits and energy ratings is expected to grow quickly. This session will help you educate your local builders, real estate agents, appraisers, bankers and homeowners on the new financial benefit of energy efficient construction.

Presenter(s) - Mike Collignon, Green Builder Coalition; Laureen Blissard, Green Builder Coalition & Bill Fay, Energy Efficient Codes Coalition

Moving REALTORS® from Introductions to Engagement in Energy Efficiency

Real estate transactions are prime opportunities to promote energy efficiency. A growing number of Multiple Listing Services are integrating "green" and energy efficiency-related data fields within their listing forms. Sales of newly constructed certified energy efficient or green homes command a premium in some cases; while the average buyer of an existing (resale) home will spend over $6,000 on improvements during the initial year of ownership, according to the Joint Center on Housing Studies. Energy efficiency advocates such as raters and program representatives are reaching out to the REALTORS® who serve their territories to bring residential energy efficiency to the forefront, ultimately serving consumers and expediting market transformation. However, simply making contact through advertising channels may not be enough. This panel will explore a variety of methods and media used to engage REALTOR® audiences, and discuss targeted training for various specialties within the real estate community such as New York ENERGY STAR® Ambassador Sales Training and Build It Green's training and certifications of agents in California. Discussion will also encompass "greening" multiple listing services and energy efficiency business case examples for real estate brokers and appraisers.
Presenters- Lisa Diffenback, Conservation Services Group; Bruce Mast, Build It Green; Nathan Krantz, Build It Green & John Shipman, Energy Efficiency Management

Advanced Energy Lessons Learned: Valuing HERS Raters and the HERS Score

For years our industry has worked on the issue of valuing energy efficiency, creating market demand, consumer awareness and the list goes on but finally there is some movement and much of it catalyzes with the appraisal world. Come learn about some of the exciting things taking place in the appraisal world while participating in an interactive facilitated discussion.

Presenters - Kristi Matthews, Advanced Energy

Valuing the Future: Keys to Appraisal of High-Performance Building

The Appraisal Panel session-describes new success with recognized valuations for high-performance projects; accepted industry guidelines and methods for assigning value utilizing HERS Audits for quantification. The session will cover new regulatory policies and how they will impact the green building industry; and implementation of new appraisal standardization for advancing high-performance building. Other topics will include trends: brown discounts verses green premiums; neighborhood revitalization; communities embracing renewable energy and water conservation, i.e., rainwater harvesting.

Presenter(s) - Rich Backus, netPLUS Energy School, LLC; John Brenan,The Appraisal Foundation; Carlton Segar, Douglas Loren Rives, Certified SRA Texas Appraiser; Michael Jorgenson, Certified National Appraisal Management Company; Certified National Appraiser; Michael Hobbs, SRA, RAA Licensed Appraiser & Teresa Lopez, Green Energy Money & Panelist from the Appraisal Foundation

Valuing the Future: Mortgage Lending for High-Performance Building

This session will provide participants with up-to-date new lending guidelines including:

- Dodd Frank Quality Mortgage regulatory guidelines impacts on consumer markets and lending financials – how these new guidelines can support market expansion in “green” mortgage financing
- New Green Initiative FHA and Conventional expanded guidelines - including energy efficiency upgrades and renewable energy
- How lending institutions can play an environmental leadership role in lending for high-performance buildings
- New funding opportunities with private capital and incentivized green mortgages and monetized appraisals
- Overview of the targeted regional High-Performance Pilot (HIPP) Initiative for 20,000 single-family homes and multi-family project

Presenter - Teresa Lopez, Green Energy Money; Paul Christensen, Security National Mortgage (SNMC) Company & Dodd Frank

High Performance Mortgage

Gateway Bank Mortgage is partnering with some of our correspondent lenders, as well as private investors to implement a true high performance, energy efficient mortgage. The financing products and models that have been accepted have been a good start, but more lender investment is needed to match the market and demand of the current and expected rate of growth.

Our product rewards the borrowers for energy efficient choices through lower interest rates, streamlined processes, lowering cost of home ownership, higher tax values, and reduced private mortgage insurance. One of the ways we are realizing this product is by partnering with key industry professionals. We have built a team of HERS raters, builders, appraisers, REALTORS®, and insurance agents who have helped develop criteria, certifications, and other requirements for this loan program. Our presenters will be discussing the lending matrix, what this means for the builders, a market sales approach to appraisal addendum, and the full package of services available through this loan program.

Presenters: McCayne Miller, Gateway Bank Mortgage, Bob Kingery, ecoSelect, Landon Phillips, Phillips Appraisals

Policy and Programs

The Energy Water Nexus

The energy and water crisis looms ahead of us and must be solved together. A growing population and the failure to adapt U.S. water policies and maintain our national water infrastructure have left us with a potentially serious threat -- a severe water crisis in the United States. Thermo-electric power plants, industrial waste water wells, and now "fracking" stress our water needs. The good news is that the home performance industry can help bring about major change. Fact: every KWH reduction we affect can help reduce water use by 0.5 gallons (hydroelectric is greater). Most people wait for over one minute for hot water. We can reduce this to a one cup wait. This session promises to equal results.

Presenter - John Tooley, Advanced Energy

Incentivizing the Next Generation of High Performance Homes: Program Administrators discuss a Post-IECC 2012/2015 Environment

With the adoption (or forthcoming adoption) of IECC 2012 or IECC 2015 by many states and the potential for upgraded minimum equipment efficiencies, above-code Program sponsors and administrators have had to quickly adapt their Programs to reflect the new benchmark. How do we best promote the construction of high-performance new homes? Program design and implementation experts will discuss their organizations' involvement in the evaluation of above-code Program offerings (including, but not limited to: ENERGY STAR, Net-Zero Ready, Passive House, and Challenge Home) and discuss how careful analysis led each of them to make design decisions regarding the future of their Programs. The session will also touch on how a Program can maintain its ability to correctly claim energy savings without violating cost-effectiveness regulations, and remain marketable to the Program Partners. Come learn from these valuable experiences to enable you to help influence the direction of the Programs in your region!

Presenters - Patrick Fitzgerald, New York State Energy Research & Development Authority (NYSERDA) & Michael Burke, Conservation Services Group; Enoch Lenge, Connecticut Light & Power/Yankee Gas; Kathy Greely, Performance Systems Development; Chris Gordon ,Vermont Energy Investment Corporation & Ben Adams, MaGrann Associates

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

Program QA vs. Provider QA - What's the Difference?

Program administrators offering incentives for energy performance in residential new construction programs will often deploy a quality assurance program that can appear to Providers and Raters to be an unnecessary duplication of the QA they are already doing to meet their RESNET obligations. Yet program QA serves a different purpose that can provide added value to both administrators and participants. Through some case study examples, this session will explore strategies for effective program QA, examine the objectives and obligations of each, and provide the opportunity to discuss challenges and lessons learned from the two perspectives.

Presenters - Doug McCleery, MaGrann Associates and Pat Fitzgerald, NYSERDA

Retrofits

Advanced Energy Lessons Learned: The Good, the Bad and Ugly of Existing Homes

Remember pre-ARRA when an abundance of existing homes work was just an idea with a big backing? Well we sure do and having seen the before, during and after impact on our industry first-hand we invite you to come hear Advanced Energy share some of the lessons learned from the field over the past 5 years. And don't worry like the title says there is good in there too.

Presenters - David Treleven & John Tooley, Advanced Energy

HPwES Forum for Contractors and Raters

As the Department of Energy explores options to create new business opportunities in HPwES, we want to know more about how contractors and raters are currently doing business and what is needed to promote greater participation in the home performance market. This meeting is intended to be an open discussion and is your chance to tell us what works for your business.

Moderator: Ely Jacobsohn, DOE

The Evolution of a Crawlspace – Lessons Learned from a Big Energy Retrofit

Applying building science principles to an existing home's crawlspace is much more complex than meets the eye. The stakes are high and many entities don't always agree on what is the best approach. Learn from professionals with years of research and real world experience about what works (and what doesn't) for successfully converting an old vented crawlspace into a functional encapsulated one.

This session takes you through the essentials of closed crawlspace performance issues. Details such as bulk moisture management, vapor retarder placement, air sealing, wall insulation materials and techniques, methods of conditioning, pest control, air quality, combustion safety and energy efficiency impacts are all fully vetted.

Mike will share energy performance data and unique details from his home's retrofit while Maria will showcase Advanced Energy's crawlspace research project and specifications for the System Vision program. Lots of pictures, lots of discussion, great resources – come get your nerd on with us!

Presenter(s) - Mike Barcik, Southface & Maria Mauceri, Advanced Energy

New Metrics of Weatherization Success

This session will present the results of monitoring several homes before and after weatherization using inexpensive precision temperature and relative humidity sensors (Onset HOBO loggers). The presentation will highlight how measuring the rate of change in these measurements as well as the pattern of these measurements permits a new class of performance metrics where the shell, HVAC and behavior can all be characterized. This new method separates the shell from the HVAC system and isolates behavior. It also can illustrate internal gain and separate the walls from attic and west facing glass, etc.

Presenter- Darren Maguire, Southeast Energy Assistance, Inc. (SEA)

Multifamily Residential

Multifamily HERS Ratings: Applying RESNET's Technical Standards

In the Rater community, there are often various interpretations of the RESNET Mortgage Industry National Standards as they apply to HERS ratings of multifamily units and/or buildings, leading to inconsistent results and practices among Raters. To reduce confusion and eliminate misinterpretations of the Standards, RESNET has convened a working group of multifamily experts to expand and clarify RESNET Standards as they apply to HERS ratings provided in the multifamily sector. During this session, working group members will provide clarification on the technical guidance related to performance testing, inspections of minimum rated features, energy modeling, and sampling, as they pertain to multifamily ratings. The working group will also discuss key definitions and the use of the HERS Index for individual units within multifamily buildings and/or whole multifamily buildings, when deemed appropriate.

The goal of the session is to introduce the proposed guidelines that will provide a consistent and clear approach to providing multifamily ratings.

Presenters - Brian Christensen, Architectural Energy Corporation; Abe Kruger, Kruger Sustainability Group & Ted Leopkey, EPA

Multi-Family Ventilation Update: Best Practices, Practical Applications and ASHRAE 2013

Multi-Family Ventilation Update: Best Practices, Practical Applications and ASHRAE 2013
ASHRAE 62.2 is one of the standards that are continuously maintained, which means it can change often. These changes can make it very difficult for you as an industry professional to ensure you are providing proper guidance to current and potential customers. If you are not fully comfortable with the differences between the 2010 and 2013 versions as they relate to multi-family construction, you need to attend this session. New products and solutions are constantly being introduced but how do you know which ones add the most value? Which best practices should you always recommend and implement? Ray Ivy and Mike Barcik have a broad range of experience with practical applications of ventilation in new construction and retrofit/weatherization situations. Come and refresh your knowledge base on this critical topic!

Presenters - Ray Ivy & Mike Barcik, Southface

All for One or One for All: Modeling Multifamily

The session will be a presentation on the advantages and disadvantages of modeling multifamily units on a per-unit basis vs a per-building basis. The presenters are experienced field assessors who will be sharing their personal experiences and the experiences of their peers. Topics explored will include: in what situations and for what intended goals are each testing and modeling methodology best suited; what equipment is most appropriate for each method; and finally, evaluating different circumstances which should be considered when trying to decide between various testing and modeling methods to provide the best results. The presentation will be formatted as an instructional talk targeting energy efficiency programs and individuals who may be considering a multifamily component of focus.

Presenter(s) - Michael Hackney & Jamie McKenzie, ICF International

Infiltration Testing and Results in Multifamily High-rise Apartment Units

Infiltration rates compiled over the past 4 years from sampling data from more than 3000 apartments and 50 mid and high-rise multifamily projects will be presented. Comparisons will be made between typical single-family and/or low-rise results and these sampled mid and high-rise results. These comparisons will focus on: guarded vs. unguarded testing, single vs. multipoint testing and single vs. bidirectional testing. LEED, ENERGY STAR and a Massachusetts utility specific baseline and their respective performance metrics will be discussed. As will the lessons learned from problems associated with sample selections to the most commonly identified construction and performance issues. Raters will come away from this session with a working knowledge and a greater appreciation of the testing protocols unique to high-rise residential buildings and testing results they can expect.

Presenter - David Ruggiero, ICF International & Michael Schofield, Conservation Services Group

Multi-Family Blower Door Best Practices and Newest QA/QC Innovations

Occupied multi-family buildings are difficult to test because you may only be able to access small portions of the building at one time. See how much can be learned with just one gauge to locate pressure imbalances. Then, using only two blower doors, learn how to locate and measure air leakage paths between units and common areas.

A Demonstration will show how multiple fans and pressure gauges can now communicate over Ethernet cables or through WiFi, allowing all the test fans and other diagnostic tools to be controlled and data logged from one location. The leakage of a single unit or entire building can be measured this way. The results and challenges from several large buildings will be presented.

The live demonstration will show how to control multiple fans and record all the data. Software runs the fans and records thousands of data points automatically. You don’t have to be a software engineer; the software makes all the decisions, and even allows you to accommodate accidental door openings in the middle of the test.

This presentation will also cover how to analyze test data to verify compliance, and will demonstrate how to combine WiFi technology to create quality control methods that can provide live confirmation of test results from a remote location

Learning objectives (provide at least four):
#1 Locate leakage paths in multi-family individual units
#2 Automatically Test multi-family units with limited access.
#3 Novel ways of testing parts of multi-family and large buildings.
#4 Understanding test results from software.

#5 Confirm Quality Control and test results remotely

Presenter - Colin Genge, Retrotec Inc.

EEBA Track

Train the Trainer Sales Session

The goal of this session is to empower you to help new home builders sell the value propositions the energy efficiency programs you deliver offer. Now that HERS ratings are commonly used by a wide range of builders in most areas of the country, the next challenge is to ensure new home sales agents and realtors demonstrate the value of energy rated homes to potential buyers. This session has been adapted specifically for raters from the EEBA Houses That Work Sales Training session delivered directly to new home sales agents. In this session you will develop a sales training plan outline that you can use to engage sales managers and the sales staff of new home builders to ensure more frequent opportunities for education sessions that will build commitment, enthusiasm and greater consistency in the message. The session will include identification of the 3 most common sales processes used by new home sales agents and how you can help them integrate the energy efficiency message into each one. Come learn the top 4 questions you should be asking each of your builders and the top 3 questions new home sales agents should be asking when speaking with homebuyers to ensure the success of the services and programs you offer. The presenter for this session has helped hundreds of new home sales agents effectively integrate energy efficiency messages into their sales process.

Presenter: Gord Cooke, Building Knowledge

Selling Your Value as a RESNET Energy Rater Session

Now that energy ratings have gained wide popularity across the country, a whole new range of potential builder and remodeler clients will be emerging, as will competition for rating services. This session will provide you with proper, proven sales techniques to ensure your prospective clients understand and appreciate the full value of the professional services you offer. The workshop will focus on sales methods often described as relationship selling or consultive selling, methods that encourage participants to understand the varied needs of a wide range of client types and then matching the services you offer to those important needs. Learn, too, proven techniques for overcoming price objections. The presenter has delivered similar training sessions to energy raters across North America, helping them ensure the clients they serve truly appreciate and value the service they offer.

Presenter: Gord Cooke, Building Knowledge

Add Value to Your Services Using the EPA Indoor airPLUS program.

This session will build on information previously presented to RESNET members about the EPA Indoor airPLUS Program and demonstrate how participants can use the program overall, and specific elements to help their clients make better decisions and to incorporate healthy indoor initiatives into their building projects. You will learn the four important, cost-effective strategies for controlling and improving indoor air quality that all of your clients should be made aware of. Participants will leave the session equipped to avoid potential risks and identify new opportunities for building and remodeling homes to simultaneously improve energy efficiency and indoor air quality and thus add

value to the services you offer. The session will include advice on how to market and sell air quality services from the presenter, who has done hundreds of effective and profitable indoor air quality investigations.

Presenter: Gord Cooke, Building Knowledge

TOURS

How SWEET it is!

Looking to enhance your trainings with hands-on props and demonstrations? Considering creating or updating educational materials related to energy efficiency and green building? Join us for a tour of the Southface Weatherization and Energy Efficiency Training (SWEET) Center and experience a state-of-the-art training facility. See first-hand how Southface approaches experiential learning and kick-the-tires on training props to gain ideas on how your organization can better convey your green story to funders, contractors and trades, consumers and clients. Learn from the experts and identify training tools and techniques for all budget levels.

Presenter - Brad Turner, Southface

Walk the Talk

We all make money by selling energy efficiency, but how well do we walk the talk in our own workplaces? Join us for a fun-filled tour of the Southface Resource Center and Eco Office to learn how one non-profit built two nationally acclaimed offices and uses them today for client engagement. See grey-water reuse and composting toilets in action along with hundreds of other green building technologies. Find out how Southface brought together the design and construction community to create these beautiful spaces and how they use them to continue their mission towards sustainability in the Southeast. Discover which strategies they would repeat, and which technologies they would avoid on future projects.

Presenter- Mike Barcik, Southface

Environmental Protection Agency ENERGY STAR Certified Homes Track

What's Next with ENERGY STAR?

Get a quick recap of the ENERGY STAR Certified Homes program in 2013 and learn about EPA's plans for 2014. This session will also include marketing updates, the ENERGY STAR Home Advisor and a discussion of the ENERGY STAR Version 3.1 program requirements, applicable to states that have adopted the 2012 IECC or equivalent, including Maryland, Illinois, and Massachusetts.

Presenter- The ENERGY STAR Certified Homes team

Cost-effective Strategies for Building ENERGY STAR Certified Homes

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.

Presenters- Rick Gazica, ICF International; Charlie Haack, ICF International

Getting Builders' Sales Staff Committed to ENERGY STAR

Many homebuilders invest significant time and energy to build homes that earn the ENERGY STAR. Yet, in many cases, homebuilders don't make a comparable effort when it comes to selling ENERGY STAR certified homes. As a result, the sales staff is often left feeling undereducated and uncomfortable selling the features and benefits of high-performing homes. Come to this session to learn how you can help your builder's sales staff create an effective ENERGY STAR elevator speech and incorporate ENERGY STAR into each part of their sales process.

Presenter- Nick Hurst, ICF International

ACCA Manual J Basics for ENERGY STAR Certified Homes

This is where the 'HVAC design train' leaves the station. The first step of designing a complete HVAC system is to determine how much heating a home needs in the winter and how much cooling it needs in the summer. This session will cover the basic concepts behind ACCA Manual J load calculations, the value of these calculations, common challenges that hinder accurate loads, and the impact that key inputs have on the resulting load. Learn about the surprising overlap between Manual J and a HERS rating; why doing load calcs. should never be like pin-the-tail-on-the-donkey, but often is; and why a Rater should be a contractor's best friend. After this, be sure to attend the next session in the series - "ACCA Manual S Basics for ENERGY STAR Certified Homes".

Presenter- Michael Brown, ICF International; Charlie Haack, ICF International

ACCA Manual S Basics for ENERGY STAR Certified Homes

Full steam ahead for the 'HVAC design train'. The second step of designing a complete HVAC system is to select heating and cooling equipment that meets the Manual J loads. This session will cover the basic concepts behind ACCA Manual S equipment selection and the value of this process. Compared to Manual J, Manual S is so simple that it can almost be done with your eyes closed. Unfortunately, the most common mistake makes it seem like sometimes it is. Learn what this mistake is and how to avoid it. After this, be sure to attend the next session in the series - "ACCA Manual D Basics for ENERGY STAR Certified Homes."

Presenters- Dean Gamble, U.S. EPA; Rick Gazica, ICF International

ACCA Manual D Basics for ENERGY STAR Certified Homes

This is the end of the line for the 'HVAC design train'. For most homes, the third step of designing a complete HVAC system is to configure a duct system that gets heated and cooled air from the equipment to the rooms, and back. This session will explain how ACCA Manual D helps designers achieve this goal, how a limit on total duct leakage contributes, and which half of the design is most often forgotten. Too many designers get off the 'HVAC design train' one stop too soon. Learn how a proper duct system completes the HVAC design and prevents it from going off the rails.

Presenters- Dean Gamble, U.S. EPA; Rick Gazica, ICF International

Case Studies in Coordination: ENERGY STAR Partners and HVAC Contractors Working Together to Ensure Success

More than ever before, builders, Home Energy Raters, and HVAC contractors must coordinate throughout the construction process to certify an ENERGY STAR home. This popular panel presentation will highlight the experiences and perspectives of ENERGY STAR partners who have teamed up with their HVAC contractors to ensure a successful experience.

Presenters- Dean Gamble, U.S. EPA; Builder, Rater, and HVAC Contractor Panelists

The "V" in HVAC: Mechanical Ventilation in ENERGY STAR Certified Homes

Every ENERGY STAR certified home is required to have a complete ventilation system. Gain an understanding of the value that this system adds. Then, become versed in its three major components – whole-house ventilation, local mechanical exhaust, and filtration – and discuss strategies for meeting them. Finally, review the relevant portions of the HVAC System QI Checklists that the contractor and Home Energy Rater must complete. This session will benefit contractors, Home Energy Raters, and builders still seeking to gain knowledge on this important topic.

Presenterd- Dean Gamble, U.S. EPA; Ashley Fowler, ICF International

Building and Verifying Indoor airPLUS Homes Just Got Even Easier
Indoor airPLUS is a companion to the ENERGY STAR Certified Homes program that provides valuable differentiation from competitors through a robust package of indoor air quality protections, with minimal additional builder or Home Energy Rater effort.

Based on extensive partner feedback, EPA has refined the program requirements to provide more flexibility and significantly streamline the compliance process, while still ensuring that labeled homes lead the industry in indoor air quality protections.

Learn about the most recent changes in Revision 2, including revised combustion pollutant requirements for attached garages and additional flexibility for meeting moisture control requirements.

Home Energy Raters will learn how to capitalize on this opportunity with forward-thinking builders and efficiently integrate the Indoor airPLUS label into their current ENERGY STAR Certified Homes verification process.

Presenters- Bob Axelrad, U.S. EPA; Nick Hurst, ICF International

New Opportunities for Raters: ENERGY STAR's Multifamily High Rise Program

Energy efficient multifamily buildings from townhouses to high-rises are eligible to earn the EPA's ENERGY STAR label through two paths offered by the EPA: Version 3 of the Certified Homes program and the new Multifamily High Rise Program. This presentation will explain which multifamily buildings are eligible for the ENERGY STAR label through each path, compare and contrast the procedures for earning the ENERGY STAR in the two approaches, and explain how Raters can be involved in the process.

Presenters- Ted Leopkey, U.S. EPA; Gayathri Vijayakumar, Steven Winter Associates

ENERGY STAR v3 from a Raters Perspective

When will we feel comfortable with Energy Star Version 3. Stumbles, fumbles, and rumbles but we are making progress and yes we are still learning. Come hear one Raters perspective on how ESv3 is going, what builders are thinking, and where we may want to go from here.

Presenter- Robby Schwarz, EnergyLogic

DOE Challenge Home Zero Energy Ready Home Track

Why the Housing Market is Ready for Zero Energy Ready Homes Today: The Business Case for DOE Challenge Home

If you put your ear to the track, you'll hear a fast approaching train. In fact, the zero energy ready home train has officially left the station. Thousands of these homes are complete and many more are committed to the U.S. DOE Challenge Home program in an incredibly short amount of time. This session will examine the effective business strategy and outstanding customer value propositions driving builders to this extraordinary level of performance. But in the end it's very simple, zero energy ready homes provide a product that is emotionally exciting to homebuyers, dramatically lower in builder risk, and substantially differentiated in a highly competitive market. DOE Challenge Home provides an easy solution for builders and raters to embrace this opportunity.

Presenters- Sam Rashkin, U.S. DOE

Why Zero Energy Ready is Readily Achievable: Technical Specifications for DOE Challenge Home

HERS scores have swept into the housing industry providing a widely recognized "MPG" for homes. But a car's performance doesn't end there… and neither does a home's. As DOE Challenge Home establishes a label for Zero Energy Ready Homes, what specifications ensure both energy efficiency and performance? As we move into HERS 60, 55, or lower homes… how do we ensure adequate moisture management, IAQ, and combustion safety in addition to the home's efficiency? In this session you'll learn how the DOE Challenge Home specs provide a systems-based path that defines truly zero energy ready performance.

Presenter- Jamie Lyons, Newport Partners, LLC

What are These Builders Thinking: Zero Energy Ready Home Builder Roundtable.

Why would US homebuilders, in the midst of a historically bad housing market – dare to innovate with Zero Energy Ready Homes? Facing fire sale prices from existing homes and just a fraction of the buyers from the boom market – how are these builders succeeding in the Zero Energy Ready Home space? Join this builder roundtable of DOE Challenge Home builders to hear about their Zero Energy Ready Homes, the business decision leading them to this level of excellence, and their business outcomes. These are truly leading builders in the housing industry that raters need to listen to.

Presenters- Imery & Co (GA builder), Addison Homes; CR Hero, Meritage Homes and Bill Rectanus, New Town Homes

Making Zero Energy Ready Homes Easy: Resources for Verifying, Constructing, and Marketing Zero Energy Homes

Plan review… energy modeling… field inspections… certification…done! Right? If it were only that simple to design, build, and market Zero Energy Ready Homes. The reality is that there's a lot more involved to be successful – like technical resources, tools to navigate the lending process, and marketing collateral to connect in a meaningful way with buyers. In this session you'll learn about recently developed DOE resources you can use to succeed: the Building America Solution Center; the DOE Challenge Home Appraisal Guidance; the DOE Challenge Home Customizable Brochure, and the DOE Challenge Home Virtual Parade of Zero Energy Ready Homes. \

Presenters- Michael Baechler, PNNL and Sam Rashkin, U.S. DOE

Rating Zero Energy Ready Homes: How to help builders participate in DOE Challenge Home and certify their homes using RESNET software

Today's leading Raters offer their builder clients a growing tool kit of market "difference makers". Using the DOE Challenge Home label to distinguish a Zero Energy Ready Home is a powerful distinction that innovative builders want. These builders are creating homes people simply must have once they experience their incredible benefits – comfort, health, low/no utility bills, innovation, and many other areas. And the best part for Raters is that certifying these homes involves just a few additional steps beyond ENERGY STAR for Homes Version 3. In this session you'll learn how to certify for DOE Challenge Home using RESNET-accredited software; how specific field verifications are conducted; and how homes are labeled and can become eligible for case studies and national awards.

Presenters- Jamie Lyons, Newport Partners, LLC and TBD, Challenge Home Rater

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

Most builders have moved beyond 2x4 walls, a compressed batt, and a couple tubes of caulk for their thermal envelope strategy. But how far do we need to go with insulating and air-sealing? What levels make sense? And equally important – how can we build to these levels effectively and avoid unintended problems with production, moisture management, and IAQ? DOE Challenge Home – DOE's label for Zero Energy Ready Homes – establishes envelope insulation levels anchored to the 2012 IECC and infiltration levels half those of ENERGY STAR for Homes Version 3. In this session you'll learn about implementing these specs, key design issues, and the latest recommendations from DOE's Building America program on high R value, air-sealed envelopes.

Presenters- Pat Huelman, NorthernStar and Joe Lstiburek, Building Sicience Corp:

Zero Energy Ready Home Technical Solutions: Ducts in Conditioned Space

Raters don't like it. Energy codes penalize you for doing it. And in Zero Energy Ready Homes - - we just can't accept it. Ducts carrying cool, comfortable air in the 50s just don't belong in a 130F degree attic with a mere 2" of insulation. The good news is that keeping ducts in conditioned space isn't a 1-size-fits-all design requirement in DOE Challenge Home. Over the last several years, DOE's Building America research program and its partners have worked out the kinks on a toolkit of duct design strategies. In this session you'll learn the pros and cons of these strategies so you can specify distribution systems which are effective in any type of project.

Presenter- Bill Zoeller, Steven Winters Assoc.

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

Raters know these homes well: It's the 10-20 year old home built with an HVAC system big enough to heat the neighbor's house too – and the garage. And if the 100 kBtu furnace was oversized for that leaky, poorly insulated home – just imagine the real design loads we see in today's Zero Energy Ready Homes! But the load calc is just the start… what does a design load which is a small fraction of a typical new home's load mean for product options? Do we need an exotic HVAC system now? Or can we take money out of the HVAC system because it'll hardly run? What about controls … will the setback thermostat still work? How do we manage longer swing seasons with no demand for space conditioning? In this session you'll learn about these design issues based on actual projects from both DOE Challenge Home and the US DOE Building America program.

Presenters- Duncan Prahl, IBACOS; Eric Martin, FSEC and Sri Puttagunta, Steven Winter Assoc.

Zero Energy Ready Home Technical Solutions: Indoor Air Quality (including Whole-House Ventilation best practices)

"Build tight, ventilate right." But is that enough for a comprehensive approach to indoor air quality. Absolutely no. A complete indoor air quality system addresses three critical functions: source control, dilution, and filtration. This session will include the details and best practices for a complete indoor air quality system and examples how they were applied in DOE Challenge Homes.

Presenter- Terry Brennan

Zero Energy Ready Home Technical Solutions: Renewable Energy Ready, Water Conservation, Disaster Resistant Construction, and Water Resistant

The "Ready" in the Zero Energy Ready name means these homes are designed to accommodate renewable energy systems to offset most or all on-site energy use. And this means more than a south-facing roof. It includes a comprehensive set of low-cost/no-cost details that can save thousands of dollars downstream where homebuyers install solar electric and solar thermal systems after they move in. In addition to being ready for solar, it is important that Zero Energy Ready Homes start addressing opportunities for water conservation for additional energy savings and sustainability. That's why DOE Challenge Homes encourage builders to meet EPA WaterSense specifications. And lastly, homes built this well are prepared to last hundreds of years… if they are ready for disaster risks prevalent in their location. That's why DOE Challenge Home also encourages builders to meet disaster resistant guidelines from the Institute for Business and Home Safety's Fortified Home Program. Learn about all these important details and specifications that will become increasingly important in the housing industry and provide further business opportunities for HERS raters.

Presenters- James Lyons, Newport Partners, LLC; Jonah Schein EPA WaterSense, and TBD, Institute for Business and Home Safety