



RESNET 2022 Building Performance In-Person Conference Schedule at a Glance

NOTE: Schedule is subject to change. All in-person attendees must comply with health & safety protocol set by RESNET to attend. For more information visit RESNET.US/2022. Detailed schedule on page 3.

February 21-23 | Pre-conference February 19-20
HILTON AUSTIN RESORT 500 E 4th St, Austin, TX

All events onsite unless noted as offsite.

Conference Schedule at a Glance

Pre-Conference

SATURDAY - FEBRUARY 19th

8:00 a.m. – 5:00 p.m. PRE-CONFERENCE EDUCATION AND TRAINING

SUNDAY - FEBRUARY 20th

8:00 a.m. – 5:00 p.m. PRE-CONFERENCE EDUCATION AND TRAINING

Conference

MONDAY - FEBRUARY 21st

8:30 a.m. – 10:30 a.m.	RESNET Monday General Session
10:30 a.m. – 11:00 a.m.	Networking Break
11:00 a.m. – 12:00 p.m.	MONDAY BREAKOUT SESSIONS 1
12:00 p.m. – 1:30 p.m.	Networking Lunch
1:30 p.m. – 2:30 p.m.	MONDAY BREAKOUT SESSIONS 2
2:30 p.m. – 3:00 p.m.	Networking Break - Sponsored by U.S. Energy Star Homes
3:00 p.m. – 4:00 p.m.	MONDAY BREAKOUT SESSIONS 3
5:00 p.m. – 7:00 p.m.	Evening Reception - Sponsored by ICC

TUESDAY - FEBRUARY 22nd

8:30 a.m. – 10:30 a.m.	RESNET Tuesday General Session
10:30 a.m. – 11:00 a.m.	Networking Break
11:00 a.m. – 12:00 p.m.	TUESDAY BREAKOUT SESSIONS 1
12:00 p.m. – 1:30 p.m.	Networking Lunch
1:30 p.m. – 2:30 p.m.	TUESDAY BREAKOUT SESSIONS 2
2:30 p.m. – 3:00 p.m.	Networking Break
3:00 p.m. – 4:00 p.m.	TUESDAY BREAKOUT SESSIONS 3
5:00 p.m. – 7:00 p.m.	Evening Reception - Sponsored by DPIS/Ei

Please note that session list is subject to change.

Last updated 2/2/2022

**session is advanced*

WEDNESDAY - FEBRUARY 23rd

8:30 a.m. – 10:30 a.m.	RESNET WEDNESDAY General Session
10:30 a.m. – 11:00 a.m.	Networking Break
11:00 a.m. – 12:00 p.m.	WEDNESDAY BREAKOUT SESSIONS 1
12:00 p.m. – 1:30 p.m.	Networking Lunch
1:30 p.m. – 2:30 p.m.	WEDNESDAY BREAKOUT SESSIONS 2
2:30 p.m. – 3:00 p.m.	Networking Break

RESNET 2022 Building Performance Conference In-Person **FULL-SCHEDULE**

Pre-Conference: SATURDAY - FEBRUARY 19th

8:00 a.m. – 5:00 p.m. PHIUS Rater Training - [additional registration required](#)

Presenter: Tony Lisanti

Room: Meeting Room 406 4th Floor

PHIUS Raters focus on single-family residential projects. The course is geared toward experienced RESNET and BPI professionals and provides grounding in passive building principles as well as a guide to onsite quality assurance for the Phius Certification program. Some topics include:

- Enclosure integrity design strategies
- Passive building mechanical/ventilation systems
- On-site verification of passive building construction features
- Airtightness/blower door testing protocols

This training is delivered in 2 parts. The first part consists of approximately 8 hours of self-paced training on the Phius training portal that needs to be completed prior to the in-person class. Upon registration, students will receive a login to the Phius Training Portal. The second is a full day of in-person training.

The course concludes with an exam that must be completed within 10 days of the end of class. Successfully completing the course and exam qualifies the trainee as a PHIUS Rater.

Candidates should possess some combination of the following experience:

- Professionals with low-rise residential energy efficiency certifications such as RESNET Rater or BPI Analyst.
- Professionals with on-site verification experience working with ENERGY STAR, LEED for Homes, and/or similar programs.
- Professionals with architecture, engineering, building science, construction management, or other similar experience who have background knowledge and experience in high performance design, construction, and on-site verification for single-family residential buildings.

[REGISTER HERE.](#)

8:00 a.m. – 5:00 p.m. LEED Green Rater Training – [additional registration required](#)

Presenter: Carissa Sawyer

Room: Meeting Room 408 4th Floor

[REGISTER HERE](#) for each prospective attendee for the LEED Green Rater Training at the RESNET 2022 Conference in Austin, Texas at the Hilton Austin Hotel.

The training is at a reduced conference rate of \$500 per attendee (this does not include the \$45 fee for the LEED Green Rater quiz). No meals will be included. A 1.5 hour lunch will be given for attendees to find a local lunch venue. Note that this in-person training is Part 2 of the training requirements, and the attendee will be required to complete Part 1 prior to the Pre-Conference LEED Green Rater Training event. [Please visit this website to read about the requirements to become a LEED Green Rater, including mandatory eligibility requirements.](#)

Pre-Conference: SUNDAY - FEBRUARY 20th

9:00 a.m. – 12:00 p.m. International Energy Code Council (IECC) Residential Energy Inspector/Plans Examiner Training

Presenter: Chris McTaggart, The BER

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**session is advanced*

Room: Meeting Room 400/402 4th Floor

This training will prepare persons for the ICC Residential Energy Inspector/Plans Examiner test. Persons completing this training can either take the in-person proctored test in the afternoon or take the test online after the RESNET 2022 Conference.

Passing the ICC Residential Energy Inspector/Plans Examiner Certification Exam by certified RESNET HERS Raters and RFIs to be designated by the ICC for the IECC/HERS Compliance Specialist certification.

Texas law requires that one must be certified by ICC as an Residential Energy Inspector/Plans Examiner to conduct the testing and inspections to demonstrate compliance with the Texas energy code.

Registration information will be posted soon.

1:00 p.m. – 5:00 p.m. Proctored International Code Council (ICC) Residential Energy Inspectors/Plans Examiner Certification Exam

Room: Meeting Room 400/402 4th Floor

Passing the ICC Residential Energy Inspector/Plans Examiner Certification Exam by certified RESNET HERS Raters and RFIs to be designated by the ICC for the IECC/HERS Compliance Specialist certification.

Texas law requires that one must be certified by ICC as a Residential Energy Inspector/Plans Examiner to conduct the testing and inspections to demonstrate compliance with the Texas energy code.

Registration information will be posted soon.

1:00 p.m. – 5:00 p.m. RESNET Quality Assurance Designee Certification Training

Presenters: Scott Doyle, Laurel Elam and Billy Giblin, RESNET QA Team

Room: Meeting Room 404 4th Floor

This training will help current Quality Assurance Delegates to prepare to become certified as a RESNET Quality Assurance Designee.

Registration information will be posted soon.

2:00 p.m. – 5:00 p.m. Draw and Score! Draw your house in modeling software.

Presenters: Jeff Myron, UCF FSEC; Russ King, Coded Energy

Room: Meeting Room 406, 4th Floor

This session will demonstrate the unique ability in EnergyGauge USA ResRateSizePro with Kwik Model 3D to easily draw and model a residential building to comply with HERS, ENERGY STAR, IECC Code Compliance, FL Code Compliance, ACCA Manual J, ACCA Manual S, ACCA Manual D, Tax Credit, and DOE ZERH. The software produces the ANSI / RESNET / ACCA 310 HVAC Design Report required for HVAC grading design compliance.

This input method is fast, easy and fun. This new data entry method has the video game look and feel providing an easy and accurate method to update or modify projects. Data entry input efficiency is further enhanced by the addition of libraries for envelope constructs.

The 3D view offers raters the ability to visualize the building unlike they have in the past.

The capabilities described are available exclusively for raters in the latest release of EnergyGauge USA ResRateSizePro.

8:00 a.m. – 5:00 p.m. LEED Green Rater Training Continued

Room: Meeting Room 408 4th Floor

MONDAY - FEBRUARY 21st

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**session is advanced*

8:30 a.m. – 10:30 a.m. RESNET Monday General Session**Room:** Governor's Ballroom, 4th floor**10:30 a.m. – 11:00 a.m. Networking Break****11:00 a.m. – 12:00 p.m. MONDAY BREAKOUT SESSIONS 1****Rooms:** Meeting rooms 406-418, 4th floor*Where the Rubber Meets the Road: Do High-Performing Homes Impact Home Values?*

The energy efficiency industry has delivered considerable value and made an impressive impact on our nation's housing stock. Three (3) million HERS rated homes. Two (2) million ENERGY STAR Certified Homes. Tens of millions of homes built to modern energy codes. But does that value persist? Or is all your hard work ignored when a rated home is maintained and resold? In this session, learn from Pearl, a real estate agent and an appraiser about what happens when high-performing homes are re-sold -- and what needs to happen for the value of your work to be reflected in future sales prices.

Presenters: Nathan Gee, Pearl Certification; Woody Fincham, Accurity Fincham & Associates, Inc and; Greg Slater, Nest Realty

Why HERS Raters Should Learn to do Residential HVAC Design ()*

HERS Raters, especially those who do energy modeling, are in a unique position to offer residential HVAC design services for new construction, as well as existing homes. Their combination of knowledge of inputting building information into modeling software, their appreciation of energy efficiency and building science, and their field experience makes them especially qualified to provide this service. Although HERS Raters lack the intimate knowledge of the practical side of the equipment and how it is installed, this can be gained by working closely with HVAC contractors during the design and installation process. HVAC contractors typically have very little experience with any kind of building modeling software. Somebody needs to step up and help installers if we are to improve the quality of HVAC designs and subsequent performance.

Presenter: Russell King, ME, Coded Energy

Standard 310 Compliance Made Easy ()*

RESNET/ACCA/ICC Standard 310 holds a lot of promise to lower HERS Index scores and improve the home's efficiency. Some tests you perform are easy enough, like measuring duct leakage. But what about all those other tasks? Is there a simpler way to obtain compliance? Yes, ACCA has a way for the HVAC professional to easily submit the needed measurements. The home could get a lower score, the homeowner will enjoy a better performing HVAC system, the home builder will have a happy customer, and you will have a happy home builder. Win, win, win, win.

Presenters: Wes Davis, ACCA and Joe Medosch, measureQuick

All About Air Tightness Testing ()*

For building envelopes and duct systems, airtightness is a key factor in the "House As A System" approach to high-quality building. This makes blower doors and duct testers vital tools for HERS Raters. Both tools can be used not only to measure air leakage but also to expose leaks with the help of additional tools. In this session, we'll cover the best practices for conducting airtightness tests on building enclosures and ducts.

We'll also include the dos and don'ts for multiple scenarios as well as methods for field checking your equipment to ensure it is reading and working properly. You cannot calibrate fans and manometers yourself, but there are some tests you can do on your equipment to make sure they are operating just as they did when

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they left the factory. This will also be a great opportunity to ask a manufacturer any questions you have about airtightness testing.

Presenter: Sam Myers, Retrotec

The Latest on the Federal Tax Credit for Energy Efficient Homes

The 45L federal tax credit is for builders who build and sell energy-efficient homes. The tax credit was set to expire on December 31, 2021. RESNET was very active in advocating for the extension of the credit. The 45L tax credit is an important tool for improving the energy performance of new homes. Congress has extended and amended the tax credit. This session will explain the changes that Congress has made to the credit and what it means for builders and RESNET professionals.

Presenters: Steve Baden, RESNET and Carl Chidlow, Winning Strategies Washington

Energy Code Update: The 2021 International Energy Conservation Code (IECC)

The International Code Council published the 2021 IECC in January of 2021 and numerous states are poised to adopt it. Attend this session to stay up to date on the latest residential provisions in this national model energy code. This session will provide an update on changes between the 2018 and 2021 IECC with a focus on items with the greatest impacts on Raters and other energy professionals, including changes to requirements for air sealing, infiltration testing, duct leakage testing, mechanical ventilation system testing, and energy modeling-based compliance approaches. The session will also cover a variety of items that must be met regardless of the chosen energy code compliance path (formerly known as “mandatory” provisions).

Presenter: Mike Turns, Performance Systems Development

12:00 a.m. – 1:30 p.m. Networking Lunch

Rooms: Salon A and B, 4th floor

1:30 p.m. – 2:30 p.m. MONDAY BREAKOUT SESSIONS 2

Rooms: Meeting rooms 406-418, 4th floor

Build Your Brand Through Thought Leadership: You have More to Say than You Know

Rating companies, green building consultants, and builders all face today’s fundamental marketing challenge--an increasingly noisy, confusing online environment that makes it difficult for quality companies to get their message across. Despite these hurdles, our target audiences are hungrier than ever for real, practical information as they navigate a completely new world of building codes, high performance construction practices, and more informed homeowners. Thought Leadership Marketing, where companies position themselves as a trusted, go-to resource to answer these questions, is very often the answer to this challenge. Yet, many fear going down this path: what do I have to say? How much time will it take? What if I’m not a natural writer?

This workshop features Peter Troast of Energy Circle, the sector’s leading marketing expert, and Steve Byers, CEO of EnergyLogic, a rating company thriving on a strategic approach to thought leadership. We’ll break down what it means, why it’s not as difficult as it may appear on the surface, practical ways to develop content, and how you can maximize the reach of your information.

Presenters: Peter Troast, Energy Circle and Steve Byers, EnergyLogic

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**session is advanced*

Transparency in QA - Setting Reasonable Expectations ()*

This session provides a visual walkthrough of the RESNET QA Process from the perspective of both Raters and QADs. We'll look at recent history, how the QA process has evolved, and what that means for the individual rater and the industry. As rating professionals, we're tasked with ensuring the integrity of the rating process, in many cases for program or jurisdictional compliance. The only way that we can collectively make decisions and set reasonable expectations is through transparency in our processes. The primary goal of this session is to bring a level of understanding to the QA process, elevating the working relationship between rating professionals and their service providers.

Presenter: Cindy Zeis, Performance Systems Development

Real-World Project Feature

This session will feature two or more unique or challenging (out of the ordinary) rating projects. This session aims to put the spotlight on the broad spectrum of residential buildings receiving HERS ratings and the talented HERS Raters who test, inspect, and model them.

Moderator: Scott Doyle, RESNET. **Presenters:** Matson Stafford, U.S. EcoLogic; Jim Baker, B and G Drafting, and Sajed Sadati.

Delivering Healthy Air in Every Home We Build by controlling Humidity, Air Purity and Ventilation ()*

Control of Indoor Air Quality requires more than just code-driven ventilation. The IAQ system must manage humidity levels, air purification, and a host of variables related to fresh air delivery. The scientific and medical communities have provided excellent guidelines on what makes air "healthy." Learn how a system-based approach that integrates existing products and technologies for IAQ can create environments that truly are safer and healthier for all occupants, year-round. High-performance builders and indoor air quality product manufacturers are at the forefront of making the right critical recommendations to the public to best ensure healthy air in every home.

Presenters: Chris Howells and Joseph Hillenmeyer, Sr., Aprilaire

Keeping the Uncontrollable in Control 24/7 365 - Moisture is a Life Source and a Contaminant, What Should We be Doing? ()*

Nikki and Joe tell the tale of the Three Ducks (bears always get the spotlight) Papa Duck is too wet, Mama Duck is ... you get the analogy. How do these Ducks control moisture in their home?

Moisture levels took center stage during all the indoor air daily webinars on SARS-CoV-2, MUST HAVE 40-60 RH! Wait- I live in the Southwest or Florida - now what?

Let's take a deep dive into the BS behind moisture, absolute, relative, grains, and dewpoint. What are the differences in these measurements and why, as an industry, are we using a moving target like RH?

We will discuss common controllable moisture sources, natural and occupant created. What are the affordable strategies to control the indoor environment - envelope vs. mechanical. Affordable systems, independent and connected, are controllable methods to increase and remove moisture, sometimes in the same week. Moisture from below, in the middle, and trying to escape above, the three Ducks have options. These are all necessary details for high-performance homes with tight assemblies.

We will discuss the climate zones that are in denial of moisture challenges and climate-specific recommendations.

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Moisture is required for life but exposure to damp indoor environments has sufficient evidence of an association to upper respiratory tract symptoms and asthma symptoms in sensitized persons. The damp family room basement can be a health hazard.

You will have a new respect for the most impactful forces of nature in your life - moisture.

Presenters: Nikki Krueger, Santa Fe Dehumidifiers and Joe Medosch, Hayward Score

RESNET's New CO₂ /Time of Use Index ()*

RESNET has recently added a CO₂ Index to its ANSI/RESNET/ICC 301-2019 Standard. This CO₂ Index is based on the regional long-run, hourly electricity generation emission projections of the Cambium database developed by NREL. The new CO₂ Index takes advantage of two significant advancements: 1) the fact that the Cambium database provides CO₂ emissions for each of the 8760 hours of the year for each of the generation and emission assessment regions in the Nation and 2) the fact that all RESNET-accredited HERS Software Tools now perform hourly energy use calculations. As a result, it is now possible for RESNET to take advantage of these hourly CO₂ emission rates to provide a new metric valuing when energy is used within its Rating portfolio. Providing a CO₂ performance Index for homes is also extremely timely for climate change considerations and the Environmental, Social and Governance (ESG) considerations of RESNET's client corporations. The discussion will include the fact that the new index will include time of use and what it means to utilize efficiency programs.

Presenters: David Goldstein, National Resources Defense Council (NRDC); Neal Kruis, Big Ladder Software and Alice Rosenberg, Consortium for Energy Efficiency

2:30 p.m. – 3:00 p.m. Networking Break - Sponsored by U.S. EPA Energy Star Homes

3:00 p.m. – 4:00 p.m. MONDAY BREAKOUT SESSIONS 3

Rooms: Meeting rooms 406-418, 4th floor

Proposal for a New RESNET Standard for Embodied Carbon

HERS Raters capture data points needed to calculate Operational Emissions for the HERS Index; 65 of these data points overlap with those needed to calculate Embodied Carbon Emissions. With software innovations made to RESNET Accredited HERS Rater Software Systems, designers and builders could dial in on both operational and embodied carbon-in-materials targets, making strategic choices to lock in up-front carbon savings. NEHERS is seeking funding to do a baseline study, which could be used to determine a carbon baseline reference home standard. If included in the HERS Index, it would become part of what is already the gold standard for home energy assessments in the residential home market, transforming the HERS Index into an even more powerful tool for tackling climate change within the next 10 years.

Presenters: Mike Browne, Advanced Building Analysis; Chris Mazzola, Home Energy Raters, LLC; Andy Buccino, Stephens, and Company, Inc; and Betsy Ames, NEHERS

HERS Ratings - The Key to Valuing of Green Homes

The HERS rating offers a great opportunity for appraisers to value green homes in residential real estate appraisals. Currently, over a quarter of all new homes built are HERS rated. Through the RESNET/Appraisal Institute, Appraiser Portal appraisers can now access key information from RESNET's registry to be able to compare homes with HERS ratings in the marketplace. This session will explain the Appraisal Institute's

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collaboration with RESNET to educate appraisers on the valuable data on green homes, the Appraiser Portal and how it works, and how HERS Raters can work with appraisers.

Presenter: Timothy Runde, Appraisal Institute

An EASY 'A', on Your Next QA – Taking Advantage of Addendum 58 and Nailing Pre-Drywall QA Minimum Rated Features. ()*

In this session attendees will be familiarized with the requirements for Pre-drywall QA in Addendum 58, and explore the minimum rated features found in ANSI/RESNET/ICC 301 - Normative Appendix A and Normative Appendix B. Learning objectives are targeted to minimum rated features which can only be captured at pre-drywall and will detail benefits to Raters (inspection revenue stream, QA requirement option), builders (lower HERS scores, and measurable quality control) and providers (QA requirement options). This aspect of the rating process has become increasingly important to HERS Raters seeking to move builders to an ERI Path for code compliance in a consistent and defensible manner.

Presenters: Michael J Arblaster, Harmony Home Energy and Billy Giblin, RESNET

Heat Pumps and ACCA Manual S ()*

Air source heat pumps are becoming a common choice for new construction. The capabilities of variable capacity heat pumps are broader than unitary equipment, but they are not infinite. This session will share strategies for selecting heat pumps as well as provide details of the pending Manual S revision. Particular attention will be paid to cold climates and humid climates. A significant Manual S adjustment has been made those addresses entering air conditions and ventilation loads, allowing for more accurate data to be used in the sizing process. This session should prove valuable for load calculation professionals, energy modelers, and HVAC system verifiers.

Presenters: Voya Milasinovic and Shawn LeMons, Mitsubishi Electric Trane HVAC (METUS)

Disaster Resilience: Tools and Tips for Raters and Builders

Billion-dollar disasters such as wildfires, floods, hurricanes, and severe storms have struck with increasing frequency in recent decades. While homeowners may feel powerless against the forces of nature, there is much that can be done to build and rebuild with disaster resilience in mind to decrease the devastating effects of severe weather events. Armed with building science, builders, remodelers, and raters all have a role to play in encouraging more disaster-resilient construction. In this session, our group of presenters will look at what is available in terms of resources for disaster resistance from federal, regional, industry, and utility programs. We'll hear from building scientists working with the U.S. Department of Energy (DOE) and Housing and Urban Development (HUD) as well as the Insurance Institute for Business and Home Safety (IBHS) and utility programs to learn about new resources and programs available to those involved in the home construction industry. We'll then look at case studies and best practices from programs that have worked in this sector, wrapping up with a look at utility programs that have supported new construction and rebuilds with incentives, technical support, and partnerships with manufacturers.

Presenters: Dan Wildenhaus, TRC; Alexandra Cary, Insurance Institute for Business and Home Safety; John Peavey, Home Innovation Research Labs and Theresa Gilbride, Pacific Northwest National Laboratory

A Path to the Future - Texas' Energy Code HERS Index Compliance Option

In 2021 the Texas Legislature passed HB 3215. The legislation updates the state's universal energy code compliance pathway to allow builders to use the HERS Index for energy code compliance across the state, in place of the state energy code or any stretch code adopted by municipalities. This session will explore how this new legislation makes it easier for builders to use the RESNET HERS Index for energy code compliance in

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Texas, and how other states can look to this legislative model, moving forward from HERS rating companies' perspectives.

Presenters: James Rodriguez, Fox Energy Specialists; Jonathan Risch, DPIS/Ei and Kathy Howard, Burgess Construction Consultants, Inc.

5:00 p.m. - 7:00 p.m. Evening Reception - Sponsored by ICC

Room: Pre-function space, 4th floor

TUESDAY - FEBRUARY 22nd

8:30 a.m. – 10:30 a.m. RESNET Tuesday General Session

Room: Governor's Ballroom, 4th floor

10:30 a.m. – 11:00 a.m. Networking Break

11:00 a.m. – 12:00 p.m. TUESDAY BREAKOUT SESSIONS 1

Room: Meeting rooms 406-418, 4th floor

Energy Trends in Marketing, Valuing, and Financing

Through the collaboration of many organizations and making energy efficiency visible, the real estate sector is more aware of the benefits of energy-efficient ratings than they were 5 years ago. Our work is not complete, and through continued collaboration, energy efficiency will become a value-added feature in marketing, valuing, and financing. In this session, we will review the areas of success and the paths to overcome the weaknesses. Raters, builders, appraisers, and lenders will want to be in this session to learn how to be a part of the movement to healthier homes, better marketing, and valuation.

Presenter: Timothy Runde, Appraisal Institute

Remote QA Before, During, and Well After the Pandemic: A Panel Discussion ()*

RESNET and Building Professionals have been working toward integrating smart remote Quality Assurance for years, with an eye to reducing costs, increasing flexibility, and maintaining high standards. The COVID-19 pandemic radically accelerated the need for good Remote QA, and the need drove innovation, which led to lots of experience since March 2020. The challenges go beyond cell connections and video limitations, and the many benefits will help guide the future of QA. Our panelists include QA Providers who have integrated remote QA, along with RESNET's Quality Assurance team.

Presenters: Emelie Cuppernell Glitch, Performance Systems Development; Michael A Browne, Energy Raters of Massachusetts, Inc.; Scott Doyle, RESNET and Sharla Riead, Hathmore Technologies, LLC

Delivering Healthy Air in Every Home We Build by controlling Humidity, Air Purity and Ventilation ()*

Control of Indoor Air Quality (IAQ) requires more than just code-driven ventilation. The IAQ system must manage humidity levels, air purification, and a host of variables related to fresh air delivery. The scientific and medical communities have provided excellent guidelines on what makes air "healthy." Learn how a systems-based approach that integrates existing products and technologies for IAQ can create environments that are safer and healthier for all occupants year-round. High-performance builders and indoor air quality product manufacturers are at the forefront of making the right critical recommendations to the public to best ensure healthy air in every home.

Presenters: Chris Howells and Joseph Hillenmeyer, Aprilaire

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How the US Housing Market will achieve Net Zero Carbon Emissions

Using Ekotrope's unique dataset and Scenario Modeling we will explore various pathways to Net-Zero. Our broad dataset allows us a unique perspective on Net-Zero strategies and policies. This data in combination with Scenario Modeling - a new tool that enables Raters to quickly answer what-if questions on large groups of energy models - allows Ekotrope to analyze many Net-Zero strategies quickly and identify the best options with relative ease. We'll use this tool to evaluate the effectiveness of various building strategies to achieve Net Zero in the US new construction home market. These data and lessons learned can help decision-makers craft new policies and building strategies to achieve Net-Zero carbon construction.

Presenter: David Pedrick, Ekotrope

Energy Code(s) of Tomorrow

Outside of the states and municipalities considering the 2021 International Energy Conservation Code, numerous jurisdictions are considering stretch energy-efficient energy codes. Places like Seattle, Boulder, and Massachusetts have either adopted or are in the process of adopting advanced energy codes that go well beyond the 2021 IECC. A net-zero appendix is also in the latest edition of the IECC. What are the features of these new energy codes and how will they be implemented and enforced. What role will there be for energy raters in these new energy codes?

Presenter(s): Isaac Elnecave, Phius

12:00 p.m. – 1:30 p.m. Networking Lunch

Rooms: Salon A and B, 4th floor

1:30 p.m. – 2:30 p.m. TUESDAY BREAKOUT SESSIONS 2

Room: Meeting rooms 406-418, 4th floor

Closing the Information Gap About Energy Efficient Products

There are thousands of energy-efficient products available for home builders, and more innovative solutions coming to market every day. How can we best find and evaluate these products and connect builders to the right products for their homes? What are the industry trends in terms of the adoption of each product? Are there missed opportunities to build better homes simply due to a lack of information? (spoiler alert: yes!) In this session, we will leverage data from nearly one million Ekotrope HERS Ratings in 2021 to explore these questions and build a toolkit of answers and solutions that drive toward better home building decisions, all while reducing headaches and wasted time for HERS Raters.

Presenter: Cy Kilbourn, Ekotrope

RESNET Pilot of Performance-Based Quality Assurance

At its Spring 2019 Meeting, the RESNET Board of Directors voted in favor of proposed revisions aimed at improving the effectiveness and efficiency of RESNET's overall Quality Assurance Program. There were five distinct initiatives in the proposed plan; one of which was to incentivize better quality through a performance-based approach.

As originally proposed, the Performance-Based QA initiative would have used reduced rating/QA fees as the primary incentive along with increased fees for non-compliance. Feedback from providers has informed us that the training and mentoring of new Raters and RFIs has become more of a burden on provider resources and would not be offset by a fee reduction.

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Recognizing the need for a pivot, RESNET Staff is proposing an alternative incentive and will be conducting a pilot in 2022 using a subset of the measures that were approved by the RESNET Board of Directors. This session will cover the details of the pilot including pre-requisites for participation, enhanced QA measures, and incentives to encourage participation.

Presenters: Scott Doyle, Laurel Elam and Billy Giblin, RESNET Quality Assurance Team

You're Certified - Now What?

This session looks at the transition from being a student to a boots-on-the-ground technician tasked with providing services for builders, design professionals, and other various stakeholders. It can feel like a very lonely place from opening dialogue to staring down the tunnel of that first real (or first in a long time) inspection. This is a three-prong, practical walkthrough of the minimum rated features. We'll review concepts, field verification practices, and modeling strategies to help bring into focus the practical elements of the rating process. This is a great session for new Raters and RFIs or those who just want to brush up on some basics.

Presenter: Cindy Zeis, Performance Systems Development

RESNET 380 (Airtightness/Airflow) & 310 (HVAC Grading): Tools and Techniques ()*

In this session, we will break down the test and measurement sections of each RESNET standard to give you a better understanding of how and why measurements are made.

Presenter: Bill Spohn, TruTech Tools, LTD

Decarbonization Economy: What is it and How do We get There?

This session will explore how the transition to the Decarbonization Economy will free us of carbon emissions and yield some of the largest capital gains that humanity has ever seen.

Creating a net-zero carbon economy is no longer out of reach or expensive. Massive innovation in the Internet of Things (IoT), artificial intelligence, renewable energy, and other enabling technologies have set us on a trajectory to achieve full-scale decarbonization.

Electrified homes, buildings, and vehicles will soon become mini-microgrids and virtual power plants, offering enhanced resiliency and stability, now paramount as natural disasters like wildfires and superstorms take out grid infrastructure with increasing frequency.

Carbon reduction technology is now capable of capturing and embedding large amounts of carbon into all of the products around us, decreasing harmful emissions and reducing our collective environmental footprint. Swelling consumer demand is making the Decarbonization Economy virtually inevitable: with 77 percent of millennials willing to pay more for environmentally sustainable products and Gen-Zs quickly becoming the most ardently active and passionately vocal generation, there is no doubt where the future is headed. Fortunately, sustainability has become a moral imperative in the business sector, driving strategic development, innovation, and sales decisions. To our collective benefit, decarbonization has become the most cost-effective way for businesses to mitigate risk, enhance resiliency, and broaden their public appeal.

Presenter: Sara Gutterman, Green Builder Media

The Future of Energy Codes

Join Dan and Robby in a discussion on the future of energy codes, starting with the International Energy Conservation Code. Dan will cover how builders, trades, and Raters lead the charge of vetting what is buildable, sellable, and actually saves energy – a critical step in measures and processes getting momentum for adoption in codes. Robby will discuss how the IECC has changed from 2018 to 2021, and what some of the

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Last updated 2/2/2022

**session is advanced*

thoughts are about what might be coming in the 2024 code development process. This lively session will incorporate audience interaction on what makes sense to push forward in terms of efficiency in our homes, as well as ask the audience to help debate which new measures or levels of efficiency are buildable and what challenges may be presented.

Presenters: Dan Wildenhaus, BetterBuiltNW and Robby Schwarz, BUILDTank, Inc

2:30 p.m. – 3:00 p.m. Networking Break

3:00 p.m. – 4:00 p.m. TUESDAY BREAKOUT SESSIONS 3

Room: Meeting rooms 406-418, 4th floor

Passive Building 101

Are you new to passive building, interested in applying it to your business and need a crash course in passive building fundamentals? This presentation includes an overview of passive house history, discusses the rationale for passive building standards and the five core principles/strategies that are instrumental to the program. We'll take a more specific look at current building certification processes, benefits of certification and overall certification trends.

Presenters: James Ortega, Phius

HERS Rater Instructor Roundtable ()*

This will be the annually required Instructor roundtable. Topics TBA

Presenters: Laurel Elam, Billy Giblin and Scott Doyle, RESNET

2022 HERS Software Consistency Update. ()*

RESNET's Software Consistency Committee (SCC) has been working towards improving consistency in HERS Index calculations across software tools for three years now. In this session, RESNET's Energy Modeling Director (and SCC Chair) will provide an overview of the accomplishments of the committee and present a roadmap of strategic improvements to enforce greater accuracy (and, consequently, consistency) moving forward.

Presenter: Neal Kruis, RESNET

Zeroing in on Balanced Ventilation ()*

Most of us understand the general concept of balanced ventilation in a home, but what options exist beyond installing an energy recovery ventilator? In this session, Dan will look at when balanced ventilation matters the most, the options for achieving balanced whole-house ventilation, the benefits you can sell with whole-house balanced ventilation, and the cost-effective solutions to providing this in a variety of home types. The session will wrap up with stories from the field, both from our presenters and from an engaged audience.

Presenter: Dan Wildenhaus, BetterBuiltNW

DOE Zero Energy Ready Homes – from a Raters perspective ()*

Version 2 of the DOE ZERH program may be giving you a little anxiety. This session will discuss the significant changes and how they impact how Raters interact with their builder clients. Ideas of how to communicate these changes to your existing clients and how to engage new builder clients will be discussed. The ZERH

program offers a great opportunity for Builders and Raters in our climate-conscious society to create zero energy homes that buyers are looking for.

Presenter: Robert Schwarz, BUILDTank, Inc.

Integrating Healthy Building Strategies in the Design of Energy Efficient, Resilient and Affordable Single-Family Homes ()*

Research has shown that financial burdens related to housing affordability directly undermine the health outcomes of occupants. To reduce the cost burden of homeownership, many low-wealth homeowners often choose to live in older, low-cost, substandard housing to make ends meet. Unfortunately, poor in-unit conditions of substandard housing contribute directly to both acute and chronic health conditions. Providing opportunities for green, energy-efficient, resilient home construction that is also affordable is increasingly understood to provide a positive correlation in the improved overall health of occupants. However, this positive collateral outcome is rarely intentional.

The disconnect between green building performance and intentional health impacts is due, in large part, to the fact that while high-performance building envelopes are designed and engineered as an assembly, based on the aggregated performance relationships of various integrated components, the potential health impact assessment of those assemblies occurs primarily at the level of the individual, discrete material unit. By integrating the foundations of a healthy building—as first described by the Harvard T.H. Chan School of Public Health—directly into the building performance design process, we can better understand and improve the potential health impact of our design decisions that heretofore could only be assumed.

Presenters: Rusty Smith; Judith Seaman; Mackenzie Stagg and Elizabeth Farrell Garcia, Auburn University Rural Studio

5:00 p.m. - 7:00 p.m. Evening Reception - Sponsored by DPIS/Ei

Room: Pre-function space, 4th floor

WEDNESDAY - FEBRUARY 23rd

8:30 a.m. – 10:30 a.m. RESNET WEDNESDAY General Session

Room: Governor's Ballroom, 4th floor

10:30 a.m. – 11:00 a.m. Networking Break

11:00 a.m. – 12:00 p.m. WEDNESDAY BREAKOUT SESSIONS 1

Room: Meeting rooms 406-418, 4th floor

RESNET HERS QAD Roundtable ()*

This will be the annually required QAD roundtable.

Presenters: Scott Doyle; Laurel Elam and Billy Giblin, RESNET QA Team

*310 Section 5 - Non-Invasive Refrigerant Charge! You can check the Charge Without Manifold Gauges or Chlorofluorocarbon (CFC) Certification! The Next Squid Game (Netflix show) Without the Horrific Ending**

Learn RESNET/ACCA/ICC ANSI Standard 310 section 5 Non-Invasive Refrigerant Charge. Whether you want to add this service or just want to understand the path, this session is a once-in-a-lifetime opportunity.

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Last updated 2/2/2022

**session is advanced*

You can do sections 1 & 2 in your sleep (Design Review and Total Duct Leakage). And others will provide excellent sessions on sections 3 Blower Fan Airflow, 4 Blower Fan Watt Draw, tests you can perform. But section 5 Non-Invasive Refrigerant Charge, this is a new Squid Game! (Netflix show). This session will cover what is required to perform this fully automated test.

Non-Invasive Method 101. You can do this. Learn how this is similar to a blower door test, a few probes and an app - DONE. Benchmarking the system is the future of H/AC compliance.

We will also cover what is required for an Independent Verification Report, and what a HERS Rater should be familiar with to have a high confidence level the refrigerant charge meets the design levels.

Jim will provide an update on the Building America Team study on “Optimizing Residential HVAC Performance Using Quality Installation Verification and Monitoring Tools”

If you want to understand these terms - not just repeat the definition from section 3, you need to be in this session.

1. Condensing Temperature,
2. Condensing Temperature Over Ambient (CTOA)
3. Saturation Temperature, • Target Liquid Line Temperature
4. Target Subcooling
5. Target Suction Line Temperature,
6. Superheat

Presenter: Joe Medosch and Steve Rogers, Measure Quick

Zeroing In: Helping Utilities Reach Their Decarbonization Goals Through New Homes

Launched in 2020, the Consumers Energy All-Electric New Home Pilot explores decarbonizing residential buildings and assesses the potential of zero energy ready homes in Michigan. The pilot is a collaboration between Consumers Energy and the NRDC to foster scalable production of affordable, high-performance single-family homes that are PV ready. Launched in 2020, the Consumers Energy All-Electric New Home Pilot explores decarbonizing residential buildings and assesses the potential of zero energy ready homes in Michigan. The pilot is a collaboration between Consumers Energy and the NRDC to foster scalable production of affordable, high-performance single-family homes that are PV ready.

Presenters: Ross Igoe and Rob Murawski, ICF

Working Towards a Decarbonized Future with the CEE Integrated Home ()*

Utilities are tasked with achieving increasingly ambitious greenhouse gas emission reduction goals. As programs assess how to meet these bold integrated demand side management (IDSM) targets, new construction offerings are focused on not just energy efficiency, but also resource flexibility, load forecasting, distribution system reliability, avoided capacity, and customer satisfaction or amenity. Connectivity and communicating capabilities will play a progressively more dominant role in new home programs as the energy landscape evolves. CEE’s many years of consensus-based development of load flexibility specifications and minimum requirements provide a basis for utilities to design new construction offerings that specify product or system functionalities necessary to enable energy management objectives. This session will provide an overview of CEE’s new Integrated Home Initiative and associated Integrated Home Competition, and their role in helping the utility industry work towards decarbonization. In addition, individual members will share

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presentations about their specific new home program offerings that adopt the CEE Integrated Home requirements and deploy in their service territories.

Presenter: Alice Rosenberg, Consortium for Energy Efficiency

12:00 p.m. – 1:30 p.m. Networking Lunch

Rooms: Salon A and B, 4th floor

1:30 p.m. – 2:30 p.m. WEDNESDAY BREAKOUT SESSIONS 2

Room: Meeting rooms 406-418, 4th floor

RESNET Quality Assurance Staff Charts a Path to Move RESNET Quality Assurance Beyond the Gold Standard.

RESNET's Quality Assurance Process is currently seen as the Gold Standard for the inspection, testing, and labeling of a home's energy and water performance. As part of its dedication to continuous improvement, RESNET management recently met with the RESNET Quality Assurance Team to chart a path on moving RESNET's quality assurance forward to a higher level.

Through this effort, the RESNET Quality Assurance Team adopted the following strategic initiatives:

- Relieve the administrative burden for RESNET staff and Providers on by making it easier to determine how much quality assurance is required
- Set up a system to be able to track the entire chain of custody among HERS Raters, RFIs and Energy Modelers in the RESNET National Registry Provide the RESNET Quality Assurance Team with analytic support to be able to more easily track rating activity in the RESNET National Registry
- Recruit a contractor or team of contractors to investigate compliance complaints and fraud (A budget for this was submitted to the RESNET Board and approved at the RESNET Board's Fall 2021 meeting)
- Enhance RESNET's ability to track all Provider Quality Assurance reviews real-time through the RESNET National Registry
- Convert the current Quality Assurance Review Checklist to an online and app-based form built into the RESNET National Registry so that updates can be made more easily available via continuous maintenance, and Quality Assurance Designees can complete in the field
- Develop a performance-based Quality Assurance process where RESNET staff and Provider Quality Assurance Designees can spend more time with those HERS Raters, RFIs, and Energy Modelers who need more assistance
- Set up a process where the RESNET Quality Assurance Team can carry out unannounced Quality Assurance field visits
- Have the RESNET Quality Assurance Data Analytics Tool available to Rating Providers so that Providers have the same ability as RESNET staff to research their rating files in the RESNET National Registry

In this session, the RESNET Quality Assurance will explain the new quality assurance initiatives that will be pursued in 2022.

Presenter: Scott Doyle, Laurel Elam and Billy Giblin, RESNET QA Team

Multifamily Infiltration Testing Research and Development

Boston University in collaboration with Advanced Building Analysis has carried out Building America-funded research over the last 3 years to develop a Zonal Multipoint Pressure Test method for use in multifamily buildings. The method yields separate infiltration results for interior and exterior leakage areas. The results from this method can be used to address concerns over compartmentalization and air quality, and to calculate exterior leakage area and infiltration loads that are much more accurate than exterior leakage area and infiltration loads derived from compartmentalization tests alone. The research has many surprising takeaways that relate to the accuracy and reproducibility of all types of infiltration testing in multifamily buildings,

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including compartmentalization testing, guarded testing, whole building testing, and our new Zonal Multipoint Pressure Testing.

Presenters: Michael Browne, Advanced Building Analysis, LLC and Handunge Tharanga Jayarathne, Boston University

Adaptive Re-use: Schools, Warehouses, and Malls into Efficient Sustainable Housing

As housing is a critical need in many places, finding ways to strengthen communities and promote urban redevelopment is critical. Hitting the aggressive worldwide carbon reduction goals will include both new energy-efficient carbon-free construction, but also the reuse of existing structures. We will review multiple project types to show how existing schools, warehouses, and malls can be transformed into efficient housing. We will demonstrate how using the HERS Index can be a powerful tool to help run utility cost comparisons and hit the energy reduction goals of these rehabs. Issues such as dealing with historic tax credits and insulation that can be balanced will be discussed and navigating unique detailing and thermal bridging in rehab projects. We will also demonstrate how combining efficient insulation upgrades with all-electric mechanical systems can lead to lower carbon use on the building's operations and in lowered embodied energy.

Presenters: Jeff Love and Nick Hinman, Sustainable Comfort, Inc

DOE Zero Energy Ready Home, Version 2 – a Cut Above and yet Within Reach

After 8 years of proving that Zero Energy Ready Homes are possible, the U.S. Department of Energy is ready to raise the bar. DOE's 2.0 version of the DOE Zero Energy Ready Home specifications was released in November 2021 for public comment and the new specifications will be issued in early 2022 with a phase-in period over the remainder of the year.

While the new specifications certainly increase the requirements in several respects, notably to align with the new 2021 IECC insulation requirements, Raters can still feel confident encouraging their customers to try for the DOE certification, knowing that several builders in the program are already meeting various aspects of the new criteria. This presentation will give an overview of the new requirements and provide several examples of how current ZERH builders are meeting these new criteria. We'll also show some of the results they are getting in terms of energy savings, cost savings, and implementation costs, as well as other key program metrics.

Presenters: Theresa Gilbride, Pacific Northwest National Laboratory and Joe Nebbia, Newport Partners

Blower Door and Duct Leakage Testing: Best Practices for Testing and Equipment Maintenance

In this session with TEC (The Energy Conservatory), we will review the latest advancements and approaches for completing blower door and duct leakage testing, as well as the latest approaches for checking equipment calibration in the field.

Presenters: Jake McAlpin and Bill Graber, The Energy Conservatory

Introducing the New International Code Council's IECC/HERS Compliance Specialist and the HERS Rater Role in Energy Code Compliance

Increasingly code officials are looking to HERS Raters as the go-to source for energy code inspection, testing and modeling. To provide added credibility to code officials for HERS Raters the International Code Council (ICC) has created a new certification, the IECC/HERS Compliance Specialist. This session will introduce the new certification, how HERS Raters can achieve it and discuss the opportunities provided to HERS Raters and code officials.

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RESNET has embarked on having HERS Raters being recognized for demonstrating energy code compliance. This initiative begins with compliance with the performance path of Section 405 of the IECC. The session will also share developments in this area.

Presenters: Mark Johnson, International Code Council and Chris McTaggart, Building Efficiency Resources (BER)