



Pre-Conference Session Nominations

Half Day Courses

(Pre-1) B2C Sales Booster

This half-day session provides an introduction and overview of key sales, sales management, and related elements important for success in rating, consulting, and home performance to homeowners. The course is ideal for owners, managers, sales people, and marketers and covers the following:

- Planning and evaluation as marketing and sales management tools.
- Communicating building science to a consumer
- Consultative sales enhanced by home performance
- Questions as communication drivers in the sales process.

The training includes interactive exercises (with worksheets so participants can bring the exercises back to their offices to train and practice with staff) and discussion time.

Suggested Presenter(s) - Mike Rogers, OmStout Consulting

(Pre-2) Encapsulated Deeply Buried Ducts achieving R-69 in Vented Attic_circa 1908 rehab

Based on the DOE Design Options for Locating Ducts within Conditioned Space, Bill Zoeller, RA; the Owners of a circa 1908 historic rehab (CZ4), installed supply ducts in a vented attic (necessary to conform with historic criteria and marketing ... ceiling heights had to remain as original) by encapsulating R-8 ducts with 1/2"xps, 3"SPFcc, and 12" blow in fiber glass. Achieved R-69 duct insulation, with no measureable leakage to the outside, and measured durability to with-stand with no degradation a person accidentally stepping on the ducts.

Suggested Presenter(s) - Ken Block, Knox Housing Partnership Inc

(Pre-3) Energy Audit IR (residential infrared training)

Energy Audits are common in residential structures when trying to evaluate building efficiency. Often, audits incorporate the use of specialized tools like blower doors, smoke pencils, duct testers and other equipment like testing meters. The purpose of this training course is to introduce the students to utilizing IR cameras in conjunction with blower doors in an effort to give a true assessment of the building envelope. As heat transfers in one of three ways (conduction, convection and radiation), only convective movement of energy is measured with a blower door during a survey. This leaves two very important methods of heat transfer unaccounted for.

The incorporation of an infrared camera--in conjunction with a blower door, when performed with proper temperature differences--allows the energy auditor the opportunity to see all three forms of heat transfer on the building envelope, and give a true assessment of heat loss in the building.

This course is designed as a 2 hour pre-conference course with a minimal registration fee. The course will involve Equipment specifications, training requirements including references to RESNET guidelines,

building envelope review, HVAC system analysis and a hands on clinic where the students will be able to apply what they have learned. A final review and exam will be given at the conclusion of the class.

Suggested Presenter(s) - Peter Hopkins, United Infrared, Inc

(Pre-4) HERS 101

Many individuals attend the RESNET Conference to determine whether they will enter the rating industry. Many of the sessions offered in past conferences are a bit too high in jargon and assumed knowledge for persons just entering the rating industry. This session will introduce a beginner to the rating industry and provide a context for the other more advanced sessions to be offered at the conference.

Suggested Presenter(s) - Abe Kruger, Kruger Sustainability Group

(Pre-5) Indoor airPLUS Training

EPA created the Indoor airPLUS certification to help builders meet the growing consumer preference for homes with improved indoor air quality. Additional construction specifications are designed to help improve indoor air quality in new homes. This training gives raters the skills they need to understand and complete Indoor airPLUS ratings. The Indoor airPLUS Program is a partnership between EPA, builders, raters and other allies to improve indoor air quality in new homes. Homes with the Indoor airPLUS label include more than 30 additional home design and construction features to help protect homeowners from a host of health problems associated with poor indoor air quality, including eye irritation, allergies, headaches and respiratory problems such as asthma. All Indoor airPLUS qualified homes also meet guidelines for energy efficiency set by ENERGY STAR®, the nationally recognized symbol for energy efficiency and can be used in lieu of the Water Management Builder Checklist for ENERGY STAR 3.0.

The training will be conducted by Ethan MacCormick and Emelie Cuppernell, Performance Systems Development.

Suggested Presenter(s) - Ethan MacCormick & Emelie Cuppernell, Performance Systems Development

(Pre-6) Performing Multifamily HERS Ratings

Join Abe Kruger of KSG and Glenn Pease of EnergyLogic to learn about Multifamily HERS Ratings during a RESNET pre-conference session! This session covers the ins and outs of multifamily, including building level and unit level HERS Ratings. During the session, we will rate a sample project as a group from plans and go through the process of selecting the “worst case” units. Topics covered include: how to address common areas, elevator shafts, commercial spaces, adjacent structures, party walls, duct leakage testing, sampling and other updates you need to know. If you’re not considering multifamily buildings in your scope of services you may be missing out.

Suggested Presenter(s) - Abe Kruger, KSG & Glenn Pease, EnergyLogic

(Pre-7) REM/Rate Advanced Training

This session is specifically designed for those who have previous experience using Architectural Energy Corporation's REM/Rate Home Energy Rating software. The session will be led by V. Robert Salcido, P.E, a Senior Engineer at AEC who has been involved with development of REM/Rate for over 14 years. The session will cover new features as well as the more obscure features of the software — custom

reporting, utility bill disaggregation, batch processing, library management, improvement analysis and more. If you've always had the feeling that you're not using REM/Rate to its full potential, or if you have specific questions about the software, you shouldn't miss this session.

Suggested Presenter(s) - V. Robert Salcido & Brian Christensen, Architectural Energy Corporation

(Pre-8) SketchUp for Energy Professionals

SketchUp is a powerful free graphic modeling tool developed by Google and now owned by Trimble. EnergyLogic has successfully adopted SketchUp to streamline the from-plans rating take-off process for our clients. It has proven to be a strong tool when reviewing probationary ratings and performing quality assurance. This training is designed to familiarize you with SketchUp tool and provide you with practice designing a model using the 3-D modeling tool.

Then we will use the scripts developed by EnergyLogic to generate a report designed for easy input into REM/Rate. Using SketchUp by itself will improve your speed and accuracy in performing take-offs, but with EnergyLogic's Custom Reporting Script designed for easy input into REM/Rate you'll find doing takeoffs is not only made fun, but cuts doing takeoffs in half the time.

This course is designed for HERS Raters or other energy professionals with equivalent experience with energy modeling. It has been specifically designed to help complete take-offs for quick from-plans rating data collection.

Suggested Presenter(s) - Glenn Pease, EnergyLogic

(Pre-9) WaterSense QAD Training

In order to become a WaterSense Provider, an organization must first be a RESNET or LEED for Homes Provider and have a WaterSense QAD on staff. This training will get you that WaterSense QAD designation in order to apply to become a WaterSense Provider.

Suggested Presenter(s) - Carissa Sawyer, EnergyLogic, Inc.

(Pre-10) You're Hot Because You're Not Wearing Underwear OR First Principles of Energy Conservation

Energy Conservation can be and is often confused with Energy Efficiency. Attempts to minimize energy bills in buildings almost invariably presume the aforementioned; when that happens, the resulting design generates dubious success at best to disastrous consequences at worst. If Energy Conservation is a goal, the designer should understand that Energy Efficiency is just one of many means toward that goal; all of control, timing, environmental-coupling, minimizing-gradients, ancillarity, etc are means toward that goal... means that are usually faster, cheaper or more effective than energy efficiency. However, a complete treatment of the Principles of Energy Conservation must also handle the list of indispensable pre-conditions, like affordability, as well as the more-important consequences than energy conservation, like durability. These ideas will be developed in an overview discussion and with many particular examples of common failures in design. Some of these failures are even encouraged by building code or government subsidy! Against these problem cases, solution designs are presented. The "sexy" title is not just a "come-on", because when building design ignores moisture flows, higher energy bills and major durability problems are common. In fact, in a certain real sense, modern buildings do not wear underwear!

Handout for:

How Energy Travels

Diffusion (flow through stationary matter)

Emissivity more importance than reflection

Moisture: It's an Energy Flow and MC speed up energy flows

1. Durability & Health are very affected
2. Moisture Content raises conductivity
3. Equilibrium Moisture Content is the same for all wood types
4. Evaporation moves lots of heat
5. Average dew points have risen dramatically
6. Building failure is often driven by cooling
7. Diffusion is very important if a change of state occurs
8. A hydrogen bond is a "physical state"
9. Stacked Convection cells with semi-permeable boundaries form desiccants
10. Hygric Mass is very important
11. Drying is a natural solar-powered flow
12. Osmotic flows can destroy stone
13. Ventilation encourages pollution
14. Genus Homo mutations/innovations include: evaporative cooling & little hydrophobic covering

Means of Energy Conservation

1. Efficiency (less energy does the same job)
2. Control (do the same job but at varying times)
3. Environmental Coupling (utilize energy flows from outside)
4. Timing (use energy later than it was generated, collected or stored)
5. Low gradients (use smaller temperature difference)
6. Revise goals (alter goal of energy end use)
7. Ancillary effects (fully credit positive ancillary effects of an energy flow)
8. Anti-Ancillarity (fully credit negative ancillary effects of an energy flow)
9. Minimize production and transmission losses of primary energy
10. Minimizing phantom or standby loads
11. Flexibility (vary ratio of output end uses)
12. Decoupling (disassociating End Uses)
13. 2nd generation/higher quality End Uses
14. Proximity (deliver energy closer to need)
15. Long cycling (utilize long on/off cycles instead of short cycles)
16. Renewable Energy (actively collect natural energy flows)

Necessary Conditions

1. Productivity (worth 10 x cost of energy)
2. Reliability (worth > \$5000 / home)
3. Resilience (withstands natural insults)
4. Insurance (about 1/2 the cost of energy)
5. Travel Expense (cost to travel to work)
6. Affordability (energy will only be saved if the consumer can afford to reach the goals before the improvement / retrofit is implemented.)
7. Maintenance (1/2 cost of energy)

8. Installation Quality (difficulty to install and ease to inspect)
9. Incentive (energy is only saved when a consumer sees a significant benefit)
10. Durability (preserving the life of the building)
11. Pest Control (mold, termites, rot)
12. Health
13. Comfort (Can't over-emphasize this! What is this worth?)
14. Safety
15. Sustainability

Economics tools control and sell EC

1. \$/kWh saved are the same kind of apples as \$/kWh generated
2. Dispatch is the enemy of EC, i.e., we're buying power but we only need energy.
3. \$/W of uninstalled PV had declined with a half-life of 8 years. For the last 3 years, the half-life has been 2 years. Current Price is \$1/2/W
4. Levelized cost of energy has been commonly used to compare various power-plant technologies
5. Levelized cost of building design strategies could be compared via \$/kWh saved.
6. Assertion: the Energy Problem can be solved with a net-zero, levelized cost of building design. And, thereby, with a zero net-cost to the global economy. by Pursuing Complete EC as retrofits

Retrofitting tools overlooked

1. Capturing all means of EC is missing because
2. Moisture flows are not appreciated
3. Moving thermal envelope is ignored.
4. Adding windows is ignored.
5. Recommendations depend upon broken models
6. The problem/opportunity is much richer in each existing building than in new buildings AND there are many, many more existing buildings

Suggested Presenter(s) - Myron Katz, Building Science Innovators, LLC

One Day Courses

(Pre-11) Advance Your Infrared Expertise and Income from Small Residential into Commercial

This section will discuss how to use an infrared imager (when, where, how, and why) in the commercial arena as well as some methods to consider for marketing your services in this arena. Some hands-on practical experience will be available during the presentation.

Suggested Presenter(s) - Stan Harbuck, A Better School of Building Inspection & Brent Foster, Northwest Infrared

(Pre-12) WaterSense Inspector Training

WaterSense is a partnership program sponsored by the EPA to promote water efficient products and practices across the country. The WaterSense label makes it easy to find products and services that save water while ensuring performance. The EPA created WaterSense to help protect the future of our nation's water supply.

Because residential water use accounts for more than half of the publicly supplied water in the United States, WaterSense has a specification for single-family new homes that use 20% less water than a

typical new home. A WaterSense labeled home is a marketing tool that can help new homeowners save water now, pay less for utilities every month, and protect resources for future generations.

Becoming a WaterSense Inspector is the first step to helping your builders build water efficient homes. This training will enable you to become a WaterSense Inspector. By partnering with a WaterSense Licensed Certification Provider, you will have the ability to certify homes for the WaterSense program.

Suggested Presenter(s) - Carissa Sawyer, EnergyLogic, Inc.

Two Day Courses

(Pre-13) 2012 IECC Fundamentals

Official ICC International Code Council Curriculum developed by the ICC Training and Education Department. Two Day class in which attendees will learn how to apply the 2012 International Energy Conservation Code and how to increase and ensure that energy efficiency is built in during the construction of new buildings and during alterations to existing buildings. Residential, Multi-Family, Commercial, and Mixed Use buildings will all be covered. The course will provide an overview of the critical concepts included in the 2012 IECC. By learning and understanding these concepts, attendees will be provided the knowledge base needed for the correct use of the code in the design, plan review, inspection and analysis of projects. Also, the course will provide a clear understanding of the requirements identified in the basic code provisions, tables, and categorizations within the 2012 IECC. Participants will also be able to apply the code in clear-cut situations and to build their understanding of the intent of the code when asked to make code compliance decisions. This course trains and prepares the attendees to take the ICC Energy Certification test with ICC's testing provider. All attendees will receive a 2012 IECC Codebook and a Course Workbook for use during and after the class.

Suggested Presenter(s) - Terry A. Collins, Abaci Energy Efficiency

(Pre-14) Combustion Safety for HERS Raters

It's coming soon... existing raters (even those with BPI credentials) have until the end of 2014 to complete the combustion safety portion of the new HERS standard.

Enjoy this class at the state of the art Southface SWEET Training center featuring multiple real combustion appliances and test equipment as well as the ENER-CAZ simulation tool.

Complete this class and you'll be ahead of the curve!

Suggested Presenter(s) - Mike Barcik, John Kane & Steve Herzlieb, Southface

(Pre-15) ENERGY STAR Version 3 Certification Course for HERS Raters with half-day Hands-on Training

All Home Energy Rater partners are required to take ENERGY STAR for Homes Version 3 training and pass the national ENERGY STAR exam through a RESNET-accredited Training Provider to be eligible to qualify homes under the new guidelines. This requirement applies to all existing ENERGY STAR Rater partners as well as new Raters, and includes Field Inspectors who are doing inspection and testing associated with ENERGY STAR qualified homes.

Southface's two-day The ENERGY STAR for Homes v3 training will cover a range of topics that Raters and Field Inspectors need to know to qualify homes under ENERGY STAR Version 3. These topics include the

ENERGY STAR Reference Design Home, Benchmark Home/Size Adjustment Factor, as well as technical details for completing the required ENERGY STAR Inspection Checklists (Thermal Enclosure Rater Checklist, HVAC Quality Installation Contractor and Rater Checklists and Water Management System Builder Checklist). This ENERGY STAR Version 3 training will count as 18 hours of RESNET Professional Development credit and will conclude with the required ENERGY STAR exam for Raters and Field Inspectors.

Also included is a half-day hands-on training which allows attendees to gain practical experience with various testing methods and equipment. Learn about the refrigeration cycle, several methods of testing HVAC system airflow, how to measure static pressure, best ways to test air flow of ventilation fans and much more! This half-day seminar is available as a separate course for Raters who have already taken the ENERGY STAR Version 3 training and want to increase their practical skills.

Suggested Presenter(s) - Ray Ivy, Mike Barcik, & Andrew Hewett, Southface

(Pre-16) Homes 401: LEED for Homes Green Rater Training

RESNET HERS Raters make ideal LEED for Homes (LFH) Green Raters. Each LFH project requires a HERS Rater as well as a Green Rater; the ability to provide both services is a great business opportunity.

The two-part LEED for Homes Green Rater Training is designed to prepare qualified participants to provide verification services on LEED for Homes projects and is the second step in earning the LEED for Homes Green Rater Certificate (see detailed pathway below). Applicants must meet initial qualifications before attending this training. PLEASE NOTE: No on-site registrations are accepted for this course. You must register in advance of the live workshop date

This is a two-part training: Part 1 of the training consists of five self-guided online training modules. Participants receive access to Part 1 via email as part of registration for this course. The online module portion provides an introduction to the Green Rater curriculum, including roles and responsibilities and key technical concepts. The highly interactive workshop portion builds upon the material presented in the online modules, further preparing you to rate on LEED for Homes projects, and delving deep into the verification services you will provide. Following the training, participants will be eligible to register and take the LEED for Homes Green Rater exam administered through the Green Building Certification Institute (GBCI). Those who pass the exam may proceed to complete the required mentorship. Upon successful completion of the mentorship, the participant will be awarded the LEED for Homes Green Rater Certificate.

Suggested Presenter(s) - USGBC Faculty Faculty Member TBD, USGBC National

(Pre-17) netPLUS Energy: the Essential 'How To' of Successful High-Performance Building

Green building education tends to focus on high-level overviews, checklists for scoring points, selling a single green program, product or service over competitors, or obvious green-washing.

Geared to the residential builder, HERS rater, designer, and project manager, this dynamic program strengthens your ability to design, build, inspect and advise for the new normal: high-performance construction that emphasizes net Zero to net Plus energy efficiency, health-promoting environments, cost optimization, resilience and long-term durability.

We focus on the HOW of best building practices, providing tips and techniques that save you time, money, and frustration. We explain the WHY of applied building science that impacts the success of your projects. We illustrate WHICH details, components, and assemblies of foundations, walls, windows, and roofs work best for differing climates, building types, project goals and constraints – without bias or favoritism.

Integration is critical to project success, but is seldom applied in practice. We chart the successful project management path, and explain in detail WHO on the project team does WHAT. This course defines the roles and responsibilities of all the key project stakeholders, empowering you to effectively direct designers, project managers, consultants, trades, lenders, appraisers, and clients who ‘help’. We focus on the expanded role of the HERS Rater in net-PLUS energy construction, from pre-design energy consultation, through design analysis, to on-site verification and building commissioning.

We address head-on HOW TO obtain valid appraisals to capture the present value of future energy cost-savings, including successful engagement with appraisers and lenders.

Lastly, we address proven marketing and sales strategies that enable you to stop wasting time and money, and focus on attracting and securing your core business.

Join us for the essential ‘HOW TO’ of successful, rewarding high-performance building.

Suggested Presenter(s) - Rich Backus, GMB PMP CPHC HERS Rater, netPLUS Energy School, LLC & Al Cobb, netPLUS Energy School, LLC

(Pre-18) PHIUS+ Rater Training

Passive House Institute U.S. (PHIUS) is seeking experienced HERS Raters to complete a two day course in order to become qualified to conduct on-site quality control for the PHIUS+ program. Passive Houses are some of the most energy efficient buildings in the world, with space conditioning energy savings of up to 90% compared to standard new construction. The PHIUS+ certification program for North American Passive Houses combines extensive design review with a rigorous on-site quality control program. PHIUS+ aligns with the quality control protocols of Energy Star 3.0 and DOE Challenge Home, while including additional tests and checks, specific to the PHIUS+ program.

The two-day course includes one day of classroom work with a second day spent in the field, demonstrating advanced testing and inspection protocols for the PHIUS+ program. The course concludes on the second day with an exam. Successfully completing the course and exam qualifies a Rater to become a PHIUS+ Rater and earns the Rater fourteen (14) RESNET professional development credits. Application to the program is required.

Suggested Presenter(s) - John Semmelhack, Passive House Institute U.S.

(Pre-19) Sales, Marketing, Blogging, and Social Media Bootcamp

In this optional one or two day workshop, attendees will learn about cutting edge strategies and tactics for driving leads and converting sales. The sessions are specific to home performance and energy rating companies and will address the unique challenges faced when marketing your services to both professionals and homeowners. These sessions will dive into the nitty-gritty on these topics, one day covering sales and marketing and another covering blogging and social media. Attendees will come away with practical, tangible tools to take their businesses forward: a marketing plan, content strategy,

specific sales tactics, blogging secrets, and social media nuts and bolts. The workshop will be led by three of the leading thinkers in the field of home performance communications and operations: Allison Bailes, Peter Troast and Mike Rogers.

Suggested Presenter(s) - Allison Bailes, Energy Vanguard & Peter Troast, Energy Circle & Mike Rogers, Omstout Consulting