

2008 RESNET Building Performance Conference

Conference Session Descriptions and Agenda

February 16 - 20, 2008

[Sheraton San Diego Hotel & Marina](#)
San Diego, CA



Pre-Conference Sessions

Saturday, February 16, 2008

Registration

8:00 a.m. — Noon

Harbor Foyer

Continental Breakfast

8:00 — 9:00 a.m. – Spinnaker II

Essential HVAC Diagnostics for Expert Raters (Pre-registration required)

Contact Rob Falke at rob@nationalcomfortinstitute.com

Presenter: Rob Falke, National Comfort Institute

9:00 a.m. — 5:00 p.m. -- Marina V

Many raters are expanding their businesses to include consulting services to assist their clients in diagnosing and prescribing solutions for comfort and efficiency issues. Consulting can be an extremely valuable and profitable extension of any rater firm. In this session, you will gain exposure to the next level of consulting, as well as, HVAC system performance verification. Learn how to measure total external static pressure, pressure drops, and verification of system airflow. Learn how to measure duct losses with air temperature diagnostics. Participate in a discussion on how to market these rare services to homeowners, building managers and HVAC contractors.

RESNET Green Rater Training and Certification

Presenters:

Donney Dorton, Guaranteed Watt Saver

Jay Hall, U.S. Green Building Council

Pepper Smith, Davis Energy Group

Laura Uhde, Southface Energy Institute

9:00 a.m. — 3:00 p.m. – Harbor Island Ballroom III

Pre-registration required. Click on

<https://www.resnet.us/rater/greenrater/registration.aspx>

RESNET is hosting training for raters to be certified by RESNET as Green Raters. Each of the presenters at this training represent a specific green program

and all have come together to cooperate and show support for a unified certification. Successful completion of this training will lead to certification by RESNET as a Green RATER.

Lunch

Noon — 1:00 p.m. – Spinnaker I

RESNET Quality Assurance and Ethics Committee Meeting

1:00 — 3:00 p.m. -- Marina III

Public Welcomed

RESNET Technical Committee Meeting

3:00 - 5:00 p.m. -- Marina III

Public Welcomed

Sunday, February 17, 2008

Registration

8:00 a.m. — Noon

Bay View Foyer

Continental Breakfast

8:00 — 9:00 a.m.

RESNET Board of Directors Meeting

8:00 a.m. — 5:00 p.m. -- Executive Conference Room 3

Public Invited

Thermal Comfort Diagnostics

Presenter: Russ King, Sierra Building Science Center

9:00 a.m. — Noon -- Nautilus 2

Thermal Comfort Diagnostics is the practice of diagnosing a home for the causes of comfort complaints by the occupants. Comfort complaints typically manifest as excessive temperature variations between rooms, but can also be caused by drafts and humidity issues. This seminar focuses on comfort issues in Hot/Dry climates. The causes of the comfort issues can include poorly sized equipment (under or over-sized), poor duct system design, poor shell building construction, poor thermostat operation, poor air balance, and many others. Tools and techniques used for thermal comfort diagnostics include on-site room-by-room load calculations, air flow measurement (flow hood), long term temperature monitoring (temperature data loggers), static pressure testing (manometer), duct leakage testing (duct tester), air temperature measurements (temperature probes and laser thermometer), and more. Thermal Comfort Diagnostics is a great business opportunity that HERS raters can add to their quiver of services. It uses

many of the same tools and skills and can greatly enhance their understanding of how a home operates.

Combustion Safety Testing Training

Presenter: Rich Moore, Invisible Energy

9:00 a.m. - Noon - Nautilus 1

Learn combustion safety testing! To guarantee the safe and efficient operation of gas appliances and ensure the health and safety of the occupants, a detailed combustion testing process is necessary. Explore traditional and high tech ways to test for CO, drafting, combustion efficiency, as well as inspections on flues, HVAC equipment, and duct air flow. Discuss the importance of combustion appliance zone (CAZ) and worst case depressurization tests. Have your questions answered, implement these practices, and ultimately do no harm.

Lunch

Noon — 1:00 p.m.

REM/Rate Advanced Users Workshop

Presenter: Dave Roberts, Architectural Energy Corporation

1:00 — 5:00 p.m. -- Nautilus 4

This session is specifically designed for those raters who have previous experience using Architectural Energy Corporation's (AEC) REM/Rate home energy rating software. The session will be led by David R. Roberts, P.E., a Senior Engineer at AEC who has been involved with the development of the REM/Rate software for over 13 years. The session will cover some of the more obscure, yet powerful features of the software - batch processing, customizing reports, data output options, library management, and more. Bring your questions and suggestions; there will be opportunities to address both.

Right Sizing AC Systems for Profit and Energy Star Certification

Presenter: Dennis Stroer, Calcs-Plus

1:00 — 5:00 p.m. -- Nautilus 3

Learn how to right-size equipment and to read sizing reports. Since Energy Star is making this mandatory, raters need to be up to speed on this issue. The session will discuss the input sensitivities of ACCA Manual J, the do's and don'ts for proper sizing, how to read the outputs from Manual-J for equipment selection, and why ARI data is not the proper tool for right-sizing air conditioning equipment. Points to be covered:

- I. HVAC Load Calculations
- II. MJ8 take off
- III. Infiltration & Ventilation.
- IV. Duct gains — the duct calculation.
- V. Reading and understanding the results.

- VI. Using Mj8 results to right size the heating and cooling equipment.
- VII. Exporting an MJ8 data into EnergyGauge®

If you happen to have Elite Software's RHVAC program or if you are thinking of purchasing it, this will be an excellent opportunity to learn first hand how to properly use the program. Bring your lap top computer and follow along. This session will be four hours long and the cost will be \$75.00. Register at:

www.calcs-plus.com

HERS 101

Presenter: Brett Dillion, Builders Energy Rater

1:00 - 3:00 p.m. - Nautilus 2

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.

Home Performance Sales and Marketing

Presenter: Joe Kuonen, Building Performance Institute

1:00 - 5:00 p.m. - Nautilus 1

What should a HP contract look like? What are the basic terms that protect the contractor/consultant and give the homeowner what they need. Liability, warranty, callbacks - if you are delivering HP work - come learn the secrets of getting the Work Order right to minimize misery! Lower misery = higher profits!

“Truth Behind the Walls” — Determining Insulation Quality Installation Through Infrared Testing

Presenter: Peter Hopkins, SoCal Infrared

2:00 - 5:00 p.m. - Marina IV

This training will feature how to detect the quality of insulation through infrared technology. It will include a demo session for people to get a hands on training. The topics to be included will be: Discovery of Infrared (short video on discovery of infrared), utilizing infrared in Building Envelope (post construction) and identifying defects (insulation, duct leaks, weather stripping etc.), ASTM Standards on insulation inspections etc. The presentation will be based upon 50 homes images that were taken. These were Post Construction (final phase or walk through) inspections done for homeowners who wished to have there homes checked for thermal breaks or insulation quality. Of the group, not a single home complied with the Title 24 insulation installation requirements.

Conference Sessions

Monday, February 18, 2008

Registration

7:30 — 8:30 a.m.

Continental Breakfast

7:30 — 8:30 a.m. -- Conference Exhibit Area

Opening General Session

8:30 a.m. — Noon -- Harbor Island Ballrooms II & III

Three Perfect Storms: America's Energy Challenge

Steve Baden, RESNET

Energy Efficiency: America's First Fuel

Bill Prindle, American Council for an Energy Efficient Economy

What It Would Take — A Building Performance Manhattan Project

Philip Fairey, Florida Solar Energy Center

Building Performance in Canada

Bruce Gough, Canada Residential Energy Services Network

Shanghai - RESNET Partnership: Shanghai Energy Challenge and the International Cooperation Opportunities

Qing Wei, Shanghai Real Estate Science Research Center

Building Energy Performance in California and Its Role in the California Climate Change Initiative

Lara Ettenson, Natural Resources Defense Council

Presentation of 2007 RESNET Leadership Awards

President, RESNET Board

U.S. Department of Energy National Builders Challenge

Edward Pollock, Department of Energy

The View from ENERGY STAR

David Lee, Environmental Protection Agency

Lunch

Noon — 1:30 p.m. -- Lanai Grass

Session 1
1:30 — 3:00 p.m.

Real & Relevant Green Home Buildings - Connecting the Dots

Moderator: Barb Yankie, Homes +, Inc.

Presenter: Peter Pfeiffer, FAIA, Barley + Pfeiffer Architects

Nautilus 1

90% of the effective green building strategies occur within the first 10% of the design process. Relevant high performance green home building is so much more about client education, thoughtful programming and prioritizing, climatically appropriate siting, sound design decisions and building systems integration than about sustainable material choices - although these will be addressed also. An integrated approach to residential & light commercial green building will be presented.

What's Happening in the Rest of the World? Other Residential Business Models

Moderator: Kathy Spigarelli, RESNET

Presenters:

Steve Baden, RESNET

Brian Castelli, Alliance to Save Energy

David Meisegeier, ICF International, Inc.

Nautilus 2

Carbon and energy are global issues and residential energy efficiency is a central component. While voluntary programs have been a key approach to date, constrained grids and a changing political climate may require the US to adopt practices that are already being implemented in other countries around the world. This session will look at some of these practices and explore what we might expect in the years ahead.

The Importance of Air Barrier Detailing and Cost Effective Methods for Achieving the Thermal By Pass Check List Requirements.

Moderator: Laurel Elam, Appalachian State University Energy Center

Presenters:

Rick Duncan, Honeywell Building Products

Steve Easley, Steve Easley & Associates Inc.

Nautilus 3

Air Barriers are the systems of materials designed and constructed to control airflow between a conditioned space and an unconditioned space. This seminar addresses the importance of air barrier detailing and understanding the difference between interior and exterior air barriers, their effectiveness as well as the common mistakes made in installation. Steve Easley will describe the attributes that make an effective weather barrier and identify the key details in a

properly performing weatherization system. He will also discuss common mistakes when inspecting for the Energy Star Thermal Bypass Check List, and examples of how uncontrolled air flow can lead to moisture problems will be presented as well as solutions.

Energy Efficiency and Environmental Certification Trading 101

Moderator: Mark Jansen, Energy Efficient Homes Midwest

Presenters:

John Baden, Western Residential Energy Services

Tom Hamilton, Quality Built Homes

Nautilus 4

There is an emerging opportunity for the home energy rating industry in the monetizing the energy savings from improving a home's energy performance. Such potential economic opportunities includes carbon offsets, environmental emission trading, energy efficiency certificate trading and utility forward capacity trading. Learn what these opportunities are and how the home performance industry take advantage of this emerging market.

The New Partnership: REALTORS and Auditors

Moderator: Tammy Baca, Stewart Title Green Initiative

Presenters:

Julie P. Hawkins, D&R International

Candace Lightner, DOE Consultant & REALTOR

Lee O'Neal, CGE Solutions, Inc.

Marina VI

Residential buildings annually use more than 20% of the nation's energy. And yet, less is being done about existing homes than new construction. How do we reach the homeowner? While there are a number of projects doing just that, one player that has largely been ignored is the REALTOR. According to recent figures, REALTORS sell between six and seven million existing homes annually and the National Association of REALTORS (NAR) has more than 1.3 million members. The U.S. Department of Energy (DOE) and the NAR have joined together and are currently working on a number of projects to address the missing REALTOR link with regard to energy conservation in existing homes. What does this mean for you? How can you make your neighborhood REALTOR a partner in educating the homeowner about the value of your services? The real estate industry is poised to play a far more active role in meeting the growing demand for energy efficiency and "green" features in existing homes. The time is now for Raters and REALTORS to join forces and transform energy wasteful existing housing stock to more comfortable, healthy, energy efficient homes that will contribute to our nation's energy independence.

Using the Comprehensive Home Assessment to Convey the Importance of Energy Efficiency Upgrades (Affordable Comfort/Home Performance with

ENERGY STAR Track)

Presenter: Rich Moore, Invisible Energy
Marina III

Home performance contractors, raters, and other residential energy professionals use the “house as a system” concept to sell and install more energy efficiency improvements. And, it all starts with a Home Performance Assessment (HPA - previously referred to as a Comprehensive Home Assessment) that enables homeowners to make informed decisions on improving the energy efficiency and comfort of their home. Come learn new techniques that will help new or seasoned professionals to more fully deploy the HPA and motivate your customers to invest in energy efficiency home improvements.

California Rater's Role in Future Title 24 Versions and Update on Plans for 2008

(California Energy Rater and Building Energy Consultant Track)

Presenter: Bill Pennington, California Energy Commission
Sea Breeze

This session will preview the plans for the 2008 Title 24 code changes with the verification and certification roles for energy raters as the emphasis. The discussion will include technical skill requirements, certification of plans, interface with local building departments, and future projected role for raters.

Session 2

3:30 — 5:00 p.m.

Infrared Scanning Technology and the RESNET Insulation Quality Installation Inspection Procedures

Moderator: Daran Wastchak, D.R. Wastchak LLC

Presenters:

Kelly Parker, Guaranteed Watt Savers

Barb Yankie, Homes+, Inc.

Nautilus 1

The RESNET insulation installation inspection procedures require that only through a pre-dry wall inspection can insulation installation be rated as a grade III. The emerging technology of infrared inspection offers an opportunity for raters to evaluate insulation installation after the dry wall has been installed. This session will explore what standards and procedures must be adopted to be able to take advantage of this opportunity.

Carbon Trading: How the Residential Market for Carbon Adds Up

Moderator: Michael Holtz, Architectural Energy Corporation

Presenters:

Philip Fairey, Florida Solar Energy Center
Bill Prindle, American Council for an Energy Efficient Economy
Rahul Young, ICF International, Inc.
Nautilus 2

Dozens of utilities in the United States are implementing residential energy efficiency programs. Interest in such programs is growing as states participate in regional emissions reductions programs, attempt to control demand growth, and are met with increasing regulations. Simultaneously, interest is increasing within the United States to adopt national legislation that controls the production of CO₂. The presence of these two factors suggests that a valuable emerging market exists in the quantification and sale of emissions credits within the residential sector. This session discusses key issues that must be resolved prior to the implementation of a system and lessons learned from working with partners in the emerging voluntary and mandatory markets.

The Biggest Energy Mistakes Builders Make

Moderator: Tabetha Reyes, Home Energy Partners

Presenter: Steve Easley & Associates Inc.

Nautilus 3

When it comes to comfort and energy costs, a home's energy performance often looks good on paper but may not always meet customer expectations. This presentation focuses on technologies and installation practices that provide the "biggest bang for the buck" when it comes to making homes more energy efficient. Steve Easley will use field slides to illustrate cost effective solutions that lead to practical and long lasting energy savings.

HERS Rater Opportunities in the Affordable Housing Market

Moderator: David Wilson, Energy Rated Homes of Utah

Presenters:

Barbara Collins, Energy Rated Homes

Julieann Summerford, Heschong Mahone Group, Inc.

Nautilus 4

The affordable housing industry can make a significant impact on reducing energy consumption. HUD alone spends approximately \$4 billion on energy each year, through grants to public housing authorities and utility allowances to low income renters. A 5% reduction would save \$2 billion in tax payer funds over the next 10 years. Many states are turning to this sector to reduce energy demand. This session will explore how state and local affordable housing programs are adapting Energy Star construction guidelines and products to reduce energy use, lower utility bills for low income tenants, and maximize comfort and building performance.

Many funding sources for affordable housing reward energy efficiency but require verification by a HERS Rater. Learn about the latest programs, funding sources, and efforts that HERS Raters can leverage to develop new business in the affordable housing market. Low Income Housing Tax Credits, ratepayers funded programs, Redevelopment Agency funding and Energy Efficiency-Based Utility Allowances provide funding for energy efficiency and depend on energy consultants and HERS Raters to deliver the savings.

Green Building Rating Systems

Moderator: Bion Howard, BEST

Presenter: Vera Novak, Insulating Concrete Form Association

Marina VI

Energy efficiency is the cornerstone of many green building programs. The new Energy Star, LEED for Homes and upcoming NAHB ANSI Green Building Standard places even greater emphasis on insulation inspections, thermal bypass checklists, and air infiltration. This presentation reviews the opportunities for the RESNET rater in green building.

Combustion Safety Testing & Techniques

(Affordable Comfort/Home Performance with ENERGY STAR Track)

Presenter: Rich Moore, Invisible Energy

Marina III

Correct the typical Rater deficiency - Learn combustion safety testing! To guarantee the safe and efficient operation of gas appliances and ensure the health and safety of the occupants, a detailed combustion testing process is necessary. Explore traditional and high tech ways to test for CO, drafting, combustion efficiency, as well as inspections on flues, HVAC equipment, and duct air flow. Discuss the importance of combustion appliance zone (CAZ) and worst case depressurization tests. Have your questions answered. Implement these practices, and ultimately do no harm.

2005 Title 24 New Construction Standards - The Rater's Role

(California Energy Rater and Building Energy Consultant Track)

Presenter: Doug Beaman, Douglas Beaman Associates, LLC

Sea Breeze

The verification of the efficiency of new homes and commercial buildings has expanded once again. In addition to verification of ducts; infiltration rates; thermal expansion valves; and other features, the major new areas of insulation installation quality and thermal bypass has been added. Learn what the regulations require and how to make sure you are documenting and registering the verifications properly.

Conference Reception
5:30 — 7:30 p.m. – Bay View Lawn

Tuesday, February 19, 2008

Continental Breakfast
7:30 — 8:30 a.m. -- - Exhibit Area

Session 3
8:30 — 10:00 a.m.

ASHRAE Standard 62.2 Today and Tomorrow

Moderator, Eric Werling, Environmental Protection Agency

Panelists:

Philip Fairey, Florida Solar Energy Center

Joe Lstiburek, Building Science Corporation

Max Sherman, Lawrence Berkley National Laboratory

Nautilus 1

ASHRAE Standard 62.2-2007, Ventilation for Acceptable Indoor Air Quality, is one of the most important IAQ related documents in the home rating business. Have you read it? Do you have a copy (and have you read it)? Do you know what types of systems are covered by the standard? What climates are exempt from whole house mechanical ventilation? Should ventilation be required in hot/humid climates? Does Joe want to increase or decrease the ventilation rates in the next version? Whether you're a ventilation expert or a novice, this session will include something for you.

LEED for Homes and How a HERS Rater Can Profit

Moderator: Bion Howard, B.E.S.T.

Presenters:

Donney Dorton, Guaranteed Watt Savers

Jay Hall, U.S. Green Building Council

Kelly Parker, Guaranteed Watt Savers

Nautilus 2

This session will explore the questions of what is LEED for Homes and how is LEED-H tied to the HERS Index? Who is building LEED Homes and what testing and Inspections are required? What is the LEED-H business model and how does a HERS Rater become a LEED-H Rater through a LEED-H Provider?

ENERGY STAR Qualified Homes Thermal Bypass Checklist: Oh What a Year It's Been

Moderator, Jerry Lyle, Home Energy Concepts

Presenter: Sam Rashkin, Environmental Protection Agency
Nautilus 3

Many HERS providers and raters will recall the significant concerns when the new ENERGY STAR for Homes specifications were introduced. In particular, many builders and HERS professionals did not feel the new Thermal Bypass Checklist (TBC) requirements were compatible with prevailing subcontractor technical capabilities or cost-effective. After a year of extensive training including 1000's of builders across the country, tremendous progress has been made linking the TBC to key builder business objectives. This session will review key lessons learned regarding TBC requirements, implementation and builder recruiting.

Understanding How Occupant Behavior Impacts Energy Use: The Occupant Energy Index

Moderator: Bruce Gough, CRESNET

Presenter: Dean Gambel, ICF International, Inc.

Nautilus 4

Standard procedures for estimating energy consumption of homes rely upon simulation of the home's architectural details, its energy efficiency features, normalized weather data, and standard operating assumptions. Operating assumptions, such as thermostat setpoints, daily water consumption, appliance purchases, and interior shading schedules, are standardized for the purpose of producing consistent ratings. However, in practice, occupants can behave very differently, resulting in consumption that varies significantly from the simulation. Current modeling methodologies do not accurately account for seasonal variation in hot water usage or the impact of an increasing number of miscellaneous appliances and plug loads that use a tremendous amount of energy in a typical home. The Occupant Energy Index is a scale that assesses the impact of variations in occupant behavior, and demonstrates how such a scale can be useful to policy makers and program designers.

Codes, Ratings, Energy Star and Tax Credits, Oh My!

Moderator: Barbara Collins, Energy Rated Homes

Presenter: Dave Roberts, Architectural Energy Corporation

Marina VI

Sorting through the various home energy performance metrics can be confounding. How does "percent better than code" relate to the HERS Index? Why doesn't this 75 point home meet Energy Star? Why doesn't this Energy Star home meet code? How is it that this home meets the tax credit requirements but doesn't qualify for Energy Star? This session will answer these and other brain teasers, and help Raters gain a better understanding of the idiosyncrasies of the various energy codes and efficiency programs.

Business Opportunities for Raters in Existing Homes (Affordable Comfort/Home Performance with ENERGY STAR Track)

Presenters:

Joe Kuonen, Building Performance Institute

Keith Williams, Building Services & Consultant LLC

Marina III

Integrate specific strategies and results used to break into the world of home performance contracting. Discover how “value-added” services and products will help start or improve your home performance career. Find out how to develop your business plan, product and service offerings for your own home performance business. With new home construction down - expanding into existing homes may be more than an act of survival! Are You Ready to Become a Home Performance Analyst? Rating business stalling? Ready to take next step toward translating your skills toward the existing home's market? Come learn the steps you need to take to broaden your career and opportunities. What certifications are needed? Where can I get more training? What is BPI and RESNET doing to make this change easier? Where is all the Home Performance action? Can I serve as both a consultant and a quality assurance verifier?

HVAC Change Out Regulations and Rater Verification (California Energy Rater and Energy Building Consultant Track)

Presenter: Gary Wollin, Douglas Beaman and Associates LLC

Sea Breeze

On October 1, 2005, the Title 24 standards were changed to aggressively address existing home HVAC change outs by requiring duct testing and sealing in most climate zones. Installing contractors must certify their own work and have a sample tested randomly by raters to check the leakage of ducts. The upcoming 2008 Title 24 Standards will continue to focus attention on this vital area to target energy efficiency efforts. Attend this session to learn the implications for raters in California.

Session 4

10:30 a.m. — Noon

Large Building / High-rise and Multiple Unit Energy Testing

Moderator: Richard Faesy, Vermont Energy Investment Corporation

Presenter: Colin L. Genge, Retrotec Energy Innovations

Nautilus 1

Clearly, it is not hard to see how all high rise buildings will some day benefit from quantitative measurements to control energy, smoke, moisture and indoor contaminants (such as cigarette smoke). In this session, we will present

information on both theoretical and actual leakage testing of numerous high-rise and multi-occupant buildings, in order to resolve building science issues. During the presentation, we will also present examples of how we have tested all 6 sides of apartments separately. This type of testing, being the most complicated, clearly demonstrates that other tests, such as measuring envelope leakage and floor by floor leakage, are far simpler by comparison. Advances in modern door fan systems make complex tests like this not only possible, but fast and accurate. The equipment used, features ultra-stable speed control, automated high powered fans, rapid set up panels, and most importantly, a centralized control point for all equipment.

Meeting the RESNET Provider Quality Assurance Monitoring Challenge

Moderator: Claudia Brovick, RESNET

Presenters:

Ann Marie Apgar, EAM Associates

Steve Byers, EnergyLogic

Clinton Heyn, D.R. Wastchak

Robby Schwarz, Energy Logic

Nautilus 2

Come hear RESNET Providers present their rigorous quality assurance programs that meet or exceed the RESNET Quality Assurance Standards. See a variety of quality assurance models and software products used to meet the Standard. Hear RESNET's staff's experience with compliance to the Standard and suggestions for improving your process.

Building Performance Institute & RESNET Board Forum: Harmonizing BPI & RESNET Certification Standards

Moderator; Larry Zarker, Building Performance Institute

Presenters:

Philip Fairey, RESNET Board of Directors

Laverne Dalgliesh, BPI Board of Directors

Nautilus 3

Representatives of the Boards of Directors of the Building Performance Institute (BPI) and RESNET have been in discussions for over a year in developing a seamless relationship between the two organizations. Solid steps have been taken to harmonize the two organization's certification standards. This session will be an open forum in which BPI and RESNET board members will answer questions on this effort and project what the relationship will be between the two organizations in the future.

ACCA Manual J Load Calculation: An Overview for the Energy Rater

Moderator: Tei Kucharski, Florida Solar Energy Center

Presenter: Dennis Stroer, Calcs Plus

Nautilus 4

A key element in the high performance of a home is the proper sizing of the HVAC System. Both the ENERGY STAR for Homes and RESNET national rating standards require the proper sizing of HVAC systems. The industry standard for HVAC load calculations is the ACCA Manual J. This session will provide an overview.

Growing Green Building and Energy Efficiency Policy in the Garden State

Moderator: Ben Adams, MaGrann Associates

Presenter: Darren Port, New Jersey Division of Codes and Standards

Marina VI

In the past two years the State of New Jersey has begun a process of planning and legislating a green future. From reducing green house gases, bolstering economic growth through bio-fuels & renewables and creating green building standards NJ is in the forefront of environmental policy. The presentation will delve into the states green evolution including at broad view of innovative state legislation, municipal initiatives and ordinances; enhanced codes; incentive programs and the creation of new state offices and “Green Teams” to name a few. In the second part of the presentation we’ll explore the social, economic and political impetus for New Jersey’s blooming environmental progression. We’ll also look at the controversies, issues not addressed or needing more attention, the pundits, adversaries and lobbyists. Time will be available for questions and discussion.

Frontline Communication 101: Conveying Home Performance Benefits (Affordable Comfort/Home Performance with ENERGY STAR Track)

Presenter: Keith Williams, Building Services & Consultant LLC

Marina III

Regardless of whether you and the customer are on the phone or in their house, there are opportunities to convey the concepts of home performance. But, it is not easy, and it is not just having a few key lines in your back pocket. Learn to build on the clues potential customers give you to establish credibility and trust. Knowing how to concisely tell the HP story will help you distinguish between “suspects” and “prospects”.

Multifamily Housing: The New Bread and Butter (California Energy Rater and Building Energy Consultant Track)

Presenter: Colin Jessop, Heschong-Mahone Group, Inc.

Sea Breeze

Multifamily housing starts are up throughout California (single-family starts are down). Now is the time for HERS Raters to embrace the multifamily market.

Learn about how to get involved in the multifamily market and the challenges and rewards of working with multi-family buildings (high-rise and low-rise).

Lunch

Noon — 1:30 p.m. — Lanai Grass

Sessions 5

1:30 — 3:00 p.m.

Whole-Wall Thermal Performance - Technology Update

Moderator: Laurel Elam, Appalachian State University Energy Center

Presenters:

Jan Kosny, Ph.D., Oak Ridge National Laboratory Buildings Technology Center

Joe Lstiburek, Building Science Corporation

Nautilus 1

R-value is not the best predictor of wall thermal performance. Air leakage, mean temperature, moisture and even orientation all affect real wall performance.

There is now a significant interest from the research community on how to best characterize envelope performance using whole wall test methods and several projects are underway. This session will provide an update on these testing programs.

Marketing Our Services

Moderator: Andy Gordon, Washington State University Energy Program

Presenters:

John Godden, Alpha Tec Consulting

Peter Reynolds, Reynolds & Associates

Nautilus 2

Green Building projects have created an opportunity to train policy makers, buildings inspectors, plans examiners and planners at the local level. The requirements in local building codes are a driver for above code energy performance labels (ENERGY STAR) and flowing from that, the interest in green building (LEED). On the other side of the coin, builders need on-site, hands-on training and feedback to be competitive in a market where energy labeling and green building helps them define their product.

ENERGY STAR Qualified Multi-family High-Rise: Moving on Up

Moderator: Barb Yankie, Homes +, Inc.

Presenter: David F. Lee, Environmental Protection Agency

Nautilus 3

High-rise multi-family buildings have been a very small component of ENERGY STAR Qualified Homes. However, many industry analysts are pointing to the aging 'baby boomer' population and increasing cost of developing land further from urban centers as drivers behind a looming trend to multi-family high-rise buildings. EPA has been actively working with stakeholders in pilot markets to develop a label for high-rise multi-family buildings. In addition, market research studies and technical evaluations have identified the biggest opportunities for energy savings. This session will present the results of these initial efforts along with potential scenarios for a national label for high-rise multi-family housing.

New Opportunity for Raters: Environmental Protection Agency's WaterSense Label for New Homes

Moderator: Steve Baden, RESNET

Presenters:

John Flowers, Environmental Protection Agency

Nautilus 4

WaterSense is a partnership program sponsored by EPA. Its mission is to protect the future of our nation's water supply by promoting and enhancing the market for water-efficient products and services. The program has an interesting set of program partners including the City and County of Denver, City of Houston, TX, City of Honolulu; water resource agencies of the states of Arizona, California, Colorado, Florida, Hawaii, Nevada, New Hampshire, New Jersey, New Mexico, North Carolina, North Dakota, Ohio, Pennsylvania, Rhode Island, Texas, Utah, Virginia, Vermont, West Virginia, and Wisconsin; manufacturers such as American Faucet, American Standard, Delta Faucet, Jacuzzi, Moen, and Price Pfister; and wholesalers such as Home Depot

EPA is setting up a new homes labeling program to label water efficient homes as "WaterSense" and would like to deploy the rating industry to inspect the water features inside of the home. A home's irrigation system would be inspected by an auditor certified by the Irrigation Association. This session will explore how a rater can take advantage of this new opportunity.

Making Energy Efficient Financing Relevant In Today's Housing Market: RESNET's Proposed Federal Policy on Energy Mortgages and Loan Guarantees

Moderator: Claudia Brovick, RESNET

Presenters:

Rick Gerardi, Lockheed Martin Energy and Environmental Services Group

David Goldstein, Natural Resources Defense Council

Marina VI

Energy efficient mortgages have been around for several decades but have been seldom used. With the growing concern over spiraling energy costs and climate change consumers and the media are growing more interested in the product.

This session will explore why the energy efficient mortgage has not taken off and what RESNET has proposed to make the product work more effectively.

Loan guarantees are a effective tool for the government to address financial barriers. For example the federal government has effectively addressed the barrier of the high cost of a college education through guaranteeing student loans. A loan guarantee program is where the government will guarantee a loan from default for certain policy purposes. The government guaranteeing a loan reduces the risk to the lender and hence will result in a lower interest loan and an avoidance of a premium mortgage insurance payment. The Energy Policy Act of 2005 authorized the U.S. Department of Energy to create an energy guaranteed loan program. This session will explore the opportunities that exist in directing the loan guarantee program to residential energy efficiency and what the actions the building performance industry should take to advocate for this.

**HP Quality Assurance as a Rater Business Opportunity
(Affordable Comfort/Home Performance with ENERGY STAR Track)**

Presenter: Dave Abrey, Green Homes America
Marina III

Home Performance programs create an unique opportunity for raters providing quality assurance oversight of home performance contractors. Just as HERS raters ensure the high standards of the ENERGY STAR Homes programs, QA raters verify that work in Home Performance with ENERGY STAR programs is correct. Find out more about this career avenue and get your questions answered.

**Roll Out of the New CHEERS Registry: A Rater Roundtable
(California Energy Rater and Building Energy Consultant Track)**

Presenter: Robert Scott, CHEERS
Sea Breeze

The rating registry is a key element used in Title 24 compliance and the California utilities' new home programs. CHEERS® is rolling out a new approach to how CHEERS® Raters interact with its data registry. This session will introduce the new CHEERS Registry Navigator and provide a forum for raters on how this new program can help improve productivity for CHEERS Raters.

Session 6
3:30 — 5:00 p.m.

HVAC Systems - What the Rater Needs to Know in the Field

Moderator: Lee Ball, Appalachian State University Energy Center

Presenters:

Darol Harrison, Energy Design Systems

Dennis Stroer, Calcs Plus

Nautilus 1

This session provides lessons learned from field inspections of HVAC systems that will help the rater better understand what to look for in assessing buildings. A checklist of items to look for related to the design and installation of systems will be provided so the rater can provide homeowners with an independent assessment of the HVAC system and guidance for improvement.

Adjusting to a Carbon Constrained World: Rating the Carbon Foot of Buildings

Moderator: Michael Holtz, Architectural Energy Corporation

Presenters:

Philip Fairey, Florida Solar Energy Center

David Meisegeier, ICF International, Inc.

Joe, Nebbia, Newport Partners, LLC

Nautilus 2

There is a growing movement in the United Kingdom led by PepsiCo for labeling the carbon footprint of consumer products. For example, a package of Walkers potato chips lists the amount of carbon dioxide emitted by the package's production, (from growing the potato to packaging and distributing of the finished products) along with the fat, salt and calories listings. This is clearly emerging as a new market force for combating global climate change. RESNET needs to begin considering adapting itself to a carbon constrained future. If it possible for a potato chip manufacturer to calculate the carbon footprint, it is surely possible for RESNET to develop a rating of a home's carbon footprint that considers the products used in the construction of the home, the proximity of the home to mass transit and the energy consumption of the home. Just as a HERS Index allows a consumer to compare the relative energy performance of a particular home with others in the market, a carbon footprint index would allow a consumer to compare the footprint of that home with other homes in the market. In addition a carbon impact rating would allow homeowners who improve the efficiency of their home to quantify the results in reducing their home's carbon footprint.

ENERGY STAR Qualified Homes: Where Are We Headed?

Moderator: Steve Saunders, TexEnergy Solutions

Presenter: Sam Rashkin, Environmental Protection Agency

Nautilus 3

After 10-plus years with only one initial specification and a few regional modifications, ENERGY STAR introduced a more rigorous specification in 2006 to be implemented one year later. One of the biggest lessons learned was that stakeholders need more time to absorb, understand and plan for change. Thus, the ENERGY STAR for Homes technical team has already developed guidance regarding likely requirements for the next ramp up in specifications. This session will track the progression to these new specifications and how they can ultimately

provide a roadmap to a carbon neutral home that can align with the American Institute of Architect's 2030 Challenge. In addition, results of detailed simulations for homes applying these improvements will show how much energy savings will be achieved with the next tier technologies and what amount of residual energy consumption will be required to achieve carbon neutrality in various markets across the country.

Infrared Scanning Technology and Residential Insulation Efficiency

Moderator: Eric Shoberg, Southwest Gas Corporation

Presenter: Jay R. Bowen, Infrared Training Center

Nautilus 4

This session will explore how infrared scanning can be used to quantitatively evaluate efficiency for R-value and other insulation ratings. Attendees will learn about the pros and cons of the various approaches to quantitative evaluation of insulation efficiency using IR scanning including such elements as steady state conditions, IR cameras, thermographer training and expertise, and environmental factors. Also included will be a brief discussion of general applications of IR scanning in building sciences.

When the Rating is Not Enough – Technical Details that Cause Performance Problems

Moderator: Erin Wiggins, Cenergy, LLC

Presenter: Courtney Moriarta, Steven Winter Design

Marina VI

We all have stories of buildings that have successfully earned the Energy Star (or other program) label yet come up short in actual performance. This session will offer examples of situations where a well-intentioned rater missed technical details that caused performance problems and offer advice on how to avoid repeating these mistakes. (Examples: condensing boilers that never condense, back-drafting appliances, moisture problems in attics, insulation that doesn't do it's job, etc.)

Are You Ready to Become a Home Performance Analyst? (Affordable Comfort/Home Performance with ENERGY STAR Track)

Presenters:

Joe Kuonen, Building Performance Institute

Larry Zarker, Building Performance Institute

Marina III

Discover the basics of the Home Performance with ENERGY STAR® program. Hear program results and lessons learned from several states. Get an overview of the available programs in California. Integrate your role as a HERS rater into home performance contractor quality assurance practices.

**The Invisible Conflicts of Home Performance, revealed through “Quality Inspections and Comprehensive Diagnostics”
(California Energy Rater and Building Energy Consultant Track)**

Presenter: Scott Johnson, Action Now!
Sea Breeze

This is probably going to be the fastest paced session you’ve ever attended. Why, you ask? Because we’re going to explore Home Energy and Comfort issues within the State of California, past, present and future. We’ll explore:

10 Homeowner Misconceptions, Super House, Design vs. As-Built, House-as-a-System, Infiltration/Exfiltration, Interstitial Communication (TBC), Thermal Boundary Defects (Air Barrier/Thermal Barrier), Infrared Thermography, Estimating Assembly R-values, Psychrometrics vs. the Envelope, Worst Case Depressurization, HVAC Defects, Duct Leakage Effects, HVAC/Three Mass Fluid Flows, Equipment Capacity vs. Capacity to Conditioned Space, Velocity Pressure/Static Pressure/Total Pressure, Air Balancing, Residential Commissioning, Tools of the Trade and much more.

RESNET’s Beer Fiesta
5:00 — 7:00 p.m. -- Exhibit Area

Wednesday, February 20, 2008

Continental Breakfast
7:30 — 8:30 a.m. -- Exhibit Area

Session 7
8:30 — 10:00 a.m.

Effective Mechanical Ventilation, Dehumidification and Zoning Strategies for Hot, Humid Climate Homes

Moderator: Philip Fairey, Florida Solar Energy Center
Presenters:
Ken Fonorow, Florida H.E.R.O.
Dennis Stroer, Calcs Plus
Nautilus 1

Energy Efficient homes in Hot, Humid climates require adequate levels of mechanical ventilation. Larger homes can reduce energy usage by zoning of the mechanical systems. Additionally, dehumidification is increasingly required in custom, multifamily and seasonally occupied homes. Effective strategies to accomplish all three objectives will be presented – based on hundreds of Building America homes in Florida where these strategies have been implemented. In

this session attendees will learn the reasons these topics are important, pitfalls to avoid and effective designs which have been successfully used in many homes.

HERS Index Score vs. Predicted Energy Use and Modeling vs. Real Life: A Colorado Case Study

Moderator: Steve Byers, EnergyLogic, Inc.

Presenters:

Dave Roberts, Architectural Energy Corporation

Robby Schwarz, EnergyLogic

Nautilus 2

There has been much discussion about how predicted energy use lines up with actual energy use in rated homes and how the HERS Index score aligns with predicted energy savings. This Colorado case study looks at these issues, reviews other like studies that have taken place, and draws some conclusions that may help start a wider national discussion on the issues.

RESNET's Effort to Develop National Standard for Energy Audits of Existing Homes

Moderator: Steve Baden, RESNET

Presenters:

Kelly Parker, Guaranteed Watt Savers

Lee O'Neal, NSpects

Nautilus 3

RESNET is undertaking an initiative to define a process for measuring the energy efficiency of existing homes. Because of the diversity of the nation's housing stock and homeowners, no one single tool will meet all needs. This session will introduce the RESNET process, explain its goals, and provide an update to the process.

ENERGY STAR Qualified Homes: New Marketing Tool Developments & Builder Recruitment Tool Kit: Finally a Tool for Raters

Moderator: David Lyle, Home Energy Concepts

Presenters:

Stacey Patmore, Environmental Protection Agency

Amber Wysocki, ICF International

Nautilus 4

The HERS industry has provided invaluable help to EPA recruiting and supporting builders interested in ENERGY STAR Qualified Homes. EPA continually looks for opportunities to assist HERS raters in this effort and has applied over ten years of experience managing exponential growth of labeled homes in the development of a new ENERGY STAR Recruitment ToolKit. This session will present the key components of this toolkit including a builder recruitment presentation, a "Top Ten Ways to Reach and Retain Homebuilders"

fact sheet, a compilation of success stories, the updated ENERGY STAR for Homes builder brochure, and a Guide to Understanding the Home Building Industry.

Putting It Together In Attached Housing Units

Moderator: Kathy Greely, Performance Systems Development

Presenters:

Paul Duffy, Buchan, Lawton, Parent, Ltd.

Bruce Gough, Energy Building Group Ltd.

Marina VI

Attached housing, including both towns and stacked units, are increasing in numbers due to reasons of affordability and densification in urban areas. If you are not including attached units in your rating business you are missing out on one of the largest growth opportunities. However attached units have special challenges in the common walls and floors. Benchmark testing in Canada has shown that production attached units may be 2 or more times leakier than singles. How do you air seal these elements while maintaining fire and sound ratings? Come and learn from two Canadian experts who have certified more than 1000 attached units as ENERGY STAR. The presentation will focus upon practical solutions and details for air sealing in attached housing units.

Estimating Savings for Energy Improvements in Existing Homes (Affordable Comfort/Home Performance with ENERGY STAR Track)

Presenters:

David Lee, Environmental Protection Agency

Michael L'Ecluyer, ICF International, Inc.

Marc Milin, ICF International, Inc.

Edward Pollock, U.S. Department of Energy

Marina III

One of the main things that distinguishes home performance contracting from mainstream home improvement contracting is the comprehensive assessment that educates the customer on a wide range of measures to reduce energy consumption while addressing health and safety and building durability concerns. One of the objectives of the comprehensive assessment is to provide the homeowner with a credible projection of energy savings. In recent years we have seen the introduction of sophisticated home performance auditing software that provides such energy savings projections and builds a financial analysis around them to show the customer the return on their investment. However, few home performance contractors use such software in the field while they are assessing the home and making their sales pitch. Is it possible to develop quick-and-easy tools that can be used reliably in the field during the initial assessment to close the deal more efficiently? What kinds of methodology should be employed in the development of such tools? The panel will explore the current

status of assessment tools, barriers to use, and priorities for research and development.

Opening of the Existing Homes Market in California – CHEERS Existing Homes Initiative

(California Energy Rater and Building Energy Consultants Track)

Presenter: Robert Scott, CHEERS

Sea Breeze

As the new homes market slows the existing homes market becomes a great opportunity for the continued growth for the demand of rating services. CHEERS is launching an existing homes rating program. This effort includes the development of a new rating software program and informing and training realtors and lenders of the benefits of using energy efficiency in the tightening housing market. This session will introduce this new initiative and explore the issues that are involved with the rating of existing homes.

Session 8

10:30 a.m. — Noon

Making Sense of It All: LEED-H, Environments for Living, ENERGY STAR, Indoor Air Package, Health House, etc

Moderator: Laurel Elam, Appalachian State University Energy Center

Presenters:

David Bell, Environments for Living

Jay Hall, U.S. Green Building Council

Steve Klossner, Health House

Sam Rashkin, Environmental Protection Agency

Eric Werling, Environmental Protection Agency

Nautilus 1

With so many residential programs being promoted it can be challenging to figure out which to do. What are the nuances, how might programs compliment each other, what are the benefits and what are the costs? Come learn more about these programs as we help you sort these questions and more.

Controlling Indoor Humidity in High Performance Homes

Moderator: Tabetha Reyes, Home Energy Partners

Presenter: Danny Gough, Energy Solutions LP

Nautilus 2

Depending on a high efficiency air conditioning system to control the indoor humidity of a high performance home will consistently fail. The result is elevated relative humidity with lots of unintended consequences. What are the latest most

advanced whole house humidity control strategies. Which ones work -which ones don't.

Introduction to Energy Efficient Lighting

Moderator: Ann Marie Apgar, EAM Associates

Presenters:

Dean Gamble, ICF International, Inc.

Jeffrey Schwarz, ICF International, Inc.

Nautilus 3

This session will provide an overview of the current state of energy efficient lighting. By better understanding the world of efficient lighting, raters can have another tool to help builders select upgrades that best fit their business model. By being more knowledgeable and versatile in this subject, raters can offer better services to their clients than competitors. Topics will include an explanation of EPA's Advanced Lighting Package, how builders can select lighting that meets the aesthetic needs of consumers, how much credit builders can get towards meeting ENERGY STAR requirements, how to verify compliance, and the range of incremental costs that might be incurred.

More Work for Raters: REALTOR®, Green Building, & Consumer Bridges:

Moderator: Claudia Brovick, RESNET

John Beldock, EcoBroker, Inc.

Nautilus 4

Home Performance with Energy Star and other commerce is now moving across REALTOR®, green building, and consumer bridges, and there's ample work for raters. As of February 1st, 2008, with over 2600 Realtor® members in 46 States, 4 Canadian Provinces, and the Caribbean, a recent survey of the AEEREP / EcoBroker's Realtor® membership finds exciting training, outreach, and retrofit success occurring out in the market place. Over 20% of the Realtor® respondents report they have already been involved in Home Performance with Energy Star and other energy efficiency and/or environmental retrofits with their real estate customers. The vast majority of all respondents report they are not only excited about what they've learned about how to connect energy and environmental opportunities and their real estate practices, but they are actively sharing what they are learning with consumers. These results have great implications for more rater business. We look forward to a great deal more success with RESNET in 2008.

Integrating Renewables with Home Performance (Affordable Comfort/Home Performance with ENERGY STAR Track)

Presenter: Matt Golden, Sustainable Spaces

Marina III

More and more consumers want PV to be green and environmental...how can a home performance contractor stay competitive. Well, you can't have a an

effective solar system without load reduction, envelope tightness, and HVAC system sizing. Find out how this contractor has created a successful business by combining home performance with energy systems to provide clients with comprehensive solutions to their energy needs.

California Solar and New Solar Home Initiatives and the Future Role for Raters

(California Energy Rater and Building Energy Consultant Track)

Presenter: Doug Beaman, Doug Beaman Associates, LLC

Sea Breeze

The new California Solar and New Solar Home Initiatives will require a home analysis of energy efficiency of the homes participating in the program to ensure that the cost effective efficiency is addressed prior to allocation of a solar rebate. Though this "energy audit" is not a rating, it's processing will be similar and offering the service will be a great opportunity for California raters.

Lunch

Noon — 1:30 p.m. -- Lanai Grass

Session 9

1:30 — 3:00 p.m.

Reducing Business Risk with the New ENERGY STAR Indoor Air Package

Moderator: Douglas Walter, Kansas Building Science Institute

Presenter: Eric Werling, Environmental Protection Agency

Nautilus 1

Builders today are at risk. One southern California law firm specializing in construction defects has won over \$430,000,000 in awards for their clients. Many of their claims relate to mold/moisture control. The new ENERGY STAR Indoor Air Package includes a comprehensive set of mold/moisture control features, beyond the requirements of Green building programs. Learn how to help builder clients manage this significant business risk, using the government label designed to reduce moisture/mold and other IAQ problems. You'll also learn how IAP can reduce other business risks, including callback costs, complaints, and lost business due to competition.

Energy Modeling with Real-Time Weather: Understanding Utility Bills

Moderator: Albert Lee, Appalachian State University Energy Center

Presenter: Dean Gamble, ICF International, Inc.

Nautilus 2

Standard procedures for estimating energy consumption of a home or building involves conducting hourly simulations using exact architectural and energy related features, typical static 30 year average weather data and typical static

operating assumptions. Using real hourly weather data allows energy efficiency and demand management programs to better assess the impact of installed technologies or modified operating procedures, by providing a closer match to the actual energy consumption and electrical demand. The use of typical average weather data is adequate when the goal is to estimate savings relative to a typical baseline. However, it is actual weather that dictates the current and future energy use and helps to prioritize technology and procedure upgrades.

Using Quality Assurance to Increase Builder Participation

Moderator, Ben Adams, MaGrann Associates

Presenter: Tom Hamilton, ICF International

Nautilus 3

Come learn how some of the best raters are evolving their businesses to include an existing homes service delivery to better diversify their businesses. How well does your new homes" rater experience translate to the existing homes market?

Using Diagnostics to Close the Deal – Home Performance Sales Techniques

(Affordable Comfort/Home Performance With ENERGY STAR Track)

Presenter: Joe Kuonen, Building Performance Institute

Marina III

Home performance offers a unique sales approach to the contracting business by employing diagnostic tools, customer education, and relationship building skills. Find out how to take your business to the next level. Discover successful strategies, such as, "walk-through" tactics, selling the customer on doing a Comprehensive Home Assessment, as well as, closing techniques and countering objections.

Session 10

3:30 — 5:00 p.m.

Measuring Up: Tools for High Performance Building Performance

Moderator: John Baden, Western Residential Energy Services

Presenter: Bill Spohn, Testo

Nautilus 1

A large part of building performance evaluation involves measurements. This session will provide an overview of measurement principles, practices and devices, with an emphasis on new advances in power, accuracy and affordability.

Ecomagination Home Builder Program

Moerator: Claudia Brovick, RESNET

Presenters:

David Bell, Environments for Living
Patrick G. McElhaney, General Electric
Nautilus 2

The Ecomagination homebuilder program offers builders and developers a turnkey solution for building higher performance homes with lower environmental impact. It combines advanced GE technology with the proven building science of Masco's Environments for Living program. Homes built under the program are expected to achieve at least a 20% reduction in total household energy use, associated greenhouse gas emissions, and indoor water use. Additionally, homes are expected to have significantly improved indoor air quality. The program incorporates broad support for builders, including innovative mortgage financing, turnkey project execution, and interactive homebuyer sales and marketing content.

Sheraton San Diego Hotel and Marina Fuel Cell Tour
Conference Registration Table

The 2008 RESNET Building Conference's hotel, the Sheraton San Diego Hotel & Marina, has a commitment to energy efficiency. The hotel meets its base power load by four fuel cell power plants. The waste heat from the fuel cells is used to heat the hotel's Lagoon Pool. See tomorrow's future today; join the tour of this innovative technology.