Home Energy Efficiency
Matt Dean, NAR Green Instructor & Home Energy Instructor
3 Hours NYS CE
December 2023 Triple Play

Description: This 3 hour class teaches Real Estate professionals interested in the connection between human health symptoms, possible home issues that could be causing them and selling a safer home.

Description: This course provides real estate licensees, appraisers and assessors with a foundation in applied building science, construction fundamentals and building inspection. Additionally, it covers measurement techniques, residential mechanical systems, HVAC efficiency and appliance safety diagnostics, ventilation and air quality, health and safety, base load usage, appliance and lighting surveys, energy modeling, audit reports and work scope generation.

Objectives:

Upon completion, participants will be able to:

- **Explain aspects of basic building science and discuss how it works.**
- **Define terms unique to building energy auditing.**
- **Identify energy efficient appliances, HVAC systems, insulation and other energy efficient related improvements.**
- **List what diagnostic tests are performed to determine how energy efficient buildings are.**
- **Read and interpret an audit report.**
- **Identify various home construction methods/types, and their common energy profiles.**

What is Green

What are the basics of building science and how do they work?
- **Why Green is complicated**
- **What is energy?**
- **Help clients and customers evaluate the cost-benefit balance of retrofitting, remodeling, or renovating.**

Energy Efficiency and Energy Conservation

What can homeowners do on their own to improve the resource efficiency of their homes?
- **Help home buyers see the potential in an existing home for resource-efficiency improvements.**
- **Suggest to homeowners DIY steps and easy upgrades to improve the resource-efficiency of a home.**
- **What services are included?**

Building Classifications and Basics

Why are these classifications important?

- **Describe characteristics of home technologies.**
- **Building Functions Building Enclosure Assemblies Foundation Floors Walls Roof Windows and Doors.**
- **Energy Audit Data Collector.**

Air Movement

The systems and components of a building that directly separate the inside from the outside.

- **Why do we need to know about air movement or air flow in buildings?**
- **Terms you need to know to describe air movement in buildings.**
- **Understanding home depressurization.**

Building Science and Thermodynamics

- **Building Science Overview**
- **House as a System**
- **Thermal and Pressure Boundary**
- **Energy Basics: Thermodynamics**
- **Heat Transfer in Building**
- **Factors Affecting Thermal Comfort**

Materials used for insulating and air sealing

- **Where buildings waste energy**
- **Air sealing**
- **Materials used for air sealing**
- **Techniques for sealing main bypasses**
- **Building enclosure**
  - **Insulation**
- **Materials used for insulating**
- **How to install insulation**
- **How to verify the quality of work**

Ventilation

- **Moisture and Moisture Control**
- **Indoor Air Quality (IAQ)**
- **Mechanical Ventilation**

Mechanical Systems

- **Heating Systems**
  - **Boiler's (Steam & Hot Water)**
  - **Forced Hot Air Furnace**
  - **Heat Pump's (Air Source & Ground Source)**
  - **Venting Type's**
  - **Domestic Hot Water (DHW)**
- **Air Conditioning Systems**
  - **Window**
  - **Central A/C**

Electrical and Appliances

- **A typical residential electrical system**
- **Electrical demand.**
- **Appliance and Lighting surveys.**

Energy Modeling Software and Reports

- **Cost-Effectiveness of Energy Measures**
- **Energy Star Vs. Energy Guide.**
- **Home Energy Score: A Tool for All Homes**

Questions and Answers

Useful links

Association for Energy Affordability, inc. www.aeaus.org
Building Performance Institute www.bpi.org
NYSERDA Contractor list https://www.nyserda.ny.gov/Contractors/Find-a-Contractor
Energy Star www.energystar.gov
NAR Green Resource Council- Green Designation & info: https://green.realtor/
NAR On Common Ground Magazine (Smart Growth) https://www.nar.realtor/on-commonground
IRS Tax Credits
https://www.irs.gov/credits-deductions/home-energy-tax-credits
Sustainable Westchester https://sustainablewestchester.org/

Matt Dean is Senior Home Energy Score Mentor/Trainer, National Association of Realtors Green Designation and New York State Association of Realtors Faculty Staff member and BPI trainer. Matthew has taught over 5000 students and has over 5000 hours experience training classes.
His specialization is in home energy training, auditing, modeling, program implementation and chief spokes-person for the Home Performance with Energy Star Program.
Dean has worked with various energy modeling, system evaluation tools and software packages for building simulation, including TREAT, Tips and BPI Rater Department of Energy software.
This industry leader has been involved in over 500 energy audits of 1 to 4 unit buildings and over 300 multifamily building QCI inspections. Clients include NYSERDA, Con Edison, National Grid, NYPA DOE Rikers Island, and property owners in New York.

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