

Sustainability Series

WEBINARS



Pollution Prevention and Stewardship Unit, Office of Environmental Assistance
Department of Environmental Quality

Helping people through positive environmental change

We advance voluntary, multi-media environmental, social, and economic improvement using scientific, collaborative solutions to achieve a healthy and sustainable environment.

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Sustainability Series

WEBINARS

Webinar Set Up

- **All lines are muted**
- **If you have a question you can type it into the Question/Chat box in your Go to Webinar tool bar**
- **Webinar is being recorded**

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Energy Audits

Who needs one? Why it is needed?

So many choices.

Which one is right for my home? My business? My community?

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Why should I have an energy audit done?

- Your triple bottom line...
 - Financial - saving operational expense, increased value of asset, growth
 - Environmental – resource consumption, land use, waste management
 - Social – employee welfare, community image and health.
- The MPSC has studied and tracked the savings from energy efficiency measures for years. They consistently find that for every dollar invested in energy efficiency, the investor saves almost \$ 4 in future energy expenses.
- Defining the scope of what is feasible.
- Prioritizing capital expenditures to achieve the best return on investment.

TYPES OF ENERGY AUDITS

- **Residential**
- **Multifamily**
- **Commercial & Industrial**

Residential



- Existing building
 - Walkthrough, Home Energy Survey
 - Utility EO assessments
 - DOE Home Energy Score
 - Measurement based and accredited
 - BPI, Energy Star, HERS
 - LEED
- New build
 - HERS
 - EnergyStar
 - LEED

Multifamily



- Existing Building
 - Walkthrough
 - EO Utility Assessments
 - Energy Star
 - HERS
 - ASHRAE I, II, III
 - LEED
 - Green Building
 - Enterprise Green Communities
- New Building
 - HERS
 - Energy Star
 - LEED
 - Green Building

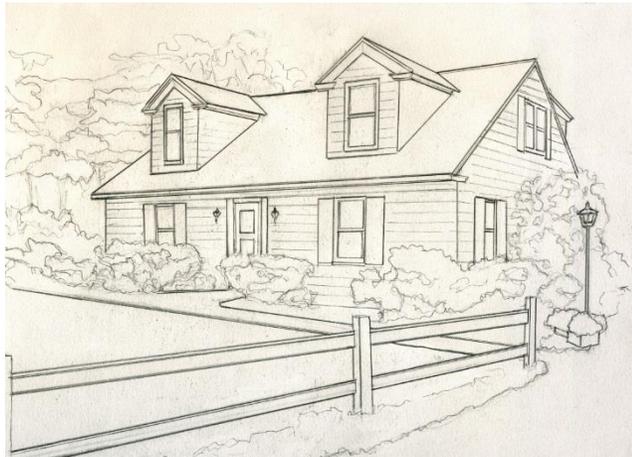
Commercial



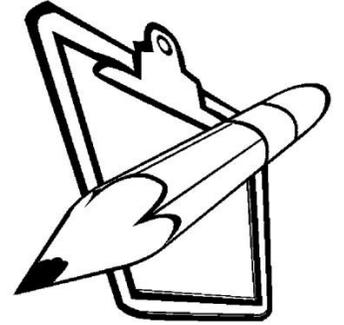
- Existing Building
 - Benchmarking
 - Walkthrough
 - Utility EO Assessment
 - EnergyStar
 - HERS
 - ASHRAE I, II, III
 - LEED
- New Build
 - HERS
 - EnergyStar
 - LEED

Benchmarking

- A simple method of entering the energy use data into a tool such as the EPA's Portfolio Manager for comparison of your building against the energy use of other similar buildings in a similar climate.



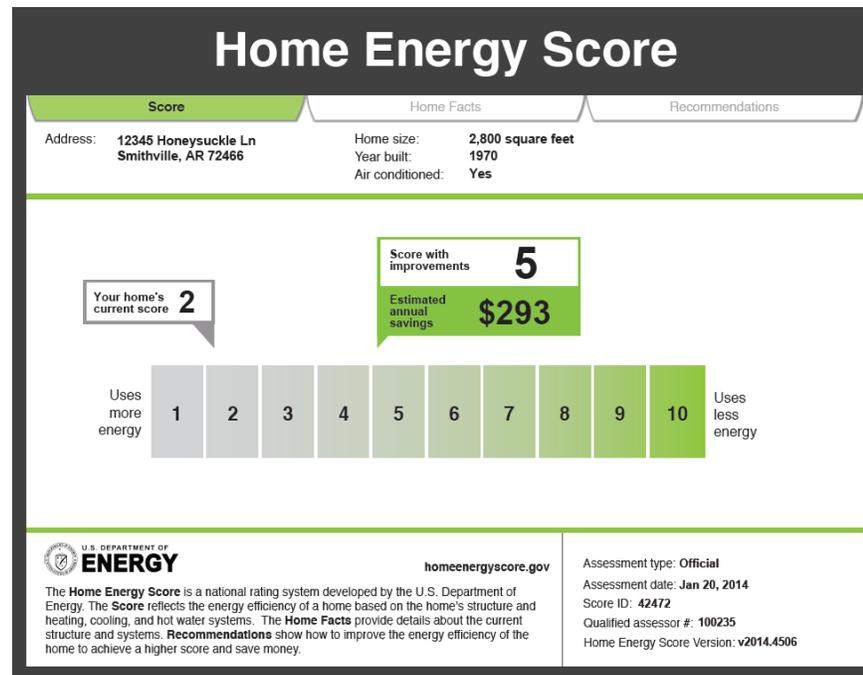
Walkthroughs, EO Utility Assessments, Home Energy Surveys, etc.



- Short/low cost/no cost option with few if any measurements taken.
- Based on experience of assessor.
- High return on efficiency measures (i.e. lighting, water savings, weatherization).
- May include free measures through a direct install program by utilities.
- Rebates on common measures.
- Should not be the basis for in-depth energy conservation measures like insulation, major relighting or renewables.

DOE's Home Energy Score

- The Home Energy Score is a quick, low-cost way for you to learn about your home's energy performance and see how it compares to others in the area or nationwide. It also provides homeowners with recommendations for energy upgrades as well as an estimate of how these improvements can reduce utility bills and improve the Score.



Measure based & Accredited Audits

- BPI – Building Performance Institute
 - Residential, Multifamily or Commercial applications
 - Certified Auditor
 - Detailed evaluation of building pressures & operations
- HERS – Home Energy Rating Score (150 – 0)
 - Residential or Multifamily (up to 3 stories)
 - Certified Auditor
 - Detailed evaluation of building systems and cost of operation
- EnergyStar® - EPA/DOE
 - New construction – uses 15% less energy than homes built to 2003 IRC
 - Adopted as part of other building ratings (i.e. LEED, Green Buildings, etc.)
 - Existing buildings – score from 1 to 100 (75+ to achieve EnergyStar® rating).

ASHRAE I, II and III

- American Society of Heating, Refrigerating and Air-Conditioning Engineers
 - ASHRAE I - a walkthrough to identify the potential for energy improvements, understanding the building and defining the type and nature of its energy systems. This results in a preliminary, high-level, energy-use analysis for the building, with a short report detailing the findings.
 - ASHRAE II – builds on the findings of the Level-1, and evaluates the building energy systems to define a variety of potential energy-efficiency improvements, such as the building envelope, lighting, heating, ventilation, HVAC, DHW, plug loads, etc.. It includes a detailed analysis of energy consumption, seasonal variations, and effective energy costs. It also evaluates lighting, air quality, temperature, ventilation, humidity, and other conditions that may affect energy performance and occupant comfort.
 - The ASHRAE III - focuses on a “whole-building computer simulation”. A computer program accurately models the way the actual building would respond to changes. It involves a detailed data collection over time. Combining that process with construction-grade cost estimating supports informed investment decisions.

LEED

- **LEED, or Leadership in Energy and Environmental Design, is changing the way we think about how buildings and communities are planned, constructed, maintained and operated. Leaders around the world have made LEED the most widely used third-party verification for green buildings.**
- LEED works for all buildings—from homes to corporate headquarters—at all phases of development. Projects pursuing LEED certification earn points across several areas that address sustainability issues. Based on the number of points achieved, a project then receives one of four LEED rating levels: Certified, Silver, Gold and Platinum.
- LEED-certified buildings are resource efficient. As an added bonus, they save money.
- Enterprise Green Communities and Green Building programs, while not as stringent as LEED, do take into account many of the same features and benefits.

What is right for you, your company or your community?

- What are your goals?
 - Saving money?
 - Saving your health?
 - Saving the planet?
- What are your resources?
 - According to the MPSC, “For every dollar that is spent on energy efficiency, more than \$ 4 of future energy costs are avoided”.

Questions?



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