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# Compare and Contrast

LEED for Homes and EnergyStar

# Presentation by:

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  - Advisory Committee of the RCGA Green Business Challenge
  
- Part of a Team!



# Energy Star

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- **EnergyStar:**

- To earn the ENERGY STAR, a home must meet strict guidelines for energy efficiency set by the U.S. Environmental Protection Agency (EPA), making them 20–30% more efficient than standard homes. Homes achieve this level of performance through a combination of energy-efficient improvements, including,

- **Effective Insulation Systems**

- **High-Performance Windows**

- **Tight Construction and Ducts**

- **Efficient Heating and Cooling Equipment**

- **ENERGY STAR Qualified Lighting and Appliances**

- To ensure that a home meets ENERGY STAR guidelines, third-party verification by a certified Home Energy Rater (or equivalent) is required. This Rater works closely with the builder throughout the construction process to help determine the needed energy-saving equipment and construction techniques and conduct required on-site diagnostic testing and inspections to document that the home is eligible to earn the ENERGY STAR label.

# LEED for Homes

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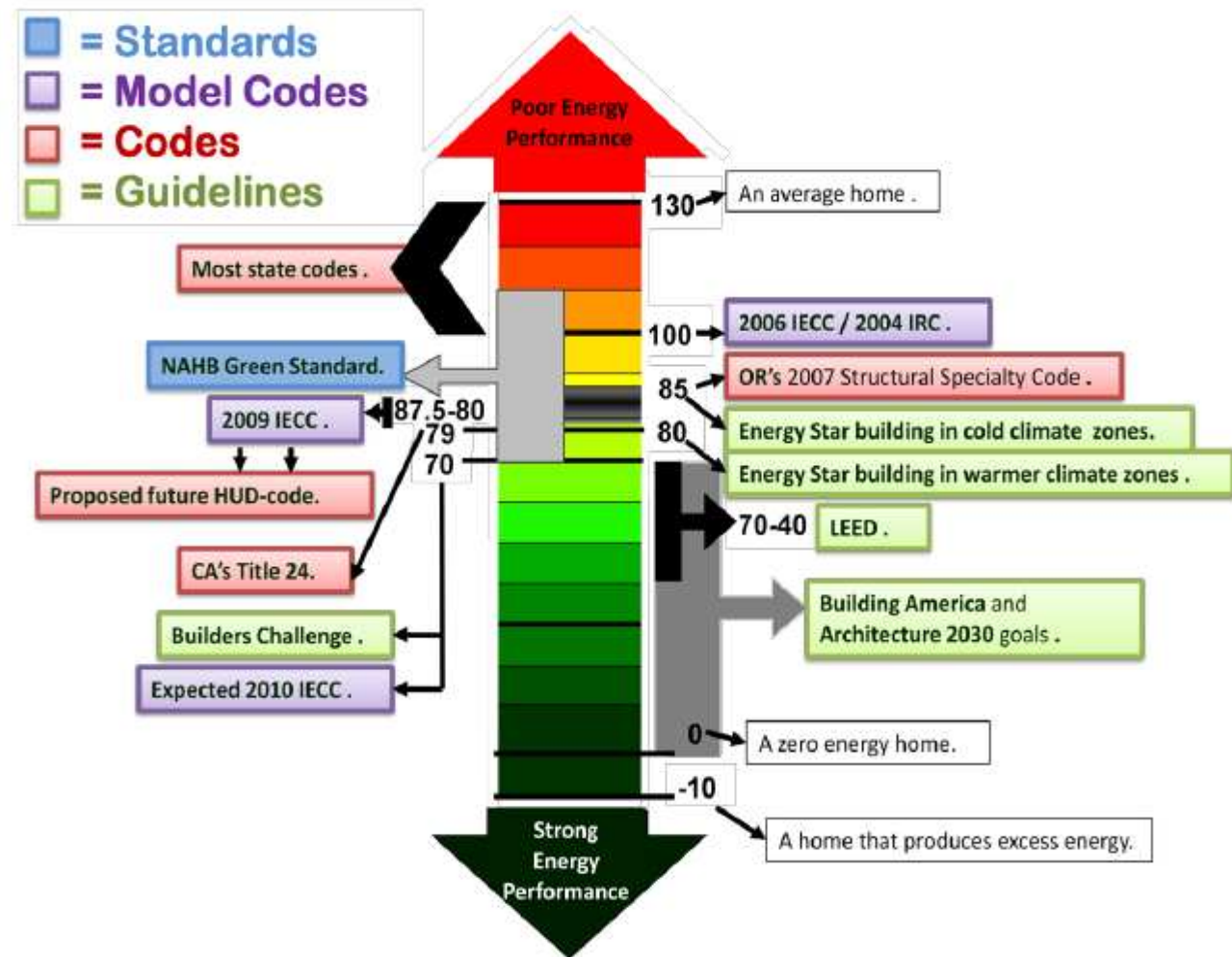
- LEED for Homes is a voluntary rating system that promotes the design and construction of high-performance **green** homes, including affordable housing, mass-production homes, custom designs, stand-alone single-family homes, duplexes and townhouses, suburban and urban apartments and condominiums and lofts in historic buildings.
- Compared to a conventional home, a **green** home uses less energy, water and natural resources; creates less waste; is smartly located and built with as little impact on the land it sits on as possible; and is healthier for the people living inside.

# Definitions

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- **HERS Rater:** a certified energy professional who qualified to conduct HERS (Home Energy Rating Systems) ratings on residential buildings.
- **Green Rater:** a certified home energy rater who has undertaken additional training and completed certain tests and tasks to become qualified to work with the LEED for Homes program through the US Green Building Council.
- **Green Verifier:** is an individual who has undertaken training and has passed the certification testing provided by the National Association of Home Builders or NAHB

# Energy and Rating Systems and Codes



From: Evaluating Residential Energy Efficiency Programs with a Universal Metric  
By Kelly Shultz, Federation of American Scientists

# LEED and Energy Star Together

## WHAT FEATURES ARE INCLUDED IN NEW HOMES WITH THE ENERGY STAR INDOOR AIR PACKAGE?

**MOISTURE CONTROL:** Moisture problems can lead to mold and other biological pollutants that can negatively impact health. With the Indoor Air Package, builders use a variety of moisture control features designed to minimize these risks, including improved control of condensation and better roof, wall, and foundation drainage.

**HEATING, VENTILATION, AND COOLING (HVAC) SYSTEM:** Poorly designed and installed HVAC systems can lead to comfort and air quality problems. Homes with the Indoor Air Package include properly engineered system sizing, improved duct and equipment installation, improved filtration, and whole-house and spot ventilation to dilute and remove indoor pollutants. Builders also inspect air-handling equipment and ductwork to ensure they are clean and free of debris and provide adequate air-flow.

**PEST MANAGEMENT:** Residue from pests, such as rodents, dust mites, and cockroaches, is known to trigger allergy and asthma episodes. In addition, wood-eating pests, such as termites, can quickly destroy a homeowner's most valuable investment. With the Indoor Air Package, builders provide a first-line defense against these problems by fully sealing, caulking, or screening possible pest entry points and using termite shields in areas of the country subject to termite infestation.

**COMBUSTION-VENTING SYSTEMS:** In homes with the Indoor Air Package, builders can help protect residents from potential exposure to combustion pollutants by using fossil-fuel heating equipment that cannot spill combustion gases inside the home, installing carbon monoxide alarms in each sleeping area, and taking steps to prevent pollutants in the garage from entering the house.

**BUILDING MATERIALS:** The types of materials builders choose and the way they manage them during construction can affect a home's indoor air quality. Builders following the Indoor Air Package specifications reduce sources of pollutants by protecting materials stored on-site from weather damage, using materials with reduced chemical content, and ventilating homes prior to move-in to help improve indoor air quality.

**RADON CONTROL:** Exposure to radon, a naturally occurring radioactive, invisible, and odorless gas, is the second leading cause of lung cancer in the United States. In high-risk radon areas, homes with the Indoor Air Package are built with radon-resistant construction techniques. Homebuyers in these areas are also provided with test kits to check radon levels after they move in.

**HOMEOWNER EDUCATION:** After purchasing a home with the ENERGY STAR Indoor Air Package, owners receive a manual explaining their home's indoor air quality features and showing how to operate their home to continue minimizing the risk of indoor air quality problems.

For more information, visit [www.energystar.gov/homes](http://www.energystar.gov/homes)

**Before:** Empty lots and 27 families living in substandard housing

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# After: Homebuyers with opportunities

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# What the 'after' means to our community and to the homebuyer:

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- More energy efficient and environmentally friendly homes that:
  - **Lower utility costs** by reducing energy and water use.
  - **Increase health benefits** through use of low VOC materials and properly sized, balanced and filtered HVAC systems that improve indoor air quality – and so help lower health care costs.
  - **Better citizenship** through LEED: the use of regional materials and minimizing the embodied energy in the overall construction process.

# Conclusions

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- Case by case, site by site.
- Integration, integration, integration
- It looks more difficult than it is