

SOUTHWEST ENERGY EFFICIENCY PROJECT  
WORKSHOP ON  
HIGH-PERFORMANCE HOMES  
APRIL 30TH, 2008 SALT LAKE CITY, UTAH

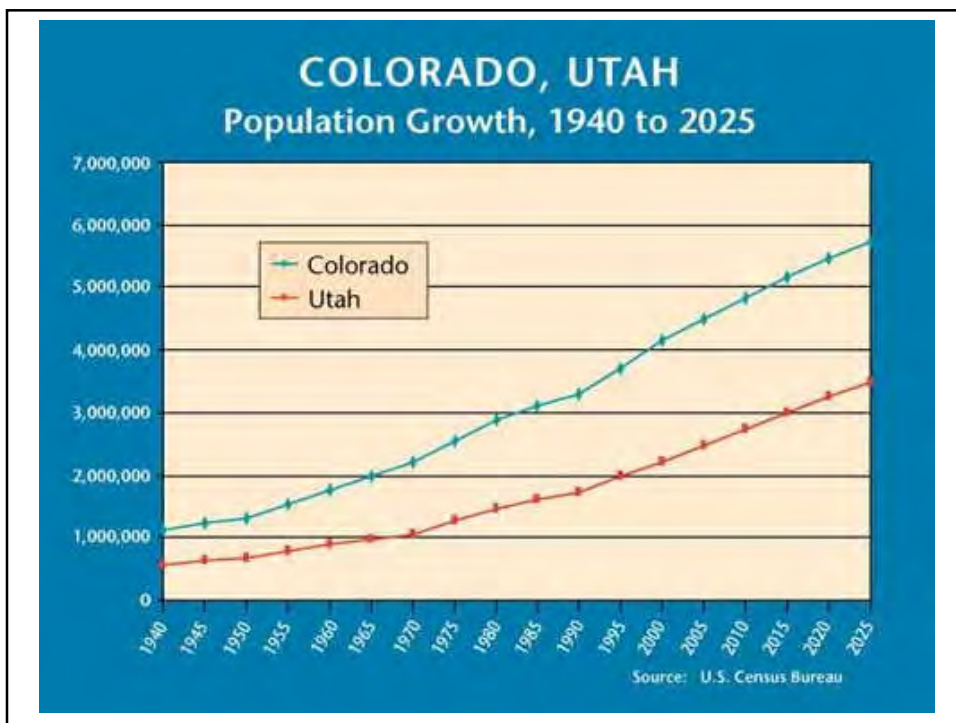


## Environmental Impact of Buildings\*

- 65.2% of total U.S. electricity consumption <sup>1</sup>
- > 36% of total U.S. primary energy use <sup>2</sup>
- 30% of total U.S. greenhouse gas emissions <sup>3</sup>
- 136 million tons of construction and demolition waste in the U.S. (approx. 2.8 lbs/person/day) <sup>4</sup>
- 12% of potable water in the U.S. <sup>5</sup>
- 40% (3 billion tons annually) of raw materials use globally <sup>6</sup>

\* Commercial and residential

U.S. GREEN BUILDING COUNCIL

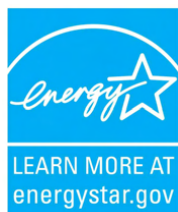


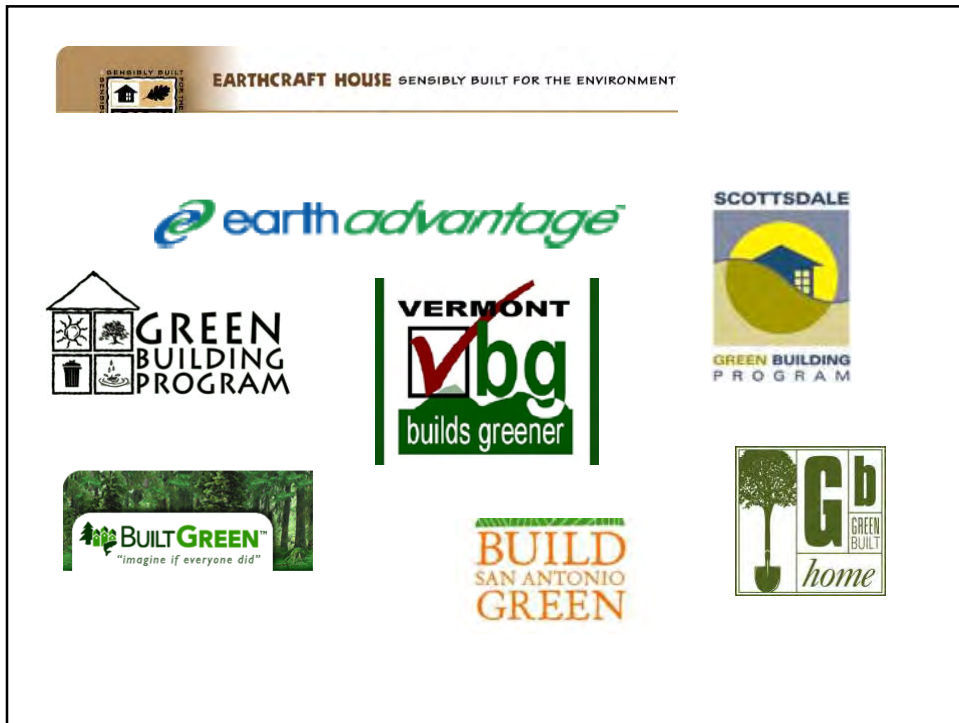
## New Goals

Encourage the use of products, technologies and practices that will:

- Provide energy efficiency, reduce atmospheric pollution
- Protect and improve indoor air quality
- Conserve water
- Preserve natural resources, reduce waste
- Result in durable, comfortable, low-maintenance homes
- Educate the homeowner

## Green Labeling Programs in Utah for New Construction





## The Rise of the Eco Label



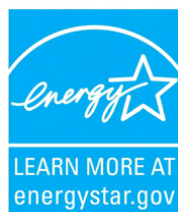
## Eco Label Goals



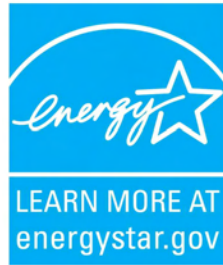
Canada  
Environmental  
Choice

- Identify consumer products that avoid detrimental impacts on the environment and human health.
- Stimulate specific market activities for businesses and product manufacturers.
- Redirect consumer behavior.
- Provide the market with an measure of sustainability that that allows for market differentiation vis-à-vis non-labeled products.
- Other goals you can think of?

## Green Labeling Programs in Utah for New Construction



U.S. Department of Energy & Environmental Protection Agency  
ENERGY STAR Program



[www.energystar.gov/homes](http://www.energystar.gov/homes)



## What is an ENERGY STAR home?

- Focus on energy efficiency and reduced emissions.
- When compared to a reference house, an ENERGY STAR qualifying home saves 2,501 kWh/year, 171 therms/year, 5,823 lbs CO<sub>2</sub>/year.



Present:  
New ENERGY STAR Spec



Insulation Installation



Thermal Bypass

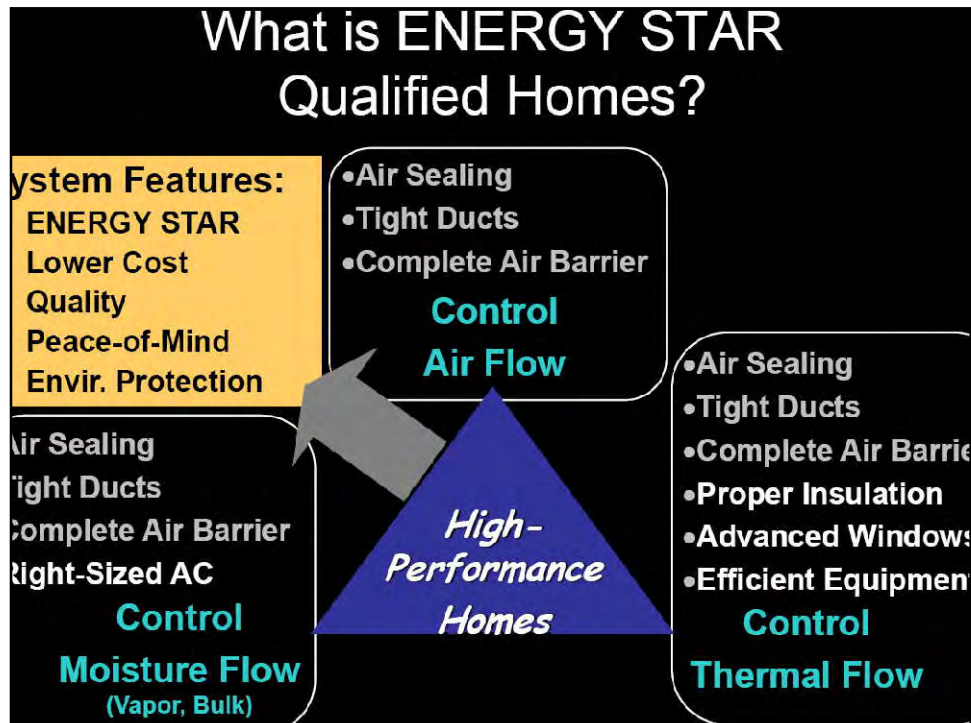


Right Sizing



Reference to  
2004 IRC

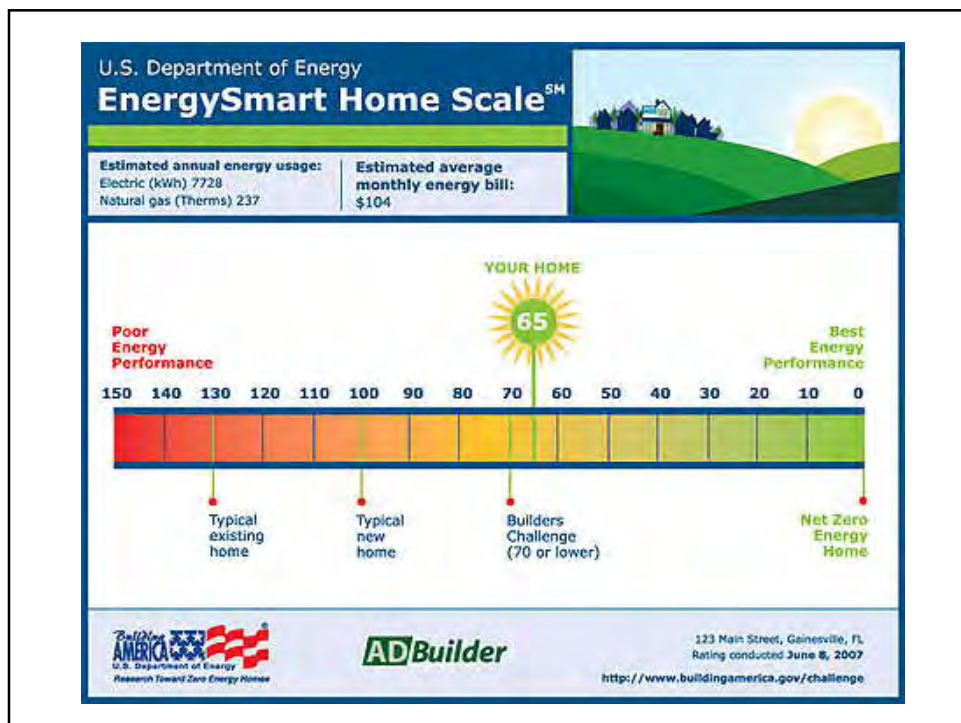
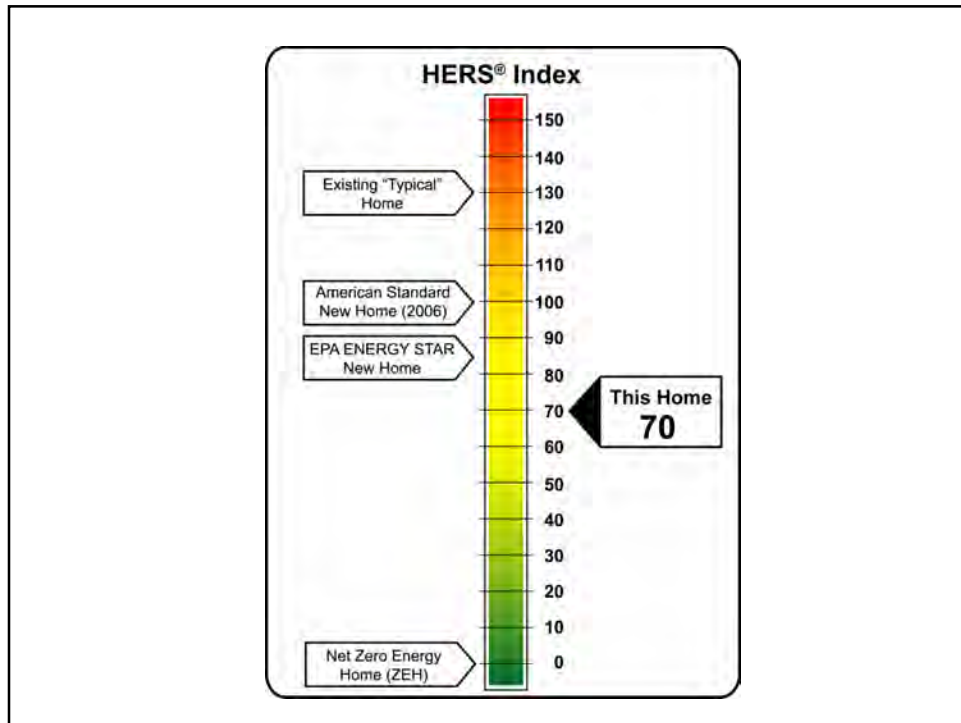
The complex block features a black background with white text. At the top, it says 'Present: New ENERGY STAR Spec' next to the ENERGY STAR logo. Below this are three main sections: 'Insulation Installation' with a photo of a wall being insulated, 'Thermal Bypass' with a diagram of a house showing heat loss paths, and 'Right Sizing' with a photo of an air conditioning unit. At the bottom, there is a collage of five small images related to construction and energy efficiency, followed by a box that says 'Reference to 2004 IRC'.



## Compliance Methods

- **Performance Path**
  - Requires a home energy rating that results in a HERS Index Score
  - Flexibility in choice of energy components of the home
  - Performance testing
- **Prescriptive Path**
  - Menu of required specifications to meet ENERGY STAR. No flexibility.
  - Performance Testing





**Figure 1. Since 2000, ENERGY STAR Benefits Have More Than Doubled**

