Agenda

Understanding the Energy Efficiency of Conventional Construction
- Facts and figures on residential energy use
- History of energy-conserving residential construction
- Building code requirements
- Energy conservation incentives

Passive House Standard: Purpose, Principles and Development
- History of certifying agencies in US: PHI and PHIUS
- Passive House Standard: voluntary performance-based building envelope energy standard
- Energy calculations: how and when to perform them
- Energy calculation tools: an introduction to tools and their functionality
- Assembling a team to ensure quality and performance
- Examining common design features of Passive Houses

Architectural Elements of Passive Houses
- Site, site orientation and siting
- Super-insulated envelope with minimized thermal bridging
- Efficient ventilation
- Ultra-efficient lights, fixtures and appliances
- Summer shading and cooling strategies
- Winter solar gain and heat retention strategies
- Integrating renewable energy technologies

Mechanical Systems in Passive Houses
- Optimizing heat gains
  - Passive solar heat gains
  - Indoor environmental heat gains
- Heat exchanger
- Supplemental heating
- Renewable energy system integration
- Energy-efficient appliances

Evaluating Passive House Case Studies
- Adapting Passive House for the Southwest
  - Case studies: in the planning process, under construction and finished projects

Learning Objectives

You’ll be able to:

- **Study** the energy efficiency of conventional construction.
- **Explore** the purpose, principles and development of the Passive House Standard.
- **Discuss** common design features of Passive Houses.
- **Examine** architectural elements and mechanical systems in Passive Houses.
- **Review** case studies and learn how to adapt Passive House for the Southwest.

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Roger Taylor
Owner of DwellsGreen of Dallas, TX

Mr. Taylor is a Certified Passive House Consultant and Passive House Rater. He is a LEED Rater, and is certified by Energy Star. DOE Zero Energy Ready Home, IECC and BPI. Mr. Taylor has served on the ANSI/RESNET National Committee for water efficiency, on the Environmental Committee for the Town of Fairview, Texas, and as project manager for large commercial data centers. This is a second career after the US Navy, a computer science degree and 35 years in the computer services industry.

Paul Westbrook
President of Re-source Design in Fairview, TX

Mr. Westbrook designed his own solar home in north Texas in 1996, which won the Energy Value Housing Award for Innovative Design (https://enerjazz.com/house). He still ranks as one of the most efficient homes in Texas. While serving as Sustainable Development Manager at Texas Instruments International Facilities, Mr. Westbrook was the LEED AP for the 1.1 million square foot Texas Instruments factory, which was the first LEED Gold semiconductor factory in the world. He led the effort to improve the energy and water efficiency of 615 million square feet of existing global facilities. They were able to double the company energy and water efficiency in less than 10 years. In 2012, Mr. Westbrook was named a Senior Fellow for the US State housing department.

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