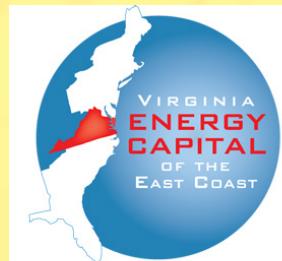


# Overview of Residential Green Building Standards

## Energy Efficiency-The Common Thread



# Overview

- Introduction to SENCON
- Which Green Building Standard is right for you?
- Popular Residential Green Building Standards in Virginia
- The Energy Efficiency Standards for each
- Update on the formation of a Virginia Chapter of Efficiency First



# SENCON Profile

## Business Units

- Training
- Consulting
- Construction



# SENCON Profile

**SENCON** is committed to providing our employees with the training and education to keep us at the forefront of the marketplace

- **Certifications**

- HERS Raters (3)
- EarthCraft Technical Advisor
- NAHB Accredited Verifier (3)
- LEED AP (3)
- LEED for Homes Green Rater
- BPI Building Analyst (4)
- BPI Envelope Professional (2)

- **Personnel**

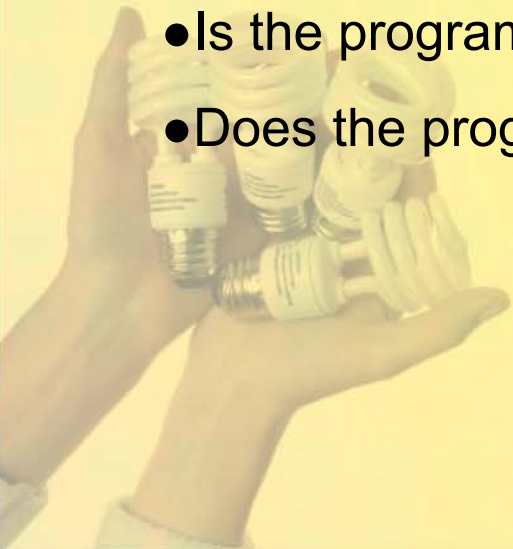
- **SENCON** has 12 staff members dedicated to serving the green building community



# Residential Building Green Standards

## ○ Factors In Choosing a Green Certification

- What level of performance is desired?
- What shade of Green is desired?
- Do the measures deliver value to the builder and new homeowner?
- Does adding the measures required push the project over budget?
- Is the program clear, consistent, reliable, and reproducible?
- Does the program provide market viability and name recognition?



# Green Certifications Overview



ENERGY STAR

EarthCraft

LEED for Homes

NAHB Green Certification



# The Common Thread

## Energy Efficiency (EE)

You cannot spell  
*GREEN* without  
the **EE!**



# EE Basic Concepts

## Focus on an Efficient Envelope and HVAC system

**Air Sealing:** Exterior Penetrations, framing plates, windows/doors rough ins, attic access, garage walls, bath tubs on exterior walls, use IC/AT recessed lights, fireplaces on exterior walls

**Insulation:** Correct installation, aligned with air barrier, rim joists

**HVAC:** Load calculation  
Programmable T-stat  
Sealed ductwork



# Achieving a Green Program: Basic Steps



- Review the green program worksheet, start reviewing pre-requisites, and add all the points that you already would be getting if you built a house today
- Plan on building an EE envelope, installing an Efficient HVAC system, and complying with other categories (Water use, Indoor Air Quality, Material, Waste, Site selection)
- Plan for 2 field inspections
- Gather supporting documentation required



# ENERGY STAR



- Government-backed, well-recognized national program with more than 1,000,000 homes built
- Focus is on the energy efficiency
- Baseline for most other rating systems
- Many builders are currently building to ENERGY STAR standards without certification
- Offers additional options (water, indoor air, and advance building packages)
- Program is changing in 2011 to raise the bar and consider size and location of homes. Water Wise

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

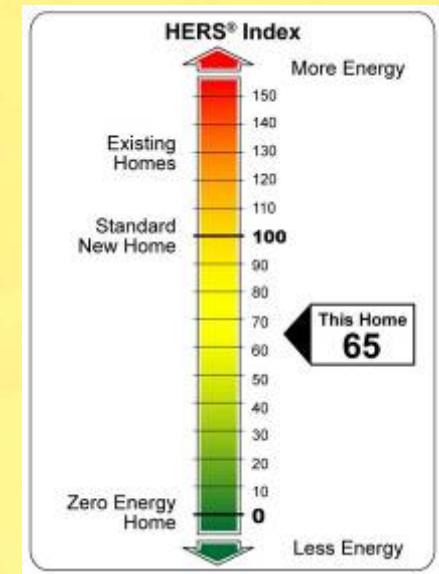


# ENERGY STAR



## Built off the HERS Index

- Scale provided by RESNET
- Index score of 100 represents a house build according to the 2004 IECC
- Index 0 represents a net zero home
- Each 1-point decrease corresponds to ~ a 1% reduction in energy consumption



# ENERGY STAR



- Program Features:
  - At least 15% more efficient than homes built to the the 2004 International Residential Code
  - Two Paths:
    - Performance Path – Testing and Modeling
    - Prescriptive Path – Builder Option Package (Built to ES Specifications)
  - Region specific
  - Addresses – Insulation, Windows, Building tightness, HVAC, ductwork, Appliances
  - 3<sup>rd</sup> party verified – Thermal Bypass
  - Certified by HERS Provider



# EarthCraft



- Launched in 1999
- Created by Southface in Atlanta, GA
- Won the “Green program of the Year” award 2009 by HBA
- Adopted and revised by EarthCraft Virginia
- Have certified 500 homes in Virginia to date
- Some municipalities are giving incentives for using the program

[www.ecvirginia.org](http://www.ecvirginia.org)

# EarthCraft



## Program Features

- Comprehensive green regional building program
- Three levels – Certified, Gold, Platinum
- Most popular Green program in Virginia
- Includes ENERGY STAR certification
  - Bonus points for exceeding Energy Star Standard
- Created by builders
- Acceptable standards meant to complement code
- Streamlined processes
- 3<sup>rd</sup> Party verified
- Certified by EarthCraft of Virginia





# LEED for Homes

- USGBC residential program designed by architects and engineers
- It was adopted from LEED commercial program
- Rating system with 4 tiers (certified, silver, gold, platinum)
- Launched in 2005 and was released in 2009 for open certification (1,041 certified homes during the pilot)
- It is certified through Providers with Green Rater inspections
- Premiere Program for sustainability
  - International recognized

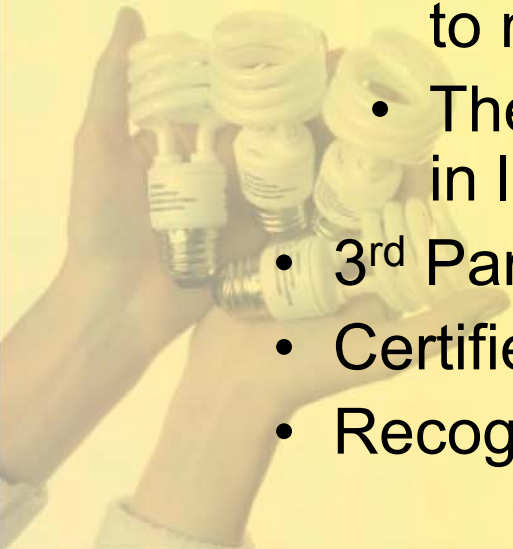
<http://greenhomeguide.com>



# LEED for Homes

## Program Features

- Comprehensive green regional building program
- Four levels – Certified, Silver Gold, Platinum
- International recognition
- Based on ENERGY STAR certification
  - Allows solar thermal domestic water systems to meet minimum HERS index
  - Thermal Bypass inspections are discretionary in limited access situations
- 3<sup>rd</sup> Party verified
- Certified by Provider and USGBC
- Recognized increased value



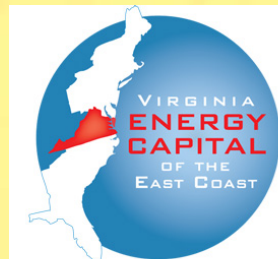


# NAHB: National Green Building Program



- Backed by the American National Standards Institute (ANSI ICC700-2008) and NAHB
- Rapidly growing at the national level
- Companion rating systems with 4 tiers
- Only 2 known projects in Hampton Roads
- Verified by a rater, the builder and subs
- Developed by contractors and vendors

[www.nahbgreen.org](http://www.nahbgreen.org)



# NAHB: National Green Building Program

## Program Features



- Comprehensive national green building program
- Four levels – Bronze, Silver, Gold, Emerald
- Based on ANSI approved ICC 700-2008 (National Green Building Standard)
- Energy Star qualified homes achieve Bronze level
- Acceptable standards meant to complement code
- Streamlined processes
- 3<sup>rd</sup> Party verified – Accredited verifier
- Certified by the NAHB Research Center



# Questions



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# Update on the formation of Virginia Efficiency First Chapter

*Presented by: Aneil Kumar, LEED-AP  
President, SENCON*

Governor's Conference on Energy 2010



# Why do we need a Trade Organization

Home Performance workforce coming together to:

- Inspire ideas: HOME STAR, REEP, Utility Data Access
- Advocate for solutions
- Partner with other stakeholders
- Produce industry-driven recommendations for program managers & state officials
- Create solutions for PACE, On Bill Financing
- Network & build industry locally
- Provide direct financial value to members
- Educate on company growth topics

# Who is Efficiency First?

- Launched in early 2009
- National trade association for the Home Performance industry
- Over 1,000 Members strong
- Home Performance companies of all sizes and backgrounds
- Growing at 50 + members per month
- Representing the Home Performance industry in public policy discussions at state and national level
- Promoting the benefits of efficiency retrofitting
- Helping grow the Home Performance industry
- Key player in HOME STAR

# Key Accomplishments

- HOME STAR, REEP, E-KNOW Bill
- 50 States, DC & Puerto Rico
- 19 Active State/Local Chapters
- *The Resource Center*
- Manufacturers Council
- 10 working groups composed of contractors & industry leaders
- Member Benefits: Discount business insurance, tech tools, Web development, conference registration

# Current Status **EfficiencyFirst**

America's Home Performance Workforce

- First formal meeting at Governor's Conference on Energy
  - Nominations for Board
  - Election of Officers
  - Organization tasks
  - Significant near-term initiatives





# Current Status



America's Home Performance Workforce



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