

# Foreste Holmes “Tiered System” for Defining Home Performance

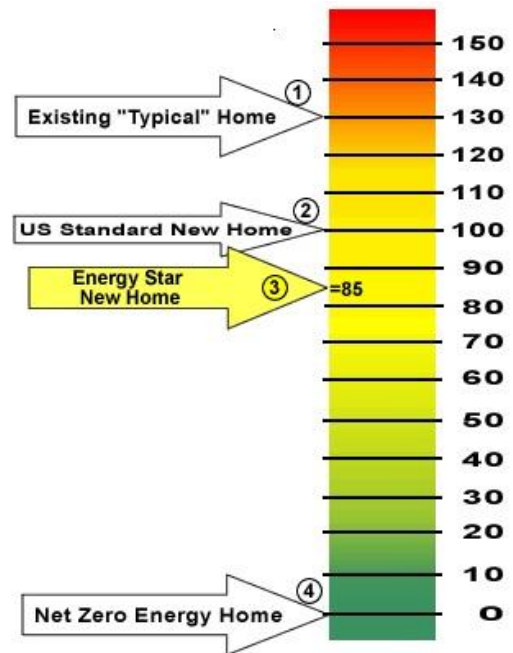
Foreste Holmes uses a tiered system as a method for potential clients to understand and select the high-performance features which can be included in their home design. These tiers are based the established home energy rating system in the U.S. and described as follows:

- The energy efficiency portion of the tiers are based on the Home Energy Rating System (HERS) index, established by the [Residential Energy Services Network \(RESNET\)](#)
- A home built to the specifications of the HERS Reference Home (based on the 2006 International Energy Conservation Code) scores a HERS Index of 100
- A net-zero energy home (which generates all the power it consumes) scores a HERS Index of 0.
- **The lower a home’s HERS Index, the more energy efficient it is in comparison to the HERS Reference Home.**

## Tier 1 Home

A Foreste Holmes Tier 1 home is the minimum standard to which we construct. This home would include the following features:

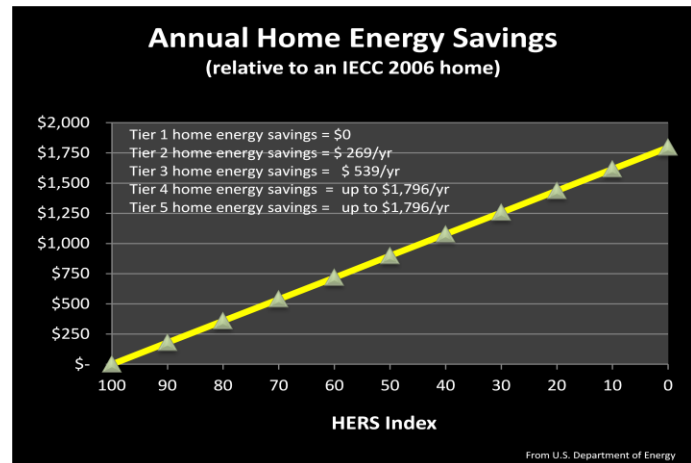
- Compliant with the [International Energy Conservation Code \(IECC\)](#) 2006 adopted by jurisdictions in the Prescott area:
  - Tier 1 correlates to the “US Standard New Home” or a HERS index of 100
  - Climate-specific requirements for window, wall, ceiling, floor, and foundation insulation R values
  - Duct insulation to minimum values
  - HVAC system sizing per ACCA Manual J calculations
- A Tier 1 home is **30% more energy efficient than an existing “typical” home** in the U.S.



## Tier 2 Home

A Foreste Holmes Tier 2 home is constructed to meet EPA Energy Star guidelines for energy efficiency and optionally can be constructed to meet Energy Star guidelines for indoor air quality. Foreste Holmes is a qualified [Energy Star Builder](#) in the Prescott area. This home would include the following features and benefits:

- [EPA Energy Star program](#) focuses on five areas that impact home-energy performance:
  - Effective insulation
  - High-performance windows
  - Tight construction and ducts
  - Efficient heating and cooling equipment
  - Efficient lighting, appliances, and water heaters
  - Third-party verification
- A home meeting Energy Star requirements has a HERS index of 85, meaning that it is **15% more energy efficient than the Tier 1 home which is equal to an energy savings of about \$269/year (see graph).**
- The EPA [Indoor Air Package Plus](#) program helps protect qualified homes (and occupants) from health hazards that can result from moisture and mold, pests, combustion gasses, and other indoor pollutants. This [checklist](#) describes the detailed approach to assuring good indoor air quality.



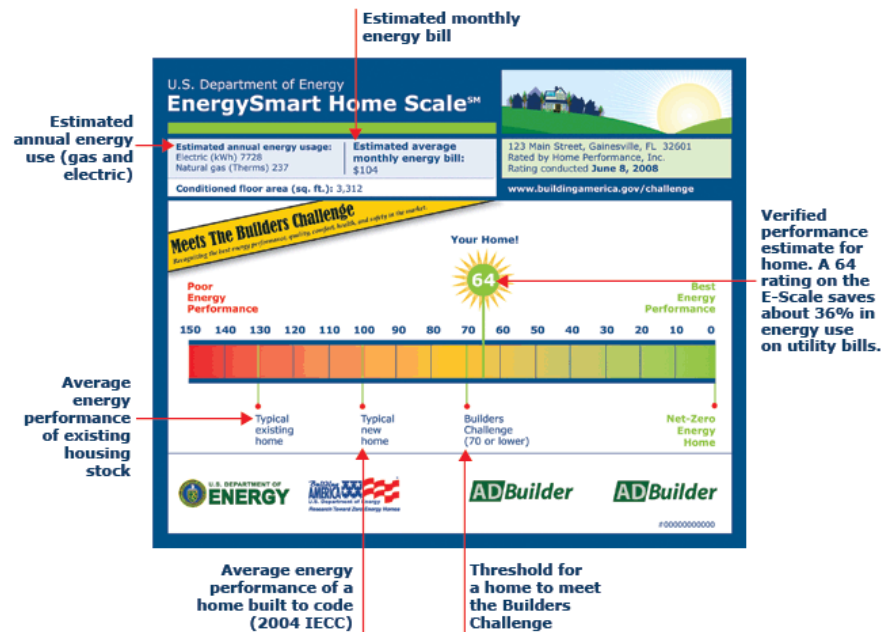
Alternatively, a Tier 2 home may be achieved by constructing to meet the requirements of the Masco [Environments for Living](#) program (Gold level). The features of this program are as follows:

- The EFL program focuses on three primary home-performance areas:
  - Energy efficiency
  - Durability
  - Indoor environmental quality
- A home meeting EFL Gold-level requirements has a HERS index of 85, meaning that it is **15% more energy efficient than the Tier 1 home which is equal to an energy savings of about \$269/year.**
- A home which qualifies in the EFL program offers the homeowner [limited guarantees on heating and cooling energy use](#), and comfort
- The EFL program also offers higher levels of home performance and is described in Tier 3 homes.

## Tier 3 Home

A Foreste Holmes Tier 3 home steps up to an even higher level of energy efficiency and is represented by the **Department of Energy's [Builder's Challenge](#)** program, on which Foreste Holmes is a [listed builder](#). This home would include the following features and benefits:

- The Builder's Challenge performance threshold begins at a HERS index of 70 which is **30% more energy efficient than a Tier 1 home which is equal to an energy savings of about \$539/year.** [Select this link](#) to see how energy improvements can impact your bottom line in terms of energy and cost savings.
- The Builders Challenge program includes [15 required criteria](#) to enhance home performance in energy efficiency and indoor air quality. In addition, there are 14 recommended criteria.
- The Builders Challenge ultimate objective is to achieve "Net-Zero Energy" which is when a home generates all of the power that it uses (i.e., HERS index of 0). Reducing a home's HERS index below 50 typically requires the addition of a photovoltaic system to a house.



Alternatively, a Tier 3 home may be achieved by constructing to meet the requirements of the Masco [Environments for Living](#) program (Platinum level). The features of this program are similar to that shown i as follows:

- The EFL program focuses on three primary home-performance areas shown below and described on this [checklist](#).
  - Energy efficiency
  - Durability
  - Indoor environmental quality
- A home meeting EFL Platinum-level requirements has a HERS index of 70, meaning that it is **30% more energy efficient than the Tier 1 home which is equal to an energy savings of about \$539/year**
- A home which qualifies in the EFL program offers the homeowner [limited guarantees on heating and cooling energy use](#), and comfort

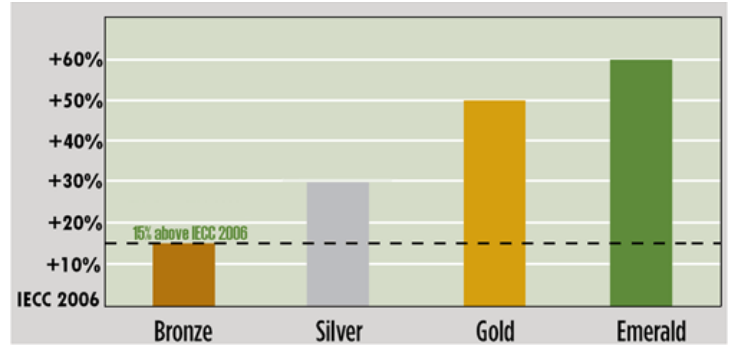
## Tier 4 Home

A Foreste Holmes Tier 4 home also seeks to attain the elevated levels of energy efficiency and indoor air quality that Tier 2 and 3 homes achieve, but also add multiple layers of [green building elements](#). National home-performance programs which support these comprehensive standards would include the following:

- National Association of Home Builders [National Green Building Standard](#)

- A NAHB-certified home must incorporate a minimum number of features in the following areas:
  - Energy, water and resource efficiency
  - Lot and site development
  - Indoor environmental quality
  - Home owner education

- A point system is used to attain four NAHB certification thresholds. The required energy efficiency levels for each category is:
  - Bronze (HERS Index 85)
  - Silver (HERS Index 70)
  - Gold (HERS Index 50)
  - Emerald (HERS Index 40)
  - See the [energy savings graph](#) for corresponding energy savings



- United States Green Building Council [LEED for Homes](#)
  - A LEED-certified home is designed and constructed in accordance with the rigorous guidelines of the LEED for Homes green building certification program. LEED for Homes is a consensus-developed, third party-verified, voluntary rating system which promotes the design and construction of high-performance green homes
  - A point system is used to attain 4 certification thresholds (Certified, Silver, Gold, Platinum)
  - Primary ratings categories include:
    - Innovation & Design Process
    - Location & Linkages
    - Sustainable Sites
    - Water Efficiency
    - Energy & Atmosphere
    - Materials & Resources
    - Indoor Environmental Quality
    - Awareness & Education

## Tier 5 Home

A Foreste Holmes Tier 5 home represents the ultimate in energy efficiency and green building. Such a home incorporates all of the Tier 4 standards but also includes any number of high-performance features including:

- net-zero energy (HERS Index of 0);
- passive-solar design; and/or
- comprehensive photovoltaic array or other alternative power generation techniques (e.g., fuel cells).