



# Your Zero Energy Ready Home Story

— BROUGHT TO YOU BY —

**Health E Community Enterprise of Virginia**

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### ***Once upon a time...***

new homes too often missed opportunities to leverage advanced technology for superior energy efficiency and performance.

### ***Every day...***

the owners of these homes experienced high utility bills, comfort problems, hidden health risks, and added maintenance costs.

### ***One day...***

a group of leading home builders decided to build advanced technology homes that met rigorous U.S. DOE Zero Energy Ready Home Guidelines.

### ***Because of that...***

homebuyers started to experience ultra-low or no utility bills along with superior comfort, health, and durability.

### ***Because of that...***

more and more homebuyers asked for Zero Energy Ready Homes.

### ***Until finally...***

Zero Energy Ready Homes became available for homeowners like you to enjoy for a lifetime.

# Welcome to Your Zero Energy Ready Home

## **THIS IS YOUR STORY.**

The story of your Zero Energy Ready Home and how it leverages advanced technology for a better homeowner experience.

## **IN THIS BROCHURE**

you will learn about the following seven complete systems and why they make your home so special.



High-Performance Thermal Enclosure

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Whole-House Water Protection

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High-Performance Comfort System

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High-Efficiency Components

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Whole-House Health Protection

---



Solar-Ready Construction

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Enhanced Quality Assurance

# High-Performance Thermal Enclosure



**The roof, walls, windows, doors, and foundation combine to form your home's enclosure.** You've got one chance to get it right during construction before it's locked in for the next few hundred years. That's why your home includes the leading expert recommendations for advanced thermal protection that provide significant utility bill savings along with enhanced comfort and durability.



## High-Performance Windows

use advanced technology to keep heat in during the winter and out during the summer while brightening your living space all year long.



## High-Performance Insulation

provides a complete thermal blanket that snugly surrounds your home in comfort and quiet.



## Comprehensive Draft Protection

is like wrapping your house in money with much lower heating and cooling bills while also blocking annoying dust, pollen, pests, noise, and moisture.

### TIP

Any time work is being done on your home that involves wall penetrations or workers in your attic, make sure the contractor is required to maintain the insulation levels and air-tight construction.



# Whole-House Water Protection



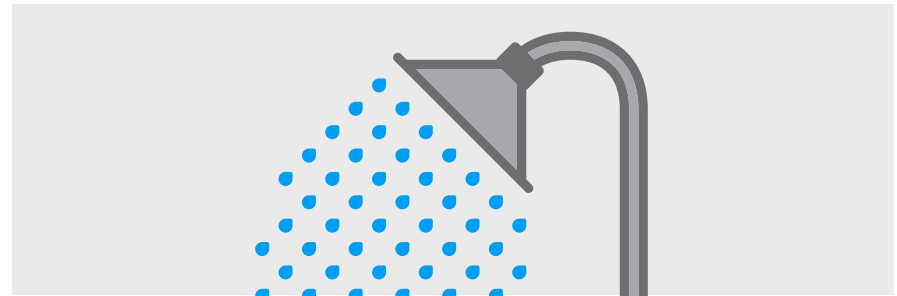
**Buying a home is often the largest investment most of us will ever make.**

Thus, it is not surprising that damage from weather and moisture is one of a homeowner's biggest concerns. Since there is one shot at getting critical details right during construction, your home includes leading expert recommended best practices for comprehensive water protection inside and out.



## Dry-By-Design Construction

includes a comprehensive water barrier system that provides peace-of-mind your home is protected from roof to foundation.



## Interior Moisture Control

provides maximum protection indoors in areas exposed to water with careful selection of materials and construction details.

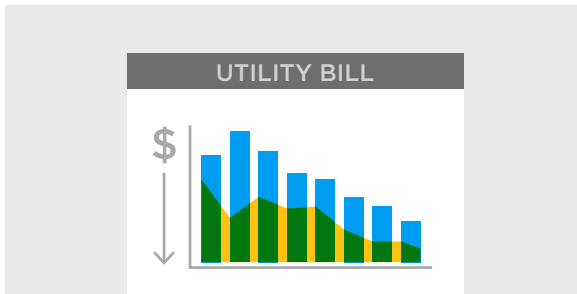
**TIP** Make sure to keep your gutters clean, avoid excessive watering of landscaping near the home, and check the grading around your home continues to slope away from the foundation.

# High-Performance Comfort System



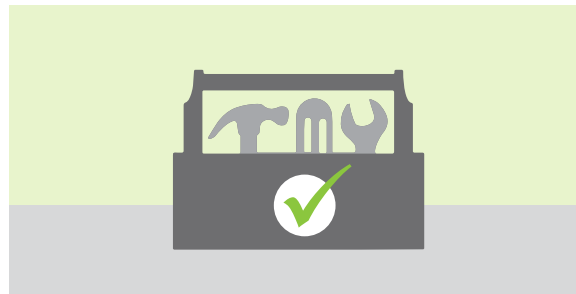
**Comfort is about more than just a thermostat set-point and a basic ‘HVAC system.’**

It’s about even temperatures and moisture control from room-to-room and floor-to-floor. It’s about being able to enjoy your entire home year-round.



## High-Efficiency Equipment

employs advanced technology and higher-quality components and controls to deliver lower heating and cooling bills.



## Professional Installation

ensures your comfort system contractor is quality assured and their work is independently checked to industry standards.



## Interior Comfort Delivery System

locates heating and cooling ducts inside the thermal enclosure—instead of excessively hot or cold attics and crawl spaces—for superior comfort and energy.

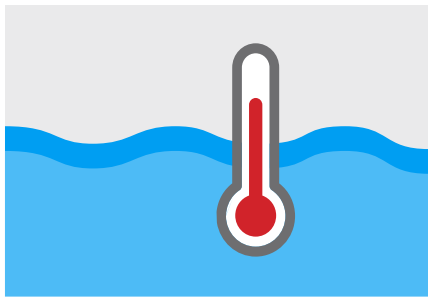
### TIP

When expecting a lot of guests during the summer, ramp up the cooling below your normal set-point before they come to be better prepared for the additional internal heat from more occupants. In addition, optimize heating and cooling set-points based on your occupancy and sleep schedule and any utility billing peak periods.

# High-Efficiency Components

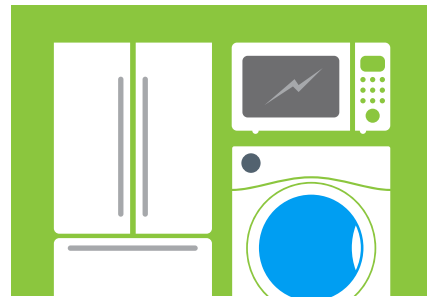


With a high-performance enclosure and substantially reduced heating and cooling requirements, the components inside your home will consume more than half your energy use. That's why advanced technology that saves energy and works better is provided throughout your home.



## High-Efficiency Water Heating

saves energy, time waiting for hot water, and 1,000's of gallons of wasted water down the drain.



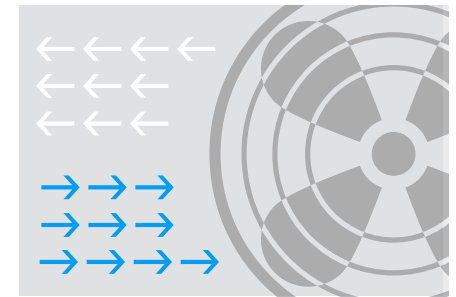
## High-Efficiency Appliances

work better, and often provide significant energy and water savings.



## Advanced Lighting

delivers great color, lasts for years, and saves substantial energy.



## High-Efficiency Exhaust Fans

not only save energy, but you can hardly hear them as they more effectively remove moisture and odors.

### TIP

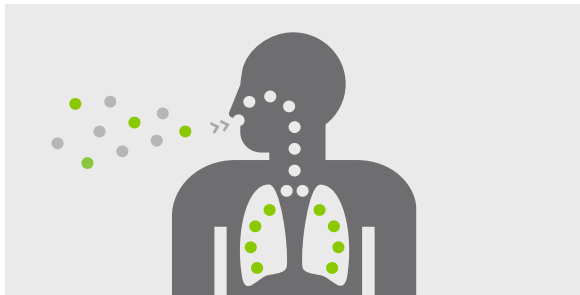
Whenever any light bulb fails or it's time to replace any equipment, appliances, or fans, make sure to choose ENERGY STAR certified products.



# Whole-House Health Protection

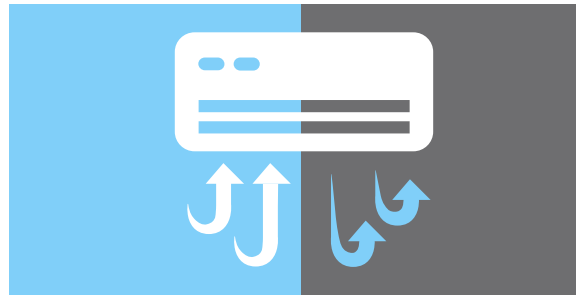


The U.S. Environmental Protection Agency reports that on average **indoor air contains 2 to 5 times more contaminants than outdoor air.** That's why your home includes a comprehensive indoor air quality system.



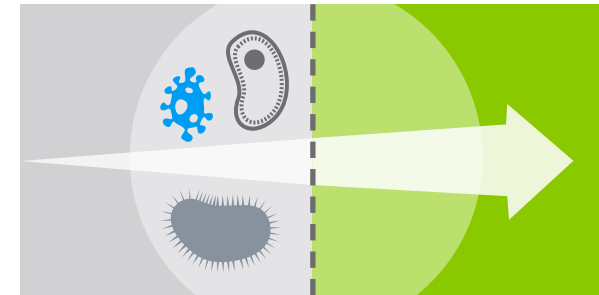
## Contaminant-Resistant Construction

uses materials that minimize or eliminate dangerous chemicals and includes features that block moisture, dust, pollen, and pests from entering your home.



## Fresh Air System

ensures adequate outdoor air to dilute residual contaminants from construction, furnishings, and normal use of your home.



## High-Capture Filtration Technology

effectively removes particles associated with respiratory problems flowing through the lungs of your home - your heating and cooling ducts.

### TIP

Make sure to regularly check and change filters at your heating and cooling system and whole-house ventilation system and regularly check outdoor intakes to remove any blockage from leaves, insect nests, etc. Moreover, before turning off a ventilation fan, make sure to understand how it contributes important fresh air.

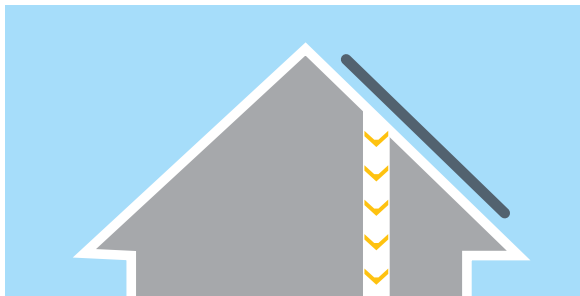




# Solar Ready Construction



**Every Zero Energy Ready Home is so energy efficient it can offset all or most annual energy consumption with renewable energy.** That's why homes without solar are typically built so a solar electric system can be easily added whenever you are ready.



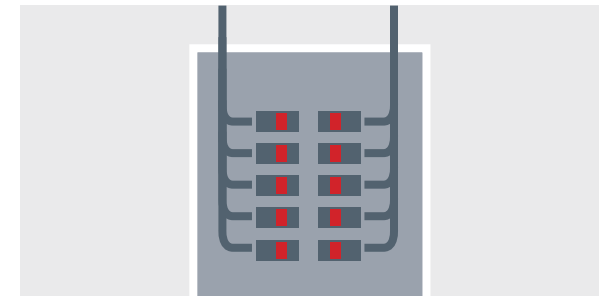
## Solar Wiring-Ready

includes a built-in path to run wiring from the attic to your electric panel so solar panels can be easily connected with minimal cost and disruption.



## Structural Load-Ready

means you can avoid \$1,000's of expense to obtain engineering calculations needed to document adequate roof framing strength.



## Solar Components-Ready

ensures you have adequate space and electric panel circuit breakers to install the critical components of a complete solar electric system.

### TIP

Make sure to store the structural engineering calculations in a safe place so they can save you the cost of duplicating them and also store your Solar Ready Checklist to help the solar electric contractor with bidding and construction.

# Enhanced Quality Assurance



**Every Zero Energy Ready Home comes with added peace-of-mind** that your largest investment of a lifetime was held to industry-leading quality standards.



## Independent Verification

means a home energy rating professional evaluated your plans, inspected construction practices, completed detailed checklists, and performed diagnostic testing to ensure performance.



## Certified Performance

means your home is fully certified to meet three prominent high-performance home programs:

- DOE Zero Energy Ready Home
- ENERGY STAR Certified Home
- EPA Indoor airPLUS

**TIP** Make sure to keep your Home Energy Rating System (HERS) and Zero Energy Ready Home documentation in a safe place because they can help enhance your home's value when it's time to sell.



# The Home of the Future...Today

Your homeowner experience has just been raised to the next level with your new Zero Energy Ready Home. Invite your friends and family who are interested in a new home to ask their builder for this level of excellence.

## **PROUD OWNER OF A ZERO ENERGY READY HOME**

Now that you know how special your home is, make sure to operate and maintain it for optimum performance by following the homeowner tips provided throughout this manual as well as guidance provided by your builder.

## **FRIENDS AND FAMILY LOOKING FOR A NEW HOME**

Make sure to have them visit the DOE Zero Energy Ready Home web site ([www.buildings.energy.gov/zero](http://www.buildings.energy.gov/zero)) and find a local builder partner. If none are listed, ask a preferred builder to partner with DOE and offer certified homes.

# The Zero Energy Ready Home Story

## THE HOME EXPERTS WOULD CHOOSE

Housing is probably the most overwhelming consumer purchase of a lifetime because it's so costly and complex. When our nation's leading high-performance home experts are asked what home they would choose, they show a predominant preference for Zero Energy Ready Home. Thus, this is a story about feeling great making the home choice recommended by the most educated homebuyers. They understand the seven complete systems included in each Zero Energy Ready Home deliver compelling value, better performance, and substantial energy and operational cost savings. Now it's time to enjoy a whole new living experience.

Virginia



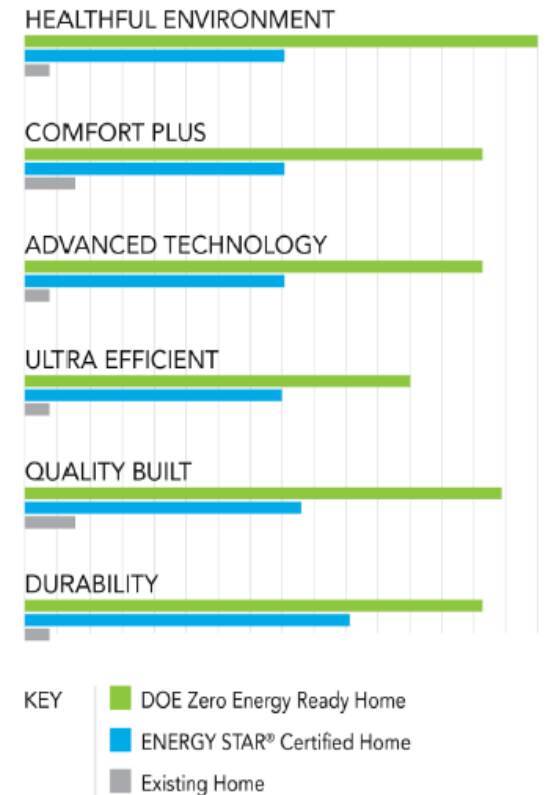
### What is the DOE Zero Energy Ready Home™ Label?

It is a Symbol of Excellence for energy savings, comfort, health, quality, and durability met by a select group of leading builders meeting U.S. Department of Energy Guidelines.

### What is a Zero Energy Ready Home?

It is a high-performance home so energy efficient, all or most annual energy consumption can be offset with renewable energy. In other words, it is the Home of the Future.

## A Symbol of Excellence



This graphic comparison chart demonstrates relative performance of this DOE Zero Energy Ready Home to existing homes (built between 1990 and 2010) and ENERGY STAR Certified Homes. Actual performance may vary.



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