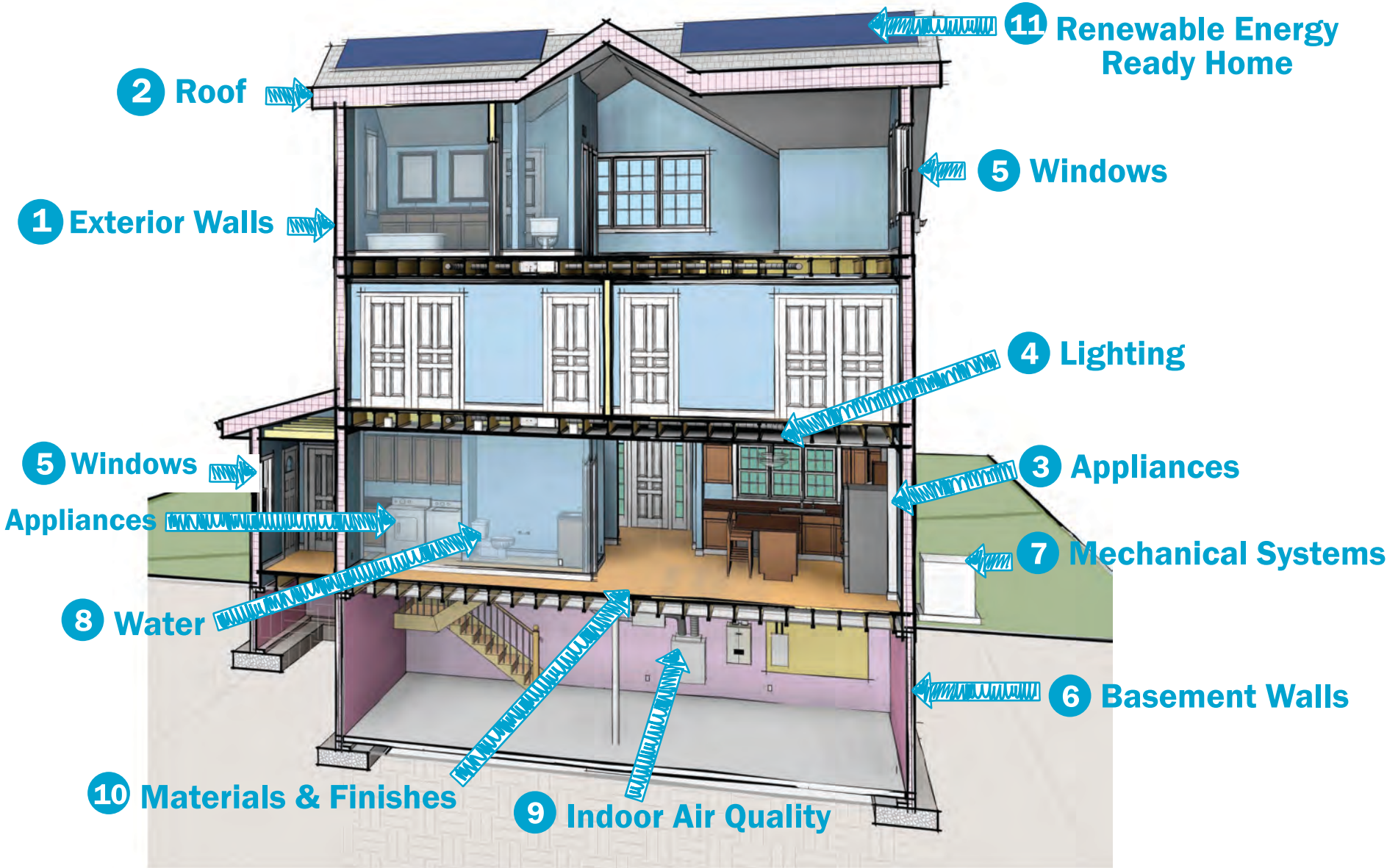


# DOE NZER Home Features

Department of Energy Net Zero Energy Ready



### Exterior Walls

Our pre-engineered Structural Insulated Panel (SIP) walls with integral R-25 insulation provide a strong, highly energy efficient, air-tight enclosure with less jobsite material waste and shorter framing installation times than standard “stick” framed walls. All wall panel joints and penetrations are taped and sealed to virtually eliminate any leaks. This means more comfort and less drafts for you!

A study by the Department of Energy’s Oak Ridge National Laboratory was conducted between two identical test rooms; one stick framed and one SIP-framed. The SIP-framed room was found to be 15 times more airtight than the stick-framed room. This reduced air infiltration equates to increased energy efficiency and reduced HVAC system sizes and operational costs. (R-25, only R-13 required by code – 92.31% better than code)

### Roof

Our pre-engineered Structural Insulated Panel (SIP) roof with integral R-49 insulation provides a strong, highly energy efficient, air-tight enclosure with less jobsite material waste and shorter framing installation times than standard “stick” framed roof assemblies. All roof panel joints and penetrations are taped and sealed to virtually eliminate any leaks. This means more comfort and less drafts for you!

We use only roof shingles with high Solar Reflectance Index (SRI\*) values to reflect the sun’s heat away from your home and not into your living spaces to further ensure your comfort year-round.

\* SRI is a measure of a surface’s ability to reflect solar heat, which is a combination of reflectance and emittance values. These values range from 0-100. The higher the value, the more heat is reflected from a surface. (R-49, only R-38 required by code – 28.95% better than code)

### Appliances

All of our appliances, ventilation and ceiling fans are ENERGY STAR qualified. These highly efficient products help you save money on long term operating costs by reducing energy use without sacrificing performance.

### Lighting

We use highly efficient LED lighting fixtures throughout your home. LED lighting is more efficient, durable, versatile and longer lasting than incandescent and compact fluorescent lighting. These ENERGY STAR qualified fixtures help you save money on long term operating and replacement costs by reducing energy use without sacrificing performance.

### Windows

We use only high performance ENERGY STAR certified windows and doors to help lower your energy bills and save you money. With our energy efficient windows and doors, you also use less energy, which reduces greenhouse gas emissions from power plants. (state targeted U and SHGC values? – don’t need triple pane as shown in Gibbons)

In winter, the cold, inside surface of an inefficient window pulls heat away from your body, so you can feel chilly in a sweater with the thermostat at 70 degrees. With ENERGY STAR certified windows, the interior glass stays warmer, so you can enjoy your window seat even when the temperature outside dips well below freezing.

In summer months, our ENERGY STAR certified windows reduce “heat gain” into your home more than typical windows do, without reducing the visible light. You get the light you need without the uncomfortable heat.

Our ENERGY STAR certified windows help protect your belongings from fading and discoloring with coatings that keep out the summer heat and act like sunscreen for your house. These coatings protect your valuables from harmful, fading ultraviolet light without noticeably reducing visible light. These special coatings reduce fading by up to 75 percent. \*

\*Window information taken from Energy Star website

### **Basement Walls**

Our pre-engineered structural basement and foundation walls provide a continuous layer of insulation and less concrete compared with those built on-site. This results in less jobsite material waste and shorter construction time, getting you into your home sooner. (R-12.5, only R-10 c.i. is required – 25% better than code)

### **Mechanical Systems**

Due to the high efficiency of the building envelope, we install a small (“right-sized”), super-efficient mechanical system to heat and cool your home. Smaller mechanical systems run more quietly and less frequently than larger units, and therefore have reduced operating costs and an increased life span. We also include an Energy Recovery Ventilation System (ERV) to provide a constant supply of fresh air into your indoor spaces. Fresh air is fed into the system through an external wall vent. The ERV recovers heat energy from your exhaust air to warm the incoming fresh air, saving on your heating costs. The air distribution system then channels the optimally tempered fresh air to individual rooms as needed. The air volume can be adjusted individually for each room, providing comfort for everyone. The constant supply of fresh air improves indoor air quality which minimizes your exposure to airborne pollutants and contaminants. This is especially beneficial for those with chronic respiratory conditions.

### **Water Efficiency**

We design and install your home’s plumbing system to meet EPA’s WaterSense requirements with maximum efficiency in mind. We use dual flush toilets and high performing, low flow plumbing fixtures throughout your home. These fixtures are located near a central gas tankless water heater. By heating water only when it’s needed, our ENERGY STAR certified gas tankless water heaters cut water and water heating expenses, while also providing continuous hot water delivery.

According to ENERGY STAR, by heating water only when you need it, ENERGY STAR certified tankless water heaters save a family of four \$95 per year, or \$1,800 over the lifetime of the water heater, on gas bills compared to a standard storage model.

### **Indoor Air Quality**

Our homes meet the stringent indoor air quality requirements of the Environmental Performance Agency’s EPA Indoor AirPLUS Program. From our construction practices to the products in your finished home, we minimize your exposure to airborne pollutants and contaminants. This is especially beneficial for those with chronic respiratory conditions. To ensure comprehensive indoor air quality protection in your new home, we focus on the careful selection and installation of:

- moisture control systems
- heating, ventilating and air-conditioning systems
- combustion-venting systems
- radon resistant construction
- low-emitting building materials.

### **Materials & Finishes**

To ensure we meet or exceed the Environmental Performance Agency’s EPA Indoor AirPLUS Program, we specify low/no VOC and sustainable products and finishes throughout your home. From no-VOC paints to locally and responsibly sourced materials, our intent is to support responsible manufacturers with active programs in place to improve our environment. Improved indoor air quality minimizes your exposure to airborne pollutants and contaminants. This is especially beneficial for those with chronic respiratory conditions.

### **Renewable Energy Ready Home**

When building orientation and site conditions allow, we design our homes to meet the Renewable Energy Ready Home (RERH) Specifications, as developed by the U.S. Environmental Protection Agency (EPA). This program allows us to design and construct homes equipped with a set of features that make the installation of solar energy systems after the completion of construction easier and less expensive.

By defining the minimum structural and system components needed to support a solar energy system, we can assure you that if you choose to do so, solar renewable energy systems can quickly and easily be integrated into your house with minimal retrofit installation costs. Note that meeting the elements of the RERH specification may not be possible for all homes due to factors such as excessive shading on the proposed array location