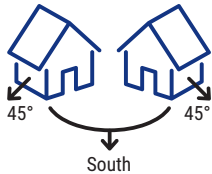




## Zero Energy Ready Homes

Key factors for designing a home with the potential to offset its annual energy use

### Solar



**The site location of the home matters.** Position the home so the winter sun comes in and the summer sun stays out with the long side of the house facing within 45° of south.

**Keep the roof clear.** Design enough room on the south-facing roof or the ground to install a solar system. A typical 2,500-square-foot home needs about 200 square feet of solar roof clear of pipes, vents, chimneys and dormers.

**Connect to the roof.** Install a conduit from the electrical panel to the attic or wherever the solar system will be installed.

### Tight shell



**Control the movement of heat, air and moisture** moving through the home's shell (walls, roof and foundation) with modern, high-efficiency air sealing.

**Have the lowest heat loss and heat gain possible** with energy-efficient windows and properly installed insulation under slabs and in basement walls, cavity walls, exterior walls and the attic.

**Keep it dry.** Take extra steps to ensure the house stays dry from both liquid and vapor by installing the best weather-resistant barrier system.

**Provide fresh air.** Install a ventilation system where you can control the amount of filtered fresh air into the house and release stale air and pollutants.



### Heating and cooling

**Install the highest-efficiency HVAC system available.** Gas heaters, heat pumps and heat pump water heaters should meet or exceed ENERGY STAR® certification requirements.



### Ducts and plumbing

**Length and placement make a difference.** Keep length of duct runs at a minimum. Place all ducts and pipes inside the thermal boundary (where the insulation is) and pressure boundaries (where the home connects to the outside, attic, garage, etc.). Do not run ducts through the attic.



### Healthy materials

**Build the house with the least toxic materials,** sealants, adhesives and paints. The less pollution inside the house, the cleaner the indoor air will be.

