## Builders Challenge

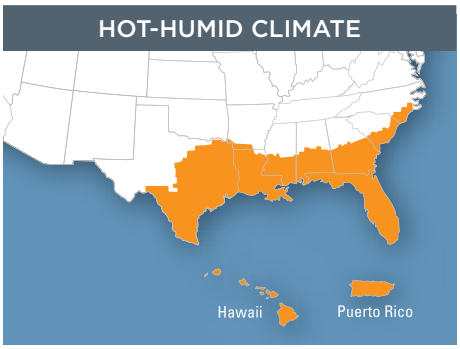
Recognizing Energy Leadership in Homebuilding

## High Performance Builder Spotlight

# G.W. Robinson

Gainesville, Florida

G.W. Robinson of Gainesville, Florida, worked with Building America partners Florida Solar Energy Center and Florida HERO to achieve a true net zero-energy home in 2010.




## BUILDER PROFILE

G.W. Robinson Homes
6208 NW 43rd Street
Gainesville, FL 32653
(352) 373-1724 Fax (352) 378-3527
www.gwrobinson.com

**Where:** Gainesville, Florida

**Founded:** 1968

**Employees:** 10

**Builders Challenge Certified Homes:** 81

**This home:** Zero-Energy Home, 3 bedroom 2-bath, 2,081 ft$^2$, $415,750

Building AMERICA U.S. Department of Energy

In 2010, Gainesville, Florida, builder G.W. Robinson hit a milestone in its 10-year partnership with the U.S. Department of Energy's Building America program—building its first true net zero-energy home. The production home builder was already routinely achieving Home Energy Rating Scale (HERS) scores of less than 60 on its "green smart" homes (compared to 85 for new ENERGY STAR homes). So it wasn't difficult to take the next step by adding solar water heating and solar photovoltaic panels to build a net zero-energy home.

G.W. Robinson's "green smart" homes begin with an insulated and air-tight envelope, which exceeds local and state energy codes. Bug-resistant blown-in cellulose is also blown into the wall cavities and attic for R-13 insulation value in the walls and R-38 value in the attic. The roof deck uses an OSB sheathing with a built-in radiant barrier that reflects up to 95% of the infrared solar radiation gain, keeping the attic several degrees cooler. Double-pane, low-emissivity, vinyl-framed windows also minimize unwanted solar heat gain.

Special attention was given to the HVAC and duct system with a right-sized, high-efficiency 16 SEER heat pump and engineered ductwork system specifically designed for efficiency. The ducts and air handlers are in conditioned space.

On all of G.W. Robinson's homes, the duct layout is in the floor plans and no deviation from the layout is allowed by installers. The high-efficiency variable-speed HVAC with engineered duct systems and fresh air intakes provide improved air quality, better dehumidification, quieter operation, maximum air circulation and air filtration, less drafts, and more even temperature distribution. HVAC registers have opposed blade dampers that put the air where it's most wanted and needed. Return air pathways are located in every room in the house. Programmable thermostats allow more accurate control and performance.

While doing their part to help save the planet, homeowners can breathe easier knowing the

> "One of our homeowners told us their new G.W. Robinson uses half the energy of their previous home that was built in 2005 and that house was almost half the size."
>
> **Kay Robinson**,
> *G.W. Robinson Homes*

indoor air quality in their homes is better than most thanks to low-VOC paints; non-toxic cellulose insulation; coated ductwork to reduce mold, mildew, and fungus; arsenic- and chromium-free wood, and "Air-Loc" recessed can lights that keep moisture and microorganisms out of living areas.

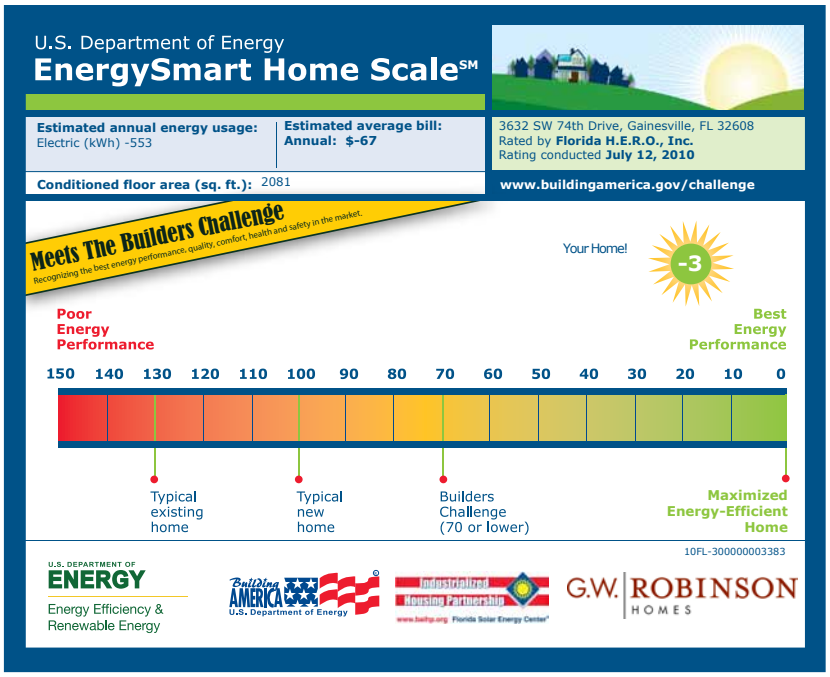
To maintain the high standards of Building America, G.W. Robinson relies on a number of quality assurance and quality control activities, including an ENERGY STAR Thermal Bypass Inspection Checklist and green certification by a licensed third-party inspector. During inspections, without solar these homes score less than a 60 HERS. With the solar package added, the score is -3 HERS.

"One of our core values has been to build homes that represent the latest technology for energy savings, safety, and durability," said CEO G.W. Robinson. The zero-energy solar home has served as a model home in 2010. The retail value of the home with the net zero-energy package is $415,750. The "green smart" homes without solar sell for $260,000 for a 1,735-ft$^2$ three bedroom, two-bath home and $436,000 for a 3,258-ft$^2$ five-bedroom, three-bath home.

The walls and ceilings are insulated with naturally bug-resistant GreenFiber blown-in cellulose insulation – R-13 in the ceiling and R-30 in the walls. Note the special attention to insulating the corners. Also note radiant barrier installed along roof to minimize solar heat gain through roof.

## U.S. Department of Energy Builders Challenge

DOE seeks to give every consumer the opportunity to buy a cost-neutral, net-zero energy home anywhere in the U.S. by 2030. Homes that qualify for this Builders Challenge must achieve a 70 or less on the EnergySmart Home Scale (E-Scale) which is based on the Home Energy Rating System (HERS) index (www.natresnet.org). The E-Scale allows homebuyers to understand—at a glance—how the energy performance of a particular home compares with others.




To learn more about the Builders Challenge and find tools to help market your homes, visit www.buildingamerica.gov/challenge.

## Key Features

- **HERS Score:** -3
- **HVAC:** 16-SEER right-sized heat pump, air handler in conditioned space.
- **Ducts:** In conditioned space
- **Water Heating:** Solar
- **Wall insulation:** R-13 GreenFiber blown-in cellulose
- **Roof:** TechShield $\frac{7}{16}$-inch OSB radiant barrier roof sheathing, R-38 GreenFiber blown-in cellulose
- **Air sealing:** ENERGY STAR Thermal Bypass checklist
- **Windows:** Double-pane, low-e, SHGC=0.21
- **Appliances:** ENERGY STAR appliances
- **Lighting:** CFL light bulbs; recessed, sealed, and insulated CFL light fixtures
- **Solar:** 66. kW roof-mounted solar photovoltaic