RECOGNIZING ENERGY LEADERSHIP IN HOMEBUILDING

BUILDERS CHALLENGE

Building America SM
U.S. Department of Energy
Research Toward Zero Energy Homes

High Performance Builder Spotlight

G.W. Robinson Builders

Gainesville, Florida

Healthy Homes

Healthy homes for a healthy bottom line - this could be the motto for G.W. Robinson Builders, Inc. of Gainesville, Florida. G.W. Robinson Builders efforts to construction houses that are healthy for the environment and the homeowner are paying off in healthy sales as well.

> "When we started constructing homes to Building America standards, we realized that we were undertaking a whole new way of home building. At first it was a challenge, but now I can't believe we ever built any other way. This systems approach just makes more sense."
>
> **G.W. ROBINSON**

CobbleField is an in-fill development of 265 single-family homes on 120 acres of woodland just west of Gainesville. The developer won over local opposition with its environmentally friendly design that includes placing homes to maintain as many existing trees as possible and landscaping with indigenous species. Every home is equipped with water-saving features including an irrigation system using recycled water and circulating loop hot-water pipes. During building, construction debris is recycled whenever possible to reduce trips to the landfill.

While doing their part to help save the planet, CobbleField homeowners can breathe easier knowing the indoor air quality in their homes is better than most thanks to low-VOC paints; 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. The high-efficiency HVAC with engineered duct system, fresh air intake, and programmable thermostats provides improved air quality, better dehumidification, quieter operation, maximum air circulation and air filtration, less drafts, and more even temperature distribution.

Competitive Innovations

Details like these help give G.W. Robinson Builders the edge in the competitive $200,000 to $600,000 price range where CobbleField homes sell. Florida Home Energy and Resources Organization (H.E.R.O.), a member of the Industrialized Housing Program Building America team, helped G.W. Robinson identify design features that boost energy performance. For example, a 50-gallon natural gas hot water heater that has a circulating loop provides almost instantaneous hot water from every faucet in a home, while saving water. (Hot water lines under the slab foundation are insulated for extra energy savings.) Double-pane, low-emissivity windows reduce energy consumption, minimize glare and heat gain and prevent carpets and furniture from fading. Inside walls containing plumbing are sound proofed with R-11 cellulose insulation. A radiant barrier in the roof reflects 95% of infrared radiation and keeps the attic up to 30 degrees cooler.

BUILDER PROFILE

G.W. Robinson Builders
www.gwrobinson.com

Founded: 1968

Employees: 22 full-time employees; 225 subcontractors and related service workers.

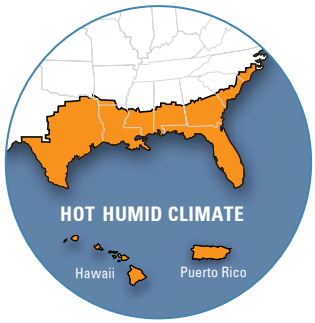
Development: CobbleField

Size: 265 homes

Square footage: 1,800 to 4500 sq. ft.

Price range: $190,000 to $600,000, average cost at $400,000

This builder is described in Building America's Hot-Humid Best Practices.



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G.W. Robinson Builders

Walls and ceilings are insulated with naturally bug-resistant Green Fiber blown-in cellulose insulation – R-30 in the ceiling and R-13 in the walls.

KEY FEATURES

- TechShield 7/16" OSB radiant barrier roof sheathing
- Double-pane, Low-e windows, SHGC = 0.21, overhangs for shading
- R-30 green fiber blown-in cellulose in the ceiling, and R-13 green fiber blown-in cellulose in the walls
- Air handling unit in conditioned space
- Properly sized air conditioner
- Hot water recirculation loop system
- Engineered and sealed duct system with OBD (opposed blade damper) registers
- Return air pathways
- Recycled water irrigation system
- Ground underslab pretreated against termites

Special attention was given to the HVAC and duct system with a right-sized air conditioner and engineered ductwork system specifically designed for efficiency. All floor plans show duct layouts and no deviation is allowed by installers. 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. Zone dampers and smaller loads enable one HVAC system to heat and cool the whole house.

To maintain the high standards of Building America practices, G.W. Robinson Builders relies on a number of quality assurance and quality control activities, including an ENERGY STAR Thermal Bypass Inspection Checklist (TBIC) and third party site visits from Florida H.E.R.O. When a house is completed, seven performance tests are measured. To ensure that few or no deficiencies will be found, Florida H.E.R.O. conducts a sub-contractor meeting after the framing of the model to discuss working as a team, describing specifications and answering questions.

The Bottom Line

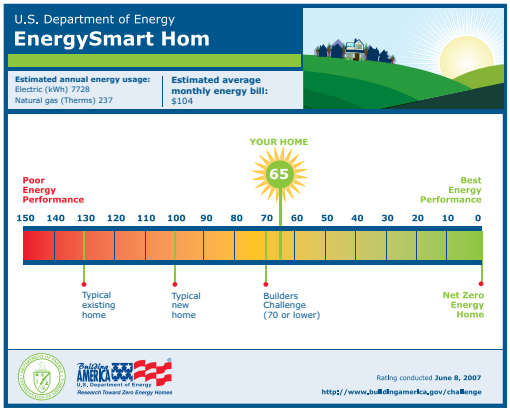
G.W. Robinson Builders targets a return on investment (ROI) of 10%. The lower monthly operating costs of these homes are recognized by lenders in two ways: 1/8 point discounted mortgage rates from certain lenders and buyers qualify for higher priced homes because lower energy bills mean homeowners can afford higher mortgage payments.

U.S. Department of Energy Builders Challenge

DOE has posed a challenge to the homebuilding industry—**to build 220,000 high performance homes by 2012**. Homes that qualify for this Builders Challenge must meet a 70 or better on the EnergySmart Home Scale (E-Scale). The E-scale allows homebuyers to understand—at a glance—how the energy performance of a particular home compares with others. Through the Builders Challenge, participating homebuilders will have an easy way to differentiate their best energy-performing homes from other products in the marketplace, and to make the benefits clear to buyers.

The figure to the right shows an E-Scale for G.W. Robinson Builders. The E-scale is based on the well-established Home Energy Rating System (HERS) index, developed by the Residential Energy Services Network. To learn more about the index and HERS Raters visit www.natresnet.org.

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



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For more information visit www.buildingamerica.gov. The website contains expanded case studies, technical reports, and best practices descriptions.

The Building America Program

Building America is a private/public partnership sponsored by DOE that conducts systems research to improve overall housing performance, increase housing durability and comfort, reduce energy use, and increase energy security for America's homeowners. Building America teams construct test houses and community-scale projects that incorporate systems innovations. The teams design houses from the ground up, considering the interaction between the site, building envelope, mechanical systems, and other factors, and recognizing that features of one component in the house can greatly affect others. More than 40,000 energy-efficient houses have been built by the seven teams to date.