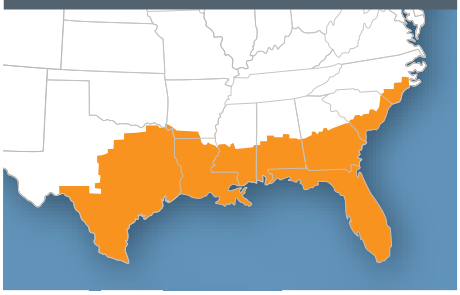
Habitat for Humanity

Builders Challenge Houses

New Smyrna Beach, Florida

Southeast Volusia HFH homes such as this one are designed and built to improve energy efficiency for homeowners.

HOT-HUMID CLIMATE



BUILDER PROFILE

Affiliate:
Habitat for Humanity,
New Smyrna Beach, FL

Founded:
1989

Homes Built:
72 homes (6 built in 2009)

> You work with people who give themselves everyday to do this, to help Habitat and people who need homes."
>
> Ray Allnutt, *SE Volusia HFH Construction Manager*

Building AMERICA® U.S. Department of Energy

Overview

Since 1995, The U.S. Department of Energy's Building America program has been providing technical assistance to Habitat for Humanity International and local Habitat affiliates interested in building energy efficient homes. Building America researchers help Habitat identify energy improvements that:

- are proven to be cost effective
- are readily available in the market place
- are appropriate for Habitat's volunteer construction crews
- do not place a maintenance burden on the homeowner

Builders Challenge

Southeast Volusia Habitat for Humanity has been building homes at the Builders Challenge level – HERS 70 or less – since 2009. These high performance homes feature ENERGY STAR® heat pumps, fans, light fixtures, and appliances which function at a higher efficiency than typical home fittings.

Ray Allnutt, Construction Manager of Southeast Volusia Habitat, is pleased that the affiliate is building homes at this standard. "I'm glad we got on board [with ENERGY STAR®] when we did," states Allnutt. "We started doing this before it got popular. Now, it's getting popular, and I like being one of the first people around here to do it," he explains.

The Habitat homes also feature an upgraded ENERGY STAR® air conditioning system, instantaneous gas water heater, and energy efficient windows. These homes not only reduce homeowner costs now but also enhance home durability, which will benefit future generations, says Allnutt.

Southeast Volusia HFH homes feature ENERGY STAR® windows, equipment, fixtures, and appliances

High Schools Volunteer

Through the collaborative effort of Southeast Volusia Habitat and Daniel Cox, a Career and Technical Education Specialist with the Volusia County School District, students from New Smyrna Beach and Deland High Schools had the opportunity to participate in the design and construction of a Habitat home. Students in Deland High School's drafting program modified an original Habitat design that shop students from New Smyrna Beach High School then used to construct the house.

The structure was eventually transported from the school parking area to its designated location (see photo, on right).

Daniel Cox recognizes the many benefits that students received from participating in this innovative project, such as applied learning and the chance to give back to the community. "It's really nice when they [students] get into an environment where it's inquiry-based, project-based, problem-solving-based, teamwork-based - where they're doing something that they realize is meaningful not only in their lives but also in the lives of others," he states.

Cox also says that Southeast Volusia Habitat's initiative in working with local schools should be applauded, and he would recommend this project to other school boards. "[It's] probably one of the best projects that we've done here locally, in my opinion," he says.

The Whole Picture

In addition to building homes that meet Builders Challenge standards and partnering with local schools, this Habitat affiliate also plans to complete a case study that explores the overall energy savings of owning a high performance home. Utility costs in participating Habitat homes will be compared for analysis. Allnutt hopes that by encouraging Habitat homeowners to partake in the study, they will see the benefits of owning an energy efficient home. "We try to create a family, so if we get homeowners involved with it, they see what's going on, too," he explains. Results of this study will undoubtedly benefit other builders who are considering an energy efficient approach to housing.

For more information on Building America's Partnership with Habitat for Humanity, see *www.baihp.org/habitat*

Tankless gas water heaters eliminate standby losses and provide a continuous hot water supply.

Low-E windows, meeting the new ENERGY STAR® standard, minimize solar heat gain and reduce overall cooling loads when temperatures are at their highest.

Southeast Volusia Habitat for Humanity®

In partnership with SE Volusia HFH, high school shop students in Volusia County constructed this 23 ft x 50 ft house, which was later transported from their school parking lot to its new foundation

Systems and Appliances

- ENERGY STAR® ceiling fans, refrigerator, and dishwasher
- Run-time fresh air vent
- SEER 15 HSPF 8.5 heat pump
- 100% fluorescent lighting
- Gas instantaneous hot water heater

Enclosure

- R-38 insulation in attic
- RBS decking
- Low-E double pane windows with SHGC of 0.20 or less
- R-13 insulation in walls
- Thermal bypass inspection resulting in RESNET Grade I Insulation

Durability

- Kitchen and bath exhaust fans vented to outside
- Run-time fresh air vent
- 100% tile flooring

U.S. DEPARTMENT OF ENERGY
Energy Efficiency & Renewable Energy

EERE Information Center
1-877-EERE-INF (1-877-337-3463)
www.eere.energy.gov/informationcenter

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For information on **Building America** visit **www.buildingamerica.gov**. The website contains expanded case studies, technical reports, and best practices guides.