



Building America Case Study Whole-House Solutions for New Homes

Tommy Williams Homes

Longleaf Village & Belmont | Gainesville, FL

PROJECT INFORMATION

Construction: New home

Type: Single-family

Builder: Tommy Williams Homes
www.tommywilliamshomes.com
(352) 331-8180

Size: 1,470 to 3,045 ft²

Price Range: \$190,000 to \$370,000

Date Completed: 2010

Climate Zone: Hot-humid

Team: Industrialized Housing
Partnership

PERFORMANCE DATA

HERS Index: 48-58

**Projected annual energy
cost savings:** \$930

**Incremental cost of energy-
efficiency measures:** \$3,314

**Annual mortgage
payment increase:** \$265

**Annual net cash flow
to homeowner:** \$665

Billing data: Not available

“The market has spoken. Energy efficiency sells,” said Todd Louis, vice-president of Tommy Williams Homes in Gainesville, Florida. Since partnering with the U.S. Department of Energy’s Building America program in 2004, Tommy Williams’ production homes have outsold the competition, with sales increasing year after year in spite of the recession. All Tommy Williams’ homes achieve HERS scores of under 60, while homes built to Florida’s state energy code have scores as high as 85. Tommy Williams achieves this high performance at less than \$3,500 in added cost per home.

Tommy Williams uses a system engineering approach to achieve high-performance with off-the-shelf products and many standard building techniques. Walls are 2x4 16-inch on center, but extra attention is given to air sealing all holes and cracks around ducts, wiring, and plumbing. Foam gaskets are installed at the sill plate and top plate, and air blocking is installed under attic kneewalls to achieve blower-door test results of 2.7 ACH50. Ducts are mastic sealed and protected from solar heat gain by a radiant barrier installed in the attic. Ladder T framing provides extra room for insulation in the walls, which are filled with blown fiberglass; R-30 blown fiberglass covers the ceiling deck of the vented attic.

The walls behind showers and tubs are filled with blown-in fiberglass that fully aligns with the air barrier material installed behind the tubs to ensure the thermal performance of the insulation.

(Photo top left) Tommy Williams is so confident of its homes’ energy performance, it offers to pay buyers’ electric bills for a year. “This is more than a sales incentive; it tells our customers that we stand behind our energy-efficient features,” said Todd Louis, vice-president of Tommy Williams Homes in Gainesville, Florida.

KEY ENERGY-EFFICIENCY MEASURES

HVAC:

- SEER 16, HSPF 9.5 heat pump (sized using ACCA Manual J)
- Variable-speed air handler
- Ventilation from a fresh-air intake to the return side of the air handler
- Moisture-sensor-controlled ENERGY STAR exhaust fans

Envelope and Windows:

- Slab-on-grade foundation
- R-15 blown-in fiberglass insulation in 2x4, 16-inch o.c. walls with brick and fiber cement siding
- R-30 blown-in fiberglass insulation in vented attic with a radiant barrier, knee wall air barriers, and foam gasket sealing
- Windows: Low-E, double-pane insulated vinyl windows, U=0.35, SHGC=0.25
- Blower door test = 2.3 ACH50

Lighting, Appliances, and Water Heating:

- 100% CFLs
- Tankless gas water heater (0.83 EF)

For more information, please visit:
www.buildingamerica.gov



Tommy Williams Homes addresses common thermal bypass issues like heat loss around tubs and showers installed on exterior walls and at attic kneewalls by filling the wall cavities with blown fiberglass and covering them with a rigid air barrier material to prevent heat loss due to air flow.

Lessons Learned

- The SEER 16, HSPF 9.5 heat pump is right sized (ACCA Manual J) rather than oversized so it will stay on long enough to adequately dehumidify while it cools.
- Outdoor air is drawn to the return side of the air handler through a filter that supplies fresh air when the air handler is running to positively pressurize the house and keep out humid air.
- Bathroom fans are equipped with a moisture sensor and run automatically when indoor humidity levels are above a set point.
- Low-emissivity windows, covered porches, and a radiant barrier in the attic minimize solar heat gain.
- Tommy Williams continues to outsell the competition, even at higher prices. In one development, where Tommy Williams and a competitor each own half of the 550 lots, Tommy Williams sold 23 homes in 2010 while the competitor sold only 16, and Tommy Williams sold at \$139.13 per square foot compared to the competitor's \$126.34. The energy-efficient features of a Tommy Williams home increase its cost by about \$3,300, compared to a similar home built to minimum Florida code. When financed as part of a 30-year mortgage, this increases a homeowner's mortgage by \$265 a year, but the reduction in energy bills averages \$930 a year for a net gain to the homeowner of \$665 per year.

"The most important innovation we use is taking a whole-house approach. We're not just giving customers a few energy-efficient options...we're putting them all together to create a much better home."

Todd Louis, vice-president of Tommy Williams Homes in Gainesville, Florida

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
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For more information, visit:
www.buildingamerica.gov

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The U.S. Department of Energy's Building America program is engineering the American home for energy performance, durability, quality, affordability, and comfort.