The 2009 International Builders’ Show & NextBuild®
January 20-23, 2009 | Las Vegas

Surviving the Crunch —
Perspectives from Energy Efficient Builders in Florida

Date: Tuesday, January 20
Time: 1:15 pm - 2:45 pm
Location: South 229

Speakers: Stephanie Thomas-Rees, Florida Solar Energy Center, sthomas@fsec.ucf.edu
          Subrato Chandra, Florida Solar Energy Center, subrato@fsec.ucf.edu
          G.W. Robinson, G.W. Robinson Builders, gcain@gwrobinson.com
          Todd Louis, Bosshardt Realty Services, toddlouis@bosshardtrealty.com

Track: Construction Methods & Systems

Description: Construction techniques are described for building high performance energy efficient homes in Florida that meet the U.S. Department of Energy Builders Challenge. Model Center material, advertising copy and approaches to developing partnerships with the Building America program and the utility companies are described that have resulted in good sales for the entry level and move up market in Gainesville, FL. Value propositions are discussed that clearly result in superior sales.

Reference Links from Presentations:

www.baihp.org
  – www.eere.energy.gov/buildings/challenge
  – www.eere.energy.gov/buildings/building_america
www.gwrobinson.com
www.bosshardtrealty.com/nhcd.php

For more information visit the DOE/EPA/HUD in North Hall at Booth N1373
Bimini II – “Green” Home Statistics
• 3,312 square feet, 3 bedroom, 3½ bath

Energy Efficiency and Renewable Energy Features
• Low-E double glazed, impact resistant vinyl windows
  \(U=0.35, \text{SHGC}=0.30\)
• 17 SEER/9 HSPF heat pump (dual fuel) by Carrier with
  programmable thermostat
• Icynene spray foam insulation (walls = R13, roof = R21)
• Duct system performance tested
• ENERGY STAR® appliances
• 92% use of compact fluorescent lighting
• AllSolar domestic hot water system sponsored by
  SunBuilt Program with Rinnai tankless, gas back up
• Meets Builders Challenge Standards with an EnergySmart
  Home Scale (E-Scale) = 57

Indoor Air Quality and Noise Reduction Features
• VOC source control including zero VOC paint and use of 75% reduced
  VOC caulks and sealants by Henkel
• Outside air ventilation
• Central vacuum system by Beam
• Quiet exhaust fans
• Formaldehyde-free cabinets
• Duct system sealed with mastic and fiberglass mesh

Other Green Building Features and Certifications
• Resource efficient modular construction and construction waste management
• Water efficient appliances and fixtures
• Meets Gold level in all sections except lot design, preparation, and development
  per the new NAHB National Green Home Building program (nahbgreen.com)
• Certified Florida Green Home by the Florida Green Building Coalition
• Progress Energy Home Advantage Premium Energy Saver Program
• Built for 140 mph wind zone
• Builder is Building America Partner and Builders Challenge participant

More information at the house in the Professional Builder Show Village or
at booth #W3659

Palm Harbor Homes – Bimini II – “Green” Home
2008 International Home Builders’ Show
Orlando, FL

Palm Harbor Homes
Palm Harbor Homes leads the
Building America Industrialized Housing Partnership Consortium
Florida Solar Energy Center leads the
Building America Industrialized Housing Partnership Consortium
A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy’s Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.

Research and Development of Buildings

Our nation’s buildings consume more energy than any other sector of the U.S. economy, including transportation and industry. Fortunately, the opportunities to reduce building energy use—and the associated environmental impacts—are significant.

DOE’s Building Technologies Program works to improve the energy efficiency of our nation’s buildings through innovative new technologies and better building practices. The program focuses on two key areas:

- Emerging Technologies
  Research and development of the next generation of energy-efficient components, materials, and equipment

- Technology Integration
  Integration of new technologies with innovative building methods to optimize building performance and savings

For more information contact
EERE Information Center
1-877-EERE-INF (1-877-337-3463)
www.eere.energy.gov

U.S. Department of Energy Launches Builders Challenge

The U.S. Department of Energy is scheduled to launch Builders Challenge, based on Building America high-performance home strategies, Thursday, February 14, 2008 at 3 PM in the Professional Builder Show Village during the International Builders’ Show in Orlando, Florida.

The Challenge — to build 220,000 high-performance homes by 2012. Leading builders will join senior DOE officials to “take the challenge” to build homes that are between 70 and 0 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.

Visit our Web sites at:

- www.buildingamerica.gov
- www.pathnet.org
- www.energystar.gov

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Lew Pratsch • Integrated Onsite Power • 202-586-1512 • fax: 202-586-8185 • e-mail: Lew.Pratsch@hq.doe.gov

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Industrialized Housing Partnership (IHP)

Subrato Chandra • Florida Solar Energy Center • 1679 Clearlake Road • Cocoa, FL 32922 • 321-638-1412 • fax: 321-638-1439 • e-mail: subrato@fsec.ucf.edu • www.baihp.org • IHP provided technical and on-site support for PHH and TNAH ‘08

National Renewable Energy Laboratory

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Palm Harbor Homes (PHH)

Mike Draper • 605 S. Frontage Road • Plant City, FL 33563 • 813-752-1368 • fax: 813-752-7280 • e-mail: mdraper@palmharbor.com • www.palmharbor.com • PHH constructed the Bimini II “Green” and Glen Cairn “Comfortably Affordable” homes for the 2008 International Builders’ Show

Produced for the U.S. Department of Energy (DOE) by Florida Solar Energy Center and the National Renewable Energy Laboratory.

FSEC-BAIHP-07B February 2008

An electronic copy of this publication is available on the Building America Web site at www.buildingamerica.gov

Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable
Tommy Williams Homes
Gainesville, FL

Energy Efficiency Features
• Home Energy Index (HERS) to 72 or below
  (significantly better than Energy Star which is 85 or below)
• Double Pane, Low-e Vinyl Frame Windows
• R-15 Fiberglass “Spider” Wall Insulation
• R-30 Ceiling Insulation with Radiant Barrier
• ENERGY STAR® Certified
  Including Thermal Bypass Checklist Compliance
• Extensive Use of Compact Fluorescent Bulbs
• Manual J Sized Heating and Cooling System
• High Efficiency Heat Pump (HSPF 9, SEER 15.25)
• Manual D Sized Duct System, Sealed with Mastic at Joints
• Advanced Framing for Improved Insulation Coverage
• Tankless Gas Water Heaters

Indoor Air Quality Features
• Outside Air “Run-time” Ventilation System
  • When furnace or air conditioner is running, creating beneficial positive pressure in the house to minimize intrusion of outside humidity and dust
  • Filtered outside air is mixed with house air in return plenum
  • Passive System - no moving parts to maintain
  • Can be disabled if necessary (such as when there’s a fire in the area)
• Ducted exhaust fans in kitchen and bath rooms to remove humid air
• Duct System Air Tightness Tested
• Air Handler in Conditioned Space (away from auto exhaust fumes in garage)
• Air Sealing to Reduce Infiltration (outside air, pollen, dust, soil gases, etc)

Systems Engineering Protocol by Florida H.E.R.O
• Simulation analysis to identify cost effective energy efficiency package
• Each design evaluated to identify opportunities for improvements in indoor air quality, durability, and comfort & to ensure specifications are correctly indicated
• ACCA Manual J load calculation to determine heating/cooling equipment size
• ACCA Manual D calculations to determine duct system sizes
• Scope of work developed for the mechanical contractor
• Each home performance tested and rated using the Home Energy Rating System

Tommy Williams Communities
Longleaf Village
Build out: 275
Completed: 120
(Additional 275 lots allocated to a non-Building America builder)

Belmont
Build out: 136 homes
Completed: 66
(Additional 55 lots allocated to a non-Building America builder)

Tommy Williams Homes
PO Box 368, Archer, FL 32618
(352) 495-3006
http://www.tommywilliamshomes.com/

Florida H.E.R.O.
15220 N.W. 5th Avenue, Newberry, FL 32669
352-472-5661, 888-711-2060 Toll Free
http://www.floridahero.com/

Technical assistance:
Building America Industrialized Housing Partnership www.baihp.org
at the Florida Solar Energy Center/UCF www.fsec.ucf.edu

Building Technologies Program
Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable.
A Strong Energy Portfolio for a Strong America

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Research and Development of Buildings

Our nation’s buildings consume more energy than any other sector of the U.S. economy, including transportation and industry. Fortunately, the opportunities to reduce building energy use—and the associated environmental impacts—are significant.

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- **Emerging Technologies**
  Research and development of the next generation of energy-efficient components, materials, and equipment

- **Technology Integration**
  Integration of new technologies with innovative building methods to optimize building performance and savings

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www.eere.energy.gov

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Produced for the U.S. Department of Energy (DOE) by Florida Solar Energy Center and the National Renewable Energy Laboratory. April 2007
G. W. Robinson Builders, Inc.
Gainesville, FL

Energy Efficiency Features
- Home Energy Index (HERS) Ranging From 68 To 63 (or lower) (significantly better than Energy Star which is 85 or below)
- Double Pane, Low-e Vinyl Frame Windows
- R-13 Cellulose Wall Insulation
- R-30 Ceiling Insulation With Radiant Barrier
- ENERGY STAR® Certified
  Including Thermal Bypass Checklist Compliance
- Extensive Use of Compact Fluorescent Bulbs
- ½” Foam Insulation On All Hot Water Pipes
- High Efficiency (83%) Tankless Gas Water Heater
- Manual J Sized Heating and Cooling System
- High Efficiency (95%) Sealed Combustion Gas Furnace
- SEER 15 Air Conditioner
- Manual D Sized Duct System, Sealed With Mastic at Joints
- Advanced framing to improve insulation coverage and reduce waste

Indoor Air Quality Features
- Outside Air “Run-time” Ventilation System
  - When furnace or air conditioner is running, creating beneficial positive pressure in the house to minimize intrusion of outside humidity and dust
  - Filtered outside air is mixed with house air in return plenum
  - Passive System - no moving parts to maintain
  - Can be disabled if necessary (such as when there’s a fire in the area)
- Ducted exhaust fans in kitchen and bath rooms to remove humid air
- Duct System Air Tightness Tested
- Air Handler in Conditioned Space (away from auto exhaust fumes in garage)
- Air Sealing to Reduce Infiltration (outside air, pollen, dust, soil gases, etc)

Systems Engineering Protocol by Florida H.E.R.O
- Simulation analysis to identify cost effective energy efficiency package
- Each design evaluated to identify opportunities for improvements in indoor air quality, durability, and comfort & to ensure specifications are correctly indicated
- ACCA Manual J load calculation to determine heating/cooling equipment size
- ACCA Manual D calculations to determine duct system sizes
- Scope of work developed for the mechanical contractor
- Each home performance tested and rated using the Home Energy Rating System

G. W. Robinson Communities
CobbleField
Build out 265 homes
262 completed

Turnberry Lake
Build out 186 homes
76 completed

Garison Way
Build out 110 homes
32 completed

G. W. Robinson Builders, Inc.
6208 NW 43rd Street, Gainesville, FL 32653
(352) 373-1724
www.gwrobinson.com

Florida H.E.R.O.
15220 N.W. 5th Avenue, Newberry, FL 32669
352-472-5661, 888-711-2060 Toll Free
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Technical assistance: Building America Industrialized Housing Partnership www.baihp.org
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www.pathnet.org
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