

Research Toward Zero Energy Homes

Palm Harbor Homes – Deschutes – “Quiet Living” Home
2009 International Home Builders’ Show
Las Vegas, NV

Deschutes Statistics

- 2,107 (approximate) square feet

Energy Efficiency & Renewable Energy Features

- EnergyStar and impact resistant windows (U=0.34, SHGC=0.34)
- Icynene spray insulation (walls = R27, roof = R33)
- 14 SEER /8.4 HSPF packaged heat pump
- Duct system performance tested
- Tankless water heater
- Extensive use of compact fluorescent lighting and LED (light emitting diodes) light fixtures
- Home has a HERS Index = 76

Indoor Air Quality & Noise Reduction Features

- VOC source control including zero VOC paint
- Outside air ventilation
- Duct system sealed with mastic and fiberglass mesh and performance tested
- Quiet exhaust fans

Other Green Building Features and Certifications

- Wireless dimmable lighting controls
- Resource efficient modular construction and construction waste management
- Meets Bronze level in all sections except lot design, preparation and development per the new NAHB National Green Home Building program
- Durable, low maintenance design
- California Title 24 compliant
- Builder is Building America Partner and Builders Challenge Participant

More information at the house in the Professional Builder Show Village, Blue Lot or at booth N1373



“As built for show”



“Artist rendering”



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
**Energy Efficiency
and Renewable Energy**

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

Visit our Web sites at:

www.buildingamerica.gov

www.pathnet.org

www.energystar.gov



Building America Program

George S. James • New Construction • 202-586-9472 • fax: 202-586-8134 • e-mail: George.James@ee.doe.gov

Terry Logee • Existing Homes • 202-586-1689 • fax: 202-586-4617 • e-mail: terry.logee@ee.doe.gov

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

Building America Program • Office of Building Technologies, EE-2J • U.S. Department of Energy • 1000 Independence Avenue, S.W. • Washington, D.C. 20585-0121 • www.buildingamerica.gov

Building Industry Research Alliance (BIRA)

Robert Hammon • ConSol • 7407 Tam O'Shanter Drive #200 • Stockton, CA 95210-3370 • 209-473-5000 • fax: 209-474-0817 • e-mail: Rob@consol.ws • www.bira.ws

Building Science Consortium (BSC)

Betsy Pettit • Building Science Consortium (BSC) • 70 Main Street • Westford, MA 01886 • 978-589-5100 • fax: 978-589-5103 • e-mail: Betsy@buildingscience.com • www.buildingscience.com

Consortium for Advanced Residential Buildings (CARB)

Steven Winter • Steven Winter Associates, Inc. • 50 Washington Street • Norwalk, CT 06854 • 203-857-0200 • fax: 203-852-0741 • e-mail: swinter@swinter.com • www.carb-swa.com

Davis Energy Group

David Springer • Davis Energy Group • 123 C Street • Davis, CA 95616 • 530-753-1100 • fax: 530-753-4125 • e-mail: springer@davisenergy.com • deg@davisenergy.com • www.davisenergy.com/index.html

IBACOS Consortium

Brad Oberg • IBACOS Consortium • 2214 Liberty Avenue • Pittsburgh, PA 15222 • 412-765-3664 • fax: 412-765-3738 • e-mail: boberg@ibacos.com • www.ibacos.com • IBACOS provided technical support for TNAH '08

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

Ren Anderson • 1617 Cole Boulevard, MS-2722 • Golden, CO 80401 • 303-384-7433 • fax: 303-384-7540 • e-mail: ren_anderson@nrel.gov • www.nrel.gov

Tim Merrigan • 1617 Cole Boulevard, MS-2722 • Golden, CO 80401 • 303-384-7349 • fax: 303-384-7540 • e-mail: tim_merrigan@nrel.gov • www.nrel.gov

Oak Ridge National Laboratory

Pat M. Love • P.O. Box 2008 • One Bethel Valley Road • Oak Ridge, TN 37831 • 865-574-4346 • fax: 865-574-9331 • e-mail: lovepm@ornl.gov • www.ornl.gov

Pacific Northwest National Laboratory

Michael C. Baechler • 620 Southwest 5th, Suite 810 • Portland, OR 97204 • 503-417-7553 • fax: 503-417-2175 • e-mail: michael.baechler@pnl.gov • www.pnl.gov

Palm Harbor Homes (PHH)

Rick Boles • 309 S. Perry Lane • Tempe, AZ 85281 • 800-467-7877 • fax: 480-829-7091 •

e-mail: rboles@palmharbor.com • www.palmharbor.com • PHH constructed the Deschutes "Quiet Living" and the Tularosa "Media Enhanced" homes for the 2009 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-14A January 2009

Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable