

Advanced Air Distribution Strategies Improve Performance of Palm Harbor Homes

Building America is sponsored by the U.S. Department of Energy. The program aims to:

- Reduce energy use by 50% and reduce construction time and waste
- Improve indoor air quality and comfort
- Encourage a systems-engineering approach for design and construction of new homes
- Develop system cost/performance tradeoffs that improve housing quality and performance without increasing cost
- Conduct cost-shared research to accelerate development and adoption of innovative building systems.

Palm Harbor Homes (PHH), one of the nation's largest producers of manufactured homes, and Building America's Industrialized Housing Partnership have teamed together to develop air-distribution and duct-sealing strategies that reduce energy use and increase comfort. PHH adds additional ducts to transfer air between rooms, ensuring adequate air flow even when doors are closed. If the return air from the rooms cannot flow freely, it creates a negative or positive pressure with respect to the remainder of the house, increases air leakage to the outside, and increases energy losses. PHH also seals the air supply and return ducts to minimize leakage of conditioned air to the outside.

In addition to reducing energy losses, Palm Harbor Homes' air-distribution strategy improves thermal comfort, increases the life expectancy of HVAC equipment, reduces the amount of dust carried in by outside air, and reduces the potential for moisture damage caused by infiltration of moist outside air, especially in humid climates.



Charlie R. Castilleja, Palm Harbor Homes/PIX09808

All Palm Harbor Homes, duct systems are factory tested with state-of-the-art equipment to assure airtight ducts.

By using additional ducts to increase the airflow between rooms and duct-sealing techniques to reduce duct losses to the outside, PHH has increased energy savings and comfort for its customers. As a result, PHH is the first producer of manufactured housing to achieve an ENERGY STAR® rating for its homes.



David Beat, Palm Harbor Homes/PIX09647

An example of an Energy Star® Palm Harbor home.





BUILDINGS FOR THE 21ST CENTURY

Buildings that are more energy-efficient, comfortable, and affordable ... that's the goal of DOE's Office of Building Technology, State and Community Programs (BTS). To accelerate the development and wide application of energy efficiency measures, BTS:

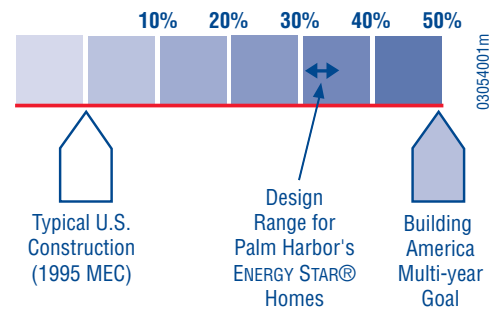
- Conducts R&D on technologies and concepts for energy efficiency, working closely with the building industry and with manufacturers of materials, equipment, and appliances
- Promotes energy- and money-saving opportunities to builders and buyers of homes and commercial buildings
- Works with state and local regulatory groups to improve building codes, appliance standards, and guidelines for efficient energy use
- Provides support and grants to states and communities for deployment of energy-efficient technologies and practices.

The Approach

Building America's systems-engineering approach unites segments of the building industry that have traditionally worked independently of one another. It forms teams of architects, engineers, builders, equipment manufacturers, material suppliers, community planners, mortgage lenders, and contractor trades. More than 230 different companies make up the five teams of Building America:

-  Building Science Consortium (BSC)
-  Consortium for Advanced Residential Buildings (CARB)
-  Hickory Consortium
-  Industrialized Housing Partnership
-  Integrated Building and Construction Solutions (IBACOS) Consortium

Building America Performance Goal (Heating and Cooling Energy Savings)



The Building America teams design houses from the ground up, considering the interaction between the site, building envelope, mechanical systems, and other factors. With this approach, the teams can incorporate energy-saving strategies at little or no extra cost.

VISIT OUR WEB SITES AT:

WWW.EREN.DOE.GOV/BUILDINGS/BUILDING_AMERICA



WWW.ENERGYSTAR.GOV



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www.eren.doe.gov/buildings/Building_America

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