



Builders Challenge

Recognizing Energy Leadership in Homebuilding

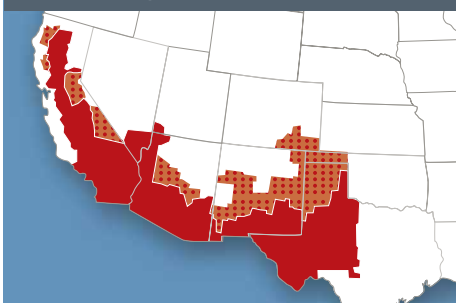
High Performance Builder Spotlight

Wathen Castanos Hybrid Homes

Loma Vista, Clovis, California

Wathen Castanos Hybrid Homes of Fresno, CA, has worked with Building America team member IBACOS to apply building science to production homes. Even without solar panels, the company's Jordan model exceeds California's building efficiency standard by 36%.

HOT-DRY/MIXED-DRY CLIMATE



BUILDER PROFILE

Builder: Wathen Castanos Hybrid Homes
President, Mike Nimon, (559) 432-8181
www.wathen-castanos.com

Founded: 1983

Where: Fresno, California area

Employees: 28, not including
subcontractors

Square Footage: 1105 to 2385 sq. ft.

Size: 3-6 bedrooms, 2-3 bathrooms

Price Range: \$129,000 to \$278,000



Building science and energy efficiency have enabled Wathen Castanos Hybrid Homes to prosper even as the California housing market has plunged. As its competitors cut prices and features, Wathen Castanos chose to improve its building processes by working with the U.S. Department of Energy's Building America research team IBACOS. The result: high-quality, energy-efficient homes at competitive prices, with sales that are 40% higher than projected for 2010. Instead of the projected 140 Fresno-area homes, the company sold and closed 196 homes, all of which meet Builders Challenge criteria.

Building science improvements enabled Wathen Castanos to build "hybrid homes" that meet strict cost demands, offer desirable features and amenities, and far surpass the requirements for the ENERGY STAR and California Green Point Rated programs.

Wathen Castanos, which has been in business for 27 years, no longer builds standard code-minimum homes.

"We cannot go back," says company president Mike Nimon. "People come in looking for our hybrid home. Our energy efficiency puts dollars and cents in their pockets."

"We show buyers the HERS scale to let them compare our houses to the competition," Nimon says. On the 196 homes it sold in 2010, Wathen Castanos attained HERS ratings of 48 to 53. The company also displays the actual energy bills of its buyers, which show savings of \$100 to \$200 during peak months, compared to typical homes in the Fresno area. "Our competition has been asking our trade partners how we achieve this efficiency while keeping prices competitive." The single-family homes, which range from 1,105 to 2,385 square feet, sell for \$129,000 to \$278,000. Designs include both one- and two-story homes, with three to six bedrooms and two to three baths.

Energy-Efficiency Features

The homes' HERS rating could be lowered still further, Nimon acknowledges, by getting ducts fully inside the thermal envelope. The builder is evaluating cost-effective strategies to do so. Currently, air handlers and duct systems are in the attic, which has radiant barrier sheathing but is unconditioned. Energy

is saved, however, by insulating all ducts to R-8 and utilizing short duct runs. Tests show less than 6% air leakage.

Wathen Castanos achieves significant energy savings through tight sealing of the thermal enclosure, plus high-efficiency HVAC, water heating, windows, appliances, and lighting. Exterior walls are sheathed with taped, caulked rigid foam; the 2x4-inch bottom plate is wrapped with a 6-inch-wide sill seal. Holes are caulked and foamed, drywall is glued to the top and bottom plates.

Wathen Castanos involves architects and trade partners in its ongoing initiative to improve performance. Its intensive value engineering sessions examine trade-offs on each aspect of the home to maximize energy performance, quality, and cost efficiency.

Wathen Castanos ensures performance with third-party duct blaster and blower door testing, a HERS rating, a California Quality Insulation Inspection, and inspections using the ENERGY STAR Thermal Bypass Checklist.



By building high-efficiency, competitively priced homes, Wathen Castanos has prospered despite difficult market conditions.

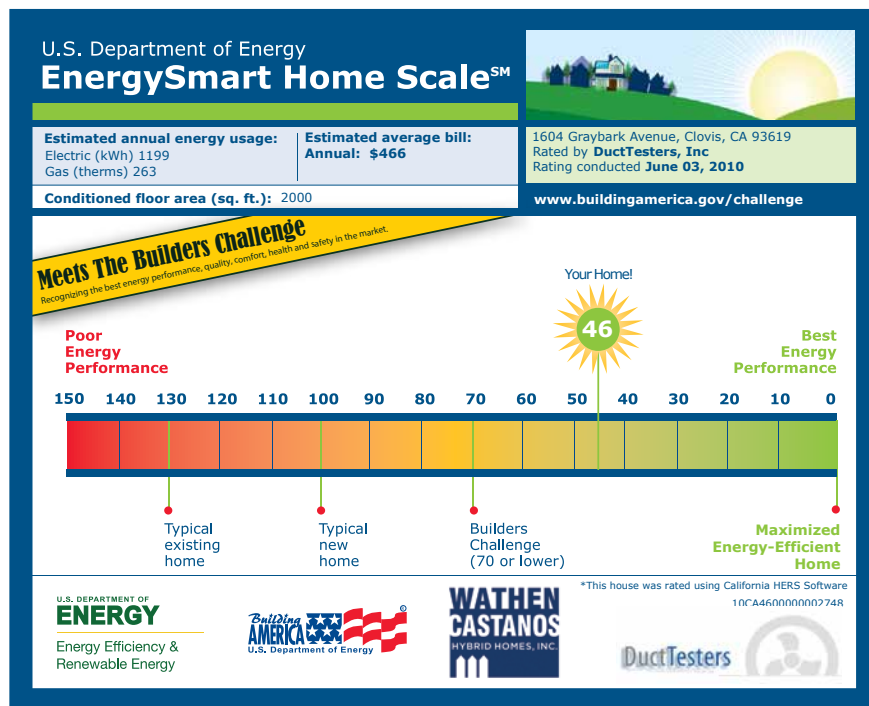
U.S. Department of Energy Builders Challenge

DOE seeks to give every consumer the opportunity to buy a cost-neutral, net-zero energy home anywhere in the U.S. by 2030. Homes that qualify for this Builders Challenge must achieve a 70 or less on the EnergySmart Home Scale (E-Scale) which is based on the Home Energy Rating System (HERS) index (www.natresnet.org). The E-Scale allows homebuyers to understand—at a glance—how the energy performance of a particular home compares with others.

Key Features

for “Jordan” model

- **HERS Score:** 46 without PV, 29 with PV
- **Blower Door Test:** 848 cfm at 50 Pa (2.73 ACH 50)
- **Duct Leakage:** 44 cfm total at 25 Pa; 42 cfm to exterior
- **HVAC:** 94 AFUE gas furnace; 19-SEER AC
- **Ventilation:** Whole-house mechanical (80 CFM Broan SmartSense® Fan) with air handler in unconditioned attic
- **Ducts:** In unconditioned attic, insulated to R-8
- **Water Heating:** 0.98 EF tankless gas
- **Wall Insulation:** R-15 blown fiberglass with R-4 rigid foam board
- **Ceiling Insulation:** R-49 blown fiberglass
- **Air Sealing Details:** A combination of spray-in fiberglass, foam and sealant, with sealing of all penetrations through plates and drywall
- **Windows:** Vinyl-frame low-e windows (U=0.25, SHGC=0.35)
- **Appliances:** ENERGY STAR refrigerator and dishwasher, CFL and LED lights
- **House Awards and Certifications:** DOE Builders Challenge; DOE Building America Pilot Home; ENERGY STAR; California Build It Green; California New Solar Homes Partnership; 2011 National Housing Quality Award



To learn more about the Builders Challenge and find tools to help market your homes, visit www.buildingamerica.gov/challenge.