



Building America Case Study Whole-House Solutions for New Homes

Pulte Homes and Communities of Del Webb

Las Vegas Division, NV

PROJECT INFORMATION

Construction: New home

Type: Single- and multi-family

Builder: Pulte Homes and Communities of Del Webb, Las Vegas Division, NV
877-485-7623
www.pulte.com

Size: 850–5,000 ft²

Price Range: \$200,000+

Date Completed: 2011

Climate Zone: Hot-Dry, IECC 3B

Team: Building Science Corporation

PERFORMANCE DATA

HERS Index:

54–60 without PV, 44 with PV

Projected annual energy cost savings:

\$1,660 with PV

Pulte's Las Vegas has been a local leader in energy efficiency since 1997 when Nat Hodgson, Vice President of Construction for the Las Vegas Division of Pulte Homes and Communities of Del Webb teamed up with the U.S. Department of Energy's Building America team lead Building Science Corporation to build pilot homes in Las Vegas. Pulte has built 100% ENERGY STAR homes in the Las Vegas valley since 1999 and builds the most ENERGY STAR-labeled homes nationwide. In January 2009, Pulte opened its Villa Trieste, a community of 185 homes in Las Vegas that achieved HERS scores of 54 to 66 without photovoltaic solar panels, or less than 44 with PV. Pulte sought LEED certification and the Environments for Living comfort guarantee on every home, and the homes also feature solar PV. Pulte Las Vegas went on to certify more than 1,200 homes to DOE Builders Challenge requirements.

That systems approach starts with a Manual J calculation of cooling needs, Manual D engineered duct design, location of ducts and air handler in conditioned space, pressure balancing every room, and meticulous attention to air sealing both the envelope of the house and the ducts. All of the newer homes at Villa Trieste feature water conserving fixtures, water sensing irrigation systems, low- and no-VOC finishes, smart thermostats, and solar panels that integrate with the cement tiles on the roof.

“When we started doing conditioned attics, we thought everyone would jump on the band wagon, but they haven't,” said Hodgson. “This kind of construction is not that hard, it's just different. Buying a home is the largest personal investment most individuals will ever make and yet the industry still relies on the most archaic means of production.”

Nat Hodgson, Vice President of Construction for the Las Vegas Division of Pulte Homes and Communities of Del Webb

KEY ENERGY-EFFICIENCY MEASURES

HVAC:

- SEER 15 AC
- Ducts in conditioned space in insulated attic
- Jump ducts for pressure balancing between rooms
- Fresh air intake

Envelope:

- R-38 blown ceiling insulation in vented attic
- Advanced framed walls with blown cellulose wall insulation
- Double-pane, low-e, vinyl windows

Lighting, Appliances, and Water Heating:

- ENERGY STAR lighting
- ENERGY STAR appliances
- tankless hot water heater

For more information, please visit:

www.buildingamerica.gov



Pulte Las Vegas worked with Building America to transform its business operations and dramatically cut callbacks.

Lessons Learned

Pulte first turned to Building America research partner Building Science Corporation in the late 1990s for help curbing run-away callback costs. Following their advice, Pulte's Las Vegas division hired a full-time quality manager and implemented several changes division wide that brought callbacks down to near zero and reduced callback costs up to \$5,000 per home. These changes included

- advanced framing techniques like two-stud corners with drywall clips to reduce nail pops and drywall cracks as wood dries
- insulating attics along the roof line to provide a conditioned space for the ducts
- more air sealing
- duct blaster testing and extensive visual inspection of every home
- HVAC commissioning procedures to cut HVAC-related complaints like noise, drafts, and inconsistent cooling
- working with its suppliers to negotiate better prices on high-performance equipment
- basing construction supervisors' bonuses on their quality inspection report scores, not number of homes built
- turning model home garages into energy efficiency education centers to educate home owners.

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

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.