

Copper Moon Development – Tucson, Arizona

Pulte Gets Customer Satisfaction

In 1986, Pulte Homes in Tucson was plagued by customer complaints and even law suits for construction and material defects in their homes. Today, customer satisfaction is above 90%, and the Tucson Division ranked #1 in customer satisfaction in the Tucson market in the *J.D. Power and Associates 2003 New Home Builder Customer Satisfaction Study*.

“We finally got the message from our buyers—value is as important as cost,” says Vice President of Construction for Pulte Tucson, Alan Kennedy. Home buyer surveys revealed that energy efficiency, ease of maintenance, and builder reputation were topping the list of what home buyers thought was important. Kennedy adds, “A large part of achieving these qualities has been our work with the Building Science Consortium through the Building America program.”

Building America helped Pulte Tucson change the way it builds, with new designs, new systems, and new materials. Pulte Tucson built its first Building America home in 1998. It now builds all of its homes to Building America performance standards, backs all of its homes with an Engineered for Life energy guarantee, and has two full-time employees dedicated to performance testing and construction inspections.

Innovations

“Under the direction of Building Science Consortium, we’ve learned to approach the house as a system,” explains Kennedy. “The shell of the home is a critical component of making the home efficient.”

At Copper Moon, a development of 1,332 to 1618 square-foot homes, the shell consists of 2-inch by 6-inch construction with studs on the exterior walls spaced at 24-inch on center. “We use what is termed ‘in-line’ framing on our exterior walls,” says Kennedy. “In this framing the trusses are placed directly above each stud.”



Pulte Tucson has turned around customer opinions with customer satisfaction now at 90%, two-thirds of its customers recommending Pulte three times or more, and call-backs and customer complaints are a fraction of their peak ten years ago.

Pulte Homes, Inc.

Pulte Homes, Inc. is a Fortune 500 company with \$7 billion in revenues. Over its more than 50-year history, Pulte Homes has constructed more than 330,000 homes.

Pulte Homes ranked #1 in customer satisfaction in 12 of its divisions (including Tucson) in the *J.D. Power and Associates 2003 New Home Builder Customer Satisfaction Study*.

Pulte Homes was also awarded **Builder of the Year 2002** by *Professional Builder* magazine, and the Tucson division was presented the **2001 Energy Value Housing Award** from the National Association of Home Builders.

INTRODUCTION

Taking action in your community



HOMEOWNERS

Shopping for value, comfort, and quality



MANAGERS

Putting building science to work for your bottom line



MARKETERS

Energy efficiency delivers the value that customers demand



SITE PLANNERS & DEVELOPERS

Properly situated houses pay big dividends



DESIGNERS

Well-crafted designs capture benefits for builders, buyers, and business



SITE SUPERVISORS

Tools to help with project management

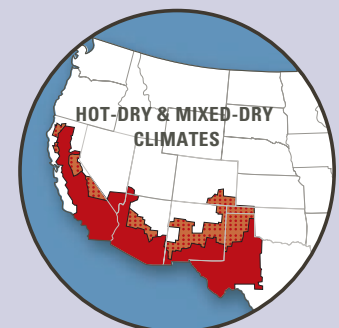


TRADES

Professional tips for fast and easy installation

CASE STUDIES

Bringing it all together



CASE STUDY: PULTE - COPPER MOON

Conventional framing of exterior walls places studs at 16-inch centers. Our in-line framing strategy allows us to achieve greater effective wall insulation values. Lumber has a poor insulating value; eliminating what we can improve efficiency.”

Copper Moon uses Thermoply instead of plywood as an air barrier to define the attic conditioned space. “It is light and easy to work with,” says Kennedy. “Our goal is to eliminate gaps from the attic space to the outside, thus our attics are tight and unvented.” Because the roof is unvented, a vapor impermeable roofing underlayment is installed between the 30-pound felt paper and concrete tile for roofing and the structural roof deck.

With the rough framing complete, the insulation contractor “nets the deck” in preparation for Pulte’s cathedralized insulation technique. Pulte uses a fabric similar to that found on the bottom of furniture. They staple this fabric to the bottom face of the top chord, between each truss. This netting is used to hold insulation in place after the mechanical trades have run venting through the roof deck.

The insulation (Cocoon manufactured by U.S. GreenFiber and trademarked by Louisiana Pacific) is installed in the netting. It is sprayed-in cellulose, a nontoxic material made from recycled newspapers. “We have no voids, gaps, or compression, which is typical with batt insulation,” says Kennedy. The ceiling contains R-22 insulation. The 24-inch o.c. exterior walls contain R-19 cellulose insulation plus R-4 extruded polystyrene.

The furnace and ductwork are installed in the attic space. Pulte uses a sealed combustion 92.6% efficient heating unit rather than the typical 80% model. Its HVAC contractor seals every duct connection with mastic, for a tightly sealed system.

“Because we do all of these things, we are able to reduce air conditioning tonnages by nearly 50%,” says Kennedy. The average HERS rating for the Copper Moon homes ranges from 87.6 to 90.3.

Comfort, Durability, and Health

“Our homes provide comfort, better windows which reduce fading of interior upholsteries, and mechanical equipment placed in conditioned space, which prolongs their life,” explains Kennedy.

“Building America should be the building standard. It is the way all homes should be built.”

Alan Kennedy, Vice President of Construction for Pulte Tucson

Environments for Living Program

All Pulte Homes in Tucson are built to the Platinum Level of the Engineered for Life program, which was developed by Louisiana Pacific with assistance from the Building Science Consortium. This Platinum Level meets the ENERGY STAR Standard and includes advanced energy features, including all ducts within conditioned space.

The Environments for Living program provides a 3-year *Heating and Cooling Cost plus Comfort* guarantee to every Pulte home meeting the gold and platinum level standards. The heating and cooling guarantees are based on the kWh and the BTUs usage on an annual basis at the current utility rates. If the home goes over the guaranteed usage, the homeowner is reimbursed 100 percent of the difference through the program.

BUILDER PROFILE

Pulte Homes Tucson Division

Where:

Tucson, Arizona

Founded:

Reentered the Tucson market in 1991 after pulling out in 1986

Employees:

Approximately 120 employees in the Tucson division

Development:

Copper Moon

Size:

Approximately 250 homes

Square footage:

1,332 to 1,618 sq.ft.

Price range:

\$145,900 to \$155,900

Key features:

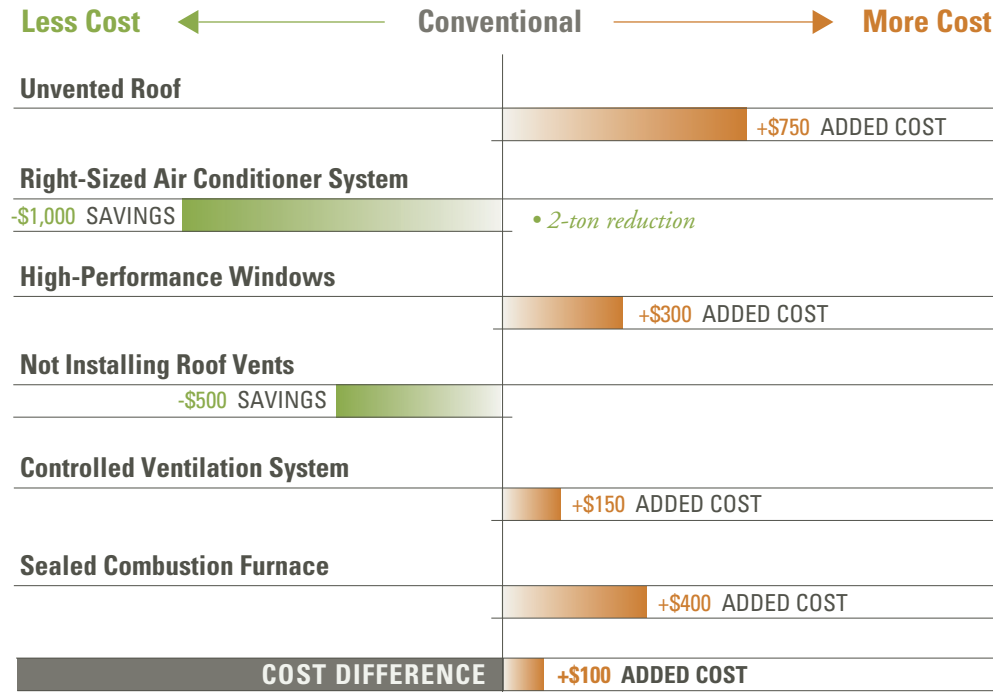
- Post-tensioned slab foundation
- “In-line” framing with air barrier insulation
- Unvented cathedral attic
- Sealed ducts with mechanical ventilation
- Air returns in each bedroom
- Low-e spectrally selective windows
- Recycled-cellulose blown-in “Cocoon” insulation that hugs the roof line for an insulated attic.
- Carbon monoxide detectors
- Reduced sizing of air conditioning equipment

CASE STUDY: PULTE - COPPER MOON

The low-e windows use spectrally selected vinyl, which lets visible light through but keeps solar heat out, lowers the cooling load in the summer, and reduces the fading of the furniture caused by direct sunlight.

The ventilation system includes the AirCycler™ controller, which runs the air handler only periodically and operates the fan only after a selected amount of time following the last operation. This system also reduces air stagnation by providing mixing of house air. Air returns are placed in each bedroom, and carbon monoxide detectors are provided every 1000 square feet.

COST COMPARISON TO CONVENTIONAL MEASURES



Careful attention went into sealing and insulating the attic.

The Bottom Line

“From our perspective, the incremental cost that consumers see in sales price for our homes is more than offset by their utility bills,” says Kennedy. “It costs our customers roughly \$800 to have a home that comes with a two-year guarantee on heating and cooling bills that use up to 50% less than code requires. If you look at the pay back on energy savings, it is worth every penny. For example, financing \$800 at 8% for 30 years costs roughly \$6 per month,” states Kennedy.

“If it hadn’t been for the Department of Energy and Building America, I don’t think builders would be where they are today. They helped us take the initiative to become innovative,” says Kennedy.

“This took a lot of work—we had to educate and train our staff, realtors, and even our building inspection department on some of the innovative systems. But if you take the same total systems approach with the industry as you take with your homes, it pays off.” It certainly seems to—Pulte Tucson has 10 communities under full development, two-thirds of their customers are recommending Pulte three times or more, and call-backs and customer complaints are a fraction of their peak ten years ago.