

Sun Lakes Development – Banning, California

Pulte takes Production Building to New Heights at Sun Lakes

Pulte Homes has pushed production building to a new level at its Sun Lakes Development in Banning, California, taking homes from start to finish in 55 days. And all of the homes were built using the Building America process and meeting Environments for Living™ platinum level for energy efficiency.

Pulte achieved these remarkable construction times (twice typical local construction builder output) by preassembling some building components, offering a limited number of options, and implementing an innovative construction method of sequentially building five houses at a time on each side of the street. This process kept their trades consistently employed and promoted an unusually high amount of cooperation on site.



Using innovative construction methods and Building America know-how, Pulte built 600 homes in its Sun Lakes development in Banning, California, all of them 15% to 20% over California's new Title 24 requirements.

“In all my years in the construction business I have not seen such remarkable cooperation among subs and management. Every visit to the site I’m approached by everybody from the installers to management anxiously asking how we’re doing and how we can improve,” said Building America field testing partner Bill Irvine of BCI Testing, part of the Building Science Consortium. Irvine noted that work site meetings between subs were a daily occurrence.

Says Josh Robinson, the Pulte Sun Lakes project manager and a Pulte Vice President. “They (the subs) are really able to take ownership and pride in what they are doing here. They actually can’t wait to get their houses tested to see if they are able to outdo the one before.”

Engineered for Life: Platinum Level

Pulte Homes in Southern California 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.

All of this cooperation and efficiency spells good news for home buyers. The 1,458- to 2,139-square-foot, 2 and 3 bedroom homes achieve 35% to 40% reductions over the requirements of the 1995 Model Energy Code and 15% to 20% over California’s new Title 24 requirements, and Pulte can offer them at \$165,500 to \$239,500, very reasonable by Southern California standards. Although options for buyers are limited to just three models with a total of six options, every home comes with high-performance windows, Corian countertops, 16-inch ceramic tiles in the kitchen, bath and entryway, and all appliances, as well as an energy-performance guarantee.

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

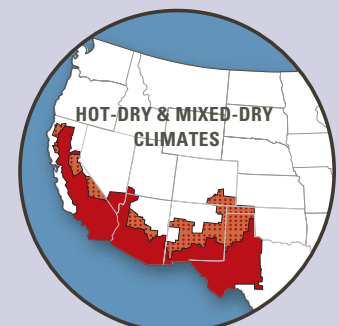


TRADES

Professional tips for fast and easy installation

CASE STUDIES

Bringing it all together



CASE STUDY: PULTE - SUN LAKES

Innovations

In 2000 Sun Lakes became the first Southern California subdivision built with Building America guidance. “We have seen a direct impact on our quality through the Building America Program. We are able to build a better product because of our consistent approach [in implementing Building America practices],” says Robinson.

Pulte decided in this development to offer limited floor plans. “We don’t give the consumer much variation. Instead we give them an upgraded package—granite slabs, maple cabinets, 20-inch floor tiles—all standard. We are doing this with every single home, so the consistency allows us to buy better, avoid the margin of error that comes through options, and build in a more efficient fashion,” says Robinson.

The home components—from roof trusses to wiring and cabinetry—are factory assembled by builder employees to exacting specifications and delivery times. For example, wiring is pre-cut to specific lengths and labeled for one particular run.

In addition to consistent components, the building process itself is consistent. “We do not bounce around on different communities; we commit to even flow production,” says Robinson. “What I mean by this is that most builders will fluctuate with what the market does. We drive what we want the market to do, and it is all based on the efficiencies that we get out of the production system.”

This means that when Robinson and his team begin housing production within a development, they do not stop production until they are finished. Sun Lakes was built using the DiVosta Building System™ (after Otto “Buz” DiVosta who sold his company to Pulte in 1997). On the job site, homes are sequenced in a zipper-like fashion down each street so the installation crews can capitalize on the efficiency of the factory-assembled components. At Sun Lakes, trade contractors work together so that each of their crews can follow the “five on one side, five on the other” sequencing of five houses at a time construction down a street.

“We have activity on every house every day,” explains Robinson. “So, in the past in Southern California through the life of any project, you might have 15 different HVAC guys, and you can’t keep them busy, and the guy you had last time is working somewhere else, and the learning curve is ongoing. In this environment, we have had the same guy doing our duct work now for 2 plus years. He understands the product and the expectations. This is huge.”

Robinson explains that this consistency has allowed his team to pay more attention to the details recommended by Building America and to fine tune their ductwork and insulation installation practices.

“Building America is a way to manage risk, potential litigation issues, and building systems failures.”

Josh Robinson, Pulte Sun Lakes project manager and a Pulte Vice President

Environments for Living Program

The Environments for Living program provides a 2-year *Heating and Cooling Cost plus Comfort* guarantee to every Pulte home in Southern California 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 Southern California

Where:

North Inland Empire Division of Southern California

Founded:

1999 (for this division)

Employees:

Approximately 240 employees

Development:

Sun Lakes

Size:

Approximately 600 units

Square footage:

1,458 to 2,139 sq.ft.

Price range:

\$165,500 to \$239,500 at construction

Key features:

- Continuous air barrier—slab to walls to ceiling
- All ducts in conditioned space
- Unvented conditioned attic
- Vinyl frame Low-E² spectrally selective windows
- Sealed combustion 90%+ AFUE gas furnace
- Pressure-balancing jump ducts
- Controlled ventilation with AirCycler™ control
- Cellulose insulation
- Built using the DiVosta Building System™

CASE STUDY: PULTE - SUN LAKES

Comfort, Durability, and Health

“Our homes are healthy. We really focus on the house as a system. With Building America’s Building Science Consortium as our partner, we did extensive duct testing and value engineering. We really tightened down the duct system and learned the performance of this on a house-by-house basis,” says Robinson.

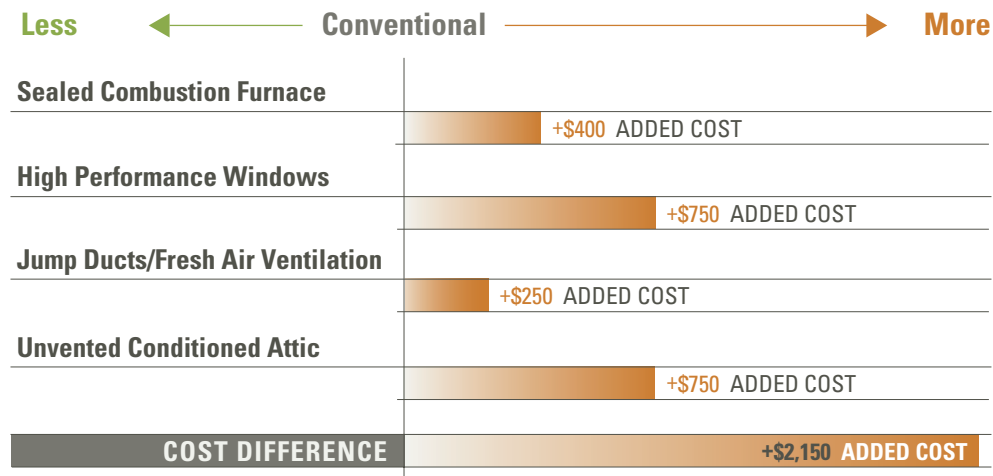
This approach has paid off. The average HERS rating is 88.

The duct layout allows supply registers to be placed where they make the most sense and improves the air distribution. Jump ducts through the unvented conditioned attic are used to prevent pressurization of bedrooms and depressurization of the main space when bedroom doors are closed. The typical one-inch door undercut does not provide an adequate return path for the supply air and can result in discomfort and stagnation in closed bedrooms. The AirCycler™ controller runs the air handler on a consistent cycle that evenly mixes house air to prevent stagnation.

The ceiling is insulated with R-22 cellulose insulation. The 2 by 4, 16-inch o.c. walls are insulated with R-13 cellulose insulation with R-4 1-inch EPS foam stucco substrate. Because the ducts are in conditioned space, duct insulation can be reduced from R-6 to R-4.2.

These health benefits are a boon to the senior buyers Sun Lakes is marketed to. The lower utility bills achieved are another plus for buyers on fixed incomes.

COST COMPARISON TO CONVENTIONAL MEASURES



The Bottom Line

“Building America has changed the way we build,” says Robinson. “We clearly believe we are building the best house on the market. We also understand that we are building for the future. Homes built under Building America’s program will clearly outlast anything we have ever done before, more so than what our competitors are doing. In terms of our long-term growth plan, we think we are doing the right thing. It has changed our approach from not just looking at the short-term value in how to get a good sale but in how to build a good house that is going to last.”



Jump ducts help to equalize a house’s air pressure to ensure air quality and comfort, and provide return air for heating and cooling.



Careful sealing of air handling equipment and a sealed combustion furnace save energy and help ensure comfort and combustion safety. Placing this equipment in conditioned space improves performance.



Coordination between the trades on a community scale encouraged quality installations, speedy schedules, and reduced labor costs.