

Passive Perfection: Explore San Diego's 1st Certified Passive House

“Passive house” may not be the best term for marketing, but it will indubitably be what buyers demand as energy efficiency options become more important in homes of the future.

Alliance Green Builders wants to stay ahead of this curve, and with its recent project, the company is already well on its way. “It’s kind of like Steve Jobs with Apple products. He knew what we [buyers] wanted before we did,” says Jeff Adams, founder and president of Alliance Green Builders. “These homeowners, we know what they want for their home. But they just don’t know it yet.”

Adams assures that Passive will enter conversations more and more as energy efficiency concerns grow within the industry. According to the **U.S. Energy Information Association** (<http://www.eia.gov/tools/faqs/faq.cfm?id=86&t=1>), about 40 percent of energy consumption came from residential and commercial buildings in 2015.

“We really can’t produce our way out of that hole. We need to reduce our energy intensity, and Passive is really the only pathway to getting to where we need to go,” says Rich Williams, founder and vice president of Alliance Green Builders.

Perfecting Passive with Casa Aguila

For other builders looking to pursue a Passive project, look no further than Alliance Green Builders’ recent home. “Casa Aguila” claims the honor of being the first Certified Passive House in San Diego. The project began when the builders were approached by a client simply looking to build an energy efficient home.

“We were just getting involved with the concept of Passive houses and thought this would be a great opportunity to do one,” says Jeff Adams.

So much of the technology currently within the project was not envisioned from the beginning, and Rich Williams is in awe of how much the home has evolved.

“These were the perfect clients,” he says. “They allowed us to be test pilots for the ideas that we had.”

These ideas include energy efficient



Casa Aguila's solar trackers. (Photo credit: KNB Associates, LLC.)

approaches such as 90,000 gallons of rainwater storage, dual access solar trackers from Germany, utilization of battery storage and a 45-foot wind turbine.

“If you’re going for complete grid disconnection, you really have to play a whole new ballgame when it comes to renewable energy,” says Williams. For example, the solar trackers are unique by not being slaves to an astronomical clock. Rather, they work off of light detection. Therefore, on a cloudy or rainy day, the solar trackers will redirect to the best possible light source in the sky.

“Also, one of the advantages of having wind along with the PV is during inclement weather. You may not have sun, but you usually get wind,” says Adams, noting how beneficial the wind turbine is for increasing renewable production during the day.

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Automation, Occupancy Sensors and Simplicity



Casa Aguila's Crestron System. (Photo credit: KNB Associates, LLC.)

In addition to building Passive, Alliance Green Builders has also partnered with Crestron to include an automated platform in the home. Eventually, the builders want to implement a truly smart occupancy sensor system in the home that could help reduce energy consumption even more by controlling things such as electrical loads,

HVAC usage and on-demand hot water.

“Think about a smart occupancy system that can actually determine whether somebody is coming into the bathroom just to check if they have food in their teeth or if they are going to require hot water. That’s where we want to go with the automation in this home,” says Williams.

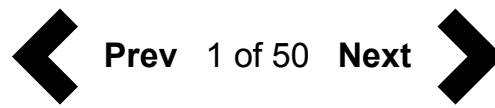
However, the future of homes still depends on how these automated technologies work together with elements of energy efficiency. Even Adams and Williams admit that, however cool they may be, even they haven’t figured out all the control elements of the home’s automation system.

“Sometimes, honestly, we feel like we created a Frankenstein,” says Williams.

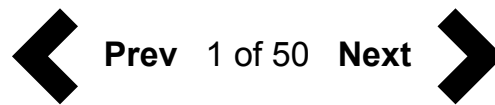
“And I think the challenge for the future is that builders need to ask, ‘How do you build an advanced home that’s simple at the same time?’”

Tour Casa Aguila and all of the innovative tech inside,
below.

(All photos courtesy of KNB Associates, LLC.)



Tour Casa Aguila – San Diego’s 1st Certified Passive Home



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