

Getting to know: NetSolar Construction

Going for zero

NetSolar aims to build LEED homes with SIPs

By **Beth Sitzler**
Las Cruces Bulletin

When cousins Javier Cabrera and Emmanuel Dominguez decided to begin their own construction company, they wanted to provide the area with a something different – structural insulated panels (SIPs).

Establishing NetSolar Construction in March 2011, the cousins used their knowledge of construction, engineering and architecture to utilize the energy-efficient building material in Las Cruces and El Paso.

“We saw a need for this and had talked about (starting our own company) a lot,” Cabrera said.

Receiving his bachelor’s degree in architecture from Instituto Tecnológico de Chihuahua in Chihuahua, Mexico, Cabrera came to Las Cruces eight years ago in search of new opportunities.

“My uncle mentioned that Las Cruces was growing a lot and had good opportunities,” he said. “I liked what I saw and got a few job offers.”

While Cabrera was working for various area builders, even designing showcase homes, Dominguez was working for a steel framing company in Mexico.

Dominguez, who received a bachelor’s degree in civil engineering from Brigham Young University, moved to El Paso, where he exported SIPs, which were manufactured in Las Cruces and used in Mexico.

While he was exporting SIPs, he and his cousin noticed that local builders mainly stuck to traditional, stick-framing construction.

“Coming from a different country and a different system of building, we saw no variety,” Cabrera said.

While builders in the area may not have previous experience with SIPs, it isn’t a new building material, Dominguez said.

The duo said SIPs were first developed by the U.S. Army in the 1940s as a way to quickly build base camps. While it was too expensive at the time to use SIPs in residential construction, the price of the building material has come down since then.

“It’s a preferred material for building energy-efficient homes in the U.S., especially on the East Coast, West Coast and where there is an extreme climate,” Cabrera said.

Cabrera said a SIP is has a solid core of insulation, making it not only stronger than most materials, but also energy efficient.

“A regular wall has studs that break every 24 inches,” he said. “You lose air and gain heat. It’s not tight.”

“The main property of a SIP is constant insulation, giving it a higher R-value.”

Qualifying as a green material, SIPs vary in thickness. A 4-inch wall will have an R-value of 16; 6 inches has a 24 R-value; 8 inches has a 32 R-value; 10 inches has a 40 R-value; and 12 inches has a 48 R-value, Cabrera and Dominguez said.

Dominguez said SIPs are also green because they are formaldehyde-free and the inner foam is 40 percent recyclable, with 98 percent of it containing air and the other 2 percent being petroleum.

“The walls are twice as strong as stick framing,” he said.

In addition to varying widths, SIPs also are available in a range of heights to accommodate any home design. Also, SIPs can be used for floors, Cabrera said, adding that they aren’t typically used for interior walls.



NetSolar Construction workers piece together the structural insulated panels of a home. The panels create a tight exterior envelope, making them green and energy efficient.

“SIPs are for the exterior envelope of a house,” he said. The style of a home also isn’t affected when building with SIPs, said Cabrera, adding that any architectural appearance – from pueblo to contemporary – can be achieved.

“It’s just like stick framing, you just need a little more knowledge when you design,” Cabrera said.

The duo said SIPs are different than other green building materials, such as insulated concrete forms, which are expensive, require specialized training to use and are difficult to modify later on.

“SIPs aren’t as expensive. Also, workers can still use the tools they’re used to using,” Cabrera said.

Another benefit of SIPs is their cost. They’re less expensive to use, Dominguez said, because less labor is required and less waste is created.

“With this material, it’s mostly prefabricated,” he said.

An entire home can be framed with SIPs in about five days, the duo said. This includes framing, insulation and sheeting.

“It can take four or five days to just frame with stick,” Dominguez said.

Because the panels are pre-cut for electrical chase and are a solid surface, wiring and applying sheet rock are also quick processes.

“It doesn’t have to be more expensive,” Cabrera said. “Building this way can cost the same as a regular house.”

The company has built a couple of houses in Las Cruces and El Paso, as well as several conducted remodels. The last residence the duo constructed received a HERs rating of 33.

“With a very tight budget, we (built a home with a 33) while some people struggle to get in the 80s,” Cabrera said. “With a little more money, we could have gone down to zero.”

Cabrera said they want all of the homes they construct to be LEED certified. He added that, in addition to cost savings, a LEED certified home will receive money back based on the level it meets. This is one of the many incentives for homeowners, he said.

“From a customer’s point of view, when you get into a house that costs \$200,000, you have a mortgage and utilities – that’s a lot of money,” Cabrera said. “When you can do it right, the house can cost the same and have no utilities.”

“A house can produce (as much energy as) it consumes,” Dominguez said.

Dominguez said NetSolar Construction is participating in the “Zero 6” program, which aims to create homes that have zero energy and water consumption, waste when building, emissions from indoor air pollution, carbon print and ignorance, meaning they are providing homeowners with information to make better choices.

Details

NetSolar Construction

Owners

- Emmanuel Dominguez
- Javier Cabrera

Phone

- 323-1113 (Dominguez)
- 323-1112 (Cabrera)

Website

www.netsolarllc.com

Email

- emmanuel@netsolarllc.com
- javier@netsolarllc.com

Organizations

- Las Cruces Green Chamber of Commerce
- Energy Star Partners
- Structural Insulated Panel Association



In addition to SIPs, NetSolar Construction includes other energy-efficient items in its homes, such as low-flow toilets and faucets, radiant heating, LED or CFL lights and solar panels and water heater.

“We provide these things a home needs to be green and energy efficient,” Cabrera said. “We pay close attention to these things in a house.”

Dominguez said NetSolar Construction also manufactures SIPs out of its warehouse at 6361 Weisner Road and sells them to other builders as well as exporting them to Mexico. He added that at the facility they can fabricate enough SIPs for an entire home in about three days.

NetSolar Construction soon will begin work on a 3,800-square-foot home in the La Marcha Estates in Mesilla. Dominguez said in the future, the company will have two model homes in the Metro Verde neighborhood, a green subdivision in the city.

“We’ll introduce our product there,” he said. “By 2020, every single house we build will be a net zero house with no extra costs for the customer. We want to grow a very responsible company.”

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