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# parking lot power

## ONE PASSIONATE ARCHITECT'S MISSION TO RECLAIM RENEWABLE ENERGY THROUGH CARPORTS

BY CYNTHIA LEWIS PORTRAIT BY JOHN DOLE DIGITAL RENDERINGS COURTESY OF ENVISION SOLAR

Often, land developers and environmentalists are thought to come from opposite sides of the spectrum, but for Bob Noble, founder and CEO of Envision Solar, the two go hand-in-hand.

Noble, one of the top green architects in California, has dedicated the last 25 years to building green through using non-toxic, recycled and recyclable materials, energy-efficient resources and most recently, solar technologies.

Last year he amicably resigned as CEO of Tucker Sadler Architects, a leading eco-friendly architectural firm, after a six-year tenure to put forth all efforts into Envision Solar. While still at Tucker Sadler, Noble spearheaded the beginning of Solar Grove™ carports, a green project that was launched at the headquarters of solar paneling manufacturer and partner, Kyocera Solar, Inc. Based in San Diego, Envision Solar is the only company worldwide made up of architects and contractors that specialize in solar shading structures.

Solar Grove carports transform a parking lot into an electrical generator, and consist of solar shade structures known as Solar Trees™. There is no metaphor more accurate to describe these structures. Where a real tree uses the process of photosynthesis to convert the sun's energy into life-supporting oxygen, Solar Trees use photovoltaic [solar] modules to generate clean, renewable energy. "When you put photovoltaic panels on top of a carport structure it becomes like a living thing," Noble says. "It's not an inanimate object. It generates electricity by being exposed to the sun. So it comes down into the utility grid and produces electricity."

One big advantage to using solar paneling is the correlation between the

midday peak of electricity use and solar energy production when the sun shines its brightest, Noble says. This is especially effective in the summer months when air conditioners run full blast and power plants are maxed out, causing excess pollution and power outages. Solar Grove carports are not only designed to help high-energy costs but are also aesthetically pleasing and built with architectural artistry. "We focus on beauty and elegance of the design," Noble says of the shaded structures. "We looked at proportions, use of materials, line and texture."

The carefully constructed design of the carports stay true to the tree metaphor: The columns are called trunks, the beams are branches, the foundations are taproots and the tops are canopies. The 25 Solar Grove "trees" built in 2005 at Kearny Mesa's Kyocera Corporation have produced more energy than expected with about 427,000-kilowatt hours the first year, creating more than 100 percent of their power through solar panels. Each Solar Tree provides shade for approximately 10 vehicles, and because the structure is built like a tree, there are no columns for cars to scrape against as they move in and out of the parking spots. In addition, they incorporate environmental design elements such as swales, which collect and purify rainwater before it enters the storm drain system.

Why parking lots? The city has an abundance of locations for parking structures, which generate high electricity production because they cover such a large, uninterrupted area — as opposed to houses or buildings that have obstructions that must be built around. Because Envision Solar is so new, Kyocera is the company's only running project — but a number of clients including public agencies, school systems, commercial shopping centers and casinos have requested Solar Grove carport proposals.

In addition to Solar Grove carports, Envision Solar has created non-commercial carports called LifePorts, a trademark of the company and a first of its kind. Homeowners will soon be able to purchase a build-it-yourself LifePort, which also serves as a frame for a garage, storage area or even habitual space.

Not until recently has the public been exposed to the extreme threats of global warming and the need for green consciousness on both a mass development and individual level, but to Noble it is nothing new. He studied environmental design at UC Berkeley and architecture at Harvard and Cambridge University in the '70s. In the 1980s, Noble built low-cost housing for Third World countries using environmental products, including some made from 99 percent wheat straw. In the early '90s, Noble founded Gridcore Systems International Co., which established a market for 100 percent recycled materials, and partnered with corporations such as IKEA. From straw to solar, Noble has always considered the importance of the environment when building [while other designers are just catching on].

"It's no longer seen as a fad or a trend," he says. "The rapidly changing climate is a real issue." Noble has a dream that Envision Solar will grow fast due to the explosive market of solar paneling, where demand exceeds supply. He has a vision to one day blanket parking lots and buildings with his Solar Grove carports, so that they may produce up to 30 percent of the city's electricity.

Noble says some of his friends think he's crazy for starting a completely new venture when others his age (54) are already thinking about retiring. "I feel like I am retired now because I'm doing exactly what I want to do," Noble says. "What else am I going to do, play golf all day?"

Let the sun shine in at [www.envisionsolar.com](http://www.envisionsolar.com)



GREEN ARCHITECT BOB NOBLE

