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Star Concrete begins mixing in green

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Star Concrete is trying to transform one of the world's most polluting industries into something a bit more eco-friendly.

The San Jose-based seller of ready-mix concrete has recently taken steps to find new sources for its electricity and raw materials -- and both are coming from renewable resources.

The easy part was the solar-panel project, said Jerry Blatt, owner of Star Concrete and parent company Sandman Inc.

The 406-kilowatt system is the second-largest installation in San Jose, after eBay's 650-kilowatt solar array installed in May. A typical residential system is about five kilowatts.

Los Gatos-based Akeena Solar Inc. is installing the \$3 million system, which should connect to the electric grid by the end of July. Once online, it should supply about 500,000 kilowatt hours of energy a year.

The 1,890 solar panels won't generate all the power needed for Star Concrete's recycling facility, but the array will cover the entire roof space on the 44,000-square-foot building at Star Concrete's location on South Seventh Street, Blatt said.

"Companies want to make some kind of investment in this type of renewable energy, especially heavy users in manufacturing," said Bill Scott, executive vice president of Akeena. "You're going to see this as more and more of a focus in the coming three to five years."

But what makes this project unique is what the alternative energy will power, Blatt said. The panels will replace diesel-powered gen-

erators that run a concrete recycling plant, which Blatt wants fully functional by year's end.

For two months, the plant has been taking in used concrete that otherwise would go to landfills. Demolition companies must pay to dispose of the debris. Star Concrete is not charging demolition companies to dispose of used concrete.

Using a customized machine that costs more than \$2 million, Star Concrete crushes and filters the material into rocks and sand that is mixed with cement to become concrete, Blatt said. That material would otherwise have to be mined from quarries.

Recycled concrete has several benefits, according to the Construction Materials Recycling Association. It reduces landfill waste, helps companies avoid disposal fees, yields as much as 15 percent more concrete than using new materials, and eliminates the cost to acquire sand and gravel. More than 140 million tons of concrete are recycled in the United States each year, the group says.

Cement production is one of the world's most-polluting industries, accounting for 3.4 percent of the world's energy consumption and 7 percent of carbon dioxide emissions, according to the Environmental Protection Agency. Each ton of cement creates nearly a ton of carbon dioxide emissions, averaging 2.5 billion tons of each in recent years. Most of the energy consumption occurs during the calcine process, in which limestone is heated and crushed into powder.

The concrete industry is ripe for innovation, said Brady Berg, a Palo Alto-based attorney in the energy and cleantech practice at Mintz, Levin, Cohn, Ferris, Glovsky and Popeo PC. There's a huge potential for companies that

can reduce concrete's energy consumption and disposal problems, he said.

"There are very few companies that are tackling the problems," he said. "It's an area that's somewhat in its infancy compared with solar."

Companies such as Los Gatos-based Calera Corp. are working on concrete that's less energy-intensive, but Berg said it will take time for the market to adopt any of the potential solutions.

"The building industry is notoriously slow to change and might not be receptive to disruptive technology," Berg said.

The Construction Materials Recycling Association calls that perception a "surmountable obstacle," but Blatt is trying to get the proof long before his product goes to market later this year.

The material will undergo testing from several third-party companies before it's used to make concrete. Blatt wants to start a new division of Sandman called Greencrete to sell ready-mix concrete composed of 90 percent recycled concrete, 5 percent recycled fly ash and slag, and 5 percent new concrete.

The recycling facility could produce two tons of material a day. Blatt anticipates great demand for the product in the green building movement because Greencrete would use recycled materials and renewable energy, two aspects that could earn points for accreditation with the U.S. Green Building Council's Leadership in Energy and Environmental Design, or LEED, Green Building Rating System.

"I'll be doing business the same as before, making concrete and selling it," Blatt said. "But I won't be buying rock and sand. Recycled concrete will be paying that bill."