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Energetically, Sanofi-aventis goes for gold

New research center already a 'silver' building, according to green standards

By **Dave Perry, The Explorer**

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The new Sanofi-aventis Research Center in Oro Valley has enough points to be certified at the "silver" level for Leadership in Environmental and Energy Design by the U.S. Green Building Council.

Sanofi-aventis wants to go for the gold.

"The company's very committed to sustainability," said John Cocco, senior engineering project manager for Sanofi-aventis. "It goes with our core philosophy:" namely, to be environmentally sensitive, and not negatively "impact the next generation."

Cocco points out that, of all buildings in the U.S. that are LEED certified, 2 percent are laboratories. Sanofi-aventis has two of those laboratories.

"A laboratory is a very difficult achievement," Cocco said, because of the demands posed by air handling and other challenges in an environment where scientific experimentation is taking place.

And, Cocco said, "LEED drives you to energy efficiency." That means a company has to "commit dollars." In the long term, such investment saves money on energy.

"Our design will save 21-1/2 percent energy over a similar building, a conventional laboratory building," Cocco said.

The Sanofi-aventis Research Center is designed to recover energy from air before it is exhausted, helping to cool or heat the building. It has highly efficient chillers and boilers, a solar hot water system that preheats hot water, and a building "envelope" with good sunlight capture, moisture seal and reflection values to minimize energy consumption.

Urinals are water-less. Faucets are motion-activated. A storage tank collects condensate from air handlers for re-use. There are trench drains at each end of both the chemistry and biology laboratories so that, should the sprinkler system be activated, water would be captured in a concrete vault for testing before it is discharged from the site. The landscape plantings are adapted to the desert.

Because Sanofi-aventis is an international company, "we were able to draw on our colleagues in France" and elsewhere for ideas on building design and efficiency, Cocco said.

As an example, the building is cooled through "chilled beam" technology, with cold water running through ceiling beams and settling into rooms, rather than cold air being blown through ducts. It is "a very energy-efficient way of cooling," Cocco said.

With conventional cooling, a building the size of the Sanofi-Aventis center would require movement of 33,000 cubic feet per minute of cooled air. With chilled beams, the need is 13,000 cubic feet per minute.

"I was a little gun-shy at first," Cocco said. "I'd never done one. In Europe they use it all the time. This works beautifully. It reduces energy consumption tremendously, and there are fewer drafts than with traditional air conditioning. I will do this in every building I do."

Chilled beams were a new experience as well for Brett Helm, the project executive for DPR Construction Inc., which built the facility.

"It's just like an old radiator," except that it's cooling rather than heating, Helm said. "You don't have fans pushing air. With the amount of energy you save, the return on investment is fairly quick."

Chilled beams are up high in the building, and cool air falls. "Architect KlingStubbins of Philadelphia is "excellent" with LEED certification, Cocco said. "They did a good job on designing this exterior. All that plays into LEED."

The environment was a consideration throughout the construction process. DPR Construction "agreed they would help keep track of waste," Cocco continued. "They found somebody who could recycle cut, used pieces of drywall." Nearly 800 tons of material was recycled from the construction site.



Randy Metcalf/The Explorer, The rarely seen eastern side of Sanofi-aventis reflects the Pusch Ridge portion of the Santa Catalina Mountains.

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