

DESIGN

Corporate HQ/Warehouse Combo Earns LEED Gold

DThoughtful changes and a dedicated client yield huge returns

by Heather Livingston
Contributing Editor

How do you . . . use fresh air to cool a San Diego warehouse and partner with the electricity utility to provide locally generated energy to others?

Summary: Hunter Industries in San Marcos, Calif., recently earned LEED® Gold for its corporate headquarters and

distribution facility in the San Diego suburb. Though LEED Gold buildings are increasingly common, this project is set apart by how the company and architect applied simple, yet thoughtful changes in process to deliver a big box building that represents the purpose of the company, uses less energy, and benefits the community.

Money, of course, always is a driver of design; but how a client directs the spending of that money means the difference between simply a good building and a good building that symbolizes a company's commitment to its people, community, and environment. Hunter Industries manufactures landscape irrigation products for use in residential and commercial applications and golf courses. To design their new sales, marketing, and distribution center, they contracted Smith Consulting Architects of Carmel Valley. Says Mark Langan, principal in charge, although the LEED concept was new to the organization, Hunter quickly got on board when they realized the benefits of designing for sustainability to staff, environment, and the company.

Steel-framed core with tilt-up concrete walls, the building encompasses 44,270 square feet of office space and 95,000 square feet for warehouse and distribution operations. The \$16.2 million facility has many of the expected green benchmarks: concrete with fly ash; recycled steel; low-flow faucets; dual-flush toilets; heat-reflective roof; and low/no-VOC carpets, paints, adhesives, and sealants. Where the building begins to distinguish itself is on the roof, where two photovoltaic arrays sit. One is privately owned and operated by Hunter; the other is owned and operated by San Diego Gas & Electric (SDG&E) and is part of the SDG&E Sustainable Communities Program.

Big benefits on the roof

Hunter's PV array is an 84-kW system that provides 100 percent of the electricity to support the building's lighting needs. The SDG&E system feeds 102 kW directly back into the grid. Combined, the two systems provide enough power to reduce the amount of CO₂ entering the atmosphere by more than 300,000 pounds per year. In addition to the projected annual savings of more than \$35,000 on electricity, Hunter Industries receives a small payment from SDG&E for the leased rooftop space. SDG&E in return is able to provide locally generated power to the community by mounting its PV system in a safe, convenient location.

Also located on the roof are 162 Daylight Technologies® daylight harvesting skylights. The skylights have a multiple lens construction that prevents heat gain in the building while diffusing natural daylight throughout. Because the warehouse is 45 feet tall, foot-candle studies were conducted to ensure that ample daylight reaches the floor level. In addition, Hunter Industries changed its cardboard packing boxes from brown to white to increase light reflectivity. According to Langan, the daylight harvesting skylights are so effective that the warehouse does not turn on any lights during the day, even when skies are overcast.

**A warehouse without a/c—in San Diego?**

A second strategy employed in the warehouse was the installation of louvers on the side of the building that draw in fresh air instead of running a chiller system. Cool air is brought in through louvers installed on the north, shady side of the building. "Cool air being naturally heavier than hot, it drops down into the space and flows through the aisles," says Gary Baker, LEED-AP, vice president of design. "Exhaust fans on the south side of the building pull the heat out, because heat will rise naturally and force itself out once the cool air is pushing it along."

Langan adds that although the loading area adjacent to the warehouse sometimes reaches temperatures in the mid-90s, last summer the warehouse itself never exceeded 80 degrees. "So far, the louver system seems to work with very little energy use," he concludes.

In addition, Smith Consulting Architects convinced Hunter Industries to use concrete paving instead of asphalt on more than half of the covered area to help lower the heat island effect around the warehouse. Not only does the cooler pavement help significantly to reduce the heat load within the building, it also is projected to last longer under the heavy use and should pay for itself within six years.

A nod to its heritage and function

Finally, Smith Consulting Architects also created a "green wall" of trumpet vines supported on a metal grid. The Greenscreen® wave wall blocks the sun's heat from much of the building exterior while reducing the perceived scale of the 45-foot high walls. According to Baker, the inspiration for the green wall came from an ivy-covered Hunter facility. While the company liked the look of the ivy, they realized that over time, the invasive vine disturbs mortar and eats away at the façade. Since the company's raison d'être is landscaping, it made sense to tie in greenery, and the Greenscreen grid allowed them the opportunity to do that without damaging the structure.

"From a global standpoint, although there are a lot of LEED sustainable projects going on right now, a lot of them are public and office works," Langan says. "This is a unique facility because it's got a large distribution component too . . . we haven't seen other people want to pursue LEED on distribution facilities, because they usually want a big box that's not very expensive. I think what we showed here is that you can do a big box, integrate simple aspects to it, get a good payback, and still make it very, very affordable and better functioning."

THIS WEEK AT A GLANCE

HOME
NEWS HEADLINES
PRACTICE
BUSINESS
DESIGN
RECENT RELATED
House Passes Stimulus Bill with Key Provisions of AIA's Rebuild and Renew Plan

MEMBERS SPEAK OUT

SHARE A COMMENT

Tell The Editor Tell A Friend

REFERENCE

The Hunter Industries headquarters building is the first facility in the city of San Marcos to achieve Gold LEED. The facility's highly energy-efficient design was also named "Sustainable Communities Champion" by SDG&E during its recent 2008 Energy Showcase Awards. Furthermore, Hunter Industries was chosen by the California Center for Sustainable Energy as an award winner of the "Special Achievement by a Medium to Large Business" in the 2007 San Diego Excellence in Energy (SANDEE) Awards.

THIS WEEK CONNECTS

LINKS

KNOW NET

KNOWLEDGE
RESOURCE

PICTURES

PODCAST

THIS WEEK CONNECTS IS A COLLECTION OF RESOURCES DIRECTLY RELATED TO THE ARTICLE YOU ARE READING. WE HOPE YOU FIND THIS A VALUABLE, USEFUL NEW TOOL FROM AIA/ARCHITECT.

