

# 'Green' Construction Becomes Second Nature to Building Industry

Environmental Consciousness Has Raised the Bar for Projects to Include Energy-Saving Features

BY MARLISE KAST

What do the Supreme Court and San Diego's construction industry have in common? They're both taking steps to address global environmental concerns.

Earlier this month, the Supreme Court ruled that environmental officials have the power to regulate greenhouse gas emissions that spur global warming. Long before this landmark decision, San Diego businesses had already been actively laying the foundation for high-performance construction.

"Green" building, otherwise known as environmentally friendly or sustainable construction, has traditionally been identified with energy efficiency, recycling and the decreased consumption of raw materials. San Diego's industry leaders are seeking to broaden this impression of "smart" building to include both the reduction of a negative impact and the creation of a positive influence on the environment.

According to Clayton Herndon, an associate of architectural firm Architects|Delawie Wilkes Rodrigues Barker, the immediate goal is for designers to raise the bar so that today's green building will become tomorrow's standard of practice.

"As architects, we hope to develop sites that actually produce more energy than they use, filtering air and water so efficiently that they are released back into the environment cleaner than when they arrived," Herndon said.

Although the popularity of environmentally friendly structures has been growing since the mid-1970s, interest in these types



The architect of Qualcomm's 12-story W tower in San Diego, Architects | Delawie Wilkes Rodrigues Barker, is seeking a Leadership in Energy and Environmental Design designation for the project from the U.S. Green Building Council. Photovoltaic panels on the building's parking structure generate power throughout the day to provide lighting to the parking facility at night.

of development projects has increased steadily in the past two years. Herndon credits several factors for this surge.

"It can be attributed to the increased publicity about global warming, oil dependency, documentaries, public education and a positive flourishing of pioneers in certification programs," he said.

## Energy-Saving Standards

One such program is a rating system known as LEED, Leadership in Energy and Environmental Design. Developed in the late '90s by the U.S. Green Building Council, the guidelines are used to define and certify environmentally sustainable designs for buildings. In order to obtain

LEED certification, a building project must first be registered online through the Green Building Council's Web site. Once an initial fee has been paid, an architectural team may submit plans for review. LEED certification occurs after construction is completed.

The LEED rating system grades each project in several categories: water efficiency, sustainable sites, energy and atmosphere, materials and resources, indoor environmental quality, and innovation and design process. Points earned in these categories qualify applicants for various levels of accreditation, including certified, silver, gold or platinum.

Hunter Industries Inc., an international irrigation manufacturer with U.S. headquarters in San Marcos, is typical of local businesses that have obtained the coveted LEED certification.

Hunter expects that, within five years, its 80-kilowatt solar system will pay for itself by providing all of the daytime lighting needs for its 100,000-square-foot warehouse. Its "green" building is a result of the collaboration between San Diego Gas & Electric Co. and Smith Consulting Architects.

Gary Baker, vice president of design services for the San Diego office of Smith Consulting Architects, describes some of the technology used in the project.

"Hunter Industries' building has two separate photovoltaic systems for harvesting the sun's energy," he said. "We incorporated high-efficiency heating and cooling systems and introduced recycled products, both in the structure and in the interior finishes. A key component was the innovative use of green wall planting on the sides of the building."

This green wall consists of vines that block the sun's heat from the exterior of the 45-foot walls. Additional green measures at Hunter Industries include a "cool roof" manufactured by Johns Manville. The cool roof system technology incorporates white-membrane panels designed to save energy through reflectivity.

## Leading By Example

Another San Diego trendsetter in high-performance construction is the \$300 million campus built for San Diego-based Biosite Inc. in Sorrento Mesa. Completed in July 2005, Biosite's 350,000-square-foot biotech research facility includes a "living roof" created with a garden-top setting and

Please turn to NATURE on Page 30

## Nature:

Continued from Page 22

extensive use of glass for natural light.

Eager to create an open atmosphere for its headquarters, Biosite executives turned to architects Delawie Wilkes Rodrigues Barker.

Herndon of Delawie Wilkes said some of the concepts that the architectural firm traditionally implements in such green construction include reclaimed water for landscaping, cooling towers and dual glazed window systems. It also incorporates recycled content in finished goods, high-efficiency heating, ventilation, and air-conditioning systems as well as energy-conscious electrical equipment.

Although conservation has long been associated with environmental protection, the intrinsic benefits of sustainable buildings are also gaining attention.

"Better air, light and acoustical quality along with well-designed, user-friendly spaces will result in less fatigue, higher learning retention, less stress and less absenteeism," Herndon said. "Recent statistics indicate that productivity improves from 2 percent to 5 percent with increased employee retention. This benefit is in addition to the energy and water cost savings from system upgrades."

Baker of Smith Consulting details some of the reasons for these benefits.

"Our designs substitute sustainable, locally harvested, recycled and reused products such as low 'E' glass, bamboo flooring and day lighting," Baker said. "We also discourage low-efficiency heating or cooling systems or any products that would give off volatile organic compounds."

In addition to these long-term health benefits, many business owners are initially attracted to green construction because



The Hunter Industries building in San Marcos designed by Smith Consulting Architects has two separate photovoltaic systems for harvesting the sun's energy and incorporates high-efficiency heating and cooling systems.

of the financial rewards. These benefits include utility incentives such as those offered by SDG&E through its Savings By Design program. For projects showing at least 15 percent energy reduction, design teams may be rewarded up to \$50,000 in addition to a possible \$150,000 for the project owners.

The ongoing energy savings for sustainable construction is even more profitable. The New York City-based pharmaceutical firm Pfizer Inc. has implemented this energy-saving technology in its nine-building La Jolla facility. Completed in 2004, four of the buildings, covering 375,000 square feet, are expected to save the company an estimated \$2.13 million annually at current energy prices. The 1 million-square-foot

campus houses Pfizer's local research lab and office space.

## Investment Starting To Pay Off

Given the obvious benefits of sustainable construction, one might wonder why it is not more widely used. Baker of Smith Consulting explains that while green building initially costs more, the price differential with traditional construction is becoming increasingly competitive.

"Companies will soon realize that the minimal extra cost is quickly paid back by lower energy costs and higher employee productivity," he added. "Additionally, buildings designed to the old standards will take longer to lease or sell than green construction. Soon, green building will become the norm."

Among those supporting this campaign for change are Swinerton Builders, a subsidiary of San Francisco-based Swinerton Inc. which has been a pioneer in the field since 1974. Among the company's 10 California-based projects currently under construction is the new corporate headquarters for San Diego's North Island Credit Union, targeted for LEED certification. Another local Swinerton project is Sunroad Centrum 12, a 1 million-square-foot high-rise standing 12 stories tall which has been pre-certified by LEED.

Indicative of Swinerton's dedication to high-performance construction is its sponsorship of the 2007 Swinerton Southern California Green Building Forum. The invitational event scheduled for May 17 will be held at the Hotel del Coronado.

Chris Day, vice president and business development manager for the San Diego office of Swinerton Builders, predicts that within five years, all new buildings will be green in one way or another.

"Sustainable construction is the future," Day said. "People need to get on board or they will be left behind. Ultimately, the movement will have as great an influence on construction as elevators and air conditioning have had. As the cost of sustainable construction is reduced, there will be no reason not to go green. It brings more value to our clients. In the long term, it is simply the right thing to do."

Echoing those sentiments is Gordon Marks, chairman and chief executive officer of Swinerton Builders at its San Francisco headquarters.

"With little effort, each of us can create and build projects that have minimal negative impact on the environment and can make a difference in sustainable growth," Marks said.

Marlise Kast is a freelance writer for the San Diego Business Journal.