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## Industrial Buildings Go Green

By Debra Hazel

Warehouses typically are thought of as large gray buildings, but that may soon be changing--to green. Slower than other sectors to get on the green bandwagon, industrial buildings are starting to catch up, as they see the benefits of sustainability.

"The LEED ratings system has been geared more toward office than industrial. These buildings are physically different--you have all these docks that open," says Thomas Bisacquino, president of the National Association of Industrial and Office Properties, Herndon, VA. "[But] you have two major motivators: it's the right thing to do, and the business case."

In other words, environmentally friendly big buildings can see big savings. "In terms of building design elements, industrial development is simpler compared to office, retail hospitality or multifamily," says Lance Ryan, vice president of marketing and leasing of Carson, CA-based Watson Land Co.--an industrial property developer which began an initiative of building sustainable industrial buildings about two years ago. Its first such building was just completed in Chino, CA. By mid-2009, the company will have developed about 2.5 million sf of sustainable industrial space.

In 2006, Denver-based developer ProLogis Corp. adopted a series of sustainability goals to be achieved by 2010, including utilization of 20% recycled content (by cost) in all new developments, installation of renewable energy resources with a capacity of over 25-million kilowatt hours annually for its global portfolio, reducing potable water usage for landscape irrigation by 50%, and diverting 75% of its construction debris from landfills and incinerators on all new projects. This year, the company announced a commitment to develop all new US warehouses to LEED standards, and all new UK facilities to BREEAM standards.

The idea of sustainable industrial facilities came "from our European colleagues," says Drew Torbin, sustainability manager of ProLogis. Recent events including surveys that indicated people were ready to change their behavior to help the environment and rapidly rising energy prices also pushed for more sustainable buildings.

But creating those buildings entails a reassessment of all building systems and materials. And that means that some of the techniques and materials used to make buildings more sustainable range from the fairly simple to the more technologically sophisticated. These include an increased use of natural light and renewable materials, to photovoltaics and plug-ins to accommodate hybrid trucks.

The main energy cost for industrial buildings is lighting, Torbin explains. Not surprisingly, a major change for both ProLogis and Watson is the increased use of windows and skylights, using the sun for illumination rather than expensive artificial light. Vented skylights can allow heat to escape and will improve air circulation without relying as much on air conditioners.

Smaller windows on the building sides can let in additional light in selected areas that need consistent light. It also is important to remember that not every part of a warehouse need be lit all of the time. Motion detectors can turn electrical lights on when sections devoted solely to storage are occupied. "There is a huge cost saving there, as well," Ryan says.

The pavement also provides a number of green opportunities, including the use of environmentally friendly concrete. "Concrete is a renewable resource. It's composed of sand or crushed rock," Ryan explains. "As a paving surface, it's far superior to asphalt, which also is a petroleum-based product."

Concrete eliminates the hot spots that often occur in asphalt-paved parking lots, which also helps in LEED certification, Ryan notes. In fact, concrete is being made even more environment-friendly, Bisacquino notes. Companies also are recycling concrete from older projects, and adding foam into the mix to triple the insulation quality. ProLogis also is recycling steel whenever possible.

Water conservation is also becoming a factor. Watson Land has designed its landscaping to include bioswales to collect and recycle water runoff, reducing maintenance costs and reducing the strain on the local water and sewage systems. Inside the building, restrooms have been configured to lower water usage, even to include waterless urinals.

Roof space is becoming an opportunity, through the use of solar cells. In March, ProLogis announced an initiative with Southern California Edison to lease rooftop space to install solar panels. Other possibilities exist, as well. "It's not unthinkable that we'll see these individual projects providing surplus energy and selling it back to the grid," Bisacquino says.

Other possibilities include helping its customers save. "In our studies, everyone is talking about the carbon footprint, but the largest contributor to the carbon footprint is the trucks," Bisacquino says. Drivers often keep the engine idling for hours for heat or air conditioning. Now, some industrial properties are looking at adding hookups that will allow the trucks to create a comfortable environment by using the building's HVAC system.

In addition to lowering operating costs, sustainability has personnel benefits that can contribute to the bottom line. Buildings with more natural light and increased air exchanges are more comfortable for workers, and productivity rises as a result, Ryan says.

The additional cost of going green can be more than offset by the goodwill and new business it attracts. "We certainly have to justify the cost. We have shareholders who expect a return," Torbin says. "But we won two BMW deals this year because of our investment in LEED. We're deepening our customer relationships."

And as energy prices continue to rise, the appeal of sustainable building continues to grow for industrial developers. "The cost of these technologies and methodologies is dropping," Bisacquino says. "Why wouldn't you do it?"