



SUSTAINABILITY: A NEW PRIORITY FOR INDUSTRIAL REAL ESTATE

By Jack Rizzo

>> There's little argument among warehouse builders that environmental sustainability is becoming one of the most pressing issues facing the commercial real estate industry.

Any sophisticated industrial developer knows that global warming is emerging as a top priority for government regulators, who exert significant control over the pace and scale of development projects around the world. We are entering an era of more stringent standards, one in which builders will be accountable for the environmental impacts of their projects in a truly holistic manner.



For instance, the United Kingdom is implementing new, pro-environment building regulations that stem from the government's signature of the Kyoto treaty on global climate change in 1997. Other member European Union countries will enact their

own versions of that legislation in the future. And in Asia and North America, regulatory emphasis on sustainable development is expected to increase dramatically in the coming years.

Customers are also emerging as a key force driving the sustainability movement in the commercial real estate industry. Executives concerned about corporate social responsibility — and about the public image of the companies they run — are requiring that their facilities incorporate environmental designs.

AN ARRAY OF OPTIONS

At first glance, the typical industrial warehouse might not look like a prime candidate for green building techniques. Modern distribution facilities are growing in size — often covering 250,000 square feet or more. They tend to be located near interstate highways, generate a lot of truck traffic and follow a fairly prosaic big box design.

The truth is, however, that warehouse developers and occupiers have an array of options available to them today that can mitigate the impact of their buildings on the environment. Here are just a few examples:

- **Construction materials:** Using recycled concrete, steel, asphalt and other materials in new warehouse construction delivers significant environmental benefits, as does providing construction waste to recycling companies. Developers can also endeavor to use materials that are produced or manufactured locally.
- **Daylighting:** Installing skylights and clerestory windows in distribution facilities allows companies to use natural light as a source of interior illumination. Daylighting harnesses the power of the sun, lowers electricity usage and carbon dioxide emissions, and improves indoor environmental quality for warehouse personnel.
- **Lighting systems:** Occupiers can reduce a facility's overall energy consumption by installing energy-efficient lighting systems.

Warehouses traditionally use metal halide lighting, but commercially available T5 and T8 fluorescent lights last longer and significantly reduce electricity usage, albeit for a higher front-end investment.

- **Water consumption:** Most of the water consumed at industrial parks is used to maintain outdoor landscaping. Developers and property managers can significantly reduce water usage with plants and landscaping materials that minimize water waste, and by utilizing “gray water” systems, where available.

- **High-reflectance roof membranes:** Traditionally, warehouses have been built with EPDM rubber roofing membranes, which are black and absorb heat and sunlight. But white thermoplastic polyolefin (TPO) roofing offers the same performance at essentially the same cost, with the added benefit of reducing a building's load on its cooling system.

- **Brownfield redevelopment:** Land parcels with soil contamination or other environmental problems can serve as excellent industrial distribution locations. Developing such sites requires specialized experience and expertise, as well as strong partnerships with government agencies that oversee clean up. But brownfield projects can also create real economic value as well as enduring environmental benefits.

THE NEXT LEVEL

Techniques and technologies like those listed above are both meaningful and practical; they afford real benefits to the environment without imposing a giant economic burden on warehouse developers. During the long term, however, they may not go far enough. As sustainable building gains momentum, regulators and customers can be expected to raise the bar on builders, pushing for higher environmental performance from their facilities.

To get to the next level, the industry will need to overcome one of the largest handicaps it faces in this area today: a dearth of hard data that quantifies the costs and benefits of

individual environmental building features.

For instance, is putting photovoltaic cells on the roof of a distribution center a meaningful and cost-effective way to reduce carbon emissions from the building during the long term? Or would it be better to have on-site shower facilities that enable people to bike to work conveniently?

Today, one would be hard-pressed to answer that question definitively. The industry needs to develop a standard, metrics-based approach that enables an apples-to-apples comparison of sustainable technologies in a scientific manner.

For instance, ProLogis has embarked on a new program that is hoped will make a meaningful contribution in this regard. The company will develop a 64-acre industrial park in the midlands region of the United Kingdom that will serve as a test bed for state-of-the-art environmental technologies. The land for the park is the site of a former coal mine that also served for years as an unlicensed tire dump. Following a government-sponsored clean up, construction will take place on more than 600,000 square feet of space designated for both industrial distribution and use by small and medium-sized businesses.

Plans for the site include a wide array of sustainable technologies and design features.

There will be improvements focused on the energy performance of the facilities, such as exterior building fabrics that decrease air leakage and loss of energy, and enhanced skylights that boost natural lighting and lower consumption of electrical power.

In addition, the project will include renewable energy systems, such as roof-mounted solar panels, heat-absorbent solar walls, and solar thermal hot water systems. Also to be explored is the feasibility of wind turbines on the site.

Finally, the development plan will be designed to create an optimal working environment for employees and to integrate seamlessly into the fabric of the local community. A comprehensive transit plan will be

developed that includes convenient links to mass transportation, cycle paths and pedestrian walkways. Shower facilities will be included to encourage cycling to work, as will a free electric shuttle to key nearby locations and an Internet-based car-pooling program. Landscaping onsite will be designed to offset the development's carbon dioxide emissions, and irrigation systems will rely on both gray water and recycled rainwater.

It will be rare to have so many of these concepts combined in one location in a project of this scale. For that reason, this project will be truly unique from a sustainability standpoint and will represent a new benchmark for the industry.

Most importantly, the developer will be using third-party engineering consultants to monitor and analyze the costs and benefits of the various features at the park, both during construction and during the long-term life of the project. The findings will be made public, so they can be used to enhance future decision-making about sustainable development by private builders, occupiers and those who craft public policy.

In the end, of course, no industrial development can be truly called sustainable unless it remains economically viable and continues to deliver a strong return to investors. That idea is sometimes lost in the debates and discussions that take place about sustainability today. But better information and a scientific approach should enable our industry to focus on those techniques and technologies that deliver the highest impact at the lowest cost, improving the world we live in without undermining business performance and the bottom line. ❏

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