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Brewery Blocks: Something special is on tap

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*T*he development of the Brewery Blocks on Portland's West Burnside Street, the location of the former Blitz Weinhard Brewery, is getting a lot of attention these days. The five-city-block historical landmark and gateway to the emerging Pearl District is hard to pass by without stopping and looking at the progress.

But, it's really what you can't see — at least at the moment — that has captured the interest of many in the building community and beyond.

That's because a large part of the project (Blocks 1, 2 and 4), under development by Gerding/Edlen Development Company, is designed to meet the highest environmental standards in the country. The Leadership in Energy and Environmental Design rating system is a U.S. Green Building Council program that evaluates environmental performance from a "whole building" perspective over the building's life cycle.

Gerding/Edlen is also on the road to receiving gold-level status from Portland General Electric's Earth Advantage Program. Buildings designed to the program's gold standards exceed Oregon's energy code, one of the strictest in the nation, by 30 percent. They must meet criteria in four categories: energy efficiency, quality indoor environment, environmental responsibility and resource efficiency.

"We have been pursuing Earth Advantage status in our projects for the last six years," said Gerding/Edlen Senior Project Manager Dennis Wilde. "LEED offers a set of even more stringent standards that help to define 'Green Buildings.' Part of our corporate philosophy is to make our buildings as environmentally responsible as possible. First, this is the right thing to be doing; second, this is just good business."

Good business means more cost-effective buildings to operate in the future as energy prices increase. Wilde sees this as critical if a building is to retain its value to the owner and tenants down the line.

"Our tenants are expressing considerable interest in the energy efficiency and the better occupant environment that we are creating in the Brewery Blocks," Wilde said. "It is not just the energy efficien-

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Energy Savers in the Brewery Blocks

High-efficiency district cooling plant

Rather than having individual cooling systems, the district (or central) chilled water system will serve all five blocks, according to PGE Earth Advantage Manager and Engineer John Karasaki. While not unique, the district system is unusual for the Northwest.

The district chilled water plant uses less energy than individual building chillers for a number of reasons. Larger chillers are inherently more efficient. Portland Energy Solutions, the owner of the plant, is spending extra on more efficient plant equipment, including variable speed drives on pumps and cooling tower fans. And industrial grade controls with sophisticated optimization programs will run the plant at its most efficient operating point. There are other savings, too. Individual buildings will not need as much mechanical room space or as many maintenance staff hours for chiller operation or repair.

Improved glazing

The use of high-performance, "low e"-coating glass reduces the amount of heat penetrating the building, but maintains a relatively high transparency.

Having natural light with reduced heat gain in summer or heat loss in winter is optimal. According to Karasaki, much improvement has been made in this area. Costs for high-quality glazing materials are decreasing, too.

Variable flow pumping system

Traditionally, cool water is pumped through coils, and fans blow air across the coils to generate cool air. The Brewery Block

buildings will have "smart" pumping that will respond to the demand for cooling and vary pumping speed depending on that demand. Karasaki says even a small reduction in the amount of water being pumped may result in significant electricity savings.

While the technology is not new, the system is more labor-intensive to design and install. However, the potential savings are tremendous and Gerding/Edlen expects a payback for the extra cost within three years.

Night flush cooling

An even faster payback, just four months, is anticipated with a night flush cooling control system.

The sophisticated system looks at the previous day's temperature and temperature trend and uses this information to turn the fan on and bring the cool night air indoors to lower the building temperature.

"It uses ventilation, rather than mechanical cooling, to pre-cool the building during the summer," said Karasaki.

Induction lighting

The parking garage is being constructed under two and a half blocks and will have room for 1,500 cars. Garage lights will be on 24 hours a day, seven days a week, 365 days a year.

The garage will use induction lights, which last 100,000 hours and provide an impressive 71 lumens per watt. (Lumens are a measure of the amount of light.) Standard metal halide lights are rated at only 10,000 hours and 51 lumens per watt.

"This means the induction lights need only 40 percent of the energy," said Karasaki. "Maintenance costs are also much less because they last 10 times longer. And, the

system as designed costs less to begin with."

This will be the first major garage installation of induction lighting on the West Coast.

Low temperature air distribution system

Air will be delivered to the rooms at 45° F instead of 55° F. To reduce drafts, fan-powered terminal units in each space will mix warmer space air with the lower temperature supply air. Less overall airflow will be needed to comfortably cool the space, resulting in less loss of energy, less fan noise and smaller duct sizes.

"Lower energy use and increased occupant comfort is a great combination," said Karasaki.

Solar panels

About 380 solar photovoltaic panels will be mounted on the façade of the new office/retail building in Block 4. The panels will produce some 12,000 kWh per year.

"We are implementing the photovoltaic panels as a demonstration that it is possible to integrate solar into the design of modern office buildings," Senior Project Manager Wilde said. "While they may be expensive today and have a very long-term payback, they are clearly one of the applications that will continue to make our buildings net energy exporters in the future."

Efficient office equipment

All office equipment will have a power strip with an occupancy sensor. If you leave your office for two minutes, it will turn off the task light, printer and other office machines. The office spaces also will be equipped with sensors for both lights and temperature.