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Building to offer breath of fresh air

By Tom Boyer
Seattle Times business reporter

Seattle's rage for environmentally sensitive buildings has prompted some gimmicky things, like shrubs growing on the roof of City Hall and library furniture held together without nails or screws.

For its new, 40,000-square-foot headquarters in the South Lake Union area, Weber + Thompson architecture envisions something more far-reaching, a plan the firm hopes could make its offices more pleasant and interesting year-round — even if it gets sticky at times in the summer.

The Seattle firm is planning the city's first significant new office building in decades designed for "passive cooling." Translation: windows that open, no air conditioning.

"It's a risk for us, a big risk," says Scott Thompson, one of the firm's principals. "If we get a couple of these built and people see it's a nice place to work, I think it will catch on."

An office building without air conditioning would be inconceivable in most American cities, but the cool summers and low humidity make it possible in the Northwest.

Many Seattleites now work in non-air-conditioned buildings built in the early 20th century, but since the 1950s, virtually every major new office building has been climate-controlled — sealed from the outside and centrally heated and cooled through a system of ductwork.



BETTY UDESEN / THE SEATTLE TIMES
Elzbieta Zielinska, left, and Scott Thompson look out the window of a building that will be torn down to build their "passive cooling" office.

The Weber + Thompson building, planned for Terry Avenue and Thomas Street, is high-tech and a throwback to the way buildings were built hundreds of years ago to promote ventilation.

"Like a chimney"

To ensure good airflow, the four-story building will be square, with a courtyard in the center, like a medieval Italian palazzo, and the floors will be about 35 feet wide, narrow by modern office-building standards.

On warm days, hot air will collect in the courtyard and rise, pulling air out of the building's courtyard windows and creating cross-breezes inside.

"The courtyard becomes sort of a stack to let the hot air go up, like a chimney," said architectural engineer Thomas Marseille of Keen Engineering, who has worked on the building.

Courtyard windows will have special adjustable blinds, similar to Venetian blinds, but hanging outside the windows. They'll provide shade, but unlike inside blinds, the heat they absorb will stay outside the building.

The exterior has been carefully designed to counter the summer sun. The roof will be coated with a light-colored compound that will reflect heat upward.

Windows on the east and west faces, which receive the most sunlight on summer mornings, will be fitted with special high-performance glass shades, which the architects nicknamed "sunglasses," to filter out heat and ultraviolet radiation outside.

Even the building frame was chosen with temperature control in mind. Instead of steel, it will be poured concrete, because the concrete's great mass takes a long time to heat up in the morning and early afternoon of a summer day, then radiates the heat back out at night.

The human factor

Even with all the high-tech architecture, keeping the building cool will require help from the people inside it.

"This isn't your typical office building — this is a building where you're going to have to participate in your own comfort," Marseille said.

Just like at home, people can cool the building in the morning by opening windows early — or leaving them open overnight. But on an August afternoon, when the outside air hits 85 degrees, people will be cooler if they close some windows.

Weber + Thompson estimates that the building will use significantly less energy — perhaps 30 percent less — than a comparable office building running electricity-hungry air compressors and chillers all

Cool features

Size: Four stories, 40,000 square feet

Location: South Lake Union neighborhood, Seattle

Cost: Estimated at \$8 million

Occupants: Room for 100 employees at Weber + Thompson architecture and 80 to 100 employees from other tenants

Energy savings: Environmentally friendly building will cost more than conventional construction, but annual energy bills could be 30 percent lower.

Source: Weber + Thompson

summer. Construction is slated to begin next year and be completed in 2007.

The lack of an air-conditioning system allows for another benefit in the winter — instead of dry forced-air heat, there will be hot-water radiators that can be individually controlled.

The building is designed to earn Leadership in Energy and Environmental Design (LEED) certification from the U.S. Green Building Council.

Like many architecture and construction firms, Weber + Thompson is developing expertise in LEED buildings, a fast-growing field because of a state law requiring new public buildings to use green-building technology.

The firm's staff has been heavily involved with planning its new workplace, and people overwhelmingly liked the idea of operable windows, said architect Jeff Reibman.

"The standard [mode of operation] for office buildings is to air-condition them down so that a guy can wear a suit in the summer," he said. "Pity the poor receptionist who's going to freeze, but that's the standard that we've been building them to."

Windows that open are definitely making a comeback, especially in the Northwest. Vulcan Real Estate's Alley24 project, a mixture of offices and apartments across from the REI headquarters, promises operable windows.

In Portland's fashionable Pearl District, a large office development called the Brewery Blocks features windows with sensors on them to signal when they're open, so the air-conditioning system can automatically cut back its airflow.

More outside noise

For Weber + Thompson employees, having windows open will mean more street noise, from planes to sirens to the South Lake Union streetcar, which is planned to go right past the building.

"It's a little bit of an adjustment in the beginning, but then you don't notice the noise," said Elzbieta Zielinska, an architect at the firm who is an expert in environmentally friendly buildings. "It's part of the urban ambience."

Reibman agreed that a little outside noise could be a good thing.

"I want to be in a space where I have some stimulation," he said. "All of us, not just in architecture, spend more time at our desks because communication happens so easily (through computers). We don't get away from our desks as much as we used to, so I think bringing the outside in is a reasonable response."

There will be days, Thompson says, when the heat could be too oppressive to get much work done. But the firm has estimated that should happen only 18 to 20 hours a year, on average, and that employees could take advantage of cooler air in the morning by starting earlier.

Every now and then — hopefully on a Friday afternoon, Thompson says — everybody will just have to take another cue from the Europeans, and cut out early.

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