

Reprinted from THE WALL STREET JOURNAL.

WEDNESDAY, JULY 9, 2003

(c) 2003, Dow Jones & Company, Inc. All Rights Reserved

Raised-Floor Ventilation Gains Footing in U.S. Office Buildings

BY ALEX FRANGOS
STAFF REPORTER OF THE WALL
STREET JOURNAL

Raise the floor.

That's what building designers are doing these days to give the constantly complaining, overheated and shivering office masses control over personal climates.

A collection of large, new office projects around the country are using so-called raised floors, which create a 12-inch to 18-inch high chamber beneath people's feet through which hot and cold air is pumped. Unlike ceiling-duct systems, raised-floor ventilation delivers conditioned air through adjustable vents in each workspace so workers can tweak their microclimate. What's more, it's cheaper to reconfigure and operate.

CHEAPER AND EFFICIENT

Raised-floor air systems have been used since the 1950s to house wiring for mainframes in computer rooms and deliver air to keep them cool. But the space seldom served as the lungs of the entire building, leaving that to ceiling ductwork. Europe was the first to make delivering air through the floor a common element of office design in the 1970s and '80s. The U.S. has been slow to follow suit.

Now, that's starting to change. "It's becoming part of the office landscape," says Fred Bauman, a University of California, Berkeley researcher who specializes in raised floors.

Among some projects greater than one million square feet that use or plan to use raised floors: Bank One's new offices in Chicago; Union Pacific Corp.'s headquarters in Omaha, Neb., which is under construction; and New York Times Co.'s new headquarters near Times Square, which is in the design stage, the first major New York project to use raised-floor air.

Tate Corp., a leading maker of raised floors based in Jessup, Md., says 40% of its customers install air through the floor, up from about 10% a few years ago.

The U.S. government's General Services Administration, which manages more than 300 million square feet of offices and courthouses, made raised-floor air a key part of its design guidelines starting in 2000. Among its new projects with raised-floor air: the new federal building in Oklahoma City that replaces the one destroyed in 1995.

But it's not just chilled workers and the public sector who see advantages. Developers are installing raised floor air as a way to attract tenants. MC Lioness Realty Group, a developer and office manager in the Kansas City area with 12 million square feet of office space, says its buildings with raised-floor air generate fewer complaints. The company says it receives 12 "hot and cold" calls a month at a 90,000-square-foot facility with ceiling air. A comparable building with raised-floor air puts out two calls a month.

Air temperature has long sat on the top of office workers' gripe lists. "It's too cold" and "It's too hot" were the No. 1 and 2 complaints in a recent survey of office managers by the International Facility Management Association, a Houston-based trade group. That's reversed from a previous survey in 1991, when hot beat out cold.

But giving workers control over their climate isn't the only consideration in using raised floors. They're less expensive to reconfigure when tenants alter workspaces. There's no ductwork to rip out, and connecting cabling to workstations is simpler than running wires through walls or ceilings.

The air system also is cheaper to operate. Because the air enters the office closer to the occupants, it doesn't need to be as cool and is delivered at around 65 degrees. Ceiling systems have to cool hot air at the top of the room before it gets to occupants below. Ceiling systems pump air at around 55 degrees. That requires more robust refrigeration and heating equipment as well as stronger fans.

Because raised floors are more energy-efficient, environmentally conscious designers have adopted raised

floor as their preferred air-delivery system.

Little Know-How

So if there's so much good about raised floors, why has it taken so long to catch on?

"There aren't many installations that have been around for years to show clients," says Jeff Barber, an architect with Gensler, a New York-based architectural firm that designed the interior of the Union Pacific project in Omaha.

Another problem is lack of know-how. But in a sign that things are changing, the American Society of Heating, Refrigerating and Air-Conditioning Engineers plans to publish design specifications on raised-floor air later this year.

Upfront cost is another issue. Most raised-floor air projects add \$1 to \$3 a square foot during construction compared with ceiling systems.

Taken as a part of a larger budget, however, supporters argue that the cost is less than that because raised-floor air requires no sheet-metal ductwork, and also allows for smaller air conditioners and fans.

"It's the greatest thing since sliced bread," says Tom Corso, MC Lioness's director of operations. Traditional overhead ductwork "costs us money and the tenants are unhappy."

Write to Alex Frangos at alex.frangos@wsj.com