



HVAC SYSTEM CUTS COSTS; ADDS COMFORT AND PIZZAZZ TO NEW HOOVER'S HEADQUARTERS.

Fabric duct helps transform a 50-year-old industrial bakery into high tech office space for business information provider, Hoover's Inc.

How do you convert a former 75,000-square-foot, 50-year-old industrial bakery building into the new high tech headquarters for Hoover's Inc., the Austin, Texas-based business information provider.

The retrofit was no easy task for architect firm, *Boka Powell, Dallas, Texas*. Luckily, Hoovers principals agreed to the currently vogue industrial style of interior design. That afforded architects, interior designers, and engineers the advantage of retaining many of the former ButterKrust Bread factory's authentic touches such as exposed steel girders, six-foot-square wall exhaust ventilator propeller fans, the steel ceiling, and other existing industrial features. The result provides Hoovers and the one-story steel and masonry building's owner, Riverside Resources, an Austin-based commercial real estate developer, with a state-of-the-art, high-tech office building.

case study

While the warehouse style design strategy of exposing the 20-foot high steel ceiling added to the space's aesthetics, it also presented a HVAC challenge for consulting engineer, Thomas Alexander, principal, Talex Inc. Engineers, Austin, and mechanical, electrical, plumbing contractor, Encompass Inc., Houston, Texas. Plus, cooling hundreds of workers stationed at open cubicles in two large 30,000-square-foot rooms required strong and even air flow, but without drafts. Alexander chose fabric duct air dispersion manufactured by DuctSox, Dubuque, Iowa, supplied by 29 gas-fired Voyager Series rooftop units from Trane Colorado, Tyler, Texas.



auditorium

and plumbing work. The fabric duct arrived on-site via ground freight and was easily organized for installation by Encompass's three-man duct crew. The result was a myriad of duct organized by Alexander's designated HVAC zones consisting of 30 trunk lines ranging from 14 to 26-inch-diameters and dozens of branches ranging from 8 to 16-inch-diameters. Using fabric duct saved the project over 200 man-hours of labor, according to Encompass' project manager, Matt Rothe. "It was our first contact with fabric duct and I think it could increase profit margins on some of our design/build projects," Rothe noted. "The first few duct runs were difficult because we were just learning the system, but after that, it was much quicker to install than metal duct because it's lighter and the hanging system is much easier."



high ceiling/open cubicles

Choosing fabric duct versus metal duct lowered the project's bottom line in other ways, too. Round air ducts would complement the industrial style, however double-walled steel duct was cost-prohibitive. Round single-walled steel duct would also cost more than fabric duct because it would necessitate external insulation to eliminate condensation accumulation. Besides raising the project costs, insulated duct would also detract from the desired interior design aesthetics.

The polyester-based fabric duct also assists in the architect and interior designer's attempts to soften the space acoustically. With a building shell consisting of hard surfaces, the fabric duct combined with fabric covered cubicles, ceiling insulation, carpeting and other sound absorbing materials reduced reverberation and noise.

An added benefit to Alexander's design is the fact that a fabric duct installation isn't as permanent as metal duct and can easily be rerouted by a contractor in less than a day in accordance to Hoovers' desire for future cubicle reconfigurations.

The HVAC design not only conformed to the industrial appearance, it also provided a high-tech indoor air quality (IAQ) solution with even, draft-less air distribution all while helping cut project costs. "We've had quite a few visitors that are impressed with the look and the functionality of our workspace," added Collier. ■



file room

"The airflow before was drafty and cold in certain areas, but now nobody even notices that the air conditioning is on, except for the fact they feel comfortable."

Adds Riverside Resources' project manager, Carson Cross: "The HVAC design in our retrofitted building is really providing superior IAQ with no dead spots or air stratification in any areas."

Using over one mile of varying diameters of DuctSox's round TuTex (High-Throw Model), the air conditioning is draft-free and evenly distributed because of thousands of one-inch-diameter orifices in a linear pattern at four and eight o'clock on the ducts and spaced apart anywhere from eight to 14-inches-on-center. DuctSox's in-house engineering department designed the orifices' uniform diameter and varying patterns to meet Alexander's specifications for proper static pressure, cfm and air flow throughout different locations in the office worker areas. "The high ceilings combined with a heavily occupied space created a problem of providing air flow that wouldn't be drafty or uneven as would probably be the situation with metal duct runs and registers placed every five or eight feet," said Alexander. Alexander's decision to use 29 rooftop units ranging from 3 to 17.5-tons helped space out the roof load according to structural engineering requirements, but it also presented an installation challenge to Encompass' Austin-based southwest division, which performed the mechanical, electrical