



Exeter, Calif.—Just minutes after arriving at fruit packer Venida Packing to bid HVAC ventilation retrofit work, mechanical contractor Jonathan Chapman immediately knew fabric ductwork would be the air distribution choice.

The newly built lunchroom mezzanine above the fruit packing floor required gentle and even airflow, plus easy clean-ability from the inherently dusty process of packaging kiwi and other

case study

fruit. Additionally, the application includes silk-screened logos on the ductwork to satisfy the Exeter, Calif.-based Venida's passion for displaying company logos.

"There were company logos already throughout the plant," recalled Chapman, president, Jack's Refrigeration, Reedley, Calif. "The practical side of the application... airflow, air distribution, aesthetics all pointed toward fabric duct, but the fact that company logos could be silk-screened on the duct surface helped convince Venida officials that fabric duct was a superior choice over metal duct." Prior to the retrofit, the mezzanine temperatures reached 115°F on hot days, which was unacceptable for visitors and lunching employees. Air conditioning was cost prohibitive because of the mezzanine's openness to the rest of the facility. However, evaporative cooling could lower the mezzanine temperature at least 25°F below the outside ambient temperature and operate less expensively than air conditioning. Additionally, any of the cooled air spilling out of the mezzanine would be a bonus for employees working below.

"We wanted an attractive, cool area where employees could have lunch and our domestic or international visitors could relax in a comfortable area," said Richard Donkin, manager of Venida, which is a custom packer of peaches, plums, nectarines, kiwifruit, pomegranates, persimmons and grapes. "The fabric duct looks very streamlined and high tech, which is good because it's very visible as guests look beyond it and out over the operation from the mezzanine."

"The fabric duct looks very streamlined and high tech"

An even airflow was a major consideration because a seven-foot-high headroom, support columns and ceiling structure required mounting ductwork outside the 4,600-square-foot mezzanine and blowing in cool air. With such a long throw of 30 feet, metal duct with registers every 10 feet would have created uncomfortable drafts on occupants. The initial thought of installing four evaporative coolers on the roof and letting air drop into the space was a viable but also a drafty proposition.



Instead, Chapman specified TuffTex premium fabric duct with a High-Throw airflow from DuctSox, Dubuque, Iowa. Marcelo Carino, salesman at manufacturer's representative, Air Tech Sales, Roseville, Calif. helped Chapman with the DuctSox design. The streamlined ductwork has linear diffusion in the form of DuctSox's high-throw orifices running the entire length of the mezzanine, which produces a more even airflow than registers mounted on metal duct every 10 feet.

Chapman's design also allowed the use of one large 22,500-cfm evaporative cooler versus splitting up the equipment requirement in four units, which saved Venida significant installation costs.

Existing exhaust fans luckily had variable frequency drives which afforded Chapman the opportunity to adjust the exhaust and produce a preferred positive pressure. "Evaporative cooler output static is rated for scenarios of simply dumping air into a space and no external static," explained Chapman. "Since we designed for a .5 w.g. static pressure because of the ductwork, the cooler is actually producing around 17,500 cfm's."

The fast-track project's schedule was squeezed between a two-week off-season period for the fruit packer. The

fabric duct and suspension system was installed in less than one day, according to Chapman.

Donkin plans to periodically disassemble the white ductwork with his in-house maintenance staff and launder it to maintain indoor air quality as well as aesthetics. "Metal duct is immovable, but all we need is a forklift/manlift cage to take the fabric duct down for cleaning," said Donkin.

What tops off the project's aesthetics is the several company logos that were silk-screened at the DuctSox factory. The logo's elaborate design and color was the first eight-color process DuctSox has used on a silk-screen project.

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