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CASE STUDY

Ohio Cold Storage Facility | Columbus, Ohio

Smoke Vents Ensure Safety for Rebuilt Cold Storage Business

A ferocious fire in August 2016 destroyed the Columbus, Ohio facility of Dick Cold Storage, which had served the region for nearly 100 years. More than 400 firefighters tackled the blaze at the 144,000-square-foot warehouse, and their task was complicated by the facilities' contents and lack of smoke vents.

"Buildings that do not lend themselves to ventilation, such as cold storage buildings, are especially dangerous to firefighters. If there is no known life-safety issue, firefighters will retreat to a defensive position and fight the fire from outside the building instead of going inside," said Steve Martin, Battalion Chief for the Columbus Fire Department. "Two of the biggest challenges we face in fighting any fire are heat and smoke. The heat of the fire radiates on everything surrounding it, causing the flames to spread and causing rapid degradation of structural elements."

In June 2018, the business unveiled a reconstructed facility with 50-foot ceilings for expanded vertical storage, six million cubic feet of storage space, 15,000 pallet positions and seven multi-temperature storage rooms. The new facility for Dick Cold Storage incorporates the latest in cold storage technology and the capacity to serve a 550-mile radius, covering a population of more than 138 million people.

The new building also has additional fire protection safeguards, such as horns and strobes, pull stations at doors, linear heat detection in freezers, and 18 automatic smoke vents manufactured by The BILCO Company.

"Additional fire protection was one of the elements that we wanted to have in the new building," Dick Cold Storage CEO Don Dick said. "We don't have sprinklers, but we have a lot of other measures for fire protection throughout the building."

Tippmann Innovation worked alongside Spohn Associates to use quad leaf design vents from BILCO. The vents include BILCO's patented Thermolatch® II positive hold/release mechanism to ensure reliable operation when a fire occurs. The latch automatically releases the vent covers upon the melting of a 165°F (74°C) fusible link and can be supplied for smoke detector or fire alarm activation. Gas spring operators are designed to open the covers against snow and wind loads and include integral dampers to assure that the covers open at a controlled rate of speed.

"Vents allow for the removal of heat and smoke and potentially slow the spread of fire," Martin said. "They will also



permit firefighters to see and enter the building, to possibly extinguish the fire early, preventing the entire building from becoming a loss."

Roofing components were selected carefully for the new Dick Cold Storage building. Roofing at cold storage facilities is especially critical, because improperly installed or inefficient materials could lead to excess moisture that can create bacterial growth. Other side effects could include structural damage from ice buildup on walls and slabs, higher utility costs, safety issues for workers and equipment that may require more maintenance or not reach its expected lifespan.

The most critical feature was constructing a vapor-tight and energy efficient roof system. Tippmann used a single-ply roofing system with 45-mil and 60-mil TPO, which serve as vapor barriers. Single-ply systems also minimize air leaks.

Dick Cold Storage made a huge financial investment in its new facility, and Tippmann Innovation paid close attention to the construction materials, especially the roofing. With a new building that can better withstand the potential of product and facility loss that can be caused by fire, the business heads into its second century ready to serve its expansive base of clients.

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