PROJECT PROFILE

Crosspoint 20/30

Sprinkler System Evaluation, Fire Test, and Design | Dallas, TX

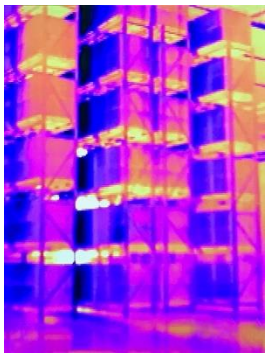
CLIENT

Barings Real Estate Advisors

BACKGROUND

The Crosspoint 20/30 Distribution Center is a one-story building constructed in approximately 1993 as a warehouse and distribution center. The building structure is primarily comprised of structural steel framing, a metal roof deck, concrete floor slabs, and with an interior masonry wall separating the building into two fire areas. The total building area is 510,400 square feet. The height of the building varies from approximately 31 ft.-10 in. at the eaves to 36 ft.-10 in. at the center bays. The warehouse was designed to allow rack storage of a wide array of commodity types without the need for in-rack sprinklers.

WJE was originally retained to provide a second opinion regarding an evaluation of the existing ESFR sprinkler systems performed by another engineering firm. Their evaluation indicated that the existing system was not code compliant due to numerous structural obstructions, and that mitigation required full system replacement at a cost of $1.5 million. Through creative problem solving that led to full-scale fire testing, WJE was able to save the client over $1 million in construction costs.



SOLUTION

Following a thorough site survey and sprinkler system evaluation, WJE agreed that the original ESFR sprinkler system had extensive obstructions, rendering the system noncompliant with applicable building codes and standards and incapable of performing as intended. In addition, WJE concluded that the proposed mitigation of removing and replacing the ESFR system was not a viable option since available ESFR sprinklers on the market were incapable of addressing the structural obstructions present at the warehouse.

In search of an innovative solution, WJE identified an upright ESFR sprinkler that had the characteristics required to overcome the existing structural obstructions present in the warehouse; however, the sprinkler was not approved for use in buildings with ceiling heights greater than 35 feet. WJE recognized that a full-scale fire test was required to demonstrate that the sprinkler was appropriate for the flexible storage anticipated for the warehouse. WJE's evaluation of past sprinkler tests suggested that a full-scale fire test would be successful.

WJE coordinated with the local Authority Having Jurisdiction to ensure the results of the fire test would be acceptable and arranged the test on behalf of the owner. The successful results of the fire test permitted the majority of the existing sprinkler piping to be reused as part of the remediation, resulting in cost savings to the client of over $1 million.

WJE | ENGINEERS ARCHITECTS MATERIALS SCIENTISTS