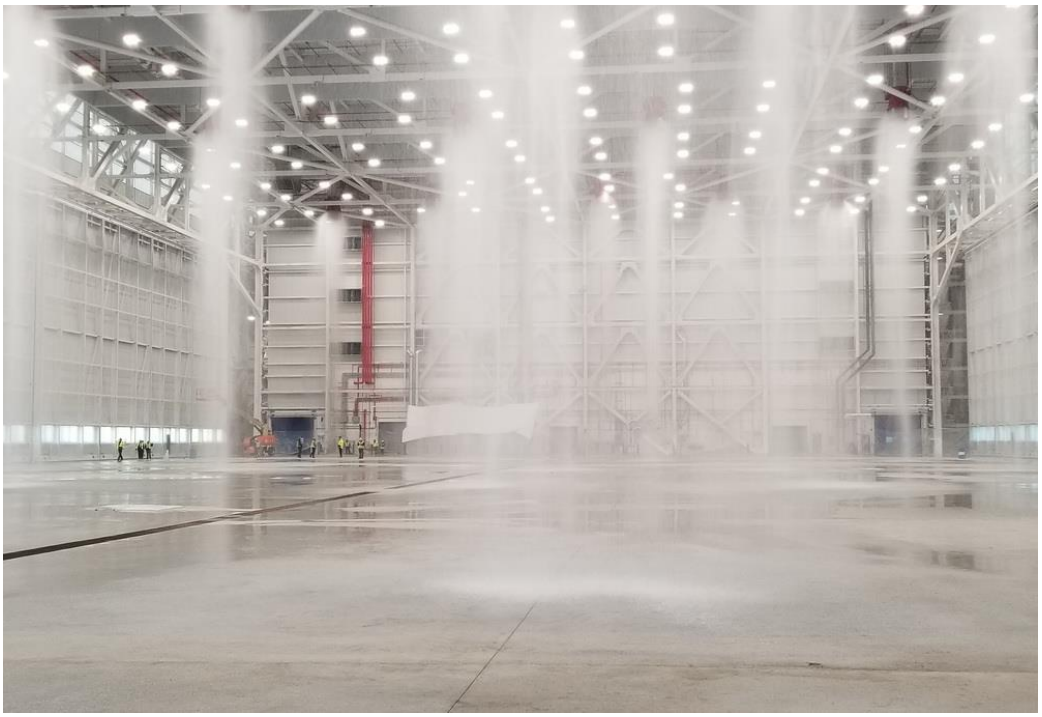
PROJECT PROFILE

American Airlines at O'Hare International Airport

Fire Suppression Systems Design and Construction Period Services | Chicago, IL



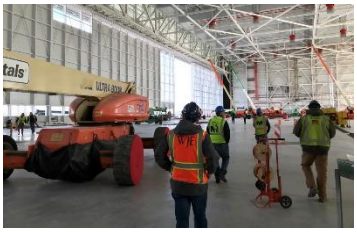
CLIENT

Ghafari Associates

BACKGROUND

American Airlines Hangar 1 was built in 1960 and totaled 241,500 square feet. In 2018, American Airlines completed Hangar 2, a 196,000-square-foot addition attached to Hangar 1.

To meet their growing aircraft maintenance needs, American Airlines renovated its existing Hangar 1 and expanded the facility with a new, attached Hangar 2 building. Ghafari Associates asked WJE to provide design services for the new hangar due to its extensive experience in fire protection design for aircraft hangars. The lead fire protection engineer on the project was a long-time member of the NFPA technical committee that writes the standard for the protection of aircraft hangars.



SOLUTION

American Airlines' intention was to fully modernize Hangar 1 and build a new Hangar 2 per current codes, standards, construction practices, and insurance standards. However, it had been many decades since a new large Group 1 aircraft hangar had been built in the City of Chicago, and the City's code was out of date.

Ghafari Associates teamed with WJE to address the fire protection design issues. A formal application and presentation were made to the City of Chicago Committee on Standards and Tests. WJE presented complete information on the options allowed under the IBC and NFPA 409, Standard on Aircraft Hangars, and the City accepted the application to allow an alternative to the City's code concerning allowable height, area, and fire protection system design.

WJE designed the high-expansion foam and pre-action sprinkler systems within the limits of the available water storage tank and fire pump house. This helped keep the costs of the project within American Airlines' budget. During construction, WJE reviewed fire protection system submittals, monitored fire protection system progress during periodic site observations, and observed final acceptance tests of the foam suppression systems.

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS