Flightstar Hangar

LOCATION
Jacksonville, FL

SIZE
113,000 sf

WALL SYSTEM
Nucor Reverse Classic™

ROOF SYSTEM
Nucor CFR™ Standing Seam

Jacksonville Aviation Authority's newest facility, Flightstar Hangar, is the largest single hangar ever built at Cecil Airport in Jacksonville, FL. Standing at 113,000 sf, it boasts an astounding 313'-0" clear span and is constructed with over three million pounds of steel. This new structure is used as a maintenance hangar by Flightstar Aviation, a leading provider of commercial aviation maintenance and repair services.

In need of expanding operations, Mark Construction Company, an Authorized Builder for Nucor Building Systems, was selected by the owner to construct a maintenance hangar that would allow both a Boeing 767 and 737 to sit side by side.

With its ability to accommodate such a wide clear span, it was determined that Nucor TrussFrame would provide an ideal solution for the structure. Designed to withstand heavy roof load conditions, Nucor TrussFrame is a hybrid rigid framing system comprised of typical built-up columns with open-web rafters, allowing for much larger clear spans than typically achieved with a solid web system. TrussFrame's unique web design allows mechanical systems, lighting, and wiring to be incorporated between the trusses, providing better light transfer between the supporting frame lines and helping to reduce energy costs.

Flightstar Hangar is comprised of two main areas: a low-bay which is 69'-0" in height and houses the planes, and an 80'-0" tall high-bay that houses the Megadoor and support framing. It features a Nucor CFR™ standing seam roof system, and is surrounded with Nucor Reverse Classic™ wall panels. The gutter and downspouts along the front sidewall are hidden by the open fascia system that is nearly 15'0" in height. It also features Nucor Wall Lites which allow for natural lighting to be dispersed throughout the building's interior as well as energy conservation.

One of the most significant challenges in constructing this project was the tremendous amount of bracing necessary to accommodate the 99,000 pound hangar door with the wind load conditions required for a building of this height. Made of a heavy gauge synthetic material, the Megadoor folds as it is drawn up into the building and is hidden visually behind the fascia when fully open. With the rafters being 12' deep, NBS designed special X-bracing at the top and bottom of the rafters to ensure sufficient support. In a maintenance environment, a Megadoor provides the best solution because it is contained within the building frame, creating a tighter seal and restricting airflow when the building is closed.

"This was a highly successful project. Deliveries were always on time, within budget, and Nucor Building Systems stepped up to every challenge – keeping this project in forward motion right up to completion."

- Victor Gilpin, Project Manager
Balfour Beatty Construction.