



Fast-Track to Excellence

Over the past 100 years, The Austin Company has accomplished remarkable feats in the design, engineering and construction of aviation and aerospace manufacturing facilities. Since the early 1900's, aircraft and aerospace manufacturers have relied on Austin's architects, engineers and constructors to successfully complete tremendously challenging assignments.

Project after project, Austin's professionals have put **The Austin Method®** to work and the results can be seen in aircraft and aerospace production and operations facilities worldwide.

In 2013, Northrop Grumman Aerospace Systems announced the designation of five Centers of Excellence

to improve their strategic alignments with customers' needs for innovative and affordable products. Northrop Grumman selected Austin to put into place three new facilities at its two Centers of Excellence in Central Florida.

Melbourne's "Building 228"

The first of these facilities — located on Northrop Grumman's Manned Aircraft Design Center of Excellence campus in Melbourne, Florida, was needed to support the company's relocation of an entire program team and hundreds of employees from its Bethpage, New York, facility to the Melbourne campus.

"In Spring of 2013, Austin was asked to look at several existing buildings at

the Melbourne campus to determine if modifications could be made to accommodate the program relocation," explains Ken Stone, a Vice President with Austin and Project Executive for Austin's services to Northrop Grumman nationwide. Austin's team quickly determined that existing buildings couldn't be effectively modified and that constructing a new 210,000-square-foot facility was the best solution.

Northrop Grumman needed the building (to be named "Building 228") to be ready for occupancy in just 58 weeks.

"We had just over one year to plan, design and engineer, construct, and

get all of the furniture and lab support systems in place," Stone says. "We went from napkin sketch to move-in within a year." The typical timeframe to plan, design, engineer and construct a building of the size and complexity Building 228 is three years.

Building 228 is home to the program management and engineering teams, as well as advanced aviation labs, for the design and support of the U.S. Navy's E-2D Advanced Hawkeye early warning aircraft.

Stone continues, "The schedule was extremely tight; we had to design and engineer everything simultaneously, and

The E-2D Advanced Hawkeye is the U.S. Navy's early warning radar aircraft that's launched from aircraft carriers. The plane is manufactured by Northrop Grumman and uses electronically-scanned radar and highly advanced technology to detect threats from enemy ships, aircraft and missiles.





More than 1,200 tons of steel were used in the construction of Northrop Grumman's Building 228.

most importantly, in the order needed to support a rapid construction start and highly compressed project schedule. The first thing we needed to do was to order structural steel." More than 1,200 tons of steel were used in the construction of Building 228.

In order to complete the project in just over 12 months, construction needed to take the lead and set the overall schedule. The standard practice is for construction to follow the completion of design and engineering.

Stone explains that for Building 228, a Construction Control Schedule was utilized that established the timeline for completion of design and engineering packages to support trade subcontractor

bidding and ultimately construction. The approach required flexibility to develop design and engineering drawings out of traditional sequence. Design and engineering began mid-June 2013. Daily and weekly meetings were held by the full team to review the schedule and ensure the project was moving forward per plan.

Orders for structural steel and pre-cast concrete panels were placed and in August 2013, construction started, just 12 weeks after the start of planning and design.

"This project required a lot of critical thinking and development of creative solutions — and it wasn't just the tight timeframe that was a challenge," Stone adds, explaining that the Atlantic Coast

climate and Northrop Grumman's LEED® goals introduced additional requirements.

"We're putting up Building 228 along the Florida Space Coast," Stone says. "We needed to factor in hurricanes, high winds and heavy rain not only in the design, but also into the construction activities."

While the facility had to be built to withstand periodic harsh coastal weather — including winds of up to 150 mph — Stone adds that the construction crews were also at times hampered by wind, lightning and rain. "We broke ground during the rainy season and on days when there was lightning, we had to set the cranes down," he says. Nonetheless, schedule was maintained.

The Austin Company and Northrop Grumman received the 2014 Merit Award from the Design-Build Institute of America (DBIA), as well as a 2014 Engineering News Record Southeast Region Best Projects Merit Award for the Building 228 project. These awards recognize the design and construction of the Manned Aircraft Design Center of Excellence facility met and exceeded owner expectations.

Building 228 is designed and built to withstand harsh weather along Florida's Atlantic Coast.



From the beginning of design for Building 228, Northrop Grumman set a goal of having the facility receive LEED® certification. Austin worked with Northrop Grumman to incorporate environmental and sustainability practices in the building's design and construction. The project received LEED® Silver Certification in September 2015.

The project incorporated numerous LEED® features including:

- alternative transportation — preferred parking for low-emitting and fuel-efficient vehicles
- water efficient landscaping
- water use reduction
- optimized energy performance

- green power
- regionally sourced materials
- recycled materials
- construction waste management

"At Northrop Grumman, we're committed to protect the environment and natural resources in the communities where we work and live," says Bill Trillo, Director of Facilities for Northrop Grumman. He adds that Building 228 provides a safe and healthy workplace for employees and also was constructed in a way that minimized adverse impacts on the environment.

Austin and Northrop Grumman have also submitted Building 100 for LEED® Gold Certification.

Stone says, "This was one of the fastest projects in Austin's history." Nearly 1,500 construction tradesmen worked six days a week, in multiple shifts each day through the 10-month construction schedule.

Despite all the odds and impacting weather, the facility was completed ahead of schedule and ready to meet Northrop Grumman's business requirements.

A sister building to Building 228, named Building 229, began construction immediately upon completion of Building 228 and was constructed in an equally impressive 10 months.

St. Augustine's "Building 100"

The project team's incredible achievement of planning, designing, engineering and constructing Building 228 in a little over 12 months not only won industry awards, it ran parallel to another fast-paced project for Northrop Grumman 150 miles to the north at the company's Aircraft Integration Center of Excellence in St. Augustine, Florida.

In spring of 2013, Austin also began planning for a new production facility for the E-2D Hawkeye aircraft.

"At the time, Northrop Grumman



Austin designed, engineered and built Northrop Grumman's "Building 100" in just over 12 months.

Northrop Grumman's Center of Excellence in St. Augustine, Florida.



had a need to manufacture more E-2D Hawkeyes than they could produce in vintage facilities that were undersized and not properly equipped to meet the requirement,” Stone explains.

“Just like Building 228 in Melbourne, Northrop Grumman wanted to get this new facility in St. Augustine online quickly,” Stone adds. “They needed us to demolish the existing final assembly building, then put up a new building in its place that would encompass all aspects of the aircraft’s manufacture — all on a very tight site.”

The project was rolled out in two phases, with the first phase focused on getting the majority of the new facility (named “Building 100”) constructed in the first 15 months. Northrop Grumman then moved operations into the new 310,000-square-foot production building.

The second phase, consisting of support shops, was implemented following completion of the first phase and demolition of additional existing buildings.

Building 100 includes a 220,000 square-foot high bay with 220-foot clear span center bay and two 85-foot span side bays; a 60,000 square-foot support shop; approximately 60,000 square-feet of office and support space; a 13,000 square-foot auditorium and cafeteria; and over 14,000 square-feet of mechanical and electrical support space; bringing the total to 368,000 square feet.

Delivering results...for decades

For more than 70 years, The Austin Company has proudly built its relationship with Northrop Grumman. Project by project, Austin has delivered on its promises to the aerospace company.

“Northrop Grumman has an expectation that we’re responsive and knowledgeable,” says Ken Stone, Vice President with The Austin Company. “We’re carrying experience from one project to the next and they expect us to come up to speed very quickly.”

And over the past seven decades, Austin’s experts have delivered. “They know us and our work. There’s a trust and confidence in place and they know we’ll jump to meet whatever challenges are placed before us,” Stone adds.

“We had relationships with each of Northrop Grumman’s heritage companies,” he explains. “The relationship started long before Northrop Grumman became Northrop Grumman.”

In the early 1960s, Austin served Northrop Aviation to design and build facilities in Southern California. Starting in the 1940s, The Austin Company was

designing and building facilities for Grumman Aerospace Corporation in Bethpage, New York. Beginning in the mid-1980s Austin began serving West Coast-based TRW Space and Electronics Corp.

Through a series of mergers of those three aviation and aerospace companies, Northrop Grumman was formed in 1994. Stone says that while the merger has made it easier to engage with what is today a single entity, Austin doesn’t take the relationship for granted. “Northrop Grumman is a prime government contractor. This means that Austin earns its business based on not only performance, but competitiveness as well,” he says. “We have to win our contracts one by one.”

There are many elements to the successful partnership, but Stone says that Austin’s ability to deliver on its promises and the company’s emphasis on communications are key.

“We’ve completed a number of projects for Northrop Grumman that are milestone achievements — not always by the size of the project, but also the capability that project brings to

their organization,” he explains. “Every project has its challenges and we deliver on those challenges. Communication is so important; we communicate every day — not just a set weekly call. Through the years, we’ve developed a rapport and we’re able to work well together.”

“Our job is to come up with options and solutions as fast as we can,” Stone says. “We’re here to deliver results, not excuses. Our job is to get it done — not to tell them it’s impossible.”

After Building 228 was completed, Bill Trillo, Director of Facilities for Northrop Grumman, praised the efforts of Austin’s team. “Finishing the facility in such a short time period was a Herculean task,” he wrote in a note to The Austin Company.

“The fast track, design-build project, resulting from 42 weeks of construction activity from ground breaking, August 21, 2013, to beneficial occupancy, June 12, 2014, is a testimony to the dedicated hard work of The Austin Company, A/E and Construction Management staff, and their many trade contractors,” Trillo says.

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