



AECOM has been providing consulting services to airports for more than 60 years.

With more than 300 specialists in our Aviation business line, AECOM's experience spans decades and includes airside and landside projects for airports of all sizes. We have a full understanding of airport design standards and environmental requirements and we work closely with federal, state and local regulators to deliver aviation projects to meet our clients' needs.

Our aviation services include airport and environmental planning, architecture, interior design, engineering, program and construction management, and specialty systems design and integration. From general aviation airports to executive airports to large international hubs - whether it's a single project or a large development program, AECOM can plan, design and deliver airport facilities anywhere in the U.S. or around world.

We bring our people and this wealth of experience to each and every assignment. **Anywhere.**



Trusted Experience.

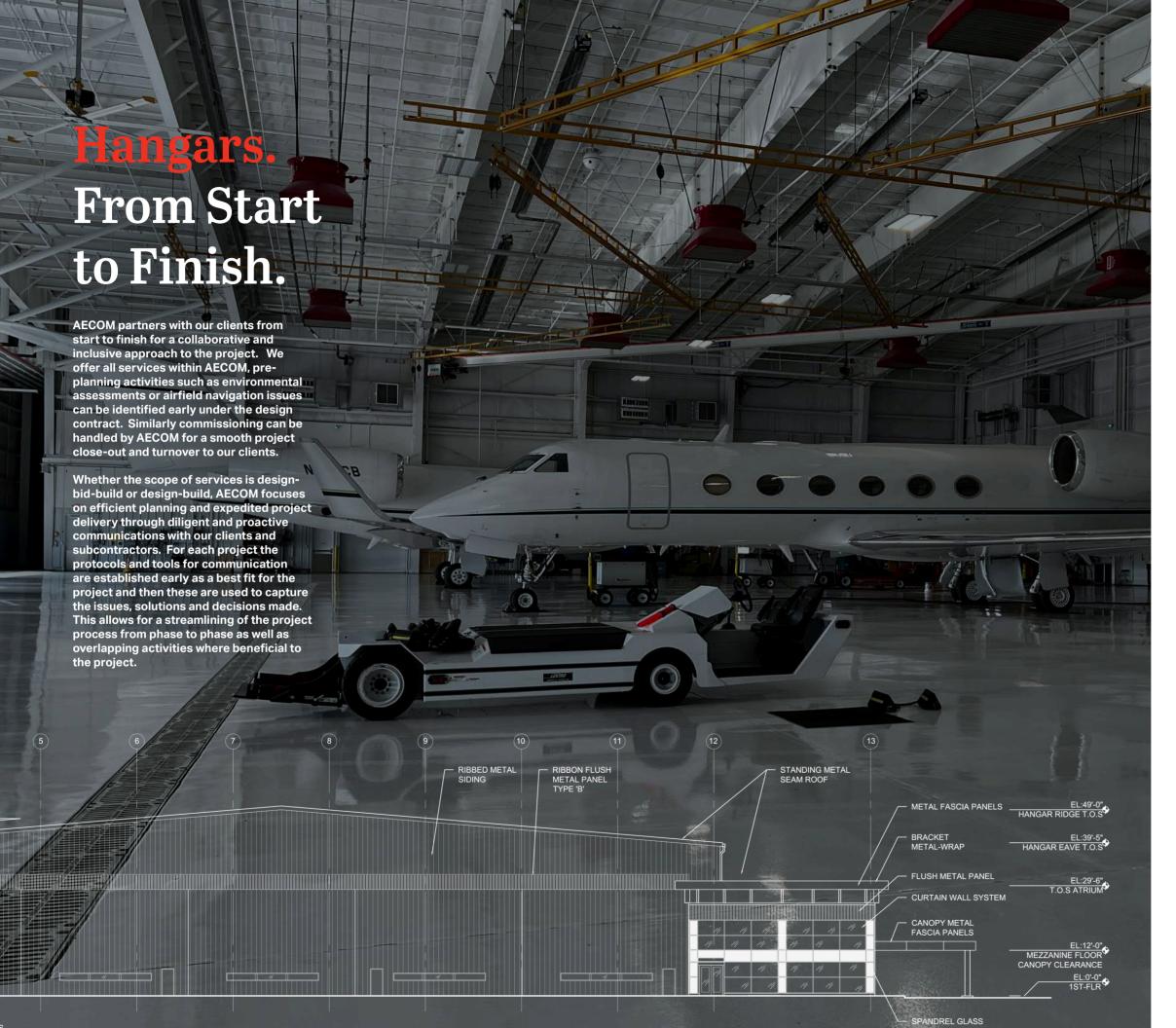
AECOM has been providing professional design and technical services to business aviation for decades We know how to plan, design and execute cargo facilities and FBO's.

We've planned, designed and built cargo facilities, corporate hangars and flight departments for Fortune 500 companies including several well-known brands. AECOM has the right stuff.

AECOM understands the variety needs for both the public and private side of business aviation facilities, whether it be the customer experience or the efficiency of the aircraft operations. We have developed overall large scale general aviation master plans at both large and small airports as well as have extensive experience with the particulars of aircraft maintenance and the supporting functions.

In addition, we have worked on aviation facilities with international operations. For aircraft maintenance facilities, we are sensitive to the trends in hangar design, MRO work, the aircraft maintenance environment and repair technologies.

We know how to work with you to make it real.



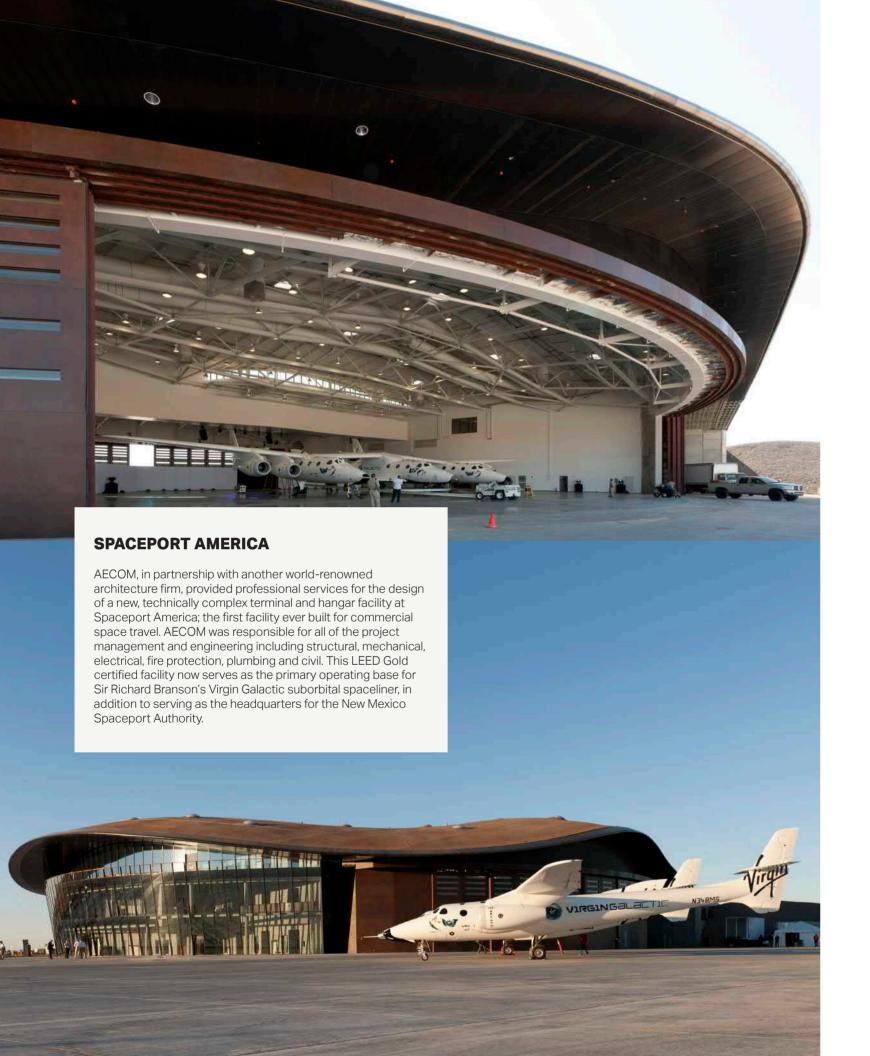
CHUBB

After preparing the initial site selection and feasibility study, Chubb selected AECOM to serve as the design-build contractor. In partnership with Tishman Construction (an AECOM company) and with Tishman acting as the General Contractor, AECOM integrated planning, design and construction into a single-point of responsibility.

Building plans include a 40,000 SF hangar with 21,000 SF of lean-to space for workshops, offices, and ground service equipment. Ancillary items include an access taxilane, aircraft parking apron, fuel storage, vehicle access and employee parking, utilities, stormwater management, perimeter fencing, and site lighting.







NETJETS CORPORATE HANGAR & WORLD OPERATIONS CENTER

AECOM provided professional planning, architectural engineering and interior design services for the Jerrold Friedman Operations Center, world headquarters for NetJets, the largest fractional jet ownership program in the world. The project consists of a 70,000 SF showcase office and operations center, and an 80,000 SF aircraft hangar with two (2) 28 ft x 100 ft individually motor-operated doors set up to expand to 160,000 SF. A 300,000 gallon private water storage tank serves the AFFF (low expansion foam) fire protection system. Maintenance and support space of 32,000 SF are designated for expansion. The facility is served by more than 500 parking spaces with extensive landscaping and secure fencing of the parking facility. A 20,000 sq yd aircraft parking apron is designed to accommodate B737-700 series aircraft. Interior design services included the preparation of freestanding furniture, furniture systems, furnishings and equipment specifications, including planting and containers.









NATIONWIDE INSURANCE HANGAR FACILITY

Professional architectural and engineering design services were provided to Nationwide by AECOM for their hangar and office facility located at Port Columbus International Airport. The operations facility for the corporate jet fleet of included a 35,000 SF hangar area designed for a future 10,000 SF expansion; 14,000 SF of maintenance and support space; a 5,900 SF automobile garage; and 10,000 SF of Class A office area with a double-height lobby overlooking the airfield.







UNITED AIRLINES HANGAR

Based on the O'Hare Redevelopment Program, United Airlines was required to develop several new airline facilities and aircraft ramp areas in new locations connected to their current maintenance operations. The new widebody hangar for a design aircraft of a B777-300ER was the last of the facilities to be built so had to meet a limited UAL funding budget amount and timeline.

United Airlines used a competitive bid design-build process for procurement of the new hangar design and construction. AECOM was awarded the contract based on their qualifications and an initial GMP estimate. Upon selection, AECOM was requested to reduce the construction budget by approximately 20% to meet the available funding. AECOM investigated a wide range of value engineering items in cooperation with United Airlines including design program scope, steel construction type, hangar door type, hangar shell profile, subcontractor design engineering and other general scope reductions to meet the budget. A balancing of the budget with stakeholder/operator input was also managed.



SkylVest

PRATT & WHITNEY HANGAR

AECOM provided programming and conceptual design for a flight test hangar for Pratt & Whitney Canada as a maintenance base for testing new jet engines in Montreal. The hangar base consisted of two side-by-side B747 hangars with associated shops and offices. The project included customized mezzanines, mobile work platforms, and cranage. The project represents a consolidation of two separate facilities and consequently the programming required a synthesis of differing operations and a stakeholder workshop approach to pull the program elements together.

SKYWEST AIRLINES MAINTENANCE HANGAR

AECOM, as a subconsultant, designed a new aircraft maintenance facility at the Colorado Springs Airport. The scope of services included assistance with architectural design and full engineering services for site civil, structural, mechanical, fire protection and electrical design, including geotechnical investigations. To meet the client's aggressive schedule, we assembled a proven team with extensive hangar design experience.



TN ANG 118TH AIRLIFT WING C-17/C-130 HANGAR

AECOM provided engineering and design services for the two-stage development of a 53,000 SF hangar at the 118th Wing in Nashville. The new facility houses one C-17 aircraft and two C-130 aircraft in its 320 ft, clear-span hangar bay, and provides shop and support space as well. The hangar's 300 ft by 70 ft high entry door provides for a unique solution to containing the high expansion foam fire suppression system and provide an energy-efficient opening closure. The project also involved the demolition of eight buildings, including two aircraft maintenance hangars.

In the first phase, the hangar was built with minimum shop space. In phase two, 60,000 SF of maintenance shops were added to the facility, surrounding the hangar bay on three sides.

Energy conservation and 'green' or sustainable architecture were pivotal issues in the planning and design of this project. Its fast-track approach allowed just two months for the

field investigation and development of a concept design, and cost estimate to achieve a congressional schedule mandate.

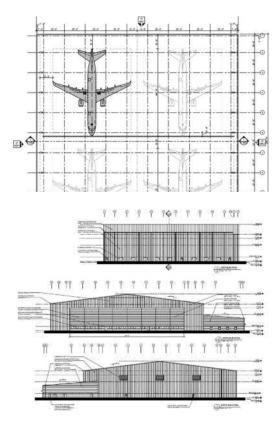
The \$23.8M project involved extensive hazardous materials remediation and engineering design for site utilities, grading, and storm water management. On all hazardous materials and airport issues, AECOM's design team coordinated with the State of Tennessee's Airport Authority and the Federal Aviation Administration.

The design included extensive physical security systems such as intrusion detection sensors (motion detectors with video surveillance), standoff distances with protective barriers, security fencing, blast-resistant exterior walls and windows, and exterior security lighting all designed to comply with recently improved Department of Defense standards for Force Protection.



REGIONAL JET NASHVILLE HANGAR

AECOM provided programming, hangar design and construction administration for two regional jet hangars of 50,000 SF hangars with 35,000 SF of support space focused on special systems and overall hangar operations optimization. Design and planning services included aircraft positioning for four regional jets, hangar shell alternatives analysis, site planning, stakeholder interviews, hangar shop planning, aircraft utility consulting and operational assessment. Two hangars were planned with a common fire pump room but only one was constructed after one tenant discontinued the lease process. Intensive site planning was required due to topography and due to the use of micropiles for the structure.

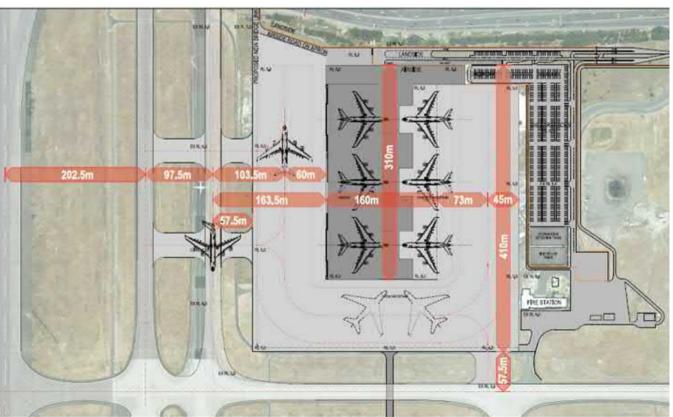


QANTAS A380 HANGAR SYDNEY, AUSTRALIA

AECOM provided design, hangar planning and special system planning for a new advanced line maintenance hangar for three A380 enclosed hangar positions and four A380 hardstand positions including shop planning, advanced docking systems, utility pit design, ground run-up enclosure accommodation and advance material handling concept. Intensive site plan analysis occurred for A380 maneuvering, A380 site access, radar reflectivity, ATCT line of site issues, wind studies and site drainage. Numerous site and building configurations were tested as part of the design process as well as alternative shell design including fabric structures.

Hangar operational planning included hangar door system analysis, multiple aircraft positioning for narrowbody and widebody aircraft, advanced docking systems for aircraft maintenance access, including aircraft fuselage crown access and teleplatforms and line maintenance shop planning at a mezzanine level.





F-15QA BEDDOWN FACILITY HANGAR MX01

The design of the F-15QA Beddown Facility includes all required buildings (headquarters, training, etc.), hangars, maintenance and spare parts facilities, fueling support infrastructure, roadways and access control facilities, and supporting utility infrastructure for host nation to operate both F-15QA aircraft training and operational squadrons. The project's scope includes over 30 buildings, three large maintenance hangars, an assortment of aircraft sheltering hangars, and extensive aircraft apron, taxiway, and roadways as part of the Beddown Facility. The design team ensured facilities conformed to airfield and explosives requirements. Coordination and conformance with base security requirements, host nation criteria, and applicable facility criteria were necessary throughout the project.





WYNN PRE-ENGINEERED FREIGHTLINER MAINTENANCE FACILITY



AECOM provided Architectural Design and Structural Engineering Services for the design and construction of a new Freightliner Truck Dealership and Maintenance Facility in Everett, MA. AECOM assisted in the programming of the new building by assessing the current Freightliner facility needs and projecting them to program the new North East Freightliner flagship facility.

This project's roughly 28,000 GSF is composed of 16 truck maintenance bays, a double height parts storage warehouse and a 2-story Administrative space for Sales and Service operations. The project construction cost is estimated at \$7 Million, including building and site work costs. The facility is designed to accommodate 40 full time employees.

PERSONNEL RECOVERY 4-BAY HANGAR/ HELICOPTER MAINTENANCE UNIT



AECOM designed a new hangar and helicopter maintenance unit (HMU) to accommodate four HH-60 helicopters, a new centralized fire protection (FP) pump house with two storage tanks, and 12 helicopter parking spaces. We prepared both structural interior design (SID) and furniture, fixtures and equipment (FF&E) packages for the hangar. The design meets Cyber Security and AFCEC Cyber Security requirements. AECOM participated in a design charrette with USACE and the USAF and developed conceptual layouts for three provided courses of action with site plans, floor plans, and exterior elevations. The preferred option was further developed and submitted at 35%, 65%, 95%, and 100% phases for government review.

The hangar/HMU building is designed to meet all applicable standards of UFC 4-010-01, including standards for exterior masonry walls, exterior doors, air intakes, and window glazing.

Cargo Experience

For more than 30 years, the United Parcel Service has commissioned AECOM for comprehensive architecture and engineering services on a wide range of projects including the 2.8M SF sorting facility located in Sandiford Field at the Louisville International Airport, coined **Hub 2000 of the multi-phase Worldport Expansion Program. The implementation of** AECOM's in-depth phasing plan contributed to the success of this high profile project, which ultimately led to Worldport Phase 2: North Expansion, which consisted of a 1.1M SF expansion to the original structure and included the addition of 32 aircraft gates, three new aircraft operations ramps, 50 new truck docks, as well as infrastructure for an expansion of the Material Handling System. Upon successful completion of Phase 2 **AECOM** was commissioned for Phase 3 which consisted of the Worldport South Expansion, a 300,000 SF addition to the existing high bay structure, the final aircraft unload wing at 450,000 SF and connections to the existing original Grade Lane Hub sort building. AECOM designed Phase 1 of Centennial Hub, a 260,000 SF sort facility with material handling system, automotive repair shop, vehicle wash bay, truck staging, employee parking and utility infrastructure in 2006. In 2016, AECOM designed the 850,000 SF expansion to Centennial Hub, with construction complete in 2018.

At AECOM, we take great pride in our professional performance and one of the best measures of that performance is the long-term client relationships that extend over decades and multiple projects and challenges. Our relationship with UPS is a perfect example of the rewards for AECOM as a service provider and UPS as a client. Below is a partial list of AECOM's experience with UPS:

- UPS Columbus Hub
- 1670-UPS Christmastown Expansion
- United Parcel Service (UPS) AutoShop Damage Investigation
- United Parcel Service (UPS) Canal Road
 Sharonville Sortation
- United Parcel Service (UPS) Gest Street Sortation
- United Parcel Service Airlines Jet Hangar Expansion
- United Parcel Service Airlines Hub 2000 Project (Worldport Phase 1)
- Worldport North Expansion and South Expansion (Worldport Phase 2 & 3)
- United Parcel Service Centennial Hub
- United Parcel Service Centennial Hub Expansion
- United Parcel Service Core Radio Room
- United Parcel Service Columbus Trabue Hub Expansion
- United Parcel Service Engineering Services
- United Parcel Service Grade Lane Phase 2
- United Parcel Service Ground Hub Heating Systems Study
- United Parcel Service Hangar Fire Suppression System
- United Parcel Service Hangar Modification Study
- United Parcel Service HVAC Study / Formula
- United Parcel Service Indianapolis Shop Damage Investigation
- United Parcel Service Maintenance Hangar Roof Replacement
- United Parcel Service Ramp 1 Snow Melter
 Project Manual
- United Parcel Service Warehouse & Vehicle Maintenance
 Facilities



UPS HUB 2000 - WORLDPORT PHASE 1

In 2000, United Parcel Service completed the largest construction project the company had ever undertaken. Hub 2000 included a new 2.8M SF initial sortation building to be located at Louisville International Airport in Kentucky. AECOM provided professional architectural design and engineering services for the new facility. According to UPS' phased planning needs, the building had to have the flexibility to accommodate future expansion in the form of an additional building 2M SF in size.

UPS Hub 2000 houses 42 acres under roof, and is comprised of three rectangular "wings" where aircraft are loaded and unloaded and which feed parcels via conveyors to a large central sorting core. The building contains approximately 100,000 SF of office space throughout, including break rooms, locker rooms, and support offices. The accelerated schedule of Hub 2000 required that a full time, 32-person staff begin a 9-month drawing/ specification production schedule immediately. AECOM's size and the diversity of its in-house services was therefore of great importance when the firm was chosen after a nationwide search.



UPS WORLDPORT PHASE 2 NORTH EXPANSION & PHASE 3 SOUTH EXPANSION LOUISVILLE, KY





Phase 2 North Expansion

The Worldport North Expansion began design in July of 2006 and consisted of a 1.1M SF expansion to the original structure. Design of this phase was completed first quarter 2007 and included an additional 32 aircraft gates, 3 new aircraft operations ramps, 50 new truck docks, as well as infrastructure for an expansion of the Material Handling System (MHS). As with Phase 1, a multi-phased project delivery system was required as conveyor design is occurring simultaneous with the building. AECOM design responsibilities were expanded to include all associated site development work including aircraft ramps, utility expansion, and numerous site development studies related to environmental clean-up sites, overall airpark storm drainage capacity, future capacity development for power distribution and system back-up.

Phase 3 South Expansion

The Worldport South Expansion began with a concept development study performed in the fourth quarter 2006. This phase consisted of a 300,000 SF addition to the existing high bay structure, the final aircraft unload wing at 450,000 SF and connections to the existing original Grade Lane Hub sort building. Design included an additional 16 aircraft gates, two new aircraft operations ramps, 30 new truck docks, as well as infrastructure for an expansion of the Material Handling System (MHS). As with Phase 1, a multiphased project delivery system is required as conveyor design is occurring simultaneous with the building. AECOM design responsibilities were expanded to include all associated site development work including aircraft ramps, utility expansion, and numerous site development studies related to environmental clean-up sites, overall airpark storm drainage capacity, future capacity development for power distribution and system back-up. Expansion design was restarted in 2019 and nearing completion of design (May 2020). Project scope changed to incorporate system wide redesign of the MHE system, demolition of portions of Grade Lane Hub, redesign of Wing F and South Core Expansion Phase 1.

UPS CENTENNIAL DISTRIBUTION HUB

The expansion of the air hub required relocation of an existing ground hub facility, located on the airfield to open up available site for aircraft parking and operations. As a result, AECOM designed a new ground hub facility to be located south of the airport to accommodate ground sort operations. This facility consists of a new 260,000 SF sort building with material handling system, automotive repair shop, vehicle wash bay, truck staging, employee parking and utility infrastructure improvements. This new facility, and the demolition of the existing structure are critical path elements of the Worldport project.



MASSPORT PRE-ENGINEERED AIR CARGO FACILITY

The project is located at Logan International Airport in East Boston, MA and consists of a new single-story, pre-engineered facility containing approximately 13,000 square feet of UPS shipping functions to serve as cargo and freight storage and office facilities. The structure houses open storage areas on the ground level with enclosed office space on the 5,000 square foot mezzanine level. The new building was constructed adjacent to an existing airplane hangar and the current UPS facility which will soon be vacated. The configuration of the facility was designed to minimize airside impacts as well as maximize the efficiencies of UPS aircraft unloads



Additional cargo projects

UPS WORLDPORT SOUTH CORE EXPANSION AND WING ADDITION

AECOM is providing architecture and engineering design services for a 1.35M SF, five-level expansion of the main core building and a 640,000 SF wing addition to Worldport, the UPS ground package sorting facility in Louisville. The design of the expansion and wing addition includes integrating the existing core building to accommodate the new materials handling equipment demands to the infrastructure and structural system. The wing addition also necessitated alterations to 15 acres of adjacent ramps. The roughly 100-acre site expansion included stormwater, topography, utilities, pavement design, and site civil design. AECOM's scope of services include architectural design, engineering design, and preparation of construction documents.

UNITED PARCEL SERVICE AIRLINES JET HANGAR EXPANSION

AECOM was selected to provide professional architectural and engineering services for the modification of UPS Airline's existing jet maintenance hangar in at Louisville International Airport. The project involved renovating and expanding the existing narrow-body bay to also allow wide-body aircraft (B747, B767 and A300) to be serviced inside the hangar. In order to house the rear stabilizer of these aircraft, the hangar was extended out an additional 45', and 70' high doors were installed. The design included a 30' deep steel truss that spans nearly 400' and an upgraded fire protection system.

Because roof mounted high expansion foam generators were installed, instead of traditional water cannons for under-wing fire protection, the hangar floor is free of any obstructions and aircraft can be parked in any configuration. UPS required that the hangar be designed and constructed in approximately 11 months. To meet this difficult schedule, the contractor and fabricator were consulted throughout the design process, and key elements, such as the structural steel, were fast-tracked and issued for construction before the rest of the design was complete.

UPS TRABUE HUB EXPANSION

AECOM provided architecture and engineering services for this 250,000 SF addition to Trabue Hub in Columbus, Ohio. The addition included the full replacement of package handling equipment which is valued at three times the building construction cost. The replacement of the traditional method of package handling with a new automated material handling system also significantly increased handling speed. Our scope of services included providing full architecture and engineering services from planning/concept to construction administration. We are also served as general contractor and construction manager at risk.

UPS SWAN ISLAND HUB EXPANSION

The HUB expansion project located in Portland Oregon consisted of additions to the north and south ends of the existing building. The south addition is 92,773 SF and incorporates two (2) operational mezzanines totalling 52,786 SF at two different elevations. A third mezzanine provides 15,500 SF of office space to accommodate administrative and logistics functions of the hub facility. The south addition added 68 truck dock positions.

The north addition encompasses approximately 20,000 SF of new construction and demolition of about 4,500 SF of the existing facility. This portion of the building provided additional truck dock capabilities as well as internal package car loading / unloading facilities. The north addition added 40 truck dock positions.

As part of the expansions, the existing south and north building walls were removed to facilitate major conveyor runs between the existing building and the new additions. This required significant structural modifications to the existing building at these locations to provide for seismic restraint capabilities.









It has been a pleasure to work with AECOM on the design of our new Aeronautics Academic Center. The team put together by AECOM was robust, knowledgeable, and current in all pertinent rules and regulations; because of this our concerns and wishes were always addressed immediately, efficiently and to our utmost satisfaction. We are extremely pleased with the final result and cannot wait to see the design come to life."

MAUREEN MCFARLAND

SENIOR ACADEMIC PROGRAM DIRECTOR, AERONAUTICS, KENT STATE UNIVERSITY







LEONARDO HELICOPTER ASSEMBLY PLANT

AECOM prepared the site selection study and concept plan for a 390,000 SF aviation-related supply chain management facility at PNE.

We identified the operational needs and requirements, evaluated a range of feasible alternatives, and prepared site plans for concept development and selection of the preferred alternative.

The next step is to prepare a project definition document (PDD) that Leonardo will use to select a partner to design, build, operate, and maintain the proposed facility



BRADLEY INTERNATIONAL AIRPORT | SIGNATURE FLIGHT SUPPORT PASSENGER TERMINAL, HANGAR AND MAINTENANCE FACILITY

This project included a 17,000 SF executive terminal/ operations facility for Signature Flight Support, the largest fixed base operator at Bradley International Airport. It also contains a 25,000 square foot hangar and support space, a 20,000 SF maintenance and repair facility, and a 45,000 SF hangar/support spaces to accommodate corporate jets for United Technologies, a Fortune 100 company which is Signature's major tenant at Bradley. Hangar designs include coordination of NFPA 409 foam fire suppression systems and EPA approved disposal systems. The project was delivered on a fast track basis utilizing numerous bid packages to expedite the process.



MIAMI INTERNATIONAL AIRPORT | SIGNATURE FLIGHT SUPPORT PASSENGER TERMINAL AND HANGAR

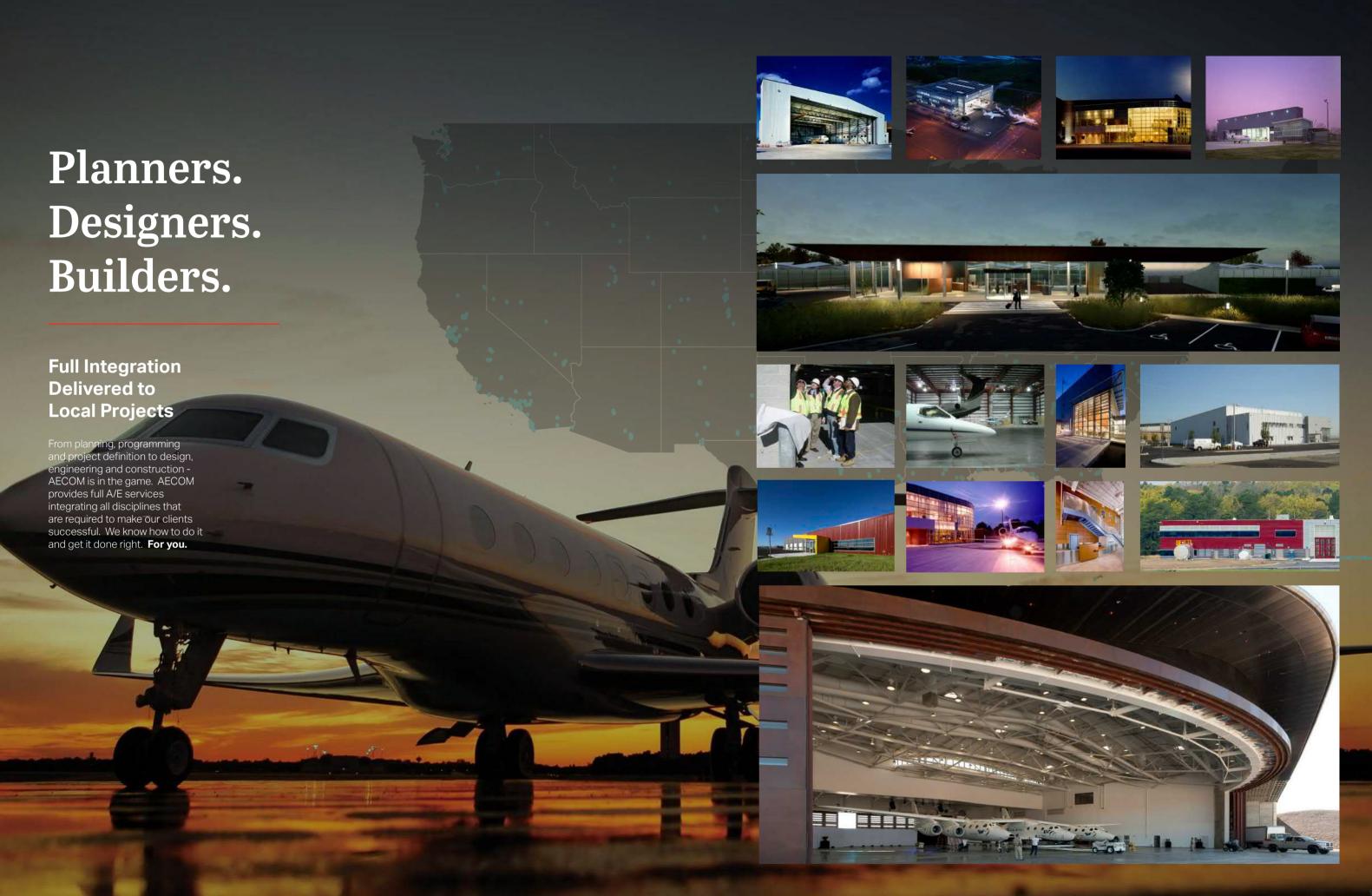
Phase I of this project involved the renovation and rehabilitation of an 8,000 SF Executive Terminal. A complete interior overhaul of the terminal facility adjacent to a 25,000 SF hangar for maintenance and operations was the primary component of the project. The lobby, rest rooms, flight operations, pilot support area, and administrative space was updated as well as the HVAC system. The project was also updated to comply with all ADA requirements.

Phase II of this project was the design of a terminal and hangar complex. Construction took place on an existing site adjacent to the runway on the north side of the airport. The project also included a two-bay vehicle maintenance facility and provision for a future hangar for small aircraft. The construction phase utilized a phased replacement approach allowing the fixed-base operator (Signature Flight Support) to maintain continuous operation during construction of the new 34,000 SF facility.









About AECOM

AECOM is built to deliver a better world. We design, build, finance and operate infrastructure assets for governments, businesses and organizations in more than 150 countries. As a fully integrated firm, we connect knowledge and experience across our global network of experts to help clients solve their most complex challenges. From high-performance buildings and infrastructure, to resilient communities and environments, to stable and secure nations, our work is transformative, differentiated and vital. We are a Fortune 500 Company.

Airports and connecting transportation links are vital to the continued growth and economic prosperity of cities regions and countries. With demand for air travel set to double over the next two decades, more than 80 per cent of AECOM's 'Future of Infrastructure' report respondents believe that the coming 10 years will be a pivotal time for civil infrastructure, including aviation, driven by disruptive technologies. Airports around the world need to pivot, adapt, modernize and expand to be ready.

AECOM is a global provider of technical services to airport owners, investors, airlines and aviation clients, leading and supporting programs for airports of all sizes and forms. Building on our global network of expertise and local knowledge, AECOM's multi-disciplined, skilled professionals are experienced in delivering integrated, collaborative aviation solutions across projects and continents, from finance and analysis to masterplanning, program management, architecture, interior design, engineering and construction services.

See how we deliver what others can only imagine at aecom.com and @AECOM.

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