



Project: **F-22 Technical Training Facility**
Location: **Sheppard Air Force Base, Wichita Falls, Texas**
Client: **U.S. Air Force**

Top-Notch Training for F-22 Crews

The Technical Training Facility at Sheppard Air Force Base — the first and only facility of its type planned — will enable the 82nd Training Wing to support and train flight maintenance crews for the Raptor aircraft. Design and construction phase services required tight coordination with Lockheed Martin and Pratt & Whitney to ensure support of mission requirements. The 124,500-square-foot project was completed in December 2006. A key element of the award-winning design is the acoustical control of external and internal noise from an adjacent runway and training equipment. Siting also addressed the need for a large functional space while accommodating necessary standoff distances, adjacent facilities and vehicular access. A drilled pier system supporting the building and floor slab addresses geotechnical concerns arising from the area's expansive clay soils. The facility features sustainable design principles and is a sensitive compartmented information facility, with 11 unclassified and three classified classrooms with raised computer floors, video terminals and complete lighting controls.

For more information, contact Mark Zimmerman, (816) 822-3847.



Project: **BSL-3 Laboratory**
Location: **San Diego**
Client: **County of San Diego**

Protecting Public Health with High-Tech Design

San Diego's Public Health Laboratory works with public health clinics, local hospitals and health care providers to analyze clinical and environmental samples. A new Bio-Safety Level 3 lab (BSL-3) enables the County of San Diego Health & Human Services Agency to process bioterrorism samples as defined by the Centers for Disease Control — viruses, bacteria and toxins. These are the agents that cause smallpox, ebola, anthrax, plague and botulism. A BSL-3+ lab also tests for avian flu. Burns & McDonnell provided architectural, engineering and construction administration. Construction will be complete in February 2007. The 3,787-square-foot lab was created by renovating an office/storage space. It includes airlocks, general laboratory area, storage room and shower/restroom. Isolation rooms will contain biosafety cabinets, a fume hood, prep tables and specialty lab equipment. The general lab area provides lab benches and supply storage. A mezzanine is used for locating the biocontainment HEPA filters.

For more information, contact Gerry Williams, (314) 821-9016.

Innovations Enable Hot Tap, Cost Savings

An existing 90-inch-diameter water transmission main needed to be relocated to avoid being under a proposed runway, part of the O'Hare Airport Modernization Program. The main serves as the primary source of potable water for seven communities with a total population of about 350,000, so service interruption was not feasible. Burns & McDonnell engineered a relocation plan with hot tap connections using Stoppole technology provided by contractor TD Williamson Inc. A hot tap means the line remains under pressure during the connection process, something not often seen with a 90-inch diameter main. Burns & McDonnell design services included revising a conceptual design created by others, utilizing temporary 48-inch diameter steel bypass lines of 3,500 feet and 1,600 feet to reduce the original plan for approximately 10,000 linear feet of 90-inch water main by nearly 50 percent. This modification will avoid construction adjacent to a busy state highway and will minimize conflicts with an existing creek, resulting in projected savings of approximately \$13 million. Construction is scheduled to be complete in spring 2007.

For more information, contact Randall Patchett, (630) 724-3200.

Enhancing Water Quality with Submerged Membranes

Submerged microfiltration membranes will enhance treatment capabilities, provide a positive barrier, and will increase the capacity of the Colorado City Metropolitan District's Water Treatment Facility to 1.2 million gallons per day. The design-build project led by Burns & McDonnell and Fischer Construction also includes the expansion of the existing plant building by 1,200 square feet. Three trains of submerged microfiltration membranes, supplied by Siemens, will be installed. A new coagulant feed system and chlorine disinfection system, mechanical, electrical instrumentation and controls, civil sitework, and yard piping are included in the project. The facility's existing packaged conventional water treatment process equipment will be removed. This project is one of the first design-build-finance projects in Colorado. Construction began in November 2006, and completion is expected by April 2007.

For more information, contact Bayard Yang, (303) 721-9292.



Project: **Water Main Relocation**
 Location: **O'Hare International Airport, Chicago**
 Client: **City of Chicago**



Project: **Water Treatment Facility**
 Location: **Colorado City, Colo.**
 Client: **Colorado City Metropolitan District**