



Transportation

Client

Memphis Shelby County Airport Authority (MSCAA)

Location

Memphis, Tennessee

“Despite enormous fluctuation in construction costs, the CH2M HILL team has managed to keep the program on track and within the limits of budget and time. Your firm has provided superb management for a program where private and public funding totaling over \$230 million is being brought together in a truly unique, practically one of a kind joint venture for the Air National Guard.”

—Craig A. Rezac,
Major, USAF

164th Airlift Wing Relocation, Tennessee Air National Guard

Project Description

CH2M HILL performed construction and program management on the largest construction program ever undertaken by the Air National Guard (ANG)—the relocation of the entire 164th Air Wing from the north side of the Memphis Shelby County Airport to 110 undeveloped acres on the southeast side. This complex and innovative \$180 million (constructed value) project included 560,000 square feet (SF) of vertical construction, 1.4 million SF of horizontal construction, and development of technical work scopes for design-build packages for 15 buildings and associated base utilities to support. Specifically, CH2M HILL provided the following services during construction:

Construction Estimating Services: At the 65-percent design completion level, we initiated a prequalification phase for interested construction contractors for both the horizontal and vertical contracts. Once prequalified, the selected contractors became engaged in final design preparation by attending design meetings, commenting on critical components of design, and developing cost estimates. With the construction contractor developing cost estimates parallel to the design team’s final specifications, we were able to realize significant cost savings. At 100 percent design, we had an informed construction contractor ready to begin work and an agreed-upon estimate to complete the work. As a result, we successfully produced designs which were bid approximately three percent below the programmed amounts.

Change Management. CH2M HILL managed the change order process through production of a weekly report generated by the project controls specialist. As change orders were requested by contractors, we reviewed each for merit, and based upon that review, added the item into the weekly budget report for discussion at the monthly owners meeting. We tracked data from two different aspects— actual changes as negotiated with contractors, and owner’s costs. Through this strict and formalized process, we were able to assure the Owner that the changes orders were valid and ensured funds were available to pay contractors as needed.

Quality Assurance and Inspection Services. CH2M HILL provided onsite inspection services for both the MSCAA and the ANG. Services performed included daily inspection reports, change and claim analysis, constructors schedule review, fire protection and life safety review, and estimating services. We validated contractor quality control through spot checks, onsite inspection and interim reporting. We also evaluated and provided construction oversight on 11 single-story and 4 multi-story buildings. Each type had different sets of criteria that had to be weighed for the specific site conditions at the installation.

Schedule Management and Compliance. Through a dedicated project controls specialist, CH2M HILL tracked over 4,000 line item activities throughout the entire program and the funding status of each individual task order on the master schedule weekly using P3e. This software was also used to track submittals, RFIs, daily Quality Assurance Rep’s (QAR) reports, and all other project related documents. This combination of a dedicated project controls specialist and the comprehensive P3e program resulted in an easily assessable data regarding construction progress, number of RFI and submittals processed, and current project photos.



The project received an **Honorable Mention Award from the Construction Management Association of America (CMAA) in October 2009.**

Work-in-Place Projections. CH2M HILL monitored progress reports and the cost- and time-loaded schedules submitted by each contractor monthly. Based on the contractor payment applications, our project controls specialist compared the information for accuracy ensuring payment requests matched actual work performed. Any adjustments were made prior to the monthly pay-out process.

Job Site Safety. CH2M HILL developed a construction safety oversight program that was coordinated with the Owner's representative. In 4 years, we completed 208,000 man hours on this program with no recordable or lost time incidents.

Technical Review of Proposed Material Substitutions, Including Foreign Made. Technical reviews of material substitutions was performed to minimize building costs due to the selection and availability of materials; to evaluate potential savings due to greater use of factory made components; and to standardize elements throughout the project. To accommodate these objectives, each component of the program was treated as a stand-alone project. The design team developed facility designs with a uniform architectural style, similar structural systems, and, to the extent possible, similar mechanical, electrical, plumbing, and fire protection systems achieving economy of construction.



CH2M HILL provided full-service construction management for a new, state-of-the-art base to serve the changing mission of the 164th Airlift Wing.

About CH2M HILL

Headquartered near Denver, Colorado, USA, employee-owned CH2M HILL is a global leader in consulting, design, design-build, operations, and program management for government, civil, industrial and energy clients. The firm's work is concentrated in the areas of water, transportation, environmental, energy, facilities and resources. With US\$6.3 billion in revenue and 23,000 employees, CH2M HILL is an industry-leading program management, construction management and design firm, as ranked by Engineering News-Record and named a leader in sustainable engineering by Verdantix. The firm has been named a FORTUNE 100 Best Companies to Work for five times. Visit us at www.ch2mhill.com, twitter.com/ch2mhill and facebook.com/ch2mhill.