



## Transportation

### Client

Colorado Army National Guard

### Location

Buckley Air Force Base, CO



*“The modeling software was an excellent tool in defining and refining all aspects of this aviation project to our leadership, our aviators, our facilities, and maintenance staffs.”*

**—Bob Datson, MILCON Project Manager, Colorado Dept. of Military and Veterans Affairs**

## Army Aviation Support Facility

### Project Description

CH2M HILL provided programming, design, and services during construction for a new Army Aviation Support Facility (AASF) for the Colorado Army National Guard (COArNG). Receiving a 2008 U.S. Air Force Design Award for Sustainable Design, this facility was completed under a fast-track schedule using 3-D Building Information Modeling (BIM) design software. To achieve a 3-month accelerated design schedule, CH2M HILL worked in partnership with the COArNG to develop the concept submittal for the AASF in a 2-month accelerated schedule that included field trips to 5 existing AASFs to collect information about what made each of these previous designs successful and what could be improved.

The new AASF includes a 109,920-SF primary maintenance and operations facility, a flammable and controlled waste storage area, two new unheated aircraft storage hangars totaling 40,877 SF, and replacement/expansion of the existing aircraft parking apron. Administrative areas and support space for more than 400 personnel are located within the primary facility. The primary facility also includes locker rooms, break/assembly space, fitness facilities, toilets, showers, and mechanical/electrical/telecom space.

### Value CH2M HILL Brought to This Project

To achieve a high-performance facility for the COArNG, CH2M HILL delivered integrated design services, which provided multiple benefits, including:

- ◆ **Fast-Track Services**—When COArNG awarded this design task in September 2003, they required a completed 35 percent design in 3 months to meet funding deadlines. To meet this goal, CH2M HILL completed the 10 percent concept design in just 2 months—from mid-September to mid-November. During this time, key discipline leads visited five similar aviation support facilities to research their operations. This information was shared during the project team chartering session and design charrettes at the project start to focus design efforts on those features shown to improve maintenance utility and user ergonomics.
- ◆ **3D Building Information Modeling (BIM)**—The BIM design included an interactive computerized design system that incorporated key planning, design, and web-based transfer of information to allow strong communication between CH2M HILL design and construction management staff, our client, and the construction contractor. Use of BIM allowed us to conduct virtual tours of the design using telecommunication links, enabling people from several offices to view the design progress and experience a virtual walk-through of the facility.
- ◆ **Functional Efficiency**—Industrial engineering concepts were introduced to the project to improve labor workflow efficiencies in the building. High performance energy management systems were incorporated to save operational costs and to complement LEED® Silver certification. Design charrettes at the project start focused efforts on features shown to improve maintenance utility and user ergonomics.



- ◆ **Life Cycle Efficiencies**—We designed the facility for low operating costs and ease of maintenance. Internal materials were selected for their durability and ease of maintenance, as well as an attractive appearance that supports a desirable work environment.
- ◆ **Sustainability**—To achieve the facility LEED® Silver certification, sustainable and energy-efficient features were incorporated into the design. For example, the building's orientation allows maximum use of natural daylight and natural ventilation. Dimmable lighting in the hangars connected to photo sensors work with the natural daylight from the walls and skylights to provide energy efficiency. Native vegetation around the building provides an attractive, low-maintenance, and low-water landscaping solution. Roof runoff also provides water-efficient irrigation. These efficiencies translate into an annual savings of more than \$60,000 in operating costs.
- ◆ **Asset to the Host Community**—Providing visibility to the COArNG mission, the AASF is a dominant structure on Buckley AFB. To mitigate the potential visual impact of the new structure, special care was taken to break up large expansive surfaces using architectural massing, change of materials, and materials compatible with surrounding facilities.

## 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](http://www.ch2mhill.com), [twitter.com/ch2mhill](https://twitter.com/ch2mhill) and [facebook.com/ch2mhill](https://facebook.com/ch2mhill).