**NEW ARMY SUPPORT BUILDING NOT ‘ALL THAT IT CAN BE’**

When the 56,000-square-foot Army Aviation Support Facility was completed in Helena, Montana in the fall of 1999, it was expected to meet the military's needs, but from the beginning, problems were encountered. The building used more energy than anticipated when compared to similar military buildings in Montana. There were also numerous occupant comfort complaints.

After two years with the poor performing building, the Montana Department of Military Affairs partnered with the Montana Department of Environmental Quality to initiate a commissioning project to identify the problems and diagnose corrective action. The Montana DEQ, with funding from the Northwest Energy Efficiency Alliance and support from US DOE's Rebuild America Program, developed a scope of work and contracted with a local commissioning provider for retro-commissioning services.

The single-story building houses operation, maintenance and repair facilities for Army National Guard helicopters. It includes administrative offices, an operations center, classrooms, locker rooms, a large hanger, a supply area, shops and a paint booth. Approximately 60 people work in the facility during normal weekday hours. There is some limited weekend and night activity.

The commissioning project identified, diagnosed and recommended corrective action for approximately 11,820 dollars, resulting in a first-year cost benefit of 5,370 dollars and annual energy savings of 13,300 dollars. The Commissioning authority provided an outstanding report from a fresh perspective and identified several items that were not installed correctly.

- Chris Denning, Director of Facility Maintenance
150 discrepancies. The mechanical systems were not particularly complex, but correctly programming the controls system to enable the various mechanical systems to operate appropriately and efficiently was more complex.

The commissioning provider functionally tested specific portions of the HVAC systems, control system, and lighting system and diagnosed corrective actions. They found dampers or linkage that were binding to prevent full opening and closing, plugged filters, equipment not connected to the control system, equipment that was incorrectly installed, and controls that were programmed incorrectly.

Most of the corrective actions addressed the occupant complaints of comfort and poor indoor air quality. The commissioned building now provides a comfortable, safe and productive working environment for the occupants, based on implementation of corrective action.

LESSONS LEARNED

• Include commissioning early in the design phase, thus maximizing the benefits commissioning provides.

• To control retro-commissioning costs, prioritize and correct issues based on building owners needs.

• Involve the building owner in the commissioning process

• Today’s HVAC control systems are very complex and need to be functionally tested.

“The advantage of commissioning is having an independent third party systematically and thoroughly perform inspections and verification tests to ensure that the systems are installed as designed and are operating according to the Owner’s needs.”

- John Phillips, P.E., Facility Improvement Corporation

COMMISSIONING BENEFITS

• Reduced energy costs (operating costs)
• Increased occupant comfort and indoor air quality
• Enhanced maintenance and a facility improvement plan was developed
• Reduced operational deficiencies

PROJECT PARTNERS

• DEPARTMENT OF MILITARY AFFAIRS
  Contact: Chris Denning
  Director of Facilities Maintenance
  chris.denning@mt.ngb.army.mil

• COMMISSIONING PROVIDER
  Facility Improvement Corporation
  Great Falls, MT
  Ficojohn@onemain.com

• U.S. DOE Rebuild America Program
  Contact: Dave Waltzman
  dave.waltzman@ee.doe.gov

SPONSORED BY

• BETTERBRICKS
  www.BetterBricks.com
  1.888.216.5357

FOR MORE INFORMATION

• MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
  Contact: Toby Benson
  406-841-5231
  www.deq.state.mt.us/ppa/taf/energy/buildings.asp

Army Aviation Support Facility

BUILDING COMMISSIONING CASE STUDY

Army Aviation Support Facility

COMMISSIONING BENEFITS

The Alliance is a non-profit group of electric utilities, state governments, public interest groups and efficiency industry representatives working to make affordable, energy-efficient products and services available in the market place.