ADA COUNTY STAR PARAMEDIC STATION #38

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Case Study

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Project Overview

Size:	3,246 square feet
Type:	Paramedic Station w/ sleeping quarters and Ambulance Bay
Location:	Star, Idaho
Utilities:	Idaho Power Intermountain Gas
Completion Date:	February 2010
LEED Certification:	NC v 2.2, Gold
Green Features:	Optimized Energy Performance Natural Daylight and Views Local/Regional Materials Low-Emitting Paints and Carpeting Light Pollution Reduction Water Efficient Landscaping Construction Waste Management

Ada County Paramedics provide advanced life support services around the clock to over 361,500 residents of Boise, Meridian, Garden City, Eagle, Star, Kuna, and rural Ada County. ACP is an emergency service dispatched by the county's 9-1-1 communications center, just like area law enforcement. In order to keep up with major growth in the Treasure Valley, the Board of Ada County Commissioners determined a new station was needed in the northwest part of Ada County to serve an ever-expanding community.

In 2009, the Ada County Paramedics Department undertook a major construction project to build a new response station in Star, ID. The facility was specifically designed and tailored to provide a comfortable and efficient facility for a crew of paramedics whose jobs require them to stay at the facility for days at a time. Planning began on the $635,900 project in January 2009 and construction was completed in February 2010.

The station consists of 3 bedrooms; 2 restrooms with showers; a report-writing room with 4 work stations; a day room with couches, lounge chairs and a television; and a residential-type kitchen with all the amenities of a modern home including a casual dining area. The facility also includes a laundry room with storage for equipment and cleaning supplies; an outdoor patio with a natural gas hookup for a barbeque-cooking grill; a full-size vehicle bay for ambulance parking; and a small emergency backup generator for essential services.

The station is expected to earn a LEED-NC Gold certification by the US Green Building Council. LEED (Leadership in Energy and Environmental Design) is a national rating system used to develop high-performance, sustainable buildings. LEED emphasizes state-of-the-art strategies for site development, water savings, energy efficiency, materials selection, and indoor environmental quality. The design team incorporated many LEED elements as described below.

The orientation of the building on the site was chosen to optimize the use of natural daylight. The ambulance bay is located in the northern side of the facility, and the living areas on the southern side, with south and east facing porches to allow maximum sun penetration in the winter and minimum penetration in the summer. The roof was pitched on the living area, to allow a north-facing clerestory window, providing even lighting and reducing the need for artificial light in the main portion of the building. The clerestory

windows are also equipped with thermostat-controlled motorized operators to exhaust warm air when needed. Nearly all of the windows throughout the facility are operable and can be used to provide natural ventilation as desired by the occupants. Further, each bedroom has its own heating/cooling unit to provide individual temperature control.

The north side of the building was designed as a high bay garage to provide indoor parking for emergency response vehicles. Large rollup doors on the front and back of the garage provide a drive-through arrangement to enable paramedics to quickly leave the facility without needing to backup or turn around. A built-in mechanical exhaust system automatically eliminates vehicle fumes from the space. The vehicle bay is heated with infrared radiant heaters and cooled with an evaporative cooling system in lieu of a traditional rooftop air conditioner, adding to the building's energy efficiency.

While much planning went into designing the facility to provide comfortable energy-efficient housing for the paramedics, equal attention was paid to minimizing its impact on the environment. The water fixtures in the facility include dual-flush water closets, and low-flow lavatories, showers, and kitchen sink faucets to reduce the burden on municipal water supply and wastewater systems. Domestic water is heated by a solar hot water system, as a result a savings of 50%-80% in water heating is projected.

The storm water system and landscaping was also designed with water conservation in mind. A pervious concrete section of the parking area allows direct rain filtration of runoff from the parking lot. The roof drains flow into bio swales located on the site. The landscape consists mainly of unmown grass seeding, enabling the use of drip irrigation and cutting irrigation water use by more than half. Trees are strategically placed to shade the pavement and decrease the heat island effect.

Ada County made use of the local utility's incentive program and earned approximately $2,500 back for incorporating energy- saving devices such as occupancy sensors, high efficiency exit signs, high performance windows, a "cool" roof, and an energy-efficient cooling system with air side economizers.

As per LEED standards, the entire construction process was managed to protect the indoor air quality including ensuring the ductwork was kept sealed, clean, and dust-free during installation. The County incorporated environmentally-friendly, sustainable material into the facility such as carpet tiles in the bedrooms and report writing room, rather than broad-loom carpet. Indoor air contaminants that are odorous, irritating, and/or harmful to the comfort and well-being of the installers and occupants were minimized. All floor covering, wall base adhesives, and paints were low- or VOC-free. And finally, the building underwent a fresh-air flush before anyone was allowed to move in.

More than 79% of the construction waste was recycled as wood, metal, masonry block, sheetrock and cardboard rather than being dumped in the landfill. Overall, the new facility meets or exceeds the County's program requirements of affordable, sustainable, high-performance construction. It costs about 42% less to operate than a conventional facility while providing a safer, healthier environment for the occupants.

PROJECT TEAM

Board of Ada County Commissioners:
- Fred Tilman, Chairman
- Sharon M. Ullman
- Rick Yzaguirre

Ada County Paramedics:
- Troy Hagen, Director
- Darby Weston, Deputy Director

Ada County Operations:
- Dave Logan, Director
- Scott Williams, Deputy Director
- Bruce Krisko, Construction Manager
- Selena O'Neal, Energy Specialist

Design Team:
- McKibben + Cooper Architects
- Musgrove Engineering, Mechanical
- Electrical Engineering Company, Electrical
- Core Engineering, Structural
- Engineering & Waste Solutions, Civil
- Jensen Belts Associates, Landscape Dsgr

General Contractor:
- KJ Corporation, Inc.

Commissioning Agent:
- McKinstry