

# MILITARY HOUSING REHABILITATION

For the project team constructing new barracks at Fort Riley, Kan., creating a successful methodology for delivering 11 design-build barracks in 450 days was vital to deal with unforeseen circumstances.

By Ali Karimi

Military housing for returning soldiers is inadequate and outdated, putting military barracks construction in high demand. As outlined in a recent *Air Force Times* article, the U.S. wants to show returning soldiers its appreciation by quickly building or renovating living quarters, hospitals and essential base buildings. In response, project teams are challenged to build these barracks quickly, often requiring the use of new construction methods. For the project team working on the Whitside Barracks at Fort Riley, Kan., which includes Walton Construction Co. LLC, VOA Architects and the U.S. Army Corps of Engineers (USACE), creating a successful methodology for delivering this type of project was vital under the circumstances.

## New Funding, Fast Schedules

USACE estimated in 2008 a need for \$14 billion in new construction to keep up with the heavy demand for more military housing. This is a small number when compared to the \$66.4 billion that the Army says it will spend through 2013 on more than 740 projects throughout the U.S., including 69,000 barracks spaces and 4,100 family-housing units.

In July the House of Representatives nearly unanimously passed the *Military Construction and Veterans Affairs Appropriations Act, 2009*. If made into law, the bill will provide \$72.8 billion for constructing improved barracks, fixing outdated military medical facilities, and increasing care and jobs for veterans across all military branches.

The funding for new construction is dispersed across a large portion of the country's military bases. Included in the military construction bill is \$534 million for new barracks to support two brigades coming to Fort Carson, Colo. At Fort Lewis, Wash., \$2.8 billion is being spent to rehab old barracks originally built in 1927, and to build 6,000 new spaces for the more than 28,000 soldiers who will be on base by 2012. Another \$18 million is being spent at Fort Meade, Md., for eight barracks that will house 400 troops.

## Whitside Barracks, Fort Riley, Kan.

Construction began on the \$56 million Task Order One at the Whitside Barracks in July 2007. Upon signing the contract the project team had 450 days to complete five barracks; three months later another \$12 million task order was awarded for an additional barracks.

Ultimately the 11 barracks will each house 156 soldiers, 1,716 in total. Each barracks is approximately 56,000-ft<sup>2</sup>, and will include units featuring two separate bedrooms with closets, shared kitchenettes and bathrooms. In addition, an outdoor recreation area with a barbecue pit, sand volleyball courts, softball fields and a running trail are also being constructed.

The first five barracks were scheduled for completion by late October 2008. The project team expedited this schedule to get furniture in place by early September, allowing the barracks to be turned over early in the event soldiers return earlier than anticipated. The additional barracks in Task Order Two is to be completed by March 2009, though the project team plans to deliver it sooner.

A contingency to military barracks construction is that project teams generally do not have a set date on which the new housing will be occupied by returning soldiers. This is one of many challenges the project team at Fort Riley has had to learn to work around.

## Barrack Challenges

To help the project team understand the design-build process, general contractor Walton Construction immediately held what it called a partnering seminar. The seminar cleared up any confusion about the process and defined roles from the most senior project executives to the construction workers. During the seminar, the plans, schedule, budget and number of workers needed were decided.

After the seminar, a mock-up was created of the inside of a single unit in the barracks. Representatives from USACE were brought in to provide feedback on the design before interior construction was finalized. This allowed the owners to make adjustments during the design phase rather than during the construction phase, when such changes would be more expensive.

From there, VOA, **BHC RHODES** and Hoss & Brown Engineers, the project architect; civil and site engineer; and mechanical, electrical and plumbing engineer, respectively, worked around the clock to finish the construction documents ahead of schedule. The documents were released in phases and were approved immediately by USACE. These efforts, including USACE willingness to fully collaborate in the design-build process, allowed construction to commence two months ahead of schedule.

After construction began, weekly construction meetings kept the project team informed on field matters both positive and negative. Negatives were resolved immediately. The project team also held monthly update meetings to ensure the project was on schedule; if not, issues were discussed and addressed.

## Bad Weather, No Workers

General urgency for completion and uncertainty as to when soldiers would return required expedited schedules and extraordinary teamwork. Despite the preparation and fast-track scheduling, problems still arose.

Last year, harsh winter weather posed the most significant challenge to the Whitside Barracks project team. For projects in regions with unpredictable climates, it is critical to build into the construction schedule enough contingency time to account for bad weather. Nonetheless, last winter at Fort Riley was among the worst on record, resulting in the project team falling approximately 40 days behind schedule.

The team overcame this by working overtime, 10- to 12-hr shifts. Heaters and extra lighting helped make the working conditions more bearable in the freezing temperatures, and the project team brought the project back ahead of schedule.

The labor shortage that has been felt across the country also heavily impacted the barracks project, which is located two hours from the nearest metropolitan area. When the project team arrived, it assumed placing an advertisement in the newspaper would attract local labor; this was not the case. Sixty percent of the workforce came from Kansas City, Mo., Nebraska, Alabama and elsewhere. Even with these out-of-towners, there was still a shortage of workers, requiring the 400-person crew to work that much harder.

## Lessons Learned

The Whitside Barracks project at Fort Riley provided several lessons learned for building military housing construction. First, gathering input and ensuring stakeholder alignment before plans,

The Whitside Barracks project team's methodology began with a partnering seminar, review of a barracks interior mock-up and collaboration with USACE on the design-build process. During this process, the stakeholders held weekly coordination and progress meetings, provided monthly updates and displayed extraordinary teamwork.

In the past, USACE has used more traditional construction methods, such as design-bid-build. However, with the necessity of delivering these barracks quicker and more cost-effectively, new methods were required.

The design-build method brings contractors, architects, engineers, owners and developers together before plans, budgets and schedules are decided. Unlike the traditional model, all parties agree on how the project will be designed and on what time frame, minimizing unforeseen problems and conflicts between the design and construction sides during construction.

schedules and budgets are drawn up is critical to eliminate mistakes and conflicts in the field.

Continuing this communication also is key. Partnering seminars and weekly project coordination and progress meetings held by the Fort Riley project team guaranteed the stakeholders collaborated fully in the design-build process.

Finally, all stakeholders must make a commitment to the schedule. Occasionally working around the clock or adjusting the schedule is sometimes necessary if a project is to be completed on time.

Had the project team at Fort Riley not operated in accordance with these points, numerous misfortunes, such as inclement weather or labor shortages, might have kept returning troops from having a proper place to call home.

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***The Military Engineer*** • November December 2008 • Volume 100, Number 656