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Strength of Preca Army Training Fac

By Mark Crawford

Like the lyrics say, the Army goes rolling along and is the first to fight for the right and build the nation's might. With those strong words as its ethos, training the next wave of brave men and women is imperative to the U.S. Army, and having facilities to do that is crucial. One of the largest training complexes the Army has is Fort Benning in Georgia, and precast concrete was at the center of a massive expansion.

A \$2.4-million project at the Malone Ranges included 37 precast Easi-Set Buildings produced by Smith-Columbia, the South Carolina division of the Smith-Midland Corporation. The buildings included seven 26-foot-by-22-foot multi-user men's and women's plumbed latrines, 13 80-foot-by-20-foot classrooms, 13 singleunit 12-foot-by-10-foot ammo buildings, three double-unit 24-foot-by-10-foot ammo buildings, and one 14-foot-by-8-foot grenade bunker.

"The client selected precast because of its high-quality appearance, fast installation and 100-year-plus lifespan," said Ashley Smith, CEO of Smith-Midland Corp. "Fort Benning wanted structures that looked good and blended in with the existing base architecture. With a formliner finish, precast can be made to match almost any type of finish and material.



Photos courtesy of Smith-Midland Corp.

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> "They wanted the look of hand-laid masonry, but without the long lead time that hand-laid masonry would require."

> Easi-Set, in operation for more than 30 years, licenses various configurations for Easi-Set Buildings including storage units, dugouts, guardhouses, utility structures and more.

> The buildings consist of panels manufactured with high-strength, steel-reinforced precast concrete, including roof and floor systems, and are prestressed or post-tensioned. The company's patented, second-generation posttensioning system applies internal pressure within the floor and roof panels using high-



By using precast concrete Easi-Set Buildings, the Army was able to quickly add additional facilities at its Fort Benning training facility in Georgia.





The precast facades were made to look like hand-laid masonry to match the existing architecture. By using precast, the project was completed in just a few months.

strength sheathed strands laid out in a circular pattern and cast into the concrete. The concrete is then mechanically stressed to 30,000 psi, adding increased strength to the panels to prevent cracking and water infiltration. Panels can be customized with extra features in the plant prior to delivery.

For the Fort Benning job, more than 350 precast concrete Easi-Set Building panels were engineered by Smith-Midland Corp. and manufactured by Smith-Columbia at its plant in Columbia, S.C.

Perhaps the biggest challenge for the project was the short turnaround – Smith-Columbia received the contract in April 2019, and the work was completed in mid-August 2019. With such a tight time frame, planning was crucial for the project to be successful.

A crane quickly off-loaded the precast panels at Fort Benning, and because Easi-Set Buildings can be installed on a level 4- to 6-inch layer of crushed stone, traditional foundations were not

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required. As a result, on-site installation was completed within a few hours.

"Precast was ideal for the short timeline, which could not have been accomplished with any other concrete solution," said Smith. "Precast is highly durable, weather-resistant and requires very little maintenance. Of course, building the precast components off-site in a controlled environment also assures the greatest control and the highest quality."

Smith noted that partnering with a licensor is a great way for precasters to add new products to their product lines.

"Licensees receive in-depth marketing and sales support, technical assistance and in-plant production training to help them build their business," he said. **PS**

Mark Crawford is a Madison, Wis.-based freelance writer who specializes in science, technology and manufacturing.

