

# Smith-Midland: Easi-Set Precast Concrete Buildings - Case Studies

## A Repeat Customer

Virginia City of Culpeper finds value in precast concrete buildings



Among the Civil War history and rolling hills of Culpeper, Va., is an active and growing community. City officials recently set out to accommodate this growth by improving the town's water lines and expanding its well system. The city repeatedly has turned to Easi-Set Buildings for various projects over the years, and it again found a solution in precast concrete structures. This time, Midland, Va.-based Smith-Midland Corp., an Easi-Set Buildings licensed producer, manufactured and installed two completely customized Easi-Span Buildings for well water treatment buildings.

### Building a Solution

Three ground water wells were added to the sites, working at a capacity of about 200 gal per minute. The new precast concrete buildings that house the well equipment are 20 ft by 50 ft by 12 ft and 20 ft by 60 ft by 12 ft, with the second being slightly larger to accommodate a laboratory. The well water treatment buildings were customized with multiple small rooms that were created by precast partition walls. Rollup doors were added to provide easy equipment access and larger clearances. Each building was installed in less than a week.



*Panel erection using crane.*

This is the first time the contractor has worked with Easi-Set Buildings, and the project manager said, “Everything went great. The buildings look great and everyone was so easy to work with.”

Easi-Span Buildings are the largest clear-span all-concrete building system on the market, in addition to being the only expandable concrete building system. The buildings are completely customizable with many finishes and colors. Precast concrete buildings are suitable for water treatment facilities because of their strength and reliability. They are weatherproofed and fire-, windstorm-, earthquake- and ballistics-resistant.

Smith-Midland has a long-standing relationship with Culpeper, completing approximately 10 building installations with them.



*20 ft by 60 ft by 12 ft Easi-Span building.*

“We work hard to exceed our client’s expectations, and customers regularly come back to us,” said George Sharikas, sales manager for the utility products division with Smith-Midland. “We’ve worked with the town of Culpeper for years, and we are excited to do even more with them.”

Later this summer, a restroom building and electrical building will be installed by Smith-Midland at one of the water treatment sites to complete the expansion.

## **Smith-Midland completes 15 restroom building project for USACE**

SMITH-MIDLAND CORPORATION COMPLETES RECREATIONAL LAKE RESTROOM PROJECT IN MISSOURI WITHIN A TIME TIGHTFRAME AND ON BUDGET

Aiming for a Labor Day opening, the U.S. Army Corps of Engineers contracts precast concrete manufacturer Smith-Midland Corp., to complete a time-sensitive, 750-panel restroom project.

Smith-Midland Corp., has completed a restroom project at Wappapello Lake that truly showcases the beauty and adaptability of precast concrete. The \$865,000 U.S. Army Corps of Engineers project in Wappapello, Mo., encompassed 750 architectural precast panels, multi-colored fieldstone, and batten board siding.



Nestled in the foothills of the Ozark Mountains on the St. Francis River in Southeast Missouri, Wappapello Lake offers activities for all walks of life. Completed in 1941, Wappapello Lake annually provides an estimated \$3.9 million in flood protection to agricultural lands and developed areas along the St. Francis River.

The Wappapello Lake restroom project was fairly routine for Smith-Midland with one exception: all 15 restroom buildings had to be finished within 60 days or less due to the looming Labor Day holiday. “It was a pretty tight timeframe for the number of pieces and structural intricacies involved,” said Scott Fiore, the Smith-Midland sales associate who initiated and managed the U.S. General Services Administration (GSA) contract.

Up to the challenge, Smith-Midland developed five different floor plans and then began making the 750 24-foot by 20-foot precast panels in accordance with the project owners’ custom exterior finish requests. Fiore said Smith-Midland was selected for the Wappapello Lake project based on the company’s 50-year reputation in the precast business, commitment to quality, and reasonable pricing. “We have experience with these types of buildings,” Fiore added, “so the project owners knew that they were going to get exactly what they asked for.”

Sequoia Britton, Smith-Midland’s buildings installation manager, said the panels were installed by a local general contractor who was able to accommodate the short completion schedule laid out by the U.S. Army Corps of Engineers. Part of the challenge, said Britton, involved transporting the huge precast pieces from Virginia to Missouri. “There were a lot of unknowns and possible roadblocks that could have come up during the trip,” remarked Britton. “To make sure there were no kinks, we put a lot of time and effort into the scheduling and transportation arrangements.”

Once onsite at Wappapello Lake, the 750 precast panels were installed in three phases with most of the heavy rigging and lifting managed by a local crane operator. “One of our foremen and I went to the jobsite and oversaw the entire process,” said Britton. “Everything went very smoothly and the customer is pleased with the results.”

## Fort A. P. Hill Undergoes Major Infrastructural Update, Replacing 17 Aging Restrooms with Precast Concrete Buildings

Durable Easi-Set Buildings will provide nearly maintenance free service for over 50 years.

Bowling Green, VA – As an active military installation, which hosts all branches of the military and even foreign allies for training exercises, Fort A.P. Hill needs to have a solid infrastructure. With many of the bases’ latrines in a state of disrepair their wastewater management vendor, American Water Operations, tapped Smith-Midland to replace nearly all of the facilities with Easi-Set precast concrete restrooms.



Fort A.P. Hill provides state-of-the-art training facilities focused on providing realistic joint and combined arms training. Considering the importance of the facility and the exposure it receives, every detail, including operational and aesthetically pleasing restrooms, is important.

“Many of the buildings we are replacing were run down, and in a complete state of disrepair. The Easi-Set Buildings we are installing are rated for 50+ years of use,” said George Sharikas, Smith-Midland Sales Representative. “This will be a major improvement over their current setup. These Easi-Set restrooms will provide our troops with sturdy, long-lasting facilities while they train.”

With this base being an active military installation, completing each installation in a timely fashion was a major factor in choosing a precast building product. “Once the holes are dug, we set the tank, and then place the building on top of it the following day. Total installation time is 2 days, 3 tops,” remarked Sharikas.

“We had to beat out a national competitor for this project,” said Matthew Smith, V.P. of Sales. “Our Easi-Set Buildings product line is extremely versatile. We were able to come up with a building design that would work for all 17 sites. This allowed American Water Operations to fulfill their contract with the base in one shot. We are proud to be supporting our troops in any way that we can.”

## The Word Is Out: Precast Concrete Buildings are the Solution for your next Water or Wastewater project



*It is not a secret that the water and wastewater industry often utilizes pre-engineered concrete buildings for its treatment, pumping and filtration needs. What should not be kept underground any longer are the vast number of advantages precast concrete buildings truly offer, particularly from an industry leader like Easi-Set Buildings.*

This month, a planned community in Bealeton, Va., can admire its new Easi-Set Building while no longer worrying about its water quality. The manufactured home community recently learned that its well water had high arsenic levels, so a water filtration system housed in an Easi-Set Building was installed. The local Easi-Set licensed producing plant Smith-Midland Virginia manufactured and installed the 20' x 30' Easi-Span Precast Building. General contractor Sydnor Hydro Inc., Richmond, Va., selected Smith-Midland because of a long working history.

"We have worked with Smith-Midland many times over the years," said John Beckstoffer with Sydnor Hydro. "They are quick, efficient and hold to their schedule."

The initial building installation was completed in less than two days during December 2014, and pipe installation and filtration connections took place over the next few weeks. The building stores four filters connected to two wells. According to George Sharikas, sales manager with Smith-Midland, pre-designed features and the quick installation time led to selecting the Easi-Set Building.

Customization options are available for every building, and local Easi-Set licensed producers work closely with customers nationwide to ensure the resulting concrete building meets the project's requirements.

As a licensed producer, Sharikas believes precast concrete buildings often sell themselves. "Customers can request design information and pricing. Once approved and made, they have a building up and erected in one to two days," he said.

The project was designed utilizing an Easi-Span Roof. Easi-Span Ultra-Large Buildings are site assembled on a gravel pad with a precast floor or on a poured concrete slab. Easi-Span roofs are the largest clear span all-concrete roofs on the market. They provide for the only expandable (in 10' sections) concrete building system up to 50' x 250' with the option of multiple-story heights.

Beckstoffer turns to precast concrete buildings more often than other building materials because concrete looks better and last longer. "Concrete buildings don't rust, and they don't break like a frame building can," he said. "Inside, you generally have to install plywood over a frame building. Over time, that just doesn't look as good as concrete."

Easi-Set Buildings will not rust, warp, corrode, rot or burn and outperform all other materials in performance and life-cycle value. The weather-tight structures are designed for any climate zone across the country with additional weatherproofing features available. Frost protection, for instance, could safeguard the integrity of plumbing lines in colder climates. Adding these and other features will not put a project over budget; Easi-Set Buildings actually cost less than site-built construction. Easi-Set Buildings have undergone UL 752 testing to be designated as Level 5 bullet-resistant buildings. They also have a standard fire rating of 1.5 hours with additional protection available, earthquake rating to Seismic Zone Category C and hurricane resistance up to 150-mph wind loads. Impact resistance is improved with post-tensioning that increases average compressive strengths.

## Securing the future of an Iconic American Beltway

Smith-Midland Corporation - Formal planning for the Capital Beltway, I-495, began in 1950, and it was included as part of the national Interstate Highway System in the Federal Aid Highway Act of 1956, with construction beginning in 1957. The I-495 Capital Beltway was fully completed when its final Maryland segment was opened to traffic on August 17, 1964.



Over the span of the next three decades, through various widening projects, nearly the entire Beltway was widened to eight lanes (four each way), the last major project taking place in the early 1990's. Over the ensuing 20 years traffic continued to grow and stress the capacities of the road and its daily users.

In early 2000, plans were advanced by VDOT for a traditional highway expansion to help address the growing congestion on the Virginia portion. The plan faced significant opposition, unaffordability, the destruction of hundreds of homes and businesses, and no transit options to support a burgeoning Tysons Corner district.

In 2002, the private sector proposed an alternative under the Public Private Transportation Act to build four new high occupancy toll (HOT) lanes that would expand capacity and deliver new travel choices, including a network for buses and carpools. A partnership with the private sector and tolling would help VDOT deliver improvements more quickly and with fewer tax dollars, provide new travel choices, and reduce impacts on the surrounding neighborhoods.



In 2007, VDOT finalized an agreement with Capital Beltway Express, LLC – a consortium that would design, build, operate, finance and maintain the \$2 billion HOT lanes project.

The 495 Express Lanes are the first road of its kind in the region to provide HOV service on the Capital Beltway – as well as the option for travelers to pay a toll for a faster and more predictable trip using EZ-Pass.

Construction, managed by Fluor-Lane of Alexandria, VA, began in 2008 and the new lanes, two new lanes in each direction on a 14-mile stretch of I-495 from the Springfield Interchange to just north of the Dulles Toll Road.

As part of the project, Fluor-Lane contracted with the Smith-Midland Corporation to manufacture and install 10 technical shelters to securely house all the E-ZPass recognition equipment. All along the 14.5 mile corridor the Easi-Set all-precast concrete buildings are set in the median strip next to two sets of information collecting pole assemblies hanging over both sets of opposing Express Lanes. Use of this system allows for the EZ-Pass system to collect the tolls of individual vehicle without any slowing of traffic flow.

Smith-Midland manufactured all of the 4” thick reinforced precast concrete panels at their Midland, VA plant, then shipped and erected the buildings using an on-site crane. Each of the 12’ x 20’ Easi-Set Buildings was outfitted by Smith-Midland with steel doors and matching locks, a 2.5 ton heat pump system and programmable thermostat. Each building was set and ready for final equipment outfitting in just one day. This saved valuable time for Fluor-Lane, as well as keeping the work site free from weeks of on-site workers needed by traditional site built construction methods.

Opened for business in 2012, the 495 Express Lanes operate 24 hours a day, seven days a week. The lanes use dynamic pricing based on real-time traffic demand conditions to keep traffic free flowing and provide a more predictable travel option.

Fluor-Lane and its partners garnered numerous awards for the project. “Northern Virginia is notorious for being one of the most congested areas in the country,” said Nic Barr, Vice President of Operations. “The Express Lanes are helping to alleviate congestion and improve travel times, not just in the Express Lanes, but in the regular lanes as well. The improvements the Express Lanes have delivered to the entire corridor are a testament to why projects like the Express Lanes benefit all drivers – not just those who choose to take the Lanes.”

The I-495 Express Lanes project is the most significant package of improvements to the Capital Beltway in a generation.

## When Nature Calls

“Can you hear me now?” takes on a different meaning when your jobsite spans a 330-acre state park and there is no cell phone service. The crew for Smith-Midland Corp., Midland, Va., overcame this challenge and successfully manufactured and installed nine Easi-Set Buildings at Echo Bluff State Park, Eminence, Mo. Purchased in November 2013, the new park is the 88th in the state, opening this summer. Smith-Midland, a licensed producer of Easi-Set Worldwide products, was called on to bring needed amenities to park attendees—quickly and on budget.



The massive scope of this project with nine buildings in a vast land presented obstacles from the start. The large number of crew members had to work fast to meet the park’s opening deadline. With the added communication issues, the crews brought their creativity into play to ensure the schedule and quality of the installations was not affected by the lack of cell service. To start with, much of the communication for this project was done after working hours and via email.

“It was an extremely challenging project because when there was an issue, our installation manager had to leave the site and make a few calls. But we were able to overcome this inconvenience,” notes George Sharikas, sales manager, Utility Products Division, for Smith-Midland.

The nine Easi-Set Buildings have a similar style, with a horizontal lap siding and batten board finish with a simulated metal roof. The exterior colors are Cedar Wood Brown and Muddy Gray with Montana Moss for the door color. The buildings include:

- One six-stall restroom with five toilets, one urinal and four sinks.
- One six-stall restroom with five toilets, one urinal, four sinks

and four showers. The building was manufactured in three pre-assembled sections, with each section weighing 70,000 pounds. • Two chlorination buildings at 10'-6" wide x 12' long with a gabled roof. • Three double wet restrooms with toilets and sinks for men and women. • One double dry restroom. • One water tank structure at 10'-6" x 20' long with a gabled roof.

The state park was designed to attract everyone from hikers, campers, wedding goers and novice nature lovers. Because of Smith-Midland's ingenuity and ability to plan for each precast concrete building install while creatively communicating, the land now is well-equipped for when nature calls.

## Cutting Costs for Chesapeake Bay

West Virginia district uses precast concrete buildings to save time & money on new facility construction.



The West Virginia Department of Environmental Protection (WVDEP) implemented the Chesapeake Bay strategy to reduce the amounts of nitrogen, phosphorus and sediment in the regional watershed. The Franklin Public Services District (FPSD) of Mineral County, W.Va., engaged RK&K engineers to design a wastewater treatment facility to handle a load of 2.5 mgd.

Phase One, completed in 2012, handled the initial flow of 600,000 gpd. West Virginia Governor Earl Ray Tomblin attended the 2012 dedication of this facility, which is recognized as the first in the state to be compliant with Chesapeake Bay regulations.

“This new plant will provide both immediate as well as future benefits to this area,” Tomblin said.

Phase Two, finished in 2013, increased the processing capacity up to 1.2 mgd. Phase Three was completed in 2015, and now the facility can serve 2,600 current and future residential and business customers. The \$55 million price tag is substantially less than the cost to bring the existing smaller systems up-to-date.

“It’s expandable...it’s ultra-modern,” said Blane Murray of FPSD.



To speed completion of the project, Alvarez Contracting used Easi-Set precast concrete buildings, manufactured by local Easi-Set licensed producer Smith-Midland Corp. The six main operations buildings ranged in size from a 10-ft-by-12-ft methanol building to a clear-span 24-ft-by-90-ft belt filter building. Each was brought in and assembled in just a matter of days, saving months of onsite labor and traffic. The cost of the pre-engineered Easi-Set precast buildings accounted for less than 2% of the project cost.

“The only way this could have taken place was through years of planning and forethought,” said Scott Mandirola, director of water and waste management for WVDEP. “It shows cooperation of the county, state and local levels that is hard to match.”

## Building Codes and Budgets Converge

Virginia county uses precast transportable buildings to conform to tight guidelines



As part of the \$10.7 million North Fork Regional Pump Station project, Virginia's Albemarle County Service Authority (ACSA) demolished the existing Camelot Wastewater Treatment Plant and its Research Park pump station. Two remotely located regional pump stations replaced the outgoing stations. The two stations are located across from each other on the busy Route 29 divided highway—the major approach road into historic Albemarle County—and are joined by 1,500 ft of 12-in. force main. Each pump station includes emergency standby generators, instrumentation and SCADA systems.

ACSA met its budget in part by specifying Easi-Set precast concrete transportable buildings. The design—which had to conform to the guidelines of the gateway zone—called for a brick finish with a metal standing seam roof. Cost savings in materials were achieved by using an Easi-Brick grid in the Easi-Set licensed producer Smith-Midland Corporation's precast plant to simulate brick on the ten wall panels that comprised the 20-ft-by-30-ft buildings. This method also produced savings by removing the cost of onsite masons.

The design also called for a non-standard height of 13 ft. The use of 13-ft-high precast wall panels simplified construction and eliminated the use of knee walls. Delivery and assembly of the wall and roof panels was completed in only two days, saving weeks over onsite construction methods.

## Delivering Modular Durable Unit for a Loudoun County Park



Smith-Midland recently manufactured, delivered and erected an EASI-SET precast concrete modular restroom/concession building for Loudoun County at the Byrne's Ridge Park in Aldie, VA. Loudoun County was searching for a durable, maintenance-free yet cost-effective solution to issues that are often associated with park sites; vandalism and maintenance challenges.

The first of several restrooms ordered was a 24 ft by 30 ft six-toilet restroom with concession area. The building was cast by SMC with split-faced block exterior wall and cedar shake roof finishes. The building was erected at SMC's yards in three 24 ft by 10 ft modular sections. The modular sections were then outfitted with components including lights, breaker panel, water heater, hand dryers, grab bars, toilets, partitions, sinks, baby-changing stations, mirrors doors and a roll-up concession window. Stain and anti-graffiti control were added at the factory along with an anti-slip epoxy floor paint.

The modular sections were delivered on three separate tractor-trailers to the park site and were off loaded onto a level, compacted stone foundation using a 90-ton crane. The primary challenge during the installation was to ensure that the three modular sections lined up with one another within a tight ¼-in. tolerance. A feature of the EASI-SET precast concrete restrooms offer is that the roof and floor sections are post-tensioned longitudinally which ensures that the three modular sections are held together under constant tension. The roof and floor are, in effect, single diaphragms, eliminating the need for a roof membrane to prevent water infiltration, SMC tied the electric and plumbing between the three modular sections together at the site and hooked the building up to the site electric and plumbing systems. Loudoun County now has a restroom/concession building that offers it freedom from dealing with constant durability and maintenance issues.

For more information on Easi-Set all-precast concrete buildings by Smith-Midland visit:  
<https://smithmidland.com/concrete-buildings>

For a FREE Quote call: 540-439-3266 or fill out our quote request form:  
<https://smithmidland.com/request-a-quote>

[www.Smith-Midland.com](http://www.Smith-Midland.com)

[www.EasiSetBuildings.com](http://www.EasiSetBuildings.com)