

PLUS! Testing Fresh Concrete // MASH Regulation // NPCA Convention Wrapup

# PRECAST INC.®

A Publication of the National Precast Concrete Association | NOVEMBER/DECEMBER 2017

**LEAN  
MANUFACTURING**  
for Precasters



The Next Level of  
**SEPTIC TANKS**

★ ★ ★  
**CHAIRMAN'S CHOICE**

# Smith-Midland is on the (High)rise



**NOVEMBER/DECEMBER 2017**



**PRECAST INC.**

Publisher  
**Ty Gable**  
Executive Editor  
**Bob Whitmore**  
Managing Editor  
**Sara Geer**  
Associate Editor  
**Kirk Stelsel**  
Associate Editor  
**Mason Nichols**  
Graphic Design  
**Molly Tippner**  
Advertising  
**Brenda C. Ibitz**  
bbitz@precast.org  
(317) 571-9500

Precast Inc. (ISSN 1940-9184 print, ISSN 1940-9192 online) is published bimonthly by NPCA.

Material in this publication may not be reproduced without written permission from NPCA. Requests for permission should be directed to the editor.

© 2017 NPCA

Address your letters and comments to the editor:

**Precast Inc./Editor**  
1320 City Center Drive, Suite 200  
Carmel, IN 46032  
(800) 366-7731  
Fax: (317) 571-0041  
Email: npc@precast.org

[precast.org](http://precast.org)



*NPCA is a trade association representing the manufacturers of plant-produced concrete products and the suppliers to the industry around the world.*

# 32 Chairman's Choice

Ashley Smith, newly elected NPCA Chairman of the Board and president of **Smith-Midland Corp.**, selects three projects that highlight his company's work.



**TECHNICAL SUPPORT**

- 6 Questions from the Field
- 8 Testing Conventional Fresh Concrete

**TECHNICALLY SPEAKING**

- 14 Taking Septic Tanks to the Next Level

**CODES & STANDARDS**

- 20 MASH Regulation

**MANAGEMENT**

- 26 Lean Manufacturing for Precasters

**PROJECT PROFILE**

- 42 Sustainable Building: A Win for Everyone

**QUALITY**

- 48 NPCA Quality Control Manual: What's New?

**WORKING FOR YOU**

- 49 Working For You

**MASTER PRECASTER**

- 50 The Inquisitive Mind: Jodi Zwart

**ASSOCIATION NEWS**

- 52 NPCA 52nd Annual Convention Wrapup
- 54 Trivia Question & Webinar Schedule

**FOUNDATION NEWS**

- 56 Fall Foundation Wrapup

**INDUSTRY NEWS**

- 58 People & Products

**RESOURCES**

- 60 NPCA Calendar
- 60 Advertisers Index



**MASH 2016** has had a major impact on precast concrete producers who manufacture traffic barriers

page 20

**On the Cover:**

Smith-Midland Corp. in Midland, Va., has become known for its innovative precast panels, such as its work on VITA in Tysons, Va.

Photo © Alan Karchmer/OTTO

**CORRECTION:** In the article, "Practice What You Preach: Tips for Welding Rebar," in the September-October issue, the equations for calculating the carbon equivalency for ASTM A615 and A706 rebar are incorrect. The portion relating to carbon and manganese for both should be represented as C.E. = %C+%Mn/6.

Connect with us on social media









★ ★ ★  
**CHAIRMAN'S CHOICE**

# Smith-Midland is on the (High) rise

By Kirk Stelsel, CAE

**Editor's Note:** The "Chairman's Choice" feature story features projects selected by Ashley Smith, president of Smith-Midland Corp. and newly elected NPCA Chairman of the Board.

In 1960, a dairy farmer in Virginia named David Smith developed a way to keep his cattle from straying off by using concrete. In 2017, his grandson, Ashley Smith, now heads Smith-Midland Corp., a successful precast concrete company with three locations, a wide range of products and a subsidiary company with six proprietary product lines licensed by precasters around the world.

What transpired in the decades between is a story of perseverance, innovation and collaboration. David's son Rodney Smith, and Rodney's sons Ashley, Jeremy, Matthew and Roderick, have not just grown, but advanced the company. The Smith-Midland team constantly seeks ways to push the boundaries of how it manufactures precast concrete, what it looks like and how it functions both during and after installation.

The three projects detailed here were hand-picked by Ashley, NPCA Chairman of the Board, as examples of projects and products that exemplify Smith-Midland.



## Cliffside Park Towne Centre

Cliffside Heights, N.J.

### CLASSICALLY MODERN LUXURY

When the owner of Cliffside Park Towne Centre in Cliffside Heights, N.J., first saw the renderings of his building, a \$140 million, 13-story luxury apartment tower, he knew he wanted a more classical, turn-of-the-century limestone look. With that in mind, the Smith-Midland team worked with the client and the architect to evolve the design.

★ ★ ★  
**CHAIRMAN'S CHOICE**



Photos courtesy of Smith-Midland Corp.



The goal for the Cliffside Park Towne Center project was to create the feel of a classic limestone building with a modern twist.

**“The experience with Ashley and Smith-Midland was wonderful. They were involved from the planning and design stage to the construction phase.”**

– James Virgona,  
*Virgona & Virgona Architects*

“He actually asked us what we thought and we said, ‘Well, you’re the client, so whatever you want we’ll work with you to get your vision out there,’” Ashley said. “We were able to help the owner and architect come up with a design that moved it towards his vision, and we helped them to standardize some of the patterns and the master molds.”

The design was finalized by Virgona & Virgona Architects and brought to life by Smith-Midland. Due to the versatility of the precast panels, the architects were able to customize the pattern to create a theme and give visual interest to the project while also maintaining consistency and cohesion.

“The experience with Ashley and Smith-Midland was wonderful,” said James Virgona of Virgona & Virgona Architects. “They were involved from the planning and design stage to the construction phase. The amount of documentation they provided, their management during construction, the field visits, and tours of the factory and finish selections were essential.

“That really made us comfortable with the material, and the color and finish consistency were outstanding.”

The majority of the panels for the project are SlenderWall panels, a licensed product of Smith-Midland’s subsidiary, Easi-Set Worldwide. SlenderWall panels are thermal- and fire-code compliant and their lighter weight and attached steel studs can help the owner reduce costs. The panels also come to the job site pre-insulated with a closed-cell foam.

The M-shaped panels used on the project permit larger windows and more natural light than usual. Smith-Midland had already used this design successfully on another building in New Jersey and plans to employ it on future projects as well. As Ashley saw the panels leaving the plant, he could tell the intricate design looked nice, but he had no idea what they would look like assembled on-site.

“I hadn’t been to the job site for about a month or so after the installation started, and by the time I got there a lot of panels had been put up and I was just impressed,” he said. “It’s our work, but to see it go from an architectural drawing to shop tickets to seeing it out on the building was really impressive. The first thing I did was I went and told the owner, ‘Hey, you’ve done a great job; it’s just an awesome building.’”





The retaining wall for the National Zoo in Washington, D.C., required extra care when it came to joints, texture and color to help it blend with its surroundings.



## Smithsonian's National Zoo

Washington, D.C.

### THE DISAPPEARING ACT

Sometimes the general public is never meant to notice precast products, and sometimes extraordinary emphasis is placed on colors and architectural details to make them stand out. For a project at the Smithsonian's National Zoo in Washington, D.C., Smith-Midland found themselves doing a little bit of both.

The retaining wall panels supplied required precise coloring and texture in order to blend into the surrounding area. The job came to Smith-Midland from general contractor Hensel Phelps, a client the company has worked with many times before on large-scale, complex projects.

"Hensel Phelps continues to come to us because they're always looking to do something creative," Ashley said. "They win their projects when there's a multi-step process and you get evaluated on the package and the design. We've teamed up with them because we've come up with a lot of creative projects with them."

The project's original cast-in-place design would have required Hensel Phelps to tear out a road and divert traffic for the whole project. Instead, it decided on a soil-nail tieback wall where the client could continue using the road. The process started by spraying shotcrete and drilling back horizontally to cast steel connection plates into the shotcrete wall.

"You have a better looking wall this way," said Kim Slusher, site manager for Hensel Phelps. "The joints all lined up well and the shoulder joints are set consistently. Speed of construction was good and the owner is pretty happy."

Smith-Midland completed

Photo courtesy of Smithsonian Corp.





**"We are proud of this project that exemplifies Smith-Midland's ability to innovate, improve, and initiate products that are current and pleasing to the eye."**

– Ashley Smith, *Smith-Midland Corp.*

installation of the precast panels at night because that's the only time the road could be closed. The installers positioned a crane truck above and a crew down below on a man lift. They would drop the panel from above and the crew would attach it to the wall.

The most complex part of the project was meeting the aesthetic requirements of the Smithsonian Institution, owner of the zoo. The wall needed to blend in and not show joints.

"We put little steps in the horizontal joints," Ashley said. "When you go out today and look, if you didn't know, you really wouldn't be able to see them. They also didn't want a pattern repeating so we had to come up with three patterns and mix them up horizontally and vertically along the face of the wall."

In order to create the natural pattern, Architectural Polymers came to the site to find existing stone walls for castings. Following installation, a permanent, penetrating stain from Europe was hand applied by EverGreene Architectural Arts to mimic the look and color variations of a natural stone wall.

"We are proud of this project that exemplifies Smith-Midland's ability to innovate, improve, and initiate products that are current and pleasing to the eye," Ashley said. "The contractor and the project won a Craftsmanship Award from the Washington Building Congress, so our guys went up on stage and got an award for it. It was like the Academy Awards of construction.


"There were about 1,000 people at the Washington Hilton, lights, big screens, video – it was a pretty big deal. They all got dressed up and brought their wives."

# A PIGMENT OF YOUR IMAGINATION!

Imagine a color and we'll bring it to life! Experienced DCS technicians will create just the right quality controlled color for your project.

Not only do we offer custom colors, we offer batch size bags, timely delivery and attentive customer service. Liquid coloring and fully automated dispensing systems complete our palette of services. With DCS the vibrant future of the architectural precast industry is assured.

Our products and services have made us the leading supplier of colored pigment to the architectural precast industry.  
Let us show you why. *Call today...*



**(800) 657-0737**  
 2024 S. Lenox Street, Milwaukee, WI 53207  
 (414) 769-2580 Fax: (414) 769-2585  
[www.dynamiccolorsolutions.com](http://www.dynamiccolorsolutions.com)

***DCS... The color of today's architecture.***



"The panels are **two stories tall** and they're all in the **shape of a seven**. You can see that when you look at the building."

– Ashley Smith, Smith-Midland Corp.







**VITA**

Tysons, Va.



### LEADING THE WAY

Tysons, Va., formerly known as Tysons Corner, is on the rise. In fact, a sign on Route 7 reads, “Welcome to Tysons, America’s Next Great City,” and the city’s redevelopment has been well chronicled in *The Washington Post*.

The newest addition to the District of Columbia’s Metro, the Silver Line, was the catalyst. It connects Tysons to D.C., creating an easy way for commerce to move between the two areas without encountering gridlock traffic.

Luckily for Smith-Midland, the company’s headquarters is nearby, and it found its way in early. In addition to supplying products for the Silver Line, it worked on VITA, a luxury rental building and the first major residential tower for the redevelopment. The contractor, Donohoe Construction Co., chose Smith-Midland to manufacture the architectural panels. The project architect, Shalom Baranes Associates, placed a heavy emphasis on the shape and feel of the building, as well as the distinct gray color for the precast panels.

“We worked with Dynamic Color Solutions to achieve the color,” Ashley said. “We made 1-foot-by-1-foot-by-2-inch thick samples and sent those back and forth with the owner. You have to discern and listen and then make another sample until you winnow it down to what they’re looking for.”

The building’s shape is a folded, pleated floor plan and the architect wanted a skin that would form around that shape. As a result, the precast panels are offset every other floor and the resulting shape implies a weave, like a fabric, to make the skin fluent and appealing.

“For me, architecturally, precast concrete had all the flexibility we needed,” said Robert Sponseller, AIA, design principal, Shalom Baranes Associates. “Personally, this material is highly underutilized. A lot of architects use it too modestly in beige or white and I think the material has much more potential.

“I like to exploit its potential as a material so we used a zinc-gray color and did an unusual shape for the panel.”

As the concrete structure reached about a third of the way, Smith-Midland was able to start panel installation. Its crew would come in at night and use the tower crane that was used during the day to set panels on the lower floors, connecting them with thousands of inserts from fellow NPCA member JVI. Following them were the window installers. This method of trades following each other up the building enclosed it faster and saved the owner time and money.

“The panels are two stories tall and they’re all in the shape of a seven,” Ashley said. “You can see that when you look at the building. At grade, there are retail, high-end, white tablecloth restaurants and other high-end retail, so we have white precast panels with a horizontal thin rib pattern. So, that’s another texture and another color we did.” **PI**

*Kirk Stelsel, CAE, is NPCA’s director of communication and marketing.*



The VITA building in Tysons employs precast concrete panels with a unique shape and color to create a shape that implies a weave, like fabric.



To learn more about Smith-Midland, visit [smithmidland.com](http://smithmidland.com)



# NPCA 52nd Annual Convention

## Wrapup

### SMITH-MIDLAND PRESIDENT ELECTED TO LEAD NPCA

Ashley Smith, a lifelong precaster and president of Smith-Midland Corp. in Midland, Va., will take the helm of the National Precast Concrete Association for the next 12 months after the passing of the gavel at the NPCA 52nd Annual Convention in Atlanta, Ga. This year's meeting was the third-largest in NPCA's history, topped only by the 2007 meeting on Maui, Hawaii, and the 50th Annual Convention in Minneapolis.

Smith succeeds Greg Stratis, president of Shea Concrete Products, headquartered in Amesbury, Mass. Smith started officially working at the family-owned company in 1978 and worked in every area of the plant. He attended his first NPCA Convention in 1980 and has been involved in leadership roles since 1987.

As president of Smith-Midland Corp., Smith instituted lean manufacturing principles, which focus on eliminating the seven types of deadly waste: transportation, inventory, motion, waiting, over-production, over-processing and defects. Smith targeted his remarks at the NPCA Convention on what he called the eighth deadly waste: "The waste of the undeveloped potential of employees."

"I heard a story about a guy who's packing up his toolbox on his last day of work after spending 30 years at the plant," Smith said. "He's been a loyal employee for three decades, never complained, always did what was asked of him. And, as he's saying goodbye to his co-workers and pulling out of the parking lot for the last time, he's thinking: 'You know, I gave them my hands for 30 years. If they asked me, I would have given them my head and my heart too.'"

"I don't want that to ever happen at our plant."

Smith said he is a student of the Toyota Production System.

"At Toyota, continuous improvement and attention to detail are driven by employees on the plant floor, and it shows in the end product," Smith said. "I want our plant to be like that and I want the precast concrete industry to be like that, because it is vital to our future success."

In other Convention activity, NPCA awarded the association's



highest honor, the Robert E. Yoakum Award, to Andy Wieser, president of Wieser Concrete Products, headquartered in Maiden Rock, Wis. Wieser, the 2015-2016 chairman of the board, is a longtime member noted for his support for raising quality standards through the NPCA Plant Certification Program, and for mentoring other NPCA members throughout the country.

Leo Feuerstein, secretary/treasurer of Western Precast Concrete in El Paso, Texas, was presented with the Douglas G. Hoskin Award for membership development. Feuerstein's sponsorship of new members and outreach to those members during their first year earned him a second Hoskin Award in four years.

The NPCA 53rd Annual Convention will convene Oct. 4-6, 2018, at the Omni Providence Hotel in Providence, R.I.

Visit [precast.org](http://precast.org) for more information on NPCA activities. **PI**

Greg Stratis, Shea Concrete Products, passes the gavel to newly elected NPCA Chairman of the Board Ashley Smith, Smith-Midland Corp.