

ARCHITECTURAL precaster

A night-time photograph of the Nashville skyline, featuring several illuminated skyscrapers and older brick buildings along the riverfront. The lights from the buildings reflect on the water in the foreground.

JOIN US FOR THE 2021 ANNUAL CONVENTION

October 8-10, 2021
Nashville, Tennessee

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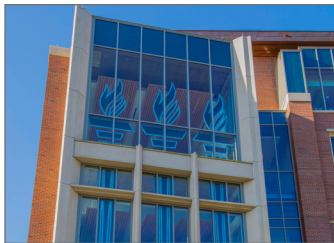
ARCHITECTURAL precaster

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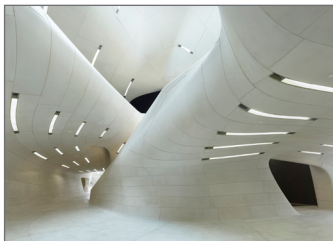
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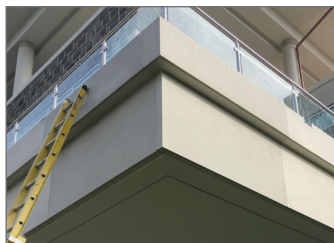
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PRESIDENT'S MESSAGE

Tim Michael, Advanced Architectural Stone

I hope everyone had an enjoyable summer with family and friends. As we continue to fight through this pandemic, I am wishing everyone good health.

You will find this issue of the Precaster focusing on some very interesting topics. It will touch on the use of 3D modeling and the tools we use to be creative in helping architects achieve their vision. It will also highlight one of our new certified producer members.

We are very excited about our upcoming convention in Nashville. We have several interesting topics and speakers scheduled. We will also be touring one precast plant and Nashville's Premier Architectural Iron Work facility that is a leader in reviving the art of hand-forged architectural metalwork. Registration is open on the APA website: <https://www.archprecast.org/annual-convention>.

Looking forward seeing everyone in Nashville.

Tim



APA
ARCHITECTURAL PRECAST
ASSOCIATION

JOIN US IN 2021

2021 APA ANNUAL CONVENTION • OCTOBER 8-11
Renaissance Nashville Hotel | Nashville, Tennessee

The banner features a vibrant photograph of the Nashville skyline at dusk, with the city lights and the illuminated white truss bridge over the river. The APA logo is in the top left, and the text 'JOIN US IN 2021' is in large yellow letters in the top right. The event details are in white text on a dark blue background at the bottom.



An In-Depth Look at an APA Award Winning Project

PORTALS V
ARBAN AND CAROSI
2020 DESIGN AND MANUFACTURING AWARD WINNER

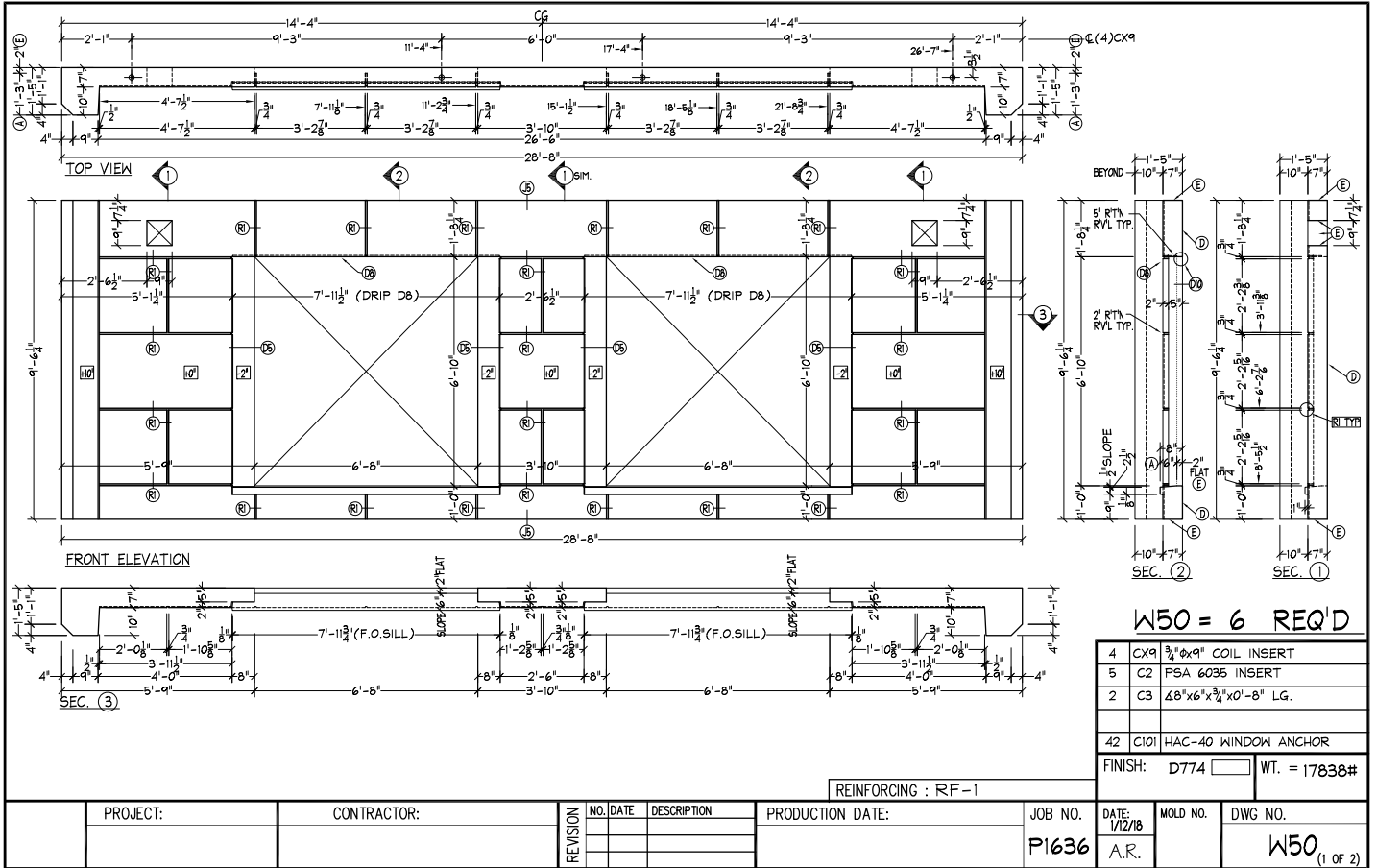
The Portals V is a high-end residential building located in Washington, D.C., at a prominent location at the foot of 14th Street Bridge adjacent to the National Mall. This residential project is located downtown in an area of the city with mainly commercial or government buildings (offices and museums). The project is one of the early efforts to develop this section of the city (between the mall and the river) into more of a mixed-use area. The apartments at this trophy residential project currently have some of the most expensive rentals rates in the city.

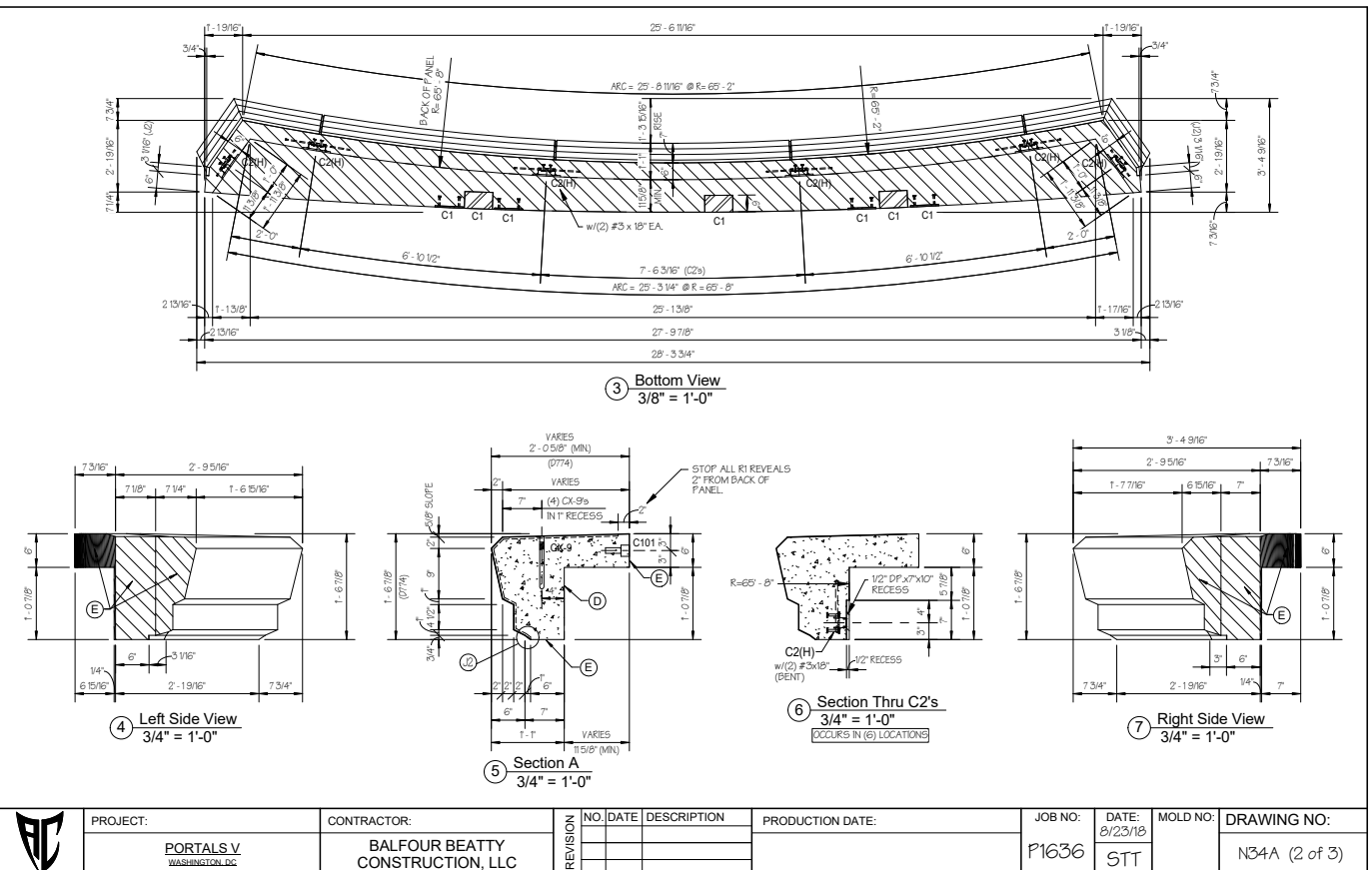
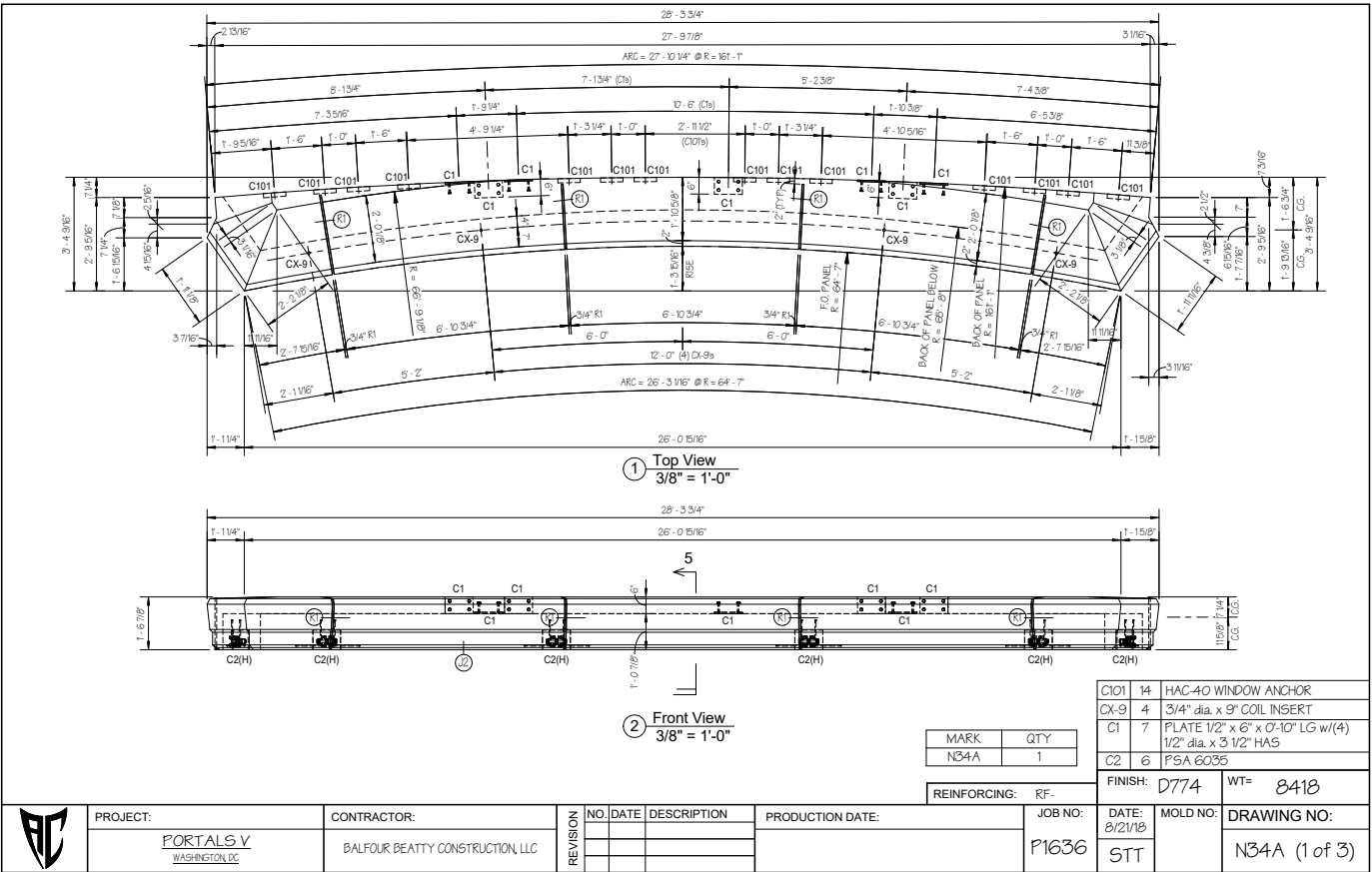
The project, manufactured by Arban and Carosi in Woodbridge, VA, consisted of 140,000 square feet of architectural precast comprised of 1,000 pieces. In order to fit in with the surrounding classic architecture (most of the DC landmarks and government buildings are clad with Indiana Limestone), the building is clad with a

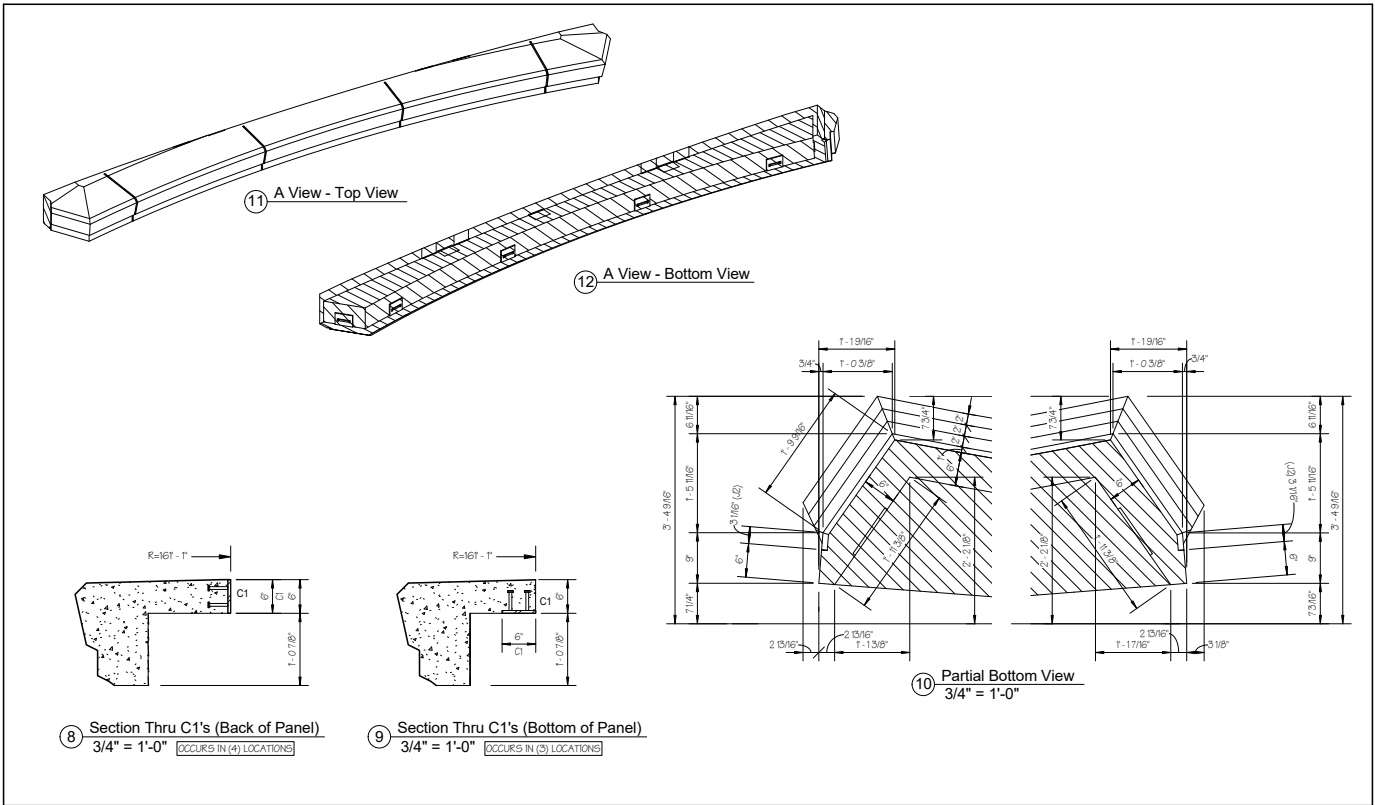
fine acid-wash finish to simulate natural limestone. As the precast is predominant architectural façade element on the building – great detail was taken to hide or minimize jointing and accentuate the simulated stone detailing (using reveals and profiles).

Precast Elements

The project consisted of over 1,000 intricate panels cast off of over 40 molds. The complex included not only profile and reveal work but multiple complex radius panels. All molds were fabricated by created plaster models in order to provide seamless and razor-sharp profiles. The modeling and molding process along with the uniform finish and detailed reveal work provided a perfectly executed simulated limestone finish.







	PROJECT:	CONTRACTOR:	REVISION:	NO. DATE DESCRIPTION	PRODUCTION DATE:	JOB NO:	DATE:	MOLD NO.:	DRAWING NO.:
	PORTALS V WASHINGTON, DC	BALFOUR BEATTY CONSTRUCTION, LLC				P1636	8/23/18	STT	N34A (3 of 3)





Due to the extreme difficulty of this project and many profiles and increate depth changes, the entire project was modeled (in 3D) to ensure proper fitting and accurate profile alignment as well is coordination with other trade work.

Nick Carosi, president of Arban and Carosi said, "This was without a doubt, one of the more complicated projects we have fabricated in many years. The complexity of many shapes and large number of required molds created a difficulty not seen in many other projects." Arban and Carosi's efforts on this project were rewarded with a 2020 Design and Manufacturing Award.

Project Name: Portals V

Location: Washington, D.C.

Architect: Robert A.M. Stern / WDG Architecture

General Contractor: Balfour Beatty Construction

DIMS TO RAIL 1/2" ANCHOR BOLT (RAILING SEE SEC.)
 TOP VIEW
 FRONT VIEW
 SEC. ①
 SEC. ②
 SEC. ③
 SEC. ④
 CABLES @ SECTIONS
 2 AC 5/8" AIRCRAFT CABLE
 7 C2 PSA 6035 INSERT
 1 C3 48"x6"x2"x0'-8" LG.
 2 C27 6"x6"x6" LG. W/FX-5
 1 BR. 4"x6"x1/2"x8'-4" LG.
 2B C101 HAC-40 WINDOW EMBED
 W354 = 1 REQ'D
 2 RAIL 1/2" RAILING ANCHOR (TYPE-1)
 REINFORCING : RF-99
 FINISH: D774 WT. = 14452#

PROJECT:	CONTRACTOR:	REVISION	NO.	DATE	DESCRIPTION	PRODUCTION DATE:	JOB NO.	DATE:	MOLD NO.	DWG NO.
							P1636	1/12/18		W354 (1 OF 2)

TOP VIEW (HARDWARE LAY-OUT)
 FRONT ELEVATION (HARDWARE LAY-OUT)
 BOTTOM VIEW (HARDWARE LAY-OUT)
 RAILING ANCHOR DETAIL
 WINDOW ANCHOR
 SEC. @ C3/C2
 SEC. @ C2
 SEC. @ C27 & BRACE
 BRACE
 BRACE 4 6"x6"x1/2"x8'-4" LG. W/(2) 1/2" HOLES AT 5' EA. END

PROJECT:	CONTRACTOR:	REVISION	NO.	DATE	DESCRIPTION	PRODUCTION DATE:	JOB NO.	DATE:	MOLD NO.	DWG NO.
							P1636	1/12/18		W354 (2 OF 2)



An interview with Shawn Walters, Florida Architectural Precast

Can you tell us a little about yourself and your background in precast?

I have been in the precast business since 1988 when my father in law purchased a small precast business in Vero Beach, Florida. The business mainly produced slabs, car stops, and some ornamental products. Soon after purchasing the business, we began to transition our product lines to the architectural scope, initially producing material for high end custom homes and later transitioning to commercial projects. After several years I bought out my father in law's interest and eventually sold the business in 1996 in order to relocate back to western Pennsylvania where I grew up. I started Pittsburgh Cast Stone in 1996 and sold that business in 2000 to return back to Florida and take advantage of an opportunity with Olde Tyme Construction in Okeechobee.

Can you give us a brief history of Florida Architectural Precast?

Initially, the company was Olde Tyme Construction, which was a cast stone manufacturer and installer as well as a stucco contractor. I was hired by Olde Tyme in 2000 to manage and grow the cast stone and architectural precast side of the business and eventually became the COO. In the recession of 2008-09, the owner of Olde Tyme decided to close down the business. At that point, I founded Florida Architectural Precast (FAP), made an arrangement to lease the Olde Tyme facility, restructured the company and brought many of the Olde Tyme employees over to the new company. So FAP was formally incorporated in 2009 but many of the current employees have worked together since 2000.

We operated out of the Okeechobee facility until 2013 when we purchased our current plant which is a 35,000



Shawn Walters
President



Mike Walters
Vice President



Luke Walters
Director of Operations



Alberto Reyes
Plant Manager

square foot manufacturing facility on five acres in Fort Pierce, FL. The company is managed by my two sons, Michael and Luke. They both were raised in the business and precast is in their "blood". As second-generation owners, they both strive to continue and maintain the company's core principles while advancing the processes and technologies to better serve our market.

What are the company's core principles?

Honesty, integrity and commitment to excellence are at the center of all we do. We view our customer relationships as long term relationships and we strive to outperform schedule and quality expectations. We take great pride in the quality and appearance of our product and go to great lengths to ensure a quality finish. Many of our employees have been part of our family for over 20 years. We greatly appreciate the efforts that they exhibit every day and strive to treat them with respect and dignity while providing them with opportunity to grow. Our employees are our most valuable asset.

What is your favorite project that your company has produced?

We have produced many exciting and high profile projects, it's hard to pick just one. We've worked on projects including: The Four Seasons Resort at Disney, the Disneyland Fantasyland Castle Wall, Trump National - Doral and Jupiter, The Breakers, Florida State University, and many public art projects throughout the country for Michael Singer Studios. In addition, there are many resort and commercial projects throughout the southeastern United States that we have worked on.

What are some of the challenges you are facing as a precaster?

Budgetary issues of future designs, competition from alternative products and the tightening labor market are some of primary challenges that we are facing.

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What are some situations you have been through or projects you have worked on that have made you become a better precaster?

When supplying masonry contractors on large projects, critical path coordination will determine the success of the project. Through our many years of supplying masons, we have learned the important process of critical path manufacturing and coordination.

How do you see the precast industry changing in the next 5 years?

Labor supply will be an issue. We will need to address the success path for employees to attract them to our industry. A precasters main focus should also include product innovation along with new product development. As competing products are introduced into the market, our industry must respond with new and innovative solutions.





3D modeling is necessary when a building has prevalent complex shapes, turns and unusual contours such as what can be found at the Louisiana Sports Hall of Fame. Photo courtesy of Advanced Architectural Stone

3D Modeling and CNC Machines Breathe New Life into Age-old Concepts

by Stacey Enesey Klemenc

Using age-old concepts adapted to modern technologies, precast concrete manufacturers such as Southside Precast Products produce everything from archways and trim work to monuments and landscaping elements. The Buffalo, New York-based company, which is approaching its 100-year anniversary, credits much of its success to 3D modeling.

"We can produce shapes that were unthinkable 15-20 years ago," says Rick Workman, company president. "We've come a long way with the types of products we

supply thanks to technology and materials that allow us to produce sophisticated organic shapes."

He says 3D modeling mostly comes into play with landscape projects that involve transitional shapes that morph from one type of shape into another. "We can get more creative in design when we don't have to follow a building structure," he says. However, Southside Precast will also use 3D modeling for specific shapes on buildings that differ from standard details.

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In addition to landscaping, Southside Precast uses 3D modeling on buildings that have intricate designs such as the McCourtney Hall at the University of Notre Dame (left) and Benton Hall at Colgate University (right). Photos courtesy of Southside Precast Products

3D opens possibilities

"If you can draw it, you can build it," asserts Tim Michael, vice president of operations for Advanced Architectural Stone, one of the largest cast-stone companies in the U.S. The company, founded in 1991, is based in Fort Worth, Texas. It also has a plant in Phoenix, Arizona.

With the advancements of 3D modeling and CNC (computer numerical control) mold making, he says, you no longer have to pull off original parts of a façade to scan it. "You can now do a digital scan of a front elevation and load that into a 3D model to replicate it," Michael says. "Before, a clay carver would carve a replica by hand and we'd build a mold off that."

The new 3D technology also comes in handy when someone wants to replicate a feature like an ornate column in a different size. Programs can reduce or

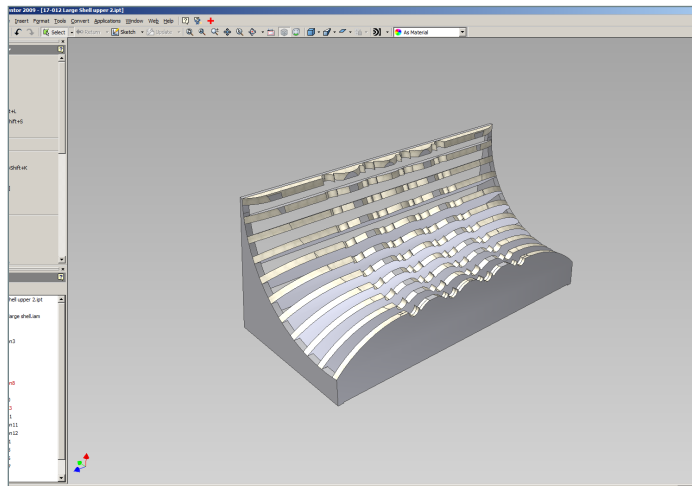
enlarge scanned-in architectural details and replicate them to scale through 3D software.

Beyond shop drawings

Rod Johnson, who runs Lucas Concrete Products, a second-generation family business in Charlotte, North Carolina, says his company tends to use 3D modeling on estimating and sales propositions, particularly if a job is complex or highly detailed.

"Sometimes you can't get a grasp on a project with a 2D 'shop drawing,'" Johnson says, referring to what's called a macro showing every piece of a building. In those cases, he'll produce a 'shop ticket,'" a 3D drawing of an individual piece that has all the details. He can produce either drawing with Autodesk Inventor, he says. "It plays well with others."

Celebrating 50 years in business this September, Lucas Concrete Products is one of a few companies with a department specifically dedicated to design/build.



When a piece of a building is ornate, Johnson says he produces a ‘shop ticket,’ a 3D drawing of an individual piece that has all the details. Photos courtesy of Lucas Concrete Products

“We are strictly a custom shop,” Johnson says. “We don’t make any widgets.” He says they get their business through bidding, negotiating, troubleshooting and outsourcing from other manufacturers that need help on a job.

Interface improvements

Like most precast manufacturers, Advanced Architectural Stone uses wood to create negative molds for most of its castings. For intricate designs, it creates positive replicas,

which are then covered with polyurethane to make rubber molds.

To create positive molds, Southside Precast starts with foam that it coats with multiple layers of a proprietary blend that forms a protective, hardening shell layer. From this, they make a hardened fiberglass mold or a peel-off rubber mold depending on the item’s style and application.

“Our 3D modeling technology allows us to extract info and interface with production to create full-scale positive models,” says Workman, whether that’s through a CNC or hot-wire cutting machine.

For building façades, his company uses AutoCAD 3D. He adds they use the Rhino 3D modeling program for undefined shapes because with Rhino “You don’t have to have fine edges.”

Rhino is great for transitional shapes, he explains. A piece can start out in one shape, change into another and then become a third after that. “And it looks like a fluid motion instead of separate pieces side by side,” Workman says.

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Rhino is a great program for creating transitional shapes for such projects as the Brooklyn Botanic Garden, Workman says. It can help a project maintain a fluid motion instead of looking like it has separate pieces side by side. Photo courtesy of Southside Precast Products

And with today's technology, you can adjust the shape of the mold to ensure it interfaces with the site. "You can take the survey info and adjust things on the fly," Workman says. "If site conditions don't match, specs can be altered as things progress."

Bits make a substantial difference

In general, manufacturers use negative molds one time while positives can be used multiple times. Improvements to CNC molds over the last few years include larger capacity, more 3D in appearance and more intricacy. CNC machines can also integrate with more software systems than they have in the past but they still have a way to go.

"A lot of architects provide us with models they create but I'd say 90% of them are not usable," says Workman. "They have to be reworked, tweaked or enhanced."



AAS is quite proud of the enormous Corinthian capitals it crafted to sit atop 16-foot-tall columns at the Old Parkland West campus in Dallas. The company was aided by a 3D Revit model and CNC-generated molds to make the columns to scale. Photos courtesy of Advanced Architectural Stone

Still, advancements in technology have greatly enhanced the versatility of architectural precast concrete. Companies that once created molds from hand drawings are now aided by computer-generated images that make jobs much easier.

Michael estimates 85% to 90% of architects are drawing 3D plans for their projects using Revit, a building information modeling program from Autodesk. "And we'll work straight from the model for 25% to 30% of our jobs," he says.

Advanced Architectural Stone uses Revit or AutoCAD 3D for drafting purposes and runs Mastercam for CNC-related projects. It has had its CNC machinery for a dozen or so years.

"What makes it so beneficial nowadays is that you can buy most any size bit to enable you to produce a finished product without a lot of sanding or finish work to make it presentable," Michael says. "These bits can fine-tune a product without leaving path marks or anything like that. They up the (manufacturing) speed, too."

The depth of the bit to the table dictates the thickness of each piece, Michael concedes. However, he adds, this doesn't limit what you can produce as you can always stack and glue pieces together to get the desired thickness.



Slow going

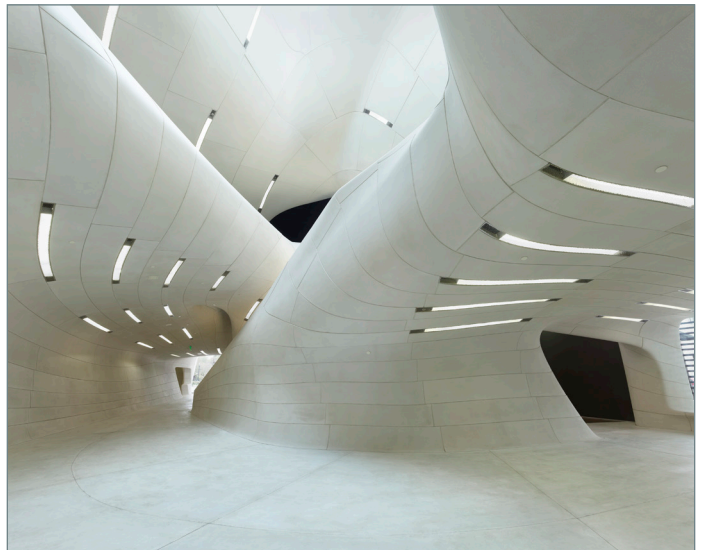
Johnson thinks the industry is slowly going toward 3D modeling interfacing with production but it's not there yet.

"If it's not faster or cheaper to get the necessary quality required, we'll do it the old-fashioned way — by hand," he says. His shop makes molds using Styrofoam, plaster, wood, bonding putty, glue and epoxy. "We'll never get away from using that stuff to make molds." He notes three-quarters of his molds are made of wood.

Johnson uses a Styrofoam cutter instead of a CNC machine to make molds. "My money is better spent on that," he says. "If I had a CNC machine, I'd need to hire someone to run it. The skilled labor is still required by hand or by machine. One is a dying artform."



Lucas Concrete Products often combines wood, bonding putty and foam to make a mold. Photo courtesy of Lucas Concrete Products



Welcome back, in this addition of the *APA Precaster* we will cover improving panel and repair appearance by brush washing with commercial cleaning agents.

Brush Washing with Commercial Cleaning Agents

By Kiley Marcoe, Metro Precast & Stone Services, Inc.

Color issues and poor appearance are usually a result of the finishing not a material or a batching issue. It is difficult, or even impossible, for the finishing department to be consistent with acid etching or sandblasting to the consistency and uniformity of paint which is often expected.

Off colored panels or repairs and inconsistent appearance within a panel can often be corrected through brush washing with a muriatic acid and water solution by creating a more consistent finish texture and removing efflorescence. The exposure level of the fine aggregates directly effects the color of the precast panel, the lighter the exposure the lighter the color, the heavier the exposure the darker the color.

Brush washing with a 10% muriatic acid and 90% water solution will correct texture issues, remove blemishes, remove efflorescence, and improve the overall appearance of precast and repairs.

Instructions for brush washing:

1. Prewet the area with fresh water.
2. Apply the cleaning solution with a brush from the bottom of the work area to the top.
3. Let cleaning solution stay on the panel for 3 to 5 minutes.
4. Reapply cleaner with brush scrubbing in both directions, up/down then left/right.
5. Working from the bottom rinse thoroughly with clean water.
6. Review dry and rewash as needed.

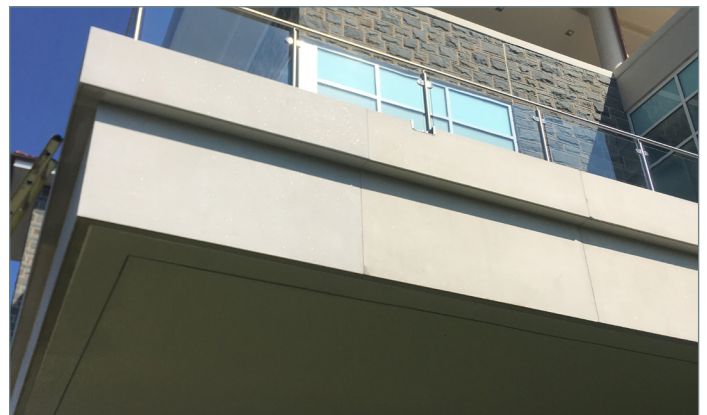
The next picture demonstrates how much finish texture effects the color



Below shows off-colored panels corrected through brush washing with a mild muriatic acid solution.



Before



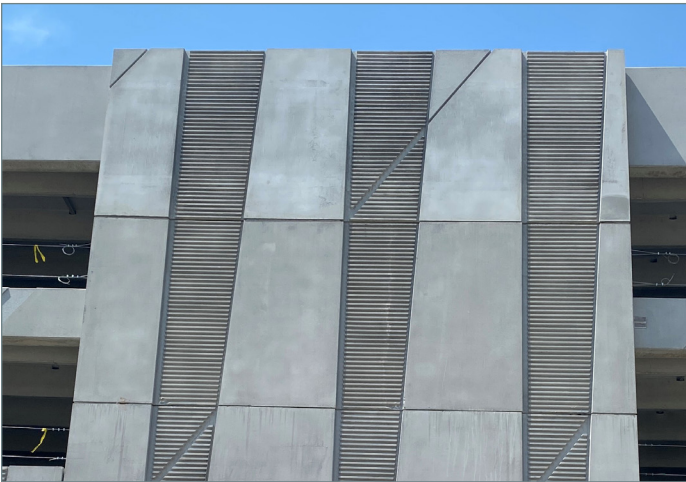
After



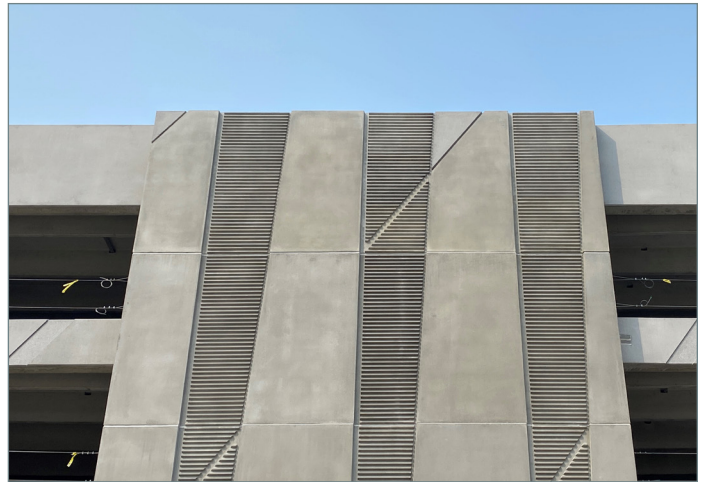
Before



After



Before



After

Below shows how well brush washing with a mild muriatic acid solution will improve the appearance of panels with blemishes and splotches.



Before



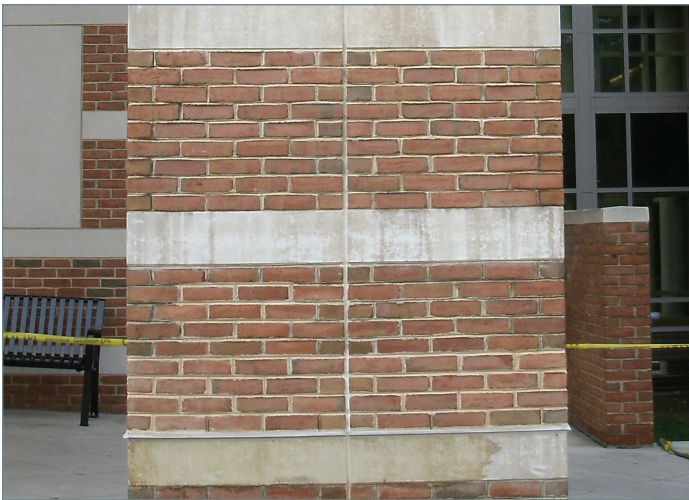
After



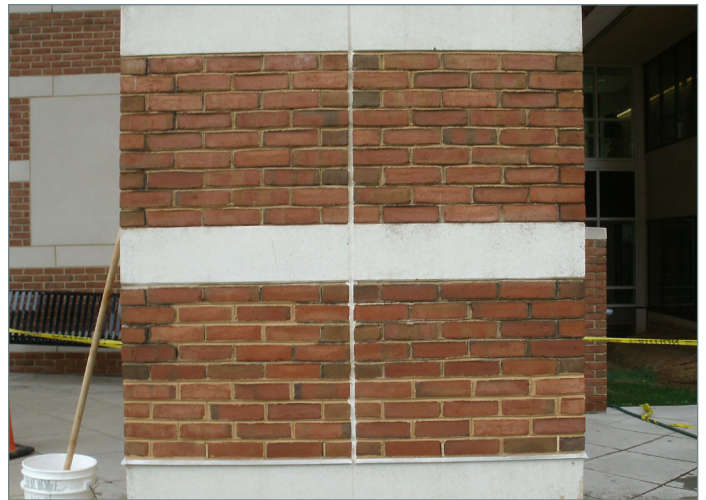
Before



After



Before

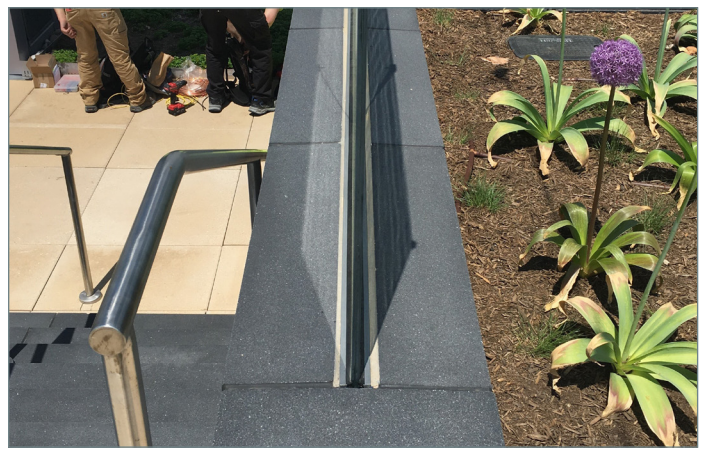


After

Below shows how well brush washing to remove efflorescence will improve the appearance.



Before



After



Before



After



Before



After

Brush washing will also improve the appearance of repairs by removing efflorescence and laitance.



Before



After



Before



After

Until next time, Kiley Marco
Metro Precast & Stone Services, Inc.
<http://www.metroprecast.com/>



Metro Precast & Stone Services, Inc.

*Restoring the architectural beauty of commercial properties
since 1990*

2022 SPRING WORKSHOP

PATCHING & FINISHING WORKSHOP

April 22-24, 2022 -- Alexandria, Virginia

Join the Architectural Precast Association in April of 2022 to learn about Patching and Finishing. This workshop features both hands-on demonstrations and precast repair as well as classroom instruction. Certificates will be issued to those who successfully complete the course.

HOTEL LOCATION

Hilton Alexandria Old Town, Alexandria, Virginia

*****Book before March 31, 2022 to secure the discounted APA room rate*****



What's Going On At The Plant?

APA Architectural Precast Association
June 23 · 🌐


What's Going On At The Plant? Installation of highly custom #architectural #precast panels produced by Premier Stoneworks for a high-end luxury home in South Florida. #concrete #SouthFlorida Shaped By Concrete #shapedbyconcrete



👍 1

APA Architectural Precast Association
August 4 · 🌐

What's Going On At The Plant? Olympian Precast (Redmond, WA) is manufacturing decorative #precast pavers for Peanuts Park restoration in Pasco, WA. #concrete



👍 4 1 Share

APA Architectural Precast Association
June 30 · 🌐


What's Going On At The Plant? @LucasConcreteProducts (Charlotte, NC) is working on some art concepts for a meandering wall project. #Architectural #Precast #Concrete Shaped By Concrete



👍 2

APA Architectural Precast Association
July 14 · 🌐

What's Going On At The Plant? This cladding job featuring unique trim bands and entryway was recently manufactured by DC Kerckhoff Company (Naples, FL) for a Gainesville Fire Station. #architectural #precast #concrete



👍 2

This page features recent APA social media posts on projects in production or completed by APA Certified Plants. Want the APA to promote your plant's work? Here's how:

TAG THE APA IN YOUR PLANT'S SOCIAL MEDIA POSTS

Facebook, Twitter and Instagram: @archprecast
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Send a picture or two of the pieces, panels or finished job and a one sentence description of the job and location to: info@archprecast.org