

# ARCHITECTURAL precaster



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# ARCHITECTURAL precast

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## PRESIDENT'S MESSAGE

*Nick Carosi IV, Arban & Carosi, Inc.*

Greetings to all fellow producers, associates, and professional members:

If you missed the 2023 Spring Workshop, I'm sorry to say you missed a great event! The workshop left attendees with valuable insights on how to increase accountability and productivity on the plant floor. The networking allowed for additional personal and professional growth and the fun activities, including the opportunity to shoot an H&K UMP 45 caliber automatic rifle, which gave attendees the opportunity to blow off a little steam!

There are two recent improvements the APA has made that I want to be sure members are aware of:

**YouTube:** For additional learning opportunities I encourage all members check out the content on APA's newly revamped YouTube Channel (@architecturalprecast). It has webinars and videos on precast and related content that also can be used to obtain Continuing Education Credits for APA personnel certifications. At this point, there are over 12 hours of CE content on YouTube!

**Money Saving Programs:** The APA launched a money saving program last year that is helping members to save on office supplies and furniture through OPD (Office Depot's B2B spinoff). The "Member Resources" tab on the APA website has information on that and other cost saving programs.



Finally, be sure to keep an eye on your inbox for details on the APA Annual Convention. The Education Committee has come up with some great motivational and educational programming for the meeting October 6-9 in Delray Beach, FL. We'll also be sure to throw some fun into the mix so please mark your calendars!

I hope that you, your families, and employees are doing well, and I very much look forward to seeing you this fall in Florida!

Nick Carosi IV

## The APA knows that having the right tools is essential to your success.

APA members are NOW ELIGIBLE for substantial discounts on office supplies through Office Depot's ODP business to business platform. You can receive up to 75% off ODP's "Best Value List" items and the average savings for participants is 24%.

There is no minimum purchase required and next-business-day delivery is **FREE** for online orders of more than \$50 (excludes furniture). You can even set up direct billing, if desired.



For more details, go to: <https://bit.ly/APA-ODP>

The night sky and LED lights show an entirely different look for the building



Greenwood Rising Black History Museum



# An In-Depth Look at an APA Award Winning Project

GREENWOOD RISING BLACK HISTORY MUSEUM

DEVINCI PRECAST

APA 2022 DESIGN AND MANUFACTURING AWARD WINNER

APA 2022 CRAFTSMANSHIP AWARD WINNER

SELSEY SCHAEFER ARCHITECTURE

CROSSLAND CONSTRUCTION COMPANY

## Overview

The Greenwood Rising Black History Museum is a legacy project of the 1921 Tulsa Race Massacre Centennial Commission. This world-class museum honors the victims of the infamous Oklahoma massacre, while striving to foster meaningful change through acknowledgement of both the past and the present.

The bold exterior features over 9,000 square feet of strikingly hollowed, nearly 29-feet-tall, white GFRC panels. These are boldly juxtaposed against charcoal-black brickwork laid below.

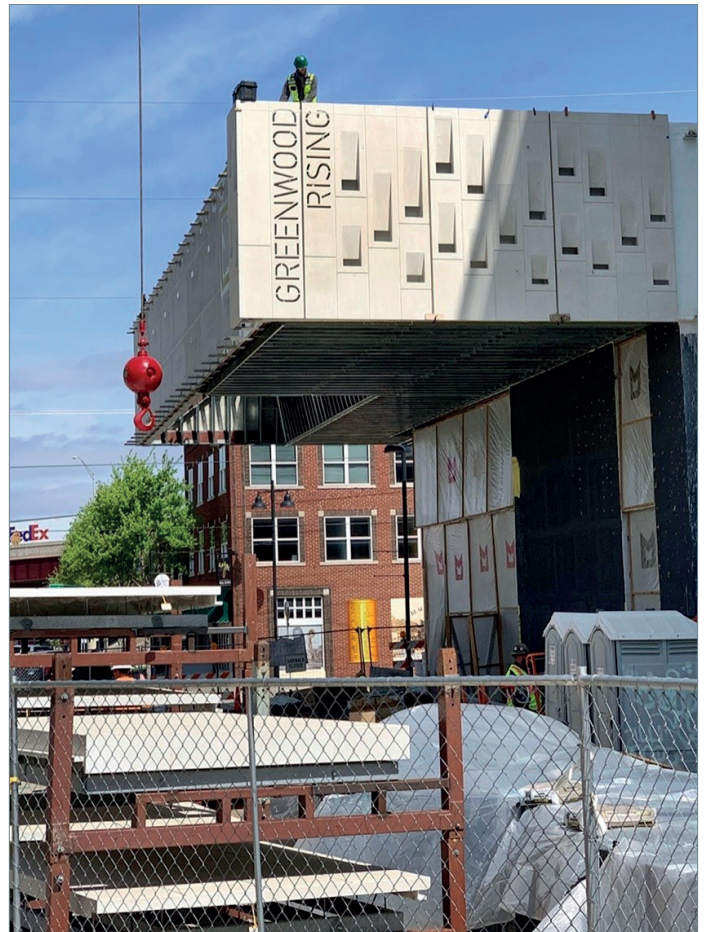
In daylight, the many, deep recesses in the GFRC skin create an ever-changing shadow play. At nightfall, the LED fixtures installed within each panel's frame adjacent to those same openings, put on a dazzling display of multicolored lights.

## Design

The GFRC, together with all the other components within and without the building, is meant to help narrate the horrific story of Black Wall Street. The whole design serves as a poignant illustration of change and transformation.

## Compatibility with Natural Surroundings

Positioned at an entrance to the city's historic Greenwood District, the building becomes a gateway into the area. Itself – a herald of change that has defined that part of Tulsa's downtown for generations. From past vibrancy and commercial success, through terrible destruction and sorrow, and into the present promise of rebuilding and reconciliation. Its importance as a landmark and a monument cannot be overstated.



*Installation in progress*

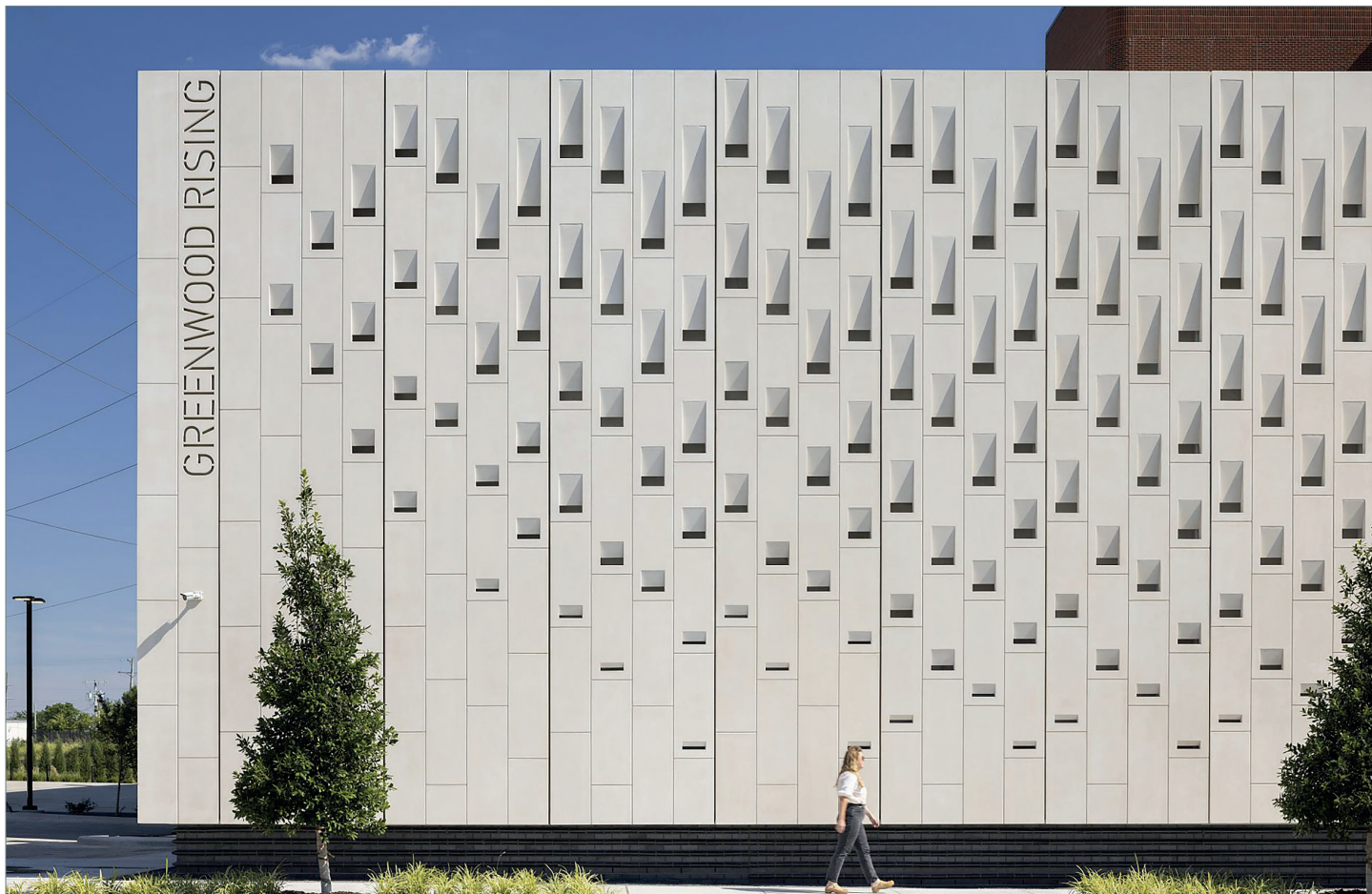
## Manufacturing Excellence

The panels were designed to both capture and project light. Their HSS frames and flex rods had to be carefully constructed to aid, rather than inhibit, the free movement of light waves. The GFRC skin also serves as a rainscreen, allowing for controlled ingress and egress of water, as well as protecting the building's air & vapor barrier from direct sunlight. SW and NE corners of the museum feature GFRC panels with vertical, pierced

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*Daytime shot of the finished building*

lettering, and inconspicuously designed light pockets hiding giant, state of the art flat LED backlights.

Some of the unique detailing aspects of the project include the pierced lettering with LED-illuminated background; the multiple light pockets and false joints incorporated into GFRC shell; the shiplap detail in the panels as well special anchoring details to provide easy in-field height adjustment.

The DeVinci team implemented its in-house daily quality control and testing program to ensure consistency. Color, texture, and consistency were achieved by adhering to the APA quality program as it pertains to finishes. All products produced were monitored for conformance to the design reference sample approved by the project architect.

## Challenges

The project had a very high degree of difficulty; the design required precise drafting and perfect mold execution, as well as continual communication between the architects, general contractor, and manufacturer. Real-life and digital simulations were used to maintain seamless interactions of frame members, GFRC shell and light.

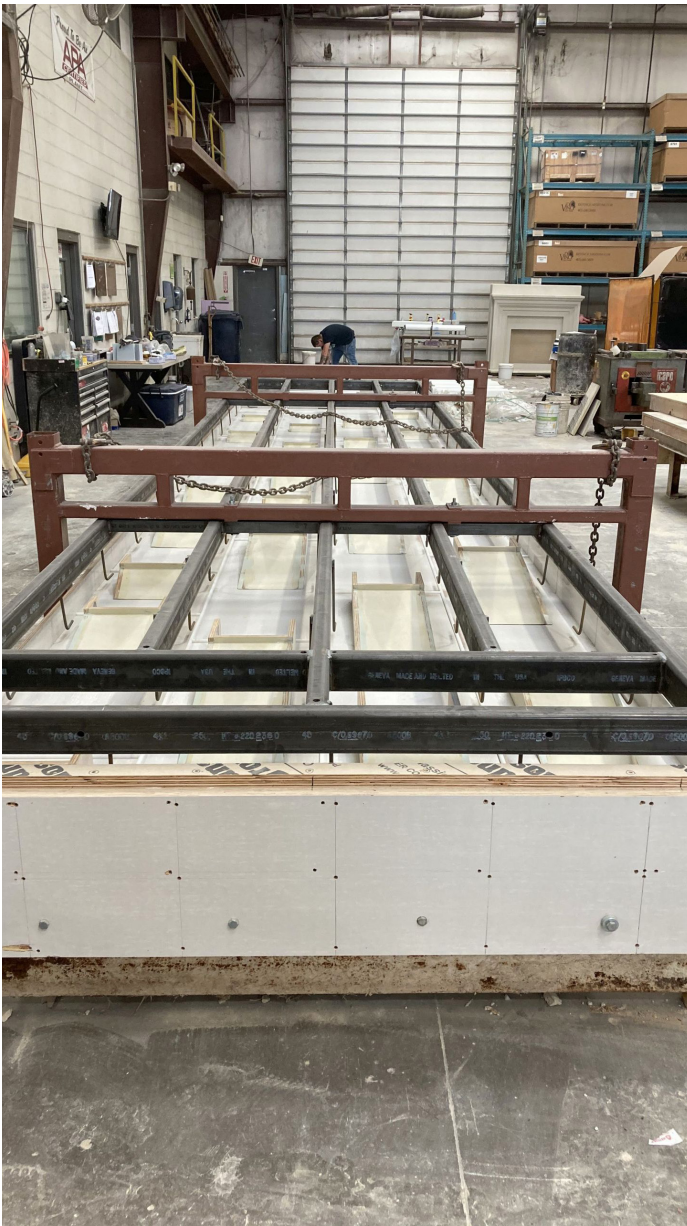
Special consideration was given to product installation and future serviceability. There was also considerable hype associated with the museum and its historic significance.

The tight time frame (only a few months) to cast and deliver the entire project was also a challenge as the museum had a hard-set opening day of June 1st, 2021 – in time to observe the massacre's 100th anniversary.

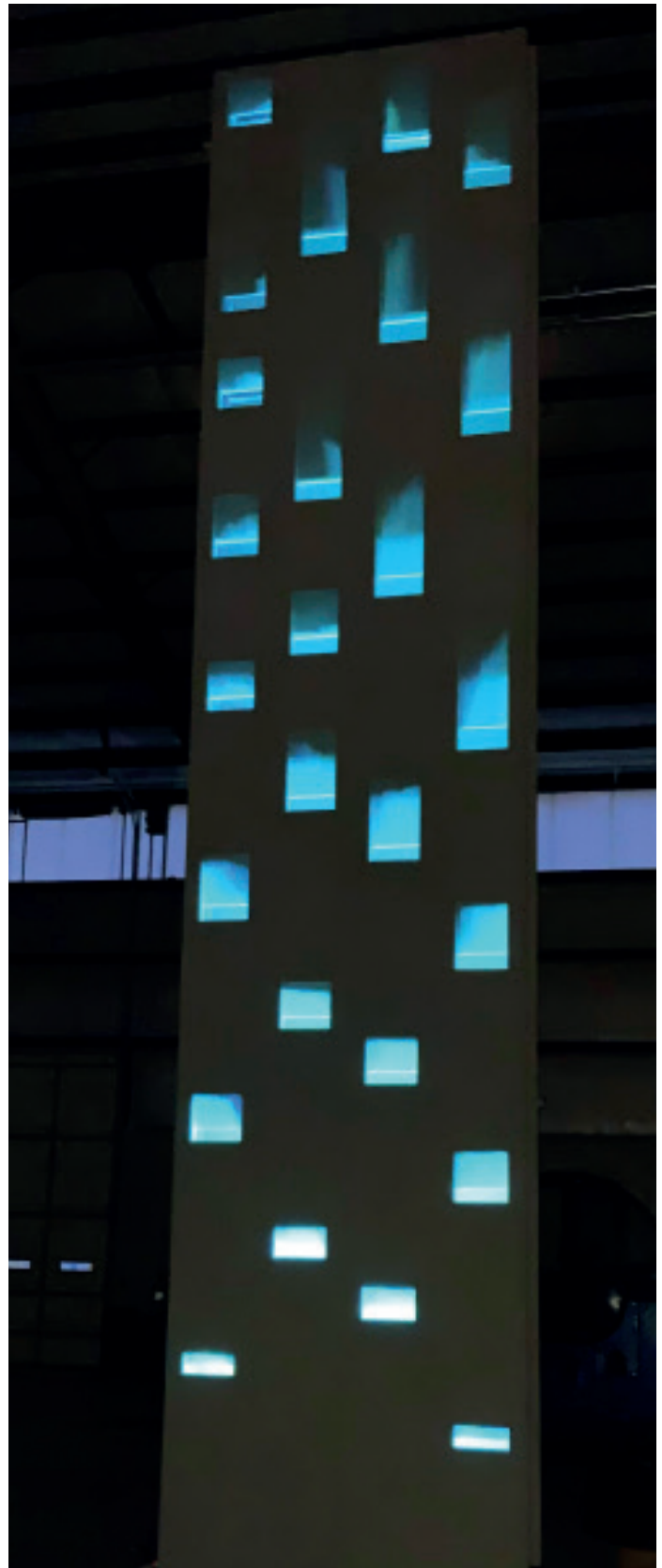
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DeVinci collaborated closely with the design team and Crossland Construction to help eliminate mistakes and streamline production.

The DeVinci team was especially honored to take part in building this beautiful landmark. Their employees' commitment to the project was evident to the awards jury which noted the façade's overall beauty, the cantilevered corners and the integration of natural and artificial light.



*The DeVinci team checks the form and supporting framework for the 29 foot panels*



*A mock up in shop to test the LED lighting*



# GFRC Renders Same Look Via a Different Method

By Stacey Enesey Klemenc and K. Schipper

When it comes to using GFRC (glass fiber reinforced concrete), most architectural concrete precasters will agree there's a learning curve involved to master its production. Although the formwork and finish procedures for GFRC are generally the same as traditional precast, the steps to get there vastly differ.

And, while the end results may look like conventional precast concrete, the purposes of GFRC fill their own special niche in the construction world.



*The OSF Ministry Headquarters in Peoria, Illinois, features 520 GFRC pieces that were historically replicated and glazed to match its largely demolished white terra cotta exterior. The appearance and exactness of the GFRC allowed the architects to obtain an historic preservation credit for the project. (Photos courtesy of DeVinci Precast).*

## Pump-and-spray

For starters, instead of placing the mix into a mold by pouring, it is usually spray applied with a pump and spray gun.

"We primarily use the spray-up method because it increases (GFRC's) flexural yield and ultimate strength," says Eric Sutliff, general manager of DeVinci Precast

in Oklahoma City, Oklahoma. "The other is a premix method for smaller applications that don't require the robust physical properties of the spray-up."

The basic GFRC mix is a blend of fine sand, cement, water, polymers, chemical admixtures, and glass fibers. Manufacturers can also incorporate other things into the mix, including pigments, fillers, and aggregates. Whereas the materials that compromise GFRC differ from conventional precast concrete, "The appearance is the same on the exterior," Sutcliff says.

Mesa Precast in Tempe, Arizona, specializes in GFRC for commercial work for universities and courthouses around the country. It also produces a lot of wet cast stone for local custom homes and other structures in the Phoenix area, says Steve Adkins, the company's general manager. Its mother company, Advanced Architectural Stone in Fort Worth, Texas, makes the firm's dry cast products.

Adkins says the key to GFRC's success is its weight.

"It's a shell material, only about three-quarters of an inch thick, so you save a lot of weight," he says. "You save money on freight; you save money on installation; you save money on handling equipment. Particularly in the field, you can use smaller cranes that can reach farther. Those are the advantages of GFRC."

Sutliff is more specific. Not only do the glass fibers in GFRC's mix enhance its structural properties, but GFRC pieces can be thinner than those made with more conventional methods.

Because architectural precast is solid concrete with interior reinforcing steel, it can weigh between 55 and 80 pounds per square foot. The thinner GFRC shell, comprising a concrete mixture with glass fibers to form a laminate build-up, falls between 17 and 20 pounds per square foot, including the steel frame that supports it.

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*Because of its propensity to be thinner, GFRF is an excellent choice for complex shapes. Seen here is a piece with an acid-etch finish. (Photo courtesy of Mesa Precast)*

## Cost-effective option

Because of its propensity to be thinner, GFRF is a great choice for complex shapes. With its high strength-to-weight ratio, it's a cost-effective solution for higher elevation applications. It's also good in instances where the building's structural support can't sustain the weight of other cement-based or stone products.

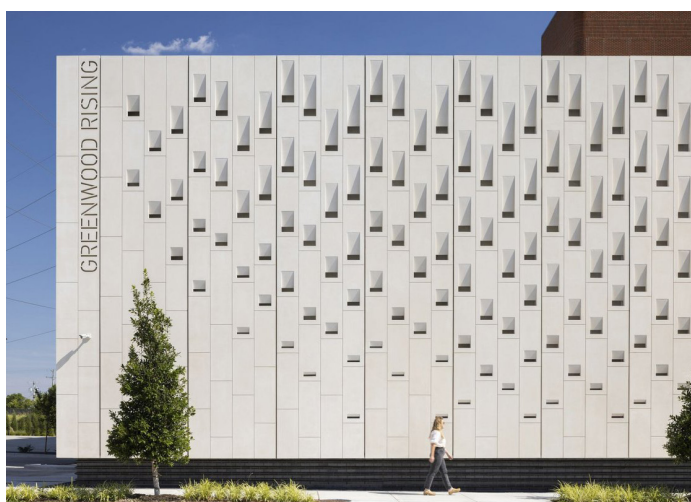
Jennifer Welding, CEO/CFO of Unlimited Designs in Salt Lake City, Utah, says the lightness of GFRF is appealing. Her company recently completed a job with Gate Precast where Unlimited Designs did everything above the roofline.

"It makes sense," she says. "Above the roof the steel support package didn't have to be quite as beefy. For that reason alone, it offers a lot of potential."

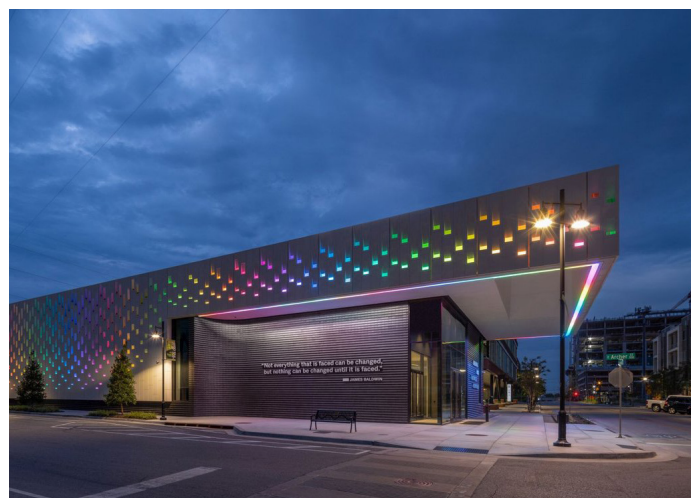
GFRF elements can't be used for structural purposes, although Atkins says a popular use for it in his market is in cornices, and especially column covers – even in residential situations.

"GFRF has always been popular where they have ugly steel supports, or even wood posts on a pergola," he says. "You take the GFRF, make a two-piece surround and now you've got a beautiful column cover that looks like it's supporting the building, but it isn't."

GFRF can be produced to look and feel like limestone, cast stone or conventional architectural concrete in any color. And while it's much less expensive to install, it is more expensive to produce than conventional concrete.



*The Greenwood Rising Black History Museum in Tulsa, Oklahoma, has nearly 9,000 square feet of strikingly white hollowed GFRF panels that stand 29 feet tall. (Photo by Mel Willis, courtesy of DeVinci Precast.)*



*In daylight, the museum's many deep recesses create ever-changing shadow play while in the evening LED lights put on a dazzling multicolored display. (Photo by Mel Willis, courtesy of DeVinci Precast.)*



## Energy efficient

Perhaps nowhere has GFRC's positive traits been on exhibit as much as with the ISTB-7 Building on the Arizona State University campus in Tucson, where GFRC elements created geometric shapes that enclosed the entire building while protecting it from the desert sun and heat.

Each side of the building's façades took on different shapes based on how the sun touched it, to minimize the amount of direct sunlight that would enter through the windows. While the panels that made up the façade appear to be the same, the slightly different shapes were designed for their specific locations on the building.

Welding says she's confident that not only the lifespan of the concrete will help her product shine for years to come, but in this case, sensors were embedded in the product to study the airflow around the building.

She adds that she's seen most of the growth in GFRC among clients who want longevity and lower maintenance – both reasons that make all kinds of architectural precast products attractive.

"We've done some restorations, as well," she says. "That's been good because of the light weight of GFRC, the structure can usually support it when sometimes it can't support another architectural precast product. We can see it going there."

The real conundrum with GFRC is that while it has been specified for many years now, there's still a learning curve ahead.

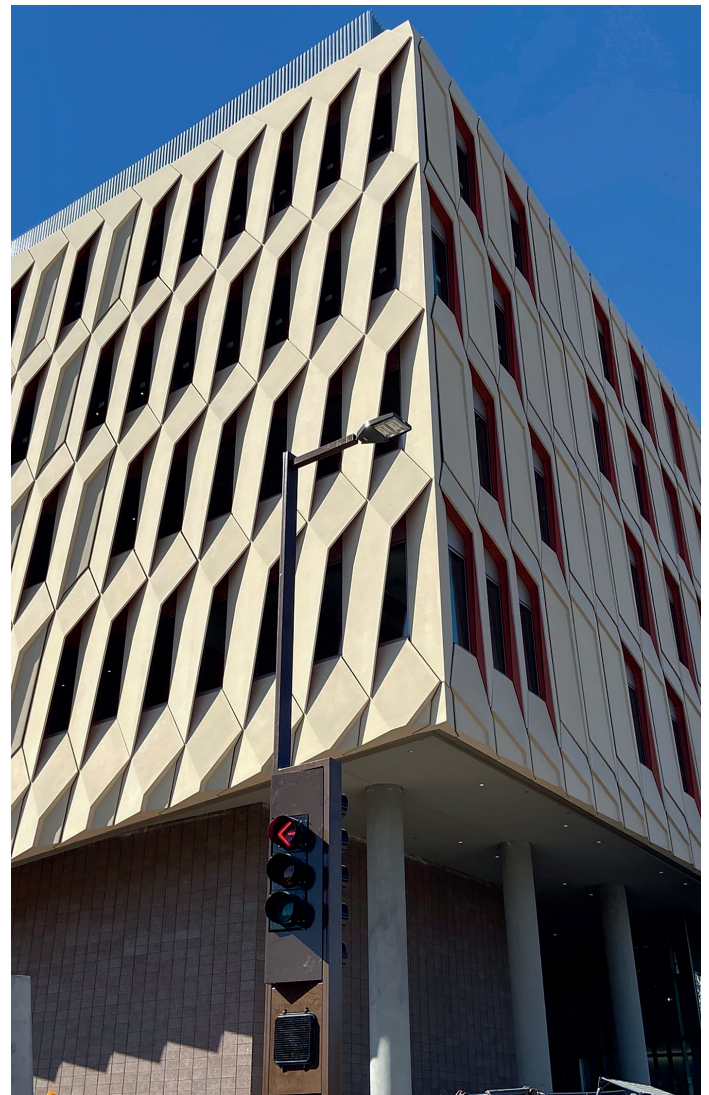
Atkins says he remembers when architects really didn't know what GFRC was, or they had only read about it in a specification book.

"However, they just didn't have the experience using it," he says. "We're seeing it a lot more in government buildings. We're seeing it a lot in cornices, decorative GFRC work. And we're seeing it in panels where there's a lot of detail in the pieces."

Still, Welding says there's a lot more education that needs to be done as older architects retire and take their knowledge with them.

"We need to reach the architects first and foremost because that's who the owners typically bring on board first," she says. "We need to get into the universities to create an understanding of what the product does, its versatility, and the colors and shapes that can be achieved. And we need to get the word out to the owners who are building constantly. Getting it in front of them is important, too."

The bottom line: "We guide clients to use the appropriate materials for each application," says DeVinci Precast's Sutliff. "Choosing the right material is important to the success of the project. We often use a combination of materials and methods on a project. They all differ in what they can deliver."





## Member Spotlight: Speed Fab-Crete

In the late fifties Dave Bloxom, the founder of Speed Fab-Crete, was a general contractor with the desire to build with some type of prefabricated construction system. After a period of trial and error, he developed a precast concrete wall panel system that incorporated a steel channel frame surrounding a concrete panel. The panels were all custom sizes and welded together to form a structure. Speed Fab-Crete was born. Dave took advantage of inexpensive radio and television advertising and was soon erecting his buildings all over Texas.

In 1998, a group of five long-term employees purchased Speed Fab-Crete from Dave Bloxom. Over time two partners retired, leaving three current owners: Carl Hall, David Bloxham and Ron Hamm.

Speed Fab-Crete no longer uses the original panel system but still provides turnkey design build projects such as churches, car dealerships, office buildings and manufacturing facilities. Speed Fab-Crete also provides structural wall panels, architectural wall panels, arch bridges, heavy structural double tees, and various

other precast concrete components to other general contractors. A large portion of Speed Fab-Crete's precast is providing ICC 500 certified storm shelters for schools. They also supply a substantial number of buildings for infrastructure projects such as water treatment plants.

One of the owners, Carl Hall, is a former member of the APA Board of Directors. He started his career in the construction industry the day after he graduated from high school, building silos in the eastern and mid-west states --he started as a laborer and worked his way up to management. He said, "what differentiated that work from other construction was that all the pay was based on piece work. Teamwork and efficiency were an 'all day, every day' practice".

To this day he carries that respect for tradesmen and those who work at the plant. He and the Speed Fab-Crete leadership are proud of their low employee turnover and their overall team, several who have been with the plant for over 30 years.





Hall believes that being a part of a design build general contracting team has helped Speed Fab-Crete grow their precast business to a higher standard since it helps them to understand their customer's needs and supply solutions. As an example, Speed Fab-Crete has a full-time manager to work with the general contractor's subs on all issues related to precast. This cuts weeks out of the delivery schedule. Timely delivery and producing a quality product have earned the plant many repeat customers -- both owners and other general contractors.

One of the biggest challenges the precast industry suffers from is the same as many other industries, the lack of available workers. Hall believes that sooner than later robotics and automation will be a bigger part of the

industry and as the cost of automation becomes more affordable, its use in the industry will increase. He sees automation not as leading to a loss of employees, but to increase production with the current workforce.

He equates being a member of APA to being born into a family of carpenters, welders, or any other trade. Over time members realize that there is a wealth of knowledge and experience that their fellow APA members are willing to share. He says, "It is a blessing to be able to call another APA member and discuss a problem or issue. The members are always willing to help, and I always enjoy helping someone else. It is a great family."







**ABOVE**  
Sales and Estimating Team (L-R): Jeff Harwell, Bridge Sales;  
Drew Norlin, Project Manager; Carl Moseley, Estimator and  
Knox Ross, Director of Infrastructure Projects



**RIGHT**  
Production and Field Services (L-R): Paul Adams Precast,  
Production Manager; Maikel Cox, Field Supt.; and  
Jeremiah Hurley, QC Manager





## HOW TO EARN CE

APA provided in person education  
(Max. 12 CEUs; 6 per event)

Examples: Annual Convention or  
Spring Workshop

Other relevant training: Plant  
tours, site visits, lunch & learns,  
online education, mentorship,  
(Max. of 6 CEUs; 1 CEU for each  
hour of education)

Examples: Tour other precast plants,  
tour a supplier's plant, watch APA  
Webinars (live and recorded on  
YouTube Channel)

Review Case Studies & Articles  
(Max. of 3 CEUs; 1 CEU for each  
hour of review)

Examples: Read articles in The  
Precaster, Concrete Contractor  
Magazine, etc.

Attending other in person  
industry events through an  
approved provider.  
(Max 8 CEUs; 1 for each hour of  
education)

Examples: Attend educational  
sessions at World of Concrete ,  
the Precast Show, take an ACI  
training course, etc.

Review/Update Plant's QC Manual  
(Max. 2 CEUs; 1 CEU for each hour  
of review)

Review Plant Procedures  
(Max. 2 CEUs; 1 CEU for each hour  
of review)

**DID YOU KNOW-THERE ARE 12 HOURS OF CE  
VIDEOS ON THE APA YOUTUBE CHANNEL  
@ARCHITECTURALPRECAST?**



## The Impact of Culture: Those Who Work There Will Determine Who Works There

By Mack Story

Listen to the voices of leaders who are losing the labor war:

- "We just can't find any good people." As if...there aren't any good or great people.
- "Due to the low unemployment rate, there just aren't any good people left." As if...the only people who can be offered a job are those without a job.
- "In today's labor market, those who want to work are already working." As if...those who are working at one place can't decide to work at a different place.
- "When we do get good people, they won't stay." As if...the problem is always with the people and never with their leaders.

*"I think the most important and difficult thing is to create a culture in the organization where leadership is really important. It's important for people in the company to realize that this is a growth-oriented company, and the biggest thing we have to grow here is you, because it's you who will make this company better by your own growth."*

*~ Jim Blanchard*

One thing I know about leaders who make these and similar comments is this: Their culture is a competitive disadvantage. Someone else has the advantage and is winning the battle for the good and great people. The good and great people certainly aren't out of work



wishing they had a job. They're working someplace else.

Until a leader is aware of the problem, they can't address the problem. In case it's not obvious, the problem is their culture. The leader owns this problem whether they want to or not. Every time I hear these comments, and I hear them a lot, I know I'm talking to a leader who doesn't know what they don't know.

Ria and I hear leaders across varying blue-collar and white-collar industries repeatedly making these comments as we travel across the USA speaking on leadership development. These voices seem to be getting louder and louder. In fact, these voices are an inspiration for this book.

There are many leaders in blue-collar industries needing help. I want to help them stop searching for good people and start attracting great people. The transformation won't happen overnight. However, until it starts happening, it's not going to happen. My intention is to use this book to raise awareness while providing a transformational road map for those leaders who want to make their culture their greatest competitive advantage.

We were speaking in Louisville, KY recently to owners of blue-collar organizations. Afterward, one approached and said, "There isn't a magic pill is there? I think we all hoped there was." I replied, "No sir. There isn't a magic pill or an easy button. This is how you build a high performance team and an exceptional culture that will attract, retain, and support them. There is no other way."

Your culture is always attracting certain types of people and repelling others. Who we are is who we attract. This principle applies to individuals as well as organizations. The culture within your organization is negatively or positively impacting those within the organization, and some who are outside the organization.

The key point is to understand the people inside your organization are constantly providing the most influential type of advertising about your organization and the leaders within it. It's called word of mouth advertising. How your team is feeling inside the organization will

*"If we lose sight of people, we lose sight of the very purpose of leadership."*

~ Tony Dungy

determine what they're saying outside the organization.

If what they're saying about their leaders and the organization to others is good, it'll be easier to find good people. If what they're saying is great, it'll be easier to attract great people. But, if what they're saying is bad, finding good people will be hard, if not impossible.

Remember the voices at the start of this chapter? Those leaders had team members who were sharing bad word of mouth advertising about the organization. Unless those leaders choose to change, nothing will change.

Common sense reveals it's easier to win the labor war while attracting great people instead of searching for good people. However, what's common sense isn't always common practice. Often, it takes uncommon sense to act on things that are commonly understood. Creating an organizational culture that will attract and retain great people requires leaders with uncommon sense.

The best led companies aren't impacted by labor shortages because they're consistently attracting the best and the brightest people to their organizations.



*This article is an excerpt from the upcoming book by Mack Story, Blue-Collar Leadership & Culture: The 5 Components for Building High Performance Teams. More information on Mack and the book can be found here: <https://bluecollarleaders.com/culture/>.*

Welcome back, in this addition of the APA Precaster we will cover the specialty tools for the precast repair technician.

## Specialty Tools for the Precast Repair Technician

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

There are specialty tools of the trade that help assure successful precast repair.

**Soda blasting equipment** – Soda blasting is a must have for texturing and removing sponge smears from repairs on precast with a light to medium sandblast finish. Soda blasting is also used to clean stains in freezing weather.





**Low pressure epoxy injection system** – Low pressure injection systems are designed for delicate architectural surfaces because they allow the use of low-strength capping adhesives that can be removed without marring the surface of the concrete. These reusable injection systems will pay for themselves after the first use compared to the manual caulk gun systems.





**Toothed bush hammer** – A toothed bush hammer is a must have to texture repairs in precast with a heavy sandblast finish. After allowing the repair to cure, simply texture to mimic the precast finish.



**Natural stone repair kits** – On precast clad with natural stone, terracotta, or glazed thin brick a complete natural stone repair kit is mandatory. Tint the knife grade UV stable resin to mimic the stone, terracotta, or thin brick color. Install the colored resin with a small leaf and square, similarly as you would any concrete repair. The only difference is the resin repair is honed or polished after the resin cures using 60 grit-3000 grit wet/dry sandpaper.



If you would like a full list of basic tools, specialty tools, and products along with where to purchase just email me at [kiley@metroprecast.com](mailto:kiley@metroprecast.com)

Until next time,  
Kiley Marcoe  
Metro Precast & Stone Services, Inc. [Metroprecast.com](http://Metroprecast.com)





## APA MEMBER BENEFIT: HR & EMPLOYMENT HOTLINE



As valued association members of the Architectural Precast Association, you have unlimited access to a complimentary HR & Employment HOTLINE through our partnership with Seay Management Consultants. This HR & Employment HOTLINE is available to you at NO COST and will provide answers to your human resources, personnel management and employment related questions.

Hundreds of employee questions arise in day to day business and almost every one of them can be different – questions about COBRA, FMLA, EEOC, ADA, and so many others. Sometimes a simple

question can turn into a complicated or costly concern if it's not handled properly.

When you have a question and need an accurate, straight forward answer, simply contact Seay Management Consultants and identify yourself as an APA member.



### HR & EMPLOYMENT HOTLINE

Email: [admin@seay.us](mailto:admin@seay.us)

Toll Free: 888-245-6272

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Sexual Harassment Prevention  
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HR Workshops and Presentations

*\*Special Projects will be offered at a reduced hourly rate for clients of APA.*



# SAVE THE DATE



## 2023 APA ANNUAL CONVENTION OCTOBER 6-9

Opal Grand Oceanfront Resort & Spa, Delray Beach, Florida

