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PUBLISHER

Nick Rhoad

EXECUTIVE EDITOR

Christy Denault

MANAGING EDITOR

Heather Bremer

TECHNICAL EDITOR

Brad Chinery, P.E.

TECHNICAL CONTRIBUTORS

Phillip Cutler, P.E.

Claude Goguen, P.E.

Hugh Martin, P.E.

Ron Naumann, P.E.

GRAPHIC DESIGN

Molly Tippner

ADVERTISING

Chris Frederick

cfrederick@precast.org | (317) 571-9500

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Address your letters and comments to the editor:

Precast Today/Editor

1320 City Center Drive, Suite 200, Carmel, IN 46032

(800) 366-7731 | Fax: (317) 571-0041

Email: marcomm@precast.org

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Chair's Insights

A MESSAGE FROM NPCA CHAIR WILLIAM J. BUNDSCHUH



William J. Bundschuh
NPCA Chair of the Board

EMBRACING CHANGE

Life is full of change, and our industry and association have seen their fair share of it. Not a day goes by that our members are not asked to improvise and innovate to remain relevant. New requirements at the federal, state and local levels are pushing precasters to improve sustainability and reduce their carbon footprint, namely in the cement we utilize to manufacture our products. Other regulations dictate where materials can be sourced from, directly affecting our bottom lines and which projects we can take part in.

Keeping up with these changes is no easy task. Luckily for us, NPCA provides ample resources to stay ahead of new requirements and prepare for whatever's coming down the road.

Change has been the theme at the NPCA headquarters as well. Nick Rhoad hit the ground running as the association's new president and CEO late last year. If you've met Nick, you know he brings a ton of energy and new ideas to NPCA, as well as a wealth of experience in manufacturing. Most Chairs hear from the president/CEO on a once-a-week scheduled call, but, with Nick, my calls are finally down to one per day. He's settled into the role and continues to learn everything he can about our industry. Don't be shy about reaching out to Nick to get a sense of where he's got the association headed.

Change means being nimble as the opportunities and obstacles facing the industry evolve. At the spring meeting, one of the Board of Directors' primary agenda items was a strategic refresh to provide direction for the organization. With so many new staff members joining us in the past few months and bringing different skills and expertise, it was great timing.

With the help of an outside facilitator, the board was able to establish four key areas or pillars for strategic growth of the NPCA: Membership growth and engagement, workforce innovation, advocacy and government affairs, and education.

The board had great discussions about the opportunities in each of these four areas and charged the staff with developing measurable goals and tactics to achieve those goals for presentation back to the Executive Committee in August.

I wish every member of this organization could have experienced the energy and enthusiasm in that board room. Our industry and our organization are going places!

4 Pillars for Strategic Growth of NPCA:





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Industry Insights

THE ECONOMIC WINDS BEHIND THE PRECAST INDUSTRY:

Technology drives productivity and growing economy



By Pierre G. Villere

Pierre G. Villere serves as president and senior managing partner of Allen-Villere Partners, an investment banking firm with a national practice in the construction materials industry that specializes in mergers and acquisitions.

I am betting at least a few of you read one of the columns I regularly write for various industry publications, and, if you do, you know I have been on my soap box for months now about the tailwinds behind our economy, which is why we did not experience a recession as was widely expected. My articles and regular columns have been focusing on the “why” behind my outlook and the drivers behind it.

What do I see? There is a confluence of events that is apparent around us: inflation that has fallen dramatically and will continue to do so despite a pause in the first quarter of this year; the outlook for interest rate cuts in the months ahead; and the robust performance of the stock markets that is bolstering everyone’s 401(k) account – and stimulating consumer sentiment in a positive direction.

Last year marked the 50th anniversary of my business career, and I have reflected on three of the seminal events of those 50 years, tectonic shifts in our economy that all stimulated productivity to new levels and changed the world around us in every conceivable way. The first was the advent of the personal computer in the 1980s, which drove us to new, previously unattainable levels of productivity. Then came the invention of the cellular telephone, which launched us even further to new heights of productivity. Originally built as car console-mounted units, then followed by the famous “bag phones,” they marked the slow and early adoption

of wireless technology. But phones took yet another quantum leap forward in the 2000s with the introduction of the iPhone and all the smartphone advancements that followed. Again, productivity rose to new levels, fueling strong growth in our economy and those around the globe.

Finally, the Internet and the attendant rollout of broadband acted to connect our computers and became a platform that made our smartphones possible, ultimately turning all of music, television and movies on its ear.

Well, there is now a fourth technology leap, easily as big as those three quantum leaps that moved our economy into an ever-more modern age: artificial intelligence, or “AI.” And the impact it will have over the next several years is almost impossible to measure, as improvements and gains build on each other. Think of the flip phone of 15 years ago and how they evolved into the smartphones of today.

But let me be clear: AI today is in the bag phone era, and the promise of this evolving technology is almost impossible to fathom. It is a huge, but very quiet, positive influence on our economy and will be for years to come, offering the prospect of fueling a long stretch of economic growth as we witness the productivity gains this technology promises.

History is instructive, and, like other transformational inventions of the past several hundred years, such as the printing press, the steam engine, electricity, computing and the Internet, AI will drive our business and the precast industry to ever higher levels of productivity. For that reason alone, we predict years of prosperity for the precast industry and construction as a whole.



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Questions from the Field

QUESTIONS FROM THE FIELD IS A SELECTION OF QUESTIONS NPCA TECHNICAL SERVICES ENGINEERS RECEIVED FROM CALLS, EMAILS, PLANT EVALUATIONS AND COMMENTS ON BLOG POSTS OR MAGAZINE ARTICLES POSTED TO PRECAST.ORG

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GEORGE ASKS:

FOR A MANHOLE 8 FEET IN DIAMETER THAT REQUIRES A 1 FOOT TALL AND 1 FOOT WIDE FLANGE COMPLETED IN A SEPARATE POUR, HOW DO I DESIGN THE DOWELS TO KEEP THE TWO PIECES CONNECTED AS ONE STRUCTURE?

NPCA TECHNICAL EXPERTS ANSWER:

First, NPCA engineers are not consultants; however, there is a wealth of technical experience to leverage.

Like most design problems, there are a number of variables that need to be eliminated or calculated before you can arrive at the final answer of how many dowels are needed. Some of those variables include:

- ▶ Depth of the manhole
- ▶ Weight of the manhole
- ▶ Elevation of the assumed water table
- ▶ The owner's/engineer's required factor of safety against flotation
- ▶ Size of dowels to be used
- ▶ How deep the dowels will be drilled
- ▶ How the dowels are anchored (i.e. grout, epoxy, mechanical anchors, etc.)
- ▶ Governing code used to determine the strength of the dowels
- ▶ Failure mode of the flange or apron (i.e. dowel pulls out, dowel shears, flange breaks through either bending or shear, etc.)

Each one of the above variables will affect how many dowels are needed, and each variable would need to be addressed before an answer could be determined. Accordingly, the help of a consulting engineer is usually needed to properly solve this kind of problem. However, in lieu of contracting with a design engineer, here is a suggested pathway for a producer to follow to solve this kind of problem on their own.



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To address the first three bullet points, NPCA publishes a Buoyancy Guide white paper that may be downloaded at [precast.org/resources/producers](https://www.precast.org/resources/producers). There are some suggested values in the white paper to use as a factor of safety, but, before using them, first check the project specs to make sure the owner does not require a greater value.

The rest of the bullet points are much more involved and would either require design calculations to determine or, if the owner is agreeable, you could run a couple of in-plant tests and/or use some conservative assumptions to eliminate them as variables.

In the first case, the design code is very specific about how deep each dowel must be drilled to be able to use the full strength of the steel in the dowel. The code is a little less clear on how to determine how much of that strength is available should the dowel not be embedded the full required length, which is likely the case



A number of variables will affect how many dowels are required to connect a manhole and flange.

here. An engineer would need to reference Chapters 22 and 25 of the ACI 318 design code, as well as use a degree of engineering judgement, to calculate the available strength of each dowel.

A suggested alternative would be to run a couple of actual physical in-plant tests and record the results. For example, select a dowel size (i.e., No. 4), drill and dowel the top of a common 1-ton, 2-by-2-by-4-foot eco block. Embed the dowel at the same depth as you would on the manhole wall (i.e. 6 inches), fixing the dowel in place using the proposed method (i.e. grout, epoxy, etc.). Attach a lifting eye to the top of the protruding dowel in the eco block and lift the eco block a couple of inches off the ground. That way, you've just proven that a single dowel can accept over a ton of load without pulling out or otherwise failing. If you want to try to reduce the number of required dowels, perform the same test on something heavier, but be ready in case a failure actually occurs.

For the last variable, the failure mode of the flange or apron, a safe assumption would be to use 1.5 times to 2 times the amount of circumferential steel in the apron as you've used for the manhole itself. For example, if you're using a single wrap of 2/8 x W4.0/W2.0 for the barrel of the manhole, use two wraps of the same reinforcing in the flange or apron. In that case, you're basically ensuring that the manhole wall would have to fail before the flange would, safely eliminating that as a possibility. Also make sure the dowels are not located right at the top or too near the bottom of the flange; shoot right for the middle, about half the depth of the flange.

Putting all of this together, you now have a viable means to figure out how many dowels you need.

As an example, the calculated buoyant force is 36,968 pounds with a factor of safety of 1.31, assuming any factor of safety above 1.25 is acceptable per the project specifications. If you've run the physical test(s) and proven that a single dowel can withstand a ton of force without pulling out or breaking, you would simply divide the buoyant force by the maximum 2,000-pound force placed on each dowel, which would be $36,986 \text{ lb.} / 2,000 \text{ lb.} = 18.49 = 19$ dowels. Divided evenly around the outer circumference of an 8-foot diameter manhole barrel, the dowels would need to be placed roughly 18 inches on center around the manhole. If the actual buoyant force is greater, more dowels would be needed; if the actual buoyant force is less, then fewer dowels would be needed and a greater spacing could be used.

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Demystifying Dry Cast Concrete

DRY CAST OFFERS EFFICIENCY,
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By Hugh Martin, P.E.

Hugh Martin, P.E., is the
director of technical
resources at NPCA.

The engineering and construction community knows a lot about concrete. Concrete is, after all, the most-used construction material in the world. Mechanical properties of wet concrete, such as its workability, density, volumetric yield and air content, are well known throughout the concrete industry. And yet, while dry cast concrete has been used to manufacture precast for more than 100 years, there are still many in the industry that are not familiar with it.

DIFFERENCES BETWEEN DRY CAST CONCRETE AND CONVENTIONAL CONCRETE

Dry cast concrete also is referred to as zero-slump or negative-slump concrete. These terms describe concrete that is sufficiently hydrated and thoroughly mixed but does not flow and cannot be poured into molds by conventional means. Dry cast concrete refers to a consistency that is even stiffer, or drier, than “no-slump” concrete. Zero-slump means that the concrete can hold the shape of an ASTM C143 slump cone without any measurable change in height after the cone is removed, and negative slump refers to the fact that additional water can be added to the mix without the free-standing sample of concrete exhibiting any measurable drop in height.

Because it is too dry to flow, dry cast concrete must be mechanically consolidated through physical means, either through high-amplitude vibration, centrifugal force, tamping or pressing – often by two or more of these methods in combination. Form equipment for producing dry cast concrete products must be both durable enough to supply the necessary mechanical energy for consolidation and resilient enough to withstand the same repeated and constant consolidation energy without breaking or losing shape over time.

Due to the amount of energy needed for consolidation, larger coarse aggregates can cause excess wear on dry cast forming equipment. Accordingly, most dry cast concrete mixes use smaller, more rounded coarse aggregates, usually pea gravel. Larger coarse aggregates, if used, tend to only be used in combination with smaller aggregates and only in limited quantities.

BENEFITS OF DRY CAST CONCRETE

The amount of consolidation effort applied by dry cast manufacturing equipment, usually vibratory energy, often produces sound levels that exceed the occupational noise exposure levels allowed by OSHA, and workers must use hearing protection when working around such equipment. However, once thoroughly consolidated, dry cast concrete holds its molded shape, and formwork can be removed almost immediately and reused to cast another product. The economic advantage of being able to use a single form 20 to more than 100 times a day rather than once or twice a day is readily apparent, and openings or leave-outs can be etched immediately into the walls of the finished product rather than having to undergo the labor-intensive process of saw-cutting the product after the concrete has hardened.

Another advantage is its improved strength and durability owed to the reduction in amount of mixing water used. Since dry cast concrete is mechanically consolidated, it naturally does not require much water, allowing for lower water to cementitious materials

(w/cm) ratios that are proven to enhance both the strength and durability of hardened concrete.

Once cured, lower w/cm ratios also help make the hardened concrete less permeable, a welcome benefit in harsher environments such as sanitary sewers and conditions such as freezing temperatures. Additionally, there are other key differences between dry cast concrete and other types of concrete regarding development of mix designs, moisture control and density, as well as freeze-thaw resistance.

MIX DESIGNS

With conventional and self-consolidating concrete (SCC), flowability is a key factor in designing concrete mixes. As more water is added to the mix, more cement is needed to compensate, lowering the w/cm ratio to more favorable values. Due to the mechanical consolidation used in dry cast, there is no need to add additional water and cement to help the concrete flow. Only the necessary amount of cement to bind all the constituents together is needed; however, be sure to check with local standards because most construction specify a lower limit of 470 pounds of cementitious powder per cubic yard of concrete. Even so, not only are w/cm ratios typically lower for dry cast concrete, but total cement usage is also typically lower as well.

Although the American Concrete Institute (ACI) once published a guide for selecting proportions for “no-slump” concrete, it is no longer available as of this writing. Even so, most dry cast





NPCA FILE PHOTO

machine manufacturers prefer to provide their own suggestions to producers about where to start when developing mix designs for dry cast concrete. Emphasis is placed here on the fact that these are merely recommendations for where to start, as every dry cast mix design will be different depending on several factors, starting with the sources of raw materials.

Producers will need to experiment with each machine and product to develop an optimal mix design for each combination. For example, a circular manhole section that is vibrated may require a higher proportion of coarse aggregate than the same manhole section produced via centrifugal force, or a rectangular product may require a lower w/cm ratio than a circular product. It may take a considerable amount of time to go through all the variables to arrive at the perfect combination for each type of product.

AGGREGATE MOISTURE CONTROL

An experienced batch plant operator that mixes dry cast concrete on a daily basis knows exactly how it looks in the mixer, how it sounds as the mixer blades push their way through the batch, even how the mixer motor sounds as it is turning the perfect batch of dry cast concrete. However, it's important to know for sure whether the w/cm ratio is within specified limits, and that can only be determined through accurate measurement of the total water that is in each batch.

Making this task more difficult, the amount of required mixing water can vary greatly based on how much water is already

clinging to the aggregates or even how much residual wash water remains in a clean mixer.

Installing several moisture probes at strategic points along the batching process is an ideal way to constantly monitor aggregate surface moisture throughout the day. Without probes, checking the aggregate surface moisture content once per day in accordance with most specifications may not be often enough to account for changes in the condition of batching equipment or changes in material moisture throughout the day. As more aggregates are consumed from the storage bins, the moisture levels are constantly changing, making it difficult to rely on a single moisture calculation for multiple batches. Using moisture probes allows the batching equipment to sense changes in surface moisture as they occur, helping ensure w/cm ratios always remain within allowable tolerances.

To properly calibrate a moisture probe, the widest possible range should be used. In other words, the probe should be calibrated for dry or nearly dry aggregate, then calibrated again for saturated conditions. The smaller the aggregate, the higher the possible variation in aggregate moisture. A well-thought-out calibration procedure is necessary for accurate calibration.

Moisture probes for coarse aggregates should also be shielded against possible damage when filling the bins, and aggregate bins should never be emptied to the point where probes become uncovered. Moisture probes should always remain covered to ensure consistently accurate readings.

For most concrete batching systems that proportion materials by

weight, a mixer probe is essential. A mixer probe essentially detects total moisture from all sources, whether it be from the aggregates, residual water in the mixer or any other source of moisture. The mixer probe reads the amount of moisture in all the materials that have been added to the mixer as a percentage of total weight, and the amount of mixing water is adjusted accordingly. Since, by definition, the w/cm ratio is based on weight, this ensures accurate control of the w/cm ratio when weigh batching.

If the aggregates are proportioned volumetrically, the percentage of moisture of each aggregate will need to be precisely known to calculate the amount of the water in each, which would then be combined with the amount of added mixing water to determine the actual w/cm ratio. Similarly, only by knowing the amount of moisture in each aggregate can the total volume of the concrete batch be determined, which is why it is important to use properly calibrated moisture probes on both the aggregate bins and the mixer when batching volumetrically.

HIGHER DENSITY

One thing that may be surprising to learn about dry cast concrete is that it typically weighs more than conventional concrete. By adding less water and using less cementitious materials, fine and coarse aggregates comprise a greater

percentage of the total volume of dry cast concrete. Since the unit weights of most aggregates are higher than those of water and cement, the total unit weight of dry cast concrete might be 4% to 6% higher than the same materials proportioned to produce conventional concrete. If not properly accounted for in design, this could result in lifting equipment or perhaps a delivery truck being overloaded, presuming the actual unit weight exceeds the 150 lb./cu. ft. typically used to calculate the weight of reinforced concrete.

Further contributing to differences in unit weight is the amount of compaction resulting from the dry cast manufacturing process. Physical compaction typically results in very dense concrete. To properly account for this level of compaction, both vibration and a weighted cylindrical hammer must be used when making test cylinders to ensure the level of compaction in the test cylinders properly matches that of the actual product.

RESISTANCE TO FREEZE-THAW CONDITIONS

The lack of flowability of dry cast concrete precludes the use of air entraining admixtures, and yet, precast structures constructed of dry cast concrete historically have had very little trouble withstanding the rigors of cold weather. As referenced in a previous article, a research study conducted by the firm Service d'Expertise en Matériaux Inc. (SEM) concluded that dry cast concrete does

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not need to be air entrained in the same way as conventional concrete to be frost durable¹. Ample installations in the upper regions of North America attest to the ability of dry cast concrete to withstand freezing conditions.

Additionally, the same properties that allow dry cast concrete to hold its shape immediately after casting also make it more resistant to freeze-thaw conditions. Higher compressive strength and lower permeability are both positive benefits of a low w/cm ratio that are proven to enhance the freeze-thaw durability of concrete².

IN CONCLUSION

Precast concrete can take on many forms, from the consistency of wetted soil in the case of dry cast concrete to flowing freely almost like water in the case of SCC. Regardless of the concrete's consistency, the result is a durable, high-quality precast product that will last a lifetime.

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When Two Tanks Are Better Than One ...

CONNECTING MULTIPLE PRECAST TANKS PRESENTS UNIQUE CHALLENGES



By Heather Bremer

Heather Bremer is the director of communications at NPCA.

Committees have been a strong foundation for NPCA's growth since their inception, addressing major issues head-on and responding to challenges and opportunities through spirited collaboration for the betterment of the entire precast industry.

The work of committee volunteers often culminates in new resources for precasters to utilize in their manufacturing process or share with specifiers, installers and other key stakeholders.

So, when members of the Wastewater Products Committee noticed that the use of multiple precast concrete tanks in close proximity was becoming more prevalent in water, stormwater, wastewater treatment and other utility applications, they decided to develop a guide to highlight the specific issues and applications unique to connecting multiple precast tanks.

"The committee felt that the practice of connecting multiple tanks together was something that has been done for decades in our industry but was becoming even more common," said Andy Winkler, chair of the Wastewater Products Committee and general manager at Wieser Concrete Products. "The concept was to come up with suggested procedures to ensure that members were correctly connecting them with engineered connections, proper placement, coatings, piping, excavation, testing, buoyancy and backfill requirements."

The result of the committee's work, "Best Practices for Connecting Multiple Precast Tanks," is available on the Septic Tanks page at precast.org. It provides guidance on material selection, manufacturing techniques, site layout, testing and installation and related component recommendations to attain a structurally sound, watertight and durable precast concrete multiple precast tank installation.

"Our goal was for any and all members to utilize this guideline to accomplish connecting multiple tanks with tanks they currently produce," Winkler said.

The use of multiple precast concrete tanks is becoming more prevalent in a wide variety of applications.





7 BEST PRACTICES

1. IMPACTS OF MULTIPLE TANKS CONFIGURATION:

Layout of tanks in series or parallel is usually dependent on the application and site limitations. Walls may adjoin or there may be a space in between, with lifting, pipe connections and backfill taken into consideration.

2. LIFTING CONSIDERATIONS:

Devices or lifting points will be installed during tank manufacturing. Lift points outside the tank could be challenging in tight spacing between tanks. When design allows, lifting inserts or other accessories should be placed inside or in the top of the tanks.

3. PIPE CONNECTIONS:

It is essential to select the right types of connectors, which create continuous watertight seals and protect the surrounding soil and groundwater. Location and accessibility must be considered, as well as whether single component flexible connectors or modular compression seal type connectors are necessary. Connector material also is a factor.

4. PROPER BACKFILL:

Designers should allow a recommended minimum of 36 inches of space between tanks to allow for proper backfilling. Flowable fill is a good option to use between tanks to fill the gaps with smaller separation distances.

5. BUOYANCY CONSIDERATIONS:

Soil reports and water table level fluctuations should be considered by designers, who are advised to take a conservative approach if the information is unavailable. Using additional weight of the soil by adding a shelf, increasing the weight of the structure and adding exterior "Shear Keys" can be used to counteract a buoyancy challenge.

6. VENTING:

Depending on the purpose of the multiple tanks, vents may need to be installed, especially when sanitary, stormwater or potable water will be flowing. Venting relieves any pressure that builds.

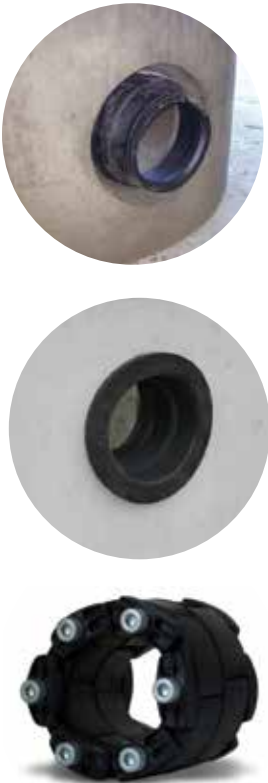
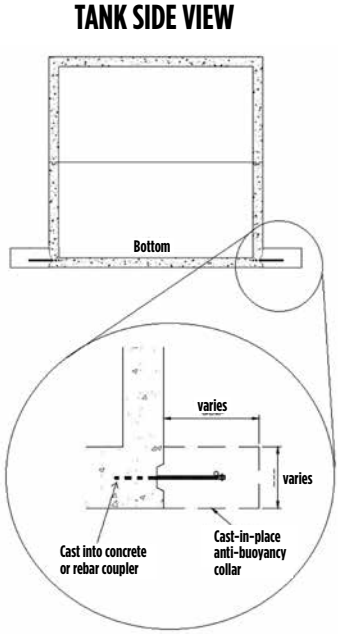
7. TANK & CONNECTOR TESTING METHODS:

Some projects may require testing tanks and connections for watertightness. This can be done through vacuum or hydrostatic testing.

Find the full document at [precast.org/septic tanks](https://www.precast.org/septic tanks).



Location and accessibility of pipe connections must be taken into consideration.



Examples of flexible (top and center) and modular (bottom) pipe connectors.

REAL-WORLD EXAMPLE

These best practices show tangible benefits in practical application.

Scott Robinson, an installer with Minnesota-based Terra Firma, had a system that required the connection of two tanks to achieve 8,000 gallons. Access at the site inhibited setting one large tank, so the installer connected two 4,000-gallon tanks, with piping at the bottom. It was a dosing/pumping situation and, with the piping at the bottom, they were able to effectively dose from an 8,000-gallon “container.”

The tanks were set at predetermined grades so that the pipe penetrations aligned.

“We placed bedding up to the penetrations to ensure that the pipe was well supported,” Robinson said. “Wieser provided rubber Cast-A-Seal pipe boots at the penetrations.”

Terra Firma installed the tanks and piping, then tested the connection by filling the tank with water.

“We ensured the depth of the water was maintained for 24 hours, similar to the test we do on single holding tanks,” Robinson said.

“This being successful left us with surety that we effectively had one 8,000-gallon tank. We were able to calculate our gallons-per-inch and apply that to our dosing requirements.”

GET THE MANUAL AND MORE

The complete “Best Practices for Connecting Multiple Precast Tanks” is available for download at precast.org/septic tanks/. It is intended to be a companion to an additional NPCA resource, “Best Practices Manual - On-Site Wastewater Systems,” also available at precast.org.

Both provide valuable insights into attaining structurally sound, watertight and durable precast concrete tank installation.



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School's In for the Summer

INTERNS,
HIGH SCHOOL
HELP CAN
BRIDGE THE
GAP FOR
WORKFORCE



By Zach Elliott

Zach Elliott is a DePaul journalism graduate and freelance writer.





Like manufacturers in many other industries, precasters are well-versed in the current challenges of attracting and retaining employees. These workforce challenges are amplified during the summer months, when employees are more likely to miss time on the plant floor for family vacations.

However, for precasters willing to take on temporary help from young minds with an interest in the industry, summer can be full of opportunity.

Internships and summer help from high school students can bridge the gaps in a plant's workforce while giving students valuable experience in the numerous roles within the industry.

Lisa Roache, CEO of Gainey's, encourages interns at the Holden, La., plant to cross train and grow in different areas during their terms.

"They can try a position for two weeks, and then they might love it," Lisa Roache said. "We just had someone from our contracting crew that wanted to try project management. And someone in project management wanted to try this production supervisor position that was available. They both loved the switch."

With roles available in everything from accounting and drafting to quality control and web design, precast plants are workplaces designed to welcome interns with a cadre of interests. But it's not without its challenges. Properly balancing work with their academics and social lives can pose issues if students don't take the position seriously.

"We are constantly giving the message that school is your most important job right now – school needs to come first," Lisa Roache said. "And there's a flexibility that comes with an internship that, if you were a full-time employee, you would not be allowed, but school needs to come first. When you're here, we want you to be all in. We want you to be productive."

Precasters must also be cognizant that internships and summer help by their nature mean turnover. As students return to classes or need a lighter workload when school begins, new interns will need to be trained or employees hired to replace them. That shouldn't scare off companies from initiating an internship program.

"Offering internships, whether for positions on the plant floor or in your front office, can build a pipeline of industry-savvy employees, engineers and specifiers that ultimately bring growth

"They can try a position for two weeks, and then they might love it."

– Lisa Roache, CEO of Gainey's





Lisa Roache works with an intern at Gainey's.

back to your business,” said Christina Trexler, NCPA Vice President of Workforce Innovations. “Young people also can bring a different perspective, helping you see opportunities for innovation you might never have considered.”

SUMMER IS THE SEASON

Internships can be offered at any point in the year, but summer likely is the best time to offer openings. A 2019 report by the Pew Research Center, based on Bureau of Labor Statistics data, found that 15- to 17-year-olds spent roughly an hour a day on homework on top of an average of seven hours of coursework. That makes summer the best opportunity for them to build experience and earn some extra pocket change.

Much of the same applies to college students. Course schedules may allow for more flexible work hours, but college students will have much more luck dedicating time to internships in the summer.

Precast plants' variable roles make them fertile ground for the collegiate ranks, encouraging longer-term opportunities for those who can handle it.

“I just did a Career Fair last Wednesday at the local college,” Lisa Roache said. “And there were a lot of freshmen and sophomores that were coming through in industrial technology, and I kept the consistent message I had all day long was, listen, don't worry about what you're interning in. Just come in and intern. You're going to learn a skill that's going to make you so much more valuable.”

FINDING INTERNS

Plants who are looking to supplement their workforce with interns do well when they engage with the community and encourage students to take an interest in their work. Giving students a more tangible experience with the company, like a plant tour, in-class presentation or project sponsorship, before asking for an internship commitment can reap rewards.

Greg Roache, president of Gainey's, has taken it into his own hands to not only be a part of recruitment but the teaching process for schools and students who want to learn about what Gainey's does.

“We're working very diligently with a local college that offers a degree in industrial technology,” Greg Roache said. “And we wanted to put in precast-specific work with them. They said, ‘I can't add any more classes, because we don't have enough

“Offering internships, whether for positions on the plant floor or in your front office, can build a pipeline of industry-savvy employees, engineers and specifiers that ultimately bring growth back to your business.”

– Christina Trexler, NCPA Vice President of Workforce Innovations

students.’ I said, ‘All right, let's help you build your program.’ So, I took it upon myself to go around to all the local high schools, taught on Career Day – and that has an impact.”

Gainey's also employs a mentorship program. Interns and their active employee mentor track their progress and make regular check-ins with a supervisor that ensures the intern is having a positive experience.

“I just sit down and talk to them to say, ‘Hey, what is it you're enjoying?’” Lisa Roache said. “What can we do better? Where are you struggling? It's not even a 15-minute talk, but it opens that door where they can talk to me or say something to their mentor.”

For plants that aren't quite sure where to start, NPCA is in the process of building a best practices guide that will provide direction for recruiting, mentoring and retaining interns.

“We want members to have a roadmap for engaging the next generation of employees and offering valuable experiences in a variety of industry roles,” Trexler said. “Stay tuned for help from your association on this front.”

Ultimately, offering internships can't just be about adding to the workforce. There's an element of taking on the responsibility of guiding a young person's future. The insights students can gain at a precast plant are undeniable.

“No matter what you're coming out of here a winner,” Greg Roache said. “If you put the effort in, you're going to learn a lot about what you may want to do – and definitely what you don't want to do. We want this to be a life-changing experience for you. For the better or the worse, right?”



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10 Common Deficiencies Found in Plant Audits

... and How to Fix Them



By Heather Bremer

Heather Bremer is the director of communications at NPCA.



A commitment to quality is key to successfully completing NPCA's Precast Plant Certification program. That commitment is put to the test throughout the associated audit, where even the most diligent plants may see deductions for missing requirements found in the NPCA Quality Control Manual for Precast Concrete Plants.

HERE ARE THE TOP 10 MOST COMMON DEFICIENCIES FOUND DURING PLANT AUDITS AND HOW THEY CAN BE REMEDIED:

1. TOPIC: EQUIPMENT CALIBRATION RECORDS

QC Manual Section: 5.1.3

Issue: Plants fail to calibrate their air meters at the right frequency.

Resolution: Air meters should be calibrated every 90 days. Add an event to your calendar with a reminder alert to perform the calibration.

2. TOPIC: NPCA QC MANUAL

QC Manual Section: 1.1.5.1

Issue: Plant does not have the most current NPCA QC manual readily accessible for inspectors and plant personnel.

Resolution: The manual is free to download from precast.org/qcmanual. The manual may be printed and stored on-site or a digital copy can be added to a company server that all personnel can access.

3. TOPIC: CURRENT AGGREGATE CERTIFICATION

QC Manual Section: 2.1.3 or 5.1.1.b

Issue: Plant does not have current aggregate certifications on hand. Evidence of compliance shall be a certification from the supplier that the aggregate meets the ASTM C33 standard.

Resolution: Get in contact with your quarry to obtain the documentation.

4. TOPIC: PLANT-SPECIFIC QC MANUAL

QC Manual Section: 1.1.2

Issue: The plant-specific QC manual is missing pieces or procedures.

Resolution: There are currently 18 elements in that section, mapping out exactly what is needed. The plant's manual needs to include all components or designate certain components as not applicable to their operations.

5. TOPIC: DENSITY AND UNIT WEIGHT

QC Manual Section: 5.3.3

Issue: Plants don't perform the test for density (unit weight) of fresh concrete correctly, typically using a strike-off bar, rather than using the strike-off plate.

Resolution: For this test, conducted in the air pot, you must use a strike-off plate.

Critical Notice: This is a critical section. If the test is done incorrectly, it's a 100% deduction or 1.5 point deduction. Two such deductions assessed in section 5.3 will result in an automatic probation.

TOP 10 REPEATED DEFICIENCIES

Repeated deficiencies occur when a plant received a deficiency in Audit 1 and issued a corrective action in writing as required by the NPCA Certification program, but they didn't correct the deficiency or their corrective action wasn't effective. That's a quarter-point deduction!

1. 1.1.3 - QC PERSONNEL TRAINING
2. 5.1.3 - EQUIPMENT CALIBRATION RECORD
3. 1.1.5. - LACK OF THE QC MANUAL OR CURRENT ASTM
4. 2.1.3 - AGGREGATE CERTIFICATIONS
5. 1.1.2 - PLANT SPECIFIC QC MANUAL
6. 3.2.4 - BATCHING EQUIPMENT
7. 5.2.2 - AGGREGATE MOISTURE
8. 5.3.5 - MAKING CYLINDERS INCORRECTLY
9. 4.6.1 - MINIMUM STRENGTH REQUIREMENTS (overnight stripping strength or shipping strength) not provided in the plant-specific QC manual.
10. 4.3.3 - PRE-POUR INSPECTION



6. TOPIC: QC PERSONNEL TESTING

QC Manual Section: 1.1.3

Issue: The plant's QC lead and/or backup personnel do not have or have expired certificates of completion from NPCA's Production and Quality School (PQS). Or they do not have or have expired certificates for applicable concrete testing by ACI Concrete Field Testing Technician – Grade 1, an industry recognized ACI equivalent or an independent third-party professional.

Resolution: PQS courses are offered online. For concrete testing, the plant can take ACI Field Technician Level I (or a nationally recognized equivalent) or contract with a licensed P.E. (on staff or independent) to witness the testing, write a letter and seal it for certification.



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HOW NPCA CAN HELP

To prepare for a plant audit, whether it's your first time seeking certification or the unannounced visits for your annual reinspection, NPCA offers resources to help you prepare for the day the auditor walks through the door:

1. TALK WITH ENGINEERS:

NPCA's technical services team is available to answer your questions on plant procedures. Call 800-366-7731 to speak with an engineer.

2. EDUCATION:

There is no specific education program on certification, but there is education available on the processes that are required within the certification program. You can find courses in myNPCA portal.

3. PLANT EVALUATIONS:

For a fee, an NPCA engineer will come to your plant and spend the day running through the auditor's checklist. The engineer can't tell you exactly what to do to remedy a deficiency but can provide experience and suggest options. You then select which option best fits your business model. Visit precast.org/plant-evaluation-program/ to learn more.

7. TOPIC: COMPRESSIVE STRENGTH CYLINDERS

QC Manual Section: 5.3.5

Issue: The cylinders are made incorrectly.

Resolution: Pay attention to how to make the cylinders for wet cast (ASTM C31), SCC (ASTM C1758) and dry cast (ASTM C497). Hiring an outside service to conduct the testing also may be an option to prevent this deficiency.

8. TOPIC: AGGREGATE MOISTURE BURNS

QC Manual Section: 5.2.2

Issue: Moisture burns are not performed at the correct intervals.

Resolution: If a plant has moisture probes in their bins and mixer, then moisture burns can be performed once a week to check the probes for proper calibration. If they don't, then moisture burns must be done every day. Add the correct frequency to plant procedures and/or set reminders on the plant calendar.

9. TOPIC: BATCHING EQUIPMENT CALIBRATION

QC Manual Section: 3.2.4 or 5.1.3

Issue: Plants have not done their scale calibrations annually.

Resolution: Calibration of equipment and batch scales are required each year. Create a calendar event to have the calibrations performed and have the proper documentation on hand.

10. TOPIC: POSITIONING REINFORCEMENT

QC Manual Section: 4.3

Issue: Plants don't check the position of the reinforcement for all pieces during the pre-pour inspection. Documentation is signed that it's been checked and everything was good. The auditor finds, for example, reinforcing steel touching the formwork.

Resolution: Perform the pre-pour inspection on all pieces and correctly document to meet the requirements in the NPCA QC Manual.

Critical Notice: This is a critical section. If you're going to do it, you might as well do it right. It's just as easy to do it right as to do it wrong.



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The Task at Hand:

PROPER TRAINING, PPE AND GENERAL AWARENESS SERVE AS THE BEST DEFENSES AGAINST HAND INJURIES.



By Mason Nichols, M.A.

Mason Nichols is a Grand Rapids, Mich.-based writer and editor who has covered the precast concrete industry for more than a decade.

Tools are vital to performing work in the precast concrete industry. Whether building forms, bending rebar or patching products, they streamline tasks, making work more efficient. But the most important tool used each day can be overlooked, despite being essential to every operation in a precast plant.

From design to pouring, setting, striping and beyond, hands are at the center of all operations. Yet, despite the importance of our hands both inside the plant and outside of work, injuries are incredibly common in the construction industry. According to the U.S. Bureau of Labor Statistics, more than 1 million workers are sent to the emergency room each year due to serious hand injuries.¹ These include everything from lacerations to cuts, burns and broken bones.

Steps can be taken to ensure hands are protected, including arming workers with the proper PPE, providing adequate resources and education and championing focus and awareness in the workplace.

WHAT HAZARDS ARE PRESENT AT A PRECAST PLANT?

Because of the nature of the work performed, numerous hazards exist at precast plants. Specific hazards vary depending on the products you manufacture and your plant's operation. As such,



“With any safety program, your situation is site-specific. Conducting the job hazard analysis and focusing on the hazards an employee is exposed to in whatever work they are performing gives you a better idea of what you can do to prevent injuries.”

– Jason Brewster, Atlantic TNG





Jason Brewster, safety and compliance manager at Atlantic TNG of Sarasota, Fla., suggests performing a job hazard analysis (JHA) as the first step in protecting workers from hand injuries.

“With any safety program, your situation is site-specific,” he said. “Conducting the job hazard analysis and focusing on the hazards an employee is exposed to in whatever work they are performing gives you a better idea of what you can do to prevent injuries.”

Dan Drenth, precast concrete specialist for Alpharetta, Ga.-based Chryso/GCP, agreed with Brewster, noting the following general areas for concern across most precast plants:

- ▶ **PINCH/CRUSH HAZARDS** – Any space where an employee’s hands can be caught, such as between a piece of heavy equipment and a precast product, creates a pinch/crush hazard. Accidents in this category can lead to fractures and broken bones.
- ▶ **CUT HAZARDS** – Tasks that involve sharp edges or corners, such as bending and cutting rebar, create cut hazards. Workers may suffer abrasions, cuts or lacerations during an accident.
- ▶ **BURN HAZARDS** – If hot surfaces or materials are involved in the work being performed, burn hazards are generated. Burn hazards can include processes such as welding but can also include coming into contact with materials such as chemical admixtures and even concrete, which can cause dermatitis and other skin irritations if handled without proper PPE.
- ▶ **ELECTROCUTION HAZARDS** – Though likely less common than those listed above, electrocution hazards are present in precast plants when live electrical work is part of a task, such as when workers perform maintenance on machinery and equipment.

GOING ON DEFENSE

Using the hazards identified from your JHA, many steps can be taken to mitigate hand-related injuries at a plant. First, as is the case with any other safety approach, apply the steps outlined in the hierarchy of controls – elimination, substitution, engineering controls, administrative controls and PPE.

As the top method in the hierarchy, the most effective defense against any injury is elimination. Where possible, find solutions in your plant that will prevent workers’ hands from being placed in dangerous situations.

“Elimination is always the best method of defense, per standard safety philosophy,” Brewster said. “One example is in your use of materials. If it’s an option at your plant, there might be cause for looking at a switch to fiber instead of rebar reinforcing – this would remove significant potential for laceration or puncture injuries.”

In many cases, elimination is not viable, and you will need to work your way down the hierarchy. Methods such as automating a task, guarding against pinch and crush points via barriers or cages, and ensuring caps are placed on exposed rebar can be effective. But while some hazards may be eliminated or engineered out of the situation, others cannot be avoided. To counteract these, gloves serve as the last line of defense for the hands.

“Gloves are a pretty simple solution, but they are also more complex than some may realize,” Drenth said, noting that the use of gloves is not a one-size-fits-all approach. “There are



NPCA FILE PHOTO

hundreds – if not thousands – of different gloves made of different materials and sizes. It’s important to select the correct glove for the application.”

For example, Drenth explained that an employee who is performing work associated with high heat should select a glove made of leather or suede for the best protection, as these will melt only at extremely high temperatures. Employees working with rebar should seek puncture-resistant gloves, while those who are patching concrete will need a glove that stands up to abrasion.

Drenth also suggested seeking employee input in obtaining the correct types of gloves for your operation.

“Don’t just go and buy a few thousand pairs of gloves,” he said. “Run some tests with your team and make sure that the gloves are both comfortable and appropriate for the work that takes place at your facility.”

As with any other type of PPE, check to ensure that the gloves you have on hand are in good, working condition. Remove any gloves from your inventory that are damaged or have otherwise exceeded their service life.

BEYOND THE GLOVE

In addition to deploying the hierarchy of controls and arming your employees with the proper PPE, other steps are critical in safeguarding workers against hand injuries in the plant. Training is an essential part of the equation and typically begins during the onboarding process. As Brewster



“Make sure that your employees are focusing on their work and the tasks that are being performed. Purposeful movements are essential – one wrong move without awareness can result in a significant hand injury.”

– Dan Drenth, Chryso/GCP

explained, at Atlantic TNG, hand safety is embedded into operations training and is contingent on an employee’s position with the company.

“We talk about why we use the gloves that we do along with what types of gloves are available for different jobs if you are cross-training,” he said. “And then, with any operators, we cover every specific hazard point there is and what we have in place to stop those hazards.”

By cross-training employees on the different types of gloves available and all the hazards present, Brewster and the team at Atlantic TNG enable their staff to be agile – if an employee is absent or unable to work, another team member can step into the role with a similar level of knowledge and care as the person they are replacing.

In Drenth’s experience, one of the most effective philosophies to teach during any hand safety training is awareness.

“My biggest concern is being aware of where you are placing your hands at all times,” he said. “Make sure that your employees are focusing on their work and the tasks that are being performed. Purposeful movements are essential – one wrong move without awareness can result in a significant hand injury.”

Brewster echoed Drenth’s words. He tells his team to “focus on being intentional, not fast,” both in their training and as a general best practice. He also stresses that team members should not think ahead to the next step of the task they are performing. This reduces injuries and production errors, ultimately leading to both a safer environment and a smoother operation.

Reminding your employees of the importance of hand safety throughout the year is also key. Consider partnering with a third-party vendor to conduct a safety

session or developing toolbox talks around specific hand-related issues that you see in your plant.

Consider also modifying your hand safety approach as your plant evolves. For example, if you purchase a new piece of equipment, think through how this affects your operations and whether the items identified in your JHA are affected. If so, revise your methods to ensure the best possible situation for your team.

Finally, as with any other safety concern, establishing a strong safety culture is key. Ensure that employees are comfortable not only with the tasks they perform and the PPE they use, but also with reporting. All accidents, from near misses to minor and major hand injuries, should be reported. Doing so will help you dive deeper into additional hazards that may not have been previously identified.

GIVING YOUR TEAM A HAND

Hands are critical to everything we do as humans and are particularly important to smooth and efficient operations inside precast concrete plants. As such, leadership and safety teams should do everything in their power to protect workers from sustaining injuries. Through thoughtful training and onboarding, customized safety plans and supplying workers with proper PPE, the number of injuries at your plant can be mitigated.

“Really, our employees should come out of work in the same shape and condition as they were in when they arrived,” Drenth said. “It’s up to us to provide the appropriate resources and materials to ensure that happens.”

REFERENCE:

1. <https://ohsonline.com/Articles/2018/08/01/Take-Matters-into-Your-Own-Hands.aspx?m=1&Page=1>

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By Bridget McCrea

Bridget McCrea is a freelance writer who covers manufacturing, industry and technology. She is a winner of the Florida Magazine Association's Gold Award for best trade-technical feature statewide.

Photos courtesy of Lee's Precast Concrete





“People really find us to be trustworthy. They know we’re going to be honest with them and easy to connect with.”

– Allen Lee, Lee’s Precast Concrete

Lee’s Precast makes a variety of precast concrete products, including box culverts.

Lee’s Precast Concrete may have nearly five decades of experience under its belt, but that doesn’t mean the precaster is ever willing to just rest on its laurels and keep doing things the same way. In fact, it’s quite the opposite for this second-generation, family-owned precast company in Aberdeen, Miss.

Founded in 1977 by Milton Lee, Lee’s Precast is continuously improving, innovating and finding new ways to serve its customers. Now run by seven other family members (three of Milton’s sons, two daughters and two sons-in-law), the company recently embarked on a huge undertaking and is already seeing the benefits of its decision.

According to general manager Allen Lee, the company commissioned a brand new dry cast plant in March. Lee said the dry cast plant is filling a gap with the company’s utility, storm drain and sanitary sewer projects, and that Lee’s Precast was considering the idea for about eight to 10 years. The need accelerated during the COVID years, when a dearth of pipe meant companies were reluctant to sell pipe separately from their larger projects.

The situation left precasters like Lee’s Precast – and its customers – scrambling to find pipe for their projects. To overcome this roadblock, the company decided to build its own dry cast plant.

And because Lee’s Precast had recently expanded its existing wet cast facility, it just made sense to keep the momentum going and get into the dry casting side of the business.

“We were getting hammered on projects while trying to take care of our customers who wanted to buy structures from us,” Lee said. “Meanwhile, other companies wouldn’t sell them pipe if those customers didn’t also buy the structures from them.”

This move represents one of many ways Lee’s Precast puts its customers at the center of everything it does, every decision it makes and every new innovation that it introduces to the market. And while most of the supply chain disruptions and raw material shortages that surfaced during the pandemic have waned, the company’s vertical integration approach means it can serve even more of its customers’ needs all under one roof.

A LIFETIME OF PRECAST EXPERIENCE

Lee’s Precast makes box culverts, retaining walls, pump tanks, grease interceptors, septic tanks, wastewater treatment plants and other products for a range of customers. The company operates two different plants (one wet cast and one dry cast) at the same location, where Lee has been involved with the company for most of his life.

“The only other income-earning job I’ve really had was as an EMT for about seven years while I was in school,” he said. “Other than that, I’ve always been involved in the precast business from the time I was a kid.”

Today, Milton Lee is president and has maintained his presence at the company, but the day-to-day operations are now handled by Allen Lee and six





other members of the family. A third generation of Lees is making its way into the company and includes Gavin Lee (Allen's son) and several nieces and nephews. The tight-knit group adheres to the principles and mission that Milton laid out during the company's early days, with a particular emphasis on trust, reliability and customer service.

Lee's Precast recently completed a precast box culvert on a university campus that was more than 1,000 feet long.



"People really find us to be trustworthy. They know we're going to be honest with them and easy to connect with," Lee said.

For example, team members never hesitate to give out their mobile phone numbers in case of a question or problem, which means customers never have to go through "five layers of communication" to get an answer.

"They can call and get a quick answer pretty much at any time," he added.

Lee credits the NPCA with "continuing to raise the bar" for the precast industry as a whole, with plant certifications being one particularly important area for the association. He also likes being part of a larger group of NPCA members, each of which is focused on operating with integrity and honesty.

"We do what we say we're going to do and put our energy into making a good product," Lee said. "We try to help each other out because a bad concrete product installed somewhere just makes all of us look bad."

FLEXIBILITY FOR TEAM MEMBERS

As Lee's Precast has evolved, the company has invested in technology that helps streamline its manufacturing processes. Its new dry cast plant, for example, includes automated machinery that helps offset the need for additional labor. This is particularly important during a time when labor constraints make it difficult to find, train and retain new employees. In fact, Lee points to workforce challenges as the company's biggest obstacle right now.

To offset the lack of labor, Lee's Precast takes steps to ensure that its current 65-person workforce is content, productive and safe. Within the last few years, for example, the company implemented a flex time program that gives team members some freedom when it comes to scheduling. That way, parents get to see their kids' soccer games, attend PTO meetings or simply spend quality time with their families.

Lee said offering this type of

flexibility is important in a region where numerous chemical plants may offer higher wages but require employees to work swing shifts.

“Our advantage is that if you have children who play sports, and if you want to get off work a bit early to avoid missing a game, we have you covered,” he said.

“Employees just have to let their managers know about their plans and we work around them,” Lee continued. “So, while we may not be able to offer someone the same wages that a chemical plant can, we can offer you the freedom of not missing events that you’ll never get a second chance to attend.”

In some cases, employees test the waters of the “higher salaries,” only to find out that swing shifts don’t gel well with their family and personal lives. One married employee with two young daughters, for example, went to work for a nearby chemical plant and wound up working so many hours that he completely missed out on his daughters’ extracurricular events.

Today, that employee is the plant manager at the company’s new dry cast facility. And while the startup phase of this new venture has required a lot of hours and effort, the employee always knows that the company’s flexible work policies will allow him more family time than he was getting at the chemical plant.

“We were so happy when he came back three months ago to run our new plant,” Lee said. “Now, he’s able to balance work responsibilities with being at the field to see his kids’ soccer games in person.”

PRECAST WAS THE PERFECT SOLUTION

Lee’s Precast handles a broad range of projects for customers, with one of its recent undertakings being a giant precast box culvert that was installed on a university campus. The 16-foot-by-6-foot box culvert came out to more than 1,000 feet in length and was used to build out a parking area over a large ditch.

“There was always water running through the ditch, so the culvert couldn’t be cast-in-place,” Lee said. “Precast was the perfect solution for this application.”

The project encompassed a total of 300 pieces, with 30 pieces per day being shipped from Lee’s Precast to the

“We do what we say we’re going to do and put our energy into making a good product. We try to help each other out because a bad concrete product installed somewhere just makes all of us look bad.”

– Allen Lee, Lee’s Precast Concrete

university campus. Once onsite, they were installed to form a new parking surface that extended more than 1,000 feet in length. The contractor had to work around high-traffic hours on campus, where vehicles were flowing in and out of the area during school hours. This created some installation time parameters that would have been difficult to navigate using the cast-in-place process.

“The contractor had to get there when traffic slowed down,” Lee said, “but even with that constraint, the overall project wound up going much quicker than both the university and the contractor expected.”

In another example of one-stop-shop service for customers, Lee’s Precast does its testing in-house, is a certified Mississippi Department of Transportation (MDOT) supplier and is currently in the process of obtaining its Alabama and Tennessee DOT certifications. With those additional certifications that company will be able to work with the transportation departments from both states, thus extending its geographical reach.

Lee’s Precast has already manufactured electrical underground structures for TDOT projects, but they were for cities like Memphis and required individual reviews. Once the new certification is awarded, the company will be free to work on a wider range of projects in the state.

“We work on a lot of storm drain projects in the Tennessee market,” Lee said, “so we have a customer base there that we’ve been serving for about three years now. We’re looking forward to expanding those relationships.”

GETTING INVOLVED

At press time, Lee’s Precast’s new dry cast plant had only been open for two weeks, but things were already going well with the new facility. Lee said much prep

work went into getting the facility ready to do business and is bullish on its prospects for the future. The company was also planning an official open house for some time in June, at which the new plant would be unveiled for a larger audience.

“We’re already filling orders out of the plant,” Lee said. “For now, however, most of our focus is really on getting this new division up and running for our customers.”

As a former member of NPCA’s Wastewater Products Committee, Lee also sees good things ahead for the precast industry as a whole. His brother David Lee, the company’s safety manager, is a current member of NPCA’s Safety Committee. As the association continues to evolve, Lee says the company will continue to find new ways to get involved with it, leverage its certification programs and take advantage of new educational opportunities.

“The NPCA does a lot to help its members across all levels of the association,” said Lee, who advises other precasters to get involved with the group, attend its national meetings and use its website as a resource. “If you sign up as a member and don’t participate, then you’ll just get out of it what you put into it.”

This advice comes from a place of experience, according to Lee, who said the company spent years only attending the national show and getting its plant certifications.

Then one day a lightbulb went on above the family-run business’ head.

“We started sitting in on a few different committee meetings at The Precast Show and then attended a precast convention,” Lee said. “At that point, we figured out that we really needed to get involved in more committees. Based on our positive experiences with these involvements, I highly encourage all NPCA members to take a similar route and get involved.”

Stormwater Detention System Gets A New Design

STORMPRISM EQ
PRODUCT USES PRECAST
CONCRETE TO CREATE AN
INNOVATIVE SYSTEM.



By Shari Held

Shari Held is an Indianapolis-based freelance writer who has covered the construction industry for more than 10 years.



Nestled between the Sierra Pelona Mountains and Castaic Lake, the 430-acre upscale, master-planned neighborhood of Williams Ranch is under construction. Many of the 497 homes, on lots up to 23,000 square feet, will reside inside a gated entry. Homeowners will enjoy built-in advanced technology, a clubhouse and a plethora of popular amenities as well as spectacular mountain views, on-site vineyards, citrus orchards, several pocket parks and an adjoining county park.

When a homeowner purchases a home in a new swanky master-planned development, they expect everything, especially the things they can't see, to work as planned. That includes the underground stormwater detention system.

Creating a drainage design to serve the Williams Ranch neighborhood development was a challenge for several reasons. California's stringent stormwater regulations and the Environmental Protection Agency's Low Impact Development (LID), which calls for site design of new residential developments to focus on reducing pollutant loads, compounded the challenge. Finally, the project was near the Santa Clarita River, an impaired waterway. This required the plan to address the water quality as well as stormwater control.

Analysis was conducted to determine the impact of altering the flow of water throughout the area. The results showed that, to meet LID requirements, both the water flow and volume would need to be reduced.

PRECAST PREVAILS

Initially, the developer, Williams Homes, specified large-diameter corrugated metal pipe (CMP), the most common material used for underground detention systems, for all three stormwater detention systems. The Los Angeles County Department of Public Works (LACDPW), which is responsible for maintenance of the largest stormwater storage system, located underneath the county park, objected to the use of CMP. A CMP stormwater system would require more maintenance and expense than the LACDPW was willing to provide. In addition, the LACDPW also wanted a stormwater system that was durable and safely accessible.

Precast concrete and StormPrism EQ, a modular, precast stormwater system developed and manufactured by Pre-Con Products in California's Simi Valley, ticked all these boxes and more.

UNIQUE DESIGN

For more than 60 years, Pre-Con, a family-owned business, has provided custom precast solutions for

Precast concrete checked all the boxes for the Williams Ranch project in California.



Corrugated metal pipe was originally specified for the project at Williams Ranch, but precast's durability made it the superior choice.

many challenging projects, including proprietary stormwater tanks. Four years ago, it designed the innovative, modular StormPrism underground stormwater storage system.

StormPrism boasts unique features that set it apart from other

stormwater systems, such as an open-air design with floor-to-ceiling columns and flat floors.

“All these designs are potential confined spaces, which could make it very difficult and dangerous to move around when performing maintenance inside the structure,” said David Zarraonandia, president of Pre-Con Products.

The unique open-air design and flat, unobstructed floors allow easy movement and visibility for more than 300 feet in any direction, even diagonally. This ensures a clear, unobstructed pathway to the exit is always in view and easily accessible. With StormPrism stormwater detention systems, there’s nothing to block air flow and no restrictions to impede the removal of sediment through the system. The flat floor eliminates trip hazards and improves ease of movement during maintenance.

In October 2023, Pre-Con assigned its StormPrism patents and trademarks to Foley Products. Headquartered in Newnan, Ga., Foley Products is a leading manufacturer of concrete pipe and precast products, with 18 manufacturing locations in high-growth markets across the United States. Pre-Con continues to manufacture and sell StormPrism products in California and to partner with Foley Products on product development and marketing of the product line.

“Before we acquired the patents, we had been licensing

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StormPrism for a few years and thought it was an excellent product,” said Anya Civitella, senior vice president of growth and performance for Foley Products. “The addition of StormPrism to our product portfolio is an important step in Foley’s growth strategy. We will now be able to offer high-value stormwater solutions across North America and play an expanded role in the management of one of society’s most vital resources.”

The company anticipates a growing need for drainage infrastructure due to the increase of intense storm systems in many parts of the country. These strong storms have the potential to overburden and eventually overwhelm our current infrastructure system.

“StormPrism was designed with openness, maintainability and safety in mind, which mitigates many issues that other products have had over the years. It is also very easy to install,” said Scott Hensley, vice president of stormwater for Foley, who previously worked for Oldcastle Stormwater Solutions and Contech Engineered

“StormPrism was designed with openness, maintainability and safety in mind, which mitigates many issues that other products have had over the years. It is also very easy to install.”

– Scott Hensley, Foley Products

Solutions. “In other words, it is the next generation of underground detention systems.”

Pre-Con provided an innovative system to handle the demands of the development.

FABRICATING THE MODULES

For the Williams Ranch project, Pre-Con fabricated a stacked system of 800 modules – 400 top pieces and 400 bottom pieces – that formed the interior of the underground detention system and 120 walls that surround its perimeter. Each module is approximately 8 feet by 16 feet, with an interior height of 11 feet, and weighs less than 20,000 pounds. Generally, the walls measure 8 feet wide by 12 feet 4 inches tall by 12 inches thick.

Pre-Con poured concrete with a compressive strength of 6,000 psi into steel molds to create the precast pieces. Pre-Con’s facility is a National Precast Concrete Association Certified Plant.

The company also created a fabric-covered basket for the system to filter the fine sediment in the stormwater before it is released. Sediment in an infiltration storage system can weaken its effectiveness.

QUICK AND EASY INSTALLATION

The project was completed in three phases. Pre-Con installed the system with the help of R&R Pipeline, who supplied extra labor and additional equipment. Pre-Con began shipping precast elements to the job site, which was about 35 miles away, on Aug. 24, 2021. The modules shipped via a standard load semi-truck – typically two pieces per truckload. The staging area was large enough that the



→ The open-air design allows for visibility for 300 feet diagonally throughout the system.



The sheer size of the system, with a footprint of 164 feet by 324 feet, was a challenge.



“Because of the nature of our design and the shape of our pieces, we were able to pick the modules up with a forklift or a fork attachment on the front of a loader.”

– David Zarraonandia, Pre-Con Products

It’s the speed at which the system was installed that makes this project stand out. Workers installed the modules at a rate of nearly 70 per day. The first phase was installed on Sept. 3, 2021, and all three phases were completed by mid-November.

“We’re receiving a lot of positive feedback from many of the engineers we deal with,” Zarraonandia said, “specifically when it comes to the simplicity of the design, the ease of installation and the maintainability of the system compared to some of the other systems out there.”

precast modules and walls could be stockpiled on-site until enough stock was accumulated to complete a phase. Then they would be installed, and the process would begin again.

The modules fit together via the tongue and groove method. Since the modules are identical, installation is nearly foolproof.

“There were no problems with the project,” Zarraonandia said, “but there were certainly a number of challenges.”

One challenge was that the project took place during the COVID pandemic. Pre-Con had to deal with workers becoming ill and off the job for weeks and the restrictions imposed during the COVID years.

But the main challenge involved the sheer size of the system. The footprint created by the modules and walls measures 164 feet by 324 feet. The excavation itself was more than 300 feet long by 200 feet wide. Pre-Con’s access point was a steep road 25 feet above the rock bedding material, and access was available from only one side. A crane would have had to pick a module from more than 300 feet away. That was not an option.

The solution: Pre-Con used a large excavator to access the excavation.

“Because of the nature of our design and the shape of our pieces, we were able to pick the modules up with a forklift or a fork attachment on the front of a loader,” Zarraonandia said. “Not only did we find a way around it, our productivity for placing the modules was far better with the excavator than we ever experienced using a crane.”



By Bridget McCrea

Bridget McCrea is a freelance writer who covers manufacturing, industry and technology. She is a winner of the Florida Magazine Association's Gold Award for best trade-technical feature statewide.

Photos courtesy of Gainey's

A Secure Solution

GAINEY'S MANUFACTURES TWO LARGE OCTAGONAL PRECAST SLABS TO REPLACE AN EXISTING CAST-IN-PLACE STORAGE TANK FOUNDATION FOR A CHEMICAL PLANT.

Time is money for chemical manufacturers, which have to balance throughput with regular shutdowns for safety, preventative maintenance, upgrades, repairs and compliance. And while shutdowns are an important part of a plant's efficient and safe operations, the actual shutdown timeframes can affect those organizations' productivity and bottom lines. Production halts can translate into lost revenue and missed deadlines, and they require the right combination of personnel, equipment and materials.

When one large chemical plant in Louisiana decided to shut down a portion of its plant to replace a cast-in-place chemical storage tank, it called on engineer Elias Henri Hage, PE, CSA department manager at Hunt, Guillot & Associates, for help designing the new structure. Hage says the company wanted to put in a new tank with a different configuration and the replacement structure required a brand-new foundation.

The timing for the project was a tight two to three weeks from start to finish to avoid any extension of the plant's shutdown time. Hage says cast-in-place wasn't an option because it would require too much prep, curing and testing time. Besides, he said, "whenever we can specify precast concrete on projects, we do."

Once precast was selected as the material of choice, Gainey's of Holden, La., was hired to manufacture the octagonal foundations.

"They wanted to replace the foundations quickly during a planned shutdown of that section of the plant," says Tim Sander, vice president of operations at Gainey's. "It was important that they trusted us to have the precast structures complete and correct when they were ready for them."

For this project, Gainey's was asked to supply two octagonal foundations, each of which had a surface area of about 260 square feet, required about 16 cubic yards of concrete and weighed more than 66,000 pounds. Since the chemical manufacturer had to stop production in that section of the chemical plant to replace the foundations, the speed of installing premade precast foundations made it a very attractive solution.

Instead of removing the existing ring wall, the company was able to place the new, precast octagonal slab on top of that ring wall.

"This was a much more economical strategy than bringing in special forms, erecting them on a site where there are no flat surfaces and then shipping in the rebar separately," said Hage, who came up with the idea to bypass those issues and use precast instead. "If we hadn't

been able to use precast, the plant would have lost another two weeks of downtime. In the long run, this was a much more economical choice."

During installation, the contractor removed the old tank, placed the new, 18-inch slab and put the new tank on top of it. The tank was then anchored to the new, octagonal concrete slab.

"Our structures were ready, exceeded design strength and fit precisely into place," Sander said. "That way, the chemical plant was able to minimize production downtime."

GETTING IT DONE IN A SHORT TIMESPAN

Gainey's Senior Design Manager Cyndi Glascock understands the challenges that chemical plants face during shutdowns – a time to get a lot done within a small span of time. This is one of many reasons why precast is the material of choice for these organizations, which benefit greatly from having their products manufactured at an offsite plant. Gainey's had been introduced to Hage in the past and knew that the engineer liked using precast on the projects that he designed.

"Elias had come to some of our wastewater conferences, and he talked to us about the chemical project and how there wasn't any time to use cast-in-place," Glascock said. "He asked if there was any way to make precast bases, and then the job progressed from there."

"Our structures were ready, exceeded design strength and fit precisely into place. That way, the chemical plant was able to minimize production downtime."

– Tim Sander, Gainey's



Sleeves and inserts are precisely placed prior to casting so the slab can be attached to the existing foundation.



Left: A false floor is constructed inside the form to match the slope of the existing foundation underneath. Right: The completed slab with anti-slip surface finish is ready to be delivered and installed.

Gainey's conducted a site visit to pinpoint any potential installation challenges which, in turn, would ultimately drive the product design.

Initial designs included the manufacture of two different parts that would be bolted together onsite to form one foundation. This meant lighter lifts for the cranes and a bit easier highway shipping process, but Glascock said Hage was more comfortable with the idea of using a single precast piece.

"He was concerned about possible shifting over time in an area where the soils aren't so great," she explained. "That's the main reason why he decided to stick with the one large piece under each structure."

A UNIQUE SET OF COMPLICATIONS

Covering an existing slab with an octagonal precast piece may seem pretty straightforward to the naked eye, but the project required some special considerations from the precast perspective. Sander says Gainey's completed a lot of planning and mold fabrication before starting the production process.

"The slope introduced its own unique set of complications, namely, how do we get that precise of a slope over that long of a distance?" said Glascock, who was told by Hage that the slope actually needed to be on the bottom on the slab to match an existing slope where the piece was going to be set.

"That meant we had to build an octagonal false floor that matched that slope, which went from 2 feet 10 inches to 2 feet 6 inches over the entire width of that octagonal foundation."

Rather than purchasing standard boards from a lumberyard and then ripping them down on a table saw, Gainey's hired a local sawmill to customize the boards to the project specifications – right down to sizes like 5 feet 1/8 inch and 4 feet 13/16 inch.

"We got the boards we needed in those very precision dimensions," Sander said, "and then we used those boards for the floor joists."

Once Gainey's went into production, it began making one piece every two days. It also used a broom, anti-slip finish and cast several holes into the pieces at the customer's request. The holes would be used to dowel the slabs into the existing foundation. In total, Glascock estimates that the chemical plant shaved about a month off the project time by selecting precast over cast-in-place.

"They probably would have had to wait the full 28 days once it was poured," she says, "followed by a week to form it up."

"With precast, we always know what we're getting ahead of time."

– Elias Henri Hage, PE, CSA – Hunt, Guillot & Associates

PRECAST IS PREDICTABLE

Hage said he's specified precast on many different projects over the years. Along with the economics and shorter project timeframes, he really likes the quality control associated with precast concrete.

"With precast, we always know what we're getting ahead of time," he said. "We also don't ever have to worry about the weather and concrete curing too quickly in the heat, or not being able to pour it because it's too cold out."

He also likes being able to handle all of the inspection and safety procedures – to ensure forms are in the correct place at the correct elevation and that the rebar is tied properly – right at the precast manufacturer's location.

"Myself and another engineer went and checked everything before it shipped," Hage explained. "When the pieces arrived onsite, everything fit correctly and with no modifications. The project worked out very well and the owner was happy with the outcome."



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PRECAST DAYS Broadens Its Reach

PARTICIPATING PLANTS WILL RECEIVE NEW AND IMPROVED RESOURCES IN CONJUNCTION WITH A WIDER PUBLIC AWARENESS CAMPAIGN.

Author: Heather Bremer, Director of Communications



By Heather Bremer

Heather Bremer is the director of communications at NPCA.

Like any newcomer to the precast concrete industry, Precast Days has grown and changed with experience.

The annual event began as a weeklong effort to coordinate open houses at precast plants. It's expanded to a monthlong celebration in October populated by a variety of events, from plant tours and educational sessions to employee picnics and community cookouts.

As precasters start preparing for Precast Days 2024 or contemplate whether to participate, they'll find a host of new resources available this summer to support their planning, help them reach out to officials and build excitement for their event.

And, this year, participating plants will have national support in their celebration of precast. NPCA will share social media posts all month long promoting precast as the foundation of modern life and positioning the industry as a place to find a lifelong and rewarding career.

WHY JOIN PRECAST DAYS?

Precast Days is an opportunity for manufacturers to provide their communities – however they define that term – with an up-close experience at a precast concrete plant. It's a chance to show people firsthand what precast is and teach them about the company and its values, goals and, of course, products. And it's the perfect forum to build relationships with elected officials, business partners, specifiers and the next generation of workers.





Learn more about PRECAST DAYS at Precast.org/PrecastDays



Precast Days is an opportunity to let customers see products, tour the facilities and speak with manufacturing partners.

During a Precast Days event, companies can:

- ▶ **Celebrate the company and employees.** Host a cookout with employees' families. Mark the team's achievements during the past year.
- ▶ **Create new business relationships.** Conduct an open house, and invite customers, specifiers and suppliers.
- ▶ **Connect with the community.** Host chamber of commerce and local and state officials.
- ▶ **Grow their workforce.** Have a job fair. Invite students from local high schools and trade schools.

Each event can be as unique as the company and its culture. There are no rules. Each company decides what works best for its operation and goals.

Speaking of goals, that's a great first step in planning a Precast Days event. Determine a few desired outcomes, whether it's attracting more business, expanding the workforce, building relationships with lawmakers or celebrating company achievements. Once these goals are determined, it's easier to build a successful event.



Large or small group tours through the plant during Precast Days can build valuable relationships with attendees.



HOW IT WORKS

Goals determined. Events planned. Now what?

Registration for Precast Days opens in July.

Look for notices from NPCA in Precast Express and social media that it's time to register, and head to precast.org/precastdays to sign up. This simply indicates a plant will participate and lets NPCA know to share resources with company representatives.

After a plant completes the registration form, the lead representative will receive an email welcoming them to Precast Days and giving them instructions on how to find and utilize all the resources available in the host kit.

The host kit will include:

- ▶ **Build-Your-Event Calendar:** Starting at three months out, this calendar provides detailed steps for executing a successful event, no matter how big or small. Using the checklists will ensure nothing is forgotten. With the Precast Days celebrations coming right on the heels of the 59th Annual Convention, getting an early start will be key.
- ▶ **Examples of Past Events:** Some companies host plant tours. Others invite students for job fairs. And some host a day designed to educate specifiers on the benefits of precast. There's plenty of room for creativity and individuality.
- ▶ **Who to Invite List:** Depending on the event's goals, the guest list could include lawmakers, officials, specifiers, community members, students or employees. This list aligns the goals with the audience.
- ▶ **Attendee Invite Examples:** These examples offer suggestions on what attendees need to know and how to entice them to save the date.
- ▶ **Press Release:** The draft can be customized to suit a plant's specific event and sent to media or officials in the area to let them know a Precast Days is happening near them.
- ▶ **Sample Letters for Legislators:** It's important to know how to contact lawmakers and get past staff who filter out low-priority correspondence. These letters will demonstrate how to make an event attractive to busy officials.
- ▶ **Links to Find Lawmaker Contacts:** Find the right legislators and staff members to invite.
- ▶ **Flyer:** Whether posted on a community bulletin board or shared on social media, a flyer is a great way to attract attendees. The flyer is customizable to individual events.
- ▶ **Social Media Examples:** If a Precast Days event is open to the public, social media is the perfect way to spread the word. These ready-made social media images are customizable for all the major platforms.

There's also a webinar available on the Precast Days website. "If You Build It They Will Come" details Shea Concrete's experience in building out its annual event.

READY TO JOIN?

- ▶ Pick a date.
- ▶ Set some goals.
- ▶ Register at precast.org/precastdays.
- ▶ Download and utilize the resources.
- ▶ Host a successful event.
- ▶ Spread the word about precast.

IT'S AS SIMPLE AS THAT.

RAISING PUBLIC AWARENESS

Precast Days won't be isolated to manufacturers hosting open-house events.

It is evolving into an NPCA-driven initiative that creates a monthlong focus on precast concrete, how it makes modern civilization possible and the career opportunities it provides.

Throughout October, NPCA will conduct a public education campaign in conjunction with the events held nationwide at member facilities. In addition to promoting resources already available at precast.org, NPCA will share videos, infographics and more on the basics of precast, its benefits and the types of jobs available. This material will be disseminated through social media and email, giving members the opportunity to share in the messaging and effort.

NPCA also will assist members in reaching out to officials in their cities and states. Members will be provided with the tools they need to educate lawmakers and specifiers on the versatility, durability and sustainability of precast.

For more information, contact Christy Denault, NPCA Vice President of Marketing and Communications, at cdenault@precast.org.

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BITTERSWEET GOOD-BYE

On April 1, **Brenda Ibitz** retired from NPCA. Ibitz gave 20+ industry-transforming years to the association. Her impact on our members and NPCA are truly immeasurable. Brenda asked to share the following message with the membership:

“Three months shy of 28 years of service to NPCA, I am leaving three years earlier than I planned to step into full-time ministry with my husband, Ron. The ministry, Living Truth Church, is located in the Miami/Fort Lauderdale area. I will focus on prison and community outreach ministry. I look forward to staying connected via LinkedIn and can be reached at bibitz@lctftlauderdale.org.”

We wish her all the best in her next chapter as she pursues ministry in South Florida.



Brenda Ibitz was honored by the Associate members for her years of service.

COMMITTEE WEEK

NPCA Committee Week is an intensive series of working sessions for participating members to focus on key issues, engage in discussions and develop ideas.

Committee Week 2024 was held May 20-22 at the Conrad Indianapolis and included meetings of the following groups:

- Education Committee
- Quality Assurance/Quality Control Committee
- Outreach Committee
- Transportation Infrastructure Products Committee
- Gravity Grease Interceptor Subcommittee
- Engineering & Technology Committee
- Underground Products Committee
- Wastewater Treatment Products Committee
- Environmental Subcommittee
- Safety Committee

A committee callout for the coming year will start in June. All employees at NPCA member facilities are eligible to join committees. Learn how you can get involved at precast.org/committees.

NPCA ON THE ROAD

UNIVERSITY OF CENTRAL FLORIDA • FEB. 27

Ron Naumann, P.E., presented to grad students in the Prestressed Concrete Structure at the University of Central Florida. His presentation, “Introduction to Precast Concrete,” introduced 24 students to the basics of precast manufacturing.





Brad Chinery, P.E., gives a presentation to members of the Northeast Precast Concrete Association.

NEPCA • MARCH 7

NPCA was privileged to present at the 2024 winter meeting of the Northeast Precast Concrete Association (NEPCA). Brad Chinery, P.E., presented at the first “back to basics” program and provided updates to federal and state Buy Clean programs. Participants learned how states are legislating Buy Clean requirements and what actions their organizations can take now to remain competitive in a changing market.

NEPCA represents manufacturers of precast concrete products and companies that provide equipment, supplies and services to the industry. The association provides advancement for people engaged in the business of manufacturing and/or distributing concrete products and other lines of business related to the concrete industry. From education and support to resources and member forums, NEPCA continues to promote industry quality and value.

ACI SPRING CONVENTION • MARCH 24-27

Claude Goguen, Hugh Martin and Naumann attended committee meetings and sessions during the ACI Spring Convention in New Orleans.

PRECAST MEETINGS IN THE GREAT NORTH

Working with the ACPA, Chinery represented precasters serving North Dakota and Montana DOTs at industry meetings this spring. Each meeting generated great discussion to identify challenges and possible solutions. Both North

Dakota and Montana are in need of a significant amount of bridge structures that exceed the capacity of local precasters, prestressers and the DOTs’ budgets. Conversations continue as both sides are committed to providing for the needs of American infrastructure.

ASCE INDIANA SECTION

NPCA recently presented “Precast Concrete: Applications and Advantages” at the American Society of Civil Engineers (ASCE) Indiana Section annual meeting. Each attendee in the room full of students, professors and A/E professionals learned something new about the benefits of precast. Topics included how cast-in-place can be converted to precast, why precast is a sustainable, durable and resilient solution, and the advantages of precast on project timelines and bottom lines.

OTHER PRESENTATIONS

- **Indiana Department of Health, March 6:** Goguen presented to regulators.
- **Ohio Precast Concrete Association, March 14:** Goguen gave two presentations in Newark, Ohio.
- **Kansas State University, April 16:** Goguen presented to students at Kansas State University in Manhattan, Kan.



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People & Products

PEOPLE & PRODUCTS IS A FORUM WHERE NPCA MEMBERS AND NONPROFIT ORGANIZATIONS CAN SHARE INFORMATION ON NEW PRODUCTS, PERSONNEL PROMOTIONS, ACQUISITIONS OR SERVICE ANNOUNCEMENTS CONCERNING THE PRECAST CONCRETE INDUSTRY.

For possible inclusion, send your press releases and photos to hbremer@precast.org

KRB MACHINERY ANNOUNCES NEW OWNERSHIP

KRB Machinery, a leading manufacturer of rebar fabrication machinery, has transitioned to 100% employee ownership through an Employee Stock Ownership Plan. This move empowers employees, fosters a culture of ownership and positions the company for continued success in the future.

“We are excited to announce this important milestone in KRB Machinery’s history,” said Nathan Kauffman, president and CEO of KRB Machinery. “Since 1986, our employees have been a driving force behind our success. By transferring ownership to them, we are recognizing their dedication and contributions to our success and are confident that this will fuel even greater innovation and growth in the years to come.”

An ESOP is a retirement plan that allows employees to gradually acquire ownership shares in the company over time. This provides employees with a vested interest in the company’s success.

BILSON JOINS CAVAION BAUMANN USA

After 12 years at Hyundai Material Handling, **Paul Bilson** has accepted a position with Cavaion Baumann USA as director of dealer development and national accounts. At Hyundai, Bilson was the main company representative to NPCA and will continue to support the association at Cavaion Baumann.

“I am excited to remain associated with NPCA and its members,” Bilson said. “2024 was Baumann’s first Precast Show exhibition, and President Rob Alling indicated



Paul Bilson

he was very pleased with the turnout and interest and looks forward to future opportunities to support NPCA.”

Baumann is a world-class manufacturer of heavy duty sideloaders from 6,600 to 110,000+ pounds capacity for precast concrete, lumber, steel and other heavy industries. Based in Cavaion, Italy, the family-owned company has led the sector for more than 50 years and now sells its lift trucks worldwide in 76 countries.

CARBONCURE CELEBRATES LOW CARBON MILESTONE

CarbonCure Technologies, a climate tech company that provides a suite of carbon utilization technologies to the concrete industry, has reached a milestone of 50 million cubic yards of lower carbon concrete produced to date. That’s enough to completely fill the Dallas Cowboys’ AT&T Stadium with concrete 13 times over.

The company is approaching another major benchmark: 400,000 metric tons of carbon dioxide (CO₂) reduced and removed

from the atmosphere as a result of its technologies. That’s equal to the annual CO₂ emissions from more than 88,000 cars. It’s also equivalent to the annual carbon sequestration of 477,000 acres of forest, enough to cover half the state of Rhode Island.

According to CarbonCure’s real-time data from its network of systems, the 50 millionth cubic yard was manufactured by Pan-United in Singapore, CarbonCure’s first concrete producer partner outside North America and an industry pioneer celebrated for advancing sustainable concrete in Asia.

TINDALL CORPORATION PROMOTES SCHWEIZER

Tindall Corporation, a leading provider of precast, prestressed concrete solutions, recently promoted **Mark Schweizer** to general manager of the Virginia location.

“Over the past 17 years, we have come to rely on Mark’s considerable talents and his knowledge of our business,” said Chuck Wynings, vice president and outgoing general manager of Tindall’s Virginia location. “He will undoubtedly bring a spirit of innovation to this well-deserved new role, along with a sincere interest in



Mark Schweizer

the growth and development of our team.”

Schweizer graduated from North Carolina State University in 2006 with a bachelor’s degree in industrial engineering, joining Tindall a year later. He began his career with the company as a process engineer, quickly transitioning to the project management side of the Virginia division. As general manager, he will oversee all division operations, including sales, project development, manufacturing, delivery and installation, as well as the professional development of the Virginia team.

ALCRETE ACQUIRES AMERICAN CONCRETE INDUSTRIES



Alcrete LLC, a leading provider of high-quality precast concrete products, has acquired American Concrete Industries Inc. This move, which includes American Concrete Industries’ NPCA Certified Plant and its 10-acre manufacturing site, will allow Alcrete to expand its reach and serve a significantly larger geography.

“We are pleased to welcome the employees of American Concrete Industries to the Alcrete team,” said Justin D. Norman, chief executive officer. “This acquisition allows for the fulfillment of the key strategic initiative of entering the state of Florida. We believe in the continued growth of the Florida construction market and are pleased that Alcrete will be able to participate in the development of this infrastructure.”

Based in Fort Pierce, Fla., American Concrete Industries has been serving the Florida market since 1987.

CYCLONAIRE WELCOMES HABLITZEL AS SUPERVISOR

Cyclonaire Corporation, a leading provider of innovative material handling solutions, has appointed **Jason Hablitzel** as the application engineer supervisor.

In his role, Hablitzel will bring his extensive expertise to lead the application engineering team, ensuring the delivery of high-quality solutions to valued clients. He will oversee the application engineering department, collaborate with cross-functional teams and drive innovative solutions for clients. Hablitzel will also be responsible for Cyclonaire’s state-of-the-art Test Lab, providing oversight for customer material testing and reporting.

Hablitzel is making a return to Cyclonaire, having previously been a member of the team from 2006 to 2016.



Jason Hablitzel

A-LOK INTRODUCES ‘THE ROCK’

A-LOK Products has introduced “The Rock™,” an incremental spacer designed to revolutionize methods for controlling the placement of pipe within the opening of grouted connections.

“The Rock” is engineered to meet the demands of modern construction projects where precision and durability are paramount. Unlike the typical “sticks & stones,” “The Rock” offers a versatile range of dimensions.



A-LOK Products’ The Rock™

“The Rock” allows users to adjust dimensions incrementally, ensuring precise alignment and optimal performance in grouted applications. Constructed from durable, high-quality materials, “The Rock” can handle rigorous construction environments while maintaining precision over time.

“The Rock” simplifies the installation process, reducing labor costs and set-up times while improving accuracy. For more information about “The Rock,” visit www.a-lok.com.

WALTER INTRODUCES NEW ADD-ON FOR WASHOUT SYSTEMS



WALTER CleverSwitch

WALTER recently introduced a new add-on for its washout system that aims to reduce water usage for mixer cleaning by 80% and put the recycled water in plants to good use. Instead of spending money on neutralizing settled but still high-pH grey water, use it to automatically clean concrete mixers with the WALTER washout system. The new add-on, “WALTER CleverSwitch,” consists of a dual water inlet, a set of valves, filters and measuring devices, all connected into the overall electric control panel. It can be hooked up both to fresh and recycled water supplies.

During the automatic cleaning cycle, the system will then alternate between both supplies to use about 80% of recycled water and only 20% fresh water for the complete washout cycle. The result: drastically reduced fresh water consumption and an improved CO₂

footprint of a concrete plant.

It is easy to add on to existing WALTER washout systems and also is available on new systems. On-site assistance for installation is available by trained service engineers. Find details at walter-cleaningsystems.com.

AFINITAS ANNOUNCES LEADERSHIP CHANGES, NEW TEAM MEMBERS

Afinitas has announced the following changes to its executive leadership team and its Accessories/Forming Systems sales team.

David Drees has been named president of the Afinitas Forming Systems Division. Drees replaces Jason Duncan, who was promoted to Afinitas CEO in December 2023. Drees has nearly two decades of experience in the construction industry. He comes to Afinitas from Accu-Steel Fabric Covered Buildings in Des Moines, Iowa, where since 2022 he served as vice president of operations.

In addition, Afinitas promoted its Global People Team Director, **Liz Wingenbach**, to Chief People Officer. In Wingenbach's three years with Afinitas, she supported four new acquisitions, launched key initiatives to drive team member growth and engagement and has played a critical role in attracting new talent to Afinitas teams across the globe.

Lastly, Afinitas has added two new team members to its Accessories/Forming Systems Sales Team.

Chad Butler has been named Southeast sales manager. He comes to Afinitas from Huntsman Building Solutions, where he was a territory sales manager. Butler has 20+ years of experience representing and selling construction/building-related products and identifying potential customers and businesses to drive sales growth.

Sean Peck has been added to the Accessories/Forming Systems Sales Team as Northwest sales manager. Peck has more than a decade of sales experience, most recently serving as director of sales at IKOTEK USA Inc., a global provider of original design manufacturing for the IoT industry.



David Drees



Liz Wingenbach



Chad Butler



Sean Peck



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Calendar of Events



SEPT. 26-28, 2024
NPCA 59th ANNUAL CONVENTION

JW Marriott Tucson Starr Pass
 Resort & Spa
 Tucson, Ariz.



FEB. 5-7, 2025
THE PRECAST SHOW 2025

JW Marriott Indianapolis
 Indianapolis



OCT. 2-4, 2025
NPCA 60th ANNUAL CONVENTION

Amway Grand Plaza
 Grand Rapids, Mich.

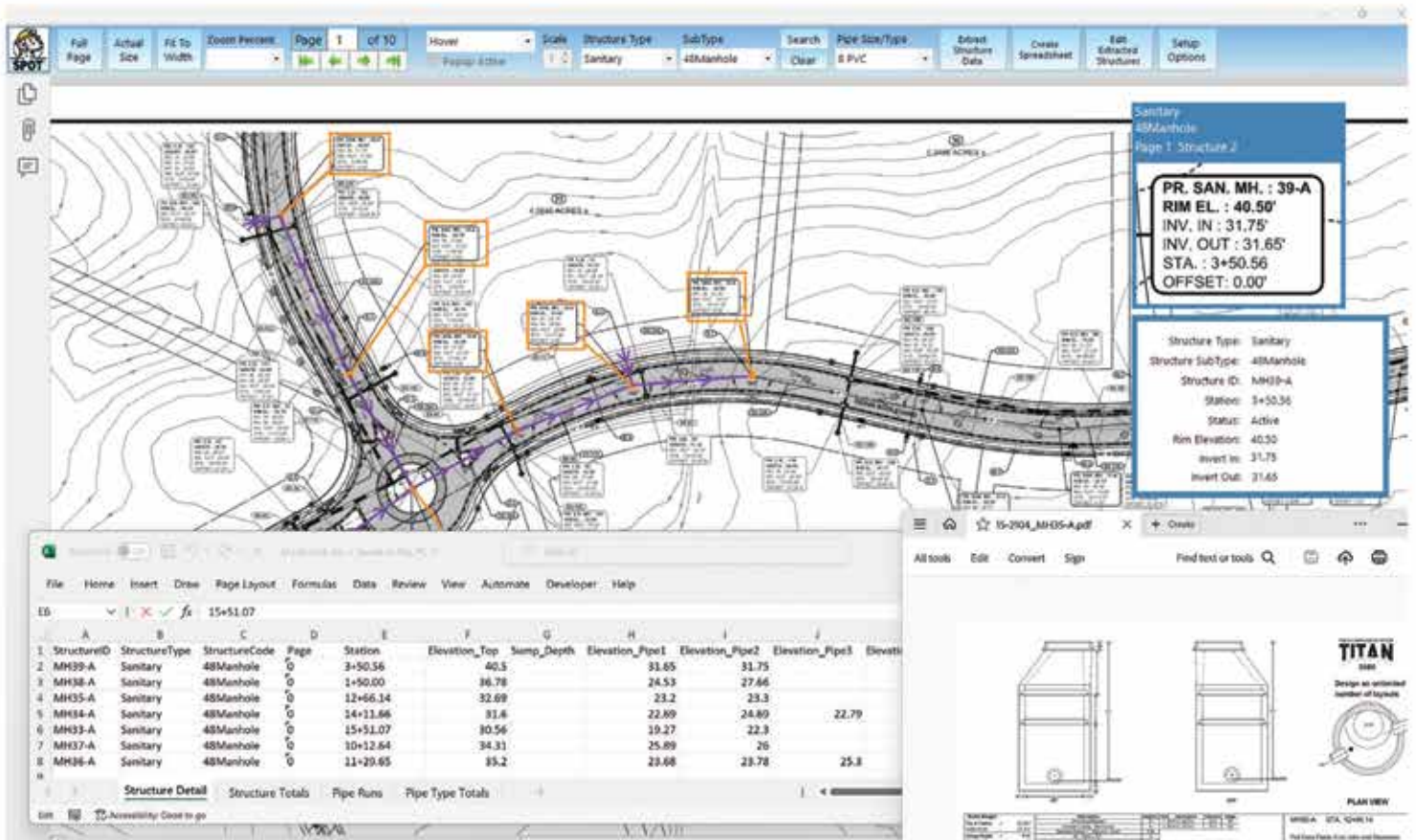
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Introducing **SPOT**, powerful AI technology from Muka Development Group that enables precasters to quickly fetch structures information from site plans. It's this easy:

1. Highlight the structure callouts on the plans.
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SPOT dramatically reduces the process of creating quotes and takeoffs for sanitary and storm structures, saving you time and effort.

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