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

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Correction: *The photograph on page 24 of the Nov./Dec. 2015 issue of Precast Inc. included an incorrect photo credit. The photo should have been credited to Trinic (www.trinic.us).*

NEW
ASTM C1628 Standard:
Pipe & Gasket Design Specification
page 16

On the Cover:
Clockwise from top-left: Andrew Gillespie, purchasing agent; Jim Talbott, vide president; Jim Gillespie, president; Jude Mandes, operations manager and Mike Iacona, sales manager.
Photo by Sara Geer

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NPCA Welcomes **New Chairman** at Annual Convention

NPCA file photo

Michael Tidwell, (left) the 2015 NPCA chairman, passes the gavel to Andy Wieser, president of Wieser Concrete Products.

While the NPCA 50th Annual Convention, held last fall in Minneapolis, was an opportunity for attendees to reminisce, it was also a time to look to the future. As Andy Wieser, of Wieser Concrete Products, came on stage at the closing gala to deliver his speech as the new chairman, he represented ties to both the past and the future of the association.

His father, Joe Wieser, joined NPCA in 1968 and served as chairman (called president at the time) in 1985. As a result, Andy has been around NPCA most of his life.

"I remember when I was a young man, meeting leaders of our association," Andy said in his speech. "They always made me feel like I belonged and made me feel important. Guys like Roland Lindsay, Lester Smith, Arlo Breidenbaugh, George Gasperson, Lenny Worden, Don Jensen, Charlie Rainero, Wally Hahn, Tom Lendrum, Allen Chase, Erv Babbert, Johnie Vaughn and Norm Gavin, just to name a few."

For the Wieser family, and many others, the anniversary was an opportunity to look back through photos and share memories. It was the second such occasion for the Wiesers, as Wieser Concrete Products also celebrated its 50th anniversary in 2015. The company began as a backyard operation that Joe and his wife, Mary Wieser, started out of the family home. Joe built the company's first plant and got his children involved at a young age. He retired in 1999 and turned over all operations to Andy and two of his brothers, Dan Wieser and Mark Wieser. The three now run the company together.

Today, Wieser Concrete Products has more than 160 employees working at five manufacturing facilities in Wisconsin and Illinois. And while Andy enjoys looking back, he is more focused on the future. He and his brothers continue to look for ways to innovate and adapt to meet an ever-changing environment.

Andy brings that same future-focused approach to NPCA. He is mindful of the past that got NPCA where it is today and proud of the members' and association's accomplishments in education, safety, diversification and quality. But he is always looking forward as well.

"We have spent the past few days celebrating NPCA's history," Andy said. "With that foundation, today we are stronger than ever. It has been a great 50-year run.

"However, like any successful organization, we have to continue to change to stay relevant. Now is the time to build on our foundation and really start planning the future." **PI**

Questions from the **Field**

Questions from the Field is a selection of questions the **NPCA Technical Services Department** receives from calls, emails and comments on blogs or magazine articles on precast.org. *If you have a technical question that needs an answer, contact us by calling (800) 366-7731 or visit precast.org/technical-services.*

Dheeraj writes:

Is concrete with fly ash useful in curing?

NPCA Technical Services Department answers:

Fly ash has pozzolanic properties and the reaction is generally slower than cement's hydration reaction. Therefore, the use of fly ash can delay set, which may result in delaying finish operations. This also depends on the type of fly ash you use, as class F fly ash will likely increase setting time while class C may accelerate or reduce set time. The effect on set, also depends on the amount of fly ash replacement in the mix. Higher amounts can lead to significant delay of initial set.

The use of fly ash will generally lower the heat of hydration in comparison with mixes using only Portland cement. Fly ash in concrete may also lead to lower early age strengths. This varies depending on the type of fly ash used and replacement levels. However, fly ash in concrete has been shown to increase long-term strength.

To answer your question, fly ash is generally not used to enhance curing. It has many other benefits including lowering water demand, increasing workability and reducing bleeding and segregation. It also enhances concrete's hardened properties by increasing long-term strength, lowering permeability and increasing durability. It will not require less water for curing. As with all curing, maintaining ideal temperature and relative humidity is key for pozzolanic and hydration reactions.

Ejaznespak writes:

What is the normal slump of concrete to achieve a good strength for a water-cement ratio of 0.40?

NPCA Technical Services Department answers:

Concrete must be made with a workability, consistency and plasticity suitable for job conditions. The slump test is generally used to measure concrete consistency. Consistency is the ability of freshly made concrete to flow. When used with different batches of the same mix design, a change in slump indicates a change in consistency and in the characteristics of the materials, mixture proportions, water content, mixing, time of test or the testing itself.

The reality is if we measure the slump, the only thing we really know at this point is the slump. The slump of a concrete mix is influenced by everything. Changes in any of the following can affect the slump of the concrete:

- Content, proportions, chemistry, fineness, particle size distribution, moisture content and temperature of cementitious materials
- Content, proportions, size, texture, grading, cleanliness and moisture content of aggregates
- Dosage, type, combination, interaction, sequence of addition of chemical admixtures
- Air content
- Batching, mixing and delivery/placement methods
- Temperature of the concrete
- Sampling, slump-testing technique and the condition of the test equipment
- Amount of free water in the concrete
- Time since batching at the time of testing

Slump is indicated in the job specifications as a range or as a maximum value not to be exceeded. If slump is not specified, ACI 211.1 Table 6.3.1 has established recommended slumps based on various types of construction.

Daniel writes:

A customer of mine had a question about the methods for installing a manhole into a hole. Most of their customers do not use spreader bars to install the manhole. I thought spreader bars were specified in ASTM, but I don't know where. Do you have any idea where I should look for such a specification?

NPCA Technical Services Department answers:

The use of a spreader bar for structure handling is not required. It is often the contractor who determines the method as long as the finished product meets the specs and expectations. Some precasters will furnish a spreader bar with delivery of their product.

Within the proposed manhole installation standard 8.2.2 there is a small mention of spreader bars only if "safe lifting angles cannot be achieved."

Bryan writes:

What will be the earliest time to remove the precast form from the Portland precast cement wall?

NPCA Technical Services Department answers:

The minimum stripping time is a function of concrete strength. The method used to determine stripping time involves comparing the actual strength gained to the required strength for stripping the structure. The required stripping strength is sometimes specified in the contract documents. In precast, the stripping strength in usually listed in the plant specific quality control manual.

The earliest time to remove formwork is when the concrete has achieved enough strength to support its own weight and the weight of anticipated loads. ACI 547, "Guide to Formwork for Concrete' states "when forms are stripped, there should be no excessive deflection or distortion and no evidence of damage to the concrete due to either removal of support or to the stripping operation. If forms are removed before the specified curing is completed, measures should be taken to continue the curing and provide adequate thermal protection for the concrete."

So unfortunately, we can't give you an amount of hours. Various concrete mixes will have different rates of set. You just need to cure cylinders in the same environment as the structure and periodically break one until the desired strength has been reached. The time required to reach that strength can then be used as a basis for further stripping for that particular mix design. **PI**

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PREVENTING CEMENT BURNS

Knowing how to **prevent and treat cement burns** is important for any precast concrete plant.

By Evan Gurley

Cement burns can be harmful and sometimes disabling for exposed workers. For example, a recent Occupational Safety and Health Administration report cites an employee who did not follow the supervisor's instruction to wear proper personal protective equipment on his feet. As a result, the employee exposed his feet to wet cement. After noticing, the supervisor instructed the employee to wash his feet and change into the proper footwear required for the job. Later, the employee felt discomfort in his feet and had to be admitted to the hospital. By the time he arrived for treatment, he had sustained second- and third-degree burns on his feet. Employees who work with wet hydraulic cement and don't follow safety precautions are at risk of developing skin problems ranging from mild and brief to severe and chronic.

CEMENT EXPOSURE RISKS

Hydraulic cement is hazardous to skin for a number of reasons, including its potential hydrogen concentration or pH. On the pH scale, which runs from 0 (very acidic) to 14 (very alkaline), cement has a pH of 12 to 13. Human skin is slightly acidic at pH 4 to 5.5. When skin is exposed to a higher pH substance, it becomes more permeable and easily absorbs chemicals. As a result, chemicals in cement can irritate the skin and even enter the bloodstream. Additionally, cement is abrasive and draws moisture from anything it comes into contact with, which as a result dehydrates skin.

If not properly addressed, these traits can cause skin issues for workers in precast concrete plants with prolonged exposure. Cement also contains trace amounts of hexavalent chromium, a toxin harmful to skin. Dry cement is less caustic and therefore less hazardous than wet cement, but it can still cause a wide range of harmful effects to the skin.

Four main skin problems encountered by workers who are exposed to cement on a regular basis include:

- Dry skin
- Irritant contact dermatitis
- Allergic contact dermatitis
- Cement burns

Dry skin

Workers not following safety procedures often experience dry skin, which can be accompanied by redness, itching and other unpleasant symptoms when working with cement.

Irritant contact dermatitis

Skin contact with wet cement can also cause inflammation, referred to as dermatitis. Signs and symptoms of dermatitis can include pain, itching, redness, swelling, blisters, scaling, scabs and other changes in skin's normal condition. Irritant contact dermatitis, a non-allergic form of dermatitis, is related to the caustic, abrasive and drying properties of cement. ICD can be short term or chronic.

Charles Piwowarski, area environmental manager with Forterra Building Products, said the best way to address potential dermatitis skin issues is by asking basic questions:

- Are employees being hygienic? This includes washing contacted skin, not staying in soiled clothing for long periods of time and using a preoperational barrier cream.
- Is the plant providing soap with warm or hot water in the washrooms?
- Is the form oil contaminated? In some instances, the form oil may become contaminated with water, cement dust or other impurities. Be sure to inspect your form oil (totes, sprayers, tanks) and be suspect to changes in color and viscosity.

The best way to prevent cement-related skin problems is to minimize skin contact.

OSHA'S RECOMMENDED PRACTICES *for* SKIN CARE

Wash areas of the skin that come into contact with wet cement in clean, cool water. Use a pH-neutral or slightly acidic soap. Check with the soap supplier or manufacturer for information on the acidity and alkalinity of the soap.

Consider using a mildly acidic solution such as diluted vinegar or a buffering solution to neutralize caustic residues of cement on the skin.

Do not wash with abrasive or waterless hand cleaners, such as alcohol-based gels or citrus cleaners.

Avoid wearing watches and rings at work since wet cement can collect under such items.

Do not use lanolin, petroleum jelly or other skin softening products. These substances can seal cement residue to the skin, increase the skin's ability to absorb contaminants and irritate the skin. Skin softening products also should not be used to treat cement burns.

Some employees may be prone to dermatitis even with the above precautions, so it may be necessary to relocate an employee to another area of the plant to reduce or prevent exposure.

Allergic contact dermatitis

The hexavalent chromium in cement can cause allergic contact dermatitis, an allergic reaction form of dermatitis, in sensitized employees. When an employee is sensitized, the immune system overreacts to small amounts of hexavalent chromium, which can lead to severe inflammatory reactions after subsequent exposures. Sensitization may result from a single exposure, from repeated exposures over the course of months or years, or it may not occur at all. After an employee becomes sensitized, which can last for years, brief skin contact with very small amounts of hexavalent chromium can trigger ACD. This condition includes many of the same symptoms as ICD, but is difficult to cure.

Cement burns

If left on the skin long enough, wet cement can cause caustic burns, referred to as cement burns. Cement burns may result in blisters, dead or hardened skin, or black or green skin. In severe cases, burns may extend to the bone and cause disfiguring scars or disability. Employees cannot rely on pain or discomfort to alert them to cement burns, as immediate pain or discomfort may not occur. Cement burns can get worse even after skin contact with cement has concluded. National Precast Concrete Association and OSHA recommend any employees experiencing cement burns see a health care professional immediately.

OSHA STANDARDS APPLICABLE TO WORKING WITH CEMENT

Several OSHA standards require employers to take steps to protect employees from hazards associated with exposure to cement. These standards include requirements for:

- Personal Protective Equipment (29 CFR 1910 Subpart I for general industry)
- Sanitation (29 CFR 1910.141 for general industry)
- Hazard Communication (29 CFR 1910.1200 for general industry)
- Recordkeeping (29 CFR 1904)
- Permissible Exposure Limit (CFR 1910.1000 for general industry)

The best way to prevent cement-related skin problems is to minimize skin contact with wet cement. Compliance with OSHA's requirements for equipment, washing facilities, hazard communication and safety training, along with good skin hygiene and work practices, will protect against hazardous contact with wet cement at precast concrete plants. **PI**

Evan Gurley is a technical services engineer with NPCA.

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Steve Mader, president and co-owner of Crest Precast, welcomes members to his plant during the NPCA 50th Annual Convention plant tour.

NPCA file photo

GETTING THE **MOST** *out of* **Your NPCA Membership**

Optimize your association membership through participation, networking, education, collaboration and learning from other members.

By Bridget McCrea

When Scott Hayward sat down to discuss the value of National Precast Concrete Association membership, the timing couldn't have been better. Not only had a team of Colorado Precast Concrete employees just wrapped up multiple plant tours, but the company also completed a successful plant certification process. Needless to say, association membership and the benefits included were top of mind for Hayward, vice president and general manager for the Loveland, Colo.-based precaster.

"We did two full days of plant tours and really learned a lot in the process," said Hayward, whose company joined NPCA in 1976. "Being able to see first-hand what the rest of the industry is doing is great. There's just so much that we can learn from one another during those interactions."

Looking back over nearly four decades of NPCA membership, Hayward said he's pleased with the progress the association has made in terms of forming new committees and tackling new and timely initiatives in order to make precast concrete products better. What hasn't changed along the way, he notes, is the strong camaraderie among members – all of whom are willing to network, share ideas and brainstorm on key issues.

Take the actual manufacturing process, for example. In some cases, Hayward said membership has helped his company identify and test certain paths it may not have thought of on its own.

"Plant certifications, for example, have enabled Colorado Precast not only to move into new geographies, but have also made us much better manufacturers of precast products," said Hayward, who attributes much of that progress to NPCA. "That, in turn, has resulted in better profitability for our company."

PARTICIPATION COUNTS

Within the manufacturing sector, numerous trade associations and business groups exist that cater to companies and individuals interested in getting involved with their industries. For some, getting involved simply means submitting an annual check to cover dues, receiving association publications and attending annual meetings. Others take membership to the next level by participating in committees, serving on boards, networking regularly with other members, collaborating on key issues and taking advantage of the association's educational opportunities.

At a foundational level, professional associations like NPCA encourage like-minded professionals to gather and learn from one another. In fact, this is the reason associations form in the first place – to provide a place for open discussion about industry challenges, successes and trends. Through these interactions, individuals are given the opportunity to emerge as community leaders by serving on the association's committees and boards and by volunteering their time and effort. Members also use their membership to attract new customers (e.g., by prominently displaying the NPCA logo on their websites, social media channels and marketing materials), attend regular meetings, compare notes with other precasters from around the world and take other steps to promote the industry.

"We're learning from others, getting involved with plant tours, getting certified and doing whatever else it takes to run a customer service-based company that truly cares about its employees," Hayward said. "Those efforts stand for themselves."

OPEN PLATFORMS FOR SHARING

It's no secret association events provide a platform for members to network and meet with other like-minded industry professionals. At these events, you can even find new customers and potential business partners.

NPCA members also have access to resources such as educational tools (both online and in person), NPCA's Technical Services Department and industry-leading publications.

Members also have access to a wide range of peers. NPCA's membership roster includes members in all 50 states, eight Canadian provinces and 12 countries. Membership consists of producer members (precasters), associate members (suppliers that manufacture a product or deliver a service related to the precast industry) and professional members (architects, engineers, regulators and educators, among others).

Jon Maxwell, plant manager at Arrow Concrete Products in Granby, Conn., has been involved with NPCA for 25 years and takes advantage of many of the association's educational opportunities.

"I've been doing all of the PQS classes and it's been great," Maxwell said.

Production & Quality School starts with Level 1 – a two-day course that covers the basic knowledge all precast concrete production employees should know – and is offered both online and annually at The Precast Show. PQS II focuses on safety, production, technical knowledge and quality control while PSQ III concentrates on building leadership skills.

"I'm going for the Master Precaster certification," Maxwell said. "The classes so far have been amazing."

> "I'm going for the Master Precaster certification. The classes so far have been amazing."
>
> – Jon Maxwell, *Arrow Concrete Products*


NPCA file photo

Live education is offered at The Precast Show and annual convention.

Maxwell said he had recently completed a PQS II – Technical course taught by Claude Goguen, P.E., LEED AP, NPCA's director of sustainability and technical education.

Maxwell said when going over the technical examples, he was able to apply his knowledge of algebra and trigonometry.

"When we first started the class I was a little blown away," Maxwell said. "The instruction really was top notch."

Maxwell said he also participates in the educational offerings at NPCA's annual conference and attends at least one webinar online per month. He said these activities go a long way when it comes to audits, inspections and certifications.

"NPCA keeps you on your toes because you know there's always going to be a yearly audit," Maxwell said. "We're always waiting for that and making sure that we're dotting our I's and crossing our T's and never cutting corners."

Like Hayward, Maxwell also sees value in attending plant tours. These events not only help strengthen connections across the association's three different membership levels, but also lead to future networking

opportunities and potential collaborations.

"Everyone is extremely friendly and open and willing to share their ideas," Maxwell said. "Some of us stay in touch afterward and work to solidify those relationships and connect. Being able to learn from other precasters is very beneficial."

Having attended PQS educational courses first-hand, Maxwell said he wants to sign up more of Arrow Concrete Products' foremen for PQS I and PQS II as well.

"We're in an industry where you can never learn enough and these types of educational opportunities help everyone stay on track and motivated," Maxwell said.

WE'RE ON THE SAME TEAM

When recalling the 10 years that Oldcastle Precast in Littleton, Colo., has been an active NPCA member, Kelly Patterson said the benefits range from plant certifications (the company has 30-plus certified plants) to leadership opportunities and forming strong ties with other producers, associates and professional members. Patterson, director of engineering, currently chairs NPCA's Technical Committee. Because the technical group reviews the information generated by all other NPCA committees, Patterson has the inside track on the latest and most pertinent industry information.

"When you assume a leadership role in an organization, and when you organize and run meetings, you have a voice and the opportunity to make a difference," Patterson explained. "It's a great experience."

He sees NPCA's educational opportunities as another important benefit of membership, particularly in an era where technology is evolving at the speed of light and impacting everything from manufacturing to customer service and business operations.

"At the meetings, everyone talks about new technologies, research and industry concerns," Patterson said. "I'm able to gather information from those events and apply it in our day-to-day operations."

Additionally, Patterson appreciates the networking opportunities that he's exposed to at the events.

"Those interactions benefit all of us," he added.

At the industry level, Patterson feels NPCA helps aid camaraderie among members who in many cases are actually competitors in the business world.

"When we know them and they know us, things tend to be less contentious," Patterson explains. "So while we're all essentially competitors, NPCA gives us all a venue where we can understand and learn from one another and realize that we are all, in fact, on the same team."

> "NPCA gives us all a venue where we can understand and learn from one another and realize that we are all, in fact, on the same team."
>
> – Kelly Patterson, *Oldcastle Precast*

To members who want to optimize their NPCA membership, or to those new members that need advice on how to get started, Hayward said connecting with other member companies is a good first step.

Patterson concurs, and said signing up for The Precast Show 2016 is a great starting point for anyone looking to get more from their membership. He said participating in committees and enrolling in the group's many educational opportunities are two additional ways to get involved.

"Don't be afraid to jump in and get your feet wet; we really are like one big family here," Hayward added. "We're very welcoming and always willing to help one another out." **PI**

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.

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ASTM UPDATE

Pipe & Gasket Design:
Separate Components or a System?

The new **ASTM C1628** standard enhances how projects specify pipe and gasket design.

By Mike Miller

The basis for developing ASTM standards through consensus is both simple and complex. Visit **precast.org/ASTMC1628** to read more about the standard setting process.

ASTM C1628 introduces new thinking about joint and gasket design.

Photo courtesy PresSeal Gasket Corp.

Precasters that make joints with rubber gaskets are familiar with ASTM C443, "Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber." Companies brought their equipment and manufacturing processes into conformance with this standard, making sure the proper joint and gasket design and source, inspection protocols and test data fully supported the products.

However, a recent addition to ASTM standards for pipe and gasket design means precasters who use pipe gaskets in their products need to be aware of coming changes. The new ASTM C1628, "Standard Specification for Joints for Concrete Gravity Flow Sewer Pipe, Using Rubber Gaskets," shows a mix of ASTM C443 and ASTM C361, with a little industry certification added. While the standard has been around for several years, it is now reaching the point where it may appear as a project specification requirement, and precasters need to be ready.

ASTM C1628 varies from ASTM C443, which may require additional design analysis and modifications to equipment, staff and processes for many precasters. The new standard introduces a different way of thinking about joint and gasket design.

The old understanding is pipe and gaskets are related but separate components. Joint designs have been a compromise between ease of manufacturing and product precision. The new thinking is the pipe joint and gasket form a system and minimize variation by providing sufficient inspection efforts at the proper process points to reduce or eliminate problems. As a result, a higher level of overall quality is achieved and everyone benefits. Overall, costs could be reduced for both the precaster and the customer.

A table available at precast.org/ASTMC1628 compares the significant differences between the two standards, revealing there are changes to requirements in almost every area. Some precasters will discover many products and processes are compliant or can easily be made compliant, while others will discover compliance challenges. Legacy equipment may need to be replaced, inspection gauges and processes may need improvements, gaskets may need to be changed or a new supplier may need to be found. Additionally, staff may require extra training.

While the changes are numerous, some of the key differences for precasters and suppliers to know include:

- **Scope.** This is what defines which products are included within the standard. ASTM C1628 provides further pipe application guidance to projects "where measurable or defined infiltration is a factor of the design." ASTM C1628 is not intended to supplant ASTM C443 as an appropriate gasketed joint system for vertically placed manhole structures.
- **Gasket physical properties.** Both standards require gaskets as specified under ASTM C1619. However, the classes are different and the requirements for ASTM C1628 are considerably more stringent. The requirement in ASTM C1619 that all tests be conducted on actual product samples will catch suppliers who avoided the transition when ASTM C443 was changed.
- **Gasket dimensional tolerances.** Design tolerances for gaskets in ASTM C1628 are about half what they are in ASTM C443, meaning supplier changes will have to be made.
- **Joint design.** An important change in ASTM C1628 is it limits joint tapers to no more than 2 degrees, 3 degrees if testing proves adequate. ASTM C443 allowed taper angles up to 3.5 degrees, 5 degrees if tested. Precasters with equipment having a taper in excess of 3 degrees will need to re-equip to meet the new standard. Additionally, ASTM C1628 includes detailed requirements for joint design.
- **Test methods (gaskets).** ASTM C1628 requires the precaster to sample gaskets and perform several quality checks.
- **Performance requirements.** ASTM C443 and ASTM C1628 both require hydrostatic tests in the straight homed position and in the deflected position. However, ASTM C1628 specifies both tests to have an off-centering shear load applied. ASTM C1628 also requires a structural shear test. As a convenience to the testing producer, there is an option to conduct all the C1628 hydrostatic and structural testing as a single test to the worst case condition.
- **Inspection.** ASTM C1628 requires that the bell and spigot of every pipe be measured. Whether this means every size, every type or every individual stick of pipe is open to interpretation.
- **Appendix.** ASTM C1628 provides a suggested checklist to assist owners and designers responsible for reviewing joint design and geometry submittals. This checklist shows a Joint Data Form that includes important details needed for a complete joint submittal analysis.


NPCA file photo

ASTM C1628 may soon appear as a project specification requirement.

Like any standard, the road to acceptance and implementation of ASTM C1628 may take years. These changes represent a push for improvement in the performance of products that comply and will likely face some setbacks. If implemented, companies that are compliant with ASTM C1628 will also be compliant with ASTM C443. This is crucial if ASTM C443 is important in your market area. **PI**

Mike Miller is the owner of Large Caliber Design, LLC, and remains active in sealing product design and development, as well as standards work with ASTM.

PRECAST FORECAST 2016

NPCA FORECASTS A 7% INCREASE IN THE PRECAST, PRESTRESSED AND REINFORCED CONCRETE PIPE SECTORS IN 2016, BRINGING TOTAL SALES VOLUME TO $22.7 BILLION.

By Bob Whitmore

Precast concrete manufacturers who landed on their feet after the Great Recession have now had two years of recovery. After reaching the depths of the recession and slowly climbing out, 2014 and 2015 produced rising sales of precast, prestressed and reinforced concrete pipe products. And 2016 looks like more of the same.

While the all-important public works sector is expected to be flat next year, the diversity of the precast concrete industry should keep it in recovery, with 7% growth expected in 2016. That translates to about $22.7 billion in sales of precast, prestressed and reinforced concrete pipe products.

"Companies that get through a severe recession generally emerge leaner and stronger because they have made the tough decisions needed to survive," said Ty Gable, president of National Precast Concrete Association. "The precast industry lost about 40% in sales at the bottom of the recession and now we're working our way back."

If 2016 pans out as expected, the industry will have recovered much of its losses and will be at about 82% of its peak year of $27.5 billion in sales in 2007.

TRANSPORTATION BILL PROVIDES A STIMULUS

Gable said the recent passage of the five-year, $305 billion highway bill will be a key economic driver for the industry, since many established precast companies provide products for transportation infrastructure. The passage of a highway bill will not have much of an effect on the bottom line in 2016, however.

"Most of the large transportation projects that will start because of the new highway bill will take about a year to get going," Gable said. "A highway bill still provides a positive stimulus for 2016 as precasters and suppliers ramp up, but the actual work likely won't happen until 2017."

Many precasters branched into new products during the lean years of 2009-2012, and they are now collecting the dividends with increased business based on a more diversified portfolio of products. Custom

precast projects, where profit margins are typically greater, helped stabilize the industry during the recession and are now providing some precasters with growth opportunities, according to Gable.

"We often hear about precasters who start working with specifiers early in the design phase and are able to show them how precast can save time on the project, reduce labor costs and provide a just-in-time delivery solution," Gable said. "Those elements are more important than ever in the construction industry, and they feed into the strengths of precast as a modern building material. Precasters who are on the leading edge have become very good at bringing specifiers into their plants for lunch and learns and plant tours and then showing them how custom work can benefit them in a variety of ways.

"During the recession, it was a means for survival. Now it's a way to continue to grow the business."

NONRESIDENTIAL GROWTH

The American Institute of Architects annually publishes a consensus forecast that combines seven construction industry forecasts and averages their findings. The AIA consensus forecast shows a 7.7% increase in nonresidential construction for 2015 followed by an 8.2% increase in 2016. The NPCA forecast is skewed toward public sector spending, because the majority of precast products are delivered to publicly funded projects, but includes residential products as well as nonresidential. The public sector is likely to grow in 2016 at the local level, while federal funding remains flat.

The importance of federal funding for heavy construction that often includes precast elements tempers what would otherwise be a more optimistic NPCA forecast, Gable said.

"A 7% increase is still strong growth and indicates a healthy precast sector that is keeping pace with the rest of the construction industry's recovery."

A look at AIA's architectural billings index and the Associated Builders and Contractors Construction Backlog Indicator helps point to where the precast industry is headed in 2016.

"Design activity tends to lead construction by nine-to-12 months," said Kermit Baker, AIA chief economist, speaking during the 2016 Collaborative Construction Economic Forecast webinar on Nov. 11. "The architectural billings index is continuing to trend up."

He said that "the billings index is highly correlated with the construction industry as a whole." The AIA index has had some of its strongest scores since before the recession, suggesting that we should see healthy growth in the quarters and years ahead of us."

Anirban Basu, chief economist at Associated Builders and Contractors, echoed that optimism during the same webinar.

"ABC's national Construction Backlog Indicator stands at 8.5 months," he said. "Contractors are actually turning away work because they can't find available labor or just don't have the capacity. During the recession it was demand issues – the work wasn't there.

"The focus has now shifted to supply constraints – the backlog number indicates that most contractors can expect to be busy in 2016."

One of the factors driving ABC's forecast of a 7.4% increase in nonresidential construction spending is that "the public sector is coming back," Basu said.

"State and local government finances are continuing to improve," he added. "So we're seeing improvement in publicly funded sectors like sewage and waste disposal, educational, transportation, highway and street, and water supply. My very strong sense is that progress at the state and local government level continues fiscally.

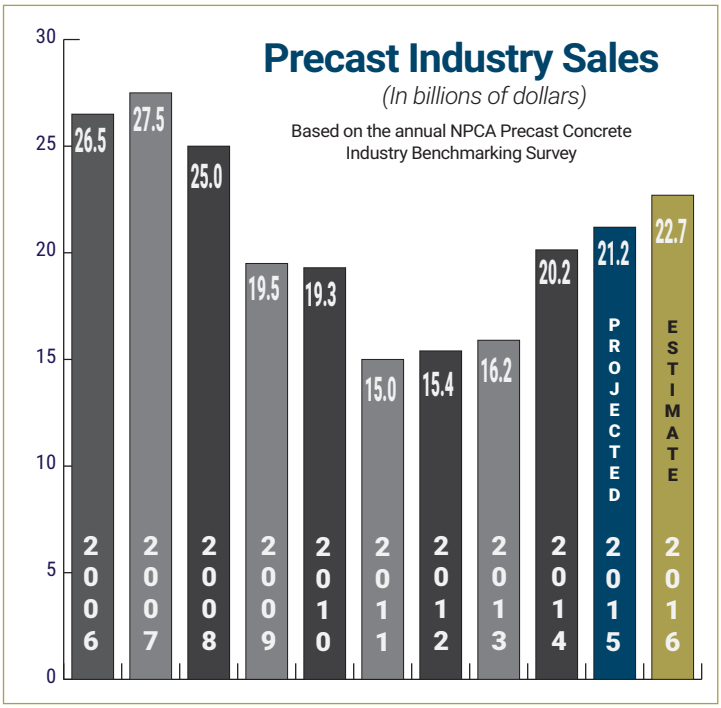
"All of that suggests that nonresidential construction can continue to recover."

NOT CRYSTAL CLEAR

While the fundamentals point toward a positive forecast for 2016, forces outside the construction industry could impact next year's results. If interest rates rise, homebuilding could underperform, for example. Homeowners who might otherwise be ready to move up and build a new home may not be willing to give up their current 3% loan for a higher rate on a new 30-year mortgage. In addition, labor shortages that now plague the precast industry are common throughout the homebuilding sector and other areas of construction and could slow the recovery. Also, worldwide events such as increased terrorism, ongoing conflicts and financial problems that plague the European Union could keep the focus of Congress overseas rather than working on rebuilding infrastructure at home.

"The picture is never crystal clear," Gable said, "but the precast industry is well positioned for a strong year, and we are looking forward to continuing the recovery." **PI**

Bob Whitmore is NPCA's vice president of communication and public affairs.



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A Bottom-Up Approach to Sustainability

Don't know where to start? Follow these steps to create a sustainability strategy.

By Claude Goguen, P.E., LEED AP

Many National Precast Concrete Association members are well on their way down the road of sustainability. Others are just starting or unsure how to even begin. Many company owners and executives understand adopting sustainable practices at their facilities can not only make them better stewards of the environment and better neighbors, but also improves efficiency and saves money. However, between the time it takes to keep up with product demand, sales, safety and maintenance, often no time is left for the creation of a sustainability strategy. The process can be as simple as delegating the task to the right person.

APPOINT A CHAMPION

Sustainability is akin to quality and safety. If it's going to work, it needs to be more than words on a wall. It needs to be part of the company culture, but can't be dictated. You must first understand employees' attitudes, beliefs and perceptions about sustainability. The best way to do this is to appoint a champion. Preferably, this is a staff member who does not hold a managerial position, shows initiative in other areas and would appreciate an opportunity to start a grassroots program. The staff member could form a small task group or start alone, depending on the size and product diversity of the plant. He or she may be unsure what sustainability means. You may be unsure. That's OK. Allow the champion some time to research the subject and gather resources.

A good online resource is NPCA's website at precast.org/sustainability. Articles such as "Precaster's Perspective: What is Sustainability Anyway?" which can be found by searching "sustainability," provide a great primer on the basics.

FIRST GOAL

Once you have your champion, first gauge the perceptions and attitudes of employees. Some people may relate sustainability directly to saving animals and rain forests. Dialogue and discussion will likely be required to explain that it's much more. Are we being good neighbors to this community? Are we being wasteful? Are we as efficient as we can be?

DEVELOP A PLAN

Based on discussions with employees, the champion would next present potential strategies. These may be vague, but will provide a starting point. For example, reducing waste could be a strategy. What kind of waste is concrete, trash or process water? Identify specific areas that can be explored. Perhaps someone proposed developing unused portions of land to conserve or restore wildlife. Maybe this person is a Boy Scout leader and wants to use an area for a troop project.[1] These need to be transformed into a plan with short- and long-term goals.

Cyndi Glascock, senior design manager at Gainey's Concrete Products in Holden, La., suggests precasters could have a sustainability suggestion contest and monthly select ideas that have the most impact. She said Lisa Roache, vice president, came up with the idea to collect ideas for improving efficiency and safety at Gainey's with a $30 prize for the winner.

"Other suggestions may be implemented, depending on their feasibility and whether or not they contribute to our company goals," Glascock said. "We have gotten a lot of buy-in from this and some truly great innovations."

PROVIDE INCENTIVES

Fawn Bradfield, sustainable communities coordinator at Anchor Concrete Products in Kingston, Ontario, said it is easy for sustainability approaches to get disrupted due to competing priorities, but meeting regularly helps to keep the strategy progressing.

"There is always something to be done when it comes to sustainability, it is about continual progression," Bradfield said.

Once a plan is in place, incentives are a great way to recognize goal achievements. This could be as simple as passing out gift cards or ordering lunch for the plant. Celebrate small victories and soon, you will be celebrating big ones.

REAL SUSTAINABILITY STRATEGIES

Reducing waste

M.A. Industries' manufacturing plant in Peachtree City, Ga., generated an excess amount of waste and needed a recycling program. The waste hauled away in a 30-yard dumpster included items that could have been recycled. This resulted in costs of approximately $55,000 a year. The company formed a core team to develop a project to reduce waste costs by 25% through recycling paper and cardboard products.

The group came up with a solution that not only resulted in a more sustainable and environmentally friendly operation, but also saved M.A. Industries $53,400 per year in costs.

Reducing electricity use

Anchor Concrete Products wanted to switch lighting systems to provide better lighting while reducing utility bills. Rather than selecting a system and installing it, management gathered employee feedback about the new lighting. One suggestion received was to include automatic, area-specific sensors that turn lights on and off according to where workers are on the plant floor. This feature is useful during swing shifts when some areas of the plant are inactive.

THE NEXT BIG IDEA IS A DISCUSSION AWAY

There are incredible innovations in manufacturing at many NPCA member facilities. In most cases, these innovations started with a suggestion from an employee on the production floor. This is why it is crucial to promote sharing of ideas on all aspects of manufacturing, including sustainability. A bottom-up approach on developing a sustainability strategy can be a rewarding experience that not only fosters a culture, but also contributes to the company's long-term success. That's a win for everyone.

For more information on this or any other sustainability topic, please contact Claude Goguen, director of sustainability and technical education, at (317) 571-9500 or at cgoguen@precast.org. PI

Claude Goguen, P.E., LEED AP, is NPCA's director of sustainability and technical education.

REFERENCES:

[1] More information on biodiversity can be found at precast.org/2013/09/the-birds-and-the-bees-of-biodiversity/

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GILLESPIE PRECAST IS ALL ABOUT HIGH QUALITY, HIGH STANDARDS AND HIGH CUSTOMER SATISFACTION.

Photos and Story By Sara Geer

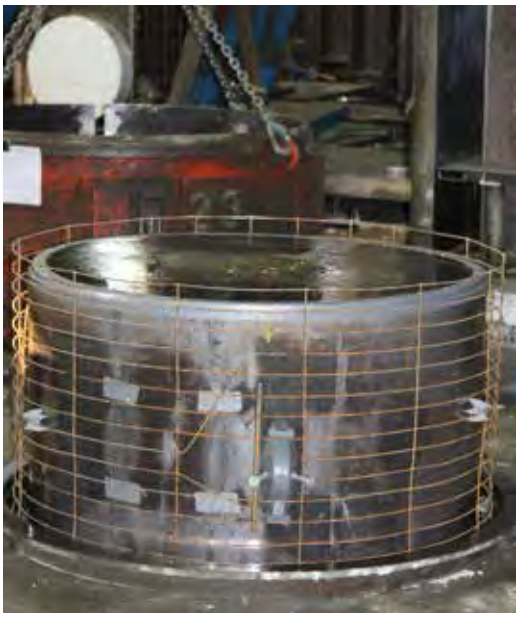
Photo Courtesy Gillespie Precast

Gillespie Precast has incorporated the **big red G** as part of their logo, which is **prominently displayed** on its trucks and precast structures that can be seen in the Mid-Atlantic region, including Maryland, Delaware, Virginia, D.C., Pennsylvania and New Jersey.

illespie Precast is a family-operated company manufacturing and selling concrete products that can trace its origins back to 1922. The company began on the Sudlersville, Md., dairy farm of George Gillespie, President Jim Gillespie's great-grandfather, when George began making blocks to build a milk house from a machine purchased from from Sears, Roebuck & Co. The demand for blocks, especially from local farmers, led to the beginning of the operation. With the help of George's son, Victor, Gillespie & Son Inc. was established. Shortly after World War II, Jim's father, Edward, joined his father and grandfather in their growing business. Ready-mix concrete was added in the 1950s. Jim and his brother, Todd, became the fourth generation, joining the company in 1983 and 1993.

BLOCK TO PRECAST

The family's first precast product line was burial vaults, with septic tanks following. In the 1970s, when steel septic tanks were outlawed in Maryland, the precast business began to



Gillespie Precast manufactures a wide variety of precast products from its three NPCA certified locations. All precast products are produced to ensure customer satisfaction.

boom, allowing the family to build their first precast concrete production facility in Chestertown, Md. Jim Gillespie said his father claims the company manufactured the first concrete septic tank in the state of Maryland.

"I'm not sure how we can substantiate that claim though," he laughed.

Over time, more precast products were added, including steps and catch basins.

After several years working for his father, Gillespie was told that "growth is in the precast. Go to the precast convention and see what's out there."

The precast convention was the National Precast Concrete Association's 21st Annual Convention held in Columbus, Ohio, in 1986. He returned home with numerous ideas and was ready to set the world on fire. With advice from a local contractor, Gillespie began making square boxes and structures using Symons panels. Gradually, this line expanded due to the relationships and reputation the family had with ready-mix and block customers who were now seeing the advantage of using precast concrete.

As business continued to flourish, Gillespie saw the opportunity to expand the product division to include custom precast structures. Continued growth in the precast concrete market led to the establishment of Gillespie Precast LLC in 2004. Gillespie built another facility in Chestertown, Md., to keep up with growing product lines and production demands. In 2013, an additional precast plant was acquired in Greenwood, Del., as the company continued to expand in the mid-Atlantic territory.

NPCA CERTIFIED

Much of the company's success can be attributed to NPCA. Gillespie, Vice President Jim Talbott, Operations Manager Jude Mandes and members of the staff are very supportive of the association and regularly attend the annual conventions, trade shows, plant tours and educational seminars for training and networking.

The company manufactures a wide variety of products from its three NPCA certified plant locations. Talbott said the company has a reputation for producing unusual pieces. The team thrives on

The production staff enjoys analyzing project plans to find ways to build quality precast concrete products.

analyzing project plans to find ways to build special products.

In 2012, Gillespie Precast was awarded a milestone project. Contractors contacted the company in October to precast a trench for the Delaware City Refinery that had been designed as cast-in-place. The trench measured 6 feet wide, 7 feet deep and 1,470 feet long and housed a 24-inch pipe to unload crude oil from railcars. The project consisted of 176 pieces, each weighing approximately 17 tons. Manufacturing was completed in a two-month period and installation took less than one month.

"We were at the precast convention in New Orleans when we got the order. The contractor wanted to know how many pieces he could have the first week of December; and that we had to be done by the end of the year. At first we told him that was an impossible schedule. We were all sitting around brainstorming, figuring out how we could do this," Talbott said. "We first had to re-engineer this to be precast, then work seven days a week, including two shifts, to meet their schedule."

Gillespie Precast delivered the last piece 11 days ahead of schedule. The project owners were so pleased with the results that they contacted the company the following May to produce a second trench and later that year, a third. From then on, the owners have specified precast concrete in many other project designs.

UNIQUE SITUATIONS

A unique project the company is proud of is a gasketed box culvert job completed in 2015. Talbott said when the project description arrived, it had attached joint testing requirements that needed to be met for compliance under ASTM C1677, along with an accelerated production schedule.

The project called for the replacement of an existing 7-foot-by-3-foot box culvert that had joint failures. The company had experience with gasketed box culvert joints but had never done extensive in-plant testing before. Gillespie Precast called fellow precasters and Hamilton Kent, the gasket manufacturer, for advice. The precasters suggested to set the sections in a worst-case arrangement for all three required tests (straight alignment, maximum-deflected position and off-center alignment) rather than doing each individually. The gasket manufacturer said no precaster had ever asked them about doing all three tests.

After completing each test to the staff's satisfaction, a project engineer witnessed the official testing, which successfully passed. The contractor told management that other precasters bid on the project but that Gillespie Precast was the only one willing to meet the testing and scheduling requirements.

Two other specialized jobs that the company worked on in 2015 included manufacturing a precast concrete architectural boat ramp with varying sized pieces measuring 15 to 24 feet and Wave Attenuation Devices, which are artificial reef barriers that prevent shoreline erosion. Gillespie Precast is the first precaster to manufacture the WADs for the licensed dealer, Living Shoreline Solutions Inc. They manufactured 500 WADs and delivered them to the Delaware coastline in the summer.

BOX CULVERT BUSINESS

Gillespie Precast's introduction into the box culvert business came as a surprise. Shortly after Talbott returned from a class at the 2000 NPCA Precast Industry Leaders Conference, a box culvert job came up for bid. The project included building a tunnel under a roadway to link a parking lot to a golf course. He said the company bid on the project as a broker for another precaster since it did not manufacture box culverts or products over 10 tons at the time. Gillespie Precast was awarded the bid but the other precaster backed out due to the tight schedule. Gillespie was a little skeptical about building something of that size, but that did not deter Talbott from trying. He immediately started calling fellow NPCA members he met at the meeting for advice. Talbott said fellow member, Kevin Camp of Camp Precast, directed him to a used form listed for sale in New York. Gillespie and Talbott drove up, purchased the form, built the pieces and completed the project on time.

In 2002, the company had just purchased land to build its new precast facility when a project surfaced that required 14-foot-by-12 foot, three-sided, post-tensioned box

"Jim Gillespie is a **visionary**. He envisioned this new facility being **top notch**. He also has a knack for placing the **right people** in position to do the job right."

– Jude Mandes, *operations manager*

Gillespie Precast is known to produce custom precast products other precasters would refuse to do.

Two projects the company manufactured in 2015 included a custom boat ramp (shown top-right) and Wave Attenuation Devices (shown bottom-right).

culverts. Talbott said construction on the plant had not yet started, so a concrete pad was poured for outside production. During this project, the company also made the decision to purchase modular box culvert forming systems from Cleco Manufacturing.

"Once we did that job and the plant was complete, we could handle any box culvert size," Talbott said. "Projects only got bigger and bigger. And now we had the plant to build them. We were ready for whatever opportunities presented themselves."

KEY DECISIONS

While other precasters were scaling back during the Great Recession, Gillespie Precast added an additional 22,500 square feet to its plant. The expansion not only increased production floor space but also increased the overhead crane capacity to 50 tons.

Another key decision was the implementation of Titan II Precast Management Software. Gillespie said the company was among the first to integrate Titan II after receiving word of its success from Garden State Precast.

"We studied different options before choosing Titan II," Gillespie said. "This was a big advantage because it has helped us track materials and monitor other important aspects to smooth the work flow."

Photo Courtesy Gillespie Precast

A BEAUTIFUL PRODUCT

In addition to choosing the right technology and time to expand, choosing the right person to manage plant operations has also been key. Jude Mandes, now an NPCA Master Precaster, joined the company in 2002 after Gillespie had purchased the land to build the new plant facility. Mandes had experience managing highway construction crews, but had no knowledge of precast concrete before starting the job.

Mandes' initial responsibility was to make sure the proper structure was in place at the new plant to facilitate a smooth transition as product volume increased. Past managers told him he'd grow complacent working under the same roof day after day. Thirteen years later, no two days have been the same, he said.

"Jim Gillespie is a visionary. He envisioned this new facility being top notch," Mandes said. "He also has a knack for placing the right people in position to do the job right. I came here to build, direct and operate this new facility.

"Now, we have a team of 30 working here at this plant alone. It's been amazing to see how this plant, and our other two, have grown."

Mandes also oversees operations at the Greenwood and the second Chestertown plant.

One accomplishment that he is especially proud of was achieving 100% on both Chestertown facilities' NPCA Plant Certification audits in 2014 and 2015. Mandes doesn't take the credit personally, recognizing the feat was a team effort.

Photo Courtesy Gillespie Precast

Photo Courtesy Gillespie Precast

"We have a **great group of people** here that take a lot of **pride** in their work."

– Jude Mandes, *operations manager*

Gillespie Precast's largest product line is box culverts.

In 2013, the company produced 176 precast concrete pieces to complete a trench project in two months for the Delaware City Refinery. The bottom-right photo shows the finished project.

"We have a great group of people here that take a lot of pride in their work," Mandes said. "We get upset when our product doesn't come out the way we planned. When it works, everyone says, 'That's a beautiful product,' and we make a lot of beautiful products!"

Gillespie Precast also won the 2015 Pinnacle Award for the Pocket Pull, a tool they designed to remove the rubber recess forms cast in concrete in order to create bolt pockets. This was a creative solution for a daily precast plant challenge.

BEAT THE ODDS

Jim Gillespie said the company has continued to beat the odds from one generation to the next as each has taken the business to the next level. The fifth generation is ready to take the reigns as Gillespie's son, Andrew, officially joined the company in 2013 and his younger son, Patrick, may join as well in the future. Todd continues to manage the ready mix company, Gillespie & Son. Gillespie takes great pride in his company and the work ethic of his 100-plus employees, who he describes as extended family. The key to their success is producing high quality products to ensure complete customer satisfaction, something made possible by a dedicated team. **PI**

Sara Geer is NPCA's internal communication and web manager, and is managing editor of Precast Inc.

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STRUCTURED Internship

NPCA Producer Member **Garden State Precast** works with MTSU to create a custom precast concrete internship.

By Sara Geer

An ongoing internship can be an excellent recruiting tool for precasters. It can also be a great way to help lighten a company's workload. However, for employers and the intern to get the most from the experience, it has to include more than just mundane tasks. If not, the result is likely a negative internship experience for the student and little gain for the employer.

Based on Ayaz Ahmed's experience as an assistant professor at Middle Tennessee State University's Concrete Industry Management program, students want the opportunity to learn and to be exposed to all functions of a company and industry. For this reason, Ahmed worked with Garden State Precast of Wall Township, N.J., to create a custom precast concrete internship program for the company.

Ayaz Ahmed

"We hire a lot of people that went to classes, but **hands-on experience** is really important."

– Mike Vergonia, *Garden State Precast plant manager*

A NEW INTERNSHIP EXPERIENCE

The foundation of the internship is to bring future employees to Garden State Precast. Ahmed said an internship can create excitement about the industry for the student and after completing school, they may end up being a match as a full-time employee. Ahmed has worked with Kirby O'Malley, president of Garden State Precast, for consulting on other projects, so the two worked together to modify the company's existing internship to create a fresh new look of the precast concrete industry for local students.

Kirby O'Malley

Andrew Cooper, an engineering student at Widener University in Chester, Pa., was selected after an 8-to-10-week interview process to be the first student to go through the new internship in summer 2015. Cooper said the internship was structured to allow him to spend a week or two in all areas of the company and to see how all departments affected each other.

"If there was an issue in one department, I was able to see how that issue carried through every department," Cooper said. "The schedule helped you to see the company from every aspect."

He said spending time in the field provided him opportunities to see how the little details are extremely important to the success of a project. He feels working in the quality control and engineering departments will help him plan his future career. The internship also helped the staff at Garden State Precast see Andrew's skills first-hand.

"It benefits us because first off, if Andrew could stay with us that would be great but also we see where he's at," said Mike Vergonia, plant manager. "We hire a lot of people that went to classes, but hands-on experience is really important."

COMMUNICATION IS KEY

Garden State Precast has employed interns for several years, but never had an official internship program in place, O'Malley said. The internship helped Cooper learn a key lesson – communication is important to any successful business.

Andrew wrote a weekly synopsis of what he learned, what could be improved and what he expected to learn the next week. This regular update made him feel more like a partner in the company than just an intern. Ahmed said it's a unique perspective that many internships may not include, because a company may lack the courage to ask, "'What's wrong and what can we do better?' The lesson is, regardless of what industry you are in, you need to learn how to deal with people," Ahmed said. "You also need to look at things from a different perspective and hopefully find a solution to a new

Andrew Cooper (left) and Mike Vergonia

Courtesy of Garden State Precast

problem or project that isn't an existing project."

Ahmed also said an internship is successful when an intern's activities are regularly managed. Andrew said specific projects he helped work on were installing box culverts in the field and estimating projects in engineering. He was held responsible and accountable by the department supervisor for his work on every project.

"This is something that needs to be included in every internship because until you are truly immersed in something, you don't truly learn," Ahmed said.

NATIONALLY ACCEPTED

O'Malley said the most important item to take away from having an internship is that the student learns what precast concrete is and the advantages it has from a manufacturer's standpoint.

"That's the type of information we want disseminated to those outside the industry, that we make a product that is controllable," O'Malley said. "My hope is this is the direction our industry will decide to take in the future."

According to Marti Harrell, executive director of NPCA Foundation, the Precast/Prestressed Concrete Institute Foundation is working with NPCAF to create an internship program template for the precast and prestressed concrete industry. More information will be available at The Precast Show 2016. **PI**

Sara Geer is NPCA's internal communication and web manager, and is managing editor of Precast Inc.

SEPTEMBER 4TH, 9:09 A.M.

A SIMPLE SHIFT IN THINKING ON THE ROAD TO SUCCESS

IN AN INSTANT, EARL NICHOLS LEARNS THE VALUE OF INDUSTRY-LEADING RISK CONTROL

Forty perfect stacks of Jersey barriers stood ready for morning delivery when the new forklift operator lost control of the wheel. Lucky for Earl Nichols of Purdie Concrete, CNA's UL-certified Risk Control engineers had just shown him a new technique to make his stacks more stable and his operation more efficient. So instead of calling his independent agent to file a claim, Earl called his client to confirm delivery and arranged three more shipments for the week ahead. Solid work, Earl!

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Giving Back **The Sawla Project**

A precaster and his church offer a **sustainable** solution that **changes lives** in Ghana.

By Bob Whitmore

Dan Houk shows the plans for the Sawla View Guesthouse and Restaurant to the local chief and an associate.

Editor's Note:
"Giving Back" is a year-long series about NPCA members who are doing extraordinary things in their local communities, across North America and throughout the world. If you would like to nominate an NPCA member for a future article, please contact Sara Geer (sgeer@precast.org).

To learn more or add your support, watch the Sawla Project video at **precast.org/sawla** or visit **sawlaview.com**.

It's a common thread that runs through the precast concrete industry: precasters know how to get things done. Companies that are able to navigate through recessions and thrive in the competitive construction environment usually have another thing in common – an entrepreneurial risk-taker at the helm of the company. And when a successful precaster gets involved in a volunteer project outside the confines of the plant, good things can happen.

Such is the case with Wilbert Precast Inc. and company owner Dan Houk. Dan and his wife Lori are longtime members of Northview Bible Church in Spokane, Wash. Church members started organizing a new humanitarian aid venture called the International Assistance Program. Formed in 1995, the IAP would create opportunities for business leaders to make a tangible impact in impoverished areas of the world. Dan became involved with this group because of his business expertise.

One of the ideas of IAP was to offer micro-loans to encourage development in a remote area of Ghana, West Africa. It turned into something very different when two men from IAP visited Ghana in 2007 and learned from a local pastor of 36 orphans and abandoned children in nearby villages.

"They took the challenge," Houk said, and IAP started a group home for children. In April of 2009, Houk made his first visit to Sawla, Ghana, 8,000 miles from Spokane, to visit the children's home.

"It's a very remote, very poor area of northwest Ghana," Houk said. "The needs are limitless. There were 36 kids in a rented building with staff and some security. Very cramped quarters," he added. "The landlord gave notice that he wanted them out so he could move back into the property."

The owner of the rented building did not need immediate occupancy, so the IAP group had time to develop a plan. "With the

Lori Houk with some of the kids from the Sawla Children's Home.

help of a major donor and many others, we built a new home on 10 acres," Houk said. Dan, his brother Mark and other IAP members organized the effort. "We found 10 acres nearby and provided funding and a building design," Houk said. "It was built by local tradesmen. Not one power tool was used to build the Children's Home."

But that was just the start of the project. Houk said that a key goal from the beginning was to make the project self-sustaining. The staff and children grow their own crops, raising corn, peppers, tomatoes, okra, peanuts, yams and mangos, which greatly reduces the food budget. Later this year they are planning to harvest their first crop of cashews to sell.

They are now well into the next phase of the project: constructing the Sawla View Guesthouse and Restaurant. Last summer the local workers mixed concrete by hand and formed 15,000 blocks to start the eight-building complex, which will include the registration office, security building, a restaurant and the guesthouses. Dan and Lori Houk were at the site in June, and while there was plenty of activity to discuss, a blog written by Lori about their trip focused mostly on the children.

"We were able to see all but two of our kids," she wrote. "They are doing very well. They are very bright kids and we are excited to see what is next for them." At the Children's Home, "there is a real feeling of unity, especially between the children and the staff." The population of orphans had grown to 49, but several were soon to leave for university – a prospect that would have been nearly impossible without the supportive environment of the Children's Home.

A highlight of the summer trip, Lori wrote, was a Sod Cutting Ceremony to officially announce the start of the Sawla View Guesthouse and Restaurant. Dignitaries included the chief of Sawla, his associate chiefs and members of the Ladies Court. A percussion band, parade and plenty of dancing topped off the ceremonies. It was a big day in Sawla.

While the Houks returned to Spokane for the remainder of the

The guest houses and restaurant are nearing completion but there is much work to be done before the expected spring opening.

summer, they stayed in constant contact with the project through their project manager, Moses Nortey, whom they originally met on their first trip to Ghana when he was their driver.

The impact of the project on the community is "so great," Nortey said. "It has created awareness that job opportunities will be available when the project is completed. People have started sending in their applications."

The personal involvement of Dan and Lori has also made an impact, Nortey said. "Dan and Lori Houk have made a difference here because the guesthouse is totally different from those we have in the Sawla District and it catches the eyes of many people. People even stop when they are passing by to take a second look at the place."

The involvement of Dan and Lori Houk and others from the IAP goes far beyond just raising funds and contributing expertise. It's very personal. "The passion Dan and Lori have for the project is so great," Nortey said. "They interact well with the children in the home and the workers on the site. They talk about the project everywhere they go in Ghana, and they always want to see and hear how the project is going."

Dan has served as the chief architect and fundraiser for the guesthouse project, while Lori is the "go person for getting things done," he said. Dan just finished his eighth trip to Sawla, while Lori has joined him on the last five trips.

Returning again in November, the Houks were preparing for an expected spring opening of the office and the first six rooms of the guesthouse, followed by completion of the additional rooms and restaurant. In such a remote area, one might expect prospects for a restaurant and hotel to be fairly bleak, but several factors point toward a project that will be able to sustain itself, employ local residents, and become a cornerstone for the community. The town currently has no accommodations for travelers and the closest restaurant is 45 minutes away. A recently paved road now connects Sawla with villages to the east. There are government district offices in the area where officials meet regularly, and with better roads, the possibility of tourism.

"This is a unique project where the end result is a profit-making entity overseen by our people that takes care of the needs of the kids, schools and churches in the surrounding community forever with no more fundraising needed to do it," Houk said. "Imagine if this model was used a million times over around the world. This is way better than our government giving their government money and hoping it gets used for the intended purpose."

To learn more about the project or add your support, watch the Sawla Project video at precast.org/sawla or visit sawlaview.com. For more information, contact Dan Houk (danhouk@wilbertprecast.com). You can also find regular updates through Facebook by searching Sawla Children's Home-Ghana, West Africa. **PI**

Bob Whitmore is NPCA's vice president of communication and public affairs.

"The **passion** Dan and Lori have for the project is **so great.** They interact well with the children in the home and the workers on the site."

– Moses Nortey, *Sawla project manager*

Opportunities Knock

JARED SCHIMMELPFENNING

NPCA Foundation scholarship opens a **world of potential** for a Purdue University student.

By Mason Nichols

Jared Schimmelpfenning

Childhood is wonderful. It's filled with joy, exciting possibilities and the belief that anything can happen. It's also a critical period in our development. Recent research suggests a child's personality is set for life by the time he or she enters first grade.[1] For NPCA Foundation scholarship recipient Jared Schimmelpfenning, a sophomore at Purdue University, childhood experiences inspired the pursuit of a construction engineering and management career.

Schimmelpfenning spent plenty of time working with his hands while growing up in central Illinois. Projects varied, but you could always find him alongside his dad and grandfather, helping in any way he could.

"I would push wheelbarrows with concrete and whatnot, just working with them and trying to learn as much as possible," Schimmelpfenning said. "That's kind of where it all started."

His love for construction continued to grow from there. In high school, he took a job at his grandfather's pattern making business. As his skills continued to sharpen, Schimmelpfenning developed an interest in management to pair with his love for hands-on construction. This ultimately led to the decision to select his major and attend Purdue.

Being an NPCAF scholarship recipient has opened the door to many opportunities for Schimmelpfenning. He secured an internship in Texas with Kiewit last summer,

Courtesy of Jared Schimmelpfenning

Schimmelpfenning received valuable hands-on experience in the construction industry when he interned for Kiewit last summer.

Schimmelpfenning's love for working with his hands began as a child, when he assisted his dad and grandfather on a variety of projects.

"The NPCA Foundation has made a huge difference in my life."

– Jared Schimmelpfenning

where he worked on the massive $1.1 billion DFW Connector project.[2] His role on the job varied, but he primarily worked with the paving, soil nail and maintenance of traffic groups. Schimmelpfenning said he took an important lesson away from his experience.

"I learned a lot about how important it is to plan and coordinate things ahead of time," he said. "That way, issues don't transfer out and materialize in the field – you can avoid them before they become a problem."

He also worked in the field and operated some of the heavy Caterpillar machinery on site. This held special importance to him, as both his dad and grandfather have worked for the company.

In addition to his time in Texas, Schimmelpfenning has benefitted from being a part of the Associated Builders and Contractors club at Purdue. The group is currently participating in a national competition to determine which team has the best project management skills.

"The national organization gives us a set of plans for an already completed project and we are required to write the management plan, hazard analyses and everything revolving around pre-construction," he said. "Our project is a museum in Colorado that consists primarily of precast concrete panels."

The experience offers yet another way to improve his management skills as he works toward earning his degree. It also provides an opportunity for him to learn more about precast concrete, a building material he already has a vast knowledge about.

"In my opinion, precast has a lot of benefits and can really broaden the opportunities available when building a project," he said. "Being able to manufacture precast components in a controlled space really increases the quality of the overall product."

Schimmelpfenning cited the NPCAF scholarship as key to his ability to take advantage of the opportunities available to him at Purdue. He also noted that his experience has provided him with the solid foundation needed for his career.

"The NPCA Foundation has made a huge difference in my life," he said.

As he seeks to perfect his craft, Schimmelpfenning will continue to benefit from the groundwork laid while operating alongside family in his early years. This, coupled with funding from the NPCAF scholarship, has Schimmelpfenning primed for future success. **PI**

Mason Nichols is the managing editor of Precast Solutions magazine and is NPCA's external communication and marketing manager.

REFERENCES:

[1] http://www.nydailynews.com/life-style/personality-set-life-grade-new-study-article-1.203576

[2] The DFW Connector project's goal was to double the size of the existing highway system around the Dallas/Fort Worth International Airport to better accommodate traffic in the area.

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**. Items are printed on a space-available basis.

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

NPCA'S GURLEY TO LEAD ASTM C27; HANSON ELECTED SECRETARY

Two NPCA professional staff members have been elected to leadership positions on ASTM Committee C27 on Precast Concrete Products. Evan Gurley has been elected chairman of C27, while Kayla Hanson has been elected secretary. Both are Technical Services Department engineers for NPCA. Gurley succeeds Howard Wingert, president of Concrete Sealants Inc., as the C27 chairman.

Evan Gurley

Kayla Hanson

An ASTM C27 member since 2008, Gurley will lead the committee for the next two years. He is a 2008 graduate of the Purdue University College of Engineering. Hanson, also a Purdue engineering graduate, joined NPCA in 2013 and has been a member of C27 since 2014. Gurley said key issues for C27 in the coming year are working to maintain current standards, boosting producer membership and involvement, and developing new standards to address the needs of the precast concrete industry.

PAPÉ AQUIRES JOHNSON LIFT AND EXPANDS COVERAGE AS HYSTER DEALER

Hyster Company announced that Papé Material Handling, a division of The Papé Group, has expanded its territory coverage with the acquisition of Johnson Lift, a division of Johnson Machinery Co. As a result, Papé Material Handling is now the authorized and exclusive Hyster dealer in those territories previously covered by Johnson Lift.

DIAMONDBACK SPACER ENTERS MARKET

Two precasters with more than 35 years of combined experience in pipe and box culvert production have developed a new spacer designed to hold up under the heavy weight of steel mesh cages. Marv Iler and Jim Erdahl recently announced the new Diamondback Spacer. According to Iler and Erdahl, the product's "unique diamond shape gives this spacer superior strength for supporting vertical sheets of steel mesh in the mold and snaps on quickly and securely saving time and effort. It also spaces the side walls so you no longer need to use several different types of spacers to get the job done." The company will exhibit at The Precast Show 2016 in Nashville.

Diamondback Spacer

STORMTRAP ACQUIRES FRESH CREEK TECHNOLOGIES

StormTrap, LLC, and Fresh Creek Technologies, Inc. have entered into a definitive merger agreement under which StormTrap will acquire Fresh Creek in a stock transaction. The agreement was unanimously approved by the boards of directors of both companies.

U.S. FOUNDRY CELEBRATES 100 YEARS

United States Foundry & Manufacturing Corp. celebrates 100 years in January 2016 with a gala for employees at the Signature Grand in Davie, Fla.

7th Street Bicycle Shop

The company was founded by Alex DeBogery in 1916 and originally was named the 7th Street Bicycle Shop. Later, the name changed to U.S. Welding and Iron Works. In 1937, it was changed again to its current name, U.S. Foundry & Manufacturing Corp. In the late 1960s, the company also moved from its downtown Miami location to Medley, Fla., where a new facility was built allowing growth for expansion. The third and fourth generation of Alex DeBogery now own and manage the company.

HYSTER COMPANY RECEIVES AWARD

Hyster Company has received a 2015 Product of the Year Award from Energy Manager Today in the materials handling category. The award was earned for the company's PSI industrial lift truck engines featuring Hyster Variable Power Technology. Award recipients were determined based on an appointed panel of expert judges working in the energy management field who are dedicated to improving energy strategies across a wide range of industries.

In its inaugural year, the Energy Manager Today Product of the Year Award competition recognizes and honors the strides made in energy management. The awards are designed to celebrate achievements that demonstrate innovation, efficiency, reliability and overall contribution to profitability in each field.

SHEA CONCRETE PROVIDES VAULT FOR FIELD HEATING SYSTEM AT GILLETTE STADIUM

NPCA member Shea Concrete Products of Amesbury, Mass., has provided CEI Boston Construction Services with a precast concrete vault that is now part of the radiant heating system installed underneath the field at Gillette Stadium.

The heating system thaws the field for use during the colder months of the year by circulating a heated solution of water and glycol through an elaborate system of cross-linked polyethylene piping installed under the field.

Shea delivered the glycol valve vault to the field and helped CEI to set the base in June 2015. The vault houses the valve manifold that feeds the glycol solution to the tubing under the field. The tubing measures 29 miles and circulates radiant heat underneath the entire field, according to Mark Fries, sales manager at Watts Radiant. **PI**

CALENDAR OF Events

March 3-5, 2016
THE PRECAST SHOW 2016
Gaylord Opryland Resort and Convention Center
Nashville, Tenn.

Sept. 28 - Oct. 1, 2016
NPCA 51ST CONVENTION
Renaissance Austin Hotel
Austin, Texas

March 2-4, 2017
THE PRECAST SHOW 2017
Cleveland Convention Center and Hilton Cleveland Downtown
Cleveland, Ohio

February 22-24, 2018
THE PRECAST SHOW 2018
Colorado Convention Center and Hyatt Regency Denver
Denver, Colo.

For the most up-to-date information about NPCA events, visit **precast.org/meetings**

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THE PRECAST SHOW

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