

MAR/APR 2014

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CASE STUDY

ARCHED SOFFIT FOR CURVED BRIDGE BEAM

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*Dennis Fink, General Manager, Plant Operations
Northeast Prestressed Products, LLC*



The Project:

The original Frederick Avenue Bridge in Baltimore was a two-span concrete arch design built in 1930. In keeping with the historical character of the area, the replacement bridge is a two-span prestressed concrete structure designed to imitate the original bridge.

The Challenge:

Northeast Prestressed Products, LLC in Cressona Pennsylvania is supplying the precast elements for the project, including 12 arched sections assembled to create 2 arches on each side of bridge replicating the look of the original double arches.

The Solution:

To cast the beams, Hamilton Form fabricated a soffit that is 44' long and curves to a 52'9" radius. To form the radius, the understructure material was cut with a high-definition plasma cutter to hold tight dimensional tolerances.

The Results:

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The industry is better off when regulatory bodies create rules that can help keep disreputable companies in line but don't handcuff quality producers.

Sense and Sensibility

BY BRENT DEZEMMER | *Chairman, National Precast Concrete Association*

The U.S. Environmental Protection Agency (EPA) showed good sense in its decision last month to re-evaluate its previous proposed rule to categorize coal ash as a hazardous material. The initial proposed ruling was part of EPA's response for stronger oversight to prevent another disaster like the 2008 slurry spill in Kingston, Tenn., when an estimated 1.1 billion gallons of wet coal ash breached a containment pond and flooded the surrounding area.

Nobody ever wants to see that type of disaster, and the EPA was right in pushing for tighter controls to protect groundwater and human health. But the initial proposal to declare coal ash as a hazardous material would have likely put a serious curb on the use of coal ash in concrete – meaning more coal ash would have gone into containment ponds. But citing a “newly developed methodology,” the EPA determined instead that encapsulating coal ash in concrete is actually a beneficial use for what is otherwise a waste material.

“The protective reuse of coal ash advances sustainability by saving valuable resources, reducing costs and lessening environmental impacts, including reducing greenhouse gas emissions,” said Mathy Stanislaus, assistant administrator for EPA's Office of Solid Waste and Emergency Response.

Last month's massive coal ash spill in North Carolina just reinforces the sensible notion that we should reuse rather than store this type of waste in a landfill. It is good to see that the EPA is willing to consider all sides of the issue.

Hopefully OSHA will follow suit when it considers the 3,103 public comments submitted on its proposed rule to cut in half the exposure limit on silica in places like concrete and masonry facilities. Public testimony started March 8, and odds are that one of the themes will be that OSHA should want a sensible policy that can be implemented and enforced rather than a more theoretical “nice to have” scenario that potentially would cost manufacturers thousands of dollars in monitoring equipment and create additional bureaucracy.

This is not an antiregulatory missive. Employers need to be held accountable for protecting the health and safety of their employees, and it is our responsibility to be good stewards of our

environment. With regard to silica exposure and other types of health and environmental issues, the regulations (the stick) are already in place. As with silica exposure, it is sometimes a lack of compliance with existing rules that creates problems. Perhaps the federal, state and local entities with oversight could look at strengthening incentives (the carrot) to develop more financial incentives that would encourage industry best practices.

We've seen the effect that these carrots can have, and it works. One of NPCA's producer members, Shea Concrete Products in Amesbury, Mass., recently earned a Sustainability Award for installing a solar panel system (see pages 44-45) on the roof of its plant that made it a Net Zero energy consumer. Federal incentives helped finance the project. The investment was steep up front, but the long-term result will likely be immensely positive for Shea and the neighboring community, which will have more energy available as a result of having a major energy consumer operating at Net Zero status.

It is just one example of how the precast industry's manufacturers and suppliers are rising to the challenge and proactively working to find win-win scenarios out there. There are many others.

Every industry has its less reputable practitioners that crank out inferior products and deliver inferior service just to make a quick profit. It frustrates all of the reputable businesses that are focused on high-quality products and great customer service and have a long-term commitment to their employees, their communities and the industry.

But in most cases the marketplace ultimately rewards the long-term thinkers and high-quality, responsible manufacturers. The industry is better off when regulatory bodies create rules that can help keep disreputable companies in line but don't handcuff quality producers. The EPA's coal ash ruling is an example that OSHA could follow. That's just good sense.

Let's Build the Future! ■



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PROFILE

Momentum

Cordel Gayle is one of several longtime employees with Coastal Precast of Florida Inc. and part of a core group that sustained the company through the Great Recession. Coastal Precast, based in Fort Myers, Fla., is among some of the first precasters in the country to see private development return, and recently posted its best month since mid 2008.

Story and photo by Ron Hyink

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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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I need to market my precast company and products. Where should I start?

How to Diversify **PART 3**

The very best products are doomed to fail without the support of marketing.

BY KIRK STELSEL

Editor's Note: Parts 1 and 2 of this three-part series appeared in the Nov-Dec 2013 and Jan-Feb 2014 issues of Precast Inc. To review them, visit precast.org/publications.

In 1896, a young Henry Ford was encouraged by his employer to continue his side work on a gasoline engine-powered vehicle called the Ford Quadricycle. Ford was an employee of the Edison Illuminating Company at the time and the encouragement came from Thomas Edison.

It would be another 12 years before the introduction of the Model T, and to successfully grow his company, Ford, just like Edison and every entrepreneur before and after, had to make many hard, strategic decisions.

As discussed in the previous two parts of this series, a lot of considerations go into diversifying and growing any type of company, including: developing a proper mindset; plenty of internal and external research and assessment; sound and well-planned staff and infrastructure investments; overcoming learning curves through education, advice and experience; an

understanding of wants versus needs; and much more.

You've surpassed the early hurdles and are now standing at the precipice of growth. If you take the plunge, the work doesn't end there. In fact, it's just beginning. No level of research, planning or investment will ensure success without ongoing leadership, training and a focus on quality and efficiency. Lastly, it's going to take a sustained effort to connect with both prospective and established customers. The best product in the world is doomed to fail if nobody knows about it or how it will benefit them. You need to engage in marketing.

The four P's of marketing are product, place, price and promotion. The great thing about precast is you already hold a competitive advantage, because it's built into the product in terms of quality, durability, efficiency, and many other attributes. Your place is defined by where you are located, and your current

NPCA'S MARKETING TOOLKIT.

distribution range – barring a licensing situation – and price are dictated by your costs. Now you just need to project that message out.

At the very core, a customer needs a reliable, money- and time-saving product that meets the unique needs of the project. Your job is to show that product is precast. It sounds easy, but it's not. If it were, precast would be used nearly every time. Sometimes the specifier has a different product in mind. Sometimes competing materials manufacturers get their marketing message out first. Sometimes your product isn't even on the radar. Whatever the barrier is, marketing can help overcome it.

The NPCA Marketing Task Force was established in 2012 to help members engage in meaningful and effective marketing and achieve industry-wide recognition of the benefits of precast. The first step was the Marketing Toolkit launched at the NPCA 48th Annual Convention last year. To learn more about the toolkit and how you can get one, visit precast.org/education and click on the "Take a New Look at Precast" icon. The task force will be undertaking additional tactics in the coming months to raise awareness of precast on a national level.

Henry Ford recognized the power of marketing all those years ago by reaching out to newspapers with stories and ads about the Model T and using local dealers to spread the word. As a result, the Model T became synonymous with exploration, reliability, freedom and the American dream.

Now it's your turn to make your company and products synonymous with whatever attributes you choose. To provide you with some ideas, members of the NPCA marketing task force and their co-workers have shared a few of their thoughts. Our panel includes:

Greg Stratis, plant manager, Shea Concrete Products, Amesbury, Mass.;

Greg Roache, president, and **Cyndi Glascock**, sales coordinator, Gainey's Concrete Products, Holden, La.;

Brian Leary, senior vice president, and **Shannon Tokarsky**, assistant vice president of specifications and marketing, Reading Rock Inc., Cincinnati; and

Chris Hindley, marketing director, A.L. Patterson, Fairless Hills, Pa.



Q: What does marketing mean to you?

Shea: Marketing means increased company awareness. In order to compete, especially when times are slow, you need to let people know you exist and what services you offer. The payoff is usually not immediate, so it's an ongoing, never-ending cycle. You must be proactive.

Gainey's: Marketing is the fuel to your company's long-term sales growth. You could be the best precaster with the highest quality imaginable and ground-breaking products, but if you don't tell anyone, what good is it? Marketing helps tell your company's unique story and sets you apart from the competition.

Reading Rock: Marketing drives our business development team and positions the company properly in the marketplace. It separates your company from the competition and provides you the opportunity to showcase your company in a professional manner.

A.L. Patterson: At the core, marketing is your opportunity to outwardly represent your brand and offering. Without marketing, you are leaving your prospective customers to make their own assumptions on who your company is and how your products perform. These assumptions are often influenced by your competitors and incorrect information in the market. Effective marketing will allow you to establish your company's identity and build awareness of your products.

Q: What are the biggest challenges you face in the marketplace when it comes to marketing your product?

Shea: Budget. Once you have determined a budget, you need to have a plan, review the plan constantly, and implement and measure the results. You can spend almost anything, but spend only what you can afford. If you are unsure or are new to marketing, then start off small. If you get good results you can always increase the budget.

Gainey's: Concrete products and construction aren't the most

MEET THE MARKETING TASK FORCE PANEL



GREG STRATIS
Shea Concrete Products



GREG ROACHE
Gainey's Concrete Products



CYNDI GLASCOCK
Gainey's Concrete Products



BRIAN LEARY
Reading Rock Inc.



CHRIS HINDLEY
A.L. Patterson

glamorous – we say “sexy” here at Gainey’s – subjects to everyone, so finding new ways to make precast appealing and exciting is what we focus on every day. We focus many times on the people behind the products.

Reading Rock: There are so many vehicles to market companies and products in today’s market. It’s imperative you choose the one(s) that your target audience utilizes. It will vary from architects to specifiers and contractors and end users.

Q: How do you overcome a specifier set on a different product or misinformation about precast products?

Shea: Rather than focusing on what the specifier is using and trying to compete, you should focus on what the specifier needs. What would be the characteristics of the ideal product? What is important to the precaster may not be important to the specifier. Always stand by your product. If you can’t, then you shouldn’t be selling it.

Gainey’s: You can’t slander the opposing material, because it only comes across petty and close-minded. Instead, we try using examples and case studies to prove the superiority of

precast. Personal visits or workshops often help us. NPCA’s new marketing campaign, where we communicate the features and benefits of NPCA and its member companies, should help greatly in coming years.

Reading Rock: We stick to the facts and provide examples of how our products address known and unknown challenges during design, installation and upkeep after the job is complete. We also reference jobs that had a competitive spec and were flipped to our product – emphasizing what drove the change.

ELECTRONIC MARKETING

Q: Shea places a fair amount of emphasis, time and money into online efforts. How has that benefitted the company?

Shea: Whenever anyone wants to buy something or research something, the first step is always to go to the Internet. The world has become paperless with the use of laptops, smart phones and tablets. By having a well-organized online presence, Shea Concrete appears in the top rankings online. Therefore we are usually one of the first to be called.

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SHEA CONCRETE PRODUCTS' WEBSITE

Q: How have you expanded your use of electronic marketing? Do you feel there has been adequate return on investment?

Gainey's: Mainly, we create and edit our electronic marketing in-house with user-friendly tools such as iMovie, Microsoft Publisher and our new GoPro camera. We know that electronic marketing works, because it never fails to create a buzz when you get a little creative. Also, we discovered that for less than half of the expense of a professional, we could purchase a time-lapse camera (GoPro) and edit the videos ourselves with limited time and energy. We use marketing interns to provide daily energy to these powerful marketing tools.

Q: Reading Rock prides itself on selling aesthetics – color and texture. With such a visual emphasis, how does the company use marketing to sell what it has to offer?

Reading Rock: We utilize the standard product brochure, website and other forms of electronic media. Good photography is essential, and we also focus on showing our product in actual settings.

Q: How has marketing changed over the years, and what tactics do you think precasters should use to have the biggest impact today?

A.L. Patterson: The most significant change is how people acquire information. Customers spend a significant amount of time online searching for what they need, and you want to make sure your company is the one they find. Your website must provide relevant content, represent your company correctly and provide a good user experience. At Patterson, we have spent a great deal of time on this, even giving our customers the ability to order online. Developing a strong web presence is an investment, but it is one that precasters should seriously consider.

TACTICS

Q: What does Shea Concrete do to market the company and its products?

Shea:

- Keep the website updated and fresh
- Use social media
- Pay per click advertising
- Online videos
- Lunch & Learns
- Plant tours
- Offer classes for some of our product lines
- Place ads in local magazines
- At least four trade shows per year
- Giveaways to customers and engineers
- Maintain a pristine fleet (delivery trucks are our billboards)
- Stencil logos on all our products
- Local radio station ads

Q: What tactics have you found to have the most impact with customers?

Reading Rock: Direct contact, solving their problems/ challenges, and showing pictures and case studies of how Reading Rock solved challenges with one or multiple products.

Q: How important are Lunch & Learns in your marketing equation?

Shea: Engineers are always interested in learning. Lunch & Learns are a great way to do this. There is nothing better than being invited to a firm to discuss your company and services, and then during the Lunch & Learn they ask you questions about a project they are working on. That is a home run and it happens every time. You then become a go-to person for any questions they have in the future. I still feel that face-to-face contact is important, even though we have a big presence online. People need to trust you in order to use your product, and it is hard to



READING ROCK'S CONCRETE PRODUCTS MARKETING BROCHURE



GAINEY'S CONCRETE PRODUCTS MARKETING CONFERENCE

trust someone you have never met.

Q: Talk about the engineering conference you established and how it has worked so far.

Gainey's: You can only go see so many people per year, but if you can get them to come to you, then you have a captive audience and can set yourself up as the expert and go-to reference. It has been an amazing marketing tool for us! The conference establishes our credibility and competence, and sets us up as major players in their eyes. We spend time researching what our local engineering community needs and work to fill that void through education and outreach.

IN-HOUSE VERSUS OUTSOURCING

Q: Your company has two people on staff who work on marketing. How have those internal resources helped the company both in good and bad economic times?

Reading Rock: We consider marketing to be part of business development and therefore it's essential to not lose momentum during down times. The projects and opportunities we support are always in the future. If you cut marketing in the down time it will take you twice as long to recover when the market returns.

Q: What are the benefits of using an agency versus doing the work in-house? How does the relationship work?

Shea: I used to do everything in-house, but I did not have the time to bring it to the next level. I had two options: hire someone or hire an outside firm. I felt that an outside firm would be the best since they usually have multiple people (brains) that could contribute, and they already have the experience in marketing. I use the agency to maintain our online presence, create videos, create trade show booths, create brochures and sometimes create paper ads. The hardest part is having an agency understand the precast industry and our audience. Just like an employee, it takes time to have the agency be able to take on tasks with little input from me. We meet two times per year face to face to go over our marketing plan, to discuss strategies and success. We also communicate almost weekly over the phone and/or email.

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MARKETING'S ROLE IN GROWTH

Q: How do you use marketing to open the door?

Reading Rock: Our marketing materials are tiered first at the corporate level showing the breadth of product we offer, then more specific at the division. The corporate message is "products on projects" and "solution providers," and there are specific product messages. Our long-term goals are to keep the Reading Rock brand known and active in the markets and promote the multiple product solutions we provide. Shorter-term goals evolve around new products, services and territory expansion.

Q: How has marketing played an important role in the evolution of A.L. Patterson?

A.L. Patterson: At Patterson, our offering has grown significantly in the past several years. Marketing has been crucial for building awareness of these products in the industry. Our products are backed by lots of test data and specification, and all of this information needs to be presented and promoted correctly. Similarly, as precasters develop and grow their offering, they need to actively market as well as strategically present the advantages of their solution.



A.L. PATTERSON'S WEBSITE

Q: Tell me about the role of the visual identity you have established for Gainey's Concrete.

Gainey's: We learned the importance of branding and how precious keeping consistency is within your marketing. We created written guidelines that address all areas of our visual identity including typography, logos, rules and exact colors to be used – and not used – in marketing pieces. No marketing pieces are released until we review and ensure we stay in compliance with our usual identity guidelines. We are proud that our visual identity is representative of our company's fun culture and commitment to quality. When people see pink, they now think Gainey's.

Q: Coming from a marketing background, what do you think are the top advantages for precasters who actively engage with marketing?

A.L. Patterson: One of the largest advantages for precasters who spend more time on marketing is brand recognition. Marketing isn't just your outward effort, it's also your brand identity and messaging that sits within everything you do. Precasters with more sophisticated marketing have the advantage of consistent messaging and brand. People naturally form opinions based on the brands they see. A well-executed, relevant brand can greatly influence how people perceive your company as a whole. ■

Kirk Stelsel is NPCA's director of Communication and Marketing.

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Test Methods & Troubleshooting: SCC **PART 2**

Expert advice for precast concrete producers.

BY SUE McCRAVEN

Editor's Note: Part 1 of this two-part series covered self-consolidating concrete (SCC) characteristics, aggregates, equipment and instructions for conducting a plant-specific cost/benefit analysis (Precast Inc. Jan/Feb 2014). Part 2 details test methods and troubleshooting based on a recent NPCA White Paper from SCC industry experts. Armed with this knowledge, you can confidently transition to higher-quality SCC products, cut labor costs and successfully compete for greater market share.

After reading "Implementing SCC – Part 1" in the last issue of *Precast Inc.*, you understand the main advantages of self-consolidating concrete (SCC) and its sensitive nature, and you are prepared for typical SCC production challenges. You've calculated SCC's labor and energy savings and reviewed the capacity of your current equipment to handle the transition to SCC. Industry experts explained SCC's moisture-content sensitivity and its dependence on the source, type and grading of aggregates and cement. Now, if you are ready to take your operation beyond the familiarity of conventional precast concrete products, two remaining topics are presented here in Part 2: SCC test methods and troubleshooting.

Test methods to qualify an SCC mix

SCC Part 1 identified the three material characteristic specific to SCC as flowability, passing ability and mix stability. SCC tests measure these characteristics. Some SCC tests are approved – or are in the process of approval – by ASTM, and yet others are methods used in the precast concrete industry but not yet officially recognized. Here are the six most common SCC tests used in the United States:

1. Slump flow is the form-filling ability of the mix. Measurement results of the concrete spread from an Abram's cone onto a level, nonabsorptive surface may range from 20 in. to about 30 in. The larger the circular spread, the greater the

flowability. Target slump flow for a given SCC mix formulation can vary by ± 2 in.

2. VSI stands for visible stability index and is a subjective visual determination of the general relative mix stability based on the appearance of the slump flow. An SCC-experienced plant operator validates VSI. A VSI < 2 is generally acceptable.¹ With experience, the assigned plant operator will gain sufficient skill in evaluating mix stability.

3. J-RING is a slump flow test that uses a circular steel ring with downward-facing radial tines or spokes; the ring is set around the bottom of an Abram's cone. Once the cone is lifted, the sample's dispersion between the tines is meant to simulate reinforcement and demonstrate how larger aggregates may restrict mix flow during placement. A difference of ≤ 2 in. between two J-RING tests is acceptable. The J-RING and slump flow tests are usually performed at the same time.

4. L-BOX is an open-topped, L-shaped (vertical and horizontal sections) apparatus with a movable gate, all of predetermined dimensions. SCC is poured into the vertical section, the gate is opened, and the fresh concrete's flow rate and slope are measured. Product-specific reinforcing can be added beyond the gate to assess any blockage resistance that may be encountered when filling forms. As you may expect, VSI and L-Box appraisals are subjective and results vary between plant operators.

5. Static segregation (ASTM C1712) is a quick and easy assessment of the likelihood that segregation of an SCC concrete will occur. (See the sidebar "ASTM Standards Relating to This Article" for the titles of each standard.)

6. Column segregation is a static test that measures aggregate segregation of SCC mixtures at rest. A sample from the mass of concrete placed in form work (not concrete from the bottom of a bucket or wheelbarrow) is placed in a vertical tube constructed of three lengths. After a set time, the top portion is sieved to isolate, weigh and record the coarse aggregate. The middle tube portion is discarded. The remaining aggregate in the third section is then weighed. The relationship between data from the top tube to that from the bottom tube is an indication of the static stability of the mix, provided that the difference in aggregates from the two sections $\leq 12\%$.

ASTM test methods altered to accommodate SCC

In addition to the six tests discussed, existing ASTM test methods for conventional concrete must be modified, or altered, to accommodate the material properties of SCC. (NOTE: These alterations all require one lift, no rodding and only slight tapping of the sample container or cylinder mold.) These SCC-specific changes are an ongoing discussion at the national level. For the present, these are the five ASTM test methods with this specific alteration for SCC mixes:

1. ASTM C31
2. ASTM C138
3. ASTM C173
4. ASTM C192
5. ASTM C231

SCC test methods

The following fresh concrete testing standards for SCC production are typically considered as mandatory testing requirements:

- Slump flow (ASTM C1611)
- VSI (ASTM C1611)
- Temperature (ASTM C1064)
- Air content (ASTM C231 and C173 - amended)
- Unit wt./yield (ASTM C138 - amended)
- Compression specimens (ASTM C31 - amended)
- Compressive strength (ASTM C39)

Hardened testing, depending on project-specific applications, may include the following ASTM tests:

- Freeze-thaw resistance (ASTM C666)
- Chloride permeability (ASTM C1202)
- Shrinkage (ASTM C157)
- Hardened air analysis (ASTM C457)

Staff training determines SCC success

If you have followed the experts' advice in SCC Part 1, you know that a successful transition to SCC requires more than exacting moisture probes and mix-control systems. Staff must be thoroughly trained in the correct methods to mix, test, place and finish SCC products.

In addition to an SCC-trained and experienced batch operator, who must be in total control of SCC operations, all plant staff should soon be able to recognize and address problems quickly

ASTM STANDARDS RELATING TO THIS ARTICLE

ASTM C31, "Standard Practice for Making and Curing Concrete Test Specimens in the Field"

ASTM C33, "Standard Specification for Concrete Aggregates"

ASTM C39, "Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens"

ASTM C138, "Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete"

ASTM C157, "Standard Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete"

ASTM C173, "Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method"

ASTM C192 "Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory"

ASTM C231, "Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method"

ASTM C457, "Standard Test Method for Microscopical Determination of Parameters of the Air-Void System in Hardened Concrete"

ASTM C666, "Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing"

ASTM C1064, "Standard Test Method for Temperance of Freshly Mixed Hydraulic-Cement Concrete"

ASTM C1202, "Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration"

ASTM C1611, "Standard Test Method for Slump Flow of Self-Consolidating Concrete"

ASTM C1712, "Rapid Assessment of Static Segregation Resistance of SCC using Penetration Test"

POTENTIAL PROBLEMS

ELEMENT CHARACTERISTIC/ PLACEMENT TECHNIQUE	POTENTIAL PROBLEMS
Reinforcement Level	<ul style="list-style-type: none"> • Inhibition of flow • Blocking of coarse aggregate causing separation of aggregate and paste • Honeycombing
Element Shape Intricacy	<ul style="list-style-type: none"> • Inhibition of flow • Incomplete filling of form leaving voids
Element Depth	<ul style="list-style-type: none"> • Required free fall causing segregation • Increased potential for aggregate segregation/settlement
Importance of Surface Finish	<ul style="list-style-type: none"> • Bug holes / voids on the surface • Sand streaking • Discoloration
Element length	<ul style="list-style-type: none"> • Flow distance causing paste to separate from the aggregate
Wall Thickness	<ul style="list-style-type: none"> • Entrapment of voids on wall surface • Blocking of aggregate
Coarse Aggregate Content	<ul style="list-style-type: none"> • Blocking • Insufficient filling of forms • Poor surface finish
Placement Technique	<ul style="list-style-type: none"> • Entrapped air voids • Pump pressure causing segregation • Delays between deliveries causing lift lines • Casting from multiple locations causing lines

in fresh and hardened SCC. SCC is more moisture-sensitive than conventional concrete, and its material idiosyncrasies require more attention to detail and testing throughout production.

After initial placement, all staff – particularly the production crew – should understand the five attributes of sound SCC:

1. Coarse aggregate at or near the top surface
2. Stable paste with no air percolation, or “champagne effect”
3. No bleed water
4. Absence of foaming at form edges
5. Complete compaction in forms with heavy, intricate reinforcing and/or blockouts (tapping or light vibration is a possible consideration)

Testing frequencies and final product inspections will likely increase, at least until everyone is SCC-knowledgeable and mixtures are consistent and stable over time. In early stages of production, weekly meetings will address staff questions and provide a means to gauge workforce progress. To capture the savings of reduced labor for SCC, foremen must anticipate and address man-hour changes.

Because production staff has a more intimate relationship with fresh concrete, they must be able to spot poor concrete right out of the mixer or during placement, and quickly alert the plant operator for evaluation and system adjustments. Workers also need to know when certain SCC mix designs may lead to slump flows over or under the prescribed limits. To avoid defective products, vibration may be necessary in situations where SCC has stiffened up or has lost flow prior to or during placement.

Test batches, water fluctuations and mock-ups

Test batches. It is important to run a series of test batches prior to full implementation of SCC. Test batches should be as large as your standard batch to ensure that the tests can be duplicated. Start trial production runs with SCC in conjunction with plant training and presentations from admixture suppliers.

Before beginning trial runs with SCC, make sure that your aggregate suppliers are consistent with their sieve analyses. Sieve analyses must fall within ASTM C33 guidelines. Aggregates and bin maintenance are critical to SCC as discussed in Part 1. Never mix stockpiles from different aggregate producers. Also check the mechanical ability of your mixer and set up a maintenance schedule for adjusting blades and scrapers before running trials.

SCC test batching helps train staff and reveals optimal plant-specific procedures, problems, required adjustments and other information, including:

- Optimal sequencing of admixtures
- Computer timing adjustments
- Mixer cleanliness and required maintenance or alterations
- Optimal charging point to the mixer
- Best mix timing for HRWR admixtures
- Timing sequences for ideal mix stability and consistency
- Presence of concrete balling
- Low compressive strength
- Poor hardening performance
- Seasonal changes in raw materials and aggregate moisture content
- Opportunity to call in an admixture specialist to help retool the mix design or recommend SCC monitoring equipment and software fixes
- Experience needed for successful SCC production
- Necessary workforce reduction due to less post-cast handling and finishing
- Operational savings in labor, production efficiencies and energy costs
- Plant-specific data for a realistic cost/benefit analysis of conventional concrete versus SCC

Moisture variation testing. After attaining consistency in fresh concrete test results, monitor – on a daily basis – all standard raw materials, equipment alterations, performance and any potential source of moisture fluctuation that may be detrimental to the stability of the SCC mix design. Because local aggregates vary and mixers and equipment conditions are specific to each plant, the only way to monitor moisture fluctuation is to run a trial SCC batch and test for water sensitivity.

Begin with an SCC mix batched to the designed water-to-cement ratio and determine its slump flow and VSI. Then add water in progressing amounts and continue to perform slump flow and VSI tests until the mix becomes unstable and the VSI result exceeds the allowable limits. In this way, you can determine how any day-to-day fluctuations in raw materials and equipment performance affect SCC moisture content in typical production conditions. If the allowable SCC test parameters are

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POTENTIAL PROBLEMS & REMEDIES

PROBLEM	REMEDY
Bug holes/Voids on Formed Surface	<ul style="list-style-type: none"> • Adjust slump flow • Adjust placement technique • Adjust placement speed • Decrease viscosity • Adjust aggregate proportions • Tap or vibrate lightly during casting (architectural/intricate forms)
Honeycombing	<ul style="list-style-type: none"> • Adjust aggregate proportions • Adjust slump flow • Change aggregate size • Increase viscosity
Incomplete Filling of Form	<ul style="list-style-type: none"> • Adjust slump flow • Adjust aggregate proportions • Decrease viscosity • Adjust placement technique
Sand streaking	<ul style="list-style-type: none"> • Increase viscosity • Decrease flow • Adjust mix proportions to improve stability
Lift Lines	<ul style="list-style-type: none"> • Evaluate for thixotropyⁱⁱ (increase water) • Adjust placement techniques • Decrease viscosity • Adjust workability time by adding retarding admix • Increase flow
Aggregate Blocking	<ul style="list-style-type: none"> • Adjust aggregate proportions • Modify mix proportions • Increase viscosity • Change aggregate size
Coarse Aggregate Content	<ul style="list-style-type: none"> • Blocking • Insufficient filling of forms • Poor surface finish
Excessive Bleeding	<ul style="list-style-type: none"> • Decrease flow • Modify mix proportions • Decrease water or HRWR • Increase viscosity • Verify aggregate gradation

exceeded, you know that the mix design, aggregates or plant equipment (or all three) requires modification or adjustments.

NOTE: Industry experts stress that SCC mixes are sensitive to water variation from any source and therefore recommend the use of automated moisture control.

Mock-ups. The idea behind a mock-up is to simulate the final manufactured precast concrete product. Mock-ups can be a scaled-down or full-size version of the final product, but they must mirror the specified formwork, height and finish requirements, including form finish. Mock-ups provide important and specific information, including:

- Hydrostatic pressure of the SCC mix
- Additional formwork bracing and walers needed
- Potential for blowouts
- Ability to meet specified dimensional tolerances
- Best placement point for desired product finish
- Potential for trapped air and honeycombing
- Opportunity to test form oils for potential SCC reactions (bug

holes, staining and ease of demolding) and EPA and local VOC compliance

Troubleshooting

The precast SCC plant operator must address any problems that occur in production and identify the root of any trouble in the production and placement process. There are five SCC problem categories:

- 1. Material changes** – Whenever any suspicion of a problem with SCC arises, first check aggregate stockpiles and bins for compliance with ASTM C33. Cement supplies should also be checked, including the type purchased. Any change in cement supplier, fineness or chemical properties can affect the quality and consistency of SCC. Constant communication between the plant operator and the individual(s) responsible for aggregate stockpiles/bins is imperative.
- 2. Batching operations** – SCC is susceptible to any inconsistency in batching and mixing operations. Changes in discharge settings or sequence can alter the entrained air content, reduce slump flow, or contribute to segregation potential of the concrete. Here are some requirements and precautions:
 - Calibrate and monitor aggregate scales, cement scales, moisture probes, admixture dispensers and water dispensers to ensure accuracy of mix proportions
 - Keep an eye on discharge settings and sequence, as they must remain consistently correct
 - Adhere to prescribed mixing times
 - Mix HRWRs for the appropriate length of time to ensure proper dispersion throughout the SCC matrix
 - Avoid short batching, as it will result in reduction of slump flow and inconsistent flows within the same batch and restrict full self-consolidation
 - Watch for lack of thorough consolidation, as it will decrease SCC strength and increase porosity of the finished product

3. Moisture control – Most problems associated with SCC are caused by moisture fluctuations during the course of daily production. Here are some tips on how to avoid them:

- Use automated adjustments for moisture control; probes are recommended
- Use regular testing for slump flow and VSI to alert the plant operator to moisture variations in the absence of automated controls
- Monitor excess moisture, as it decreases SCC mix stability
- Watch for severe mix instability indicators: “champagne effect,” foaming, bleeding and segregation

4. QA procedures – Increased testing, calibration and monitoring were covered in SCC Part 1.

- 5. Pouring operations** – Take heed of these precautions:
- Intricate reinforcing requires a less viscous SCC mix
 - Placement timing is critical to ensure HRWR effects are not diminished
 - Pouring too rapidly can lead to bug holes by entrapping air on

POTENTIAL MIX DESIGN ADJUSTMENTS

	Powder Content	Water Content	C.A. Topsize	S/A Ratio	VMA Dosage	HRWR Dosage
Fluidity						
Too Low		↑			↓	↑
Too High		↓			↑	↓
Viscosity						
Too Low	↑	↓			↓	
Too High		↑			↑	
Blocking	↑	↓	↓	↑	↑	
Stability Rating						
Too Low	↑				↓	
Too High	↓	↑			↑	
Aggregate Pile			↓	↑		
Mortar Halo	↑	↓			↑	↓

the finished surface of the forms

- Pouring too slowly may decrease head pressure and SCC's ability to fully compact
- As with conventional concrete, SCC should not be poured from excessive heights, as this leads to mix segregation
- Mix qualification testing should include average placement time of a given form to evaluate performance
- Even though SCC is known for not requiring vibration, forms with heavy reinforcing or blockouts may require light vibration or tapping for full compaction

See the sidebar "Potential Problems and Remedies" as a quick reference chart for using SCC.

5 main points to remember

With SCC Part 1 and 2 articles, you are now informed, armed and prepared to take on SCC to sharpen your competitive edge. If you have decided to transition your company to SCC production, remember these five points:

1. Your peers in the industry advise you to expect a steep SCC learning curve.
2. Trial runs and thorough staff training in all aspects of SCC are critical.
3. Obtain SCC technical advice from you admixture supplier.
4. SCC delivers significant production savings.
5. Yes, SCC is the smart way to go, but don't forget that it is a "finicky" material requiring exacting material and production controls. ⁱⁱⁱ

Sue McCraven, NPCA technical consultant and Precast Inc. technical editor, is a civil and environmental engineer.

Endnotes

ⁱ VSI Level 0 is a homogeneous mass with no evidence of bleeding; Level 1 concrete shows slight bleeding or surface sheen; Level 2 concrete has a mortar halo plus water sheen; and Level 3 concrete reveals course aggregate in the center plus a mortar halo.

ⁱⁱⁱ Thixotropy is the property exhibited by certain gels of becoming fluid when stirred or shaken and returning to the semisolid state upon standing.

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5 Areas that Make Your Plant More Efficient

NPCA file photo

Plant efficiency helps you keep costs down and stay competitive.

BY EVAN GURLEY

Everyone likes to reduce costs where they can to help lift the bottom line. Usually cost savings are measured in terms of lower utility bills, producing less waste or purchasing more efficient machinery. But there are also some efficiencies to be found in your processes, from the fundamentals of communication to the complexities of production scheduling.

Here are five areas you can address now, and some insight on how to approach them.

“What are a few key items you address in your plant to help run the plant efficiently?” This is the question I posed to various NPCA producer members to gain insight on how they strive to operate efficiently on a day-to-day basis. Here are their main ideas and some insight on how to address them.

1. Communication

Effective verbal and nonverbal communication skills are critical in the workplace. Good communication skills go beyond conversations, as employees must also know how to communicate well in written reports and emails. Understanding the benefits of effective communication helps companies focus on developing a workforce that can effectively communicate

within the plant and among customers, vendors and business partners.

“Communication is improved by holding management meetings with all company leaders present so that each department better understands the roles and issues of each other’s department,” said Stephanie Loud, owner/operator of Mountain West Precast in Ogden, Utah. For example, the plant person might not understand the role of the purchasing department and how they can’t just go to Home Depot to purchase a part for the plant, because the protocol is to get three competitive quotes. Or perhaps the payroll department might not want to hire any new people for a specific job, but if they understand the overtime incurred by plant employees, it might make more sense financially to get that extra person. “I think that sometimes employees focus solely on what they are responsible for and don’t understand how all areas of a company overlap and intertwine. When they look outside of their scope, there are company efficiencies that can be realized for everyone’s benefit.”

John Lendrum, president of Norwalk Concrete Industries in Norwalk, Ohio, said there must be a clear direction and focus from the top that is recognized by every employee.

"This translates to daily production schedules that are shared in advance; consistent product drawings; proper notice of shipments; and a method to provide immediate feedback and correction when something is not right," he said. "Value-added services such as coatings, fit of components and special installations need to be scheduled just like casting the product. This takes man-hours and is often overlooked until it impacts the ability to ship products on time."

Lendrum added that he has never considered it a waste of money spent on a system or tool that has improved communication. "Real-time information is here to be harnessed to our advantage," he explained.

Communication supports all aspects of the working environment, and no organization can exist without it. The quality of the communication is what makes the difference in having a successful organization.

2. Production scheduling

Fluctuations in product demand are a big headache for precasters when it comes to production scheduling, but they are inevitable. Construction projects rely on timely deliveries of materials, and as precasters have experienced all too often, there are times when a contractor will contact the precast plant at the eleventh hour and request a product for delivery the next morning.

Production control means coordinating manufacturing activities in accordance with the manufacturing plans so that preconceived schedules can be attained with optimum efficiency. Precasters strive to deliver the required quantity and quality of products on time, but this cannot be achieved without a solid production control system.

Communicating the production schedule well in advance (to contractors/owners as well as precast plant production workers) is a vital ingredient in successful project management. When all involved parties have a good understanding of the production schedule, everyone better understands their assignments and the relationships with other activities needed in order to complete the task.

"The person scheduling has to have a good feel for products, plant function and people," said Lendrum. "It is often more an art than a science." When plant errors or customer changes happen, the production scheduler must be able to compress and change the schedule, sometimes on a daily basis, which may impact delivery dates. "This job should not fall entirely on one person," he added. "There has to be a backup person in place. There can only be one gatekeeper to the schedule with a daily lock-down point to avoid disruptions and missed castings."

Production scheduling is intended to match the resources of equipment, materials and labor with project work tasks over time. Sound scheduling can eliminate production bottlenecks, facilitate the timely procurement of necessary materials, and otherwise ensure the completion of a project as soon as possible. In contrast, poor scheduling can result in considerable waste as production workers and equipment wait for needed resources or for other tasks to be completed.

Precasters often are limited by operational constraints related to production capacity, the quantity or availability of molds/forms, demand satisfaction and other issues. Developing a production schedule in advance will help optimize production efficiency even when limitations exist.

3. Shop drawings

For certain projects involving an outside architect and engineer, the following scenario may sound familiar:

A building project is broadly divided into two major phases: the design phase and the construction phase. First, the architect conceives of the building and then puts the concept down on paper in the form of presentation drawings. Next, the architect and the engineer work together to decide on materials and construction methods. The engineer determines the loads the supporting structural members will carry and the strength each member must have to bear the loads. He or she also designs the mechanical systems of the structure, such as heating, lighting and plumbing. The end result is the preparation of architectural and engineering design sketches that will guide the draftsmen who prepare the construction drawings. These construction drawings, plus the specifications, are the chief sources of information for the supervisors and craftsmen who carry out the construction.

But this isn't always the case for precasters. Precasters who get involved with custom projects will likely work with an engineer and architect when developing the drawings or will be supplied with the drawings.

Obtaining/developing the drawings is the first half of the issue. Once the drawings have been received, personnel working off the drawings must be able to comprehend what they are seeing. It is critical that those working with shop drawings can comprehend the information for the setup, manufacture, handling and erection of the particular precast concrete product. Understanding these documents and the information contained





PRODUCTION GOALS

within them is critical to all phases of production and quality control. Otherwise, there is no control of quality at the plant. Openings can be misplaced, lifting devices may be incorrectly embedded, reinforcing steel may be improperly spaced – all which jeopardize the structural integrity of the product.

The primary function of blueprints and shop drawings is to transfer information from the contract documents/drawings into information pertaining to the manufacture, handling and erection of the precast concrete product. Using the information on the drawings correctly will confirm that the products being fabricated are in fact what were specified.

Workers should be familiar with all aspects of shop drawings including the various views, sections, symbols and lines.

4. Production goals

Nearly every manufacturing company has a daily or weekly meeting where issues concerning production, customers, materials, personnel and more are addressed.

The daily/weekly production meeting should be a set duration of time at a regular interval throughout the course of the year to assess, measure, communicate and plan production schedules. Objectives of this meeting should be to:

- Assess rate and schedule performance from the previous day
- Confirm the schedule for the current day
- Set the schedule for the next day or two
- Discuss, report and resolve production and customer issues
- Maintain valid production dates on all production schedules (or work orders) and customer orders for use by materials and customer service

Production goals matter greatly, because they have a direct impact on profitability. They also have a direct impact on competitiveness. Every precaster should be setting, tracking and monitoring crew productivity.

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5. Outsourcing materials

To improve the efficiency of a precast concrete plant, prefabricated reinforcement (cages, mats) and cast-in components (lifting hardware, castings) should be considered in situations where production schedules do not allow for the plant to make the unit in-house, even if it has the capabilities to do so.

When it makes sense, outsourced components can contribute to net cost savings of time, handling, storage space, labor and



materials. For custom or specialized items such as cast iron hatches, Lendrum says it is essential that you order and receive them in plenty of time. "Long lead times for cast-in items can severely impact customer delivery times," he said. "That needs to be identified up front at the time the order is placed. Adequate inventory stock of fast-moving components such as lifting hardware needs to be checked frequently by someone who can do the ordering immediately. Running this through two or three different people may add days to the actual order being placed."

It starts with you

A plant can address numerous items to help improve efficiency on a day-to-day basis. What works for one plant may not work for another, but a few things are certain: Communication, planning and a mutual understanding of the end goal is essential. Take a minute before your next production day, sit down with your key personnel and address these issues from the top down to ensure there isn't something your plant may be overlooking that could affect how efficiently your plant is operating. ■

Evan Gurley is a technical services engineer with NPCA.

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How many spreadsheets is your precast company using?

Source: Ray Parks, a professor of IT management at the University of Hawaii

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The New Globally Harmonized System: The Right to Know

Are you or your employees at risk?

BY BOB WATERLOO | TECHNICAL SALES MANAGER, CONCRETE RELEASE AGENTS, HILL AND GRIFFITH CO.

New rules, new regulations! It seems that we are faced with these on an almost daily basis. If you are not up to date, you and your employees could be at risk, and your company could be facing penalties. The United States, in conjunction with other nations, has agreed to new rules regarding employee rights and need to know concerning hazardous materials (previously covered in Material Safety Data Sheets, or MSDSs). The new reference will be called Safety Data Sheets (SDSs).

We use many materials in the precast industry, and many of them have given us better castings – but always at a price. That price often comes in the form of special care and handling of materials that are classified as hazardous, including those that are considered flammable or combustible, or cause irritation, sensitivity, corrosion, and are proven or suspected carcinogens. Part of our responsibility is to help reduce the threat, whether

minor or serious, to our workers and the environment. OSHA commonly refers to it as “the right to know.”

You are probably already aware of the new rules and regulations regarding SDSs and the training necessary to comply with the new Globally Harmonized System (GHS). This applies not just to precast suppliers, but the precast producer is also responsible for complying with certain regulations including training.

In making a brief survey of precast and pipe producers, I found that while they are generally somewhat aware, most do not realize the full scope of the new regulations. Here is a quick overview of the GHS.

First, the MSDS is a thing of the past. It is now being replaced by the SDS, and while the format is very similar, there are some significant changes. You will need to have SDSs from all of your suppliers. Some states will have additional requirements, although they are not necessarily addressed here.

GHS LABEL ELEMENTS	
Product Name or Identifier <i>(Identify Hazardous Ingredients, where appropriate)</i>	See 1.4.10.5.2 (d)
	See 1.4.10.5.2 (c) and Annexes 1, 2
Signal Word	See 1.4.10.5.2 (a)
Physical, Health, Environmental Hazard Statements	See 1.4.10.5.2 (b) and Annexes 1, 2
Supplementation Information	See 1.4.10.5.4.2
Precautionary Measures & Pictograms 	See 1.4.10.5.2 (c) and Annex 3
First Aid Statements	See 1.4.10.5.2 (c) and Annex 3
Name and Address of Company	See 1.4.10.5.4.2 (e)
Telephone Number	See 1.4.10.5.4.2 (e)

The Section numbers refer to the sections in the GHS Document or “Purple Book.”

GHS PICTOGRAMS & HAZARD CLASSES			
	Explosives		Acute toxicity
	Self-reactives		Skin irritation
	Organic peroxides		Eye irritation
	Flammables		Skin sensitizers
	Self-reactives		Carcinogens
	Pyrophorics		Respiratory sensitizers
	Self-heating		Reproductive toxicity
	Emits flammable gas		Target organ toxicity
	Oxidizers		Germ cell mutagens
	Organic peroxides		Eye corrosion
	Gases under pressure		Skin corrosion
	Acute toxicity		Corrosive to metal
	Aquatic toxicity		Aquatic toxicity

June 1, 2015, is the time for everything to be in place. An additional review of the policies will occur June 1, 2016, after which there may be additional changes. However, some of the laws are already in effect. If you are not in compliance with them yet, you will need to move quickly.

The employer is responsible for:

- Identifying and maintaining a list of hazardous chemicals known to be present at the plant
- Obtaining, keeping up to date and providing employee access to SDSs
- Being sure that all hazardous materials are properly labeled
- Presenting a training program for all employees who will be exposed to these hazardous materials
- Having a written hazardous communication program in place
- Having SDS information available to employees and ensuring they have access to the company training program.
- Ensuring that employees read and understand the SDSs and the labels on the containers of all hazardous materials

Perhaps the first area of concern to producers is the fact that employee training of the new GHS was to be completed by Dec. 1, 2013. If you haven't already done so, now is the time to do it.

Your training program must include:

- The requirements of the standard
- Places where hazardous chemicals are present in your work area
- The location and availability of the written program, the chemical inventory and the SDSs
- How to access the SDSs in your work area
- How to read the SDSs
- How to read the GHS-style container labels
- Any specific labeling used in-house if different from the standards
- Specific hazardous chemicals in the employees' immediate work areas
- How to detect the presence of a release of a hazardous chemical
- The physical and health hazards of those chemicals
- Measures you can use to protect yourself against these hazards
- Required personal protective equipment (PPE) available and how to use it

Next, you must have a written program and a list of all SDSs spelled out in the program. All SDSs must be in English (worldwide), and additional languages also must be available to convey to employees in their native language or a language they understand. The manufacturer of the hazardous material is responsible only for supplying the SDS in English, so you are responsible for any additional languages.

Materials that fall under the GHS include:

- Health hazards
- Physical hazards
- Environmental hazards
- Other hazardous chemical
- Hazards not otherwise classified

HAZARD WARNING LABELS

Any material falling under the "hazardous" classification must have the following information on the label:

- Product identification
- Pictogram
- Signal word
- Hazard statement(s)
- Precautionary statement(s)
- Name, address and telephone number of the chemical manufacturer, importer or other responsible party

While there is no specific format for the label, all of the above must be clearly shown. Pictograms are also required for quick identification of the hazard.

On the SDS itself, there will now be a total of 16 sections – all of which must be completed for any material that falls under the hazardous classification:

1. Identification
2. Hazard(s) identification
3. Composition/information on ingredients
4. First-aid measures
5. Firefighting measures
6. Accidental release measures
7. Handling and storage
8. Exposure controls/personal protection
9. Physical and chemical properties
10. Stability and reactivity
11. Toxicological information
12. Ecological information
13. Disposal considerations
14. Transport information
15. Regulatory information
16. Other information (including date of preparation or last revision)

As a final note, all hazardous materials in your workplace must be cross-referenced by supplier and/or manufacturer.

These new OSHA regulations place an additional burden not only on the manufacturer/distributor, but also on the end user – you! Owners and operators are now responsible for keeping employees aware of any hazardous material on the premises, and all new employees must go through this training before being allowed in the workplace. OSHA will likely ask about the GHS in your workplace and assess stiff fines for not being in compliance.

The National Precast Concrete Association offers its members a free webinar titled "Webinar: Guide to Globally Harmonized System Documentation" by logging on to precast.org/education. ■

Bob Waterloo is technical sales manager, Concrete Release Agents, Hill and Griffith Co., based in Indianapolis. For additional information, contact him at bwaterloo@hillandgriffith.com or visit the Hill and Griffith website at grifcote.com.

The Spot: Jacquie Scibior

An NPCAEF scholarship recipient's proximity to a local precast concrete producer plays a critical role in pursuit of her civil engineering career.

BY MASON NICHOLS

Most of us can easily recall our childhood hangout of choice. For some, it may have been a park or playground near home. For others, "the spot" was a local restaurant. No matter the location, each of us has a place that we will forever remember as a crucial component of our younger years.

For Jacquie Scibior of Utica, N.Y., "the spot" was only a short walk across the street to the production yard of Husted Concrete Products Inc. Scibior, an NPCA Educational Foundation scholarship recipient, considers her experiences at the precast concrete facility paramount in her decision to pursue a career in civil engineering.

"We had family friends who had a son my age," Scibior said. "His parents owned a precast concrete company. We used to see these huge things being made and all of these precast pieces in their lot. To us, it was like this awesome jungle gym. We used to just walk through them and crawl through things and be amazed at how huge they were."

Scibior's early admiration of the construction and engineering industries was also kick-started by her father, whose work as a general contractor and owner of a plywood company helped guide her on her career path. "I loved going to work with my dad, and I just thought it was so cool," she said. "I was more of a tomboy, the type of person who always wanted Legos and liked to build things as opposed to playing with Barbie dolls."

"A lot of the information that I now know about precast concrete has come from the resources, stories and articles I can get from NPCA."

– Jacquie Scibior

Scibior's interests carried her to Clarkson University in Potsdam, N.Y., where she currently majors in civil engineering, minoring in sustainable solutions for the developing world. But before she could begin her studies, she realized she would need financial support. "When I was applying for colleges, I was keeping budget in mind, because my parents didn't really have a lot of money and I didn't grow up wealthy," she said.



JACQUI SCIBIOR ON AN ACADEMIC TRIP TO COSTA RICA.

"I knew I needed to find scholarships to be able to attend the schools I wanted to go to."

Thankfully, Scibior's friends at Husted Concrete Products suggested applying for the NPCAEF Scholarship, also offering to write her a recommendation letter for her application. Today, she has been afforded a slew of educational opportunities as a direct result of her financial aid.

Last year, Scibior participated in a volunteer trip to Belize where she worked on sustainable housing for families with limited access to resources. The homes, which were constructed of bags containing a mixture of dense clay and sand, sat on foundations made of car tires.

"It sounds crazy," Scibior said. "You wouldn't think the

HOUSE IN BELIZE MADE OF BAGS OF CLAY AND SAND.



houses would stand up. But they looked really cool and they worked.”

During another recent trip, Scibior witnessed poor housing conditions in the U.S. Virgin Islands, noting the large number of unfinished projects scattered throughout St. Croix. After performing a bit of research, she discovered that the cost of loans – coupled with high interest rates – often prevent potential homeowners from finishing construction of their homes.

Scibior also developed an interest in sustainability, which was sparked by a high school research project on renewable energy. These trips have only furthered her dedication to green building practices. In the future, she hopes to use that dedication to spread the benefits of sustainable construction around the world. “We don’t have unlimited resources on this planet,” she said. “Things aren’t just constantly renewable.”

Last semester, Scibior wrote a research paper on sustainable housing in Haiti, exploring the use of precast concrete to

combat earthquakes and other extreme weather events that affect the area. Through her studies and the continued support of NPCAEF, she recognized that specifying precast concrete is a viable and environmentally sound choice.

“A lot of the information that I now know about precast concrete has come from the resources, stories and articles I can get from NPCA,” Scibior said. “If I had a conversation with somebody and had to try and convince them why they should

choose precast over a competing material, I could give them the whole spiel about why they need to choose precast.”

For some, a childhood hangout is just a memory, a lingering vision of the past and what used to be. For Scibior, it is the foundation of discovery, and the catalyst for aiding the world in the adoption of sustainable building practices – now and into the future. ■

Mason Nichols is NPCA's communication coordinator. For more information about NPCA Educational Foundation scholarships, please visit precast.org/foundation or contact Marti Harrell at mharrell@precast.org.

NPCA EDUCATIONAL FOUNDATION MOVES FORWARD

The NPCA Educational Foundation was founded by a group of forward-thinking members in 1989 with the idea of giving something back to our industry while preparing us for the future. In doing so, the NPCAEF has provided numerous scholarships to deserving students to help develop our future leaders and professionals in the engineering disciplines.

With this commitment and the support from our NPCA members, today the Foundation's success has provided growth opportunities far beyond initial objectives to include grants for funding PDS modules, training videos and education for target audiences within our industry and to those who use our products. The Foundation remains committed to its core objectives and embraces necessary changes that may arise.

For these reasons and to better reflect our mission and purpose, we are excited to announce a new brand identification that simplifies our name and clarifies who we are: We are the NPCA Foundation (NPCAF).

This name reflects the association we support and how we want to be known. As with any structure, it must be built on a strong Foundation in order for it to last. Our goal is to be that Foundation for the NPCA.

Barry Fleck
President, NPCA Foundation

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Maxine Kraft	Ft. Worth, Texas	Barry Fleck, A.L. Patterson Inc.
Jared Schminzelpenning	Tremont, Ill.	Joe Thornton, Illini Concrete Co. of Illinois
Marshall Bailey	Hampton, Mich.	Terri Roudsaw, Besser Company

Graduate Student	City, Province	Sponsored by
David Amonn	Winnipeg, Manitoba	Yan Lin, LaFarge



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WHEN THE CHIPS WERE DOWN FOR MOST PRECASTERS DURING THE RECESSION – ESPECIALLY IN HARD-HIT FLORIDA – COASTAL PRECAST OF FLORIDA INC. SURVIVED THE CHALLENGE AND IS NOW THRIVING ON PRIVATE DEVELOPMENT.

STORY AND PHOTOS BY RON HYINK

If we were to take a blank canvas and portray the precast industry in the years leading up to 2008, we would paint mostly lush forests with crystal streams, green shards of grass, bright blue strokes of sky with dabs of puffy white clouds and plenty of sunshine. It was a beautiful sight to behold indeed.

Unfortunately, sometimes even attractive pieces of art hang unnoticed and underappreciated. We just didn't know how good we had it. Once the cloak of the Great Recession fell down around us, we watched with trepidation as the leaves in our glorious painting first faded then dried and curled up. An angry wind rose up out of the plains sending dust a mile high over the scene. The ground could hold no root but could only watch as the tumbleweeds of the times skipped across sparse vegetation. Call it The Grapes of Wrath of a much more recent economic desolation, if you will.

It was a time when precasters withdrew into themselves, becoming smaller physically and fiscally, some shuttering their doors for good or selling out to other companies with deeper pockets. Those who survived clung almost entirely to DOT, state or local work, as private development was suddenly gone with the wind.



THAT WAS THEN ...

Some states suffered far worse than others, and Florida was one of the hardest hit. But somehow, the Sunshine State has been among the first to see private construction return, even along the coastal areas of southwest Florida where it probably shouldn't have because of the lack of any meaningful industry.

"This area had always seen such a huge residential boom, as there had always been an overwhelming amount of people who want to move down here," said Buddy Hume, vice president

of operations and controller of Coastal Precast of Florida Inc., a Fort Myers-based manufacturer of underground stormwater and wastewater products. "But what happened is, when we got into the 2004-2006 range, they were building way beyond demand, and so the inventory of housing had reached a very high level."

And then we all know what happened: The economy went from boom to bust in a blink of the eye. Florida's prosperous construction activity became impoverished, and only a few morsels of government work were available for so many clamoring for it. Residential work simply stopped in its tracks. "Especially in Charlotte County, you could see the utilities were put in, and they started with maybe one house or guard gate, and then they just quit right where they were," said Kathy Pawlowski, office manager. "They put in the utilities, or partially put them in, and maybe got the drainage structures and the manholes out there, and then they just sat there."

With so much home building and so little industry in southwest Florida, it was the first area to get hit. "It hit us extremely hard," said Mark Henderson, a salesman with the precast company. "I know of one shopping

center that was built just before the bust that was totally complete. They keep the landscape nice, but there is not one tenant in it."

Coastal Precast reduced its work hours and work days per week, and the number of employees dipped to 18, about half of what there had been. For a time, all the local trades became dependent on what little the government could offer.

"Normally in a situation like this, where things become stagnant and slower, you would expect to lose some competition," said Buddy. "Not that I wish ill will on anyone, but just naturally that's what happens, and the cream rises to the top and they keep going. But that didn't happen. So everybody was fighting for that smaller piece of the pie."

But then things really got ugly when an underground utility contractor from a large national company came into the area and severely undercut all the bids. "It was a situation where nobody could figure out how that could continue," said Buddy. "A lot of our core customers were being impacted by this, because they were losing work to it. This company ended up being less than honest." This they endured for nearly four





AT LEFT, BRYON HUTCHINSON PREPARES REBAR FOR THE NEXT STORMWATER AND WASTEWATER PRODUCTS FROM COASTAL PRECAST OF FLORIDA. BELOW, PETE DALENBERG READIES TEST CYLINDERS TO ENSURE CONCRETE QUALITY REMAINS HIGH.

years, but the rogue company finally met its doom. When it could not complete a large state job, it was fired. "Once they finally took that action, the company ended up going out of business and liquidating."

... AND THIS IS NOW

By the end of 2012, things began to look up for Coastal Precast. People looking for second homes or retirement homes were starting to trickle back into Florida, explained Buddy. "It was the first time we really started to see it, so we knew we had some momentum," he said. But with very little industry in the southwest part of the state, the east coast of Florida was the first to greet the returning investors. Buddy noted that from West Palm Beach south to Miami, affluent buyers were snapping up real estate. "Over there, the market's a lot different, because it's a lot more competitive," he said. "Those people aren't



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looking to buy houses in southwest Florida – they want more of a bigger city-type lifestyle.”

The rest of the hopeful homeowners would soon follow them southward, however, since nice, warm beaches on the ocean will always be a draw. Buddy stated that it was a matter of people gaining the confidence to buy again. “You reach a point where the inventory is depleted and the demand comes back, and I think that’s what we were seeing,” he said.

“We’ve gotten several jobs for private communities that have come here to Fort Myers and Lee County,” said Kathy. The renewed confidence with the home buyers begat more confidence in businesses that wanted to build or renovate restaurants and shopping centers, and slowly the two sides of home building and business building began to play off each other. “We put a lot of underground in for Dollar General and Dollar Store. Chase Bank has put up a lot. We’ve had several restaurants out here at Gulf Coast Town Center,” she added, referring to a fairly recent shopping development.

For Coastal Precast, restaurants mean grease traps. “A lot of the grease traps we build are for new restaurants, but there’s also a lot of redevelopment of existing restaurants, and they’re putting new grease traps in them too,” said Mark. “A majority of them are 750-gallon or 1,250-gallon grease traps. If it’s a restaurant of any size like Longhorn or Olive Garden or Cheddars, they have three, four, sometimes five 1,250-gallon grease traps in them.”

And with the new shopping centers came the need for new drainage structures. “You’re looking at anywhere from three to eight drainage structures and three to four manholes at the most,” said Mark. “Now you get into a residential community, there will be 150 to 250 drainage structures and anywhere from 12 to 35 sanitary sewer manholes. A lot of these communities have two, three and sometimes even four lift stations. So it’s really helping.”

And so the long-awaited economic upturn along the left coast of Florida has finally become a reality. “January 2014 was our



best month that we have invoiced since the middle of 2008,” said Buddy. “So we’re definitely starting to get back to the production levels where we need to be.”

As more forms are being filled, the company has hired more people to fill them, including a new salesman and a new production manager. “We also added another guy in the plant,” said Buddy. “So with the increase in business we’re getting, after we weathered the storm and cut back in all the areas we could, we’re now starting to fill some positions again to keep up with the demand.”

IT’S ALL ABOUT THE PEOPLE

Driving the momentum of Coastal Precast out of the sour times and into the sweet can be laid at the feet of its people. From the owners to the production workers and everyone in between, it’s a pretty close family – and the word “family” is not so far from the truth, as several of them have been working together for many years. “We don’t have a big turnover of employees here, we never have,” said Kathy. “We’ve all been here a long time.”

Each employee seems to have a favorite reason for staying with the company. Kathy talked about job satisfaction and enjoying what they do. Mark mentioned the benefits. “I guess you could consider us a small company, and I’ve never seen a company this size contribute to your 401K,” he said. “That’s unheard of.”

Rick Letcher, drafting manager, has longtime friends here. “I like coming to work, and I like the guys I work with,” said Rick, who had doubled as production manager until recently when the company started hiring again. “There are four or five of

BUDDY HUME, PETE DALENBERG, KATHY PAWLOWSKI, TOM CAMPBELL AND RICK LETCHER REPRESENT THE REST OF THE “FAMILY” OF COASTAL PRECAST EMPLOYEES.



them I've worked with anywhere from 20 to 32 years." Rick, who has been in the precast business since 1981 and with Coastal Precast since it started in 2001, said he and some of his friends had worked together for other precast manufacturers until they came home to Coastal.

It was this same core group of production workers who brought the company through the lean times, when management was forced into a decision to reduce the number of employees. You can't get rid of your core people even through the rough times, Buddy explained. "Our staff was about half of what it was, and most of what was impacted was plant labor," he said. "The problem is, to run an effective organization, you can only cut so much. There are certain people you can't do without, because you have to have a certain amount of knowledge and a certain amount of people to perform the functions."

But Coastal Precast is also blessed with having dedicated employers. "We're fortunate to have a very solid ownership," added Buddy. "The people involved with the ownership have various backgrounds and areas of expertise. So we have a lot of depth to draw upon here, and we have a lot to fall back on when we need it."

It's a recurring theme throughout the company: good employers, good employees, good friends, and a good place to work with good benefits. Tim Durban, project manager and salesman, is one of the more recent hires, and he is already seeing the light. "I think this is a great company," said Tim. "One of the things that people ask me when I go home is, 'How was your day?' I tell them every day is like Christmas morning when I'm working here."

The first colorful strokes of art are already being applied to a fresh canvas in the precast industry. ■

Ron Hyink is NPCA's managing editor.

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Damp Proofing vs. Waterproofing

Part 1: Do You Know the Difference?

BY TIM FRAZIER

Editor's Note: This is the first of a three-part series. Part 1 in this issue explains the technical differences between damp proofing and waterproofing of concrete products. Part 2 will cover preparation, specifications and performance in the May-June issue, and in the July-August issue we'll present Part 3, which will identify applications that require chemical resistance.

Waterproofing and damp proofing sound like the same thing, and the general objective of both – minimizing the travel of water through a substance – is the same. However, there are major differences.

Some of the key differences between the two are the physical properties of the materials used, the thicknesses applied and the application service conditions. Damp proofing is intended to keep out soil moisture, while waterproofing keeps out both moisture (or water vapor) and liquid water. The International Residential Code (IRC) specifies that “any concrete or masonry foundation walls that retain earth and enclosed interior spaces and floors below grade shall be damp proofed from the top of the footing to the finished grade.” Waterproofing is required only “in areas where a high water table or other severe soil-water conditions are known to exist.”



Photo courtesy of Tim Frazier

Further, the American Concrete Institute (ACI 515.1) defines waterproofing as a treatment of a surface or structure to resist the passage of water under hydrostatic pressure, whereas damp proofing is defined as a treatment of a surface or structure to resist the passage of water in the absence of hydrostatic pressure.

Concrete is a heterogeneous composite building material based on a matrix of relatively inert inorganic aggregates held together by an inorganic binder of hydrated cement paste. Concrete physically is a porous material and will absorb water much like a sponge when placed on a wet surface or placed into water, allowing moisture to wick from outside to inside in a process known as capillary action. Differences in the internal void space of concrete of different compositions varies. Lower water-to-cement ratios in a concrete's composition will typically render less capillary or void space in the concrete matrix. The composition of concrete has a dramatic effect on its strength properties and also profoundly affects its ability to resist deterioration caused by exposure to various physical and chemical conditions. Therefore, by being able to reduce the porosity of concrete, the detrimental effects of water can be minimized or eliminated.

Damp proofing

Damp proofing is a process that involves using a mixture (traditionally tar or unmodified asphalt) as a coating on the exterior side of a structure and has one main purpose: stopping the transference or wicking of ground moisture through concrete. Typically the damp proofing coating cured thickness is less than 10 mils thick. It is a basic, acceptable form of treatment

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Differences between Damp Proofing and Waterproofing

	Damp Proofing	Waterproofing
Material	Unmodified asphalt	Polymer-enhanced asphalt membrane or all-polymer composition
Original Function	Originally developed as a type of primer to prepare road surfaces, protecting basements	Designed specifically for moisture protection on block and poured wall foundations
Thickness	Less than 10 mils when cured	Minimum 40 mils when cured
Resistance to hydrostatic pressure	Unable to permanently resist water flow under hydrostatic pressure	Resists water flow under hydrostatic pressure
Stability underground	Brittle at low temperatures	Retains elasticity and flexibility at low temperatures
Crack bridging	Little to none	Can span cracks of 1/16"

in many situations. Damp proofing is not intended to keep all water and moisture out, but rather its goal is to retard moisture infiltration by blocking the capillaries of concrete, which slows water penetration.

Drawbacks of damp proofing include an inability to seal larger cracks, large bug holes, holes left by form ties, surface protrusions and potential damage caused by coarse or careless

backfilling due to the limited thickness applied and the brittle nature of the product. With proper surface drainage, correctly installed foundation drains at the footing, and the absence of hydrostatic pressure that would drive water infiltration, damp proofing can supply adequate, long-lasting protection.

Waterproofing

Waterproofing concrete, on the other hand, is designed to stop water infiltration through a concrete structure. Waterproofing materials have the ability to bridge cracks that develop over time due to their elastic, flexible nature and the thickness of the applied coating.

Waterproofing materials also are designed to withstand hydrostatic pressure and are often in excess of 40 mils.

According to ICC-ES, a nonprofit company that does technical evaluations of building products, components, methods and materials, waterproofing must be able to do three things. First, it must stop water vapor, the gaseous form of water that can be released by the surrounding soil and can move through

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concrete. Second, waterproofing membranes must be able to stop water under hydrostatic pressure. Third and most important is that waterproofing must be able to span a crack in the treated concrete.

Waterproofing is essential in areas where there is significant rain and high water tables. As water enters the ground, it collects around the foundation. The higher the water rises up the foundation, the greater the hydrostatic pressure exerted against the concrete surface. This is especially true in areas with clay soils, as clay will absorb and hold more water than granular soil. This hydrostatic pressure forces water through porous concrete. So the sub-grade depth of the concrete structure, the degree of inherent hydrostatic pressure in the area and the use of the interior space are important criteria to consider when determining whether damp proofing or waterproofing is appropriate.

Materials cited for use in waterproofing applications include:

- Rubberized asphalt coatings (hot and cold applied)
- Clay-based products (bentonite)
- Crystallization products
- Rubber-based coatings
- Urethane coatings
- Butyl rubber sheeting

Weighing both options

The primary variables to consider when determining the appropriate water protection of your structure include: soil conditions, water table level, local drainage conditions, sub-grade depth and the degree of moisture tolerable for the interior of the structure being provided water protection. Waterproofing will cost more up front when compared with damp proofing options. Best manufacturing is performed when it is specified appropriately, executed correctly and no future repairs are required.

All concrete coating projects have the same need for appropriate surface preparation, understanding and following the coating manufacturer's application instructions (including environmental limitations during application and cure), proper backfilling to avoid membrane damage after application and providing necessary drainage where feasible. ■

Tim Frazier is technical director of Concrete Sealants Inc. He has been involved with coating-related products for 27 years and with concrete coatings for the past 20 years. Frazier holds a bachelor's degree in chemistry from Wilmington College, and a master's degree in chemistry from Wright State University.



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LEED is Not the Only Game in Town

BY CLAUDE GOGUEN, P.E., LEED AP

One can hardly read any green building article written over the past 10 years without the mention of Leadership in Energy and Environmental Design (LEED). LEED clearly has been the dominant environmental rating system since its development by the U.S. Green Building Council (USGBC) in 1998. However, with the continued growth of sustainable construction, LEED is attracting competitors, one of which is the Green Globes system.

Green Globes originated in Canada in 1996 when the Canadian Standards Association (CSA) published the Building Research Establishment's Environmental Assessment Method (BREEAM) for existing buildings. The system was renamed Green Globes in 2000 as it became an online assessment and rating tool.

In Canada, the Green Globes version for existing buildings is operated by BOMA Canada (Business Owners and Managers Association) under the brand name BOMA BEST. In the United States, the program is managed by the Green Building Initiative (GBI). The GBI has continually refined the system to ensure that it reflects current and ongoing advances in research and technology.

Today, Green Globes is used by large developers and property management companies including the Canadian federal government, which has adopted the program for its entire real estate portfolio.

The Green Globes program is web-based and provides guidance for green building and certification that includes an on-site assessment by a third party.



The program has modules supporting new construction, existing buildings and health care buildings. Like LEED, it can be utilized for a wide range of buildings from offices and multifamily structures to hospitals and institutional buildings such as courthouses, schools and universities.

How LEED and Green Globes compare

In concept, the goals of both rating systems are similar: Build more sustainable buildings, basing the design on energy and water conservation, occupant safety and comfort, and other factors. Green Globes markets itself as a more user friendly system, but some say it is more industry friendly while LEED is more rigorous.

Unlike LEED, Green Globes does not contain prerequisites. Both are based on a point system – LEED having 110 points while Green Globes is rated on 1,000 points. The points are

Environmental Assessment Area	New Construction Points	Environmental Assessment Area	Existing Building Points
Project Management	50	Environmental Management	100
Site	115	(N/A)	
Energy	390	Energy	350
Water	110	Water	80
Materials & Resources	125	Materials & Resources	110
Emissions	50	Emissions	175
Indoor Environment	160	Indoor Environment	185
Total Points	1000		1000

TABLE 1: GREEN GLOBES POINT DISTRIBUTION FOR NEW CONSTRUCTION AND EXISTING CONSTRUCTION (thegbi.org)

Green Globes Rating Scale		
85% - 100%		Demonstrates national leadership and excellence in the practice of energy, water, and environmental efficiency to reduce environmental impacts.
70% - 84%		Demonstrates leadership in applying best practices regarding energy, water, and environmental efficiency.
55% - 69%		Demonstrates excellent progress in the reduction of environmental impacts and use of environmental efficiency practices.
35% - 54%		Demonstrates a commitment to environmental efficiency practices.

TABLE 2: GREEN GLOBES RATING SCALE (thegbi.org)



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	Founded	Points	Categories	Ratings
Green Globes for New Construction	2000	1000	7	1,2,3 or 4 Globes
LEED v4 Building Design and Construction	1998	110	9	Certified, Silver, Gold or Platinum

TABLE 3: COMPARISON OF BOTH PROGRAMS

distributed as shown in Table 1.

In terms of certification levels, LEED has Certified, Silver, Gold and Platinum levels, while Green Globes certification levels are measured by one, two, three or four green globes. The Green Globes rating scale is shown in Table 2. Table 3 shows a comparison of the two programs.

Green Globes uses an online questionnaire-based approach. Once the questionnaire has been completed, a report is generated that provides a list of sustainable achievements, ratings and recommendations for improvement. A third-party assessor then communicates with project teams and building owners to review documentation and conduct on-site building tours. LEED, on the other hand, is more documentation-intensive.

In terms of popularity, LEED has been the front runner; however, Green Globes has been catching up lately. The U.S.

General Services Administration (GSA) recently recommended the federal government consider Green Globes as an alternative for LEED.

The U.S. Department of Defense, which owns more LEED-certified buildings than any other entity, has reportedly decided to allow its facilities to use the Green Globes program. The Department of Defense manages 2.3 billion sq ft of space in 300,000 buildings worldwide.

Growing greener

There is no question that the LEED system has had a profound effect on the green building industry. It has helped push awareness and use of sustainable construction materials and methods to every part of North America. That increase in popularity has created more demand for programs, and Green Globes has stepped up to fill a need. Suppliers to the precast industry should familiarize themselves with both programs and be prepared to provide supporting data. This effort can further enhance a company's ability to take advantage of this growing market. ■

Claude Goguen, P.E., LEED AP, is NPCA's director of Sustainability and Technical Education.

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The Precast Show 2014

The Precast Show 2014 returned to Houston, Texas, Feb. 13-15, for three days of exhibits, education, meetings and special events. Nearly 3,000 precast industry manufacturers and suppliers experienced a trade show floor buzzing with optimism that the steep recession in construction was over and better times were ahead. When The Precast Show had its debut in Houston in 2009, most of North America was mired in an economic downturn in which many construction-related businesses lost up to 40% of their revenues. Five years later the recovery appears to be solidly underway, though some regions of the country are slower to rebound than others.

"We heard from many exhibitors that there were more precasters ready to buy equipment than in the last several years," said Ty Gable, president of the National Precast Concrete Association, which co-sponsors that show with the American Concrete Pipe Association. "The construction economy has been

weak for the past several years, and many manufacturers were just trying to stay afloat. They have been delaying making any large equipment purchases. This year there was a general feeling of optimism on the trade show floor that the very slow recovery of the last couple of years is going to gain a little momentum in the next year or two."

The trade show featured 222 exhibitors in 49,200 sq ft of exhibit space on a trade show floor that spanned about 100,000 sq ft.

"We are the largest precast-specific trade show in North America," said Gable. "For the most part, our attendees are not browsers – they are buyers or decision influencers, and so we're delivering quality leads to our exhibitors. We often hear from exhibitors that they get good solid leads from The Precast Show that will keep them busy for weeks after the trade show."

In addition to the trade show, both NPCA and ACPA held extensive training,

committee meetings and special events during the week. NPCA also partnered with the Precast Prestressed Concrete Institute (PCI) on a course for local architects. PCI held its Winter Conference in conjunction with The Precast Show and will join The Precast Show as a partner starting in 2016 in Denver. The Precast Show 2015 will be held at the Orange County Convention Center and Rosen Shingle Creek in Orlando, Fla., March 5-7, 2015.

NPCA 2013 SAFETY AWARDS

The NPCA Safety Awards program honors those companies with outstanding safety records in three categories based on the number of man-hours of production. The Platinum Award, the highest level of safety achievement, is presented to members with zero reportable injuries during the recording period.

Category I (0-60,000 hours)

PLATINUM AWARD:

Carr Precast Concrete Inc., *Dunn, N.C.*
Hanson Building Products, *Green Cove Springs, Fla.*
Hanson Building Products, *Marianna, Fla.*
Hanson Building Products, *Wauregan, Conn.*
Hanson Building Products, *Wakefield, R.I.*
Hanson Building Products, *Montgomery, Ala.*
Hanson Building Products, *Dayton, Ohio*
Hanson Building Products, *Como, Miss.*
Hanson Building Products, *La Place, La.*
Oldcastle Precast, *Charleston, W.V.*
Oldcastle Precast, *Houston, Texas*
Oldcastle Precast, *Littleton, Colo.*
Oldcastle Precast, *Medley, Fla.*
Trenwa Inc., *Florence, Ind.*
Wieser Concrete Products Inc., *Roxana, Ill.*
Wieser Concrete Products Inc., *Portage, Wis.*

GOLD AWARD:

Oldcastle Precast, *Madera, Calif.*

SILVER AWARD:

Oldcastle Precast, *Fuquay-Varina, N.C.*

BRONZE AWARD:

Jensen Precast Hawaii, *Kapolei, Hawaii*

MOST IMPROVED AWARD:

Carr Precast Concrete Inc., *Dunn, N.C.*

Category II (60,001-120,000 hours)

PLATINUM AWARD:

CP&P, Harrisonburg Precast, *Harrisonburg, Va.*
Hanson Building Products, *Pelham, Ala.*
Oldcastle Precast, *Concord, N.C.*
Oldcastle Precast, *Fredericksburg, Va.*
Oldcastle Precast, *Telford, Pa.*
Oldcastle Precast, *Nampa, Idaho*
Oldcastle Precast, *Newnan, Ga.*
Oldcastle Precast, *Orlando, Fla.*

Oldcastle Precast, *San Diego, Calif.*
StructureCast, *Bakersfield, Calif.*
Western Precast Concrete Inc., *El Paso, Texas*
Wieser Concrete Products Inc., *Maiden Rock, Wis.*

GOLD AWARD:

Oldcastle Precast, *Jacksonville, Fla.*

SILVER AWARD:

Oldcastle Precast, *Wilsonville, Ore.*

BRONZE AWARD:

Oldcastle Precast, *Topeka, Kan.*

MOST IMPROVED AWARD:

Oldcastle Precast, *Nampa, Idaho*

Category III (120,001+ hours)

PLATINUM AWARD:

Hanson Building Products, *Houston, Texas*
Oldcastle Precast, *Cape Coral, Fla.*
Oldcastle Precast, *Mansfield, Texas*
Oldcastle Precast, *Telford, Pa.*
Tindall Corporation, *Spartanburg, S.C.*

GOLD AWARD:

Oldcastle Precast, *Fontana, Calif.*

SILVER AWARD:

Oldcastle Precast, *Auburn, Wash.*

BRONZE AWARD:

Oldcastle Precast, *Pleasanton, Calif.*

MOST IMPROVED AWARD:

Oldcastle Precast, *Telford, Pa.*

NPCA PLANT CERTIFICATION AWARDS QUALITY AWARD OF EXCELLENCE

The Quality Award of Excellence is awarded annually to plants recording the top overall audit scores in the certification program, representing the top 1% of all certified plants in NPCA's program. Recipients for the 2013 calendar year are:

Colorado Precast Concrete Inc., *Loveland, Colo.*
The Fort Miller Co., *Greenwich, N.Y.*
Mack Vault of Toledo, *Bowling Green, Ohio*
Oldcastle Precast Inc., *Auburn, Wash.*
Oldcastle Precast Inc., *Middle Island, N.Y.*
Speed Fab-Crete, *Kennedale, Texas*

TOP 25 CERTIFIED PLANTS

The Top 25 Award is presented annually to plants recording the highest 25 audit scores, an achievement that places them among the top 7% of all NPCA certified plants. The 2013 recipients are:

Binghamton Precast & Supply Corp. (Phelps St.), *Binghamton, N.Y.*
Binghamton Precast & Supply Corp. (Thomas St.), *Binghamton, N.Y.*
Camp Precast Concrete Products Inc., *Milton, Vt.*
Colorado Precast Concrete Inc., *Loveland, Colo.*
Dellinger Precast Inc., *Denver, N.C.*
Diamond Concrete Products LLC, *Guyton, Ga.*
Faddis Concrete Products, *New Castle, Pa.*
Hanson Pipe & Precast, *Lorena, Texas*
Jamestown Macadam Inc., *Falconer, N.Y.*
Lindsay Precast Inc., *Canal Fulton, Ohio*
Mack Vault of Toledo, *Bowling Green, Ohio*
Monarch Precast Concrete Corp., *Allentown, Pa.*
MSE Precast Ltd., *Qualicum Beach, B.C.*
Oldcastle Precast Inc., *Middle Island, N.Y.*
Oldcastle Precast Inc., *Auburn, Wash.*
Oldcastle Precast Inc., *Nampa, Idaho*
Rinker Materials, *Westfield, Mass.*
S & M Precast Inc., *Henryville, Ind.*
Sherman-Dixie Concrete Industries Inc., *Hermitage, Tenn.*
Sherman-Dixie Concrete Industries Inc., *Elizabethtown, Ky.*
Speed Fab-Crete, *Kennedale, Texas*
The Fort Miller Co. Inc., *Greenwich, N.Y.*
Tindall Corporation, *Fairforest, S.C.*

Wieser Concrete Products Inc.,
Portage, Wis.

Wieser Concrete Products Inc.,
Maiden Rock, Wis.

CUP AWARDS

NPCA's Creative Use of Precast (CUP) Awards competition recognizes innovative applications of precast concrete in two categories: Above-Ground and Underground. An independent panel of industry experts served as judges, and awards were presented during The Precast Show 2014 in Houston. For complete descriptions of this year's winning projects, please visit precast.org/awards.

Above-Ground Category

FIRST PLACE

Smith-Midland Corp.

Project: The Alexander Apartment Complex

Location: Edgewater, N.J.

Tasked with replicating the architecture of New York City's Park Avenue circa 1945 for The Alexander, a nine-story apartment building in Edgewater, N.J., Smith-Midland Corp. manufactured precast concrete wall



THE ALEXANDER APARTMENT COMPLEX

cladding with historical details such as cornices, reveals and bull noses. Each of the manufactured panels is a buff color with an acid etched finish.

Due to the lightweight design, many project costs were reduced, including those associated with the building foundation, structure, shipping and installation. The project featured 1,024 LEED-friendly exterior panels, combining a proprietary precast concrete product with traditional architectural precast totaling nearly 100,000 sq ft.

The 360-degree concrete-to-stud connection isolated the exterior precast concrete cladding from the structural stresses associated with wind loading, steel frame movement, expansion and contraction, and seismic shock.

SECOND PLACE

Universal Precast Concrete Inc.

Project: Bumper Cars Playground Display

Location: National Playground Expo, Houston

Universal Precast Concrete was approached with the idea of designing precast bumper cars to be installed in a playground setting. The customer wanted the cars to look real and also be able to withstand use from many children over the years.

Universal Precast developed molds for



BUMPER CARS PLAYGROUND DISPLAY

the unique products, and to successfully pour and strip them, elements were split into modules that were cast separately and then assembled at the plant. The cars were also given footings for additional stability once installed.

The last step was painting the cars to ensure they resembled real bumper cars. As a finishing touch, a steel post was added to simulate the electrical connection synonymous with the power source of real bumper cars.

The end product was exhibited at the National Playground Expo in Houston.

THIRD PLACE (TIE)

Norwalk Concrete Industries

Project: Eaton Corporate Headquarters Reflecting Pond Wall

Location: Beachwood, Ohio

When a project architect sought to design the site for the new Eaton Corporate Headquarters in Beachwood, Ohio, the goal was to combine the function of a large retention pond with an eye toward aesthetics. The material selected for the walls of the pond had to have clean, uniform and clearly delineated lines.

Norwalk Concrete Industries created



EATON CORPORATE HEADQUARTERS REFLECTING POND WALL

an old-world texture for its block system, and then created customized block sizes to meet project requirements. Custom forms were fabricated, and a total of 1,900 individual blocks were produced.

The result is a fully functional, EPA-compliant storm detention pond and a focal point for the new headquarters. The total length of the top course of the wall is 1,062 lineal feet, making the circular pond visible from space using your favorite satellite photo viewing software.

THIRD PLACE (TIE)

Shea Concrete Products

Project: Ocean Avenue Sea Wall

Location: Newport, R.I.

The City of Newport, R.I., sought design-build proposals to repair or replace a failing cast-in-place retaining wall along the famed Ocean Avenue. Critical wall



OCEAN AVENUE SEA WALL

criteria included sustainability, minimal construction footprint and aesthetics.

The city selected the precast modular block wall (PMBW) solution submitted by Shea Concrete Products from among several cast-in-place bids because of its additional benefits: the modular nature of the system allowed for easy installation between tides; a grid tied the entire system together; the joints between the blocks allowed for rapid escape of water from overtopping waves; and the road could remain open during construction.

Shea Concrete provided 3,080 sq ft of blocks. From demolition to completion, the construction – feasible only during low tide and cooperating wave conditions – took two months. The wall was completed just before tropical storm Irene and Hurricane Sandy arrived.

HONORABLE MENTIONS

Smith-Midland Corp.

Project: Lake Wappapello Restroom Buildings

Location: Wappapello, Mo.

StructureCast

Project: Diablo Valley College

Location: Pleasant Hill, Calif.

Underground Category

FIRST PLACE

Anchor Concrete Products

Project: Highway 407 East Expansion

Location: Whitby, Ontario

Anchor Concrete Products won the bid for the first phase of a \$1 billion supersized highway project in Whitby, Ontario, that required four large culverts. The team’s challenges were to provide high-quality structures that would meet design needs; a challenging schedule; and the installer’s need for a quick and efficient install.

The solution was an innovative, two-piece clamshell culvert that incorporated a cantilever joint allowing the contractor to place the pieces using only a crane. This eliminated the costs associated with pulling the pieces together.

In total, 2,710 tons of concrete were

delivered and installed in just four days, and each 38.6-ton section was placed in less than seven minutes. The culvert provides a natural stream bottom and a pathway for wildlife to cross under the highway.

SECOND PLACE

Terre Hill Concrete Products

Project: BWI Airport Glycol Reclamation/ Recycling Project

Location: Baltimore, Md.

A networked system of products was installed at Baltimore-Washington International Airport for the purposes of glycol reclamation resulting from the process of aircraft deicing. Terre Hill Concrete Products manufactured 2,295 ft of trench drains along the north and south sides of a multimillion dollar deicing pad. Additionally, a series of 24-in. pipe was installed to connect the trenches to more



BWI AIRPORT GLYCOL RECLAMATION/ RECYCLING PROJECT



HIGHWAY 407 EAST EXPANSION – WHITBY, ONTARIO

than a dozen 5-ft-diameter manholes and three glycol diversion vaults.

Tight tolerances required that Terre Hill also manufacture 230 leveling pads to aid the contractor in setting the sections of trench. An average 120 ft of trench was delivered to the site daily, allowing the project to be completed in three weeks.

THIRD PLACE

Bluffton Precast Concrete

Project: Hellbender Salamander Hut

Location: *Rivers and Streams*



HELLBENDER SALAMANDER HUT

The population of the Eastern Hellbender salamander has been declining as much as 82% in recent years, and researchers suspect that its habitat of clear streams is disappearing. Bluffton Precast Concrete developed the Eastern Hellbender Salamander Hut, a 150-lb precast concrete structure that can be installed in streams and riverbeds frequented by the ancient amphibian.

The project started when a biologist searched for a local precast producer to discuss a design for the salamander hut. The biologist along with Bluffton and its forms supplier collaborated on a three-piece mold set that includes a removable lid and a knock-out in the bottom of the structure where the river bed can be exposed.

If the Hellbender hut is successful, it could prove valuable for research and could help rebuild the Hellbender population.

HONORABLE MENTION

Smith-Midland Corporation

Project: Beach Prisms

Location: *Ocean Gate, N.J.*

SUSTAINABILITY AWARDS

NPCA's Sustainability Awards competition rewards excellence in sustainable products, practices and operations within NPCA membership, and to publicize the overall progress of the precast concrete industry toward sustainability.

The awards are divided into four categories: Producer Plant, Producer Project, Associate Plant and Associate Product. For complete descriptions of this year's winning projects, please visit precast.org/awards.

Producer Category

FIRST PLACE PROJECT

Smith-Midland Corp.

Project: Nelson Harvey Facility, *Johns Hopkins Medicine Campus*

Location: *Baltimore, Md.*

After decades of wear, the hand-laid brick envelope of the nine-story Nelson Harvey facility on the Johns Hopkins Medicine Campus in Baltimore began failing. The architects needed a solution that met two criteria: one, a system lightweight enough to prevent any need for additional superstructure or foundation costs; and two, that the facility would be

able to stay operational during the exterior renovation.

The Smith-Midland SLENDERWALL system met both requirements. Its unique composite construction allowed for the recladding to take place without removing the old fascia. The project included 158 SLENDERWALL panels with an Endicott brick facing, maintaining continuity with the original exterior. Smith-Midland also applied its closed-cell "H2Oout" foam insulation sealant to the panels. These options will provide savings in time and on-site trades, and insurance against air and water infiltrations. The project is to be certified under Baltimore City's Green Stars program, which is equivalent to LEED Silver.

FIRST PLACE PLANT

Shea Concrete Products

Plant: Solar Power

Location: *Amesbury, Mass.*

Shea Concrete went solar in the summer of 2013. The Shea facility in Amesbury powered up on Aug. 30 with a new American-made, \$1.4 million solar panel system installed on the roof of the plant. The 1,184 SunPower solar panels will produce an estimated 421,000 kw-hours per year. This makes Shea Concrete a Net-Zero electrical energy consumer, meaning that the solar panel



NELSON HARVEY FACILITY, JOHNS HOPKINS MEDICINE CAMPUS



SOLAR POWER IN AMESBURY, MASS.

system generates enough electricity to fully power the Amesbury location without requiring any additional sources of electricity. The panels, which are American Recovery and Reinvestment Act (ARRA)-compliant, harvest an output that is on average 7% better than other panels annually and 20% more productive over the 25-year life of the system.

PRODUCER PROJECT HONORABLE MENTIONS

Northeast Precast LLC – Millville, N.J.

Project: Bimbo Bakeries Building Thin-wall Panels

Integrating architectural and structural design into a lightweight sustainable panel system.

Northeast Precast LLC – Millville, N.J.

Project: Boardwalk Casino and Townhouses

A total precast sustainable solution for post-Sandy construction on the Jersey shore.

PRODUCER PLANT HONORABLE MENTION

Reading Rock Inc. – Cincinnati, Ohio

Plant: Concrete Recycling Process
Concrete crushing system reclaims "bone pile" waste for use in other products.

Associate Category

FIRST PLACE PRODUCT

The Euclid Chemical Co.

Product: TUF-STRAND SF Macro-Synthetic Fibers

Location: *Cleveland, Ohio*

The building sector is a major contributor to the carbon dioxide footprint in any developed community. One way that scientists refer to this footprint is by describing carbon dioxide equivalents or "CO₂eq." An important way to decrease the CO₂eq associated with building practices is to use materials that have a smaller carbon footprint. Polypropylene fiber reinforced concrete (PFRC) is a versatile and high-performance material particularly suited for concrete construction. The Euclid Chemical Co.



TUF-STRAND SF MACRO-SYNTHETIC FIBERS

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EUCLID CHEMICAL COMPANY

recently partnered with the University of Akron in a research study to establish the benefits and potential reduction of CO₂eq when using TUF-STRAND SF macro-synthetic fibers in concrete.

The results of the study indicated that the use of polypropylene fibers reduced the CO₂eq emissions by 56% compared with steel reinforcement. This analysis can be carried over to applications within the precast concrete industry to help reduce CO₂eq.

FIRST PLACE PLANT

The Euclid Chemical Company

Plant: "People, Plant, Prosperity" and Sustainability

Location: *Cleveland, Ohio*

The Euclid Chemical Co. continues to recognize that sustainability is a critical driver to both company success and employee satisfaction. Over the past several years, multiple projects have been deployed at Euclid's manufacturing facilities throughout North America to improve metrics on waste management, energy consumption, water use and safety. These initiatives are communicated to the company's employees and customers to demonstrate

its commitment to being a good neighbor and a respected business partner.

Recognizing that sustainability is a process, Euclid promotes the foundational values of "People, Plant and Prosperity," where the social, cultural, environmental and economic factors of day-to-day business are blended into the global and political arena. The company has instituted a variety of programs to trim waste and curb energy use, and has established a Sustainability Leadership Team to track energy consumption and improve efficiency at its plants throughout North America.

ASSOCIATE PRODUCT HONORABLE MENTIONS

W.R. Grace – Cambridge, Mass.

Product: AIRtrac Air Management Technology

Controlling air volume in the mixer to save time and reduce waste.

Hamilton Kent, LLC – Toronto, Ontario

Product: Watertight Box Culvert Joints

Tylox Super Seal rubber gaskets for box culvert project to capture CSO discharges.

ASSOCIATE PLANT HONORABLE MENTION:

Hamilton Form Company – Fort Worth, Texas

Plant: Improving Sustainable Manufacturing Processes

A sustained effort to create a more efficient plant and reduce waste.

NPCA WELCOMES NEW STAFF MEMBERS

NPCA has recently hired two engineers to bolster its Technical Services staff. Eric Carleton and Kayla Hanson arrive at a critical time as our economy and the precast industry itself begin their rise from the ashes of the recession.



ERIC CARLETON

Eric has a bachelor's degree in civil engineering from Colorado State University, and is a registered engineer in Minnesota and Indiana. He and his wife, Kathy, have been

married for 32 years and have three adult children. Eric worked for eight years with Armco Steel Corp. in its construction products division and two more years when the company became Contech Construction Products. Prior to joining the NPCA staff, Eric worked for 26 years as the technical director and corporate



KAYLA HANSON

engineer with Independent Concrete Pipe Co.

Kayla graduated with a bachelor's degree in civil engineering from Purdue University in 2013 and joined NPCA as a technical

services engineer early this year. Prior to joining NPCA, Kayla worked with various organizations to promote engineering outreach programs for middle school and high school students.


UPCOMING 2014 NPCA WEBINARS

NPCA provides webinars on an ongoing basis throughout the year to provide producers with the vital education for all facets of running a precast concrete plant.

Think you know your stuff? Take the challenge and answer the following question. Send your response to Claude Goguen, P.E., at cgoguen@precast.org, and if yours is the correct answer (chosen randomly from among all correct answers), you will receive one free admission to one of our 60-minute webinars presented in 2014. We will accept one answer per person. Good luck!

Challenge Question: You bring in a sample of aggregates from the stockpile first thing in the morning, and it weighs 6.8 lbs (3,084 g). You burn off the moisture to get the sample to an oven dry state, and it weighs 6.36 lbs (2,885 g). You know that the absorption capacity of this aggregate is 0.02%. If 450 lbs (204.12 kg) of this aggregate is used in the mix design, what adjustment to the mix water will you need to make?

This is the kind of material that attendees learn in NPCA education webinars! The correct answer will be published in the May-June 2014 issue of *Precast Inc.*, which will accompany a new challenge question and another chance to win free admission to a webinar.

Below are the webinars scheduled for the remainder of 2014. All webinars start at noon Eastern time. For course descriptions and registration for any of the webinars, please visit precast.org/education/online-education. 

2014 NPCA WEBINAR SCHEDULE

DATE	TOPIC	INSTRUCTOR	PRICE
April 9, 16, 23*	<i>PQS II QA</i>	Claude Goguen	\$495 Per Person
May 21, 2014	<i>Understanding How Hot Weather and High Temperatures Impact Your Precast Products</i>	Claude Goguen	\$79 Per Location
June 25, 2014	<i>Video Surveillance for Precast Plants: Protecting Your People and Your Property</i>	TBD	\$79 Per Location
July 23, 2014	<i>Cracks Are Whack! A Guide to Proper Precast Concrete Crack Repair</i>	Claude Goguen	\$79 Per Location
Aug. 20, 2014	<i>Building a Lean Culture</i>	Paul Akers	\$79 Per Location
Sept. 3, 10, 17, 24*	<i>PQS II Technical**</i>	Claude Goguen	\$495 Per Person
Nov. 5, 2014	<i>Healthcare Reform: How Will Your Business Be Affected in 2014 and Beyond?</i>	Jamie Hasty	\$79 Per Location
Nov. 19, 2014	<i>Cold Temperature Concreting</i>	Claude Goguen	\$79 Per Location
Dec. 3, 2014	<i>PQS II Safety (Precast Specific Module)</i>	Gus Gonzalez	\$150 Per Person

* Attendance at all sessions is required for PQS II webinars.

** Due to the advanced math concepts covered in PQS II Technical, students are required to take and pass NPCA's PQS II Technical Math Prep course as a prerequisite for this course. The math prep course will be offered as a free three-day webinar on Wednesday, Aug. 27, 2014, from 1 p.m. to 4 p.m. Eastern time. If you would like to try to test out of the math prep course, please contact Kathy Ritsmon at kritsmo@precast.org.

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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 NPCA, Attn: Precast Inc. magazine, 1320 City Center Drive Suite #200, Carmel, IN 46032 or email them to rhyink@precast.org.

Dayton Superior enhances PC110 Suprotek Impalement Safety Cap

Dayton Superior, a provider of accessories, chemicals, forming and paving products to the nonresidential concrete construction industry, has introduced the enhanced PC110 Suprotek Impalement Safety Cap, which minimizes impalement risks on the job site. It is compliant with OSHA requirement 344.90 and has the CALOSHA C-1730-AG approval.

In addition to providing increased job site safety, the innovative design of the Suprotek safety cap reduces the need to have different sizes of safety caps to fit varying sizes of rebar. The new PC110 cap fits sizes #3 [10mm] to #11 [36mm] rebar. Its dual color design enhances the readability of OSHA-required information.

The patented technology used in the Suprotek safety cap design, paired with its versatility and OSHA compliance, makes it an essential personal safety component for use on job sites of any size or scope throughout the country. It can be used on vertical or horizontal protruding rebar by simply placing the black end of the safety cap onto the end of the bar.

For more information about Dayton Superior, visit daytonsuperior.com.

Besser adds to Pipe and Precast sales team

Besser Co. has announced the addition of Travis Dye to its Pipe and Precast Sales Team. Based in Sioux City, Iowa, Dye joins a sales team that serves producers from around the globe with their needs for equipment, retrofits and parts.

As an 18-year veteran of Besser Co., Dye brings a wealth of equipment knowledge to his new role. He began as a draftsman in 1995 and three years later became a machine technician. In



TRAVIS DYE

department supervisor working directly with sales, engineering and other departments to meet customer expectations. He is a graduate of Western Iowa Technical Community College where he earned an associate's degree in mechanical engineering technology.

Dye can be reached at (712) 202-1855 (office), (989) 916-8362 (mobile) or via email at tdye@besser.com.

Besser and Automacad form marketing alliance

Besser Co. has announced that it has established a marketing agreement with Automacad Inc., a manufacturer of concrete products machinery based in Candiac, Quebec. The key element of the agreement lies in the representation of Automacad's wet-cast production equipment by Besser Co.'s sales team around the globe.

Since entering the concrete products market in 2007, Automacad has earned a stellar reputation for providing high-quality, custom-made, innovative solutions for dry-cast and wet-cast products as well as for concrete packaging and other concrete-related projects.

For more information about Besser, visit besser.com. For more information about Automacad, visit automacad.com.

this capacity he constructed and tested machinery in-house and then installed and serviced it at customer locations worldwide. In 2007 he became assembly

Spillman releases new brochure on plastic and concrete spacers

Spillman Co. has recently published a new six-page brochure on Plastic & Concrete Spacers that features its complete Plasclip line of rebar and mesh spacers. New to Spillman's line of spacers are three new locking Plaswheels and nine retooled Econo-Bolsters that are now available in a 30-in. length. Spillman offers the most complete line of plastic spacers designed specifically for the precast concrete industry, says the company.

Spillman is a 66-year-old manufacturer of custom steel forms for the precast concrete industry and is located in Columbus, Ohio. In addition to custom steel formwork, Spillman sells a wide range of plastic rebar accessories and protective devices, air and electric internal and external vibrators, EZY-STRYP magnetic clamping devices, and production hardware and accessories.

For more information, call (800) 44-FORMS or (614) 444-2184, or visit spillmanform.com.

BASF introduces EPD development service for concrete mixtures

The Admixture Systems business of BASF's Construction Chemicals division has announced the launch of a third-party critically reviewed Environmental Product Declaration (EPD) Manager tool for concrete. This tool enables BASF to create customer-specific EPDs for concrete to help communicate the environmental performance of their mixtures.

In addition to developing the EPD content through its EPD Manager tool, BASF provides a seamless process for the third-party critical review and registration of the final EPD document

through the Program Operator. The final high-quality EPD can be submitted to architects and engineers.

With its EPD development capabilities, BASF can help concrete producers meet LEED v4 requirements for the new materials and resources credit.

For more information, visit masterbuilders.com.

BASF launches Master Builders Solutions global construction brand in North America

BASF has announced the North American launch of its new global brand, Master Builders Solutions, to the construction industry. The global brand reflects BASF's commitment to the construction industry and includes a wide range of construction chemical solutions previously sold under a variety of well-known specialty brands.

The portfolio of products and services marketed under the Master Builders Solutions brand includes chemical solutions for new construction, maintenance, repair and renovation of buildings and infrastructure. It spans product segments such as concrete admixtures, cement additives, chemical solutions for mining and tunneling, sealants, waterproofing, concrete protection and repair products, grouts and performance flooring products.

The range of products and services marketed under the Master Builders Solutions brand features a new global naming system, helping BASF to support customers and partners with high-quality and consistent products and services around the world. This naming system utilizes the "Master" prefix combined with a descriptor of the product function or application, creating clarity and consistency in the product offering.

For more information, visit masterbuilders-solutions.basf.us.

Don Smyth retires from Polylok

Don Smyth, senior technical advisor, retired at the end of December 2013 after a lengthy career with Polylok Inc. & Zabel Environmental. Smyth joined

the firm in 1999 as a technical advisor with a background in construction and engineering. He was involved in all aspects of the company from technical sales and assistance



DON SMYTH

to product development. Throughout the years, many customers relied on his expertise and problem-solving abilities.

Polylok Inc. & Zabel Environmental, an international supplier of plastic injection molded products for the precast concrete and on-site wastewater industries, is based in Wallingford, Conn. Visit polylok.com for more information.

NEPCA names new president

The Northeast Precast Association has named Jim Pryor as its president. Pryor is owner of Atlas Concrete in New Britain, Conn. Greg Stratis, NEPCA's former president, will remain on the board of directors.

NEPCA is based in East Taunton, Mass. For more information, visit nepca.com.

Two certifications planned for boom truck operators

In response to a request by NPCA and other industry groups, the National Commission for the Certification of Crane Operators (NCCCO) will develop and

launch two new certifications created specifically for boom truck operators. NCCCO will develop a more specific certification subtype addressing the unique characteristics of boom trucks based on recommendations from a working group that included NPCA technical staff, NPCA members and other industry representatives. The new program will cover boom trucks with fixed controls and boom trucks with swing controls. Most boom trucks in the precast concrete industry fall under the Boom Truck-Swing Controls certification category.

These programs will meet all OSHA and ANSI requirements and establish the highest standard for certification of boom truck operators. An OSHA rule requiring certification of crane operators goes into effect in 2017. Employers are encouraged to begin certifying their employees now so they will be in compliance when the new rule takes effect. Both Boom Truck certifications will be available in 2014. The Boom Truck-Fixed Control exam is expected to launch in the first quarter of 2014. The Boom Truck-Swing Control exam is expected to launch in the third quarter. The certifications will include both written and practical components but have been designed specifically to address the knowledge and skill required of boom truck operators.

For more information, contact Joel Oliva, manager of Program Development and Administration by email at joliva@nccco.org or call (703) 560-2391. ■



Meeting	Location	Date
NPCA 49th Annual Convention	Le Centre Sheraton Montreal – <i>Montreal, Quebec</i>	Oct. 22-25, 2014
The Precast Show 2015	Orange County Convention Center – <i>Orlando, Fla.</i>	March 5-7, 2015
The Precast Show 2016	Colorado Convention Center – <i>Denver</i>	March 17-19, 2016
The Precast Show 2017	Nashville Convention Center – <i>Nashville, Tenn.</i>	March 23-25, 2017

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

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