

JULY/AUGUST 2013

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Take a New Look at Precast!

BY MIMI RAINERO COLES | *Chairman, National Precast Concrete Association*

As federal, state and local resources for everything from transportation projects to clean water infrastructure continue to shrink, it's time for the precast concrete industry to get in gear and share its compelling and important story. As precast concrete manufacturers, we know the many benefits of precast as a construction material, and most of us can recite them in our sleep. We know about quality workmanship in a controlled production environment, our skilled labor force, the ability to custom-cast just about anything, the smaller footprint on the job site.

We can go on and on about our products' many benefits, and we're constantly developing and looking for new products, techniques and opportunities! We've done a wonderful job educating ourselves about precast and our products. However, there's a disconnect between what we know as manufacturers and what many DOT officials, project designers, specifiers and contractors know and understand when they're developing specifications for a project. It's time, NPCA members, to initiate a marketing program to share our story of a progressive, highly efficient, proven industry that has been a cornerstone to our countries' infrastructure and should be a vital component of building and rebuilding infrastructure for the future!

Not a day goes by that I don't hear of opportunities where our industry can play a key role in new development. Think about Hurricane Sandy. It was called the perfect storm because of the confluence of meteorological conditions that created one of the most devastating superstorms in the history of North America. The rebuilding will take years – and there are serious discussions about how to rebuild. Do we just rebuild the same structures again and hope for the best? Or do we rebuild stronger for the future? For those progressive people thinking about resilient construction, there's an answer: **PRECAST CONCRETE.**

We repeatedly hear that there are thousands of failing bridges – from rural spans over creeks to high-traffic commuter bridges. How do we replace those structures in the quickest possible time to decrease the disruption to everyday life and commerce? There's an answer: **PRECAST CONCRETE.**

More than 700 cities across the country are facing EPA deadlines to clean up toxic waste dumped into waterways when their combined sewer systems overflow. Cities are designing ways to store stormwater in massive underground tunnels and detention tanks or to construct separate systems for stormwater and wastewater. What's the best solution? You know the answer: **PRECAST CONCRETE.**

Those are just three examples of the incredible opportunities available for our industry. In a sense, this may be a perfect storm for precasters. Our nation desperately needs serious infrastructure rebuilding in the coming decades. We've been the infrastructure people in the past with miles of concrete pipe and millions of bridges, box culverts, and storm and sanitary structures already on the job! Architectural precast buildings, storm shelters, sound walls, retaining walls – precast is all around us! We can be the infrastructure people of the future! Our members are equipped with the product knowledge, design capabilities, production practices and cutting-edge ideas to help move our industry and country forward! Right now ... it's time to tell our story in a big way.

The National Precast Concrete Association is prepared to launch a major marketing initiative that will provide NPCA members with tools to tell their own stories to their targeted groups. Our national marketing initiative will be unveiled later this summer, and the launch will take place with a training session and a series of training webinars starting with the NPCA 48th Annual Convention in October and leading into The Precast Show 2014 next February.

The marketing initiative will include several components. Although the centerpiece will be a set of tools that each individual company can adapt for its own message, there will be a national component as well. We'll use traditional vehicles like advertising, video and banners for events. There will be a push by NPCA to make sure that DOTs, specifiers, regulatory agencies and anyone with an interest in precast concrete knows who NPCA is, recognizes NPCA as "the go-to source for precast" and understands the importance of being an NPCA member. Greater visibility in trade publications and at industry meetings will increase awareness of NPCA, the precast concrete products industry and our members!

With NPCA working on the national level and our members working on the local, state and province front, we're going to encourage decision makers to "take a new look at precast" and help them break out of old stereotypes to see precast concrete construction for what it is: a high-quality, contemporary building material that is sustainable, resilient, incredibly adaptable and perfect for today's no-waste, fast-paced construction projects! For the companies that embrace these possibilities, this is the perfect storm. It's time to tell our story. Are you ready to "take a new look at precast?"



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PROFILE

How the Akin Family Beat the Odds

The Akin family weaved their disparate personalities together through the years to turn economic hardship into booming success at Bluffton Precast Concrete Co. in Bluffton, Ohio. Jim and Tillie Akin, in front, established Bluffton Septic Tank Co. in 1968, and upon their retirement in 2006 handed off the business to their children. Backing Jim and Tillie are son-in-law Jim Stacy, plant manager; son Michael, vice president; daughter Susie, office manager; and son David, president.

Story and photo by Sue McCraven

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How to Read a Cement Mill Certificate **PART 1**

Rather than filing and forgetting after the cement delivery, use the mill certificate to your advantage.

BY LARRY ROBERTS AND TERRY HARRIS



Everything that goes into our concrete mix includes some sort of documentation. It could be a certification, a mill test report, test record or test data, statement of conformance – and the list goes on. Some records simply state adherence to an applicable standard, but some contain data that can be overwhelming.

When we buy cement, we are provided with a cement mill certificate by the cement producer. Cement mill certificates, also called mill test reports, contain a lot of information that can prove useful for tracking changes in your concrete and controlling variability in your mix. Usually this certificate must be included in submittal documents to show that the cement conforms to the requirements of applicable specifications, such as compositional or performance limits. Unfortunately, the other information in the document is often not used and the certificate is simply filed away, yet reading and tracking that additional information may be helpful in achieving smooth operations in the precast industry. We'll take a look at some of the more useful information for precasters.

What's in it for me?

First, let's discuss what a mill certificate is and what it is not. ASTM C150/C150M, "Standard Specification for Portland Cement," provides guidelines for such certificates along with an example. However, each cement producer has its own format, often supplying more information than the example shows. We will focus on portland cements for this article, and you may want to refer to the example on page 8 to follow the discussion.¹

At the top of the example certificate, you will

A CEMENT MILL CERTIFICATE CONTAINS USEFUL INFORMATION THAT CAN HELP YOU TRACK THE CEMENT'S CHEMICAL PROPERTIES TO GET OPTIMAL CONCRETE PERFORMANCE.

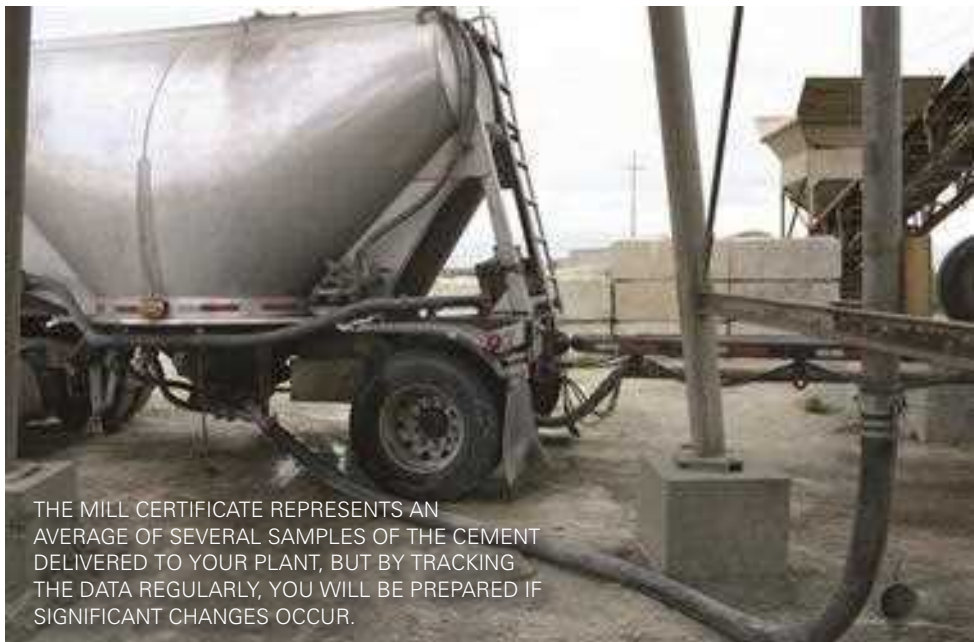
find the cement type. Due to overlaps in requirements and strength levels typically well above specification limits, some cements meet several types. This may show in some mill certificates as "Type I/II" or in extreme cases "Type I/II/V." Sometimes the same cement will have more than one certificate when different designations are used, depending on which type the customer ordered. It is useful to consider the cement type that is more restrictive.

Both compositional and performance information is provided in the CHEMICAL table in the left column and the PHYSICAL table in the right under the Standard Requirements section. Some of the performance information for long-term tests may apply to cement produced earlier than the time period covered, and this will be noted as shown in the example for the results of C1038 testing at the bottom of the PHYSICAL table.

Further, although ASTM explicitly details the test methods and analyses used to develop the data, there can be significant differences between producers in how often they are collected and the time periods represented. It is important to understand that the certificate is not an analysis of a particular shipment of cement (unless required by the purchaser). This is generally the case except in very large projects, as it would require extensive storage capacity and delay shipment until after the test results are obtained.

The usual certificate reports the average composition and performance over some specified range of time. In the ASTM C150/C150M example, the range is given as a seven-day period. In practice, mill certificates representing a monthly average are typical, sometimes a calendar month, sometimes merely stated as "monthly basis" without further clarification. Sometimes they are reported on a "lot" basis with no clear time period. It is best to understand exactly what type of average is represented by talking with the producer if it is not clear on the certificate.

In any case, the results reported are for the average of a large number of different samples analyzed and performance-tested over the time period chosen. Thus, normal, day-to-day production variation is averaged out, and a certificate gives no indication of such variation. Also, the samples tested on each day are usually physical composites of several samples taken over a production period, such as a shift or the full day. In some cases, these may be as frequent as hourly, meaning that the physical tests could have been done on a blend of 24 different samples, while the chemical results would be a mathematical averaging of each hourly sample. The mill certificate number then comes from an averaging of all the days in the time period. Logically, then, no single sample – be it a small sample for laboratory testing or a 30-ton bulk delivery – will have exactly the composition or performance reflected by the average values in the accompanying certificate. To make this even clearer, at



THE MILL CERTIFICATE REPRESENTS AN AVERAGE OF SEVERAL SAMPLES OF THE CEMENT DELIVERED TO YOUR PLANT, BUT BY TRACKING THE DATA REGULARLY, YOU WILL BE PREPARED IF SIGNIFICANT CHANGES OCCUR.

NPCA file photo

the height of the production period, generally in the summer, the cement actually shipped may be only one or two days old, yet the certificate shows seven- or even 28-day strength, based on historical production data. So a fair definition of the certificate is:

"A summary of the averages of tests (physical and compositional) of cement of the type indicated, tested over some defined period."

If the certificate represents average cement testing, what good is it? Actually a lot, but it takes effort to gain the value of the information. First, let's state the obvious: There are no concrete tests reflected in the certificate, no tests with admixtures, no tests with supplementary cementitious materials (SCMs), and no tests at other-than-laboratory temperatures. It can't tell us everything we would like to know, but it can give some strong hints if we track the information regularly.

It is highly recommended to use simple control charts on which the variables discussed below are plotted each time you receive a new certificate. If concrete testing results and mix design information are plotted on similar charts, relationships may surface that are too complex to discuss here.

Material variation is the bane of concrete production. If nothing ever changed, production would be easy – but things do change. While variation within the time period will not be reflected in the certificate, change over a longer period will be. After all, the cement manufacturers are challenged to offer a consistent product from materials that are dug out of the ground and by their very nature must be variable. To do that, mixture proportions of the raw materials must be continually adjusted. With such multi-component raw materials, it is impossible to keep all composition factors the same. So the cement characteristics will vary, as will the characteristics of all concrete components.

Let's list a couple of important variables and track how we



C150/C150M – 12

ABC Portland Cement Company
Qualitytown, N.J.

Plant Example

Cement Type II(MH)

Date March 9, 20xx

Production Period March 2, 20xx – March 8, 20xx

STANDARD REQUIREMENTS ASTM C150 Tables 1 and 3

CHEMICAL			PHYSICAL		
Item	Spec. Limit	Test Result	Item	Spec. Limit	Test Result
SiO ₂ (%)	^A	20.6	Air content of mortar (volume %)	12 max	8
Al ₂ O ₃ (%)	6.0 max	4.4	Blaine fineness (m ² /kg)	260 min	377
Fe ₂ O ₃ (%)	6.0 max	3.3	Autoclave expansion (%)	430 max	0.04
CaO (%)	^A	62.9	Compressive strength (MPa)	0.80 max	
MgO (%)	6.0 max	2.2	1 day	^A	
SO ₃ (%)	3.0 max	3.2	3 days	7.0	23.4
Ignition loss (%)	3.0 max	2.7	7 days	12.0	29.8
Na ₂ O (%)	^A	0.19	28 days	^A	
K ₂ O (%)	^A	0.50	Time of setting (minutes)		
Insoluble residue (%)	0.75 max	0.27	(Vicat)		
CO ₂ (%)	^A	1.5	Initial Not less than	45	124
Limestone (%)	5.0 max	3.5	Not more than	375	
CaCO ₃ in limestone (%)	70 min	98	Heat of hydration (kJ/kg)		
Inorganic processing addition (ground, granulated blastfurnace slag)	5.0 max	3.0	7 days	^B	300
Potential phase composition (%) ^C			Test Method C1038 Mortar Bar Expansion (%)	^D	0.010 ^E
C ₃ S	^A	59			
C ₂ S	^A	11			
C ₃ A	8 max	5			
C ₄ AF	^A	10			
C ₄ AF + 2(C ₃ A)	^A	20			
C ₃ S + 4.75C ₃ A	100 max	83			

^A Not applicable.

^B Test result represents most recent value and is provided for information only.

^C Adjusted per **A1.6**.

^D Required only if percent SO₃ exceeds the limit in **Table 1**, in which case the Test Method **C1038** expansion shall not exceed 0.020 % at 14 days.

^E Test result for this production period not available. Most recent test result provided.

OPTIONAL REQUIREMENTS ASTM C150 Tables 2 and 4

CHEMICAL			PHYSICAL		
Item	Spec. Limit	Test Result	Item	Spec. Limit	Test Result
Equivalent alkalis (%)	^F	0.52	False set (%)	50 min	82
			Compressive strength (MPa)		
			28 days	28.0 min	^G

^FLimit not specified by purchaser. Test result provided for information only.

^GTest result for this production period not yet available.

Additional Data

Inorganic Processing Addition Data

Type	Ground, granulated blast furnace slag
Amount (%)	3.0
SiO ₂ (%)	33.1
Al ₂ O ₃ (%)	10.9
Fe ₂ O ₃ (%)	1.1
CaO (%)	44.4
SO ₃ (%)	0.2

Base Cement Phase Composition

C ₃ S (%)	63
C ₂ S (%)	12
C ₃ A (%)	5
C ₄ AF (%)	11

We certify that the above described data represents the materials used in the cement manufactured during the production period indicated.

Signature: _____

Title: _____

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CONCRETE BATCHING PLANTS

can use the information to know when something significant has changed.

Alkali content

Alkali content is shown in the example as $\text{Na}_2\text{O}(\%)$ and $\text{K}_2\text{O}(\%)$ in the CHEMICAL table under the Standard Requirements section, and as equivalent alkalis (%) in the CHEMICAL table under the Optional Requirements section.

Equivalent alkali is the summation of the sodium oxide and potassium oxide content of the cement, expressed as a percentage of mass equivalent sodium oxide (often abbreviated $\text{Na}_2\text{O}_{\text{eq}}$), by making a chemical calculation based on an equal number of molecules of sodium and potassium oxides. It is not required to be reported if the cement has no alkali limit, but most certificates report it. Even if the cement is not low-alkali cement (below 0.60%), the amount is important for three reasons:

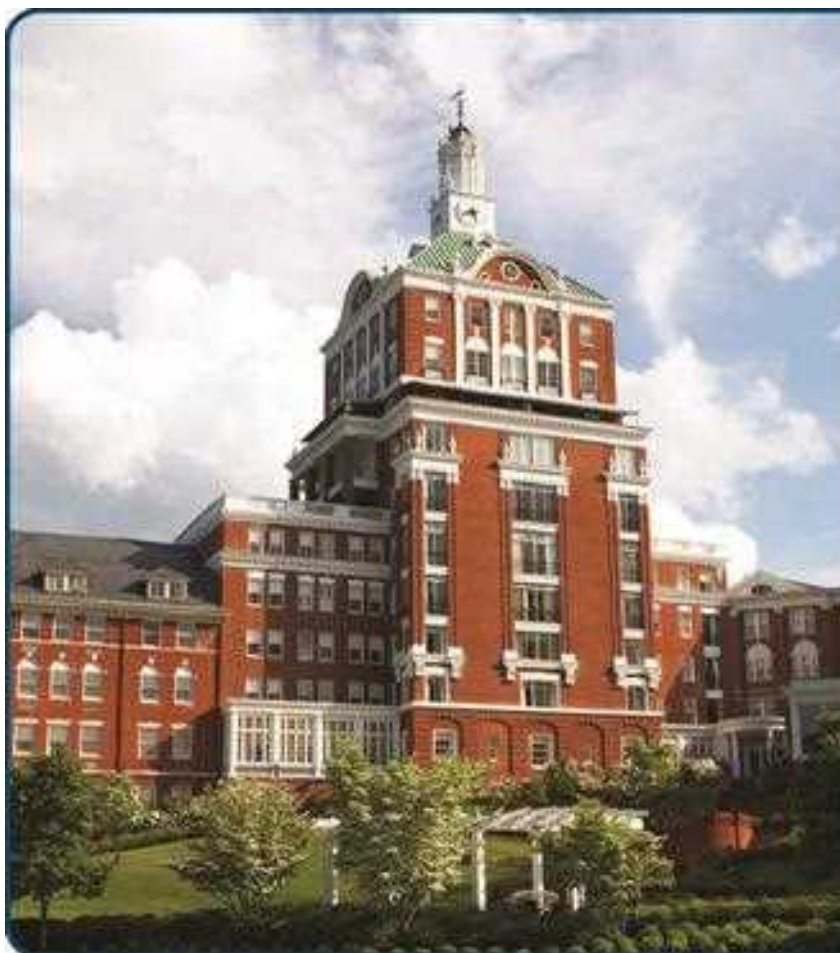
1. Air-entraining agents generally produce more air as the alkali content goes up. Where the alkali occurs in the cement can affect this, but to get a first approximation, we need to track the equivalent alkali content. If a change is noted in the mill certificate, air-entraining agent dosages may need adjustment. Above 0.60%, alkali changes of 0.1% can be significant. If the cement is quite low in alkali – say 0.30% – even a 0.05% alkali

change can be important. It is impossible to say that such variation will definitely have an effect, but just by tracking it you can judge whether adjustment is necessary.

2. Alkali can impact the reactivity of SCMs, especially Class F fly ash. Alkalis in the cement tend to raise the pH of the mix water. This attacks the reactive glasses in the ash and allows it to react chemically, improving the concrete strength and lowering the permeability, both of which can improve durability. A substantial decrease in alkali content may affect the strength performance or durability. Frequently, the optimum fly ash dosage will decrease as alkali content is reduced and there is less alkali available to attack the glass.
3. When alkali-silica reactivity of aggregates is a concern, changes need to be tracked carefully. Concretes using low-alkali cements can still suffer from this if the concrete has relatively high cement contents, depending on how reactive the aggregate is. Cement content times alkali content provides the “alkali loading” of the concrete.

Blaine fineness

Along with chemical reactivity of the cement composition, cement fineness controls early strength development. In fact, most Type III cements today are merely higher fineness versions of the regular Type I, II or V cement produced at the same plant.



Virginia is for Precasters

Virginia may be for lovers, but this fall it will also be a place where precasters love to be. It's the NPCA 48th Annual Convention at The Homestead in Hot Springs, Va., where you will find the top suppliers to the precast concrete industry, exceptional educational courses and great networking opportunities. But there will be more to love about it than that! Known for its championship golf courses and the largest hot springs in a Virginia hotel, The Homestead has an extensive list of resort activities that will keep you and your family members entertained with a wide range of possibilities before and after NPCA Convention activities.

Pulse rates will rise Oct. 9-12. Watch for your copy of the NPCA 48th Annual Convention magazine that will tell about all the events, and then register at precast.org/convention.

THE HOMESTEAD 2013
Hot Springs, Va.
Oct. 9-12, 2013

Early Bird Deadline
Sept. 11, 2013



In the search for strength, market forces have driven cement fineness higher for all types over the past several decades. The Blaine fineness (shown in the PHYSICAL table of the example) is determined by how fast air moves through a compacted pellet of cement, and thus provides an overall average measure of fineness.

Tracking the fineness can be useful in several ways:

1. As fineness increases, concrete water demand generally goes up and may need adjustment. Water-reducing admixture demand may follow the same pattern.
2. Air-entraining admixture demand will tend to go up with fineness, so adjustment may be necessary.
3. If a substantial difference is seen in fineness but the strengths have remained the same, it is indicative of some change in the cement production. It may be related to clinker chemistry, kiln operation, clinker cooling, finish mill operation, use of a secondary clinker source, sulfate content, or a completely different cement source.
4. Many things can change with fineness. For instance, the seven- to 28-day percentage strength gain experienced in the past may decrease as fineness increases, as more cement will have reacted within seven days. Stated another way, the early strength may be higher, but the ultimate strength may be reduced.

But it's not our intent here to explain why and how all these things could relate, or all possible results; the important point is that a change in cement fineness signals a potential change in concrete performance and needs to be understood. The best place to start is with a discussion with the cement supplier.

In the next issue of *Precast Inc.*, Part 2 of this article will cover cement compound analyses, such as C₃S and C₃A. ■

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¹ A copy of the example mill certificate, courtesy of ASTM International, is available on NPCA's website at precast.org/certificate-example. ASTM C150/C150M is available for purchase at precast.org/bookstore.

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Conquering Prescription Drug Abuse in the Workplace

An effective drug-abuse policy goes beyond simply stating that drug abuse will not be condoned.

BY ADELE VOLLBRECHT, RN, MS, CCM, MSCC, LNCC

Prescription drug abuse is a pervasive problem in the workplace which, consequently, means it is a challenge for employers. The misuse of any drug by workers, prescription or otherwise, can lead to lost productivity, absenteeism, injuries, fatalities, theft and low morale. It also can inflate health care, legal liability and workers' compensation costs. It's estimated that drug abuse costs U.S. employers \$81 billion annually.¹

Prescription drugs are the third most commonly abused category of drugs, behind alcohol and marijuana.² About 48 million people have abused prescription drugs in the United States, representing nearly 20% of the population.³ Misuse of

prescription medications is especially acute among young adults between the ages of 18 and 25.⁴ Canadian statistics fall in line very closely with American statistics.

People do not leave their substance abuse problems at the door upon entering the workplace. Once they're at work, the consequences of their actions may have a negative effect not only on them, but also on their co-workers and the overall workplace environment. This is especially true when caution and safety are absolute necessities, such as on an assembly line, at a construction site, or when operating heavy machinery or transporting others.

No business is immune from the effects of prescription

drug abuse. Even a small company may have someone on staff who is taking medications in a manner inconsistent with their intended use. Knowing this, all businesses should have comprehensive substance abuse policies in place. They should provide access to treatment for employees who abuse prescription drugs and involve professional case managers to ensure treatment approaches are effective and lasting.

Develop a comprehensive policy

Some substance abuse policies merely send the message that the misuse of prescription drugs, and any use of illicit drugs, is not condoned. They outline internal drug testing procedures and spell out potential penalties, but basically stop there.

While there is legal value in documenting and communicating the obvious, a strong policy needs to go a couple of steps further.

Employees need to know, for example, that they can seek assistance with an abuse problem confidentially without jeopardizing their jobs. In most workplaces, there's a stigma associated with asking for help. Even if they recognize the need for intervention, people fear that coming forward and being honest can ruin their careers. Effective substance abuse policies make it clear that the health and well-being of each employee is paramount, and that seeking help is preferable to hiding a problem until it endangers others. Policies also may spell out a company's leave-of-absence and return-to-work processes, should that become necessary.

Comprehensive policies could also incorporate information on the appropriate use of prescription medications into overall wellness and risk-prevention strategies. While prescriptions typically are accompanied by pages of information detailing proper use and possible side effects, that valuable information often is ignored. Few people educate themselves beyond the instructions on the bottle that explain dosage and frequency. By incorporating important usage information into substance abuse policies and supporting those policies with meaningful training, employers can reinforce the dangers of misusing prescription medicines.

Provide access to treatment

Encouraging employees to come forward with substance abuse concerns is an important first step, yet most supervisors and human resources representatives are ill-equipped to provide counseling or therapy. So, unless a company provides access to proven treatment options, simple acknowledgement may not lead to the most favorable results.

Employers should provide programs that place employees face to face with substance abuse experts. These include both wellness programs and employee assistance programs (EAPs)



**Build Your Own
DRUG POLICY**

The following two links will take you to resources you can use to build out a comprehensive drug policy:

Substance Abuse Program Administrators Association (SAPAA), at sapaa.com

StateDrugTestingLaws.com

with substance abuse coverage that provides screening, therapeutic counseling, and referrals for employees and, if necessary, family members. Many such programs have post-discharge maintenance planning for follow-up, since care and support following treatment may be required to help employees manage the chronic nature of many co-occurring disorders.⁵

Assistance and wellness programs cost money, but most employers find them to be smart investments.

The Gillette Co., for example, saw a 75% drop in in-patient substance abuse treatment costs after implementing an EAP.

When workers with substance abuse disorders get treatment, employers and employees alike benefit through:

- Improved employee health and lower total health care costs over time
- Less absenteeism
- Improved job performance
- Reduced costs associated with short- and long-term disability and workers' compensation
- Fewer accidents and less corporate liability

Involve case managers

Case managers offer a collaborative process to assess, plan, implement, coordinate and evaluate outcomes to meet the needs of a worker with prescription drug abuse issues. This can be accomplished by effective communication with the worker, the medical provider and the employer, as needed, to help the employee regain pre-injury status.

The primary focus is to assess medical treatment and identify case-specific problems by using evidence-based medical outcome criteria. This often results in a reduction of indemnity and medical exposures through cost-effective health care delivery assistance and coordination of an employee's rehabilitation.

Claim representatives and case managers work closely with caregivers so that injured employees have recovery plans tailored to their needs, the job and the employer's business.

Involvement of a case manager often can benefit both the employer and employee by actively involving both parties in the recovery process. This is especially important for employees, because they gain a sense of control over what is happening, develop an understanding of their recovery goals and proceed with greater confidence. Additional advantages of case management services often include the following:

- Expertise to educate an employee about his or her diagnosis and explain the caregiver's treatment plan at the employee's level of understanding
- Expertise to work in collaboration with all providers that may be involved within the overall treatment plan and, if needed, research and assess alternative treatment options

- Work with the employer to assist in the identification of transitional work opportunities based upon medical limitations and/or functional abilities as determined by the employee's caregiver
- Assist to promote cost-effective health care delivery, timely rehabilitation and optimal outcomes
- Problem-solving and analytical-assessment skills

Prior to nurse case-management involvement, employers should utilize preferred-provider networks that will assist with injury and pharmacy management. Insurance carriers may consider providing employers with access to network provider lists to support them before they need it. This can help employees locate qualified, preferred medical providers in their areas. Preferred providers deliver quality, cost-effective care and understand the importance of employees remaining on the job or returning to work as soon as it is appropriate.

Prescription drug abuse among employees is a costly and potentially dangerous challenge for companies. That's why employers of all sizes should be vigilant about creating and promoting strong substance abuse policies, providing access to treatment and utilizing case managers. Reputable insurance carriers offer excellent resources and expertise to employers

who need counsel in establishing broad-based programs to help employees in need.

Help is just a phone call away. ■

Adele Vollbrecht, RN, MS, CCM, MSCC, LNCC, is a Manager of Case Management at CNA Insurance. She has more than 12 years experience in Workers' Compensation Disability and Injury Management with in-depth knowledge of pharmacy trends and injury management practices.

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¹ National Council on Alcoholism and Drug Dependence, "Drugs and the Workplace"

² National Council on Alcoholism and Drug Dependence, "Drug FAQs/Facts"

³ National Council on Alcoholism and Drug Dependence, "Drug FAQs/Facts"

⁴ An Analysis of Worker Drug Use and Workplace Policies and Programs. Office of Applied Studies, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services. July 1997.

⁵ SAMHSA, CSAT, "Substance Abuse in Brief: Effective Treatment Saves Money," January 1999.



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Creating advancement opportunities for your best production employees isn't just an option – it's a necessity.

PART 2

Paving a Path from Production to Management

BY BRIDGET McCREA

Making the transition into a management role isn't easy for any employee. It can be particularly onerous for the production worker who has spent much of his or her time on the shop floor interacting with machines, equipment and product on a daily basis. Charged with completing specific tasks and meeting production goals, this shop floor employee isn't always a natural fit to serve as a team leader, manager or supervisor.

But that doesn't mean it can't happen. In fact, many precasters have successfully transitioned production employees into management roles, and many more will follow that same path in the future. In this second part of a two-part human resources article series, we'll look at how manufacturers can help pave a clearer, easier path from the shop floor to the management ranks for their workers.

Why hire outsiders?

To Gustavo Gonzalez, president of Safe-T At Work LLC in Fort Lauderdale, Fla., it just makes sense for precasters to tap into their trained, knowledgeable pool of production personnel when filling management positions. After all, these folks are

already trained, loyal and in tune with the corporate culture. They understand the ins and outs of the company's operations and have a good handle on its inner workings. Why start from scratch by hiring outsiders?

"Why let a good prospect go to waste when you have already invested a lot of time and money in his or her training?" Gonzalez asks, noting that such promotions are often two-way streets that benefit both employer and employee. "Sometimes employees think that they are in dead-end jobs with no opportunities for advancement. When you promote from within, it sends a message to employees to improve themselves because an opportunity may be present at any given time."

Implementing internal promotions from the shop floor and into management roles also sends the message that the precaster values its workers, and not just the equipment and machinery that churns out its products. "Most employers fail to realize that equipment, molds and machinery are not the biggest assets of a company – employees are," says Gonzalez. "Big plants can have all of the automated equipment in the world, but for the most part labor is still a way of life."

That's not to say every production employee is a good

candidate for management. Some lack the necessary personal and people skills, says Gonzalez, while others simply aren't interested in taking on the added responsibilities of leading a team of people. Having to draw the fine line between friendship (with shop floor "buddies," for example) and authority can be another obstacle to success for someone who has spent years on the production floor. "I used to tell my friends who worked for me, 'In here I am the boss, and outside we are friends,'" remarks Gonzalez.

Assuming that the "best" production employee will naturally make the "best" manager is another area where precasters face hurdles when promoting from the shop floor and into the management ranks. "There has always been an unspoken theory in management circles that your best production employee should be the one elevated from the ranks," Gonzalez points out. "This is not necessarily true, because there is no correlation between production skills and interpersonal skills. Just because someone is excellent at working on the plant floor does not mean that he or she can handle a crisis."

Instilling responsibility and accountability

It's no secret that management roles bring with them more responsibility, accountability and personnel interaction than the typical production position requires. For these reasons, it's critical that precasters take the time to select the right candidates rather than spending time and money training and cultivating someone who simply isn't cut out for a management role.

Greg Chase, president of Chase Consulting in West Harwich, Mass., says precasters should start the process by looking at their current shop floor "stars," who are often ranked accordingly: A+ players, A players, B players, and so forth. "This is the top echelon, and it's comprised of employees who need to be challenged," says Chase. "They should be given special opportunities that keep them interested in staying and working in a precast concrete plant."

Assuming that those star players are happy in their current roles and uninterested in advancing into other jobs and/or departments can be a costly mistake for companies, particularly in today's expanding job market. Leave an ambitious production employee hanging, for example, and you could lose him or her to your nearest competitor, or even to an entirely different industry.

Precasters who want to avoid this problem should work to grow well-rounded employees who are cognizant of their growth opportunities. "Come up with a plan to develop those stars beyond just being one of the best hourly workers in the plant," Chase advises. "Delegate different duties that help employees grow and become more well-rounded, and to eventually take on a management role if they so wish."

Chase says adopting this mindset of advancement isn't always easy for precast manufacturers – particularly those that are used to the "bucket" approach to job duties (office handles office work, managers lead, and shop floor employees make the product). Precasters who effectively bridge the gaps between those buckets are the ones who will come out winners when it

comes time to fill open and/or new management positions.

"A lot of manufacturers don't even realize that there's a bridge that needs to be crossed from time to time," says Chase. "The key is to stay alert and always ready to develop your star players. Otherwise they are going to go work someplace else where they are more challenged and where they can reap more rewards."

Leaders wanted

It's not enough for a precaster to talk about cultivating production workers into management; there are also a few key steps that need to be taken to ensure the clearest path possible has been paved for the transition to happen in a seamless manner. Chase says increasing and improving communication across the entire workforce is a good first step for any manufacturer. "Listen to your people and you'll start to understand them better," says Chase. "You'll not only learn what makes them tick, but you'll also be able to come to good promotional paths for them."

Gonzalez says precasters should also learn to recognize employees who truly have leadership characteristics. "Knowledge can be acquired," he says, "but leadership has to be earned." So what are the characteristics that a precaster should be seeking? The Society for Human Resource Management (SHRM) outlines the following leadership skills

THE MANAGEMENT MATRIX

In this matrix, Gustavo Gonzalez breaks down the operations involved in a precast cycle. For each cycle, he suggests assigning a value from one to three based on the individual employee's knowledge. Here's an example using form cleaning and leadership cycles:

FORM CLEANING	
Level 1	1. Cleans forms with steel wool and learns the proper oiling procedures
Level 2	1. Recognizes the importance of clean forms 2. Keeps forms clean without being told 3. Keeps forms not in use clean, oiled and closed
Level 3	1. Able to teach other employees the proper procedures in form cleaning
LEADERSHIP	
Level 1	1. Able to ensure that the plant is operated safely 2. Brings problems to management's attention
Level 2	1. Understands and follows the daily fundamentals 2. Advises other employees in these concepts
Level 3	1. Able to lead and coach other individuals 2. Leads by example 3. Self motivated individual

and behaviors that contribute to superior performance:

LEADING THE ORGANIZATION:

- Managing change
- Solving problems and making decisions
- Managing politics and influencing others
- Taking risks and innovating
- Setting vision and strategy
- Managing the work
- Enhancing business skills and knowledge
- Understanding and navigating the organization

LEADING THE SELF:

- Demonstrating ethics and integrity
- Displaying drive and purpose
- Exhibiting leadership stature
- Increasing his or her capacity to learn
- Managing himself or herself
- Increasing self awareness
- Developing adaptability

LEADING OTHERS:

- Communicating effectively
- Developing others
- Valuing diversity and difference

- Building and maintaining relationships
- Managing effective teams and work groups

“Management should be aware of the people who possess the character, responsibility, accountability and motivation to step forward,” says Gonzalez. “It’s really about knowing who the leader is and who is not.”

Once those individuals have been identified, the next step is to set up a system that will be used to evaluate candidates in an objective and fair way. Gonzalez says this can be done based on observations, past history, behavior patterns or other factors. “The best method is to create a matrix and then list the desired traits and knowledge required for the job,” says Gonzalez. “Then, rate the candidates on it.” (See the sidebar “The Management Matrix.”)

Managing uncertainty

Gonzalez admits that one of the biggest challenges during the manager selection and rating exercise is that the precaster really doesn’t know with certainty whether it has picked the right candidate. “If the answer is no, then management is left with the unpleasant task of deciding if the person should go back to his previous job,” Gonzalez explains. “This could have a counter-effect among employees and with the individual worker.” One way to circumvent this issue is by being clear upfront with the candidate and letting him know what the alternatives will be if the transition doesn’t work out within a certain period of time.

Another obstacle to overcome is the transition period itself. “It should be a gradual change in which the individual is able to obtain new skills – but not have them forced upon him,” says Gonzalez, who sees the use of titles like “assistant manager” as effective ways to gradually transition production workers into leadership roles.

Finally, he says having clear job descriptions and expectations spelled out upfront can help ensure a smooth transition period for both the individual and the company. “A well-prepared job description is an important requirement that lets the candidate know what his or her line of authority and accountability is,” says Gonzalez.

And don’t forget that an effective shop floor-to-management promotion takes time and patience. “There’s no silver bullet, and it doesn’t happen overnight,” Chase says. “In fact, sometimes it takes a two-steps-forward and one-step-back effort to get it going in the right direction.” In the end, Chase says precast manufacturers that put the time and energy into cultivating managers from the production ranks will benefit from the effort.

“It could take a few months to a year to develop an excellent plant laborer into a manager,” says Chase, “but the payoff will be significant when you wind up with an excellent new team manager who is well-versed in some of the company’s most critical operational areas.” ■

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

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Strength in Unity

A new partnership between the U.S. Army Reserve and NPCA stands to strengthen both for the future.

BY KIRK STELSEL

When you hire an employee at your business, what are the “must-haves” that you look for in a candidate? Trade skills can be learned and relationships can be built, but attributes such as reliability, confidence, maturity and leadership are hard to teach. These are desirable qualities for any precaster, whether for a position in production, sales or management.

In an effort to provide NPCA members with a pool of candidates who possess these core characteristics, the association has embraced a public/private partnership with the U.S. Army Reserve (AR). The intent is to benefit men and women who have selflessly given of themselves in defense of our country, while strengthening the precast concrete industry

workforce and promoting member understanding of the value of citizen soldiers.

Signed, sealed, delivered

In April, a delegation of NPCA representatives traveled to Fort Belvoir, Va., for the signing of a partnership agreement between the association and the AR. Attending the signing on behalf of NPCA were Chairman of the Board Mimi Rainero Coles, President Ty Gable, and John Lendrum, president of Norwalk Concrete Industries and Army Reserve Ambassador to Ohio.

At the signing, Brig. Gen. Tammy Smith, director, Human Capital Core Enterprise, Office of the Chief Army Reserve, thanked NPCA for its commitment to AR Soldiers. She also spoke to a personal connection with precast concrete and the role it played in the safety of soldiers during her service in Afghanistan.

“The Army Reserve’s partnership with the National Precast Concrete Association helps our soldiers to optimize their value to the American workforce when supported by employers that truly recognize and embrace their leadership and technical skills,” said Smith. “This partnership helps the employee strike a productive balance between their military and civilian careers.”

The signing of the partnership agreement came on the heels of a very successful exhibit by the AR at *The Precast Show 2013* in Indianapolis, where a representative spoke with attendees about the benefits of hiring soldiers and answered questions. The AR will also have a booth at *The Precast Show 2014* in Houston.

RICHARD ALVARADO, RIGHT, HAS PLAYED AN INCREASINGLY IMPORTANT ROLE AT WESTERN PRECAST, EL PASO, TEXAS, THANKS TO HIS LEADERSHIP SKILLS HE LEARNED SERVING IN THE U.S. ARMY.



BRIG. GEN. TAMMY SMITH, MIMI RAINERO COLES, TY GABLE AND JOHN LENDRUM TRAVELED TO FORT BELVOIR, VA., TO SIGN A PARTNERSHIP AGREEMENT BETWEEN NPCA AND THE U.S. ARMY RESERVE.

What can a soldier bring to your business?

When it comes to employment in the private sector, AR soldiers bring a unique set of credentials. Through their military experience, they offer employers a blend of leadership and technical skills thanks to training that can't be replicated anywhere else.

Perhaps nobody in the NPCA membership has more experience with the AR and the role it plays in the public and private sectors than Lendrum, a retired Army colonel who spent many years in the AR. Fostering the partnership has been a labor of love for Lendrum, who sees the benefits in the soldiers he has hired, including maturity, confidence and leadership skills.

"Soldiers are trained to be problem solvers and think through a situation under stress, then execute once a decision is made," he said. "They have basic first aid, safety and human resources training, and often military-trained special skills that translate directly to the job. They are technologically savvy, normally multitask well and are not afraid to ask about what they are not familiar with."

As a business owner, Lendrum has to make some time concessions for employees to attend training or deployment, but has found it to be manageable and not much different than normal vacation schedules. There are protections built in for employers whose employees are facing multiple assignments in a short period of time, and service-related medical needs are also not borne by private insurance plans. In addition, there are some areas where tax incentives and grants for hiring soldiers may be available.

"One way NPCA members can help promote national defense and our security is through full-time employment of Army Reserve soldiers and family members," he said. "It's not just big military areas but small, local communities that can benefit from this partnership."

Exhibit A: A perfect match in El Paso

At NPCA-member company Western Precast in El Paso, Texas, secretary-treasurer Leo Feuerstein found out just how well a veteran of the armed forces could thrive and grow in a precast plant.

Richard Alvarado is a U.S. Army veteran who served in Iraq. During his five years in the military, he spent time training with some of the most elite forces in the Army including the 82nd Airborne's 504th Parachute Infantry Regiment and the Army Rangers. Looking to fill time between the end of his Army career and what he hoped would be the start of a career in law enforcement, Alvarado stopped by Feuerstein's plant simply because he happened to be passing by one day.

What Feuerstein quickly realized was that Alvarado had all the skills and qualities needed to play an integral role at Western Precast. As eager as Alvarado was to learn and grow – he is a self-described type A personality who loves to "push himself past fear or any other obstacle" – Feuerstein was equally eager

HOW CAN YOU HIRE A CITIZEN SOLDIER?

The AR's Employer Partnership Office (EPO) works actively to ensure that returning soldiers and veterans find gainful employment, and that those at home are able to maintain their careers while they serve. It is critical to the AR's success and value.

In December 2011, the Hero2Hired (H2H) program was launched as a comprehensive employment program for reservists. The mission is to "simplify the job search while reducing the number of unemployed Reserve Component Service members."

In order to connect employers with reservists, the website, [H2H.jobs](#), was launched to simplify the process. After entering some basic information about your company, NPCA members can easily post open positions that will be seen by potential applicants across the country. In addition to posting job openings, companies can search for candidates and invite them to apply and participate in hiring events – all free of charge.

On the Hero2Hired website, NPCA members can create an online presence using employer marketing tools, send digital invitations to potential candidates, get automatic notifications of applications, and find candidates using a powerful search function. In addition, the EPO will provide support to NPCA members and opportunities for members to participate in hiring events. The EPO will also provide information to AR Soldiers about NPCA employment opportunities and provide access to EPO Strategic Subject Matter Experts.

to pile on new responsibilities and challenges. Thanks to his training, Alvarado felt ready to attempt anything.

"I knew nothing of precast when I first arrived, but the mentality that I carried lends itself perfectly to a new career," Alvarado said. "I'll take anything on with a smile, and I'll take my lumps from my mistakes, learn from them and move on. I started as dispatch, but I wanted to learn everything I could – sales, shipping, production, drafting, estimating, quality control. So I soaked in everything I could as quickly as possible.

"Success in my opinion requires the same need to avoid complacency both in the military and in a precast plant."

From an owner's perspective, Feuerstein found in Alvarado a strict adherence to a high moral code of conduct and a strong commitment to following through on every project.

"It appears to me that the military experience Richard obtained strengthened his desire to succeed and be a true leader," Feuerstein said. "This type of experience is training and value almost impossible to receive in ordinary civilian life. I would always recommend that you do your due diligence in hiring, but if you have the chance to hire an individual that has served our country with pride and honor, why wouldn't you?" ■

Kirk Stelsel is NPCA's director of Communication.

We'd like to hear about your experiences with Army Reserve Soldiers. If you currently employ a reservist, email us at npc@precast.org.



Fixed and Portable Ladder Safety

BY EVAN GURLEY

Working on and around ladders is hazardous by nature, and using them improperly makes them an even riskier prospect. A glance at Occupational Safety & Health Administration (OSHA) stats tells us there are 24,882 injuries and as many as 36 fatalities per year due to falls on stairways and ladders used in the construction industry. In most of these cases, the ladders were either used incorrectly or were defective in some way, or both.

All precast plants use fixed and portable ladders, yet not all plants adhere to safe ladder practices. Employers are responsible for training their employees to recognize and minimize hazards related to ladders and stairways. Employers must ensure that each employee is trained by a competent person in accordance with applicable safety and health standards.

Here are some pointers that apply to all fixed and portable ladders, including those built at the job site:

- Maintain ladders free of oil, grease and other slipping hazards.
- Do not load ladders beyond their maximum intended load nor beyond their manufacturer's rated capacity (a safety factor of 4 is standard).
- Use ladders only for their designed purpose.
- Use ladders only on stable and level surfaces unless secured to prevent accidental movement.
- Do not use ladders on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental movement.
- Keep areas clear around the top and bottom of ladders.
- Do not move, shift or extend ladders while in use.
- Use ladders equipped with nonconductive side rails if the worker or the ladder could contact exposed energized electrical equipment.
- Face the ladder when moving up or down.
- Use at least one hand to grasp the ladder when climbing.
- Do not carry objects or loads.
- Rungs, cleats and steps must be spaced at least 10 in. apart but no more than 14 in. apart.

- Ladders must not be tied or fastened together to create longer sections unless they are specifically designed for such use.
- Do not use single-rail ladders.
- Use extension ladders at an angle where the horizontal distance from the top support to the foot of the ladder is approximately one-fourth the working length of the ladder.

When using specific types of ladders, follow these practices:

STEPLADDERS

- Do not use the top or top step as a step.
- Do not use cross bracing on the rear section for climbing unless they are designed for this.
- Metal spreader or locking devices must be provided to hold the front and back sections in an open position.

PORTABLE LADDERS

- The clear distance between side rails must be at least 11.5 in.
- Metal rungs and steps must be corrugated, knurled, dimpled, coated with skid resistant material or treated to minimize slipping.
- When used to access an upper landing surface, the side rails must extend at least 3 ft above the upper landing surface.
- When a 3-ft extension is not possible, the ladder must be secured and have a grasping device such as a grab rail to assist workers in mounting and dismounting the ladder.

FIXED LADDERS

- If the total length of the climb is at least 24 ft, the ladder must be equipped with safety devices.
- Individual rung/step ladders must extend at least 42 in. above an access level or landing platform. This can either be a continuation of the ladder as horizontal grab bars or vertical grab bars with the same lateral spacing as the ladder's legs.
- Each step or rung must be able to support a load of at least 250 lbs applied in the middle of the step or rung.
- Rungs must be shaped to prevent slipping.
- Clearance between fixed ladder rungs, cleats and steps or any obstruction behind the ladder must be at least 7 in.
- The pitch must not be greater than 90 degrees from horizontal.

DEFECTIVE LADDERS

- Fixed and portable ladders with structural defects, such as broken or missing rungs, must immediately be marked as defective or tagged with "Do Not Use" or similar language and withdrawn from service until repaired.
- Repairs must restore the ladder to its original design criteria before using it.

For more information on ladder safety, consult OSHA 29 CFR 1926.1050 through 1060 or applicable Canadian standards. ■

Evan Gurley is a technical services engineer with NPCA

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A few miles south of the Village of Bluffton we meet the Akin family at Bluffton Precast Concrete and learn how they succeed as second-generation owners.

"Some said we wouldn't hear the 'S' word {subdivision} again - not in our lifetime. But it's beginning."

HOW THE AKIN FAMILY **BEAT** *the* **ODDS**

BLUFFTON PRECAST CONCRETE CO.

Story and photos by Sue McCraven

A hasty visit from John Dillinger made this small Ohio community notable when he lifted \$6,000 in a 1933 bank heist. Today, families take evening strolls here along Main Street, just a few blocks from the Mennonite-founded Bluffton University with its oddly quiet campus. About halfway between Findlay and Lima sits this idyllic Village of Bluffton surrounded by fields of soybeans, corn and wheat.

It's a place where a visitor feels welcome at the local pub or in the cozy coffee house across the street. It's where, a few miles south, Susie Miller (formerly Akin) greets you with a big smile while her miniature schnauzer, Riley, sniffs out your recent whereabouts. You've arrived at the family-run Bluffton Precast Concrete Company (BPC), begun by a risk-taker and managed by a second generation of Akins.

SURPRISE IN A MUSCLE CAR

Running lean since the housing crash, all employees here wear multiple hats as they cope with an unexpected uptick in business. Dropping from 50 employees during the "gravy years" to 28 hard-pressed workers today, David Akin, BPC president, understands only too well the recession's brutal effects on the precast concrete industry.

Like many NPCA precasters, BPC is a family-run operation. Jim Akin started the business in 1968 – back when muscle cars like the Pontiac GTO and Ford Mustang were king.

Speaking of muscle cars, Jim rolls into the yard along with his wife, Tillie, not in a stodgy Lincoln Town Car but, surprisingly, in a black Dodge Charger – and Jim is full of surprises (see the sidebar "Where Angels Fear to Tread"). Three of Jim and Tillie's four children, David, Michael and their youngest, Susie, are now at the helm, while remaining daughter Betsy is represented by her husband, Jim Stacy, the plant manager.

FREAKY FEBRUARY & CLAY PIGEONS

"February was weird for us, because this past winter was busier than our last few summer seasons," says David. "There's lots of activity in Dayton and INDOT work in mid and northwest Indiana, also projects in West Virginia, Cincinnati and Indy." Much of the municipal work comes from EPA-mandated CSO work.

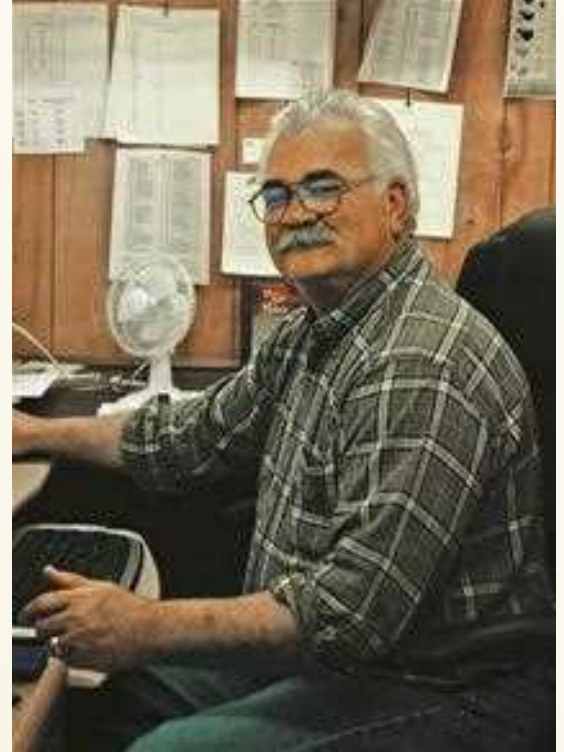
"We've never been this busy in winter – it's good news, but a tall order for our reduced staff," adds David. Since the collapse of the "gravy years," when subdivisions popped up everywhere, BPC's net profit margin has taken a dive. The slowdown meant letting people go and enduring many weeks without a paycheck for himself.

BPC cranks out a steady stream of burial vaults, manholes and utility vaults, mostly custom orders. Recently, retaining wall blocks and MSE wall panels were

SUSIE
AKIN-MILLER
AND RILEY
WELCOME
VISITORS



ng to come back slowly now, and I welcome it with open arms!" – DAVID AKIN, BPC president



TOP LEFT: JERMEY CAMERON PREPARES FORMS FOR THE EASTERN HELLBENDER SALAMANDER HUT.

TOP RIGHT: DAVID AKIN, PRESIDENT, SAYS HIS REDUCED STAFF HAS RECENTLY BECOME VERY BUSY DUE TO A WELCOME INCREASE IN WORK.

BOTTOM LEFT: LUKE BABCOCK PUTS THE FINISHING TOUCHES ON A VAULT LID.

added to the product line, and a very unusual custom project was a "love nest" for the endangered Eastern Hellbender Salamander.¹ As one of David's most enjoyable challenges, he says, "We're proud to be helping the environment."

Eight years ago, BPC invested \$1.5 million in a computer-controlled, 2-yd Skako mixer, batch plant, cement silo and indoor aggregate storage – all contained in a new 10,000-sq-ft

building. Risking this unprecedented amount of capital produced large bank payments and stress levels. Fortunately, David's grandfather passed along a way to handle pressure.

An avid gun collector, David loved shooting as a boy when his granddad taught him to be a marksman. Blasting clay pigeons out of the sky, often 25 for 25, helps David release steam. "With so much on my plate and worrying about the future of our business, skeet and sporting clay shooting is my main stress reliever," he says.

ON THE ROAD AGAIN ...

In a trailer adjacent to the main office, David checks two computer screens and says, "We've been a distributor-driven company for over 20 years now – no salesmen." David maintains strong relationships with distributors by meeting with them often. Today, BPC serves five states: Ohio, Michigan, Kentucky, West Virginia and Indiana. This means long days on the road that put more than 1,000 miles per week on his truck. On the road, he stops at construction sites to banter with contractors, a practice that has led to jobs. "I'm the sales guy here," he says, "because that's what I was good at before coming to BPC 22 years ago, and it was just a natural that I bring that ability to our family business."

Before joining BPC, David and Michael worked in other careers. With a new business/marketing degree, David began his career as a Marathon Oil Corp. marketing rep. After a short stint there, he found himself unemployed and living with his parents. "I took advantage of dad's cemetery industry connections and landed a job with Gorham Bronze, selling grave memorials," says David. Then he began his own manufacturers' rep business in the cemetery supply industry, BPC included.

In 1990, "My father offered me an opportunity to join BPC," says David. Newly married, he and his wife, Julie, decided to move from Columbus to Lima. "Things were pretty tough at

"Anymore, this business is hard to predict. We used to have a backlog and we could project out. Now,

first. I took quite a cut in pay," he says, "and the move was a culture shock."

Savings helped, and David saw huge potential to grow BPC. "I had been a diligent saver, and I committed myself to BPC. Any initial sacrifices for Julie and me certainly played out well in the long run."

A JACK OF ALL TRADES

Michael, BPC vice president, likewise paid his dues as he plied his economics degree in banking. He was conflicted, however, over pressure to sell one-year adjustable mortgages to young couples when he knew they were unlikely to afford the bank's planned rate increases.

Like his brother, Michael came to Bluffton in 1990 during BPC's heyday when it pulled in healthy profits. Today, Michael is found on the road repairing installed manholes or filling in as a driver. His dedication to BPC is evident in his willingness to do whatever it takes. "With a bad knee, repairs aren't easy, but we're short-staffed and we all do what we have to do to keep things running," he says. Michael is skilled at most jobs, from operating cranes to cutting steel. "The majority of my time is spent on take-offs, getting the plans ready for production, and I enjoy design problems."

Some drawings that Michael gets are not feasible. "You can't put a 36-in. pipe in a 48-in. structure," he says. "We rarely build right from prints, and it has gotten worse over the years." He theorizes that young engineers lack the field experience behind well-drawn plans.

Regarding the economy, Michael says, "Anymore, this business is hard to predict. We used to have a backlog and we could project out. Now, competition is fierce and we travel farther than ever to get work. We're busy and want to hire more people, but how long will the good times last?"

After the major batch plant investment, BPC purchased additional forms. "We're able to do many different things more efficiently," says Michael. "We're not stuck in one market."

ONE MAN, FOUR HARDHATS

Ben Wittenmyer was a surveyor, a virtual one-man GPS surveying operation. He took off cross-country, even working in Honduras, mapping pipelines for Marathon Ashland Petroleum LLC. "The year I got married, I was home 33 days, so I started a flooring business," says Ben. "But after four years, driving 120 miles a day gets old. In '06, my mom met Susie's mom at Bible study. Mrs. Akin said her son, Michael, was looking for someone with engineering and computer skills – plus, Bluffton was only a 12-mile drive."

Ben not only took over IT from Jim Stacy and became BPC's resident engineering and design guru, but is also the safety and QC guy. Most of Ben's time is spent on project design using Stack-It, finessing engineering plans into workable prints for BPC's production.

Ben loves one-off designs (check out the \$1.3 million Ferrari on his screen saver in the photo), but safety is his toughest challenge. "Safety is the hardest part of this

BEN WITTENMYER IS A BIG FAN OF ONE-OFF DESIGNS - PARTICULARLY FERRARIS.



WHERE ANGELS FEAR TO TREAD:

Jim and Tillie Akin

What do you think of a math major who tries his luck in purchasing for Dow Chemical, travels as a salesman for Northern Fibre Products, and reps for National Lime & Stone Quarries? Then he travels to Seattle as an aeronautical engineer for Westinghouse before managing Hillcrest Golf Course where his partners know him as an excellent golfer. Leaving the greens, he decides to learn – from scratch – how to make septic tanks. He builds this mosaic career while his wife, confident in her fearless husband, raises their four small children.

Meet Jim and Tillie Akin, married 55 years, who beam with pride over their progeny who run the company that Jim established in 1968 as Bluffton

Septic Tank Co. With early success in tank sales, Jim and his longtime right-hand man, Dwight Rader, expanded to burial vaults and manholes. "Dwight started out at 16, cutting rebar after school, and never had another job until his retirement in 2006!" says David.

"Jim always wanted to be on his own," says Tillie, "and people knew they could count on his honesty." When asked if he was afraid to jump into the unknown, Jim says, "Sure, I was scared." But he jumped in nonetheless. Is Jim Akin a case of "Fools rush in where angels fear to tread," or "Fortune favors the brave"? Now there's an easy question.



competition is fierce and we travel farther than ever to get work." – MICHAEL AKIN, BPC vice president

job,” says Ben. “There’s so much involved with OSHA rules and regs; you have to focus 100% or you’ll miss something.” For example, the plant is cramped for space and some aisles are narrow, so Ben has to remind the guys not to set things in doorways or rebar in aisles. “We all need to stay in a safety mindset,” he says.

STEVE PALTE SR. PREPARES A CIRCULAR WIRE CAGE.



FARMER’S WORK ETHIC & HIRING PROBLEMS

Jim Stacy, plant manager, began as safety director and IT manager, then got his CDL along the way to help fill in as a driver. “I’ve been here 18 years, starting when we were still in the septic tank business,” says Stacy. Raised on his grandfather’s 900-acre farm, he knows hard work, can repair most machinery and still drives a tractor at home.


Prior to coming to Bluffton, Stacy spent 18 years at Kodak in Findlay, expecting to retire from the company like his dad. “Kodak got run over by the foreign digital cameras,” says Stacy. Like Ben, he came to BPC with essential experience (machine operator, shipping/receiving and systems manager).

“I supervised 300 people at Kodak – mostly women,” he says, laughing about the change at BPC, where he supervises all men.

Stacy also does the hiring and, as he represents the epitome of the American farmer’s work ethic, says, “It’s hard finding people today who are willing to work hard and stick with it.” Finding good people is always a challenge. “A new guy will work two hours, take a break and leave. So I look for a farming background – and 80 to 90% of them work out. They understand a day’s work and aren’t afraid to get dirty.”





STEVE STRACK GETS A VEHICLE READY FOR THE ROAD AGAIN.



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“Five years ago it was a major slowdown, but now it’s a fire drill every day,” says Stacy, adding that he thinks it’s the result of pent-up demand. BPC’s product line, which now includes custom pieces, and customers’ demands have really changed, he says. “Before, you’d get a job and have three or four weeks to produce and ship it. Now, most customers want it within a week.”

Contractors scream and priorities change daily, and it’s almost impossible to cater to these demands, says Stacy. “You either do it on time or they go elsewhere. That’s the biggest change I see in this business. It puts stress on everybody.”

Dispatch logistics and schedule changes are Stacy’s biggest headaches. “We have four drivers on staff and a couple of backups. We own five semis and a straight truck – and they’re busy all the time,” he says. A driver may take a load to Dayton and return to find another load waiting for him to take to Toledo.

“We reminisce about the plethora of subdivisions and all the underground products that they entail, and how almost all that work just dried up,” says David. “But we’re hearing the ‘S’ word again,” referring to residential subdivision construction.

Six years ago, there was such a large inventory of finished

“You either do it on time or they go elsewhere. That’s the biggest change I see in this business. It puts

homes that, after the economy fell, these houses stood empty on weedy lots. "Some said we wouldn't hear the 'S' word again – not in our lifetime," adds David. "But it's beginning to come back slowly now, and I welcome it with open arms!"

ONLY ONE IN THREE FAMILY BUSINESSES SURVIVE

Just 30% of family-run businesses survive to the second generation, according to the Small Business Administration. Even so, family-run companies have impressive stats:

- 90% of all North American businesses are family run.
- Family businesses account for 62% of all U.S. employment.
- 70% of family business owners want to pass the reins to their children.
- Second-generation ownership is successful only about 30% of the time.
- Third-generation family businesses survive just 10% of the time.

What's behind two generations of Akin family ownership at BPC?

The Akin family and the production crew can't hide their secrets for success. Sure, the Akins had their share of sibling head-butting. But down the road from the comfortable Village of Bluffton we find the result of their family dynamic: a warm welcome, a wagging tail, practical jokesters and a farmer's work ethic. We meet dedicated people who came to BPC with excellent skills, and who wear many hats without complaint. We encounter a tight-knit family and two generations of natural-born salesmen. We talk with a fearless man and his family who all show satisfaction and gratitude for the blessing of an enduring family enterprise. These are BPC's secrets of success. Welcome to Bluffton. ■

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

¹ See the article "Saving the Eastern Hellbender Salamander" in the March-April 2013 issue of *Precast Inc.*, and in the Summer 2013 issue of *Precast Solutions*.

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stress on everybody.” – JIM STACY, BPC plant manager

Between Concrete and a Hard Place

Understanding project-specific standards and specifications and your ability to affect them.

BY ERIC WATHEN, P.E.



One of the most important questions a precaster can ask is, “Can I actually make this product to meet project specifications?” Many times, contractors request pricing at the last moment before a project is let, and they don’t provide all of the necessary project information to the producer. They may provide a couple of plan sheets or maybe just some quantities, and then ask for a price.

As a precaster, you may think of it as simply providing a few structures, a couple hundred feet of pipe or a short retaining wall. So you get the job and start the submittal process, and everything is fine until the submittal comes back stamped “REJECTED!” Then you find out that the structures require a special additive that will more than double your costs, the pipe requires a special design with a joint you can’t produce, or the wall you quoted doesn’t meet the structural requirements of the project. Now what? Now you are stuck between concrete and a hard place.

Fully understanding the project plans, specifications and expectations of the owner are key to your success. When assessing the project, you will need to look at four things: standards, specifications, special provisions and plan documents.

- **Standards.** A technical standard is an established norm or requirement with regard to technical systems. It is usually a formal document that establishes uniform engineering or technical criteria, methods, processes and practices. Examples of technical standards are ASTM, ASCE, ACI or AASHTO. They are national or international requirements that set minimum benchmarks to ensure a product or process is uniform no matter where it is built or who is building it. Just because a product meets a standard does not mean it is a superior product or process. It simply means a group of people got together and agreed to certain minimums that it must meet. An example of this is Orangeburg Pipe. Never heard of it? Do a Google search.
- **Specifications.** A specification is an explicit set of requirements to be satisfied by a material, design, product or service. Specifications are generally developed and implemented by agencies or manufacturers to ensure that products or processes meet local requirements. For example, all state DOTs must follow AASHTO standards at a minimum, but each state DOT has its own book of specifications that all construction projects must meet. These specifications vary from state to state to meet the desires and needs of

the individual areas they serve, and they are uniform across the state they serve. Many specifications are performance based and specific to local conditions and environments. Specifications most often reference standards as minimum requirements, and then build upon them to ensure local expectations are met.

- Special provisions. Special provisions are project-specific. They are part of the bid package and are usually developed and included by the design engineer or architect. Special provisions build upon or change specifications. A city's specifications may allow for many different types of materials for sewer pipe. They may determine that on a specific project, reinforced concrete pipe is the only allowable material to be used. In this instance, the contractor and pipe manufacturer would have to follow the standards, specifications and special provisions.
- Plan documents. Project plans are the drawings, schematics and details used to construct the project. Plans not only show locations, dimensions and details, but often they also contain notes and more detailed directions for individual product construction and manufacturing. Plans generally are what most precasters look to when they quote and build their products.

The four sections above and the terms and conditions should be consulted for each project you bid or quote to ensure you can actually manufacture the product. Generally, there is a hierarchy for each of the documents: Plans supersede special provisions, which supersede specifications, which supersede standards. This level of understanding is important, because sometimes the sections contain conflicting information. Remember, if you can't get a question answered during the bidding process, at least understand and be prepared to defend the document that served as a basis for your bid.

Some of the most frustrating instances of working your way through the plans and specifications can be when the design engineer has copied one section from a previous project, while the specification or special provision is relevant to the current project. Some specifiers, believe it or not, may not have read or do not understand the standards they reference. They reference them because their firm has always referenced them. Here are some examples of this:

- An engineer requires vacuum testing of storm manholes with under-drains connected to them. If under-drains are connected to the structure, it is designed to take on ground water. The purpose of a vacuum test is to make sure that a structure is leak-free and won't allow any ground water in.
- PVC joint specifications, testing and acceptance requirements are applied to RCP.
- Concrete for underground pipe and manhole structures is required to meet the architectural specification, which is usually much different than that of a utility structure spec.

It is important for the designer to understand that just changing a standard or specification for the same product can

greatly affect the availability and price. The more specialized the project is, the more careful the reviewer should be.

Why is all of this important and why should you care? Risk and liability! If you quote or bid a project, the engineer and owner expect that you can make the product to their requirements. If they specify an ASTM C361 confined groove joint, that is what they expect. If you don't have the equipment to produce it, you will all want to know that right up front. This is why it is important that all of your sales force and estimators understand your production capabilities.

Get proactive

What are some pre-emptive ways to ensure that your local owners and engineers are specifying to your capabilities? Get to know them first. Provide a Lunch and Learn to every engineer you can, talking about precast and your capabilities. Stay in contact with the design community and ask about upcoming projects. Offer your expertise to review their plans and specifications before they let the bid.

Getting to know your local engineering community is the most proactive thing you can do to affect your business. How do you go about this? Attend your local American Society of Civil Engineers (ASCE) monthly meetings. Get involved with local professional associations like IWEA or AIA. Make sure everyone at these events knows what you do and sees you as a peer and resource.

More than 30 states now require continuing education requirements for engineers and architects. Use the contacts you made at the professional events to call local engineers and offer them a 50-minute class on precast products and how to specify them. More than likely they will accept. You can download Lunch and Learn presentations from the NPCA website that can serve as a good starting point for your own presentation.

Once you have established relationships and have shown that you can be a resource, stay in contact with the community. You can usually find one or two good contacts in each office that will work closely with you. Visit their offices once a month or so to drop off a new product information sheet or the newest widget you're handing out to your customers. While there, ask what they are working on or if they have any upcoming projects. Mention that you would be happy to take a look at the plans and specifications to review them for constructability with regard to precast. Looking at the plans before the bid is let will help them deliver a better product to their customers by reducing the number of questions during the bidding process. The more precise their plans and specs are, the better their bid price will be.

Though making changes to national standards is a very difficult process, influencing change to local specifications and special provisions is an attainable goal. Working closely with your engineering community can help them understand your capabilities and help you understand their expectations. When both sides understand and agree on what the finished product should be, everyone wins. ■

Eric Wathen, PE., is a technical services engineer with NPCA.



Sustainability Awards

Recognizing Excellence in a Growing Industry Segment

BY CLAUDE GOGUEN, P.E., LEED AP

Something happened at The Precast Show 2013 in Indianapolis last January that had never been witnessed before: the presentation of the inaugural NPCA Sustainability Awards.

In keeping up with the demands of the construction industry, many NPCA members have adopted sustainable practices in their purchasing, manufacturing and shipping operations. Our industry has benefited from their actions, and it is in this spirit that the Sustainability Committee has created the NPCA Sustainability Awards.

The goal of this award program is to reward 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. The winners of each category for 2013 are as follows:

PRODUCER DIVISION

FIRST PLACE – SUSTAINABLE PLANT

Material Recycling Center

StructureCast, Bakersfield, Calif.

StructureCast is located just south of Bakersfield, Calif., about midway between the Los Angeles Basin and the Northern California population centers. With two other concrete producers located in the vicinity of its plants, the owners decided to create a concrete recycling facility that could serve their plants and the other facilities in the area.



MATERIAL RECYCLING CENTER

The crushing and screening plant StructureCast set up was created primarily to recycle the remnant concrete and washout from the three area plants. In 2010, the site began to accept waste concrete from construction sites in the area and waste asphalt from nearby road projects. The crushed and screened product is then resold as road base to paving contractors, while the steel reinforcement is recycled at scrap iron centers. Today, the four-acre site is operated by three men about 15 days per month and sells about 10,000 tons of road base per month.

The project offers a variety of sustainability benefits, including the reuse of waste, meaning less construction refuse entering landfills and less need for mining of new materials. In addition, the site is just four miles from the city center – compared with 45-65 miles to the areas where rock deposits are mined – which means less transportation costs and emissions.

The recycling project is welcomed by state and local agencies, as 100% of the materials recycled are reused in right-of-way construction.

FIRST PLACE – PRODUCER PROJECT

Pomona College South Campus Parking Structure

StructureCast, Bakersfield, Calif.

Pomona College, located in Claremont, Calif., wanted to free up space for further campus expansion by using old lots for new building sites. Two architectural firms partnered to design a two-story, 318,000-sq-ft parking garage with 608 spots that opened in July 2012.

However, it is more than just a parking garage; it is an example of a growing trend to integrate parking facilities with their environments.

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POMONA COLLEGE SOUTH CAMPUS PARKING STRUCTURE

Not only was the southeast corner of the garage bermed so that it fuses into the campus, the architects also incorporated a soccer field into the design of the roof. StructureCast supplied 165 architectural precast panels to this LEED Platinum project.

The panel finishes were medium aggregate exposure and used a specially selected natural stone and a tan color pigment. The architectural features, including colors and textures, were designed to blend into the area's natural environment.

In addition to the panels, StructureCast manufactured unique roof-level spandrels with integrated benches that allow spectator seating for the rooftop field.

While the concept of a sustainable parking garage seems to be somewhat of an oxymoron, the garage at Pomona College implements elements that make it environmentally friendly. By doing this, Pomona College ended up with not only a durable and aesthetically pleasing garage, but one that matches up with the ongoing campus initiative to go green and to become a more pedestrian-friendly campus.



ASSOCIATE DIVISION

FIRST PLACE – ASSOCIATE PLANT

Implementation of a New Recycling Program

M.A. Industries Inc., Peachtree City, Ga.

The M.A. Industries manufacturing plant was generating an excess amount of waste and was in need of a recycling



IMPLEMENTATION OF A NEW RECYCLING PROGRAM

program. All waste was classified as trash and hauled away in a 30-yd dumpster, including items that could have been recycled. This was resulting in costs of approximately \$55,000 a year. Reducing the amount of trash by separating the recyclables would reduce the yearly cost of waste removal. A core team was formed to take on the task of developing a project to reduce waste cost by 25% through the recycling of paper and cardboard products. They developed a timeline with a targeted completion date of February 2012. Working with M.A. Industries employees, the team collected data on waste generation and disposal.

First they replaced the cardboard boxes with self-dumping hoppers, which reduced the amount of discarded cardboard. Also, recycling bins were provided throughout the office so that employees could participate in this initiative. Cardboard, cellophane and clean paper products were segregated from other waste for recycling.

As a result of these efforts, the 30-yd dumpster that had been emptied two to three times per week at a rate of \$375 each time was replaced by an 8-yd dumpster emptied once a week at a rate of \$100 per month. This not only resulted in a more sustainable and environmentally friendly operation, but also saved M.A. Industries \$53,400 per year in costs.

FIRST PLACE – ASSOCIATE PRODUCT

Nycon-G Reinforcing Fiber for Precast Panels

Nycon Corp., Fairless Hills, Pa.

In an effort to create a greener fiber product, Nycon Corp. invented Nycon-G using 100% reclaimed, post-consumer and post-industrial waste carpet. Nycon-G can be used for decorative purposes as well as construction purposes. Nycon-G goes through a patented process to reclaim the nylon from waste carpeting to create a sustainable building material. Nycon-G not



NYCON-G REINFORCING FIBER FOR PRECAST PANELS

only keeps waste out of landfills by reclaiming nylon from used carpeting, it is also a beneficial additive to concrete for crack control, complying with the AC32 requirement.

In one example, it was used in a large-scale project at the

Heldrich Hotel and Conference Center in New Brunswick, N.J., where 500 precast concrete panels used in the project were produced with the Nycon-G fiber as reinforcement. The fiber offers precasters the ability to create an excellent, “no fuzz” finish and improves the impact-, shatter- and abrasion-resistance of the concrete as well.

The use of this reinforcing fiber contributed to obtaining the highest LEED rating for the Heldrich Hotel and Conference Center, while contributing to the overall quality and aesthetics of the structure.

The Sustainability Committee is proud to have the opportunity to recognize the pioneer companies in our industry that have adopted sustainable practices. By shining the spotlight on these producer and associate members, it is the committee’s hope that their initiative and leadership will inspire others to follow and therefore contribute to the sustainability of precast concrete products.

The committee will soon be looking for entries for the 2014 Sustainability Awards. If you are interested or have questions regarding the program, please contact Claude Goguen at cgoguen@precast.org or at (800) 366-7731. ■

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

A	B	C	D
88% of spreadsheets have errors			
How many spreadsheets is your precast company using?			

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

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Annual Inspections & Audit the Auditor

BY PHILLIP CUTLER, P.E.

One of the most important aspects of the NPCA Plant Certification Program is the plant inspection, which provides an added level of quality assurance to municipalities, DOTs and other certification partners. Plant inspections are critical for maintaining the credibility of our program.

As an NPCA certified plant owner, you are already aware that an auditor could show up for your annual unannounced inspection at any time during the year. Plants that are new to the program, however, will have the first inspection scheduled for a specific day and time. But whether your plant is currently certified or just entering the certification program, your next plant inspection may come with a new twist.

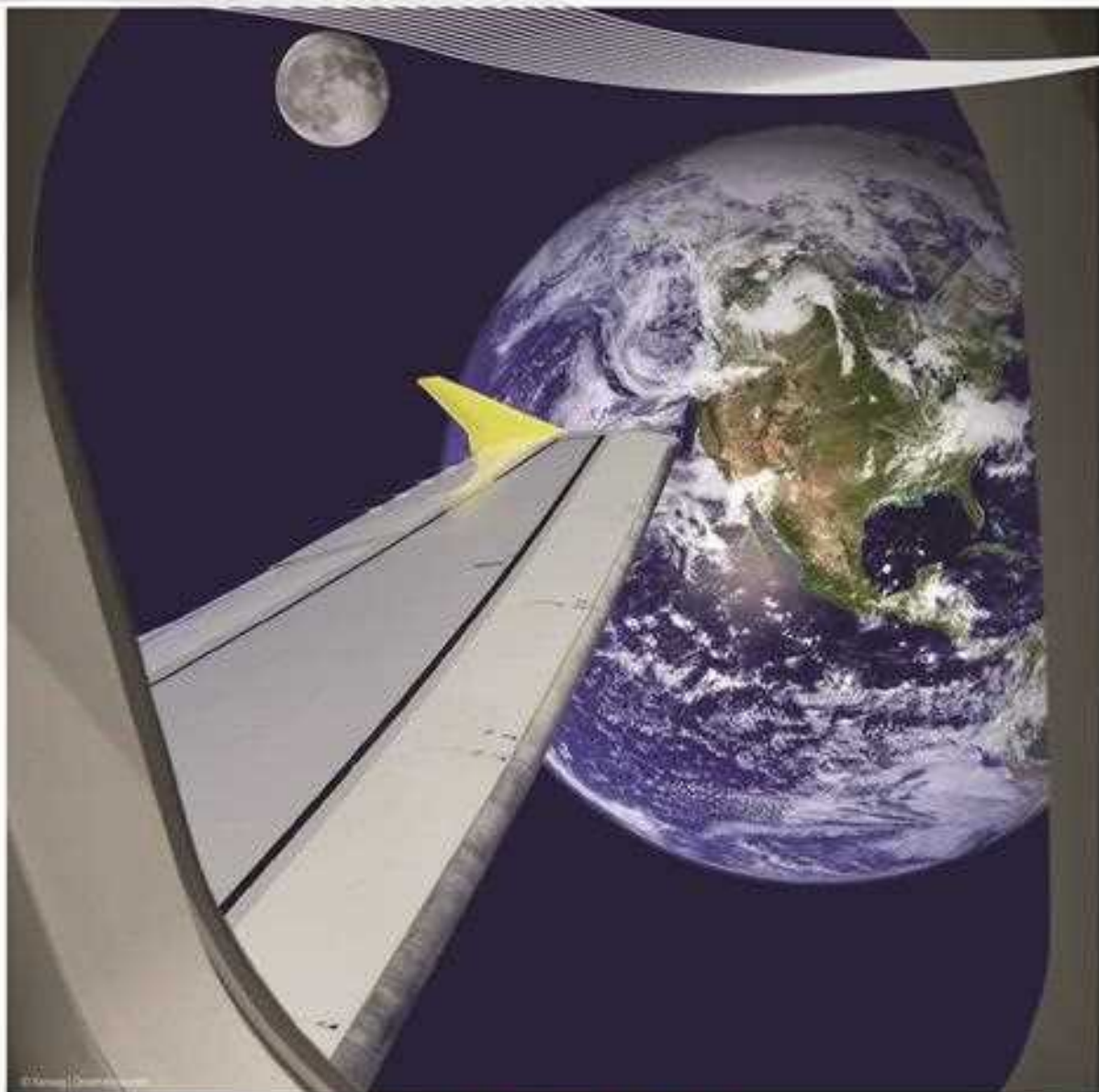
First a little background information. One of the stipulations of our ANSI accreditation is that NPCA must perform unannounced audits on our third-party inspectors while they are performing annual inspections on your plant. In addition, NPCA technical staff must be audited by ANSI inspectors while performing this task, so there are three separate levels of auditing that could occur with any inspection: third-party inspections on your plant, NPCA audits on the third-party inspectors, and ANSI audits on NPCA.

When NPCA is being audited, the mechanics of plant inspection are not altered in any way, so you can expect to receive the same thorough audit as if only the third-party agent were performing the inspection. It simply means that NPCA is getting the same thorough audit of our processes associated with monitoring the performance of our third-party agents.

What does this mean for your inspection? It means that on the day of your announced or unannounced audit, it is possible that the third-party plant inspector could be accompanied by an NPCA technical services representative and an ANSI auditor. This is a necessary step to maintain our ANSI accreditation, and it provides an added level of assurance that inspections and audits of inspections are performed at the highest level.

We appreciate your understanding and consideration of the annual inspection process. If you have any questions, please contact Phillip Cutler, P.E., at pcutler@precast.org or (800) 366-7731. ■

Phillip Cutler, P.E., is director of Technical Services and the NPCA Plant Certification Program. The NPCA Plant Certification Program is accredited by the American National Standards Institute (ANSI).



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Changing Lives

An NPCAEF scholarship recipient gets a healthy dose of life lessons abroad thanks to her scholarship.

BY ASHLEY JENKINS



For 24 years, the National Precast Concrete Association Educational Foundation (NPCAEF) has awarded scholarships to students with the goal of creating a specifying community that understands the features and benefits of precast concrete. This message has been shared with scholarship recipients from all different backgrounds that have attended schools from coast to coast, majored in a wide range of construction-related trades and earned degrees from some of the most prestigious higher-education institutions in the United States.

These achievements alone speak to the success of the foundation. However, a deeper look reveals ancillary benefits – life-changing experiences made possible by these scholarships – that are not always shared.

Thanks to the scholarships, students can focus on their academics and immerse themselves in activities related to their majors such as student groups and leadership positions. These experiences help mold and shape students as much as any classroom or professor.

The trip of a lifetime

Rebecca Jackson, a recipient of an NPCAEF scholarship and a recent graduate of the Massachusetts Institute of Technology (MIT), took part in a life-changing trip to Uganda last summer. The experience opened her eyes to the world beyond her vision and has helped shape the person and professional she will become.

In high school, Jackson knew she wanted to pursue a career in civil engineering, so when she found out about the NPCAEF, she knew it was a perfect match. She chose MIT because of its reputable engineering school and its positive and influential culture. Jackson studied everything from structural design and project evaluation to required humanities courses meant to round out students culturally and mentally such as Japanese Cinema and Literature.

Ironically, it was an opportunity right within her own major,

REBECCA JACKSON, SECOND FROM RIGHT, JOINED OTHER COLLEGE STUDENTS TO USE THEIR ENGINEERING SKILLS TO CREATE RAIN WATER CATCHMENT SYSTEMS IN UGANDA.



“I have a strong belief in giving back to the world that has given me so much. I am very blessed to live my life.”

– REBECCA JACKSON

with the organization Engineers without Borders, which has been more influential culturally than any humanities course. Jackson was invited on a trip to Uganda, thanks to several years of civil engineering design classes that made her a strong candidate for the trip. She knew immediately that she had to seize the opportunity.

“I have a strong belief in giving back to the world that has given me so much,” Jackson said. “I am very blessed to live my life.”

The trip lasted seven weeks and the work consisted of creating six rainwater catchment systems in Ddegeya, Uganda, while also educating the community about water safety and water sanitation. Uganda has a hilly terrain and villages are positioned at the peaks. In order to retrieve water, individuals from the village must go to the valleys where wells have been drilled below the water table. This necessary trip makes water collection an exhausting daily chore that is often borne by children who are sometimes forgoing school due to the time and energy commitment required.

Immersed in a culture

Upon arrival, Jackson was paired with a family and lived with them for the next seven weeks, taking part in all household activities and becoming a temporary part of the family. “We ate with them, slept in their homes, played with their kids and met their pet goats,” she said.

While some of the villagers were skeptical of the presence of the group, consisting of three MIT students, two professional engineers and a student from Maceray University, the team worked hard to gain acceptance through education and by creating a group of community leaders who were in charge of managing the retention tanks after their departure. They also rolled up their sleeves and helped with the construction, which went a long way in changing the perception of the more skeptical villagers.

In order to alleviate the burden of the daily trips to the wells and to help buffer the village against the dry season, Jackson and her team constructed underground systems that are several thousand gallons each and fed by roof gutters during the rainy season. The group decided to use a technique that consisted of an above-ground masonry structure and



an underground cylinder dug about two meters deep and lined using ferrocement applied to chicken mesh.

Throughout the process there was a lot of redesigning on the ground, which was a new experience for Jackson – particularly with no Internet connection. In school she learned and studied design, but now she was putting it into practice for the first time, which really brought forth the technical skills she had been learning at MIT. She learned to redesign and experiment on the spot, recalculate and observe the site conditions that changed on a daily basis.

The technique included adding a waterproofing agent to the mixture and using the surrounding earth for most of the structural support. With the water retention tanks, the village now has an easily accessible, year-round water supply, and the children have the time and energy to go to school.

“I have very strong opinions on education,” Jackson said. “I think that education is something that should be guaranteed to everyone, and it was upsetting to see that there were kids who were just too fatigued to go to school. It’s really awesome that we got to do this project, because this is a way for these kids to step out of the position of fetching water every day.”

Lessons learned

The experience taught Jackson not only engineering and communication skills, but how to deal with sensitive situations. She learned how to negotiate and compromise, and experienced the “nitty gritty” design work and how to interact with different people with different goals and perceptions.

“The people I worked with in Uganda taught me so much,” Jackson said. “Although most had little education, they have an insatiable thirst for knowledge. Working side by side with the villagers taught me that sustainable design comes from understanding not just the engineering problem, but also the social implications of the work.”

Thanks to her scholarship allowing her to experience MIT to the fullest, Jackson will carry her experience in Uganda with her for the rest of her life. Spending time with a community that struggles to meet basic needs on a daily basis helped put her own life into perspective.

Because of her experience, and seeing just how little one can live on, Jackson has paid closer attention to her own spending and has started setting aside money for charities.

The biggest lesson she will take from her experience, in her career and her daily life, is a basic passion for other humans.

“There was definitely an element of culture shock,” she said. “You always read these heart-wrenching stories, but you feel so distant from them. They are people just like you or me and they have emotions, they have dreams and they have wants.

“No matter whether it’s my career or dealing with people outside of work,

just having a basic understanding of what it's like to be another human and what it's like to put yourself in someone else's shoes is very important."

Ashley Jenkins, a graduate from Indiana University-Purdue University Indianapolis, served an internship with NPCA for two semesters in her pursuit of a Communications degree.

NPCAEF Scholarship Recipients

Since its beginnings in 1989, the NPCA Educational Foundation has provided educational scholarships to more than 80 undergraduate and graduate students enrolled in a civil engineering, architectural and construction-related curriculum.

Undergraduate scholarships are awarded at \$2,200 per year for up to four years. The Daneen S. Barbour Graduate Scholarship is awarded at \$2,500 for one year.

Five deserving students were awarded scholarships this year. Undergraduate scholarships were awarded to Jacquelyn Scibior of Utica, N.Y.; Michael Hess of Wisconsin Dells, Wis.; Samuel Sprinkle of Fairhope, Ala.; and Espvik Hakon of Norwalk, Ohio. The graduate scholarship was awarded to Eric Brandon of Spokane, Wash.

Jacquelyn Scibior of Utica, N.Y.

Sponsored by: Judith Husted of Husted Concrete Products Inc., New York Mills, N.Y.

Jacquelyn is pursuing a dual major in civil and environmental engineering at Clarkson University in Potsdam, N.Y. She is active in extracurricular activities including figure skating, dance, track and soccer. Additionally, she completed U.S. Naval Training ROTC Boot Camp and served as the Drill Squad Commander. Jacquelyn's interest in engineering and architecture has led her to internships with Alesia & Crewell Architects and the NYDOT. She is currently active in the New York Water Environment Association and the Community of Underrepresented Professional Opportunities where she works to inspire women in the engineering workforce.

Michael Hess of Wisconsin Dells, Wis.

Sponsored by: Mark Wieser of Wieser Concrete Products Inc., Portage, Wis.

Michael attends the University of Wisconsin in Madison, Wis., and is pursuing a degree in civil engineering with an emphasis in Project Management. Michael worked at Wieser Concrete Products' Portage plant last summer and gained valuable experience in a variety of aspects of precast concrete manufacturing. While at UW Madison, he has been on the Dean's List and was awarded a number of scholarships for his academic achievements. Additionally, he participated on the Concrete Canoe Team, Engineers without Borders and is involved in a number of intramural sports.

Samuel Sprinkle of Fairhope, Ala.

Sponsored by: Bill MacWilliam of Universal Precast, Irvington, Ala.

Samuel was a senior at Fairhope High School in Fairhope, Ala., and graduated this spring. He has been accepted to Auburn University where he will pursue a civil engineering degree. Active in a number of extracurricular activities, Samuel is a member of the National Honor Society, Mu Alpha Theta and the Youth Rifflery Club. He participates in track and field, and has served as president of Future Engineers. There he was the designer and head welder of a moon buggy for the NASA Moon Buggy Race.

Espvik Hakon of Norwalk, Ohio

Sponsored by: John Lendrum of Norwalk Concrete Industries, Norwalk, Ohio

Espvik graduated high school in 2012 and currently attends Kettering University in Flint, Mich., where he studies mechanical engineering. Espvik has worked for Norwalk Concrete Industries for three summers and is interested in using his mechanical engineering degree to streamline and improve the batching and mixing processes, as well as using automation technologies to more precisely distribute concrete in forms to reduce defects. Espvik has been active in many extracurricular activities including varsity golf and motocross, and as the design and project manager of the robotics team.

Eric Brandon of Spokane, Wash.

Sponsored by: Gary Venn of Oldcastle Precast Inc., Auburn, Wash.

Eric attends Washington State University in Pullman, Wash. A 2012 Cum Laude civil engineering graduate of Washington State, Eric is pursuing a joint Masters of engineering and technology management, and Masters of Business Administration. He has earned numerous honors including President's Honor Roll, Innovative Design Award Fellowship and First Place in the WSU "Imagine Tomorrow" Competition. During his summers, Eric has worked in the field serving as a project engineer for the Green River Filtration Facility and Maple Valley Highway Improvements in the summer of 2012, as a project engineer intern at the Fairchild Air Force Base Runway Reconstruction project, and a field engineer intern for Interstate Concrete and Asphalt.

If you would like to make a pledge to the NPCA Educational Foundation, or if you would like more information, call NPCA at (800) 366-7731 or visit precast.org/foundation.

Scholarship applications for the next school year must be postmarked by Jan. 1 for consideration at the semiannual NPCA Board of Directors meeting in February. Students must include a letter of sponsorship from an NPCA member in good standing. Applicants will be notified in writing of the board's decisions soon after the meeting. Applications are available online at precast.org/foundation.

Donate Items to NPCAEF Silent Auction

NPCA's Educational Foundation is once again hosting a silent auction at this year's Annual Convention in New Orleans. You can show your support for the Educational Foundation by donating an item to the auction. Last year's donations ranged from gift cards to vacation packages, jewelry to iPads, and everything in between. No donation is too big or too small, and may be tax deductible (check with your tax advisor). Best of all, the monies raised through the NPCAEF silent auction will directly benefit the Educational Foundation's scholarship fund.

To make a donation, visit precast.org/convention/npcaef-silent-auction and follow the link to the form, complete it and send to Marti Harrell at mharrell@precast.org or via fax at (317) 571-9500. All donations must be submitted to NPCAEF by Monday, Sept. 9, 2013. Questions about donations can be directed to Marti at (800) 366-7731.

To learn more about NPCA's Educational Foundation and how it benefits the precast concrete industry, visit precast.org/foundation.

OSHA Crane Operator Certification Delayed Until 2017

OSHA has announced that it will delay for three years an impending ruling requiring that crane operators must be certified by November 2014. NPCA worked closely with OSHA to obtain the three-year delay. The OSHA ruling would have required all crane operators in precast plants to be certified by completing a crane operator training course and passing a comprehensive test. The current testing covers cranes that are commonly seen in the precast industry, but also includes cranes and situations that fall outside the typical day-to-day operations that a precast boom truck operator would experience.

After hearing NPCA's concerns that the qualification/certification options presented by OSHA did not entirely align with the precast concrete industry, OSHA decided to delay the certification requirement until November 2017, reducing the disruption to the construction industry that the original compliance date imposed. The delay will give NPCA more time to work with industry crane operator certifying bodies to develop a boom truck certification that is appropriate for the precast concrete industry and to give plants more time to prepare their operators for the certification. ■

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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.

Anchor Concrete hosts Ontario Premier Kathleen Wynne

Anchor Concrete Products Ltd., Kingston, Ontario, hosted a May 14 plant tour for Ontario Premier Kathleen Wynne and Member of Provincial Parliament (MPP) John Gerretsen. Wynne took a site tour through the production facility to promote the proposed Liberal Budget and emphasize her government's commitment to supporting small businesses in Ontario.

For more than 40 years, Anchor Concrete has been a family-run business providing high-quality manufactured concrete products for provincial, municipal, commercial, industrial and residential infrastructure systems.

"It's really wonderful to be here and to be at a company that has operated since 1969 and the kind of industry that really exemplifies Ontario and our strength," said Wynne.

Jeff Bradfield, president of Anchor Concrete, said, "We were honored to be able to host Ontario Premier Kathleen Wynne to Kingston and to Anchor Concrete Ltd. to view our facilities and meet our employees. It is excellent to see our government supporting small businesses in our community."

Over the years, Anchor Concrete has been involved with many high-profile infrastructure projects including the Bom-



WYNNE, CENTER, ADDRESSES THE PRESS ALONG WITH GERRETSEN, RIGHT, AND BRADFIELD, LEFT.

bardier Monorail test track completed in 2011. Anchor received an international award for this project from NPCA earning a first-place Creative Use of Precast (CUP) award.

Visit www.anchorconcrete.com for more information about Anchor Concrete Ltd. and links to Wynne's visit.

Kraft Curing Systems partners with A.L. Patterson

A new subsidiary of Kraft Curing Systems GmbH will re-establish its warehouse facility and service center with A.L. Patterson, a supplier of precast concrete accessories.

Kraft's manufacturing facility will remain in Lindern, Germany, while its new warehouse and service center will be at Patterson's strategic location just outside Philadelphia and close to major markets and transportation hubs. This is the first Kraft center to be established in North America. The facility includes a 31,000-sq-ft warehouse, offices and training areas.

Kraft Curing Systems is a global leader in accelerated concrete curing systems. The company was recently formed when a group of investors, led by Michael Kraft and Barry Fleck of A.L. Patterson, acquired the assets of Kraft Energy. They are committed to serving the many Kraft Systems located throughout the Americas, and having access to the Patterson infrastructure and distribution channels will enable the company to quickly rebrand its reputation for sales, parts and service.

Mark Kraft has been named director of Sales for Kraft Curing Systems and will oversee the sales team. He will be utilizing the Patterson sales force that has more than 25 years of experience selling curing systems and will also be working with other international agents and distributors.



KRAFT CURING SYSTEMS' NEW FACILITY

For more information, contact Kraft Curing Systems Inc. at (267) 793-1005 or visit kraftcuring.com.

Norweco announces new wastewater treatment system

Norweco Inc. has announced a new addition to its product line, the Norweco Hydro-Kinetic Model 600 FEU Wastewater Treatment System.

This brand-new treatment system is the only NSF/ANSI Standard 40 and 245 certified residential wastewater treatment system to pass two consecutive tests without performing routine maintenance for a full 12 months, says the company. The Hydro-Kinetic system also produced incredible effluent results for the entire 12-month period: 2 mg/L CBOD, 2 mg/L TSS and 7.9 mg/L Total Nitrogen.

The outstanding effluent quality is ideal for installations where exceptional



NORWECO'S HYDRO-KINETIC MODEL 600 FEU

treatment and/or field sampling are mandated by regulation. For more information, contact Norweco Inc. at (800) NORWECO or email@norweco.com.

George R. Roberts Co. and The Step Guys add field sales engineer

George R. Roberts Co. and The Step Guys, suppliers of precast products for commercial and residential applications, have announced the hiring of Adam Foster. Foster joins the company's sales department as a field sales engineer specializing in commercial precast concrete products.

Foster brings with him eight years of experience in the precast concrete industry as well as prior experience in the utility construction and engineering fields. He is a graduate of the University of Maine – Orono and is a member of the Maine Better Transportation Association (MBTA). He lives with his wife and

three children in Lewiston, Maine.

The addition of Foster comes at an important stage of growth for George R. Roberts Co., which is in the process of completing a



ADAM FOSTER

new 8,600-sq-ft production facility at its Alfred, Maine, plant. Additional crane capacity and production floor space will result in a wider range of precast products to its valued customers.

For more information about George R. Roberts Co., visit georgerobertsco.com. For more information about The Step Guys, a division of George R. Roberts Co. specializing in the design, manufacture, and installation of precast concrete steps, visit stepguys.com.

President/COO of Oldcastle Precast Building Systems retiring after 27 years

Donna Reuter, president/COO of Oldcastle Precast Building Systems, has



DONNA REUTER

and market transitions, and over the years has worked in many aspects of Oldcastle Precast Building Systems including controller, information manager, vice president of Project Services, general manager and president.

Christopher Speck has been named the new president/COO of Oldcastle Precast Building Systems. Speck joined Oldcastle Precast Building Systems in 2006 in sales and project management and served on both the Operational Excellence and Commercial Excellence teams travelling throughout the United States. He also held several positions including plant manager and general manager before serving as the regional sales manager for the Virginia Region.

For more information about Oldcastle Building Systems, visit oldcastleprecast.com.

Hyster unveils heavy-duty lift truck series

Hyster Co. has unveiled its new H360-36/48HD lift truck series, which was designed to meet the most demanding applications such as pipe handling, general and crated cargo, break bulk, lumber, steel and concrete.

The Hyster H360-36/48HD series features durable components built around a well-integrated powertrain, an all-new heavy-duty front end and excellent all-around visibility, says the company. Two models are available: The Hyster H360-36HD with a 36-inch load center, and the Hyster H360-48HD with a 48-inch load center. Both deliver 36,000 lbs of lifting capacity.

Hyster teamed with Cummins to develop an optimized powertrain that

retired from the company as of May after a 27-year career with Oldcastle Precast.

Reuter has managed the Building Systems company through challenging times



HYSTER'S H360/48HD LIFT TRUCK

delivers maximum productivity, excellent fuel consumption, low emissions and a long service life. The Cummins QSB 6.7L six-cylinder diesel engine provides 164 horsepower and 540 ft lbs of torque. Heavy-duty and economy performance modes offer excellent fuel economy while maximizing productivity.

The H360-36/48 series comes equipped with Hyster's On-Demand, load-sensing hydraulic system with variable displacement pump technology that delivers hydraulic flow only when needed to lift a load. The Hyster On-Demand system introduces an efficient way to meet the truck's hydraulic load demands, saving fuel and producing less heat. Also, oil, filters, hoses and seals last longer due to the lower temperatures, says the company.

For more information, visit hyster.com.

First installation of the new J-J Hooks MASH TL3 bolt-down safety barrier

Shea Concrete Products of Wilmington, Mass., recently completed delivery of the new J-J Hooks MASH TL3 bolt-down barriers with the Hilti anchoring system to the Larz Anderson Memorial Bridge project in Cambridge, Mass. The bridge, listed on both state and national



J-J HOOKS MASH TL3 BRIDGE INSTALLATION

historic registers, was built during the late 1800s. It is a vital transportation link connecting the cities of Cambridge and Boston and is the primary connection between two Harvard University campuses.

The MASH barriers represent an expansion of the J-J Hooks self-aligning connection system. "They are unique because they can be bolted to bridge decks or pinned to highways, meeting the new FHWA MASH TL3 requirements," said Greg Stratis, Shea Concrete Products manager.

Easi-Set Worldwide designed and MASH-tested the barriers and partnered with Hilti to offer a proprietary anchor system that requires only two bolts per 12-foot section. This enables fast installation and easy removal of barriers without flame-cutting the bolts or causing damage to the bridge deck. Removal requires taking the locked bolts out of an adhesive-embedded Hilti threaded anchor and filling the small void with a concrete grout. The J-J Hooks MASH TL3 barriers are configured and tested to allow for both bolt-down and pin-down applications with lengths of 10, 12, 20 and 30 ft.

Easi-Set Worldwide is a wholly owned subsidiary of publicly traded Smith-Midland Corp. For more information, visit jjhooks.com and easiset.com, or contact Moffette Tharpe at (540) 439-8911 or mtharpe@easiset.com. For more information about Shea Concrete Products, visit sheaconcrete.com.

Schlüsselbauer offers durably resistant pipeline for sewer systems

Schlüsselbauer North America LLC has introduced a new liner to the North American market for its Perfect Pipe pipeline system. The new system is distinguished by the high load resistance of concrete pipe combined with the durable corrosion resistance (pH 1 to pH 14) of a thin-walled polyethylene liner.

The liner has a wall thickness of less than 2 mm and is connected to the concrete with multiple, newly developed anchors on the reverse of the liner. This ensures that the liner is firmly connected to the concrete even during storage and



transportation of the pipes. Tests attained a pull-out force of more than 250 N per anchor. Other pipe geometries without a lining can be manufactured with the same production equipment.

The use of self-compacting concrete also allows for reduced wall thickness in many cases, which results in fewer materials used during manufacture and lower freight costs.

Perfect Pipe is also well-suited as a jacking pipe for widths up to 48 in. In these applications, the pipe is manufactured with plastic connectors in the same way as the pipes for an open trench. These connectors come with two seals to reliably seal the corrosion-resistant lining system. The pipe is ideally suited to jacking, even in geodetically difficult conditions. The pipes, including the liner, can be manufactured to any length.

For more information, visit sbt-na.biz.

Jensen Precast hires civil engineer to head stormwater systems division

Jensen Precast, based in Sparks, Nev., has announced the hiring of Walter G. Stein, P.E., to head up its stormwater division, Jensen Stormwater BMP/LID Systems. Jensen Stormwater Systems products include those for stormwater detention and retention, infiltration (including porous pavement), treatment (trash, debris and pollutant removal), evapotranspiration and bioretention.

Stein earned a bachelor's degree in civil engineering from California Polytechnic State University, San Luis Obispo, and a master's degree in civil engineering from San Jose State University. His engineering career began when he served as a combat engineering officer

in the U.S. Army 7th Infantry Division based at Fort Ord, Calif. Post-military, he served in several positions including vice president of CDS Technologies Inc. in Morgan Hill, Calif. Upon the acquisition of CDS by Contech Construction Products, he served as vice president of International Project Development.



WALT STEIN

of underground structures, water treatment equipment design and sales, and project engineering and consulting services for infrastructure and site development projects.

For more information about Jensen Precast, visit jensenprecast.com.

Euclid employees elected to ACI, CSS

The Euclid Chemical Co., a provider of admixtures and concrete repair materials for the construction industry, has announced that two of its employees have been elected as fellows to the American Concrete Institute (ACI), and one has been appointed to the Standards Council of Canada (SCC).



CLAUDE BÉDARD

on its strategic direction. The council is appointed by the Canadian government and reports to Parliament through the Minister of Industry. Bédard has been

In 2010, Stein founded WDD Engineering & Construction LLC in Simi Valley, Calif., focusing on stormwater equipment representation, reinforced concrete design



PHILIP BRANDT

with Euclid Chemical for more than 20 years and served as a member of the ACI board of directors from 2008 to 2011 and the Canadian Standards Association board of directors from 2005 to 2007. He holds bachelor's, master's and doctorate's degrees in civil engineering from the Université de Sherbrooke and is a licensed civil engineer in the Province of Quebec.

Philip Brandt, vice president of business development, and Warren McPherson, Great Lakes regional manager, have also been named as fellows of ACI. ACI Fellows are individuals who have made outstanding contributions to the production or use of concrete materials, products and structures in the areas of education, research, development, design, construction or management. A fellow has also made significant contributions to ACI through committees and/or local chapters.



WARREN McPHERSON

Brandt has been with Euclid Chemical for more than 20 years and has been a member of ACI since 1984. He holds a degree in construction engineering from Tennessee State Technical Institute.

McPherson, who has been actively involved in the concrete industry for more than 35 years, is the past president of the ACI Greater Michigan Chapter. He holds a bachelor's in mathematics with a minor in chemistry from Southeast Missouri State University.

IACET renews CNA's accreditation

CNA, a commercial insurance underwriter based in Chicago, has announced that the International Association for Continuing Education and Training (IACET) had renewed its School of Risk Control Excellence (SORCE) accreditation for a five-year period. This accreditation allows CNA customers to receive health and safety continuing education unit credits for SORCE courses that qualify under IACET guidelines.

SORCE provides a convenient, cost-effective way to fulfill professional continuing education requirements. A wide range of companies, regulatory boards and organizations accept IACET courses for their continuing education requirements, including the American Institute of Architects, the Federal Emergency Management Association, the Federal Highway Administration and a number of community banks, educational institutions and state engineering boards.

Since its inception in 2005, SORCE has educated more than 80,000 participants in industry-leading loss prevention, risk management and risk transfer techniques that address a company's exposures. A full list of courses is available at CNA.com.

Hamilton Kent celebrates 70 years of sealing connections

Light the candles: Hamilton Kent is marking its 70th anniversary!



HAMILTON KENT'S SALES TEAM

Founded in 1943 in Kent, Ohio, Hamilton Kent started out as a small manufacturer of rubber components for the war effort. It has since grown into one of North America's premiere manufacturers of gaskets, connectors and other sealing components for underground infrastructure, operating out of two world-class facilities in Toronto, Ontario, and Winchester, Tenn.

"In 70 years, a lot of things have changed. But many things have stayed the same. Quality products are still critical for keeping underground infrastructure watertight and great customer service is still valued," says Bernard Grégoire, president and COO. "As we celebrate our 70th birthday this year, we're proud of our contributions to underground infrastructure and pleased that Hamilton Kent is still regarded as North America's premier manufacturer for sealing buried systems and components."

For more information about Hamilton Kent, visit the news and videos sections of its website at hamiltonkent.com. ■

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Meeting	Location	Date
NPCA 48th Annual Convention	The Homestead – <i>Hot Springs, Va.</i>	Oct. 9-12, 2013
The Precast Show 2014	George R. Brown Convention Center – <i>Houston</i>	Feb. 13-15, 2014
The Precast Show 2015	Orange County Convention Center – <i>Orlando, Fla.</i>	March 5-7, 2015

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

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