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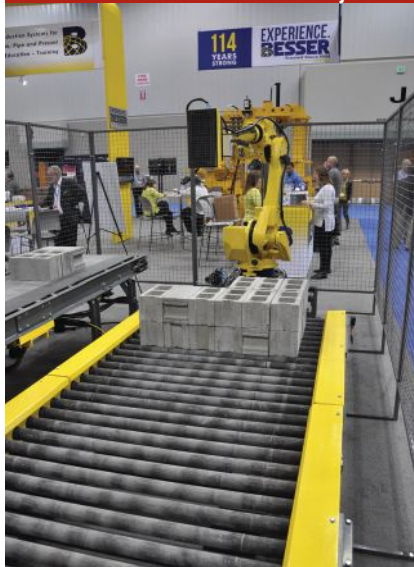
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PHOTOS: Jay Kazen, WKICM for EquipPro Distributors

A seasoned, dedicated workforce keeps Heldenfels Enterprises one of the Lone Star State's top sources of structural precast for building and transportation markets.

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Low-carbon materials at what price?



A new report from The Climate Group, based in London with a New York office, looks beyond carbon dioxide emissions reduction cost factors in concrete and steel to price premiums the market might bear when presented conventional versus low-carbon material options. "The Steel and Concrete Transformation: 2024 market outlook on lower emission steel and concrete" was released late last month at Climate Week NYC, an event Climate Group hosts in conjunction with United Nations General Assembly. Climate Week aligns with its Concrete Zero and Steel Zero industry initiatives, each involving producers that commit to CO₂ emissions reduction on timetables leading to 2050.

The report examines results from a global survey of construction and other industry stakeholders. Authors weigh production basics, citing the respective high and moderate emissions reduction potential of substituting combustion with electricity in steel and cement production. They question whether major concrete and steel consumers in real estate, infrastructure, manufacturing and energy sectors are willing to incur cost premiums, adding: "The survey is intended to build transparency on this topic to support sound decisions."

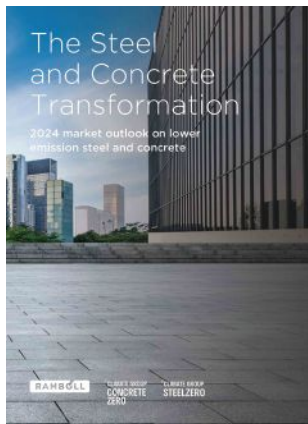
Among survey respondents, 40 percent say they would be willing to pay a premium for emissions reductions of 25 percent or higher for concrete, while 47 percent would be willing to do so for reductions exceeding 50 percent. The respective numbers were 45 percent and 57 percent for steel. Nearly 80 percent of respondents expect lower emissions concrete and steel will be standard for new projects or products within the next decade, owing to market demand and regulatory pressures.

Climate Group prepared "Steel and Concrete Transformation" with Ramboll Group A/S, a Copenhagen architectural/engineering firm with North American offices. Researchers analyzed responses from 250-plus companies across 42 countries and 21 business sectors. While the outlook is broadly positive for climate-centered procurement, report authors examine respondent-cited barriers to low emissions concrete and steel adoption: Cost (84 percent of respondents), industry conservatism (37 percent), and lack of knowledge (33 percent). Businesses see financial levers such as tax incentives, credits, and subsidies (69 percent of respondents), carbon pricing (50 percent), plus minimum product standards or embodied carbon limits (43 percent) as priorities for regulators and other public officials.

"This report is a real temperature check of the market," says Climate Group Head of Industry Jen Carson. "It's encouraging to see the appetite is here, now, for organizations to pay a premium for lower emission steel and concrete. Actors across the value chain—suppliers, governments, and investors—should take note."

"The fact that more companies are now willing to pay a premium for lower emission steel and concrete sends a strong signal to the market," adds Ramboll Chief Operating Officer Michael Simmelsgaard. "To accelerate progress, all actors now need to come together—from policymakers and investors to off-takers of steel and concrete, as well as end users who will need to accept a price premium until the market matures."

"Steel and Concrete Transformation" references how companies across the globe are committing to ambitious climate targets leading to attainment of net zero GHG emission operations by 2050. Credit the authors for pondering whether concrete and steel buyers are prepared to transform their supply chains toward a net zero pathway and have sustainability commitments "crucial enough for them to be willing to alter their cost structures?"



Posted at www.theclimategroup.org.

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Audited By:



"I do not know of a single HammerTek® elbow being taken out of service, among all that we have put in service over the past 15 years."

Robert Ober, PA-PO Industrial Systems, on HammerTek's Smart Elbow® pneumatic conveying elbows installed in the company's concrete, mining, grain, fertilizer, food, fly ash, plastics and pharmaceutical bulk handling projects.

PA-PO Industrial Systems, New Braunfels, TX, builds bulk material handling projects from \$25,000 retrofit contracts to \$25-million turnkey projects in concrete, mining, grain, fertilizer, food, fly ash, plastics, pharmaceuticals and other industries.



"The Smart Elbow vortex elbow has become an integral part of the fabric of our design any time we are dealing with dilute-phase material transport," he says, adding that his company specifies the elbows as an alternative whenever a client's design calls for long-sweep elbows. The policy evolved after receiving ongoing client complaints about prior uses of long-sweep elbows requiring excessive maintenance downtime for patching or replacing worn-through ells, or clogging of hygroscopic materials.



The company began specifying Smart Elbow® deflection elbows from HammerTek® in 2001 to reduce elbow wear and related downtime, but now also relies on them to cut offload times, reduce degradation/dust, improve safety and reduce the space needed for conventional sweep elbow installations.

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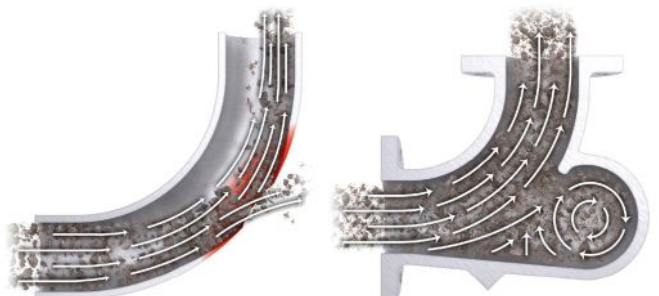


Robert Ober at one of PA-PO's projects—a premier precast concrete producer in Albany, MN, where PA-PO utilized (24) HammerTek elbows—speaking on the many benefits of HammerTek elbows.
Photo courtesy PA-PO Industrial Systems, 210-569-9262, PA-PO.com

"By generating less dust within the system, the Smart Elbow® vortex chamber design also reduces the likelihood of filter media in silo-top dust collectors clogging and causing a safety valve to release material into the atmosphere," Ober explains. Lower demand on filter media additionally minimizes the risk of a

safety valve malfunction that could result in an over-pressurized dust collector being launched from its mounting.

He also says, **"offload times improve by up to 50% – ranging from 20 to 30 minutes with the deflection elbow design vs. 40 to 60 minutes with long-radius sweep elbows."**



Unlike sweep elbows (left) in which abrasives impact and penetrate the elbow wall, the Smart Elbow® design features a spherical chamber that protrudes partially beyond the desired pathway, causing a ball of material suspended in air to rotate, gently deflecting material around the bend without impacting or wearing the elbow wall.



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Pierre G. Villere serves as president and senior managing partner of Allen-Villere Partners, an investment banking firm with a national practice in the construction materials industry that specializes in mergers & acquisitions. He has a career spanning almost five decades, and volunteers his time to educating the industry as a regular columnist in publications and through presentations at numerous industry events. Contact Pierre via email at pvillere@allenvillere.com. Follow him on Twitter - @allenvillere.

There is a series of metrics and indicators that point to continuing strength in the economy, with arrows from every imaginable direction pointing upward.

Of course, leading off all the good news was the first interest rate cut by the Fed in four years. In September, the all-but-assured rate cut of 25 basis points was supplanted by a far more aggressive 50 basis points, with more to come. The Fed turned its attention from their inflation target of 2 percent, and studied a softening labor market instead, hence the larger-than-expected cut. And the week before the rate cut, a survey of mortgage applications climbed 14.2 percent on a seasonally adjusted basis for the week ending in anticipation of the rate cut, and expectations of further cuts this fall.

On the inflation front, consumer prices rose 2.2 percent year-over-year in August as measured by Personal Consumption Expenditures—the lowest annual inflation rate since February 2021. Cooling inflation paves the way for the Federal Reserve to cut its benchmark interest rate further, lowering borrowing costs for all kinds of loans. Overall inflation is nearly back to the Fed's goal of a 2 percent annual rate, though rent inflation has stayed stubbornly high and is the single biggest component of the upward pressure on inflation.

Then there is the stock market, busting through previous records to mark all-time highs over the past couple of months, and it is instructive to see how far things have come. Remember, the prior peak in January 2022 wasn't that long ago in terms of days, but a lot happened over that time period: U.S. inflation climbed to 9 percent, the Federal Reserve raised interest rates by over 500 basis points, Russia invaded Ukraine, and a new Middle East conflict emerged. Prominent naysayers warned of "economic hurricanes," "five years of unemployment above 5 percent," and "the worst earnings recession since 2008." Not surprisingly, Americans' confidence in the economy eroded.

Fast forward two years. Thanks to a resilient economy, quickly fading inflation, and a 26 percent advance in 2023, we're now celebrating all the indexes touching or surpassing

new records. Some investors might view this with trepidation, but remember, markets lead the economy, not vice versa.

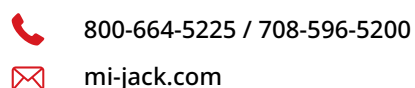
Then there is the economy, which grew at a 3 percent annualized pace in the second quarter, a faster rate than Wall Street had expected. The Bureau of Economic Analysis' third estimate of second quarter U.S. Gross Domestic Product was unchanged from the second estimate, which had shown 3 percent annualized growth. Economists had estimated the reading to show annualized growth of 2.9 percent, but the third estimate for second quarter GDP confirms that economic growth was higher than the 1.4 percent annualized growth seen in the first quarter. The revisions only strengthen my conviction that the U.S. economy will continue to expand at a decent pace over the coming year, which suggests labor market conditions are unlikely to deteriorate markedly from here.

All this converges to calm consumers and bolsters their view of the current state of affairs. Putting aside the forthcoming election, consumer sentiment continued to rise in late September, reaching a five-month high on more optimism about the economy in the wake of the Federal Reserve's interest-rate cut. Further reductions in borrowing costs are helping to underpin consumers' outlook on the economy and their personal finances. Sentiment appears to be building some momentum as consumer expectations for the economy brighten. Remember, the person pushing that shopping cart through Walmart is the single biggest driver of the U.S. economy, accounting for 70 percent of GDP, making the consumer America's largest industry in the country by far.

What does all this mean? A strong GDP, falling interest rates, a strong stock market, and bolstered consumer confidence all point to prosperity for the foreseeable future. And lower rates will drive increases in housing development, addressing the tremendous pent-up demand that exists for new homes, as well as commercial construction across all categories. We can expect strength in construction spending and private and public development for months, if not years, ahead.

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Optimization for Ready Mixed Concrete Dispatch

Expect artificial intelligence to impact all aspects of the fulfillment process.

"If it ain't late, you ain't making money."

Sound familiar? This has been a decades-long mantra of ready mixed concrete (RMC) dispatchers all over the world when pressured to minimize the typical 17 to 23 percent of total costs due to logistics. And the bookend customer complaint to dispatchers has universally been, "Don't lie to me about lying to me!"

Through the advent of mobile technology combined with powerful artificial intelligence (AI) programming, the customer can now see everything spanning truth and lies. Woe be upon the dispatcher who continues to embellish delivery and truck statuses—yet the RMC producer still needs to make money.

The bigger picture

Mathematical optimization for RMC logistics has a history of mixed results, but the vast potential for very real reward persists. Let's foreshadow the topic with help from the late W. Edwards Deming, an electrical engineer and mathematical physicist of

world-renowned talent.

Deming famously stated, "Sub-optimization is when everyone is for himself. Optimization is when everyone is working to help the company." In our world, if we optimize logistics for a truck (the individual), we improve the truck's performance. If we optimize logistics for the collection of orders (the company), we improve the company's performance.

Caution! Paradigm shift required

Manual dispatch for RMC began decades ago. Back then, old-timers—often gruff and chain-smoking and sometimes prematurely aged due to the pressure—worked with a large board on the wall representing the plant, with rows (trucks) and columns of hooks (time slots) to hold index cards representing the live logistics. While the advent of computers initially expanded the capacity and speed of the dispatch process, the programs merely automated paradigms of the manual method. The board was simply moved to a computer screen. Real-time delivery ordering and truck-tracking was still done by phone.

Faster computers with more memory eventually allowed additional factors to be considered and information to be managed electronically, but they still did not substantially change the truck-scheduling process. Enter "computerization of optimization," a collection of mathematical principles and methods for solving quantitative problems. Faster computers combined with modern AI substantially increase the reach of enhanced processes, particularly for the complicated and large challenges in RMC.

Alas, once again, humans are the stumbling block. We insisted on truck optimization, which diminished the impact on company performance. Subsequently, there is an industrywide acknowledgment that many prior attempts at RMC optimization fell short of expectations. We must elevate our thinking to the collection of orders.

Paradigm shift, applied

INFORM GmbH, based in Aachen, Germany, has developed an AI optimization package called Syncrotest. They have proven platforms dedicated to such things as automotive manufacturing, airline logistics, fraud detection, and—you guessed it—RMC logistics. With subscribers worldwide, they have extensive use-case evidence of the financial impact of order-based optimization.

While INFORM works with the biggest RMC producers, let's start small and consider a representative, real-life proof point of an EU-based, 37-truck operation. The INFORM customer is augmented with dedicated independent and wildcat independent trucks.

For the target day, the company's manual truck-based dispatch results in USD were:

- 37 owned trucks with fixed costs that never sleep: \$13,126.
- 23 owned trucks deployed had a variable cost of \$3,936.
- 20 dedicated independent trucks: \$9,705.
- 10 wildcat independent trucks: \$8,700.
- Total manual dispatch logistics trucking costs: \$35,467.

The INFORM optimized process with all owned trucks deployed resulted in:

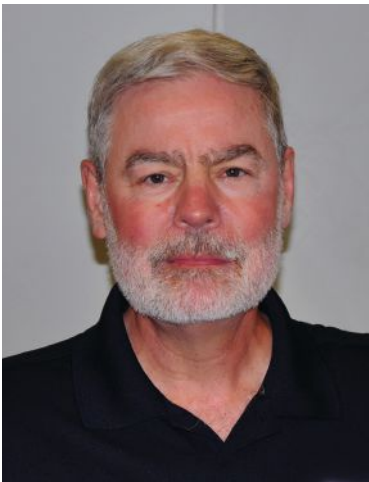
- All 37 owned trucks deployed: fixed costs \$13,126.
- Owned trucks' variable costs: \$4,868.
- 19 dedicated independent trucks: \$11,921.
- Total optimized logistics trucking costs: \$29,915.

The result was a \$5,552 (15.7 percent) reduction of transport costs for the day. Of course, part of the cost reduction was putting the schedule in place sufficiently before the prior day's close to call up all company-owned trucks. However, the bottom line still counts.

Nibbles, not bytes

AI will impact all aspects of the RMC fulfillment process. The most obvious will be a constant stream of small suggestions—nibbles, if you will—to the customer, dispatcher, batcher, etc. For example, the platform's message may state: "Hey finisher, you are placing an order for outside flatwork with a 15-minute spacing. Your last six orders requested 15 minutes, but you actually performed at 25-minute spacing. How about changing this time?"

Dispatch also will be impacted, but in the isolated paradigm of the action at hand. For instance: "Hey dispatcher, have you considered splitting the order 50/50 between plants 4 and 7? This will reduce unused truck time and deadheading by 73 minutes." While much better than straight manual dispatch, it will, by definition, be much less impactful for cost savings than a full-scale order optimization model.



Craig Yeack has held leadership positions with both construction materials producers and software providers. He is co-founder of BCMI Corp. (the Bulk Construction Materials Initiative), which is dedicated to reinventing the construction materials business with modern mobile and cloud-based tools. His Tech Talk column—named best column by the Construction Media Alliance in 2018—focuses on concise, actionable ideas to improve financial performance for ready-mix producers. He can be reached at Craig.Yeack@bcmicorp.com.



If we optimize logistics for a truck, we improve the truck's performance. If we optimize logistics for the collection of orders, we improve the company's performance.

The “Hey (sales guy, finisher, batcher, etc.), have you ...” model will become the default baseline for all aspects of a producer, with the caveat that dispatch is much better served by the big, more complex order approach. Consider the comparison between a jet airliner and a helicopter. The jet will always be faster and more fuel-efficient, but the helicopter will be the only practical, albeit much more limited option for short-distance flexibility. (Full disclosure: Your columnist leads a company that provides AI for exactly this purpose.)

Is this trip worth it? Comparison to cement optimization

Consider a mix with 400 pounds of ordinary portland cement (OPC) at \$150 per short ton (ST). Let’s say the cost of the supplementary cementitious materials to replace the OPC is \$30/ST. For every 1-percent reduction of OPC through optimization, the net monetary savings per cubic yard (CY) will be ~\$0.24. Given 8.25 CY per load, the savings would be ~\$2 per load.

Transport is typically between 17 to 23 percent of the total cost structure of RMC. For a total cost of \$125 per CY and using the low end of 17 percent as the transport cost, that is \$21.25. If we can save the low end of the exhaustive INFORM optimization proof

points of 15 percent, that’s \$3.19/CY—and at 8.25 CY per load, that’s \$26.30 per load. The notion of low-hanging fruit comes to mind, as it will be difficult to find a better return on working capital.

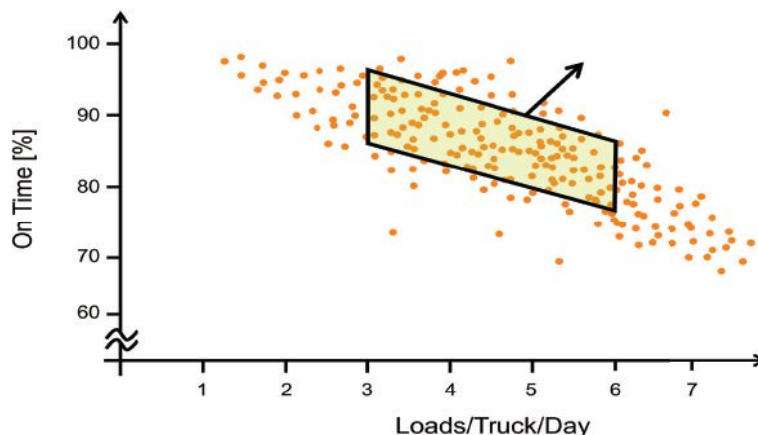
Looking forward

My dentist has a framed picture in the waiting room with the caption, “Only floss the teeth

you want to keep.” Likewise, Deming wisely proclaimed that the “two basic rules of life are (1) change is inevitable and (2) everybody resists change,” followed by another wry observation: “It is not necessary to change. Survival is not mandatory.”

Our beloved industry is in the same boat. RMC producers do not have to change. However, those who survive will.

ON-TIME DELIVERY VERSUS TRUCK PRODUCTIVITY



INFORM optimization technology provides the dispatcher a target balance—shown as data points within the orange parallelogram—for mixer truck fleet operations. Chart: INFORM GmbH

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Proven Protection: Test Reports Validate Xypex Bio-San's Efficacy Against Microbial-Induced Corrosion

Introduction

Microbial-Induced Corrosion (MIC) poses a significant threat to the durability and integrity of concrete structures, particularly in wastewater treatment facilities and other harsh environments. MIC is caused by the activity of microorganisms, which lead to the deterioration of concrete. This article delves into the mechanisms and impact of MIC on concrete and introduces Bio-San, an advanced antimicrobial admixture developed by Xypex, as an effective solution to combat these challenges.

Understanding Microbial-Induced Corrosion (MIC)

The Problem:

Microbial-Induced Corrosion (MIC) is a biochemical process that results from the metabolic activities of specific bacteria, such as sulfur-oxidizing bacteria like *Thiobacillus novellus*. These bacteria produce sulfuric acid as a byproduct, which aggressively attacks the concrete. The main consequences of MIC include:

- **Chemical Degradation:** Sulfuric acid reacts with calcium hydroxide in concrete to form expansive compounds like gypsum and ettringite.
- **Physical Damage:** The formation of expansive compounds causes cracking and spalling of the concrete.
- **Accelerated Corrosion of Reinforcement:** the physical damage leads to the exposure the internal structure, accelerating the corrosion of reinforcing steel.

How Microbial-Induced Corrosion (MIC) Works



Impact on Infrastructure:

The long-term impact of MIC on concrete structures is severe, including:

- Increased maintenance and repair costs
- Reduced service life
- Potential structural failure
- Economic burden due to frequent repairs or replacements

The Xypex Bio-San Admixture

Overview:

Xypex Bio-San is formulated to mitigate the detrimental effects of MIC. Beyond the unique Xypex crystalline technology, it incorporates a proprietary advanced antimicrobial technology that inhibits the growth and activity of harmful bacteria, thereby protecting concrete structures from biochemical attack.

Study 1

A series of tests were conducted by an independent laboratory to evaluate the antimicrobial efficacy of Bio-San Admixture against *Thiobacillus novellus* (the most common MIC leading bacteria). Mortar samples were prepared with and without Bio-San Admixture and subjected to a modified ISO 22196 test method to assess bacterial reduction.

Test Procedure:

- Samples were inoculated with *Thiobacillus novellus*.
- After a 24-hour incubation period, samples were neutralized, and bacterial counts were determined according to ISO 22196.

Antimicrobial Effect *Thiobacillus Novellus*

Test Sample	24h Bacterial Concentration	% Reduction	Log 10 Reduction
Untreated Concrete (Control)	5.6×10^5	-	-
Xypex Bio-San Treated Concrete @ 1%	8.8×10^1	>99.98	4

Study 2

Long-term exposure trials were conducted over a 10-year period by an independent laboratory to assess the corrosion resistance and microbial activity of concrete treated with Bio-San Admixture. The study was carried out in the headspace of a primary settling pond at a wastewater treatment plant experiencing MIC.

Test Procedure:

- **Sample Preparation:** Concrete cylinders (100 mm diameter x 200 mm height) with and without Bio-San Admixture were cast and suspended in the headspace of a sedimentation tank.
- **Environmental Conditions:** Samples were exposed to H₂S concentrations ranging from 20 to 70 ppm, typical of wastewater treatment environments.

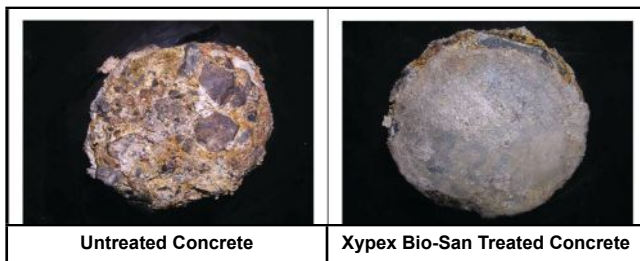
Samples suspended in headspace above sedimentation tank



Evaluation Parameters:

- **Mass Loss:** Periodic measurement of concrete mass loss due to corrosion.
- **Visual Inspection:** Regular examination of samples for surface changes.
- **Bacterial Count:** Determination of *Thiobacillus* spp. concentration on concrete surfaces.
- **Corrosion Depth:** Measurement of corrosion penetration into concrete samples.

Comparison of untreated concrete and Xypex Bio-San treated concrete after 6.5 years



Corrosion and Bacteria: Results After 10 Years:

Item	Untreated Concrete (Control)	Xypex Bio-San Treated Concrete @ 1%	x Reduction
Time of Exposure (years)	10	10	-
H ₂ S Concentration (ppm)	20-70	20-70	-
Corrosion Depth (mm)	8.3	0.9	9.2
Bacterial Count - <i>Thiobacillus</i> spp (cfu/ 10 cm ²) <small>Note 1</small>	8900	37	240 log 10 = 2.4

Note 1: cfu = colony forming unit, is a measure of the population of microbial growth.

Conclusion:

The comprehensive evaluations of Xypex Bio-San Admixture by independent third-parties demonstrate its exceptional efficacy in protecting concrete structures from microbial-induced corrosion (MIC). Key findings from the studies include:

1. Antimicrobial Effectiveness

Bio-San Admixture significantly reduces the growth of *Thiobacillus novellus*, achieving over 99.98% reduction in bacterial concentration. This confirms its efficacy in protecting concrete surfaces from microbial-induced deterioration.

2. Long-term Corrosion Resistance

Over a decade, concrete treated with Bio-San Admixture exhibited nine times less corrosion compared to untreated samples. The bacterial count on treated samples remained minimal, indicating sustained antimicrobial action and effective protection against MIC.

3. Durability and Longevity

In addition to its impressive antimicrobial properties, which reduce both bacterial growth and corrosion depth, Bio-San Admixture is enhanced by Xypex Crystalline Technology. This technology not only makes the concrete waterproof and chemical-resistant but also enables it to self-heal static cracks up to 0.5 mm. These features highlight Bio-San Admixture's crucial role in enhancing the durability and resistance of concrete structures exposed to harsh sewage environments.



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Reduced Carbon Concrete Consortium assists FHWA grant-eligible parties

The American Concrete Pavement Association-led Reduced Carbon Concrete Consortium (RC3) is reaffirming its commitment to assist non-State agencies or organizations in Federal Highway Administration Low-Carbon Transportation Materials (LCTM) program grant pursuits. The FHWA announced an LCTM Notice of Funding Opportunity for non-State applicants seeking assistance on projects using concrete, asphalt, glass or steel whose production exhibits substantially lower levels of greenhouse gas emissions than conventional alternatives.



Eligible non-State applicants include local governments, political subdivisions of a State, U.S. territories, federally recognized tribes, Federal Land Management Agencies, Metropolitan Planning Organizations, and special purpose districts or public authorities with a transportation function. FHWA will award grants from an \$800 million, Inflation Reduction Act-funded pool and is accepting applications through November 25 at an LCTM portal (<https://grants.gov/search-results-detail/356233>). Concurrent with non-State applicant grant determinations, FHWA is processing applications from States qualifying for an initial \$1.2 billion LCTM funding round earlier this year.

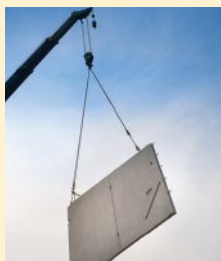
RC3 was formed to help State and non-State agencies with LCTM application processes, program execution and disseminating information on reducing carbon in construction specifications. FHWA encourages non-State applicants to partner with States on applications and projects. In turn, RC3 is well-positioned to help organizations across the country optimize partnering opportunities leading to grants for projects with low carbon concrete specifications. Joining ACPA in the Consortium are the National Concrete Pavement Technology Center at Iowa State University, Concrete Advancement Foundation, National Ready Mixed Concrete Association, and MIT Concrete Sustainability Hub.

"The RC3 is ready to help applicants with the grant process. We are here to help ensure that sustainability and resiliency efforts can be maximized—both with agencies and on-the-grade. Just as we did earlier in the year, we can be an asset and a resource to those who apply," says ACPA CEO Laura O'Neill Kaumo.

"This is the next step in the unprecedented FHWA investment in the sustainability and resilience of our nation's transportation infrastructure. We applaud it as bringing much-needed resources to local agencies," adds Michigan-based concrete consultant Larry Sutter, Ph.D., P.E. An individual RC3 member, he can be reached for more LCTM information at sutter.engineering@gmail.com. Also available for LCTM insights are his fellow RC3 individual members Wiss, Janney, Elstner Principal Thomas Van Dam, Ph.D., P.E., tvandam@wje.com; and, NCE Principal Kevin Senn, P.E., KSenn@ncenet.com.

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NAVY SCOPES AICRETE

Richmond, Calif.-based concrete mix design technology developer AICrete has been awarded \$25,000 in the National Security Information Network (NSIN) AI Infrastructure Challenge. The program drew AICrete and 21 other companies to a virtual Pitch Day, where participants presented solutions exhibiting the potential to help the United States Navy leverage artificial intelligence to optimize building design; enable branch officials and staff to rapidly generate and evaluate multiple design options; iterate throughout development; and, ensure standards or regulations compliance.

AICrete's presentation linked efficient concrete usage to the cost savings and environmental impact of Department of Defense projects. Representatives discussed how the AICreteOS platform employs AI, machine learning, computer vision, and automation to create an optimal concrete mix design that meets or exceeds compressive strength, air content, slump and other performance criteria, while also reducing material costs and carbon footprint. AICrete was among AI Infrastructure Challenge participants eyeing federal market inroads. "If you are considering participating in an NSIN program, it is absolutely worth the time and effort, even just to go through the experience and learning process, but being selected was the cherry on top," affirms AICrete Vice President of Sales and Marketing Michael Fletcher.

NSIN sponsored the AI Infrastructure Challenge in partnership with the Naval Facilities.

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Bureau sees construction ranks nearing 8.4 million by 2033

Employment Projections — 2023-2033, a new Bureau of Labor Statistics report, tracks the addition of 6.7 million jobs to the U.S. economy over the next 10 years, 380,000 of them in Construction, 75,000 in Architectural, Engineering and Related Services occupational categories. The projected 4.7 percent gain in Construction jobs through 2033, where industry headcount would hover 8.4 million versus 8 million at present, contrasts with the prior decade's 36.9 percent increase, a figure reflecting post-Great Recession building activity.

Among the major Construction areas of residential building, nonresidential building and heavy/civil, BLS economists see respective employment gains of 3.9 percent, 5.9 percent and 4.9 percent over the 2023-2033 window. Under a subcategory of specialty contractors working with cement-based materials, they project increases and headcounts by trade: Foundation, Structure and Building Exterior, 3.7 percent, 1.03 million; Poured Concrete Foundation and Structure, 4.7 percent, 268,000; and, Masonry, 2.4 percent, 153,000.

Nearly matching the Masonry outlook figure is Nonmetallic mineral product manufacturing, which spans ready mixed and manufactured concrete, brick, cement and lime production and, BLS notes, is on track for a 2.5 percent gain over the 2023-2033 window. Nonmetallic Mineral, Construction and Architectural & Engineering Services are among Employment Projections major occupational categories, across which BLS economists see overall growth of 4.0 percent, to nearly 175 million jobs in 2033.



BLS economists project total Construction employment of nearly 8.4 million by 2033, the strongest gains likely in the Poured Concrete Structure subcategory.

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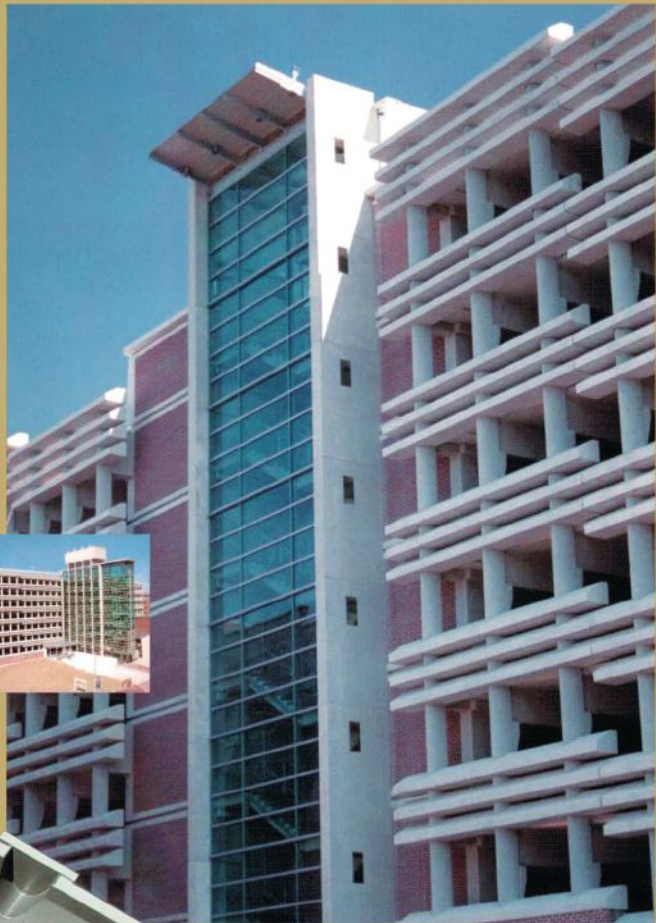
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IT upgrade expedites NLRB case processing

The General Services Administration Technology Modernization Fund (TMF) announced a \$23 million investment to modernize the National Labor Relations Board case management system. The funding will enable the agency to replace its outdated hardware with an advanced, cloud-based solution, dramatically improving its ability to process labor disputes efficiently. In 2023, the NLRB processed over 22,000 cases and recovered more than \$56 million for workers. However, its 17-year-old system has led to delays in case processing, reduced data reliability, and increased cybersecurity risks. Such technological challenges impact internal operations and affect the agency's ability to serve workers and employers, NLRB officials note.

The modernization effort will prioritize e-filing capabilities, allowing for faster and more efficient submission of labor-related documents, as well as enhanced public access to critical information and case statuses. The system upgrade will also facilitate more robust data analytics, enabling the NLRB to identify trends, make data-driven decisions, and allocate resources more effectively. Further, the upgraded system will be built with scalability in mind, ensuring the agency can readily adapt to future technological advancements

and evolving labor landscape needs.

"Across government, we're focused on serving the American people through the secure, accessible, and responsible use of technology," says GSA Administrator Robin Carnahan. "The TMF is a proven model for driving effective, impactful, and cost-effective government IT modernization. GSA is committed to its growth and long-term success."

"This investment in the NLRB's technological capabilities represents our commitment to making government digital services more efficient and effective for workers and the general public," notes TMF Executive Director Larry Bafundo. "By providing the tools for faster case processing and improved data management, we're empowering the NLRB to better serve the American workforce and uphold the principles of fair labor practices."

"This investment exemplifies the transformative power of strategic IT modernization," adds TMF Board Chair and Federal CIO Clare Martorana. "By leveraging TMF, we've accelerated NLRB's digital transformation, significantly enhancing its operational capabilities. The shift to a cloud-based solution isn't just replacing legacy infrastructure—it's unlocking new levels of scalability, security, and accessibility."

AGENCY MERGER REVIEW COORDINATION

A new memorandum of understanding between the U.S. Departments of Labor and Justice, National Labor Relations Board and Federal Trade Commission is intended to strengthen competition by better coordinating the information antitrust agencies use to evaluate potential impacts of mergers and acquisitions on labor markets. The document sets out several methods to obtain background on labor issues during merger investigations:

- Soliciting information from worker stakeholders and organizations;
- Seeking production of additional information and data related to labor markets from filing entities;
- Using public data sets from the department and NLRB; and,
- Continuing to coordinate under pre-existing interagency memorandums of understanding.

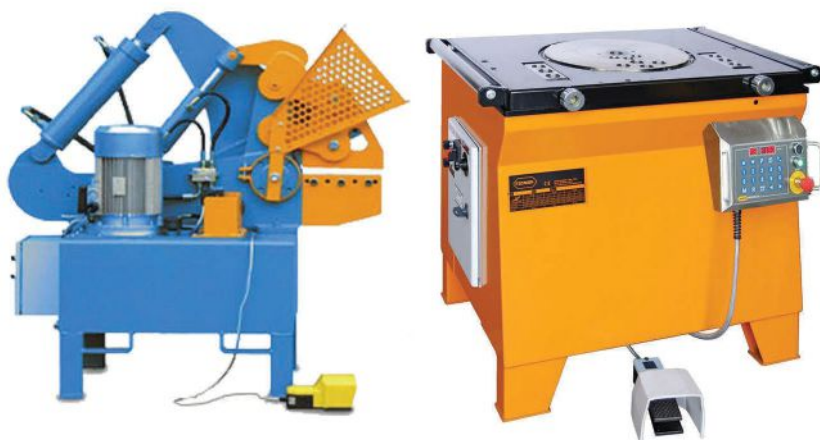
"Workers are the backbone of our economy, and it's critical that the impact on workers and the labor market are given due consideration when analyzing mergers and acquisitions," says Acting Secretary of Labor Julie Su. "The Department of Labor is committed to providing information and data to strengthen the Department of Justice and Federal Trade Commission's understanding of labor markets, and we look forward to deepening our work to protect workers by promoting fair competition in labor markets."

"Competition in labor markets means higher wages, better working conditions, and more opportunities for workers," adds Justice Department Antitrust Division Assistant Attorney General Jonathan Kanter. "Our partnership with the Federal Trade Commission, National Labor Relations Board and the Department of Labor will help us identify and act against mergers that threaten to harm competition for workers."

"Congress passed the antitrust laws to ensure that all Americans benefit from free and fair competition. When businesses vigorously compete for workers, workers enjoy better wages and working conditions as well as greater opportunity and freedom," concludes FTC Chair Lina Khan. "By deepening partnerships with the National Labor Relations Board, the Department of Labor and the Justice Department's Antitrust Division, the FTC will keep building on our whole-of-government efforts to ensure that all Americans can get a fair shot in our economy."

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University Lab-to-Slab team measures metakaolin performance

The Sustainable Concrete Lab-to-Slab Initiative under the University of California, Davis Pavement Research Center will see testing of three slabs bearing 2.5 yd. or more of concrete mixes designed with novel binders, including a supplementary cementitious blend from metakaolin producer Purebase Corp., Ione, Calif. Through prequalification testing, QA/QC, mid-term monitoring, plus environmental, constructability and life cycle cost assessment, Center officials seek insights from small-scale, traffic-free sections regarding the binders' pilot project and mainline construction potential.

"Although UC Davis has tested metrics of our SCM in the past in a lab setting, this is the next step in a project by the Pavement Research Center where we can physically see the performance of the material in a real-life application," says Purebase CEO Scott Dockter. "Test slab [success] will open the door for our SCM to be widely utilized and implemented in substantial construction projects across the state of California. This would be a positive move for Purebase in our goal of decarbonizing California and, eventually, the nation."

Lab-to-Slab launched mid-year with ACI Foundation and California Department of Transportation funding plus Federal Highway Administration support. Officials aim to advance sustainable concrete technology by accelerating implementation of alternative binders for concrete slabs and structures.



Specimen pavement testing will continue through 2026.



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THE HERCULES JACK GOES DIGITAL

AggNexus Conference shows the value of optimal data interpretation

The premier AggNexus Digital Innovation Conference drew upward of 100 representatives of independent or multinational concrete, cement, aggregate and asphalt producers, along with their software and hardware partners. Staged last month on the University of Texas, Austin campus, it demonstrated how the rapid evolution of artificial intelligence models, coupled with data capture or analytics methods, are transforming construction material producer field, plant or back-office operations.

AggNexus organizers mustered 10 software or service overview presentations and three panel discussions from a diverse pool of producers and current or prospective technology partners—most inclined to open applications that can be readily integrated into user-tailored suites, narrow to broad. The opening panel, “Buying Or Creating Your Software?,” offered these takeaways:

- Difficulties of finding good software developers, shorter programming schedules, and overall programming costs favor construction materials producers turning to specialized off the shelf or market solutions.
 - Producers with the right team and committed leadership can develop software in house and realize a unique strategic advantage.
 - Programmers must understand what construction materials producers’ customers need.
 - Engagement and onboarding of staff or manager users is important. Training packages typically accompanying software deployments prepare users to best leverage data.
- Perspectives from a second panel, “Challenges and Opportunities in Digitalization for the Industry,” included:
- First movers in new software offerings tend to enjoy a competitive advantage, although often for a limited window. They can also find themselves contributing to a knowledge base or artificial intelligence model benefitting peers and competitors.
 - Users need to target fundamental, clean data captured from all existing and new platforms.
 - Summing up the age of digitalization in construction materials, panelist and Stockpile Reports



“How Artificial Intelligence Will Influence The Industry” panelists, from left: UCLA Associate Professor of Civil & Environmental Engineering Mathieu Bauchy, Cobotiq CEO Jon Hill, Aggregates Business International Editor Guy Woodford (moderator), Knife River Construction Materials Vice President Jeremy Quinn, TAC Insight/Fast-Weigh Product Lead Eric Wilhite, and Inform Software Logistics Division SVP Thomas Bergmans.



“Buying or Creating Your Software?” panelists, from left: Concrete.ai CEO Alex Hall, Luck Stone Senior IT Director Logan Pickels, Burgex Mining Consultants Co-Founder Stuart Burgess, Go Build 360 COO Adele Warren, and Aggregates Business International Editor Guy Woodford (moderator).

platform developer David Boardman noted, "Data is truly the new oil. Capital expenditures for harvesting data will grow by an order of magnitude."

"How Artificial Intelligence Will Influence the Industry" rounded out the panel program, netting these insights:

- AI has different uses and varying adoption timelines in cement, aggregates and concrete production. Cement companies are leading the way with AI-enabled predictive maintenance programs, which hold great potential given their plants' complexity.
- AI developers for aggregates operators need to embrace the process-driven nature of crushed stone, sand and gravel production.
- AI applications in concrete production are emerging for quality control, mix design optimization, plant equipment monitoring and fleet dispatching.
- AI models are of limited value without tight controls around data.

Specialty software developer Price Bee and founder Barry Hudson organized AggNexus with peers and construction materials media allies. Joining him as vendor participants from North America were Burgex Mining Consultants/Mineralogy Aggregates,

Concrete.ai, EveryPoint/Stockpile Reports, Inform Software, and TAC Insight/Fast-Weigh. Rounding out vendor participants were CheckProof of Sweden, Eltirus of Australia, and GoBuild360 of South Africa. Semco Publishing, Denver parent company of *Concrete Products*, *Cement Products* and *Rock Products*,

along with U.K.-based Route One Publishing Ltd. and its *Aggregates Business International* title, teamed with On the Rocks Digital, a marketing and web design specialist to present AggNexus.

Planning is underway on a follow up conference in 2025.



"Challenges and Opportunities in Digitalization for the Industry" panelists, from left: Big Town Concrete CEO Richard Szecsy, New Enterprise Stone & Lime Director, IT James Rokosky, Check Proof CEO Hakan Holmgren, Aggregates Business International Editor Guy Woodford (moderator), Eltirus CEO Steve Franklin, and EveryPoint CEO David Boardman.

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FRP Institute names leadership team, outlines market development vision

After two years of work with American Association of State Highway and Transportation Officials, state department of transportation and composite manufacturer representatives, the FRP Institute is set to realize its primary purpose: Promoting the increased use of fiber-based polymer reinforcement in concrete transportation and environmental infrastructure. Fiber reinforced polymer is a generic term for a composite made by combining fibers—typically glass, carbon or basalt—in a matrix reinforced with a polymer, resulting in strong, lightweight material

formed into reinforcing bars, grids or mats. When used to reinforce or repair concrete, FRP materials exhibit up to twice the tensile strength of steel reinforcement at 25 percent of the weight and are non-corrosive and non-conductive.

Since chartering the group in 2022, FRP Institute founder and CEO Richard Krolewski has worked with a leadership team and the AASHTO National Transportation Product Evaluation Program on audits for manufacturers seeking inclusion on DOT qualified vendor lists. “Our mission is to educate the

engineering community about the benefits of FRP reinforcement,” he says. “We have developed a program for DOTs, engineering firms and academics that covers the design, installation, handling, chemistry and quality control of FRP reinforcement. Response has been outstanding. Public works officials and their suppliers are interested in building infrastructure with non-corrosive, long-lasting reinforcement.”

FRP Institute seeks to streamline manufacturer audits through paperless documentation retrieval. “We’re undertaking a complete redevelopment of audit criteria to more uniformly adapt to the most proficient codes and standards applicable to DOTs,” notes Auditing/Technical Services Chair Joe Stilwell, P.E., former Maine Department of Transportation fabrication engineer. “Future goals include utilizing our audit reports as approved industry training via the AASHTO Industry Document Repository.”



On the heels of a Q3 2024 brand and website launch, FRP Institute plans to continue to add technical resources and promote educational courses as membership grows. The group’s benchmark presentation for state DOTs is “FRP Reinforcing for Concrete Structures: Design, Installation, Handling, Chemistry and Engineering.”

“We’re building a lot of momentum and adding new FRP producers, suppliers and individuals to our membership,” affirms Krolewski, who has 20-plus years of experience developing certification programs for precast concrete producers and a track with the Federal Highway Administration and U.S. Army Corps of Engineers. “We believe FRP reinforcement has a significant role to play in building the next generation of infrastructure.” Joining him and Stilwell on the FRP Institute leadership team are Chair W. Cabell Garbee II, P.E., manufactured products engineer in the North Carolina Department of Transportation Materials and Test Unit; Lead Auditor Rudolf (Rudi) Seracino, Ph.D, M.ASCE, F.ACI, North Carolina State University Civil Engineering, Construction and Environmental Engineering Department professor; and, Codes and Standards Chair Matt Chynoweth, P.E., vice president and National Bridge Discipline Leader for RS&H Inc., Florida-based architectural/engineering firm, and former Michigan DOT chief bridge engineer. — www.frp-institute.org



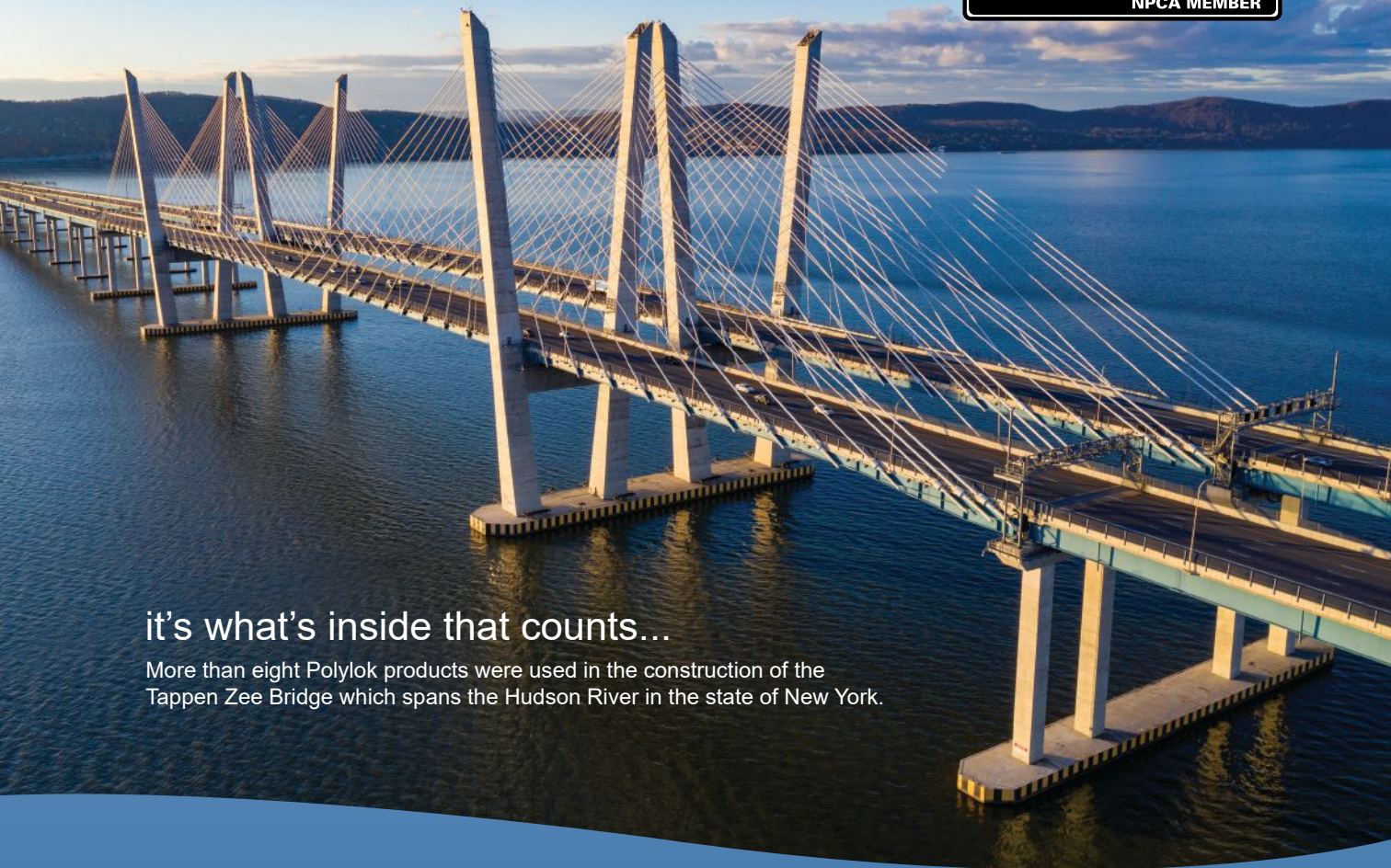
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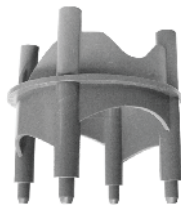
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CRH, Holcim commit \$75M to Sublime Systems, Microsoft collaborator

Sublime Systems, Somerville, Mass. developer of an electrochemical process netting ASTM C1157-grade binder at lower carbon dioxide emissions levels than portland cement, is teaming with CRH Plc and Holcim Ltd. to advance a premier Sublime Cement facility in Holyoke, Mass. The global cement, aggregate and concrete producers' \$75 million Sublime Systems investment anchors a requisite financial commitment to the facility, which is eligible for a funding match up to \$86.9 million under a Department of Energy Office of Clean Energy Demonstrations opportunity announced earlier this year.

Holyoke plant stakeholders envision 30,000 tons' annual capacity and production start as early as 2026. Initial output tonnages will be available to the CRH/Ash Grove Cement, Holcim US and Lafarge Canada businesses. Along with the forward powder purchases, dubbed "binding cement reservations," CRH and Holcim will individually collaborate with their new partner to develop Sublime Cement production lines in multiple geographies, all targeting "true zero" emissions operation.

"Sublime Systems is a disruptive force in cement. Its unique technology cuts across the entire production process, from the use of clean electricity to carbon-free raw materials," says Holcim Ltd. Chief Sustainability Officer Nollaig Forrest. "This investment is fully in line with our strategy to accelerate the decarbonization of construction by scaling up the most innovative technologies."

The partnership demonstrates a CRH commitment to "supporting breakthrough technologies and driving innovative

low-carbon solutions for the built environment. Sublime's differentiated technology and ability to scale, combined with our expertise and footprint across North America and Europe, offers significant potential to dramatically decarbonize cement production," adds CRH Ventures Head Eduardo Gomez.

"Our breakthrough technology must be paired with manufacturing operations, logistics, and distribution—areas [where] building materials leaders excel," concludes Sublime Systems Co-Founder and CEO Dr. Leah Ellis. "Holcim and CRH each bring unique strategic advantages and expertise in the industry, and these partnerships offer an unparalleled opportunity to scale our technology."

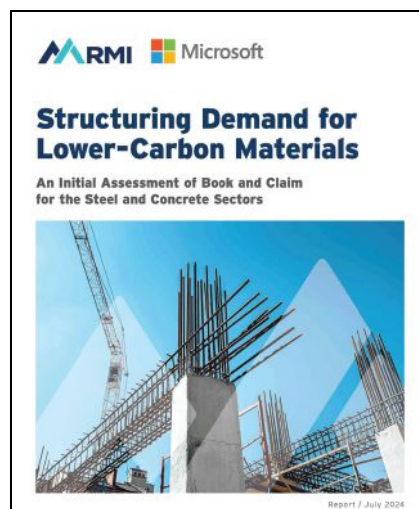
MICROSOFT MODELING

Under a memorandum of understanding announced shortly after the CRH and Holcim capital commitments, Sublime Systems and Microsoft Corp. aim to negotiate a contract for the purchase of environmental attribute certificates (EAC) generated from the Holyoke and subsequent Sublime Cement facilities. The companies intend for their collaboration to inform development of a book and claim market and demonstrate how it could serve as a model supporting cement and concrete sector decarbonization. Book and claim models, Sublime Systems notes, decouple the environmental attributes from the product itself and enable low-carbon materials producers to access a customer base well beyond their immediate geographic area.

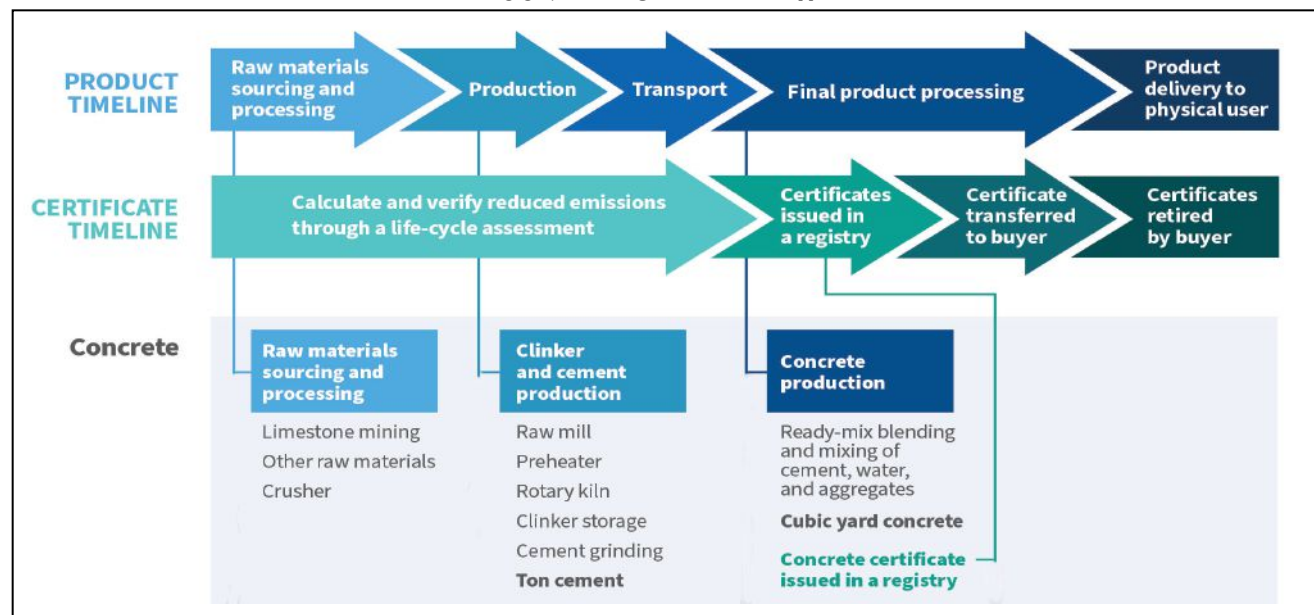
"Low-carbon cement is a critical solution not only for our work to become carbon negative by 2030, but also for the world as we look

to transition to a net-zero economy," says Microsoft Fuel and Materials Decarbonization Lead Julia Fidler. "We look forward to collaborating with Sublime and an ecosystem of industry partners to develop systems that are verifiable and held to the highest standards of integrity." Microsoft's use of innovative contracting structures, including purchase of environmental benefits attending Sublime Cement, she adds, heralds a faster transition to decarbonized construction.

"The collaboration unleashes powerful signals to the broader market that there is bankable demand for our low-carbon cement and that we must scale to meet that demand. We look forward to a future where there is a Sublime Cement plant in every region," affirms Sublime Systems' Dr. Leah Ellis.



BOOK AND CLAIM PATHWAY



Sublime Systems and Microsoft envision a "verifiable, additional, and catalytic" EAC transaction. "Structuring Demand for Lower Carbon Materials," a July 2024 Microsoft and RMI publication posted at www.rmi.org, cites those criteria as foundational for a book and claim model to be impactful.

CRH names CFO Mintern as successor to retiring CEO Manifold

The Dublin parent company of CRH Americas Materials Solutions, Ash Grove Cement, Oldcastle APG and Oldcastle Infrastructure has appointed Chief Financial Officer Jim Mintern as successor to Albert Manifold, who will cap an even 11 years as chief executive officer at the end of 2024. Mintern is a 22-year CRH Plc veteran who has held various senior leadership roles and was named a director in 2021. The board credits his deep industry knowledge and track record of developing people and teams, coupled with an extensive portfolio of management, financial and capital markets expertise. In the latter area, he led the September 2023 transition of CRH's primary listing from the London Stock Exchange to the New York Stock Exchange.

"The board has a significant focus on succession planning throughout CRH. With the support of independent advisors, we have followed best practice, including a review of external candidates, and carefully monitored the development plans for potential internal candidates," says CRH Chairman Richie Boucher. "Over recent years we have closely observed Jim's character, qualities and abilities, as well as his significant influence on the evolution of CRH. We are very pleased to have a successor of such caliber and confident that Jim is best positioned to lead the CRH team, building the future of the company for the benefit of our investors, customers, colleagues and communities. Jim will become the chief executive officer of a high-performing company in robust strategic and financial health."

"CRH is a very focused, high performing group and is recognized by its customers as the industry's leading provider of innovative building materials solutions. Under Albert Manifold's leadership, it has delivered superior growth and performance with consistently improving profitability, cash generation and returns," he adds.

"CRH has an impressive legacy of continuous growth and financial performance by providing value enhancing solutions for its customers," affirms Mintern. "I look forward to working alongside our highly talented team as we build on this foundation and continue to successfully grow the business while delivering exceptional returns for shareholders."

Manifold will serve in an advisory role for 12 months after stepping down from the board and relinquishing executive duties on December 31. He joined CRH in 1998 and was appointed chief executive officer in 2014.



CEO Albert Manifold (left) and successor Jim Mintern.

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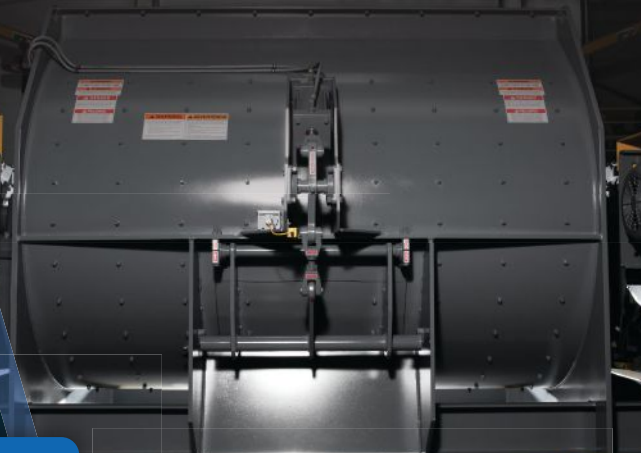
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\$85M funding round propels Fortera beyond CalPortland plant model

The Silicon Valley developer of the ReCarb process, where carbon dioxide from cement or other industrial plant emissions is mineralized and converted to concrete-grade ReAct binder agents, has secured \$85 million in Series C funding to pursue additional plant installations after this year's charter facility deployment at the CalPortland Co. Redding, Calif. mill. Fortera reports participation from previous investors Khosla Ventures and Temasek plus first-time investments from Wollemi Capital, NOVA by Saint-Gobain, Presidio Ventures and Alumni Ventures. They recognize the ReAct route to commercialization, amplified by Fortera's World of Concrete 2024 premier, coupled with market uptake prospects for a unique calcium carbonate whose production equates to a 70 percent reduction in carbon dioxide emissions versus portland cement.

"Due to the scale of the industry, we won't have an impact on emissions unless we have an economic pathway to expand globally," says Fortera Co-Founder and CEO Ryan Gilliam. "With the launch of our first plant and close of this funding round, we're entering into the next phase of our development as a commercial project company to accelerate low- to zero-carbon cement deployment. It's vital to have the financial means to put operations in place to commercialize our technology, and we are honored to have the backing and expertise of some of the most knowledgeable investment firms in project



finance and the cement and concrete industry as we carve the path to zero CO₂ cement."

As demonstrated at CalPortland Redding, the ReCarb process bolts onto existing cement operations and mineralizes captured CO₂. Since Fortera's process integrates into established infrastructure, including feedstocks, capital investments, logistics, and sales networks, the path to wide-scale commercialization is potentially shorter and more cost-effective. The ReCarb technology entails significantly reduced kiln temperatures than portland cement clinker and is compatible with renewable energy integration, which would further reduce emissions and usher zero CO₂ cement production. Building on the CalPortland Redding template, Fortera envisions full-scale ReCarb plants mineralizing upward of 165,000 tons of CO₂ and yielding approximately 375,000 tons of ReAct Blend or ReAct Pure cement annually.

"Fortera does what previous green cement technologies have failed to do—it works with cement companies to provide an accessible solution to a cleaner industry," observes Wollemi Capital Director Natalie Volpe. "The compatibility with today's ecosystem makes us confident that Fortera's process is the most effective technology to decarbonize cement and achieve meaningful climate impact more quickly. We are pleased to bring Wollemi's expertise in financing next generation infrastructure to support the development of future plants."

"Investment in Fortera aligns with Saint-Gobain's priority toward the decarbonization of industries and our commitment to working with startups that are moving the world forward with sustainable innovations," adds Saint-Gobain Vice President, External Venturing Basma Kharrat. "We look forward to fostering our relationship with Fortera as they continue to evolve cement technology aimed at reducing environmental impact while also reducing carbon emissions through manufacturing facility upgrades."

Fortera's ReCarb technology is the result of 100,000-plus research and development hours, supported by more than 100 issued and pending global patents and over a decade of real-world product testing. Third-party labs have confirmed ReAct series materials' capacity to match the strength development and durability characteristics of portland cement. — Fortera, San Jose, Calif., www.forteraglobal.com



Fortera programs the ReCarb process to yield a partial or full portland cement replacement.

Eco Material drives down CO₂ emissions, landfill volumes

Eco Material Technologies Inc., the top fly ash and supplementary cementitious material processor and marketer in North America, targets annual SCM volume of 20 million tons by 2030, a doubling of 2023 output. That projection leads production data and perspectives in the just-released 2023 Sustainability Report, showing how Eco Material last year:

- Diverted more than 10.2 million tons of material from landfills, including fresh fly ash, bottom ash, and harvested landfilled ash;
- Avoided or helped avoid 5.9 million metric tons of carbon dioxide emissions by promoting binder or binding agents augmenting or replacing portland cement;
- Expanded fly ash harvesting and beneficiation capabilities as work on new Texas and Georgia plants commenced or concluded;
- Milled 69,000 tons of low-carbon cement products;
- Issued an additional \$125 million in Green Bonds to fund sustainability-driven projects and innovations, bringing the company's total such financing instruments to \$650 million;
- Partnered with Pennsylvania sustainability consultant ClimeCo and other stakeholders to develop the first-ever U.S. Low-Carbon Cement Protocol for generating voluntary carbon credits; and,
- Reduced Total Recordable Incident Rate below 1.0, significantly lower than the industry average, while boosting employee safety and health program investments.

"Our 2023 results demonstrate continued leadership in decarbonizing the cement and concrete industries," says Eco Material Chief Growth Officer Rob McNally. "By expanding production of near-zero carbon supplementary cementitious materials, we are enabling customers to significantly reduce their environmental footprint while improving the performance of concrete. Innovative products like PozzoSlag and Pozzo-CEM can replace up to 100 percent of ordinary portland cement in certain

applications, dramatically cutting emissions."

"We remain committed to pushing the boundaries of innovation in sustainable construction materials," adds CEO Grant Quasha. "Our goal is not just to reduce the carbon footprint of the concrete industry, but to revolutionize how we build for a more sustainable future."

Document is posted at www.ecomaterial.com.



ECOMATERIAL
2023 SUSTAINABILITY
REPORT
LEADING DECARBONIZATION OF
THE CEMENT INDUSTRY
2023 SUSTAINABILITY REPORT

SLAG CEMENT PRODUCER RANKS GROW

The newest Slag Cement Association member, Sathi USA, has developed a slag cement production facility in Houston, billed as an "eco-friendly plant designed to set new standards in sustainability." Sathi USA's mission is to reshape the construction industry through ground granulated blast-furnace slag technology and a "commitment to revolutionize the marketplace with sustainable construction materials."

"We are excited to have Sathi USA join," says SCA Marketing Director Nick Brimley. "Their unwavering commitment to slag cement being the preferred solution for lowering embodied carbon in concrete will push the industry forward in achieving our sustainability goals."



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CarbonBuilt poised for new plant deployments with Meta backing

CarbonBuilt and Facebook host Meta Platforms have announced a plan to broaden adoption of the former company's Reversa binder and process technology, where carbon dioxide is sequestered in concrete and mix designs require lower than normal volumes of CO₂-intensive portland cement.

"Meta is prioritizing a multifaceted approach to decarbonization in hard-to-abate sectors like concrete. Our collaboration with CarbonBuilt will help them to deliver a step change reduction in emissions with a clear near-term path to scale," says Meta Head of Clean Technology Innovation John DeAngelis. "Accelerating the deployment of these types of solutions is critical for driving deep decarbonization and we hope this collaboration can help pave the path for others to do the same." Since 2020, he adds, Meta has maintained net zero greenhouse gas emissions in its global operations—reducing output of CO₂ and other GHG compounds by 94 percent from a 2017 baseline—and committed to achieving net zero emissions across its value chain in 2030.

Bending the carbon curve in cement and concrete on a fast timetable, notes CarbonBuilt CEO Rahul Shendure, requires solutions with which "market participants can secure

an attractive return on their investment of financial and human capital. Our collaboration with Meta will help accelerate the scale-up of ambitious, here-now technology."



A capital commitment from Meta positions CarbonBuilt to equip additional plants with Reversa technology on an expedited timetable, extending the proven model of premier user Blair Block, Alabama's top concrete masonry producer.

CLIMATE WEEK HUB LIVE: 'LEADERSHIP AND GREEN GROWTH'

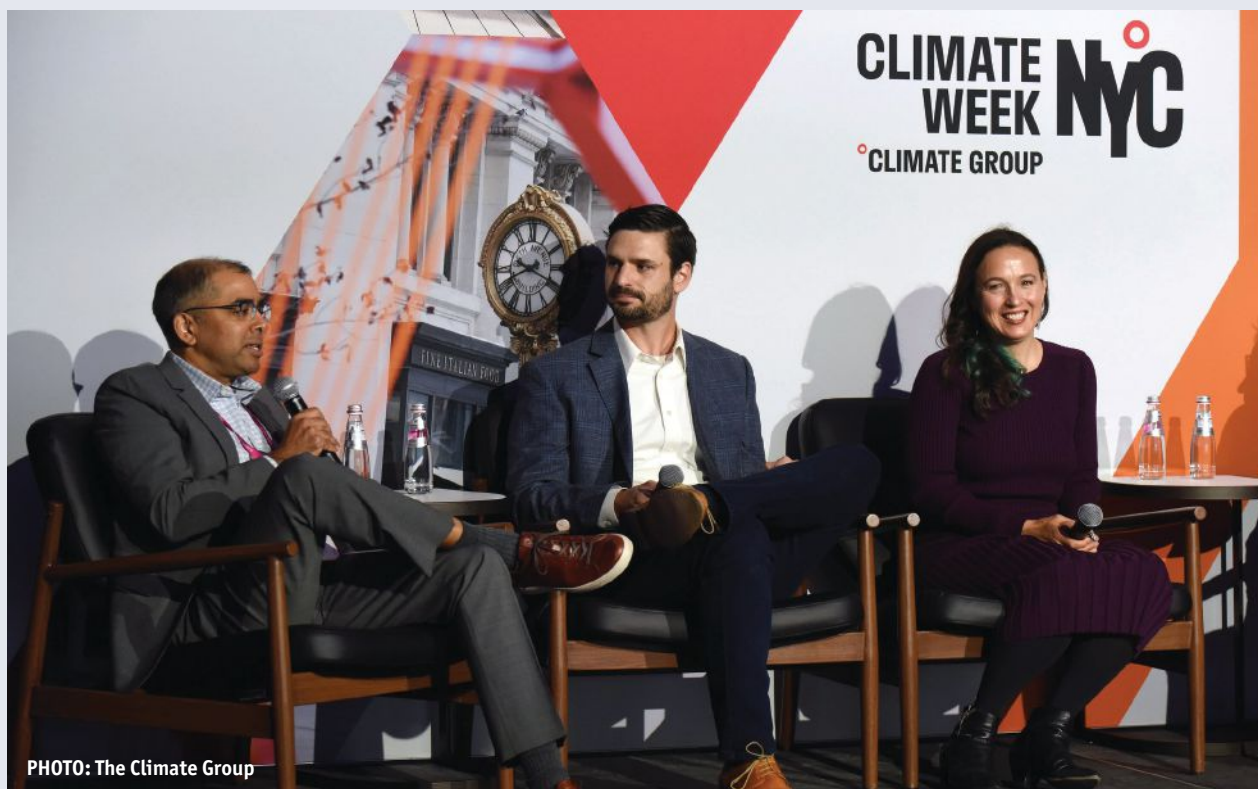


PHOTO: The Climate Group

The CarbonBuilt and Meta Platforms collaboration announcement dovetailed Climate Week New York City, hosted by London-based Climate Group and staged late last month alongside United Nations General Assembly proceedings. CarbonBuilt CEO Rahul Shendure (left), Meta Head of Clean Technology Innovation John DeAngelis and New Concrete Co-Director Sara Neff discussed CarbonBuilt Reversa technology adoption prospects during a panel within the Climate Week Hub Live program, "Leadership and Green Growth."

Besser raises robotics offerings with Slab Innovation asset deal

Besser Co. has added concrete masonry building or hardscape unit and pallet handling automation capabilities, acquiring the assets of St. Hubert, Quebec-based Slab Innovation. An early-September transaction formalized the next step in a strategic alliance netting successful completion of many joint plant projects throughout North America since 2017.

"It's fitting that in the same year we're celebrating our 120th anniversary of serving the global concrete products industry, we're expanding our commitment to innovation by welcoming Slab Innovation into the Besser family," says Besser CEO Ryan Suszek. "The addition provides our customers access to robotic solutions that are proven to increase plant efficiency, improve worker safety, and expand product lines."

"Officially joining the Besser team is an honor and a tremendous accomplishment for us," adds Slab Innovation President Benoit Slavinski, who joins Besser as vice president of Robotics. "We're bringing our 20-plus years of experience and passion for crafting custom robotic solutions for the concrete industry. The opportunities ahead are unlimited in all segments of the industry, including those beyond Besser's current scope."

The Slab Innovation team expands Besser capabilities with a workforce highly skilled in mechanical and electrical engineering, equipment fabrication, plus customization of robotics controls and programming. Besser also adds two brick-and-mortar facilities in Canada to its existing North American manufacturing and service footprint. They will focus on identifying, building, and integrating flexible and robust robotic applications to meet each producer's specific needs.



FILE PHOTO: Concrete Products

A Slab Innovation Clamp Palletizer amid the Besser ICON Expo Machine & Equipment Show booth in 2018—the year after the companies entered a partnership leading to the September 2024 asset transaction. Slab Innovation joined the North American Fanuc Robot integrator ranks in 2013.

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Visionary developer transforms Transamerica Pyramid Center

With a namesake architectural precast concrete masterpiece recognized the world over, the Transamerica Pyramid Center reopened in San Francisco last month following a \$1 billion dollar investment by Deutsche Finance and New York developer SHVO in partnership with London-based architect Foster + Partners.

The Transamerica Pyramid, along with the adjacent Two and Three Transamerica buildings, have been reimagined with a hotel-like aesthetic that welcomes tenants and guests with luxurious private amenities and expanded public spaces. Features include a renovated grand lobby, exclusive top-floor bar, sky lounge, gym, spa and conference spaces. Transamerica Redwood Park, an urban oasis sustaining old-growth treasures in the San Francisco Financial District, has also been meticulously restored and expanded with new sidewalks, seating and landscaping.

"The Transamerica Pyramid has always been ahead of its time, and now it always will be. The remastering of this historic block will mark a new chapter for this iconic landmark, ensuring it remains a vibrant hub for creativity, business, and community," says SHVO Chairman Michael Shvo.

"We are delighted to see Transamerica Pyramid Center entering a new era," adds Lord Norman Foster, executive chairman of Foster + Partners. "Our transformation honors the building's history while creating interior spaces that are world class and outdoor public gardens that reconnect with the city."

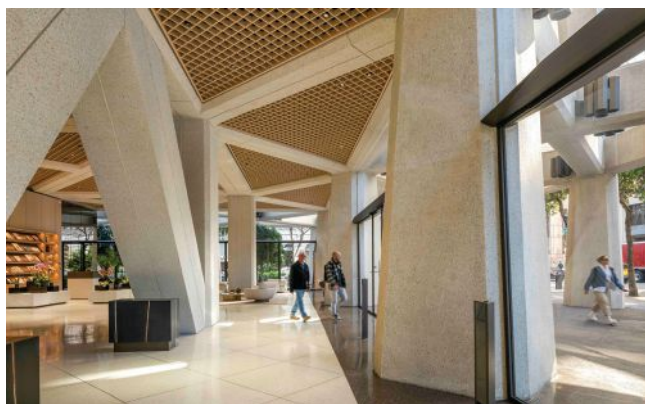
"The Transamerica Pyramid is more than just a building, it's part of our story as a city committed to rebuilding and reinventing itself, and a symbol of San Francisco's spirit," notes Mayor London Breed. "This renovation not only cements an iconic building to continue as a landmark site for generations to come, but it also is creating a thriving hub for businesses and fostering a vibrant public space for everyone."



PHOTOS: David Lipman for SHVO



The Pyramid from northwest and east (top) perspectives, the latter through the Transamerica Redwood Park. The 360,000 square feet of architectural precast defining the entire exterior and prominent interior aspects is a credit to Western Art Stone, which during a 1971-1972 production schedule delivered 3,920 exposed white quartz aggregate elements from a plant just outside San Francisco.



Rebar-tying workhorse moves from contract to ownership model

Advanced Construction Robotics plans Q1 2025 delivery of initial orders for TyBOT 3.0, the next generation of an automated rebar tying machine previously offered on a project-by-project, "Robot as a Service" terms. Over the past six years, ACR and contractor partners have demonstrated prior TyBOT versions' capabilities on 60-plus jobs, primarily bridge decks, in 14 states, totaling 4 million-plus ties. The machines can yield 1,100 ties per hour depending on bar size and spacing. TyBOT 3.0 premieres in a standard model suiting work areas up to 67-ft. wide, configurable for expanded widths to 117 feet.

The TyBOT package includes comprehensive training to ensure customers can confidently mobilize, configure, supervise, and maintain TyBOT from day one. ACR's Service Platform Subscription gives customers access to a live data portal providing insight into their rebar installation operations as well as continued access to the latest software features. TyBOT 3.0 also has optional accessories to further expand its cost-saving capabilities, including multiple modes of travel for non-bridge projects and a carry function add-on to transport materials efficiently and safely to working crew members.

"Offering TyBOT for sale represents our commitment to creating disruptive solutions that will redefine how the world builds, driving unprecedented efficiency, safety, and innovation across a wider range of construction applications," says ACR Founder and Executive Chairman Stephen Muck.

"With over 65 field deployments nationwide, TyBOT has proven that it provides customers at least 25 percent savings in their installation operations and is quickly becoming an accepted tool of the trade by rodbusters," adds CEO Danielle Proctor. "We've seen a tremendous increase in demand for TyBOT as well as our second product, IronBOT, the Rebar Placing Robot. Our planned evolution from product design and adoption through Robot as a Service to offering our BOTs for purchase reflects confidence in our team's ability to quickly provide mature products that reliably solve real-world problems. We look forward to customers fully integrating our solutions into their operations, providing enhanced productivity and safety using modern tools for a modern workforce."



TyBOT 3.0 will extend the productivity of the prior version, shown here at a mid-2024 project on a Kiewit Corp. job in North Carolina, where subcontractor DT Read Steel Co. secured 58,000 ties on a 25,150-sq.-ft. deck.



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N.C. State, Lehigh, Alabama teams measure up to PCI Big Beam

A North Carolina State University student team, guided by faculty advisor Gregory Lucier and member producer Tindall Corp., took the Precast/Prestressed Concrete Institute 2024 Engineering Design Competition. Now in its 24th and better known as Big Beam, the event challenges college or university students to fabricate and test 20-ft. structural members. Teams are judged on their beam's load-resisting performance in tests that simulate real-world building or infrastructure conditions; quality of analyses and reports; and, project overview videos.

"Big Beam provided a platform for us to bridge the gap between theoretical knowledge acquired in school and its practical application in the precast industry," says N.C. State's Sam Valmassoi. "I was particularly excited about the use of ultra-high-performance concrete in our design and the unique challenges and opportunities that arose."

"The Big Beam competition is the foundation of our mission to support and promote student education initiatives," adds PCI President and CEO Bob Risser. "The future of the precast, prestressed concrete industry is in good hands, judging by the entries. Congratulations to the North Carolina State University team and all of the students who participated."

Rounding out 2024 Big Beam Competition leaders in second and third place were teams from Lehigh University, with faculty advisor Clay Naito and PCI producer Northeast Prestressed Products; and, University of Alabama Team 1, with faculty advisor Sriram Aaleti and PCI producer Gate Precast. The Lehigh team also prevailed in the Big Beam Best Video category and took the competition's Keith Kaufman Award for Best Report, recognizing clear presentation of data, professional look and formatting, plus overall writing quality.

Other 2024 Big Beam participants included teams from University of Minnesota – Duluth, with PCI producer Molin Concrete Products; Northern Arizona University, with EnCon AZ LLC, dba TPAC; Old Dominion University, with Coastal Precast Systems; and, University of Western Ontario, with Stubbe's Precast. Aspire magazine and Pennsylvania-based ALP Supply sponsored this year's event.



Lehigh University Big Beam team members, from left: Kate Springsteen, Taryn Ross, Ryder Henry, Peter Misiewicz and Ryan Bruce.



University of Alabama Team 1 handiwork.



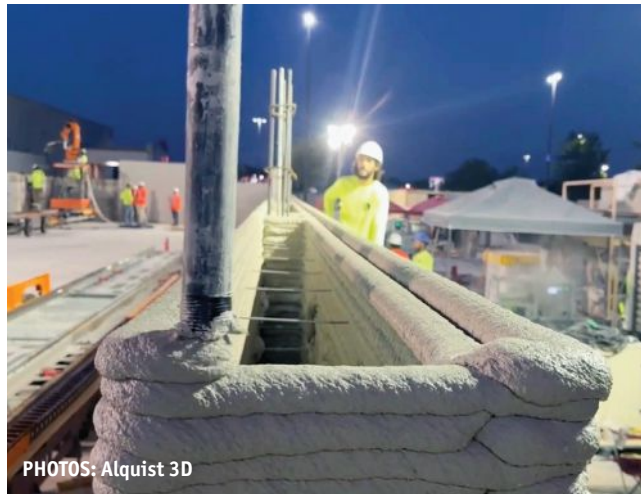
N.C. State team, from left: Sam Valmassoi, Taylor Brodbeck, Allison Ebbert and Mohammad Qambar. Tindall Corp. fabricated their specimen with an ultra-high performance concrete mix. Destructive testing confirmed the material and engineering scheme's robust nature.



Walmart Supercenter merchandises 3D concrete printing

Colorado-based Alquist 3D recently dispatched a concrete/mortar ink printer and crew to place a 20-ft. high enclosure for an 8,000-sq.-ft. addition to the Walmart Supercenter in Athens, Tenn. An articulating robot with 48-in. long, 1-in. diameter nozzle shuttled around each wall section perimeter, efficiently printing twin inner and outer layers with precision. The new facility will support the Walmart Online Pickup & Delivery program.

Alquist 3D officials note that the Walmart Athens addition exemplifies their commitment to “transforming how we think about building—whether it’s for commercial retail or the future of housing. The project represents not just a step forward for Walmart, but also for the retail and construction industries at large. Our mastery of cutting-edge 3D concrete printing technology reflects a broader trend toward greener, faster, and more technologically advanced construction.”



PHOTOS: Alquist 3D

The Tennessee project marks Walmart’s first large-scale 3D-printed concrete application. A second such specification is in the works for a sister store.

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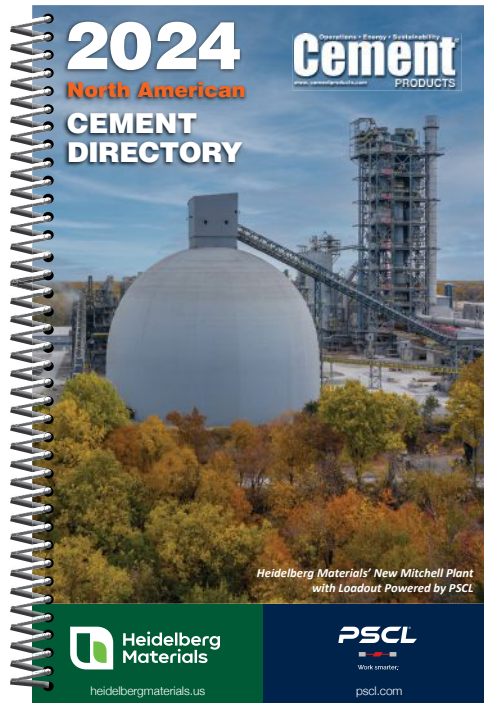


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ASTM brings committee deliverables to UN Climate Change Convention



COP29
Baku
Azerbaijan

ASTM International has been granted provisional observer status at the 29th session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP29), November 11-22 in Azerbaijan. With a goal of advancing science-based, consensus solutions, ASTM representatives will showcase current committee and related efforts in the areas of Climate, Additive Manu-

facturing and Sustainable/Resilient Construction, the latter covering:

- Lower carbon materials
- Carbon neutralization of materials
- Minimization of construction waste

- Manufacturing or producing better materials
- Innovation in construction practices

To support awareness of its role in providing technical solutions developed by global scientific experts to address climate action, ASTM is partnering with the International Code Council and Business Council for Sustainable Energy. ASTM holds special consultative status within the United Nations and has participated in various activities or initiatives. UN committees and agencies have recognized or cited ASTM standards, many of which support realization of 12 of the 17 UN Sustainable Development Goals. Additional information on the COP29 presentations can be obtained from ASTM's Emmanuel Escoto, 610/832-9809 or escoto@astm.org.

CERTIFIED DECARBONIZATION PROFESSIONALS EMERGE

ASHRAE, the Atlanta organization behind the most widely adopted building energy efficiency and mechanical systems standards, has announced an inaugural cohort of 64 Certified Decarbonization Professionals (CDP). The certification validates candidates' competency to assess, analyze, and develop effective and sustainable strategies to reduce or eliminate the life-cycle carbon footprint of new or existing buildings. It requires education and work experience; adherence to a code of professional conduct; and, passing a rigorous exam spanning tasks across eight domains, including decarbonization drivers, project planning and development, construction and renovation, passive and active efficiency, facility management, plus distributed energy resources. The ASHRAE Center of Excellence for Building Decarbonization provided the vision and resources behind CDP.

"Decarbonization is essential to our global sustainability goals, and ASHRAE is committed to empowering professionals with the skills and knowledge necessary to lead the charge," says 2024-25 President M. Dennis Knight, P.E. "The Certified Decarbonization Professional program is not just a milestone for ASHRAE, but a much-needed tool for the industry as we work toward a net-zero future." — www.ashrae.org/certification



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International Motors powers up solutions, services with Navistar sunset

Heavy-duty truck OEM Navistar Inc. will now operate as International Motors LLC, maintaining Lisle, Ill. headquarters while expanding a North American market stake for parent company Traton SE, Munich. International Motors will focus on more than engineering and delivering truck and bus products, management notes. While vehicles remain the core of every customer interaction, a full International Motors solutions portfolio will also include parts, maintenance, financing, connectivity, and charging services. Current OnCommand Connection and International 360 tools will unite under a new digital customer interface, My International, programmed to align all customer solutions and data, including service contracts, financing, and fleet management in one place. The rebranding also marks the company's revival of captive financial services, which will now go to market as International Financial.

INTERNATIONAL

The new brand embodies what International Motors Chief Strategy and Transformation Officer Tobias Glitterstam characterizes as "Determination, partnership, and collaboration in meeting every challenge with a solution. Our new name and look complement strategic changes we are making to offer enhanced customer experiences."

"The return to International is an acknowledgement of our rich heritage as much as it is an investment in our promising future," adds CEO Mathias Carlbaum. "The simplified brand structure, distinct visual identity, and clear strategy to more effectively engage with customers ensure we can lay claim to another 200 years of success and signals a new phase of our company's positioning."

Navistar Inc. became a holding company for truck equipment assets separated from legacy International Harvester agricultural machinery in 1986, a drastic departure from the prior year's corporate messaging.



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We simply say that we will do everything in our power to help our customers succeed in their businesses. Sometimes the help we offer is a detailed computer analysis of a customer's maintenance facilities that can make the difference between a trucker's profit and loss. Sometimes it's staging an agricultural equipment clinic for friends and neighbors, with movies, refreshments and real tips from company experts on preventive maintenance, and how to increase efficiency in the field. It's all part of a commitment we and our dealers have honored since we began. And, as far as everyone at International Harvester is concerned, the commitment is forever.



The commitment is forever.



The Navistar brand sunset is part of a broader transformation ushering 2022-2024 International S13 Integrated Powertrain launches across LT and RH Series, HX Series (shown here at ConExpo-Con/Agg) and HV Series models.

Wireless device confronts concrete building barriers to Gigabits

Santa Clara, Calif.-based Airvine, a first mover in multi-Gigabit-speed wireless backhaul systems for indoor connectivity, has engineered its WaveCore product line to eliminate the expensive and time-consuming drilling associated with Ethernet cabling and reinforced concrete structural or partition elements in commercial buildings. The WaveCore wireless backhaul system consists of a simple point to point bridge with two nodes, each just over 10 in. square and 2.7-in. deep and equal to transmitting Gigabit-speed links through thick concrete. Testing has shown results such as a 3Gb per second connection through 8 inches of concrete in the middle of a 54-ft. link and a 4Gb per second connection through a 12-in. concrete wall in a garage that was in the middle of a 6-ft. link.

In addition to relieving building engineers of drilling or complicated Ethernet cable routing in typical commercial office building spaces or suites, the WaveCore will prove useful in meeting connectivity requirements for fire control rooms. They are often located in the basement, surrounded by thick concrete walls, and have mandated connectivity to first responders or other outside world parties. The WaveCore solution is managed by the VineSuite software platform, which facilitates network set-up and operation.

"We have proven with customers for more than a year now that the WaveTunnel provides cost-effective Gigabit-speed connectivity in MDUs, factories, warehouses, conference centers and other similarly large properties," says Airvine CEO Vivek Ragavan. "However, we could not achieve the company's founding vision of providing pervasive indoor wireless connectivity because we literally kept running into concrete barriers. The WaveCore system surmounts these obstacles and enables us to connect wirelessly any building with any floor plan anywhere."



WaveCore node

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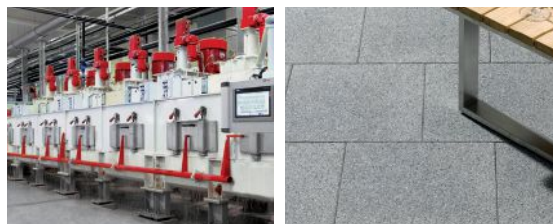
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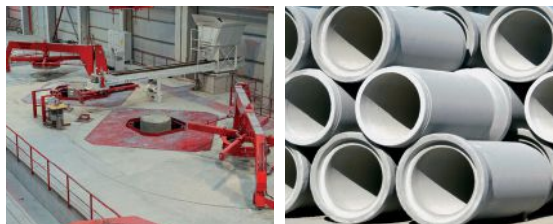
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PRODUCERS

Holcim Ltd. Country CEO, Mexico Jaime Hill has been appointed region head North America, gaining responsibility for the **Holcim US** and **Lafarge Canada** businesses and succeeding Toufic Tabbara. Hill joined Holcim in 1996 and has 30-plus years of experience spanning finance, sales and marketing leadership roles in the U.S. and Latin America. Management credits his track record of profitable growth, positioning the Mexico portfolio as the second biggest contributor to Holcim Ltd. operating profit.

Concurrently, General Counsel Corporate and M&A Lukas Studer has been promoted to group general counsel, effective November and succeeding Mathias Gaertner. As the lead attorney in the execution of Holcim's fast-paced growth and portfolio transformation, Studer has played an essential role in a merger & acquisition strategy spurring 100-plus transactions in the last five years.



Mike Donovan

Dublin-based slag cement processor **Ecocem** has appointed Mike Donovan as technical director for its U.S. operations, ahead of a Port of Los Angeles grinding operation and terminal opening. He arrives

with upward of four decades in the industry, including tours with Sherman Industries, Blue Circle Cement and **Central Concrete Supply**. Most recently, he oversaw development and commercialization of a natural pozzolan with **Geofortis LLC**. He joins Ecocem U.S. Operations Managing Director Steve Bryan in working with industry partners to support slag cement adoption and provide resources to North American government agencies, consultants and investors seeking guidance on low-carbon binders and concrete.



Jennmar, Pittsburgh-based construction product and service provider and part of the FalconPoint Partners portfolio, has acquired a Holden, W.V. blending facility from **Wright-Mix Material Solutions LLC**, central Appalachia's premier contract blending and bagging services provider. The asset transaction supports the **Jennchem** subsidiary.

"The addition of a trusted, existing partner will greatly enhance our customer service and strengthen our ability to deliver J-Seal specialized foaming cement with the speed and efficiency our customers have come to expect," says Jennmar CEO Tony Calandra. "Sincere thanks to Kendall and Shannon Wright for their support in ensuring a smooth transition."

"We are excited to welcome Wright-Mix employees to the Jennchem family. This acquisition will strengthen our position in the market and allow us to further improve our product offerings," adds Jennchem Chief Operating Officer Drew Morgan.

"We have collaborated with Jennchem over the last 15 years to develop and produce J-Seal and other products," affirms Shannon Wright, president of **Wright Concrete and Construction**. "With new toll-building facilities under construction within our network, now is the right time for Jennchem to take full control of their product lines. We are confident in a bright future for our West Virginia employees and thank them for their loyalty and dedication."

EPAM Systems Inc., Newtown, Pa. digital transformation and product engineering services provider, has entered an agreement to acquire Miami-based Neoris, a global advanced technology consultancy with more than 4,700 professionals across major talent hubs in the U.S., Latin America and Spain. The sellers are funds managed by **Cemex S.A.B. de C.V.** and Advent International, a seasoned global private equity investor.

Neoris specializes in delivering complex

digital engagement and transformation projects for clients in the Americas and Europe, across manufacturing and service industries. "Cemex founded Neoris more than 20 years ago and led it to become a global technology consultancy," says CEO Fernando Gonzalez. "We are proud of its track record and the role it has played in Cemex becoming an industry pioneer in digital technologies. We look forward to continuing our collaboration with the newly combined team. This transaction is part of Cemex's efforts to focus on its core businesses and aligns with our ongoing acquisitions and portfolio rebalancing strategy." Cemex expects to continue partnering with Neoris to further its leadership in providing a superior customer experience through digital technologies, he adds.

"Neoris' commitment to engineering quality, innovation, and strong level of client engagement, combined with their deep expertise across our key industry segments, makes them the best partner for us," affirms EPAM CEO Arkadiy Dobkin. "This combination will significantly strengthen our presence in Latin America while we continue to enhance our differentiated delivery capabilities across Europe."

BUSINESS OBSERVERS WATCH DRAKE READY MIX GROW

Fort Myers, Fla.-based Drake Ready Mix, founded in 2006 by a father-and-son team and now operating on a 10-acre site and 100-plus mixer fleet, is a finalist for the GrowFL Companies to Watch list, to be released this month. Sponsored by Nperspective CFO & Strategic Services in partnership with the Edward Lowe Foundation, the GrowFL Florida Companies to Watch award recognizes businesses that significantly contribute to Sunshine State's economic vitality. Nominees have overcome challenges, displayed strong leadership, and fostered innovation, making a positive impact on their communities and industries.

"As a family-owned company starting out with less than 10 employees, we feel this recognition is a testament to our team's passion and commitment to reliability, quality and value," says President and Founding Partner Terry Drake.

"This year's finalists showcase Florida entrepreneurs' remarkable resilience and creativity," adds GrowFL Companies to Watch Committee Chair Marius Dobren. "Their achievements in a dynamic business landscape inspire others to reach for excellence. As a marketplace for entrepreneurs by entrepreneurs, the GrowFL community is delighted to celebrate the finalists and looks forward to announcing the top 50 honorees."



Drake Ready Mix is among 500-plus businesses nominated for Companies to Watch List honors.

ORGANIZATIONS



Matt Ballain

Matt Ballain has been named executive director of the **Precast/Prestressed Concrete Institute** Central Region, spanning Arkansas, Indiana, Kentucky, Michigan, Ohio, Tennessee, and West Virginia. The appointment follows his performance in many roles at PCI, leading to election as 2023 chair, along with nearly 20 years as vice president and general manager of **Coreslab Structures**, Indianapolis. On PCI's Executive Committee, Ballain has been an advocate for education and sustainability, including efforts to develop teaching materials for a college or university level prestressed concrete class. Concurrent with Executive Committee duties, he chairs the PCI Sustainability Committee.

"Matt's understanding of the industry, ability to foster collaboration in the private and non-profit sectors, and track record of substantial growth will serve the region well," says PCI Central Region Chair Barry Barger (**Prestress Services Industries**, Grove City, Ohio).

"I look forward to using my skills to further grow the market for producer and associate members, strengthening relationships with university professors and students, and enhancing the PCI Central Region through efforts with PCI and the other PCI regions," Ballain affirms.

The **National Ready Mixed Concrete Association** has recognized Lorri Soule, corporate safety manager of Washington-based **Miles Sand & Gravel Co.**, and Maine-based **Auburn Concrete** in its 8th Annual Safety Awards program. The Truck Mixer Manufacturers Bureau-sponsored award is presented to an individual and/or company whose actions represent the very highest in the advancement of safety in the ready mixed concrete industry. The recipients will be honored at an awards ceremony this month during the 2024 NRMCA ConcreteWorks Conference and Expo, Denver.

"Lorri's innovative strategies and unwavering commitment have not only elevated safety protocols but also inspired a profound shift in how safety is perceived and practiced across all of our organizations," Miles S&G officials note. "Her leadership and dedication have transformed safety standards." They credit her safety management with a 55 percent year over year injury rate decrease in 2023, during which the producer saw a 31 percent increase in worker hours over 2022.

Auburn Concrete earned a company NRMCA Safety Award partly on the strength of a testimonial from its insurance broker, who

after two-plus years of working with the producer notes: "I have seen nothing less than a 100 percent commitment to safety and fostering a partnership of innovation which has led to great success. To say they have been anything less than unrelenting in their pursuit of safety would be an understatement."

National Stone, Sand & Gravel Association Executive Vice President and Chief Advocacy Officer Michele Stanley will be interim chief

executive officer upon this month's departure of Michael Johnson, who has served as president and CEO for 11 years and will maintain those titles in a November transition to the American Coatings Association.

"Under Mike's leadership, NSSGA is in the best position it's ever been in to represent and advocate for our members," says Board Chair Jim Nickolas (**Martin Marietta Materials**). "During his tenure, the association successfully implemented four successive

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APPLIED RESEARCH ASSOCIATES VETERAN HEIN EARNS TOP CMHA HONOR

The Concrete Masonry & Hardscapes Association has presented David Hein, P.E. with its 2024 Industry Champion Award, a special recognition that extends beyond CMHA and the immediate concrete products industry. It honors individuals who, through their efforts and dedication, have significantly contributed to the advancement and promotion of concrete products. Recipients hail from various fields and industries and have recognized the value of concrete products, championed their use, and helped to drive innovation, sustainability plus growth.

Since 2020, Hein has been an independent engineer following nearly 20 years with New Mexico-based Applied Research Associates Inc., where he served as transportation infrastructure division manager, principal investigator and principal engineer. During his ARA tenure, Hein was introduced to segmental concrete pavement and the Interlocking Concrete Pavement Association, for whom he managed a number of notable projects. Through his work with the ICPI Foundation, he researched slab and plank finite element modeling, on/offsite Permeable Interlocking Concrete Pavement benefits, and developed CMHA's Permeable Design Pro

Software. He also consulted on PICP Structural Testing for the University of California Pavement Research Center.

CMHA credits Hein with developing many tools, among them a pavement condition index methodology which treats vehicular installations as assets, monitors their performance and predicts when maintenance will be required. The methodology evolved into ASTM E2840, Standard Practice for Pavement Condition Index Surveys for Interlocking Concrete Roads and Parking Lots, elevating management of paver roads to the level of other competitive pavement types. Hein has also developed a Life Cycle Cost Analysis of segmental concrete pavements allowing the industry to show the financial advantages of selecting pavers. He also chairs the American Society of Civil Engineers Technical Committees that created the ASCE 58-16 Structural Design of Interlocking Concrete Pavement for Municipal Streets and Roadways and ASCE 68-18 Permeable Interlocking Concrete Pavement standards.

"This award is our way of expressing deep appreciation for invaluable contributions that have supported and elevated the industry as a whole," says CMHA CEO Robert Thomas. "David

continues to be an advocate for segmental concrete pavement through his work with technical associations and government agencies. His recent work with the ICPI Foundation includes looking into developing a strategic map for future research and efforts needed to further institutionalize the use of segmental concrete pavements in Canada and the United States."



CMHA Hardscape Committee Chair Wayne Vilaluna (left) presents David Hein the 2024 Industry Champion Award during the CMHA Midyear Meeting in Ottawa.

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Rocks Build America strategic plans and our membership has grown to exceed 500 companies within the aggregates and industrial sand industry. Mike has assembled a team of professionals that will carry on the great work to deliver value to our member companies. The reputation and influence that NSSGA enjoys today is a testament to the work Mike and his team have done. On behalf of NSSGA's leadership and its members, we wish him much success in his next chapter."

The interim CEO appointment was announced less than a month after the National Ready Mixed Concrete Association made similar moves in response to the resignation and immediate exit of Mike Philipps, staff president.



Baker Construction, the largest concrete contractor in the U.S., has named Jason Uthe as chief financial officer, overseeing strategic financial planning, shared services, budgeting, forecasting,

and reporting. A certified public accountant and internal auditor, he arrives with 20-plus years of experience in financial operations and driving business growth at high-profile engineering and manufacturing firms. His strategic insights and focus on operational excellence, management notes, will support Baker's purpose of "Building better structures and building better lives."

Prior to joining Baker, Uthe served as senior vice president, corporate finance for **Cornerstone Building Brands**—home to **Stoneworks** and **Ply Gem Stone** precast concrete veneer products—where he successfully led corporate finance strategies, planning, operations, investor relations, and ERP transformation. Earlier in his career he held similar roles at Linde, Dover Corp. and Procter & Gamble. Uthe holds a M.S. in Accounting from the University of Cincinnati and MBA in Finance from Xavier University.

"Jason's proven track record in financial stewardship, deep industry knowledge, and vision for innovation make him an ideal choice for keeping us on track to achieve significant growth while exceeding our clients' expectations," says Baker CEO Karl H. Watson, Jr.

ASTM International C01 Committee on Cement has presented the Bryant Mather Award to Steve Wilcox, who runs an eponymous consultancy after nearly 40 years in the industry, most recently as **Argos USA** technical director. Wilcox was recognized for the expertise and mentorship that marks his decades-long career within the cement industry. His tenure includes service as chair of Subcommittees C01.10, C01.27, and C01.95, which helped

strengthen ASTM's cement standard specifications. An ASTM International member since 1990, Wilcox has been previously honored with the C01 Award of Merit plus one C09 and two C01 Awards of Appreciation.

Calgary-based **Carbon Upcycling**, a carbon dioxide capture and utilization technology provider, recently joined the **Portland Cement Association**, marking what company officials call a significant step in their mission

to reduce the carbon footprint of cement production. "The most effective and credible pathway to decarbonizing the cement industry is through strategic partnerships and collaboration with long-time industry leaders," says Carbon Upcycling CEO Apoorv Sinha. "Joining PCA underscores our commitment to advance sustainable practices and substantially reduce carbon emissions. We look forward to forging a low-carbon, resilient future with our fellow members."

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By partnering with international producers and PCA members like **Ash Grove Cement** and **Cemex S.A.B. de C.V.**, he adds, Carbon Upcycling is driving sustainability initiatives. The firm is currently developing a first-of-a-kind commercial carbon capture and utilization system at Canada's largest cement plant, the Ash Grove Mississauga mill. The project is intended to yield low-carbon cement and aligns with Canada's national decarbonization plan.

"Carbon Upcycling's efforts are helping the cement industry increase circularity and advance its commitment to achieving carbon neutrality," notes PCA CEO Mike Ireland.

Florida-based **DPR Construction**, one of the nation's top technical builders, recently honored the first graduates of its Craft Apprenticeship Program. Of the 100 apprentices currently enrolled, 43 have successfully completed the rigorous concrete or drywall programs, which are **National Center for Construction Education and Research**-certified and recognized across the U.S. DPR's Craft Apprenticeship Program offers a unique learning experience in both Spanish and English. Participants gain journey-level skills in

construction essentials such as math, blueprint reading, and communication, preparing them for trade-specific learning paths in concrete, drywall or electrical.

The contractor is offering the program across the Southeast and Texas to help extend entry points into the trades. Aimed primarily at newer craft team members, it affords participants technical instruction coupled with on-the-job training over the course of about two years. DPR developed the approach to allow apprentices to digest information in a variety of settings, ensuring they are ready to tackle real world construction challenges and able to meet the high quality and safety standards needed to succeed in the industry.

"With labor shortages affecting the industry, we know it takes an all-in approach to bring more people into the trades," says Chris Bell, DPR's self-perform work leader in the Southeast. "We want to provide as many entry points to careers in the skilled trades as possible and this complements the excellent union-run programs throughout the country. We're committed to providing opportunities to learn essential skills that can fuel rewarding life-long careers."

Miami-based **Onx Homes** plans to extend

its intellectual property portfolio with patent filings for **technologies** that enable the production of environmentally sustainable, resilient homes at scale and speed. **Archicrete** is a cement-free formulation with high compressive and flexural strength and a global warming impact 33 percent below that of conventional concrete. **Cork-Gypsum Plaster** is a cement and sand-free biocomposite designed to reduce heat transfer. Its thermal conductivity is 52 percent less than that of conventional plaster and helps homeowners lower electricity consumption. The **Net Zero Energy Buildings** method addresses many challenges tied to traditional construction, incorporating predesigned, insulated concrete elements to ensure high quality and repeatability, while significantly easing common schedule and quality issues associated with conventional practice.

"These patents represent a significant advance in construction technology: We can now build communities that are even more durable, cost-effective and environmentally responsible for the next generation of homeowners," says Onx Homes COO Ravi Bhat.

CONSTRUCTION QUALITY CERTIFICATION

The newest credential from American Society for Quality, Milwaukee, responds to universal contractor and owner priorities. Now open to applications, Certified Construction Quality Manager (CCQM) certification addresses the growing need for highly skilled professionals who can manage projects with a focus on quality assurance, regulatory compliance, and sustainable building practices. An ASQ Body of Knowledge guide for CCQM candidates, posted at www.asq.org, references Pre-Contract, Planning, Design, Procurement, Construction, Project Turnover and Closeout, plus Operations and Management phases.

CCQM certification development was a collaborative effort involving the ASQ Design and Construction Division, significant construction subject matter expert contributions, and a partnership with the closely allied ASQ Excellence organization. "This highlights the critical need for advanced quality management skills in construction," says ASQE Executive Director of Certification Michael Byrnes. "CCQM will play a vital role in promoting sustainable practices and elevating the overall quality of construction projects worldwide."

"This certification is not only a testament to our shared commitment to excellence but also a strategic move to address the evolving needs of the construction industry," adds ASQE CEO Jim Templin. "We believe that the CCQM will become a cornerstone for professionals dedicated to driving quality and sustainability in construction."

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MANUFACTURERS

Colorado is the first stop in a rapid expansion plan through which Florida-based **Mapei Corp.** aims to extend concrete admixture production and distribution across the U.S. The company's new 32,000-sq.-ft. facility in Denver features advanced mixing, batching, laboratory and quality control technology, plus warehousing. It joins existing Mapei North America admixture plants in Dalton, Ga., Madison, Ill., Swedesboro, N.J., and Garland, Texas. The company plans to open additional satellite admixture plants in Chicago and Houston by year end, with other new facilities serving Southwest and Northwest markets to follow in the first half of 2025.

"The opening of our new Denver plant [is a] landmark in our strategic growth in the U.S.," says Mapei North America CEO Luigi Di Geso. "This facility will enhance our ability to serve the Western region with high-quality admixtures, ensuring faster delivery times and superior customer service."

"[The] plant is designed with the latest technology to maximize efficiency and quality," adds Mapei Corp. Director of Construction Chemicals Gerald LaPier. "This is another milestone as we expand our network of facilities; we are committed to maintaining the highest standards in production while reducing our environmental impact."

New York-based customer relationship management and concrete/aggregate/asphalt price optimization platform developer **Slabstack Software Inc.** has joined the **Command Alkon** Connected Partner program. The move facilitates cloud-to-cloud application program interface integration supporting mutual accounts or prospects and strengthens Slabstack's leadership in heavy building materials sales automation.

"This partnership helps us deliver unparalleled CRM, sales intelligence, and price optimization to producers, driving profitability across their businesses," says Slabstack CEO Aymeric Halvarsson. Connected Partner affords his company access to Command Cloud, boasting cloud-native scalability and reliability, plus seamless API integration, fortified by robust security controls and customer data authorization.

"Serving customers alongside partners like Slabstack is another example of our commitment to drive innovation and enhance customer experiences in our great industry," affirms Command Alkon Senior Vice President, Strategy Chris Strickland. "We have admired Slabstack's dedication and innovation in

recent years and look forward to helping our mutual customers operate more efficiently and profitably."

Command Alkon presents Connected Partner as "a dynamic community of forward-thinking companies dedicated to propelling the heavy building materials market. By fostering collaboration and driving innovation, partners aim to push the boundaries of technology and elevate industry standards."



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PHOTO: Concrete Products

Heldenfels Enterprises Inc. (HEI) is among Texas precast, prestressed producers that rode a strong Great Recession recovery, then positioned its human and plant capital for even healthier public and private construction market activity after 2020. Based at an 85-acre San Marcos site along Interstate 35, HEI is uniquely equipped to serve segments accounting for the bulk of the state's structural precast deliveries: Highway and Bridge, Marine, Industrial, Sports and Entertainment, plus Commercial Building.

Third and fourth generation Heldenfels family investments in San Marcos headquarters and Corpus Christi legacy plants during the 1980s and 1990s sealed the producer's Lone Star State market leadership potential. Underlying routine or major contract successes since consolidation of plant facilities are seasoned production teams whose dedicated members uphold HEI's "core values of integrity and innovation" in nonresidential building and heavy/civil construction. Their skills and craftsmanship are evident in projects from the Dallas Cowboys home, AT&T Stadium in Arlington, and Texas A&M University's Kyle Field to the SH 99 Grand Parkway toll road outside Houston and Tesla Gigafactory near Austin.

"The senior leadership in the plant has over 50 years of combined experience in precast, prestressed concrete," says HEI Operations Manager Jake Maier. "They possess a constant will to adapt and succeed with each new job. Their approach is a testament to each individual's personal investment in every project Heldenfels is part of. When it comes to a competitive advantage, I believe our people are it. We would not be where we are today without them."

Nearing 2020, HEI production teams were poised for record or near-record industrial building contracts fueled by a semiconductor and electronics manufacturing renaissance, concentrated in the central Texas Capital Region. Such activity has helped the Lone Star State grow to represent 10 percent of U.S. economic output.

At the outset of the decade, volume and schedule demands tied to projects with millions of square feet under roof compelled HEI to double San Marcos plant mix production capacity. The investment would reduce concrete delivery cycles across a vast girder, panel, column and flatwork expanse. It would likewise add new backup capability respecting the tight timetables of design-build contractors or industrial facility owners for whom speed is the prevailing cost variable in a nine- or 10-figure project budget. Further validating the decision to raise mix capacity are the additional volume demands and ever-increasing quality standards emanating from public or private projects with funds from the 2021-2022 Infrastructure Investment and Jobs Act and Chips and Science Act.

SHORTENED CYCLES

HEI enlisted EquipPro Distributors of New Braunfels, Texas and sister company PA-PO Industrial Systems to design, fabricate, and install a second batch plant alongside an existing workhorse whose ribbon and twin shaft mixers showed their age. Under normal operating conditions, the old batch plant turned 4 yd. loads for Tuckerbilt delivery vehicles in seven minutes.

The new batch plant was completed in 2022, anchored by a 6-yd., EquipPro-customized Sicoma twin shaft mixer and patented MixRig mixer structure. The machine cuts production and loading cycles to under five minutes utilizing a two-stage mixing process—new in the case of Texas Department of Transportation contracts. EquipPro engineers tailored the plant around three new 75-ton Meridian silos, whose compartments facilitate Type I/II and Type III portland cement, Class F fly ash, plus other prospective binders. All pneumatic fill piping is fit with HammerTek cast vortex bends, allowing semi-dense refill from three horizontal vessels at higher rates of densified cementitious materials. To expedite delivery to the twin shaft mixer, engineers opted for high-speed, large diameter screw conveyors with direct drives located on the discharge end feeding a weighing system fit with compression load cells for superior resolution.

"Success in building a batch plant relies on the synergy between both parties, where trust, communication, and a shared vision create the foundation for innovation," says HEI Ancillary Services Manager Raul Armendariz, who oversaw the work with PA-PO and EquipPro. "Together, we unite our expertise and resources, ensuring that each step, from design to execution, is aligned with precision, commitment, and mutual respect."

"The new batch plant is easier to operate. From loading to mixing the materials, concrete output has become faster and more efficient," adds Superintendent Octavio Ruiz. "The structure itself is also high quality. The EquipPro team was very reliable and always provided great communication."

Continued on page 45



(from right) Operations Manager Jake Maier, Production Manager Eduar-do Nunez and Ancillary Services Manager Raul Armendariz lead seasoned form preparation, pouring and stripping crews. At peak production, their schedule entails casting multiple structural element types for building and transportation contracts.



PHOTOS: Jay Kazen, WKICM for EquipPro Distributors



The first of two phases in HEI's adoption of next generation batch equipment saw the 2022 start-up of a new plant, designed and built by PA-PO Industrial Systems and EquipPro Distributors. The main structure, bins and silos mirror the adjacent existing plant. Major building contract requirements, coupled with solid market prospects for at least the remainder of the decade, drove the producer's decision to have PA-PO and EquipPro retrofit the legacy equipment to the new plant specifications and performance. Central to production continuity is each plant's Sicoma 6-yd. twin shaft mixer, sized for efficient charging of the San Marcos yard's Tucker-bilt fleet, and COMMANDbatch CP controls.



PHOTOS: Jay Kazen, WKICM for EquipPro Distributors



Competence, culture and tradition drive safe, efficient workflows at the HEI flagship yard, strategically located between Austin and San Antonio.



A focus on cementitious material inventory in batch plant configuration reflects private project customers' increasing tendency to prescriptive and proprietary mix designs, especially where carbon metrics are concerned. Downstream construction parties' greater concrete production scrutiny—thorough batch plant inspections in some instances—also drove EquipPro's customization of dust control and maintenance features. The firm positioned higher capacity, top-mounted WAM dust collectors for all silos and utilized a large, fan aspirated scavenger atop the aggregate in-feed conveyor discharge directly in front of the mixer. The configuration creates an air curtain pulling mostly fresh air up the conveyor and allows the collector to foil any measurable dust outcome from the mixer.

EquipPro performed concrete, structural and millwright work plus commissioning as turnkey. HEI took on the electrical sub-contract, rental machinery, and shared project management role. The result: a fast-track batch plant. The productivity and quality factors attributable to the new batch plant drove HEI's decision to tap EquipPro and PA-PO Industrial for a 2023-2024 overhaul of the original batch plant. EquipPro fabricated an entirely new low-profile Euro-style—but heavier duty—galvanized modular batch plant and mixer mezzanine. The bin set utilizes a reversing belt on VFD for material purging and is equipped with premium ceramic head pulley lagging due to the moistened limestone aggregate typifying HEI mix designs.

Installation of a second customized Sicoma mixer, WAM dust collector group, level indicators, actuation valving and high-speed screw conveyors helped HEI bring the legacy batch plant and four silos up to performance and matching their new twins. Both plants run on Command Alkon's COMMANDbatch CP control platform.

MOMENTOUS MARKET

The HEI headquarters lies amid a Texas corridor whose rich limestone deposits support five cement plants in a 35-mile radius: Alamo Cement, the producer's primary Type III supplier, and Capitol Cement, both San Antonio; Cemex USA, New Braunfels; Texas Lehigh Cement, Buda; and, Ash Grove Cement, Hunter. The San Marcos precast, prestressed yard is also strategic to Dallas-Fort Worth, Houston plus Austin and the Capital Region. They represent the three largest markets in a state nearing 20 consecutive years as tops for population growth—a trend most immediately indicated in 2023 single- and multi-family housing starts exceeding 230,000.



Texas Department of Transportation and Texas Economic Guide figures show the depth of market drivers and prospects awaiting producers like HEI and their public and private construction customers. A July 2024 report, Connecting Texas 2050, projects TexDOT annual funding eclipsing \$20 billion within two years and increasing about \$1 billion annually through midcentury. In addition to federal funding and state motor fuel tax receipts, the agency enjoys more than \$4 billion annually from general state and energy royalty funds.

Deep transportation coffers help fund projects like I-35 NEX, a \$2.5 billion undertaking to add elevated lanes throughout San Antonio's main north-south artery. For starters, joint venture design-build contractor Alamo NEX Construction LLC has awarded HEI a contract for 2,782 TX girders, totaling 392,000 lineal feet. Subsequent phases over a six- or seven-year window will spur voluminous prestressed concrete orders.

Alongside a very healthy transportation log for at least the remainder of the decade, the Texas nonresidential building market bears on its own rock-solid footing. Current or near-term technology, semiconductor and other electronics manufacturing project commitments total upward of \$100 billion. About half of that figure entails 25 facilities, each valued at \$250 million or more and announced in one 12-month period alone.

The most telling demand and output indicator for HEI and its peers in manufactured or ready mixed concrete is Texas' portland and blended cement consumption over the 20-2023 window, climbing from 14.9 million to 19 million metric tons by U.S. Geological Survey records.





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Date: Nov. 7 | noon – 1:30 p.m. ET **Presenter:** Brad Chinery, P.E., NPCA

Prefabrication and modular construction are often used interchangeably. By its nature, precast concrete products are prefabricated. They can also be used in modular applications to provide further time savings and less disruptions on the job site. During this webinar, we will show numerous examples where precast concrete structures were used above and below ground to enhance job site efficiency and provide value for the owner. We will spotlight unique applications of precast modular structures and the benefits they offer.

About the Presenter: Brad Chinery is a U.S. Air Force veteran and professional engineer with more than 14 years of leadership and decision-making experience. He earned a B.S. in Civil Engineering from the United States Air Force Academy and a M.S. in Engineering Management from the Air Force Institute of Technology. Prior to joining the NPCA, Brad held various leadership positions in Operations, Engineering, Quality Assurance and Emergency Management in the U.S. Air Force.



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One major aspect of the project for which supply chain, fabrication and delivery stars aligned is the main span bridge deck, a .53-mile stretch of precast concrete panels and high-performance concrete closures. Excepting SRM Concrete, whose ready mixed plant abuts the Detroit approach, no primary Gordie Howe International Bridge supplier or subcontractor was better situated to Bridging North America staging yards than International Precast Solutions, LLC. A member of The Prestressed Group in Oldcastle, Ontario, International Precast

operates a bridge structures plant in River Rouge—bordering the Motor City to the south along the Detroit River. The operation is less than two miles from the new bridge's Detroit approach and proved equal to timely casting of 1,260 deck panels, most 31.5- x 15-ft. and 10-in. thick. The precast concrete schedule hovered 16,000 yards of 10,000 psi mixes, designed with a 60 percent slag and 40 percent Type I/II portland cement blend.

WDBA tasked Bridging North America with quality control measures befitting a 125-year service life structure. Heavy on stainless steel rebar, coupled with transverse and longitudinal post tensioning ducts, the main span precast deck panels were subject to a seven-day, 100 percent humidity curing cycle. In the face of 2022-2023 market and supply challenges confronting stainless steel buyers, International Precast and Bridging North America officials worked with Buffalo, N.Y.-based Salit Specialty Rebar to ensure that their 2,500-ton, pre-bent reinforcement order was delivered as scheduled.

Continued on page 49

PHOTOS: Windsor-Detroit Bridge Authority



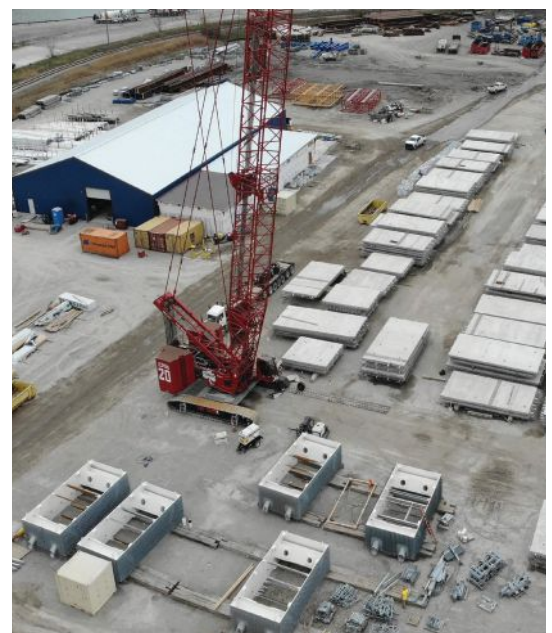
International Precast Solutions dispatched panels to the Detroit staging yard, set up on acreage adjacent to an SRM Concrete ready mixed plant. The Detroit approach and cable stay tower are on right of way between the SRM plant and 28,000-ton Holcim US terminal. Bridging North America established ramps at the base of each cable stay pier so International Precast could ferry trailered panels to the Windsor staging area.



Flour Corp. (plant); Windsor-Detroit Bridge Authority (site)



International Precast Solutions enlisted Hamilton Form for a 13-panel casting bed and positioned the curing tents along a parallel run. Gordie Howe International Bridge main span deck panel production was sequenced over an 18-month window.



PANEL PRACTICE

Deck panel engineering, production, staging and placement emulated specifications and best practices that Bridging North America partner Fluor Corp. affirmed with the Governor Mario M. Cuomo Bridge construction. Fully opened in 2018, the three-mile Hudson River crossing between New York's Westchester and Rockland Counties commanded more than 3 million square feet of precast deck panels.

After securing the Gordie Howe International Bridge main span deck contract, International Precast configured a 13-piece casting bed and curing chambers for production of six panels per day on a five-day work week. The River Rouge plant schedule reflected Bridging North America's staging of up to 400 panels each in Windsor and Detroit yards. The producer exceeded quality control expectations, based on internal testing data and that of separate WDBA and Bridging North America inspectors. Prestressed Group CFO Alex Baker credits plant, contractor and owner teams with the concrete schedule success and Calgary engineer Kassian Dyck & Associates with meticulous panel detailing. Tekla 3D modeling, programmed for rebar or steel clash detection, equipped the engineer to provide shop drawings steering International Precast to panel tolerances resulting in zero rebar clashing conditions throughout the half-mile main span.

Toward mid-2024, crews capped nearly two years of placing the precast deck panels across or along structural steel edge and redundancy girders, floor beams and soffit panels. Main span deck work was sequenced from Canadian and U.S. sides, as ironworkers placed the precast panels and steel members in 123-ft. wide, 49-ft. long segments. The 12-panel segments bear on 216 cable stays supported by twin, 722-ft. piers.

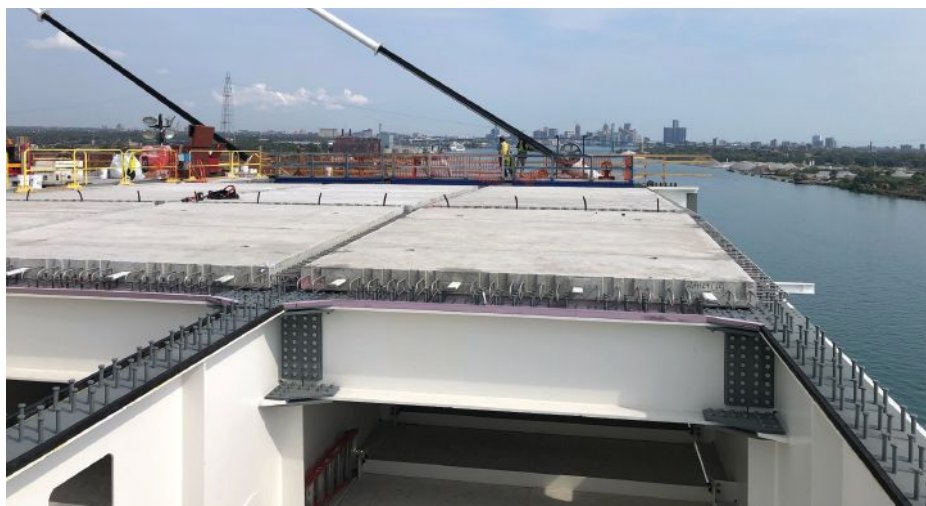
Upon mid-span closure completion in July, Aecon Lead Engineer Jaime Castro-Maier characterized the main span deck's segment-by-segment operation as a "marathon of construction cycles" culminating in precise alignment of the Canada and U.S. halves. "At the final point, we were within a few millimeters of where we were expecting to be," he added. "If you look at the magnitude of this construction site and the size of the bridge deck—to talk about millimeters was very rewarding."



PHOTOS: Windsor-Detroit Bridge Authority



Main span bridge deck construction commenced December 2022 from opposite Detroit River banks. The Canada and U.S. crews methodically inched closer to each other, leading to May 2024 placement of the final precast deck slabs, followed by six weeks of mid-span closure beam erection and deck pours.



Afinitas machines next-level wet cast automation platform

Building on Prima, a signature technology for high volume, wet cast underground or utility precast, Afinitas has launched Prima 360, a broader platform of automated systems to reduce labor requirements and increase throughput of concrete products or structures cast with high slump mixes. Prima 360 leverages a wide range of technologies developed in-house by the Afinitas Equipment and Automation (HawkeyePedershaab Concrete Technologies, BFS Betonfertigteilesysteme GmbH brands), Forming Systems (New Hampton Metal Fabrication and Spillman Co.), and Concrete Accessories (CAM, Hawkeye, Spillman, Caswick Ltd. and Amifast) teams to provide automation suiting all types of factory layouts, product requirements and budgets. The systems are backed by the strength of the Afinitas global technical team and service support.

The platform includes Prima, Afinitas' signature wet cast system for high volume production of nearly any drainage or utility structure or product. With its advanced production loop, automatic inventory management system and real-time analytics, Prima brings assembly line efficiency to wet cast production. Prima's highly optimized workstations reduce labor and increase throughput. In addition, Prima simplifies planning and provides all the metrics needed to optimize processes at every level of production.

Prima Fit, as the name suggests, is wet cast automation that scales to fit producer requirements. A powerful yet economical option, it utilizes vertical product stacking to maximize floor space. In addition, Prima

Fit can be easily configured to produce specialty precast structures that would require extra space and set up time on other systems. Prima Base is an intuitive design software for creating limitless channel flow options for monolithic manhole bases. It transforms the labor-intensive, inconsistent traditional methods of producing monolithic manhole bases using an intelligent digital configurator and precision EPS milling system. Prima Base helps producers increase output and quality while minimizing rework.

Prima Scape draws upon decades of BFS vibration technology to help producers create visually appealing and mechanically precise slabs, pavers and veneer elements. With one automated system, producers can create reproductions of natural stones, slate,

granite or terracotta in exact laying units for flooring, pool or fountain conditions, patios, deck slabs and other residential and commercial applications. — *Afinitas, St. Louis, Mo., www.afinitas.com/prima*



Prima Scape veneer stone production line.



BFS vibration technology underpins the Prima Scape program for automated hardscape slab and veneer stone unit production.

ACM Optimized Paver Technology seals value

ACM Chemistries, a key player in integral admixtures and inline surface treatments for manufactured concrete products, has introduced Optimized Paver Technology (OPT), a program assisting hardscape contractors in upselling homeowners on higher value products for their outdoor projects. By guiding them in marketing factory-treated pavers, ACM enables contractors to prioritize more profitable, high-value installations that will improve their reputations for longer-lasting, lower-maintenance, more aesthetically pleasing work.

The OPT marketing initiative provides a robust suite of resources at www.optimizedpavers.com, including photography, videos, social media materials, and homeowner handouts. The assets are designed to educate both contractors and their clients on the benefits of premium factory-treated pavers. Topping OPT advantages for homeowners:

- Richer, longer-lasting colors throughout the lifespan of the paver;
- Resistance to stains or damage caused by food, leaf debris, pool chemicals, and fertilizers;
- Enhanced durability against weathering in both hot and cold climates; and,
- Reduced risk of unsightly efflorescence.

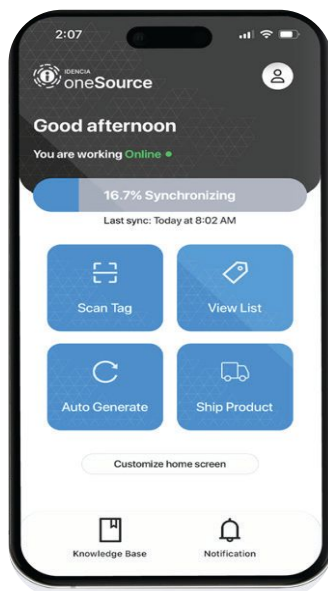
Such benefits and performance features are inherent from the moment the pavers are molded. Because the OPT treatment is applied during production, it is chemically integrated into the paver and requires no further sealing at the time of installation or beyond. Hardscape contractors are positioned to offer their customers greater value, resulting in higher margin projects and an increase in referrals from loyal clients. This shift not only boosts high-value installations, ACM contends, but also maximizes profitability through warm leads and client recommendations.

"Many well-known concrete producers manufacture pavers featuring Optimized Paver Technology. These premium products have been proven to increase homeowner satisfaction with the look and performance of their hardscaping," says ACM Vice President of Sales & Marketing Dean Jurik. "Our goal with the OPT initiative is to help raise awareness of these products among contractors and direct them

to our manufacturing partners so homeowners, contractors, and producers alike benefits from broader use of optimized pavers." — ACM Chemistries Inc., Norcross, Ga., 770/417-3490; www.optimizedpavers.com, www.acmchem.com



Concrete Vision, Idencia integration sharpens precast quality control



Concrete Vision, developer of operational management software for precast concrete producers, anticipates enhanced program functionality stemming from a technology integration with Idencia OneSource, a mobile tool for tracking structural or architectural element data, including quality control metrics.

Concrete Vision is continually evolving web-based software solutions specifically for precast producers. It programs modules for contract or project management, sales and estimating support, production scheduling, quality control analysis, dispatching, field reporting, safety, and time clock activity—positioning users to successfully drive business performance. The Idencia OneSource integration will provide information flow in both directions. Common users will be able to feed all job and precast piece information from Concrete Vision into OneSource to streamline QC tracking and observe progress within the former platform.

“We are always looking for ways to add value for our clients,” says Concrete Vision President Dan VanWieren. “Integration with other leading software platforms that support the various steps of the precast manufacturing process creates business efficiencies.”

“Integrating with Concrete Vision allows our joint customers and all precasters the opportunity to strengthen their grasp on production,” affirms Idencia CEO Jeff Pollock. “The combined functionality of both systems provides a clear picture for producers to create meaningful work with analytics and insights unlike before.” Idencia OneSource is truly mobile, he adds, as it allows users to track QC and yarding information anywhere, even without Internet access, and sync back to the cloud. — *Concrete Vision, Grand Haven, Mich., 616/530-5911, www.concretevision.com; Idencia Inc., Manchester, N.H., 603/541-7704, www.idencia.com*

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1

50 items per page

The Concrete Vision and Idencia teams were on track to complete programming and confirm integrated platform functionality by the start of this quarter.

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Tuning into Music City

As the concrete landscape of Nashville evolves, Hall Custom Concrete emerges as the market's newest specialist in residential flatwork and decorative vertical elements. Bringing a wealth of experience from a concrete franchise to the vibrant Music City, the contractor promises expert craftsmanship, unparalleled management, and swift project turnaround times—setting a new standard for custom concrete services in Nashville and surrounding areas.

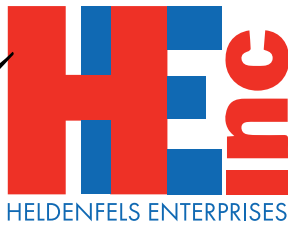
Hall Custom Concrete offers a comprehensive range of expert flatwork services tailored to meet the diverse needs of market homeowners. Specializing in patios, driveways, sidewalks, footers, slabs, and retaining walls, its team “combines precision and creativity to transform outdoor spaces into stunning works of art. Each project is approached with meticulous attention to detail, ensuring that every stamped pattern, pour, and finish is executed to perfection. As Nashville continues to grow, Hall Custom Concrete remains steadfast in its mission to build a foundation of trust and quality, one slab at a time.”

Seasoned professionals with a passion for concrete craftsmanship deliver exceptional quality and durability from one job to the next, management notes, adding: “Whether it’s creating a stamped concrete patio for entertaining guests or constructing a sturdy retaining wall for added security and aesthetics, Hall Custom Concrete’s expertise shines through in every aspect of its work.”



Hall Custom Concrete differentiates from other artisans through “superior workmanship, exceptional customer service, and innovative design.”

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Heldenfels Enterprises chose PA-PO Industrial Systems to design a complicated dual retrofit to answer increasing demand for the highest-quality SCC and UPHC mixes at higher outputs—batched and mixed consistently.

EquipPro took the design and fabricated a replica of the original batching plant and tied it to the patented MixRig to meet the initial phase of the dual retrofitting in 2022.

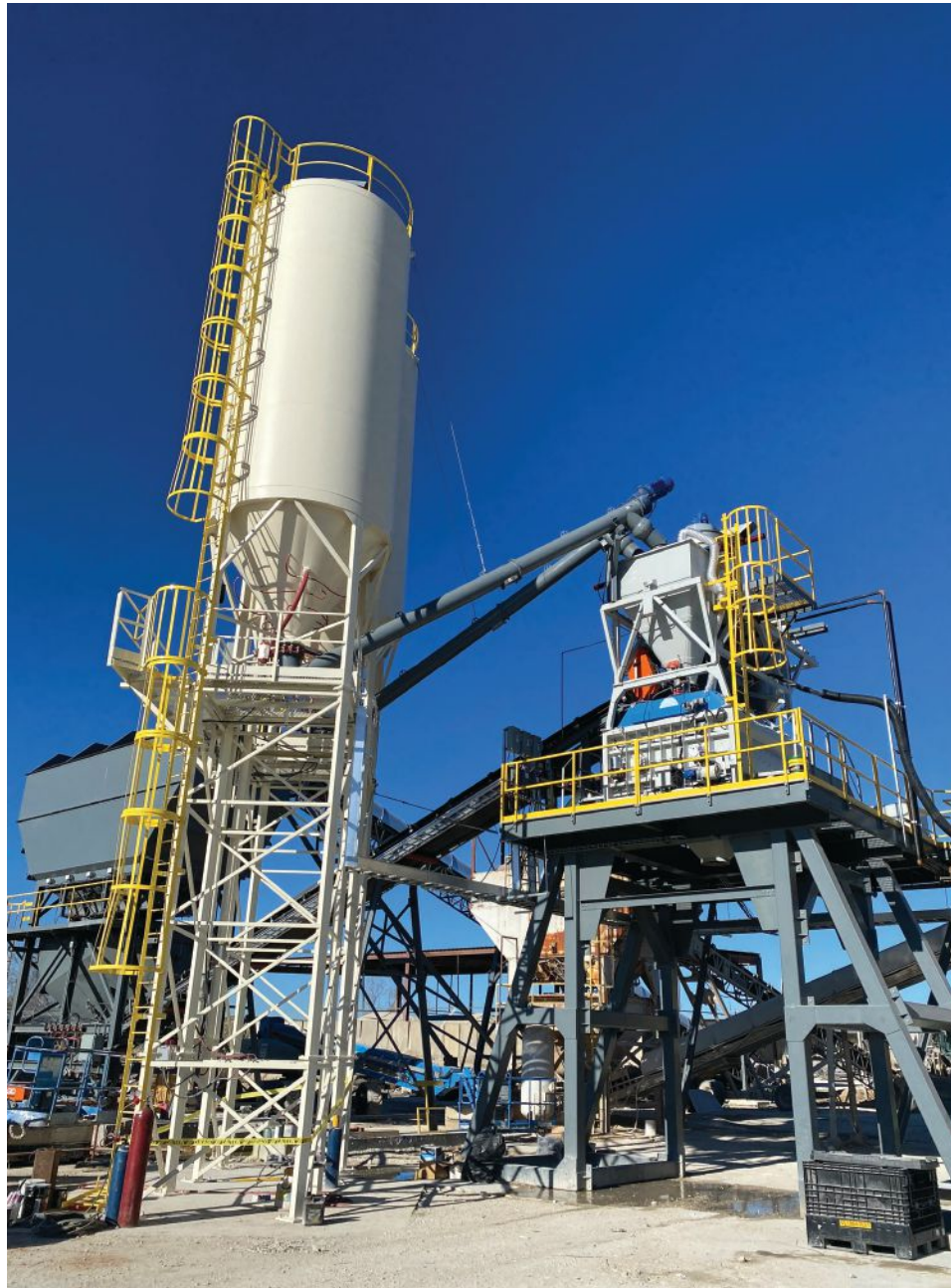
Following the success of the initial retrofitting, the second plant was developed on the legacy plant location, utilizing many existing components.

The original plant utilized a standard ready-mix design from 40 years ago. EquipPro supplied a newly fabricated replica to sit on the same foundations. The second plant was specified with the U.S.-made, lower-profile, fully-galvanized, heavy-duty Uni-Cast aggregate section—by EquipPro. In this case, the mixer structure shared the legacy plant mixer and silo foundations with dental concrete by EquipPro's installation crew.

EquipPro provided Heldenfels with zero scheduled downtime, doubling production and significantly raising the quality of the concrete produced!



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