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THE LEADING BUSINESS MAGAZINE FOR CONTRACTORS
JUNE 2021 | CONSTRUCTIONBUSINESSOWNER.COM

INTEGRATION WITH INTEGRITY

McCarthy Building Companies Inc. on encouraging growth through diversity, equity & inclusion

plus:
Psychological safety at work & ways to address it

IN THE OFFICE
How civil contractors gather, analyze & use data in the digital revolution

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No doubt, you've seen the word "sustainability" buzzing around your news feeds lately — it's had notable mentions alongside President Biden's infrastructure plans, and was announced as part of Amazon's goal to reach net-zero carbon emissions and power its operations with renewable energy. But ... what is it exactly?

The meaning of the word itself is simple: the ability to be maintained at a certain rate or level. That definition broadens as the word is applied to various environmental initiatives, societal factors, and sectors of economy, industry, etc. For instance, it's been around in construction for some time — with the first version of Leadership in Energy and Environmental Design (LEED) launched by the United States Green Building Council (USGBC) in 1998. With the LEED rating system, the USGBC measures a building's sustainability and resource efficiency — and has done so for 23 years in well over 100,000 commercial building projects.

As the demand for more sustainable building continues to rise, and the practice of green building becomes increasingly profitable, construction today is positioned to lead the world by example. This industry already understands the importance of and need for sustainable practices, and it's time to talk more about it.

So, as part of this ongoing sustainability conversation, we'd like to hear from you. Tell us: What does sustainability mean to you? In what ways are you working to contribute to building a better world?

This summer, Construction Business Owner (CBO) is producing a special section highlighting the ways in which construction is leading the effort: CBO's Sustainability VIPs. The Sustainability VIP honor is designed to recognize the efforts and ingenuity of those building a better future for the earth and its inhabitants. These Sustainability VIPs are general contractors and subcontractors who have developed programs or launched initiatives within their companies to support any of the following areas of sustainability:

- Industry and infrastructure
- Clean energy, water and sanitation
- Recycling and responsible consumption and production
- Protection of climate, wildlife and waterways
- Sustainable cities and communities
- Green building and LEED efforts
- Humanitarian efforts (poverty, hunger, equality, health, wellness, education, employment)

At constructionbusinessowner.com/svip2021, we invite you to share your nominations of the contractors or contracting organizations you believe are driving change. If you'd like to be considered, be sure to move quickly — nominations close June 25, 2021. From your nominations, our editors will select 10 finalists to be featured in our August issue. Turn to page 31 for more details and an easy-scan QR code to get started.

Take good care,

Kathy Wells

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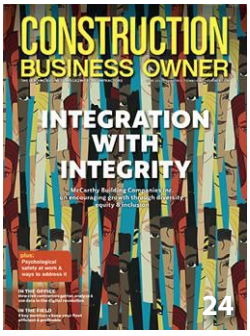

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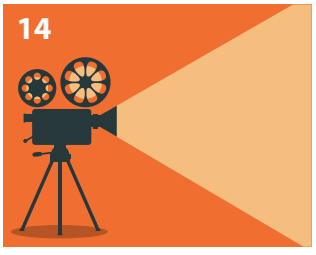



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Isuzu North America Corporation & Gatik Form to Develop & Evaluate Autonomous Medium-Duty Trucks

Isuzu North America Corporation, a leader in low cab forward (LCF) trucks in the United States and Canadian markets, and Gatik, a company focused on automating on-road transportation networks for B2B middle-mile logistics, have agreed to collaborate on a project to develop and evaluate fully autonomous medium-duty trucks. This collaboration will accelerate the commercialization of autonomous delivery fleets, while contributing to a safer and more sustainable logistics community in the future. The collaboration will integrate Gatik's autonomous driving technology into several Isuzu medium-duty N-Series trucks to produce SAE Level 4 delivery vehicles with redundant systems. Visit isuzucv.com.

JLG Names Joe Kleiner Regional Vice President for Eastern U.S. & Eastern Canada

JLG Industries Inc., an Oshkosh Corporation company and global manufacturer of mobile elevating work platforms (MEWPs) and telehandlers, announced that Joe Kleiner has been named regional vice president for the Eastern U.S. and Eastern Canada. Kleiner replaces Brent Miller, who was recently named vice president of channel management at JLG. Kleiner's primary focus will be leading JLG's sales and service growth within the region. Kleiner's region includes the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and West Virginia. In Canada, Kleiner oversees the provinces of New Brunswick, Newfoundland and Labrador, Nova Scotia, Ontario, Prince Edward Island and Quebec. Visit jlg.com.

Max USA Corp. Names Vice President of Sales Eastern North America

As Max USA Corp. continues to expand, the company has named Dan Durant vice president of sales, Eastern North America. Durant initially joined Max USA as a regional sales manager in 2015, and has since worked with and encouraged each of his team members to help achieve ideas and goals into new and expansive opportunities. For the past 5 years, Durant has worked to expand his skills and knowledge of how Max USA Corp. might exceed and support the construction market's needs with its growing line of industrial tools and innovative solutions. Visit maxusacorp.com.

U.S. Department of Labor Withdraws 'Independent Contract Rule'

Effective May 2021, the U.S. Department of Labor has withdrawn the controversial "Independent Contract Rule" citing these reasons:

- The independent contractor rule was in tension with the Fair Labor Standards Act's (FLSA) text and purpose, as well as relevant judicial precedent.
- The rule's prioritization of two "core factors" for determining employee status under the FLSA would have undermined the longstanding balancing approach of the economic realities test and court decisions requiring a review of the totality of the circumstances related to the employment relationship.
- The rule would have narrowed the facts and considerations comprising the analysis of whether a worker is an employee or an independent contractor, resulting in workers losing FLSA protections.
- The department anticipates that the independent contractor rule's withdrawal will avoid a reduction in workers' access to employer-provided fringe benefits such as health insurance and retirement plans.
- The withdrawal will also avoid a reduction in other benefits such as unemployment insurance and workers compensation coverage.

"By withdrawing the Independent Contractor Rule, we will help preserve essential worker rights and stop the erosion of worker protections that would have occurred had the rule gone into effect," said U.S. Secretary of Labor Marty Walsh. "Legitimate business owners play an important role in our economy but, too often, workers lose important wage and related protections when employers misclassify them as independent contractors. We remain committed to ensuring that employees are recognized clearly and correctly when they are, in fact, employees so that they receive the protections the FLSA provides." Visit dol.gov.

$70 million

Doosan Bobcat North America, a global manufacturer of compact equipment, has announced plans for a $70 million expansion of its Statesville, North Carolina, manufacturing facility. The company plans to construct an additional 580,000 square feet for its manufacturing operations, which will create 250 new, full-time jobs over the next 5 years in Iredell County. The construction is expected to begin July 2021, with full project completion expected May 2022.

Dodge Data & Analytics Announces Merger With The Blue Book Building & Construction Network

Dodge Data & Analytics and The Blue Book Building & Construction Network announced that they are combining their businesses in a merger. Dodge's owner, Symphony Technology Group (STG) – a private equity firm focused exclusively on business-to-business data, software and analytics companies – facilitated the transaction. Dodge and The Blue Book have each served the construction industry for more than 100 years, and their combined expertise and capabilities will give current and prospective customers access to the industry's leading platform for data insight, market intelligence, firm discovery and networking. The combination will result in the Dodge | Blue Book Construction Industry Database, containing more than 10 billion data elements and comprising the most complete, up-to-date and accurate information

about projects, people, firms and products in the industry. Dodge chief executive officer (CEO) Daniel McCarthy will lead the combined company and The Blue Book President and General Manager Brian Tonry will continue in his current role. Former Blue Book CEO Richard Johnson will be integral in the combination of the two companies and will serve as a member of the combined company's board of directors. Following the merger, the company headquarters will remain at the Dodge campus in Hamilton, New Jersey, and The Blue Book headquarters in Jefferson Valley, New York, will become a primary office for the company. Visit construction.com.

▶ Hyundai Construction Equipment Americas Adds Matt Brown as District Sales Manager – West

Hyundai Construction Equipment Americas, Inc. has announced the addition of Matt Brown to the construction equipment sales team. Brown will be responsible for assisting Hyundai dealers across the Western region of the U.S. Brown joins Hyundai with over 11 years of varied territory sales experience, most recently working as a regional sales manager for another construction original equipment manufacturer. Visit hceamericas.com.

▶ Immel Construction Hires 3 New Employees


Evan Huhta

Immel Construction, a construction services company providing general construction, project management, estimating, and skilled craftsmen, has hired three new employees to its superintendent and project manager staff. Evan Huhta joined as superintendent, with nearly 10 years of industry experience. Huhta has worked on a variety of projects, maintaining strong communication and adherence to budget and schedule.


Matt Diny

Matt Diny joined as project manager. He has experience in a large range of project scopes in commercial, retail, residential, and health care markets. His responsibilities include administrative and technical management on construction projects from the preconstruction phase through final acceptance by the client.


Dalton Stahnke

Dalton Stahnke joined as project manager. He has experience in industrial and agricultural projects and retail construction. His coordination of quality control guidelines and constant communication with the client ensures the highest quality and owner satisfaction. Visit immelconstruction.com.

▶ The American Concrete Institute Announces 2021-2022 President, Vice President & Board Members


Cary S. Kopczynski

The American Concrete Institute (ACI) has elected Cary S. Kopczynski to serve as president for the 2021-2022 term; Antonio Nanni as vice president for a 2-year term; and Charles K. Nmai as senior vice president. Additionally, four members have been elected to serve on the ACI board of direction, each for 3-year terms: Michael C. Brown, Anthony R. DeCarlo Jr., John W. Gajda, and Kamal H. Khayat. Kopczynski is a licensed civil and structural engineer in many states and a recognized expert in the design of reinforced concrete and post-tensioned concrete building structures. He has authored numerous articles in the fields of structural analysis, design and construction. Visit concrete.org.

▶ Procore Acquires Construction Artificial Intelligence Company INDUS.AI

Procore Technologies, Inc., a provider of construction management software, has announced its acquisition of INDUS.AI, an artificial intelligence-powered analytics platform for the construction industry. Terms of the transaction are not being disclosed. This acquisition adds computer vision capabilities to the Procore platform, helping owners, general contractors and specialty contractors realize greater efficiencies, safety and profitability. INDUS.AI solutions are used to track and review construction progress, ensure safety and compliance, gain real-time project visibility, view labor deployment, minimize equipment idle time and resolve claim disputes. Procore plans to integrate INDUS.AI's capabilities into the Procore platform. In the interim, INDUS.AI's solutions will not be commercially available to new customers. Visit procore.com.

▶ Allison Otto to Serve as President & CEO at Otto Construction

Otto Construction, an award-winning construction company serving Northern and Central California, announced Allison Otto, the company's executive vice president (EVP), has been selected by the board of directors to assume the role of president and CEO, effective this month. She is the third generation of her family to lead the company, which was founded by her grandfather, John F. Otto, in 1947 and previously led by her father, Carl Otto, until 2007. Otto Construction currently employs approximately 150 people, and its diverse management team boasts a combined 136 years of experience with the company. Visit ottoconstruction.com.

▶ Swinerton Executive Committee Promotes Scott Conrad to EVP, National Director of Self-Perform Services

Swinerton has announced the promotion of Scott Conrad to EVP, national director of self-perform services. Conrad joins the executive committee with a focus on the achievement of excellence in all trades Swinerton chooses to self-perform. Today those trades are concrete, drywall, cleanup, demolition, electrical, firestopping, specialty installation, finish carpentry, and doors, frames and hardware. Conrad joined Swinerton in 2011 as Colorado division manager, quickly earning the title of vice president and region manager. Conrad has served on the Swinerton Builders board of directors, and, in 2018, was elected to the Swinerton Incorporated board of directors, a position he holds today. Visit swinerton.com.

▶ American Concrete Institute to Host 24-Hour Concrete Conference

American Concrete Institute (ACI), along with ACI international chapters and partners, will host "24 Hours of Concrete Knowledge," a free conference designed to bring together the worldwide concrete community. Anyone interested in learning more about concrete, from anywhere in the world, can attend the event. The conference will begin July 13, 2021, at 3 p.m. EDT, and will feature concrete experts from various ACI chapters and partners for 24 continuous hours. To register, visit concrete.org/24hourconcrete.

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Insight from industry aces & answers to construction's biggest questions

ASK THE EXPERTS

What is your advice for project management during the busy season?



Tim Christner
President
Christner Construction

Right now, the construction industry has an opportunity to build better relationships, increase communication and improve product quality. The busy season is not a time for project managers to let their communication skills waver, but an opportunity to keep clear and honest conversations. Delayed responses to calls and emails can not only cast doubts to everyone from customers to subs, but also cause concerns with management. No one enjoys delays because they cost in both time and revenue. However, addressing those concerns or delays head-on, and allowing and adjusting for them in a planned coordinated direction, is less stressful for all involved — and can keep those valued relationships stronger in the future.

My company has implemented "tailboard time," which is the period of time when everyone has arrived to the jobsite (preferably 15 minutes early), during which you and your team gather to discuss the day's plan for success. Of course, this is a simpler task to accomplish in smaller companies or projects. However, if a project manager's team has four or five key leaders who can also handle the task of leading these talks, tailboard time can take place on any size project. In these meetings, managers set expectations and assign goals for the day, so that everyone is in sync with the plan. If your workforce begins their day as informed as possible, and is aware of the day's set goals, they are more likely to achieve them.



Gregg Schoppman
Principal
FMI Corporation

All contractors have a proverbial busy time of year — even my Floridian neighbors, who seem to only recognize one season. The busy season reminds me of those sports movies where the coach gives players that uplifting pep talk (cue emotional music) in the locker room exclaiming, "You've been training for this your whole life." While project management may lack the gravitas of "Rudy" or "Hoosiers," the operative theme is the preparation. If you consider the busy season as the most important time of year, what have you done to prepare for it? If you enter the big game and haven't so much as looked at the playbook or even practiced, are you destined to fail?

The season is now upon us, and it's easy to get mired in the millions of little things that will consume time. First, all managers should have a mantra of cautious optimism. Yes, something will go wrong —weather, inspections, design flaws, etc. — but that does not mean the project will go entirely off the rails. Identify short, seasonal goals that build toward a successful season. Second, even with a strong plan of attack, you must use those interim goals to serve as the backbone for planning events. Think of halftime and 2-minute warnings — it's easy to get lost in the frenetic action of the game, but never forget that the success of the game is in the planning.

What's on your mind?

To submit a question for this section, email Associate Editor Alex Headley at aheadley@cahabamedia.com.

Visit **constructionbusinessowner.com/asktheexperts** for more industry-leading insights.

AIA Contract Documents

Real projects start with the industry standard

Before starting the project, Spillman Farmer Architects used AIA contracts to renovate **Founders Hall**, a classroom on the Bucks County Community College campus which includes a soaring three-story atrium.

AIA documents used: A101®–Owner/Contractor Agreement, B103–Owner/Architect Agreement for a Complex Project, C401–Architect/Consultant Agreement, E201–Digital Data Protocol Exhibit.

Learn more at aiacontracts.org/cbo-founders



Check 101 on index.

©Jeff Totaro Photography

Construction Is Changing — Are You?

Embracing new tactics & doing things differently to deliver better results



GEORGE HEDLEY, CSP, CPBC, is a professional construction BIZCOACH and industry speaker. He helps contractors build management teams and get their businesses to work for them. He is the bestselling author of "Get Your Construction Business To Always Make A Profit!," available on amazon.com. Email Hedley at gh@hardhatpresentations.com to sign up for his free e-newsletter, start a BIZCOACH program, attend a Wealthy Contractor BIZ-BUILDER Boot Camp or get a discount at hardhatbizschool.com online university for contractors. Visit hardhatpresentations.com for more information.

Just Ask George.

Send your questions for Hedley to Editor Kathy Wells at kwells@cahabamedia.com.

Construction hasn't really changed much in the last 30 years — or has it? Only a few years ago, a handshake, a set of blueprints, and a pickup truck were all contractors needed. Now everyone uses computers, email, cell phones, CAD, downloaded plans and project websites. Today, labor and material shortages, instant communication, Zoom meetings, and design-build are as common as the old handshake way of doing business. Today, if you aren't constantly improving, updating and trying new alternatives, you can't keep up with your competition or customers. Change is fast and continuous, new technology is introduced every month and the latest software only lasts 18 months before an update. Also stack in the category of change are training and talent development, new materials, installation methods, and equipment improvements that require technical skills once reserved only for highly trained specialists.

Recently speaking with a large construction products manufacturing company president, he told me many of his contractor customers were still stuck in the past and weren't open to their latest innovations and installation methods — even though these new products save time and labor, and are easier to install. He said many older-generation general contractor and subcontractor project managers (PMs) and superintendents really didn't want to try anything new.

PEOPLE NEVER WANT TO CHANGE

Change is painful — you have to modify your regular methods, learn new techniques and solicit buy-in from your colleagues to run with these new systems and processes. Changes requires trailblazing leadership, motivation and proactive training, often accompanied by a potentially costly learning curve. But final results produced by improving your methods of operation can often provide a higher outcome and increased benefits, including faster field production, competitive advantages, lower costs and a better finished product. Upgrading and improving also provide opportunities to show customers you are a progressive company with enhanced technical knowledge and new advantages.

CONSTRUCTION TODAY IS HARD

There are many market forces continually making it harder to be a profitable contractor, some of which include:

- *Labor* — Almost every contractor is experiencing a labor shortage. This restricts your ability to grow, finish projects on time, and make the profit you want. Employee culture is different than it was 20 years ago, as people today are looking for more than just a job and a paycheck.
- *Talent development* — With the labor shortage, you can't just run a wanted ad to find enough qualified candidates. Finding and developing talent must be

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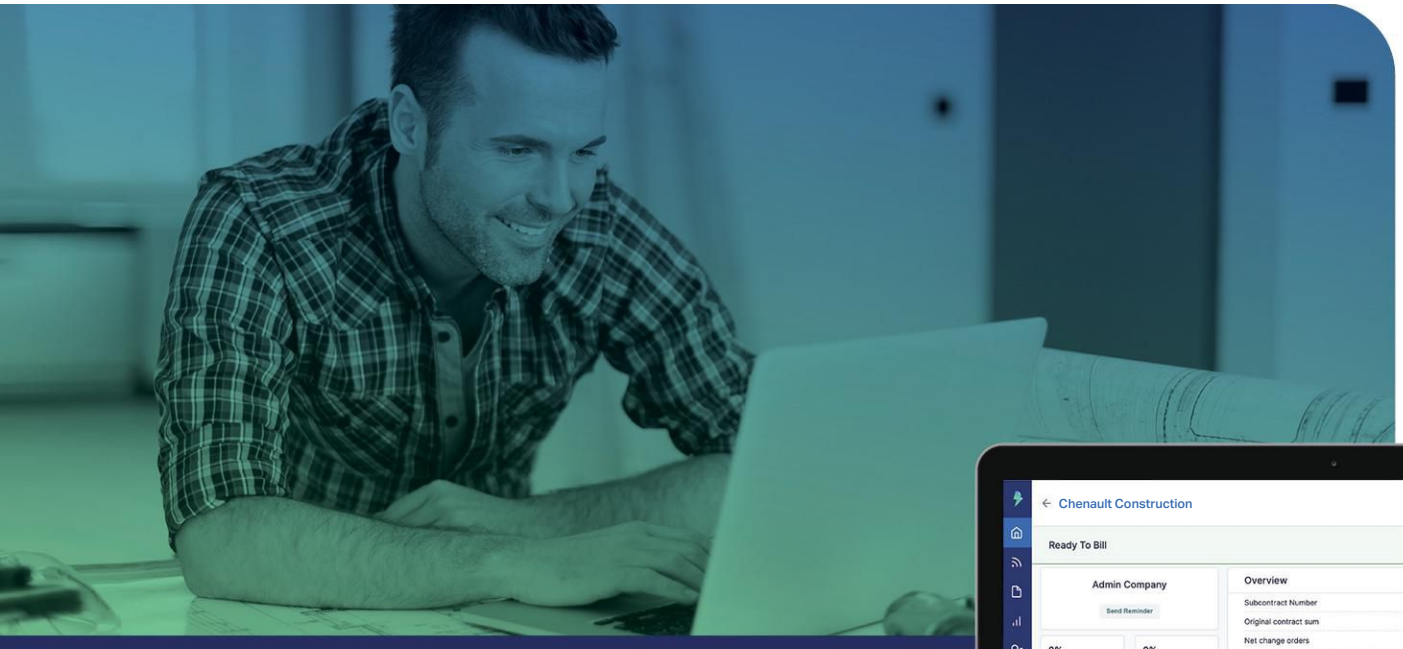

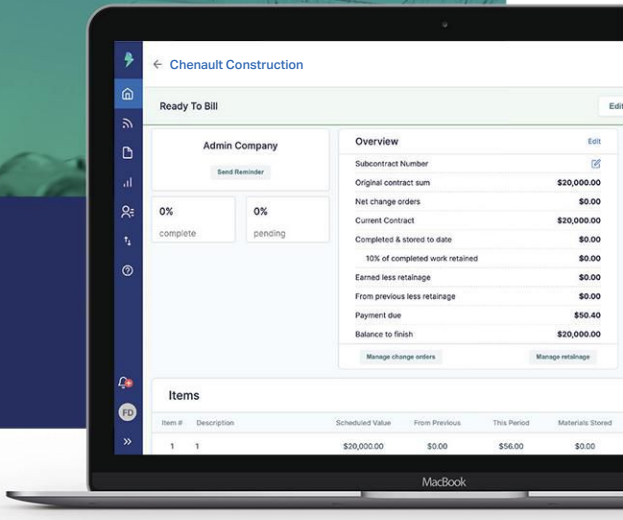

Supercharge your team and eliminate emails, spreadsheets, and piles of paper so you can focus on building, not billing.

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a top priority The best talent strategy is to develop your own team and create a culture of promotion from within.

- *Technology* — To stay current with today's construction and project requirements, most project owners and contractors require integrated software systems to manage their business.
- *Communication* — PMs and crew supervisors must communicate regularly via integrated construction apps and software programs.
- *Material shortages* — There is a major materials and product shortage causing long lead times and late deliveries on projects.
- *Price escalation* — Material prices are steadily increasing with a consistent pace. You can't guarantee your bid price for more than 30 days in today's market.
- *Delays and changes* — Contracts must contain clauses addressing potential delays, extra move-ins, added phases, stop and starts, and other disruption or slowdown costs.
- *Green* — The push to "go green" and be Leadership in Energy and Environmental Design (LEED) certified has brought significant additional costs to projects.
- *ADA* compliance — The American Disabilities Act (ADA) has added numerous requirements to many projects. Several new additions and changes have been added and upgraded. My company just completed a $10 million commercial project in California. The final certificate of occupancy was delayed 4 weeks while waiting for a certified access specialist to inspect the project.
- *Utilities* — Utility companies are slow to approve, design and install their services, which could be a result of understaffed teams. On the project mentioned above, the power company took 2 months to design, approve and install a transformer and electric meter after the project was ready to energize. This added significant costs, leaving the contractor to rent and maintain a large generator to power the building for several months.
- *Waste* — Construction project trash and debris are now required to be sorted into recyclable and nonrecyclable bins before hauling it to the dump. This affects all construction material waste, including concrete wash-out, metal, wood, drywall and paint.
- *New products* — Architects and engineers are continually looking for better products and solutions to enhance their project design and efficiency. They attend conferences dedicated to presenting and reviewing new construction materials, products, installation methods and specifications to make projects better for the customer, community and environment.

INNOVATION & DISRUPTION ARE THE NEW NORM

The top-performing construction businesses today aren't afraid or worried about protecting what they've got, venturing out into new customers and project types, or trying innovative products and techniques. They're willing to sell old equipment that isn't profitable or well-utilized, invest in the latest software, hold people accountable to achieve results, and show poor performers the door if they don't hit their goals. Innovation and disrupting the status quo is the new normal. They seek and promote new ideas, solutions and improved strategies to eliminate competition, grow profitable sales, attract new customers, become the best in their market and build a cutting-edge, high-margin business.

More than 20 years ago, construction customers wanted to do business with trusted contractors who had lots of experience, worked hard and provided fair pricing. If you did a good job, you'd get your share of work. Today, customers and competition are different. Of course, you should maintain those traits and characteristics just listed, but you must add integrity, passion, energy, and a desire to become the top-performing company in your market. You must nourish your willingness to stay ahead of the competition, commit to being an innovative industry leader, and do whatever it takes to meet your customer's goals.

YOUR PLAN TO CHANGE

Bidding on the same type of projects you've bid on for years from the same customers won't help achieve your goals — neither will using the same old installation methods and primarily installing materials and products. Resting on your past accomplishments and reputation isn't enough. People want to do business with companies that do what it takes to be a leader in the ever demanding and continuously changing business of construction.

Usually, the decision to change your business is the result of years knowing what you're doing doesn't work.

Deciding where to start is the first tough decision to make. But once you make important decisions and changes to start moving in a new direction, incredible things will happen. Any decision is better than no decision. Positive changes are positive, and no changes are negative. So, start by making your first positive change and do something different. CBO

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BE SEEN BE SAFER

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Learn From Your Firm's Video Playbook

Using game films to evaluate performance, study strategy & build better teams



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Everything is being recorded. Just about every human has access to create their own video diary via cellphone, and many have used this access to become stars in their own at-home "Truman Show." Regardless, video technology has made an indelible mark on the world. If you are a TikTok or YouTube viral sensation, you know that some video clips are as good as gold. However, for most people on the planet, who prefer to watch and laugh at these vignettes, it is important to recognize that this tech is hardly a flash in the pan.

Consider the ubiquity of video technology in the nightly news. How often do today's mainstream news stories feature footage shot by bystanders on their smart devices? And how many are shot by the professionals?

Additionally, think about how sports use video technology in the form of game films. Without a doubt, teams spend as much of their week in the film room as they do the practice field. Golfers watch videos of their strokes, stock car racers watch simulations of their races, offense teams watch and study defensive teams' picks and plays.

Whether we are watching videos for entertainment, or using them to gain knowledge, you have a new tool in your belt — it's up to you to decide whether you and your teams will benefit from it. Be honest: Have you used this technology to succeed in business yet, or are you simply a social viewer?

TRAINING VIDEOS

Training is often viewed as the traditional classroom setting that features a ton of PowerPoint presentation slides and the boredom that accompanies them. The era of the VCR was a time when recording a training session was complicated and cost prohibitive. Then, also storing and utilizing those videos was a cumbersome practice that, more often than not, concluded with piles of unused tapes.

Once again, every one of us has a handy cam in our pockets. This doesn't mean every participant will hit "record" during their training sessions — but, rather, someone can create an archive that provides employees with access to a digital library that can be leveraged long after the training session. For instance, these trainings can be used for:

- *New associates* — Sharing videos with new trainees gives all associates the same onboarding experience, no matter when they were hired later.
- *Subject matter training on a project* — Think of this as specific reference materials for a specific item or issue.
- *Weather days* — If our children can learn via Zoom or Skype, our teams can still be productive, even in the face of weather or other delays.

Another aspect of video technology worth exploring is the production of case studies. From a more proactive perspective, videos can highlight case



> Think about how sports use video technology in the form of game films. Without a doubt, teams spend as much of their week in the film room as they do the practice field.

studies for use in group or one-on-one training sessions. For contractors doing renovation, rehabilitation or service work, a video of an on-site condition could be taken to illustrate potential hazards, issues, challenges, etc., such as wear and tear on a heating, ventilation and air conditioning (HVAC) system, roof damage from the elements, or similar real safety hazards. These short visualization videos could place the learner(s) in a real-life scenario, and allow instructors to then ask pointed questions like:

- "If you were confronted with this situation, what would you look for?"
- "If you came across this problem, how would you triage the situation?"
- "How would you price this work, knowing what you know here?"
- "What type of questions would you ask the customer?"

GAME FILMS

There is no shortage of great technological solutions when it comes to examining both jobsite performance and even recording the team members getting to the jobsite. The construction industry has historically wrestled with implementing similar technologies largely because of the negative perception of Big Brother. But FedEx and UPS are classic examples of organizations that have leveraged GPS and such technologies to drive productivity, efficiency and safety.

One has to wonder: When Tom Brady is on the sidelines staring at the tablet handed to him after an errant throw, is he thinking, "Why are they recording me? Don't they trust me?" More than likely, Brady, like thousands of other athletes, is using that technology to reevaluate his performance. It's not about punishment, but, rather, learning.

Whether you're using on-site video camera technology or simply using some form of smart wearable technology, your construction organization can leverage the same tools as your coaching counterparts in the sports business. For instance, consider the following applications:

- *Put-in-place construction* — A civil contractor can plot the methods and means of a mass excavation project to evaluate routes, load times, truck stacking, etc.
- *Real-life safety appraisals* — Both good and bad safety practices can be evaluated and improved upon.
- *People tracking* — Harkening a chapter from the lean management books that diagram worker movement, individual worker steps can be examined. Once again, this is not about catching a carpenter sleeping, but, rather, determining a more effective solution. For instance, is the cargo box/tool crib too far from the worker? Does the lay-down area require 10% more effort, leading to productivity declines?

All these instances build a repository of lessons learned and best practices that will continue to provide ongoing learning to both management and employees. Ultimately, fewer organizations today offer traditional classroom-style lectures, and more, best-in-class organizations have begun to offer alternative training solutions. While the next TikTok video sensation may not be among your ranks, you would certainly like to find the next Tom Brady. CBO

The Digital Revolution & Its Impact on Construction

How civil contractors are gathering, analyzing & using data today



DONNA LAQUIDARA-CARR, Ph.D., is industry insights research director at Dodge Data & Analytics, where she provides editorial direction to the SmartMarket Report Series, covering such diverse topics as world green building trends, business value of BIM, managing risk in the construction industry, the drive toward healthier buildings, building a safety culture and lean construction. Her insights on these topics have been published in numerous industry publications, and she regularly conducts webinars and speaks about this research at events for diverse organizations, including the AIA National Conference, CMAA National Convention, AGC National Convention, the Lean Congress, Greenbuild, the inaugural WELL Conference and BOMA. Visit construction.com.

Civil contractors have always relied on project data. Whether for tracking productivity, payrolls, schedules or budgets, greater access to rich data has and will continue to be what enables them to expand beyond siloed project data to cross-organizational analyses that best optimize their work.

New research from Dodge Data & Analytics — published in the second 2021 issue of the "Civil Quarterly," in partnership with Infotech, Hexagon, Command Alkon and DCW — suggests that the digital revolution among civil contractors is well underway, including use of data and analytics.

While promising, the findings also suggest that civil contractors are still in the process of actually shifting from the manual gathering of that data (i.e., through paper forms and their own homegrown electronic forms), to the use of dedicated apps and software that enable access to more current, comparable, accurate and consistent information.

According to the report, over 85% of civil contractors collect data on safety, work item progress, material/project delivery, project inspection and tracking personnel and equipment. Many of the contractors are gathering this data through multiple means.

More than 40% report doing so using electronic forms created by their company, and many are still using paper methods, especially for safety (38%) and material/project delivery (31%). On the other hand, about half leverage dedicated apps/software to gather this information, whether through off-the-shelf commercial products or through proprietary solutions.

A similar pattern is visible for the analysis of data gathered as well, though this area lags slightly in the overall digital evolution. Around 60% to 70% of civil contractors rely on general use software like Microsoft Excel to analyze the safety, material/project delivery, project inspection, work item progress, and personnel tracking data they gather, whereas only around half are using dedicated apps/software for these tasks.

The research also examined whether these companies are using the data they gather and analyze strategically, tactically or just to track progress on projects. Not surprisingly, large companies (those with annual revenues of $50 million or more) are using data more frequently — both strategically and tactically — based on the role within the company than their smaller counterparts.

- Sixty-nine percent of respondents from large companies report that company leadership uses data strategically, compared with about 28% of smaller ones.
- Seventy-six percent of large companies report that their project leadership uses data tactically, compared with 54% of midsize companies (i.e., annual revenues of

$10 million to $49 million) and only 38% of small companies (i.e., annual revenues of less than $10 million).

- Site leadership at large companies also deploy data tactically more frequently, with 57% doing so compared to 37% of midsize companies and 25% of small companies.

This may be the result of large companies more frequently acting as early adopters for digital technologies and tools. It might also suggest that large companies could be the bellwether of how data will be used across the industry as a whole, especially as the proliferation of digital tools allows for lower barriers to entry than in the past, and as people generally become more comfortable with digital tools.

Certainly, the study reveals that the lack of tools to use is not a significant barrier. Only a small share of civil contractors (fewer than 20%) report that they cannot analyze the data because of a lack of good apps/software to do so or existing tools being too difficult to use.

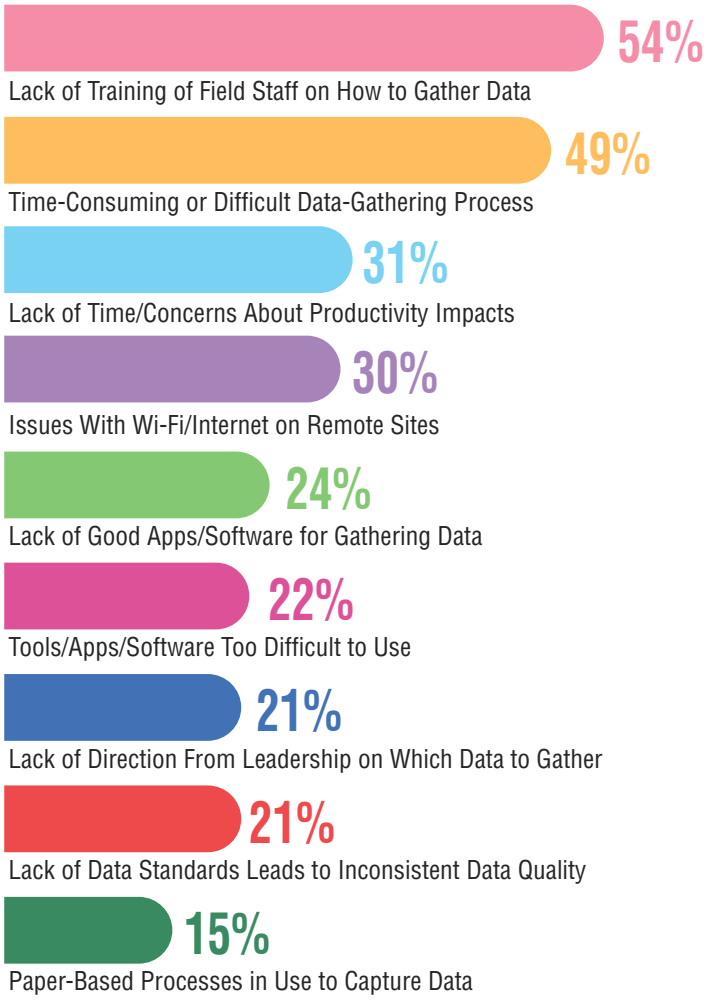
Instead, nearly half of civil contractors (45%) consider lack of consistent data one of the biggest challenges that prevent them from analyzing it, and when asked about the drivers of this obstacle, civil contractors acknowledged lack of field staff training for data gathering and the challenges associated with the process itself. Again, far fewer contractors are concerned about the quality of apps and software (of which there are many available) impacting their data-gathering processes than with people-related issues — actually gathering the data is the biggest challenge.

The message from these findings is clear. Data gathering and analysis is aided by good digital tools, but, as with all other advances, it is the proper deployment of those tools in the field that determine their usefulness in the end. For a tool to be useful, it must be useable.

And while tools used to analyze data are important, intentional engagement and training of field staff is even more critical to ensuring the consistency needed to be effective.

In fact, successful digital advancement involves engaging staff across an organization, especially on-site workers, on not only the means of gathering data, but also how their efforts contribute directly to the end result. This includes not just that specific project, but all of the company's projects moving forward. Ensuring that your employees and project managers understand how and why the company is gathering and utilizing the data being collected is key to properly bringing your business into the digital age. CBO

Biggest Challenges to Civil Contractors' Ability to Consistently Gather Data



Hitting the Business Bull's-Eye

Targeting the fundamentals of speed, aim & accuracy

BY JIM SPURLINO

Can moving too fast throw your business off-target? We all know that speed in business can be necessary to respond to a problem or to take advantage of a discrete opportunity. Serious problems must be addressed; and some opportunities can't wait for you to get on board at your convenience.

What I'm talking about is moving too fast — from where your business is today to where you want it to be — without considering and understanding your target, your market, your customers or your capabilities to make a move that suddenly.

The past year has certainly instilled some urgency — perhaps even panic — in your thinking. If anything will provoke you to take quick action on whatever ideas you can think of to keep your business going, it's a sudden, overnight, pandemic-induced economic recession. Some of your panic may have come about because you didn't yet know that an option was a possibility, or hadn't prepared for the consequences. But now you know.

MOVING TOO FAST & LOSING TRACK OF YOUR BULL'S-EYE

Here are some of the ways that speed can kill, especially if you lose track of your business bull's-eye:

- Your cash is low, you need more cash flow, and you need it now. So, you jump on a couple of ideas in your eagerness to bring cash in the door. It's important to pause when you are struck by the urge to do this. Think about your goals and analyze the situation. Your sudden moves may not give you the results you desire, and you've spent precious time with minimal results and you're still in the same predicament.
- You move fast on something and get some positive short-term results, but what you're doing isn't really within your business bull's-eye. You've forged ahead with all due speed, it sort-of worked, yet now, here you are trying to figure out how it fits into your long-term plan.
- You decide you really need to strike out in a new direction, but fail to really consider your company's strengths and weaknesses. The direction you've decided to go in spreads your capabilities too thin and you have to lean on your weaknesses instead of your strengths.
- You see where you want your business to be in the future, so you try to take a big leap from where you are today to where you want to be. However,



somewhere along the way your customers peel off because they weren't ready to move into the future. You changed the target, but they didn't change with you.

FUNDAMENTALS FIRST

In those scenarios, speed can cause you to stumble because you've ignored certain fundamentals. However, when you have those fundamentals solidly in place you have the ability to move quickly and take advantage of market opportunities, deal with abrupt changes or respond to a seismic shift in the market that forces you to change your bull's-eye.

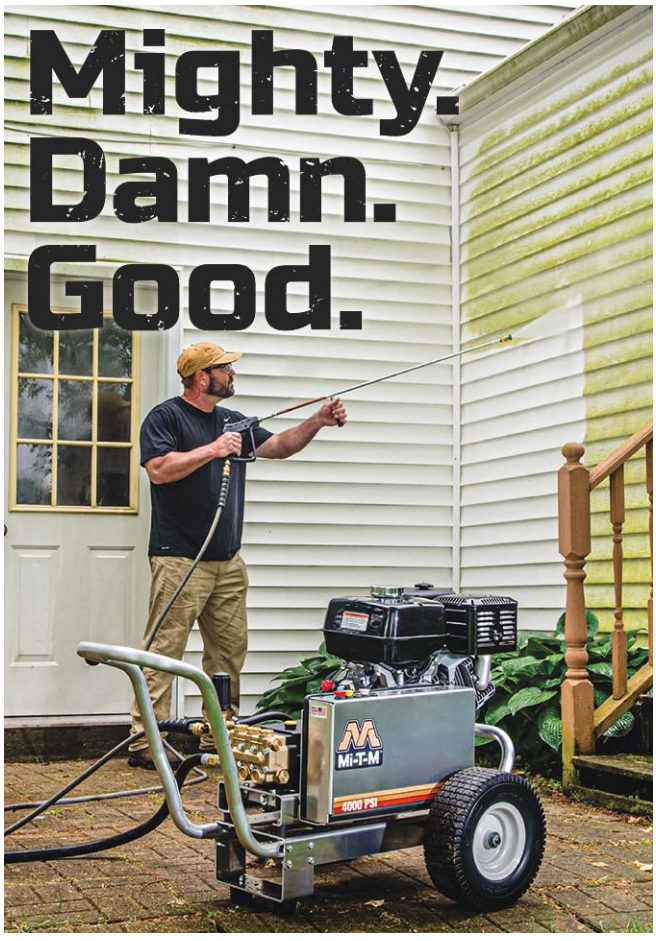
What are these important fundamentals?

- *Information* — Information is an indispensable tool. If you don't have current and accurate information, moving quickly can lead to wasted time, money and effort. Moving with great speed in an information vacuum can be costly. Make sure you understand all the external factors and be hyper-vigilant in identifying change and tracking trends.
- *Preparing for unknown opportunities* — Based on your business bull's-eye, you should be prepared for opportunities without knowing if or when they will appear. Always keep building your knowledge about the market, customer needs and emerging solutions, even if you have no immediate plans to put this information to use.
- *Knowing your business inside and out* — Make sure you understand your company's strengths and weaknesses. If you know your business inside and out — your bull's-eye, your team's capabilities, where your business fits in the market — this understanding will support the use of speed and agility to take strategic action.
- *Timing* — When information, preparation and knowledge meet, you can confidently judge whether the timing is right for a fast move. Just make sure you aren't missing anything that could make your target a little hazy.

Above all, consider your target, your business bull's-eye. You need to be prepared, precise and practiced to move quickly. If you aren't precise, speed won't help you hit a target you haven't defined. If you want to move fast, know your target, and know how you'll know when you hit it. Be precise in what you're aiming for so you can move with speed when the time is right. CBO

Jim Spurlino is a business owner and entrepreneur. His book, "Business Bullseye: Take Dead Aim and Achieve Great Success," is a guide to leading small and midsize businesses to success and provides tools, insight and guidance. The book outlines universal concepts that emphasize establishing a concise bull's-eye, and the necessary steps to taking dead aim and hitting it. Visit jimspurlino.com.





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Defending Your Company on Social Media

Strategic guidance to maintain a steady & positive presence online

BY SCOTT LEWIS

Many good things come out of social media. It has become popular in the business community to engage with customers and increase brand recognition. Along with its popularity and the exposure and reach it provides many businesses, social media can sometimes cross over from professional to personal. This occurrence often forces companies to seek out methods to control their branding and messaging in ways that promote their company favorably.

For instance, every business has encountered a disgruntled employee or customer at some point. But when that displeasure results in negative feedback posted about you or your business on social media, you must be prepared to handle it and defend your business moving forward.

When creating a social media management strategy, regardless of whether you are dealing with positive or negative feedback, make sure you manage the audience viewing your online profiles. According to a Salesforce survey, the average consumer uses 10 different online channels when looking for or communicating with businesses. Your social media profiles are today's Yellow Pages, and it is essential to understand how other companies and competitors offer their products and services through social media.



The first step is critical to build and maintain a social media policy for your business. This will create awareness, align strategies, hold users accountable, and help to shape and deliver the message you want to send potential new clients. Take a look at the following concerns to learn how your business can reassess and support its online presence with a smarter, safer social media strategy.

CRISIS PLANNING

One vital part of a social media strategy is establishing a crisis plan — a way to handle difficult conversations with other social media users, and respond to negative reviews. Technology can't defend you from bad reviews, so developing a plan is essential to the success of your crisis response. The key to resolving any controversy is to be honest and, most importantly, to not add fuel to the fire by trying to overexplain a lousy situation.

Stick to the facts, address the real problem, provide a solution, and limit participants to only those who need to be involved. Some inappropriate posts are made by accident, but news travels fast, and it's best to stay on top of situations like these. A combination of policies, technology and oversight can protect you and increase your social media awareness.

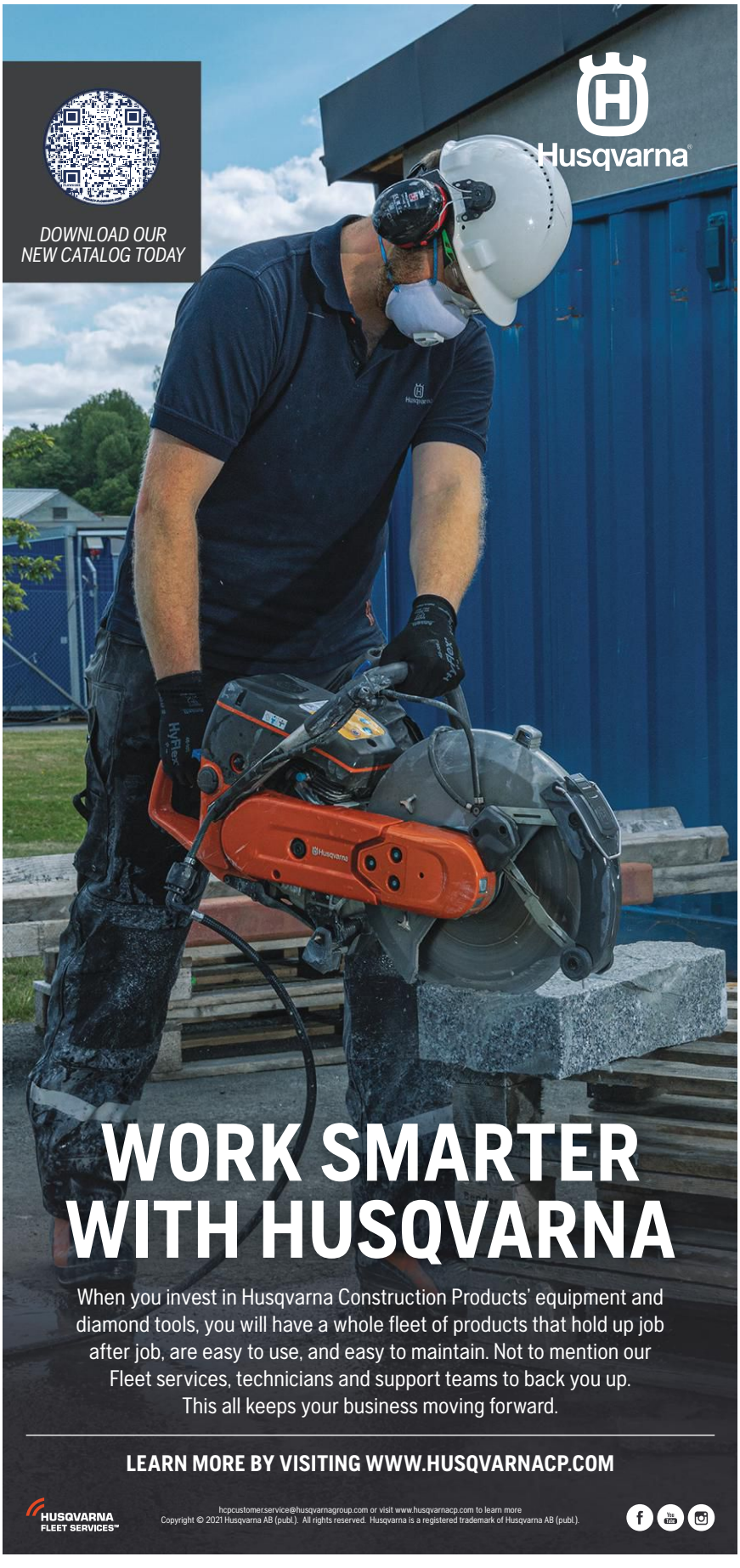
SOCIAL LISTENING PROGRAMS

How can a stakeholder keep up with and manage a company's social media presence? Social listening is a basic way to keep track of what is being shared about your organization online. Some of the critical features of social listening software include flexible queries that help to improve results; reports that outline who is talking about your brand, competitors or industry; Twitter, Facebook, Indeed and LinkedIn filters that search for negative keywords and demographic data, which could include the interests, occupations and locations of those in your audience. Social listening tools can also direct people who are searching for information about your company to positive feedback.

ACCOUNT ACCESS & SAFETY

Often, a business's social media posts can be misused by employees, posting proprietary data or sharing information that would not ordinarily be made public from a business perspective. To raise social media awareness among your employees, consider the following steps.

- Limit employee access to social media accounts. To cut down on misinformation, phishing and disgruntled posting, lock your social media feeds so that no post goes live until it is reviewed.



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Social media is public. It moves fast & can quickly escalate a situation, especially when the feedback is negative.

- Train the employees who post on behalf of the company about your organization's specific policies and what constitutes appropriate use.
- Employees who handle your social accounts and represent the company should be sufficiently trained on how to identify, mitigate and prevent an attack on any social media platform.
- Change your account passwords regularly, especially with regard to changes in personnel.

In today's world, it is essential to maintain a social media presence to have constant communication with the people who are interested in your company and its products and services.

Positive and negative posts alike, it is essential to be consistent in your response. Make sure you handle all complaints the same way you would if the individual was standing in front of you.

ESTABLISHING BEST PRACTICES

Establishing best practices is a key step in building a successful strategy and developing policies to manage that strategy.

Keep in mind that your company should have a designated group of people working together to manage your business's various social accounts. The same individuals should not only review comments and respond in a timely manner, but also take time to discuss any difficult scenarios and determine whether the response to those conflicts should be publicly or privately.

Social media is public in nature. It moves fast and can quickly escalate a situation, especially when the feedback is negative. Avoid the kneejerk reaction to immediately remove the inappropriate or negative post(s) from social media — this approach may only complicate the issue. Honest communication with the displeased party is a much more straightforward way to manage and mitigate the damage that can result from these posts.

FROM A LEGAL PERSPECTIVE

Remember: Documentation is king. Save everything, take screenshots of all heightened social media communications, especially if the comments are accusatory or derogatory. Should things reach a point of escalation where the problem is brought to litigation, this documented correspondence could be the difference between winning and losing in court.

This also means you need to meter your online reaction to the post. While, in most cases, you should not delete a post, in some cases, from a legal perspective, not responding is the best course of action. Any responses could be used against you in a court setting, so, if you respond, demonstrate the proper sympathy or empathy to the issue, along with suggestions for how to rectify the situation to their satisfaction.

Considering some of the legal ramifications of social media and the written word, try to avoid putting yourself in a situation where you could make a bad situation worse by having it unfold in public. It is essential that when responding, you follow a couple of basic rules. First, never blatantly attack in a manner that is rude and outrageous; you could amplify the problem by inadvertently involving others who follow your social media feeds, exponentially expanding the argument. Be cautious of known social media users whose sole purpose in posting is to taunt or provoke. These "trolls" are often looking for a fight, and your response could interject a stranger with no skin in the game into your argument. Don't put yourself in a position where you might lose control — this could lead you to say something that could come back to get you in court.

Managing and monitoring social media can be difficult, but the reality is that you can't stop people from posting negatively about you or your company. This is why it is essential to monitor social media and be responsive and proactive. Don't forget to weigh the value of your response — sometimes silence says more about the poster than it does about you. CBO

Scott Lewis is president and CEO of Winning Technologies Group of Companies, including Liberty One Software. Lewis has more than 36 years of experience in the technology industry and is a nationally recognized speaker and author on technology subjects. Winning Technologies' goal is to work with companies to select, implement, manage and support technology resources. Call 877-379-8279 or visit winningtech.com.


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EMPLOYEES: Integration With Integrity | By Alex Headley

McCARTHY ON DEVELOPING GROWTH & ENCOURAGING SUCCESS THROUGH DIVERSITY, EQUITY & INCLUSION

McCarthy Building Companies Inc., a nationally known commercial construction company based in St. Louis, Missouri, has been in business for 150 years. The company and its staff are recognized for their commitment to quality and customer satisfaction. But fulfillment of its clients' needs is not their only focus. McCarthy has also made recent investments in the success of its workforce. Recognizing that representation of and respect for a wide variety of cultures, backgrounds and opinions is important to the longevity of the industry, McCarthy recently appointed Kamecia Mason as vice president of diversity, equity and inclusion (DE&I).

As Mason builds upon McCarthy's existing DE&I efforts to evolve the firm's internal and external strategy and implementation, she also gains industry support. Prior to joining McCarthy, Mason developed a reputation for leadership focused on enhancing inclusive cultures, supporting community engagement, and increasing diversity investments. In her role, Mason aims to increase awareness of DE&I not only at McCarthy, but also across the industry as a whole.

According to Mason, successful DE&I efforts begin with the community. "Construction is a service- and community-based business," she said. "We work in the middle of where everyone lives, works and plays. The more connected you are to your community, the more support you are likely to receive." Mason says this plays out not only in the way construction crews are perceived on the jobsite, but also in supplier diversity. "Bringing together a focus on the community in the construction space gives us a team made of the actual community. The more often local folks are employed, the more often that money goes back into the community," said Mason. "Every construction jobsite provides opportunities to be centered on inclusion and diversity to benefit the actual community."

McCarthy isn't the only construction organization finding a renewed focus on diversity and equity in the built world. HNTB, an employee-owned infrastructure firm serving public and private owners and contractors, named Diana Mendes corporate president of infrastructure and mobility equity. With her history of representing social justice and equity issues tied to infrastructure investments, Mendes is focused on shaping transportation and mobility equity policy through collaboration with federal, state and local agency leaders.

The Construction Financial Management Association (CFMA), a nonprofit serving the educational needs of construction financial professionals, recently appointed Bruce Orr as chair of the association's new diversity and inclusion committee. Orr, the founder and chief data scientist at ProNovos, a software company focused on intelligent software solutions for the construction industry, leads the committee and authors articles addressing DE&I problems throughout the industry, including some of his own difficult experiences as a person of color in construction.

As the industry's understanding of the need for DE&I initiatives continues to deepen, there is growing support from business leaders who recognize it must become an integral part an organization. With the investment of time and effort on the front end, establishing DE&I initiatives can provide businesses with diverse and equitable teams and opportunities that support respect and success for everyone working in the industry.

DE&I BENEFITS

The communal and workplace benefits of a diverse workforce is becoming a science of its own — and one that is delivering results. Studies from Harvard Business Review, McKinsey & Company and Credit Suisse all point to diversity, equity and inclusion as key factors of business success. These reports provide a glimpse into the benefits of representation in the workplace:

- Gender diversity can predict positive financial performance
- A diverse board can deliver a 95% higher return on equity than companies with homogenous boards or councils
- Companies that actively utilize a diversity program are 70% more likely to enter a new market

- Companies that score poorly on diversity are 29% less likely to achieve above-average profitability
- Retention and employee loyalty is 19% higher at companies ranked highly for diversity and inclusion efforts

According to Mason, "Diversity in general — when you have a good mix of people involved — can offer so many experiences and perspectives that would otherwise be missed. This can drive some outstanding business outcomes. It's also important to recognize how comfortable a workplace feels to those working in it. Having a person there to relate to or feel comfortable with makes you more likely to stay with the company."

Supported by the data from various studies that encourage the creation of job roles like hers, Mason says reaching the highest level of success is most likely to happen when DE&I efforts are included in the foundation of a company.

"The research shows that more diverse workforces perform better. If your business is welcoming to DE&I, you can overcome hurdles earlier and have a team that is a more reflective of the kind of clients you are targeting. It gives you a leg up on the competition, who may have to play catch up later," she said.

However, this is not to say that DE&I shouldn't also be a consideration for more established or already successful businesses. "You need this to make your business work," said Mason. While existing companies might have more adjustments to make than those just starting out, Mason says making the effort is a continuum. "Year after year, planning is required. Be thoughtful and patient. Don't overtax your partners with change," she said.

INTEGRATE WITH INTEGRITY

As a best practice, those looking to develop a DE&I strategy should take steps to ensure DE&I is integrated into every business function. Business owners should consider how this integration impacts all the varied functions and departments within a company.

"It has to be a core imperative or it's not part of your business strategy," said Mason. "Make sure to include your employees in the process — if you are unable to hire a full-time resource, recognize that your staff needs to be compensated for their time spent on any internal research or committee work that go toward your DE&I goals. Don't let the program become a way to just 'check the box' for diversity. Make sure you are actually increasing representation and engaging the community," Mason added.

In addition to her primary role at McCarthy, Mason is leading McCarthy's Capacity Building program, where she mentors minority- and women-owned businesses. The program currently includes 31 women- and minority-owned construction organizations, helping them to shore up their construction skills. After these companies graduate from the program, they are qualified to bid on McCarthy projects, providing an opportunity to work on larger projects and grow their place in the industry.

"The intention is to help businesses work with McCarthy and expand their technical capacity," said Mason. It's important to note that the biggest factor in the success of participating organizations is initial support from their leadership teams. "The chief executive officer must be committed to participation in order for the organization to succeed," said Mason. "We want that knowledge to be transferrable all the way to the top. We want each class to give the business something to apply to their work."

The program also helps companies to develop their marketing and branding to build recognition, representation and continued growth in work outside of McCarthy.



> Diversity in general — when you have a good mix of people involved — can offer so many experiences & perspectives that would otherwise be missed. This can drive some outstanding business outcomes.

INTERSECTION WITH HEALTH & SAFETY

Engraining these values and practices into company culture is the next step, especially as it relates to employee health and safety.

"We have to get really intentional. There are intersections between both inclusion and equity in the workplace and the actual safety and well-being of our employees," said Mason. "Suicide rates are higher in construction than elsewhere, and we need to put an effort into approaching mental health and how it intersects with DE&I."

According to the Centers for Disease Control & Prevention (CDC), construction has the highest suicide rate across all industries. The suicide rate in construction is about four times greater than the national average, and five times greater than that of all other construction fatalities combined — more lives are lost per day from suicide than from all of the Occupational Safety and Health Administration's (OSHA) Focus Four hazards combined.

The demographics of the construction workforce falling into the highest risk categories may be a driving factor in these numbers. According to CFMA, some of the factors driving this statistic are related to the industry's reputation:

- Stoic, old-school and tough-guy culture
- Fearless and thrill-seeking
- Promotes advancement without leadership training
- Travel-related separation and isolation from family
- Chronic pain and sleep deprivation
- Seasonal layoffs and end-of-project furloughs
- Tolerant of alcohol and substance use
- The highest use of prescription opioids of any industry
- Performance pressure (schedule, budget and quality)
- Access to lethal means

Many of these factors drive home the need for DE&I that goes beyond gender and race to include sexual orientation, gender identity, neurodivergence and personality types.

CSDZ, a company supplying risk management and safety services to the construction industry, has developed a program dedicated to worker well-being and suicide prevention.

"Suicide is a complex issue and there is not a simple solution. DE&I is a hallmark of healthy workplace culture. Mental health helps address each aspect of DE&I. Employees experiencing psychological safety at work feel more trust and belonging. In this way, effective DE&I initiatives can lead to employees accepting resources and seeking care to address underlying mental health and life/work stress," said Cal Beyer, CSDZ vice president of workforce risk and worker well-being. Beyer also heads an initiative focused on mental health and safety in the industry called Hardhat Health.

Beyer says workplaces that are truly committed to DE&I seek to foster a climate of psychological safety among all workers. "Psychological safety is the outcome of an organization's commitment to building a culture of care based on a respectful workplace. Programs, policies, procedures and practices that promote DE&I also reinforce the mental health and well-being of workers." Beyer says.

The major challenge is reducing the stigma mental health carries, and incorporating it into safety, health and wellness culture. "Important steps business owners can take include actively demonstrating care, concern, empathy and flexibility toward employees. "This is especially true as the number of workers returning to workplaces. Sharing information about employee assistance programs, employee health benefits, community-based social service agencies and crisis hotlines reinforces to employees that their employer recognizes how important mental health is to their well-being," said Beyer.

Launching a DE&I program and providing mental health support might sound like a tall order to some, but according to Mason, there is no challenge too great: "The construction industry knows how to solve complex problems, it's what we do every day." CBO

Alex Headley is associate editor of Construction Business Owner Magazine and Digital Media.

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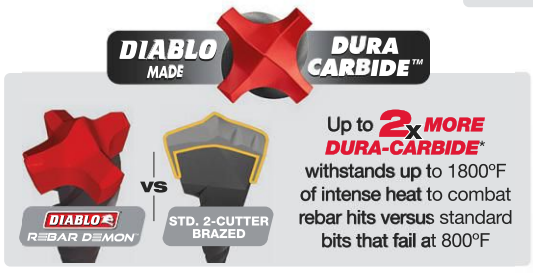

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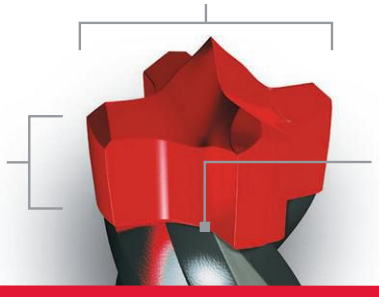



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EMPLOYEES: Exploring Psychological Safety | By Ryan Todd

HOW DIGITAL RESILIENCE TRAINING CAN UNLOCK ADVERSITY & DIFFUSE THE EFFECTS OF STRESS ON THE JOB

In the wake of the COVID-19 pandemic, workforce stress is at an all-time high. More than 70% of the workforce agrees that this has been the most stressful time of their entire career. Depression rates have more than doubled, and there's been an increase in substance abuse, domestic violence cases and suicides.

Stress and workplace accidents are closely connected, with up to 80% of workplace accidents being a direct result of stress. Essential workers who are handling delicate materials and putting themselves in harm's way need to be mentally sharp and to be able to cope with stress — otherwise they're at increased risk for accidents or injuries. That's why experts are concerned with the health and safety of physically demanding industries like construction, oil and gas, and utilities.

As such, business leaders are now recognizing that psychological safety plays a huge part in physical safety and have prioritized bringing mental health resources to help improve safety.

This is where resilience training comes in, and employers have turned to this as an effective way to help their workforce get ahead of any adversity that they face and limit the negative effects of stress.

THE MENTAL HEALTH BRAND PROBLEM

When we think of mental health, it often conjures up images of weakness: head-in-hands imagery, suffering, anxiety or even suicide. All images that equate to mental illness. When we think of physical health, the imagery is more likened to fitness, vibrancy and athletic or healthy people, and not of someone with a cast or in a hospital bed. This contrast speaks to the brand problem facing mental health.

The reality is that mental health impacts us all — it lives on a spectrum between thriving and illness that must be monitored regularly. It changes by the day, and there's no finish line.

However, the mental health supports we've provided workers are negatively contributing to this brand problem. Up until now, the focus of mental health resources has been skewed towards the illness end of the spectrum, pertaining to the one in five employees who might be in mental distress. Resources like crisis lines, teletherapy and return to work programming that are offered through employee assistance program (EAP) providers. Why? Because this is the area that's costing employers directly through absenteeism and turnover costs. Making the issue even worse, employees rarely even know these resources exist, with less than 10% of workers utilizing mental health supports through EAP providers.

The recent move to resilience training marks a shift toward a





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Two key ways that digital resilience training has broken through are: reaching workers where they are; & giving them tools to practice by doing.

proactive, total workforce approach and focuses on building core skills and promoting overall mental well-being in the workforce. This shift has made mental health resources more accessible, focusing on mindfulness, mental fitness and energy management — improving relatability to the wider employee population instead of just being focused on when people are broken or in danger.

BREAKING THROUGH TO THE BLUE-COLLAR WORKFORCE

For industries such as oil and gas, utilities and construction with a high concentration of field workers, their employees prefer to work with their hands because it's what they're used to, it's what they do every day on the job. When there is a job to be done, they're the ones inclined to make do with the resources at their disposal to physically find an answer to any problem that they may face. This hands-on approach is integral to their work and livelihood.

We also know these industries are male-skewed, and that males are at an increased risk of substance abuse, depression and anxiety, with suicide being the No. 1 cause of death in males under the age of 45. Males tend to be less likely to seek the help they need, whether it be due to stigma, an inability to admit weakness or to be vulnerable with their emotions or some other factor. Additionally, men like to be in control and issues with mental health or stress can render them powerless or subject to professional expertise that's far outside of their comfort zone.

So, rather than offering our blue-collar industries access to a network of therapists that they're unlikely to utilize, employers are now turning to resources like digital resilience training that offer privacy and a hands-on, skill-building approach to mental health and well-being. It puts the control and mental health responsibility back in the worker's hands, just as they prefer, and gives them the ability to anonymously access content on their own time.

REACHING EMPLOYEES IN THE FLOW OF WORK

Mental health programs in blue-collar industries have fallen well short on accessibility. With a large concentration of remote workers that are constantly on the go and are rarely in front of a computer screen or stationery at a desk, employers have struggled with finding ways to meaningfully access their workforce with any initiative, let alone mental health.

Unsurprisingly, resources such as workshops, which are limited in reach and continuity, and EAPs, which are laptop-based and severely lacking in awareness and utilization, are not breaking through to employees and engaging them in a meaningful way.

There are two key ways in which digital resilience training has broken through the barriers many employees face when dealing with mental health: reaching workers where they are, and giving them tools to practice by doing.

For the reach part, priority environments for employers to influence blue-collar workers include their mobile phones and health and safety meetings. Resilience training has enabled employers to put bite-sized lessons and tools in their worker's hands, this time through the technology of their mobile devices, which can be accessed anytime, anywhere. These micro trainings offer benefits to the frontline worker in as little as 5 minutes a day, not coming at the expense of time or productivity. Health and safety meetings offer a window for leadership to deliver a quick message on the important topic of mental health and well-being, encouraging the continuity of practice on their mobile devices. These consistent but easily digested approaches to health and safety reduce the stigma associated with discussing mental health while empowering employees to research, practice and understand their options in a private way.

What digital resilience training has tapped into is that people learn best by doing. By making the subject more accessible in shifting the focus from illness to well-being, to a responsibility that empowers personal control and to training that lives within the flow of the workday, resilience training is helping employers in blue-collar industries breakthrough with mental health like never before. CBO

Dr. Ryan Todd is the chief executive officer and co-founder of headversity. Launched in 2019, headversity is a workforce platform that provides employers with the tools to better equip their employees when it comes to building individual and organizational resilience. Visit headversity.com.





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CONSTRUCTION BUSINESS OWNER

5 RECOMMENDATIONS FOR FIGHTING WORKFORCE LOSSES & FINDING QUALIFIED CANDIDATES

This year is poised to be a year of growth, with the Federal Reserve recently increasing its forecast of the nation's gross domestic product to 6.5%. With that, the construction industry will likely face challenges around hiring cycles, evolving protocols and a widening skills gap.

Baby boomers in leadership roles, such as superintendent and foreman, are retiring, and the available talent pool for niche skilled trades, such as masonry detailing and woodworking, is both shrinking and aging. In addition, trade schools are facing declining enrollments for new apprentices that can help to pick up the slack.

Any way you look at it, construction firms are dealing with a skills gap for subcontractor talent that will only widen in the coming years. So, how can employers in the construction industry get ahead of the curve and set themselves up for success? Consider the following five recommendations to help bridge the gap.

1. TAKE A SYSTEMATIC APPROACH TO TRAINING

As with any widespread issue affecting an industry, it's often helpful to look at what the largest and most well-resourced firms are doing to tackle the problem. In terms of the niche skilled trades talent gap, national construction firms have begun offering apprenticeships and robust, on-the-job training that's commensurate with a technical school's certification process.

The most successful companies find motivated people among their current workforce and train them for needed roles.

One particularly effective approach to maintaining contact with high-demand workers is to require a multiyear commitment for program completion — much like a degree — with reimbursement and certification available at the end.

2. EMPHASIZE OUTREACH & EDUCATION

In addition to a shrinking labor pool, skilled trades also face difficulty at the onset of the talent pipeline. Many early-career candidates come from 4-year college programs in construction management, rather than skilled trade apprenticeship programs, and don't always understand the growing value of specialized skills.

What can the average construction firm do to address this issue, and become a favorable destination for the next generation of skilled laborers? Go after candidates at the beginning of their career journey, where people are most interested in learning how to build a house or a building, and emphasize how important skilled trades are.

Employers can do outreach through job fairs, seek referrals from existing employees and become more intentional about marketing to the candidate pool rather than potential customers only. People need to know that skilled trades can be just as lucrative and rewarding as more generalized project management work.



3. FOCUS ON RETENTION

Retention may be the most efficient place to focus your efforts. As the competition for skilled trade talent heats up, construction firms have been introducing more extreme measures to keep their workers happy. It's increasingly common to see skilled-trade wages paid to keep top talent even during downtime in production schedules. Higher wages, more flexibility and additional perks for workers with the scarcest skill sets are all regarded as requirements for firms to remain competitive.

Make your core crew happy, and skilled trades talent will come to you. Earning a reputation as a teacher, mentor and nurturer will keep key people in your firm, and make them want to grow on the job.

4. FIND CREATIVE WAYS TO BROADEN THE TALENT POOL

The talent gap may widen to the point at which construction firms of all sizes will need to look at expanding the talent pool to include international laborers.

Larger firms have already shored up their processes for filing visa requests through the state department. Also underway is a gradual reduction of threshold requirements for skilled laborers. In some roles where such clearances are not required by regulations, background checks and drug testing are going away.

5. BUILD RELATIONSHIPS WITH CONTINGENT LABOR PROVIDERS

As the skills gap widens for certain niche skill sets, the job market is likely to evolve a new mindset for employing skilled tradespeople who are already trained and ready to get to work. Contingent labor subcontracting is likely to emerge in the coming years as a way to fill the employment needs more quickly and efficiently. Staffing companies that are moving in the direction of managed services are a great resource to lean on as that trend continues.

While it's not ideal to wait around for new staffing options, implementing the above-listed strategies can leave you in a better spot once they begin to arrive. In the meantime, construction business owners should stay true to their original purpose, adhere to their company values and aim for excellence and clarity throughout the hiring process. CBO

Aaron Wood is the director of strategic operations at Aerotek. With over 20 years of experience in recruiting and staffing, Wood specializes in strategic operations and managed services offerings. He oversees various construction and solar projects nationwide and brings much expertise in this space to his portfolio of business. Visit aerotek.com.





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4 Tips for Attracting & Retaining Gen Z Employees

Shaping the next generation of construction professionals

BY RANDI BAKALAR

The skilled labor shortage in the United States continues to be a significant challenge for the construction industry. While the pandemic delayed many construction projects in 2020, the demand in 2021 is full steam ahead. This strong demand, coupled with older workers retiring, has intensified the labor shortage, creating space for the next generation of construction workers.

According to a recent study by the U.S. Chamber of Commerce and USG Corporation, 91% of contractors who participated in the study reported having a moderate to difficult time hiring skilled workers for vacant positions. In the months following the start of the COVID-19 pandemic, business owners reported having an even bigger challenge in filling open positions. In fact, the study reports 39% of those contractors believe hiring will become even more challenging in the months and years to come.

To foster the next generation of the construction workforce, construction business owners can help to close this gap by recruiting Generation Z, which is anyone born between 1995 and 2010. With the recurring worker shortages in today's construction environment, consider the following tips to help companies in the skilled trades successfully attract and retain millennial and Gen Z workers.



1. CHANGE THE CONVERSATION

It's never too early to introduce young people to skilled trades opportunities. Parents and teachers should give equal weight to skilled trade careers and higher education paths.

Ultimately, a 4-year degree may not be right for every student, and young adults are seeing the financial pitfalls that can come with earning a bachelor's degree. In fact, federal data from 2021 shows that the average student leaves a 4-year degree program almost $40,000 in debt. In comparison, a 2-year degree or trade certification allows students to get paid, on-the-job training during school, and depending on the line of work, many companies will pay for their employees to get their trade degrees.

Financial freedom aside, the industry needs to reinforce that skilled trade careers also require talent, knowledge

The industry needs to reinforce that skilled trade careers require talent, knowledge & dedication. These are roles that thrive on creativity, innovation, teamwork & quick thinking, & may also provide the opportunity to become a manager or take ownership within a business setting.

and dedication. These are roles that thrive on creativity, innovation, teamwork and quick thinking, and may also provide the opportunity to become a manager or take ownership within a business setting.

2. CONNECT WITH YOUTH

As a manufacturer committed to partnering with the community in building a pipeline of skilled workers, Bobcat recommends that professional trade businesses reach out to local high schools to showcase the opportunities in the industry — and their specific businesses — to attract future employees.

This type of relationship building is in the best, long-term interest of every small business owner and requires ongoing efforts. This may mean encouraging high school students to consider a tech school, to look at your company for summer internship work, or take into consideration a potential job opportunity after graduation.

Outreach opportunities should also look broadly enough to build connections with students who are nearing the end of their degree programs and planning for their career paths after graduation.

3. SPOTLIGHT THE BENEFITS

The belief that you must secure a 4-year or liberal arts degree to be well-compensated simply isn't true. There is good money to be made in skilled trades work. For example, the mean annual wage for construction and extraction occupations can range from $39,000 to $45,580, and mean hourly wage is around $20.67, according to a May 2020 report from the Bureau of Labor Statistics.

Many in the skilled trades profession earn six-figure wages in far less time, and with far less money spent on education, than just about any other field of work. Beyond wages, there are other factors, such as the benefits of work satisfaction, job security and work/life balance. It is the responsibility of all industry professionals to educate youth on the financial benefits, as well as the fulfillment that comes from other positive aspects of these roles.

4. ENCOURAGE DEVELOPMENT OPPORTUNITIES

Finally, it's important to inform young people of the opportunities for advancement and growth within your company — and the industry at large. There are significant opportunities for career progression and growth into management and leadership positions. Showcasing the opportunities for succession planning and business ownership is another aspect of the trades labor force that can provide more value than a more traditional career path outside of the industry.

The industry is reaching a tipping point where we will continue to see more significant job gaps as baby boomers retire. Capitalizing on the vast knowledge and skills of these professionals now to train a new generation of professionals will be vital to keeping the industry going. Part of this is understanding how to communicate with Gen Z employees.

More than any other generation, Gen Z employees are driven by financial awards and potential career advancements. Tying back their responsibilities and their place in your organization to the bottom line is important for them to understand how they directly contribute to not only their own success but also that of the company. In addition, it can be important to remember that this group uses digital communication tools for all aspects of their lives. Text messaging and other project management or workflow applications, like Slack, are the preferred way to collaborate and connect.

Ultimately, everyone can play a part in preparing for the economy of tomorrow by taking steps to help attract and retain the next generation of construction professionals. While these tips are meant to encourage you and your managers to strategically plan for the future of your business, you are the real expert when it comes to your business, your market and the role you play in your community. The more outreach you can do to cultivate awareness for your organization and the opportunities in the industry more broadly, the more successful we will all be in building stronger employees, businesses and communities. CBO

Randi Bakalar is the corporate communications manager for Doosan Bobcat North America, and has previously served in human resources and labor relations roles for the company. She has extensive experience leading employee engagement programs, communication and outreach, as well as supporting the company's science, technology, engineering and math (STEM) education initiatives and partnerships with higher education programs. Bakalar is passionate about cultivating the next generation of skilled professionals and the future of the construction industry. Visit bobcat.com.



5 Key Metrics That Make or Break Your Company

How to keep your fleet functional & profitable

BY TOM WEBB

You can't operate a jobsite without equipment. For many heavy civil construction companies, it's the most significant asset they own. Therefore, it can have a profound impact on your bottom line. While there are many fleet performance metrics to manage to keep a fleet productive and healthy, the following are five key metrics and definitions below directly impact the bottom line. Read on to find out how.

1. UTILIZATION

Definition: A measure of use of a machine unit or a class of machines, i.e., 40 hours/week equates to 2,000 hours/year. If that is the maximum time of usage, that becomes 100% utilization.

Equipment is one of the most significant assets of any heavy civil construction company. It's not uncommon to have a million dollars worth of equipment on a $150,000 job, for example. So, every fleet manager wants to make sure they utilize each of those assets to their fullest potential. Utilization also becomes a key data point in determining equipment rates, so it must be accurate.

Comparing "charged time" to a job, entered by field personnel, with "actual machine-hours," from telematics or manually entered, can help you determine how your fleet is doing. You'll want to set utilization target expectations for each equipment class, i.e., midsize excavators may be 1,300 hours/year (65%), while asphalt machines maybe 1,900 hours/year (95%). The better utilization rates you can achieve, the less equipment sits around idle, costing you money. And that means more profit for your company.

Technology can track the charged time from the field and show you which pieces and equipment classes are underutilized in your fleet. Telematics devices track the movement of your fleet and actual machine hours of usage.

2. EQUIPMENT RATES

Definition: A rate set to use a piece of equipment — a dollar amount per specified time period.

Equipment rates are a helpful metric that allows companies to bid on their expected equipment cost, to recover their costs/investment, and to compare internal equipment costs with published outside rental/lease costs to validate ownership versus renting. They typically include all fixed, ownership costs and operating costs. They should not involve operator and accident/abuse repairs.



It is generally recommended to set rates by class, and you might consider having rates for "idle" (ownership costs only), "running" (ownership and operating costs), "down" and "stored."

The challenging part about setting equipment rates is that there is no right way to do it. However, industry experts have put together calculators to help give you a baseline. Equipment rates should be dynamic to account for changes in utilization, purchase prices, fuel costs and other factors — which means they should be revisited at least biannually, if not more often than that.

While executives, such as chief executive officers, chief operating officers and owners, typically have the final say on equipment rates, high-performing equipment managers track their costs to give data-backed recommendations.

3. UPTIME HOURS

Definition: The hours that a piece of equipment is available to be used during regular shift hours. The opposite of downtime hours, which indicates a piece of equipment is unusable due to needing an unplanned repair.

Whether you track uptime or downtime, it's a valuable metric because it allows equipment managers to evaluate their brand/model choices, their preventive maintenance programs, their rebuild programs, their replacement process, their assigned operator program and more. Downtime calculations should include only normal wear and tear repairs and should exclude planned off-shift repairs. It's those planned repairs like those included in a preventive maintenance schedule that leads to more uptime, which leads to more projects completed on time and budget for the company. Telematics devices can give mechanics and service teams access to fault codes, which can help decrease machine downtime by letting them know what items they need before they leave to repair. Preventive maintenance programs allow you to play offense and be proactive towards increase uptime hours.

4. WRENCH TIME

Definition: The time a mechanic or technician spends with a tool in their hand, performing actual maintenance work.

No employee can spend 100% of their time on only direct labor or billable hours. And the same is true for mechanics. In the best shops, direct labor (i.e., wrench time) maximums are estimated somewhere between 60% and 85%. The remaining time spent on indirect but necessary things like clean-up time, sick/vacation

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But you don't want to chip away at that wrench time even further with inefficiencies like difficulty locating equipment history or details, calling several people for information on a work order, or repairing a piece of equipment only to find it back in the shop a week later for its scheduled maintenance. To avoid double work, make sure you are focused on efficient time usage when maintaining equipment.

Finding ways to reduce inefficiencies will provide your mechanics with more wrench time and, in turn, allow your company to do more without increasing headcount. Digitizing shop paperwork provides mechanics with all the information they need at their fingertips quickly with little to no hassle.

5. AGE BALANCE

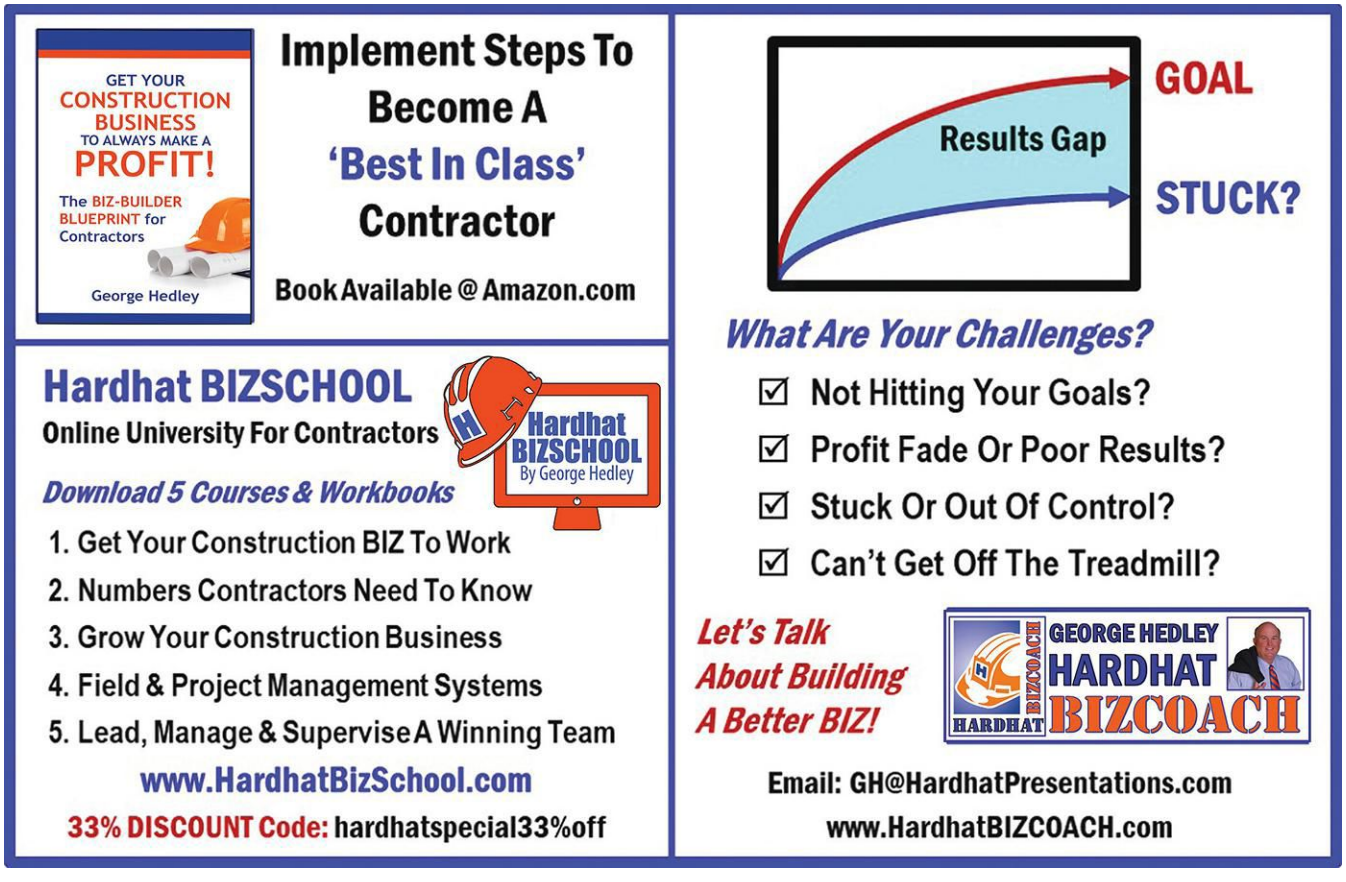
Definition: Replacing a portion of each class of equipment each year so that the average unit is at the midpoint of the projected class life.

Nothing lasts forever — including equipment. At some point, it will need to be replaced by purchase, rental purchase option, lease, rent, or other means. But, just as your equipment was not likely all acquired at once, you won't want to replace it all at once either. So, it's crucial to have a mixed-age fleet at any point in time to avoid large capital outlays or delays in availability. This is especially important in large unit classes and critical pieces for an operation like large excavators and plant loaders. Keeping your fleet age balanced will help your company maintain capacity and stabilize cash flows related to equipment costs and purchases.

The use of churn charts, modeled after C.E.M.P. Central Inc.'s color-coded method, can allow equipment managers to visualize and identify whether specific equipment classes, or their entire fleet of vehicles and/or equipment, are starting to skew away from a healthy age balance. CBO

Tom Webb is the vice president of products for construction software developer HCSS, a Texas-based company that specializes in developing software to help heavy, highway and utility construction industry companies streamline their business operations. Webb has 29 years of experience in software technology and 25 years in the construction industry. A graduate of the University of Houston, Webb currently serves as chairman of the fort bend county technology task force, as well as a board member for the University of Houston College of Technology and the Fort Bend Future Technology Initiative. Visit hcss.com.





Specialized Software to Keep Your Employees Safe

How risk management technology can unlock a competitive advantage

BY MIKE PEROZEK

Over the past several years, the pace of digital transformation in construction has accelerated sharply. Indeed, digital transformation in construction is overdue. As McKinsey & Company has pointed out in its research, industrywide annual productivity in construction has increased by only 1% over the past 20 years, while productivity in the total economy has improved by almost 3%. While there are a variety of reasons why construction productivity has lagged other industries, technology adoption is a big one.

Construction technology adoption is accelerating for many reasons. First, an explosion of innovation by new technology companies has brought to market new capabilities built on advances in big data, mobility and the internet. Even the COVID-19 pandemic accelerated the pace of tech adoption for building companies as many firms adopted new systems as a necessity to remotely manage and monitor jobsite safety, workers' health and remote collaboration with internal teams, owners, engineers and architects.

But while the use of technology continues to expand, many firms still struggle with how to prioritize investments and how to ensure that technology initiatives are successful.

WHERE TO START

For any construction business, one of the big challenges is to identify which technologies are most relevant for them and what problems need to be addressed. There are many ways to improve safety and prioritizing specific objectives is a critical task on any successful project. Some of the most common goals I see today include:

- Save time for employees in completing jobsite inspections
- Improve compliance to OSHA and owner-defined safety requirements
- Enable remote jobsite monitoring
- Create objective safety performance indicators that executives can easily access
- Improve safety awareness and culture

Once goals are defined and prioritized, there are many resources to help identify potential technologies, vendors to consider and what resources are likely to be required. Many companies seek advice from friends or peers at other companies.

Increasingly, insurance brokers and carriers are helping their clients, too.



The most successful technology initiatives put the business goals & people at the center, not the technology.

According to Tom Grandmaison, chief broking officer for Aon's construction business, "Our team is constantly building our understanding of new and innovative technologies that help reduce risk. We share our team's technology experience with our clients to help them improve efficiency, better manage safety and ultimately minimize losses. Our clients generally appreciate our insight as they navigate an increasingly crowded and complex universe of technology vendors."

MAKING IT WORK

Most managers know that adding any type of new technology for safety and risk management requires management support, implementation or training resources and a budget to pay for it. But maximizing the ultimate success of any project often depends on how easy it is to set up and use the new technology, measuring the business impact and making deliberate efforts to facilitate change management associated with doing things differently.

If new technology isn't easy to use, it will not get used to its fullest potential — especially in construction where there is at times limited proficiency with tech and remote work environments with power or connectivity constraints. With many types of safety software, for example, "making it easy" means ensuring it works on remote work sites, any mobile device and with or without an internet connection.

Joe Poliafico, vice president of global risk and safety at First Onsite, a provider of property restoration services in both the United States and Canada, said, "One of our top goals was to find and implement software that could be quickly customized to make it easy to use, capture all of the data we need, so that we could act fast and manage any situation that arose which could negatively impact our business." As the First Onsite experience illustrates, user experience can be significantly improved when software systems can be tailored to closely match the existing business processes that it is designed to automate.

MEASURE RESULTS

W. Edwards Deming famously said, "In God we trust. All others must bring data." A data-driven mindset is invaluable as a management skill in today's economy — and especially so when it comes to digital transformation. Data helps make the case for new technology initiatives as well as aligning and motivating teams to work toward common objectives.

For Poliafico, "Analytics is an essential capability where we've invested. By creating metrics that are both meaningful indicators of our business performance and easily understood in the field, we've been successful in driving safety behaviors in our people." Selecting the right metrics is critical, but equally important is making the data metrics visible within the organization. At many companies, key performance indicators (KPIs) are published and visible for all to see on signs or screens throughout the office. First Onsite implemented software that replaced spreadsheets with online dashboards so that all of its teams can access data online in real time, allowing the whole team to measure and contribute to meeting those goals.

FOCUS ON PEOPLE

The most successful technology initiatives put the business goals and people at the center, not technology. David Wald, Aclaimant chief executive officer and co-founder, has advised customers on hundreds of software implementations. "Technology by itself does not improve jobsite safety, people do," Wald said. "The best results happen when organizations take care on technology projects to clearly define their purpose and goals, communicate these objectives across the entire organization and measure results to ensure that the intended impacts are actually achieved."

The pace of digital transformation will continue to accelerate in construction. Owners, contractors and insurance partners are all actively investing, and there remain incredible opportunities to use technology to improve the efficiency and effectiveness of how we manage risk and safety in construction. So, whether you're just getting started or working on whatever is next on your transformation journey, focus on making it easy, set clear goals and measure results and remember to communicate and align your teams to understand and actively participate in making technology work to drive the best results possible. CBO

Mike Perozek is a technology sales and customer success leader at Aclaimant, a leading provider of insight-driven safety and risk management software. Perozek is passionate about helping companies adopt new technology that delivers material operational and financial improvements. Over the past 20 years, Perozek has worked extensively in the construction, real estate and staffing industries. Visit aclaimant.com.



Beyond Hospitals, Hotels & Housing: The Future of Prefabrication

5 sectors that will benefit from prefabricated construction

BY AMY MARKS

Picture dozens of modules slotted into place, creating multi-unit apartment blocks, hotels or student housing. This has been the prevailing image of prefabrication in construction: volumetric modular builds that are repetitive, cellular and simple.

Builds such as the Nightingale hospitals in the U.K., which were assembled in just days, prove the quality, predictability and speed that the prefabrication approach can deliver. There are many other stories about volumetric modular construction like Nightingale that get the lion's share of the focus — but they all overlook the bigger picture.

Prefabrication and industrialized construction are a significantly larger ecosystem with stakeholders that provide everything from building parts to assembled components and large-scale building systems, as well as volumetric modular elements. For example, in projects with heavy mechanical, electrical and plumbing (MEP) elements and hardened structural requirements, subcontractors engineer and build systems offsite and then deliver and install them in the building project.

Looking to the future, five sectors will define and establish the standard for prefabrication and productization (prefabrication's next level) and will set the stage for transformation throughout design and construction: data centers, pharmaceutical manufacturing, oil and gas, manufacturing facilities and semiconductor plants.



SERIAL OWNERS LOOK FOR CERTAINTY

What do these sectors have in common and why are they well-suited to industrialized construction? Unlike housing, for example, all five represent highly consolidated markets with a smaller number of serial owners operating across multiple geographies. Serial owners typically require consistency across projects to provide operational efficiency, the ability to accelerate projects and to control costs. Rather than starting from scratch on every project, these owners also want uniform facilities that are constructed — then operated — in the same way every time so they can gain economies of scale only available with repetition. They want to develop and provide an owner's playbook to their designers and builders to allow them to follow a proven process.

Uniformity is especially important for heavily regulated industries, like

pharmaceutical manufacturing, where compliance depends on a consistent environment. And in less predictable, remote locations like oil refineries, uniformity helps mitigate risk.

Lastly, all five industries depend on specialized, technical facilities. Every project requires heavy MEP and hardened structural elements, especially in oil and gas. Traditional construction processes are typically not a good fit for these projects as they require building complex systems in constrained spaces with multiple trades developing highly technical systems at the same time.

With prefabrication, MEP and structural components can be decoupled from the jobsite and engineered and manufactured concurrently in a controlled setting. This approach provides owners with a greater certainty over schedule, cost and output — factors critical to every project.

REAPING THE BENEFITS OF PRODUCTIZATION

Serial owners that build and operate data centers, pharmaceutical manufacturing, oil and gas, manufacturing facilities and semiconductor plants are even progressing beyond prefabrication to productization. Productization means owners are partnering with design for manufacturing and assembly (DFMA) experts to create a scalable product that is defined, managed and optimized for a specific need. The resulting components can be incorporated during a structure's design phase and then procured like equipment.

Productization creates incredible value for these industries, from the first build through to an asset's entire life cycle. For example, facilities in all five sectors incorporate technology that will evolve and be replaced over time, such as the heating and cooling elements in data centers or manufacturing robotics. Through productization, these systems have well-defined functional requirements and system integration that makes installation easier, serviceability and replacement is simplified, sustainability increased and downtime for upgrades minimized.

Then there's scalability. Instead of building large facilities with unused space reserved for future capacity, productization allows serial owners to be more responsive to demand and to "right-size" their projects — conserving capital. They are more responsive because they can build faster, build from reliable components and systems, and get consistent results regardless of who builds the project. Through productization, owners in these critical sectors can create future-proof facilities or even allow for technology swaps without risking their capital.



EMBRACING THE INDUSTRIALIZED CONSTRUCTION OPPORTUNITY

As owners in these five influential industries take greater control of projects, they will drive change in the built environment ecosystem. Other stakeholders are also beginning to take advantage of the benefits of industrialized construction, prefabrication and productization to better serve their customers.

If you are an MEP subcontractor, you should be working to transform into a manufacturer of products, rather than just aiming to be fabricator. Consider what you produce, what variations are required and begin to define your products. The ecosystem will need systems integrators — with a clear understanding of complex MEP and hardened structures — to bring together these pieces and parts.

Forward-thinking contractors will need to build on their existing relationships and embrace new processes. To adopt the new product-focused model, it will be important to grow a supply chain experienced in both prefabrication and productization, working closely with systems integrators. And across the ecosystem, there is a need for technology to underpin these new workflows: platforms that can support the flow of data and bring stakeholders together.

Embracing innovation and transforming a company to benefit from industrialized construction is a process, and it can be challenging. Right now, many companies have some of the foundational skills in place. However, there is a gap in the understanding of manufacturing techniques and other skills unfamiliar to the conventional stakeholders. Moving to prefabrication and then productization takes a mindset shift, including an awareness of the importance of reusable data across the life cycle. But from there, you can progress through optimization and even circularity enabling the ability to reuse both digital and physical assets — the benefits can be huge to many different types of organizations.

TRANSFORMING DESIGN & CONSTRUCTION

Productization has the potential to transform design and construction. With consistent elements and assemblies, it's easier to take advantage of technology including generative design — or apply advanced building techniques like robotics in manufacturing facilities as well as on the site. From an operational perspective, these components can also feed into digital twins, generating functional data that can create feedback loops for operating in autonomous buildings in the future.

The ecosystem is at different stages of this journey, but the influential technology companies and owners in data centers, pharmaceutical manufacturing, oil and gas, manufacturing facilities and semiconductor plants are helping lead the way.

These five sectors are a fertile ground for advancing the innovations that will benefit other industries and the ecosystem as a whole. These leaders — along with the convergence of design, make and operate — will result in better business outcomes and a more holistically sustainable world. **CBO**

Amy Marks is head of industrialized construction and evangelism at Autodesk. Marks is known as the world's preeminent prefabrication consultant and often referred to as the "Queen Of Prefab." Prior to joining Autodesk, Marks served as chief executive officer of XSite Modular, where she championed the use of optimized prefabrication across many building types including high-tech, health care, hospitality, data centers, residential and commercial buildings. Visit autodesk.com.





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New Products to Watch

Selected by the editors of Construction Business Owner, these new-to-the-market products are just a few of our favorites recently released to the construction community. Stay tuned in every issue to find out what you need to know about the latest gear, solutions & industry-leading innovations.



CEMENTEX ▶

Ultralight Series Arc Flash PPE

Released: 3/11/21
Availability: U.S & Canadian Markets
What's new? The lift-front face shield of this hood provides a larger viewing area through which users can see the energized equipment. By enhancing the area of view to see potential hazards and users' peripheral vision, the new lift-front hood design helps to minimize accidental contact with energized, hazardous conductors.
Specs: The new hoods provide a larger viewing area through the updated clear gray color shield, and remain compatible with The ventilation system helps to reduce the risk of dehydration, especially in hot weather conditions.
Check 200 on index.



▲ JLG

2733 High-Capacity Telehandler

Released: 4/21/21
Availability: Global market
What's new? With 26,600-pound maximum capacity, this model is the highest capacity telehandler that JLG offers and is purpose-built to handle and haul heavy, bulky materials.
Specs: The Offers 33 feet of maximum lifting height and an 8,000-pound capacity at maximum reach. It is equipped with performance-enhancing productivity features, including a two-speed hydrostatic transmission with optional ride control and boom float to improve load stability and promote smoother operation on uneven terrain.
Check 201 on index.



▲ AUTODESK

Autodesk Takeoff

Released: 3/9/21
Availability: Global market
What's new? Better visualize project scope with aggregated 2D and 3D takeoff. Teams can visualize project scope from detailed 3D takeoffs to identify gaps in producing accurate costs and estimates.
Specs: Estimating teams can access the most up-to-date construction documents, drawings and models within Autodesk Docs, the centralized platform that underpins both Autodesk Build and Autodesk BIM Collaborate. The centralized platform gives teams access to real-time updates for improved collaboration across projects.
Check 202 on index.

HILLTIP ▶

Icestriker 500 Salt & Sand Spreader

Released: 4/28/21
Availability: North American Market
What's new? An advanced color screen controller comes standard with the IceStriker 500, providing users the unmatched ability to either manually set a fixed auger speed or have the material spreading rate automatically adjusted according to vehicle speed. The user-friendly interface provides easy control of the various spreader functions, such as the vibrator and work light, from the comfort of the cab.
Specs: The IceStriker 500 features a high-quality stainless steel hopper body that is corrosion-resistant and easy to clean, while facilitating smooth material flow. Material delivery is optimized by an inverted V with a vibrator to help prevent bridging. A 2.5-inch stainless-steel auger is included to provide a consistent material flow to the spinner.
Check 203 on index.





CATERPILLAR ▼

815 Soil Compactor

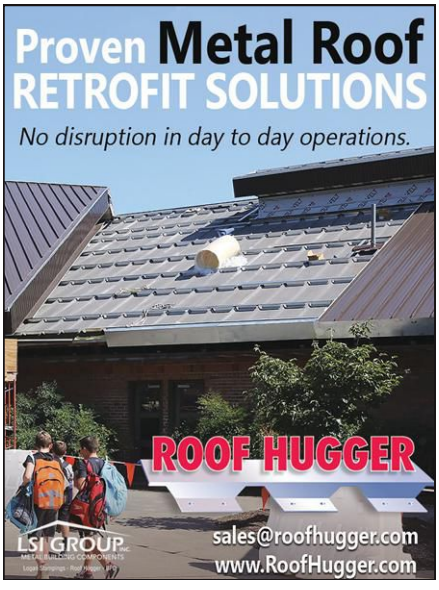
Released: 4/20/21
Availability: U.S, Canadian & Mexican markets
What's new? New machine designs and revised service groupings combine to cut maintenance costs up to 9%. With all components relocated from the cab roof to lower overall transport height, the redesigned operator's cab upgrades the steering and climate controls to elevate comfort.
Specs: Built for high-speed, high quality soil compaction with its four 39-inch wide steel drums. Drum design boasts a chevron pattern to the tamping tips, delivering high ground pressure and compaction, excellent traction and smooth ride. A symmetrical tip pattern offers equal compaction effort in both forward and reverse, and the special tamper design reduces material fluffing.
Check 204 on index.

HITACHI ▶

2D Grade Control & Solution Linkage 3D Grade Control

Released: 4/23/21
Availability: Global market
What's new? Grade control technology allows the machine to control the boom and bucket as the operator handles the arm, reducing the need for multiple passes to achieve the correct grade. Less experienced operators are able to achieve the correct grade more efficiently.
Specs: Offers four options for grade management technology: 2D grade guidance, 3D grade guidance, 2D grade control and Solution Linkage 3D grade control.
Check 205 on index.





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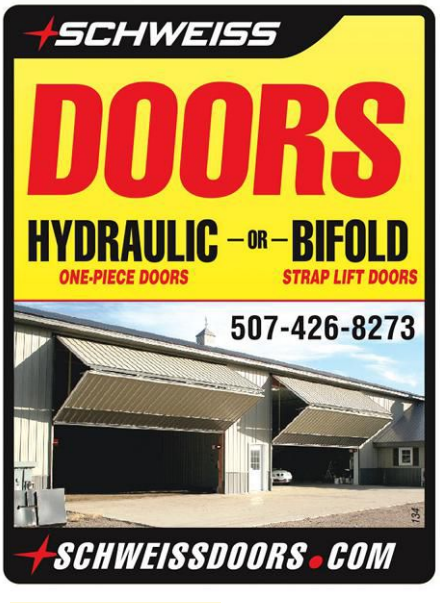

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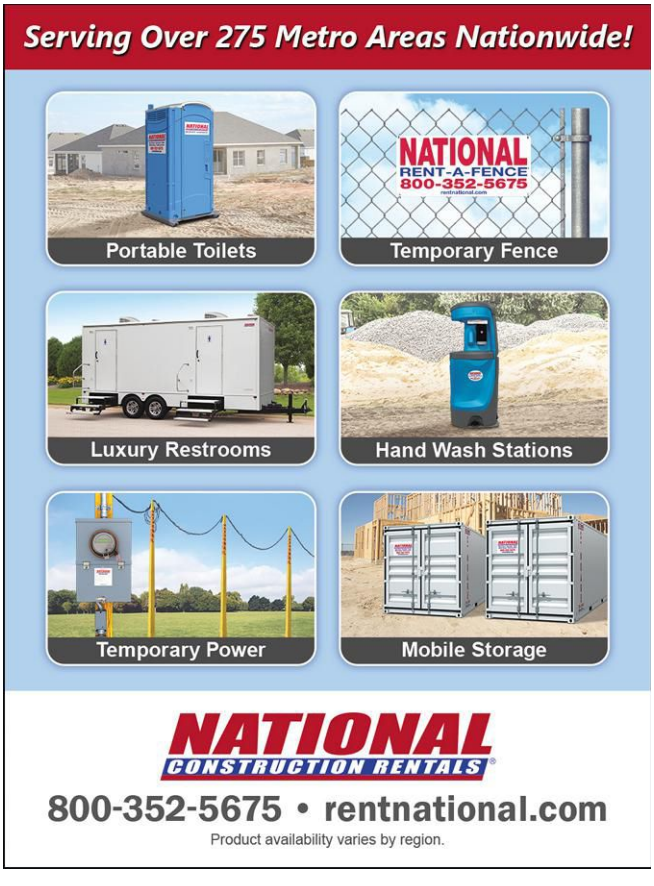

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❑ 10 Construction – Special Trade Contractors
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❑ 04 Water, Sewer and Utility Construction
❑ 05 Heavy Construction
❑ 06 Concrete Work
❑ 07 Excavation Work
❑ 08 Wrecking and Demolition Work
❑ 13 Architecture, Engineering and Construction Management Services
❑ 11 Consulting Contractor
❑ 99 Other (please specify)

_____

2. Your primary job title is: *(Check Only One)*

❑ 10 Owner, Partner, President, CEO, CFO, COO, Vice President, Director
❑ 11 General Manager, Manager, Foreman, Superintendent, Purchasing Agent, Controller, Accountant
❑ 12 Engineer, Architect
❑ 06 Consultant
❑ 99 Other (please specify)

_____

3. Approximate annual contract sales volume:

(Check Only One)

❑ 01 Less than $500,000
❑ 02 $500,001 – $1,000,000
❑ 03 $1,000,001 – $2,500,000
❑ 04 $2,500,001 – $5,000,000
❑ 05 $5,000,001 – $10,000,000
❑ 06 $10,000,001 – $20,000,000
❑ 07 $20,000,001 – $50,000,000
❑ 08 More than $50,000,000

4. Which of the following products/services are you planning to buy during the next 12 months?

(Check All That Apply)

❑ 01 Earthmoving Equipment
❑ 02 Trucks, Trailers and Accessories
❑ 03 Compact Equipment
❑ 04 Lifting and Hoisting Equipment
❑ 05 Safety Equipment and Apparel
❑ 06 Attachments
❑ 07 Concrete and Paving Equipment
❑ 08 Survey and Site Prep
❑ 09 Compressors, Generators and Pumps
❑ 10 Financing and Accounting Services
❑ 11 Software and Technology
❑ 12 Insurance and Bonding
❑ 13 Training and Education
❑ 14 Telecommunications
❑ 16 Greases, Lubricants and Filters
❑ 17 Jobsite Lighting
❑ 18 Building Supplies
❑ 19 Rental Equipment
❑ 21 GPS Equipment and Security

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Annual Value of Construction Put in Place

March 2019/2020/2021 Annual Rate Comparison

This chart compares the two previous years' total value of construction put in place to an annual forecast based on March 2021 figures. (Millions of dollars. Totals may not add up perfectly due to rounding.)

	2019*	2020*	2021
Total Private Construction	**961,535**	**1,012,543**	**1,169,199**
Residential	506,975	557,895	734,568
Nonresidential	775,231	802,618	778,517
Total Public Construction	**320,671**	**347,969**	**343,886**
Residential	6,049	7,628	9,323
Nonresidential	314,622	340,341	334,563
TOTAL Construction	**1,282,205**	**1,360,386**	**1,513,085**

**Seasonally Adjusted Annual Rates. Source: U.S. Census Bureau.*

$1,513,085

MARCH 2021 TOTAL ANNUAL VALUE OF CONSTRUCTION PUT IN PLACE

"As business activity at architecture firms moves sharply toward recovery, it is very encouraging to simultaneously see such positive indicators of future project work increasing in the pipeline," said AIA Chief Economist, Kermit Baker, Hon. AIA, Ph.D. "The activity architecture firms are seeing is a positive bellwether not only for the construction outlook, but also for the larger economy."

AIA Architectural Billings Index (ABI)

	National		*Regional - Billings				*Sectors - Billings			
Month	Billings	Inquiries	Northeast	Midwest	South	West	Multifamily Residential	Commercial/ Industrial	Institutional	Mixed
Oct-20	47.5	59.1	44.9	49.4	45.8	50.4	55.1	48.0	42.2	52.7
Nov-20	46.3	52.0	38.7	50.1	46.7	48.3	52.2	47.5	41.9	49.5
Dec-20	42.6	52.4	38.8	43.6	46.8	43.4	46.1	47.2	38.5	48.0
Jan-21	44.9	56.8	41.9	42.2	47.4	42.8	44.4	44.3	39.9	47.9
Feb-21	53.3	61.2	46.9	49.3	52.4	49.5	48.3	50.5	47.8	52.5
Mar-21	55.6	66.9	50.8	56.5	55.8	52.8	52.6	57.0	54.4	54.9

For more information on the index or to subscribe to the complete historical data going back to 1995 for your internal analysis, **please contact economics@aia.org.** The ABI presents monthly construction billings data, using a base score of 50. A score of more than 50 indicates a growth from the previous month, and a score of less than 50 indicates a contraction from the previous month. A score of 50 indicates no change. Source: The American Institute of Architects (AIA), Architecture Billings Index (ABI).

*Regional and Sectoral indexes are 3-month moving averages, due to small sample size. All data is seasonally adjusted.
**Every January, the AIA research department updates the seasonal factors used to calculate the ABI, resulting in a revision of recent ABI values.



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