APRIL 2019 | CONSTRUCTIONBUSINESSOWNER.COM

CONSTRUCTION BUSINESS OWNER®

THE LEADING BUSINESS MAGAZINE FOR CONTRACTORS



Lorien Barlow
Director & Producer, "Hard Hatted Woman"

WOMEN TO WATCH

How one documentary aims to amplify advocacy for women in construction

Ambra Melendez
Production Welder

IN THE OFFICE
3 moves to borrow from Nick Saban's playbook

IN THE FIELD
Crane rental strategies for your next big project

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Much to the delight of hiring managers everywhere, accounting and advisory firm Marcum LLP shared last month that the construction labor market continues to gain momentum. In its annual analysis of industry job trends, based on the United States Bureau of Labor Statistics' Job Openings and Labor Turnover Survey (JOLTS), Marcum reported that construction was a bright spot in the national labor market, despite financial uncertainty, government shutdowns and other factors in Q4 2018. January 2019 leapt forward with 52,000 net new jobs in construction, as reported by Marcum's chief construction economist, Anirban Basu. "The JOLTS numbers tell us that employment growth stands to be an element of our collective future during 2019's initial half," Basu said.

Leading with the momentum of the labor market, our cover series focuses on the lifeblood of construction—employees. On page 26, CBO's Elizabeth Manning talks one-on-one with two women who are breaking barriers and fighting the labor shortage with a film called "Hard Hatted Woman." As it stands, our industry is dominated by male tradesmen (97 percent), leaving women in blue-collar construction trades to fight for respect and push back against the stereotype of a typical trade worker. Read "Women to Watch" to learn how they're raising awareness for women in the trades and how you can show your support.

As the demographic of the workforce continues to shift, millennials are filing in to earn their place in line. On page 30, in "Making the Most of a Generation," CBO's Rachel Fulford speaks with growth and development expert Blake Cavignac about how business owners can understand and better harness what millennials have to offer.

And in "Incorporating Labor Strategy into Construction Collaboration" on page 34, Parke Jacquay, from recruiting and staffing giant Aerotek, shares tips for engaging teams and stakeholders to create a better project environment.

Head over to constructionbusinessowner.com/webinars to sign up for our next free webinar being held April 25 at 2 p.m. EDT. "35 Years Between the Ears" will answer "What happens to your organization when a 35-year veteran hangs up his hat?" and provide tips for transferring a seasoned employee's know-how and experience to the less seasoned colleagues filling his shoes. This webinar will highlight software capabilities in estimation benchmarking, artificial intelligence (AI) and historical data access to show companies how to mitigate the loss of key employees and the knowledge they're taking with them. If you can't make it to the live event, sign up anyway—we'll send you the recording.

Take good care,

Kathy Wells



Managing Editor Elizabeth Manning recently traveled to the Georgia Capitol Building in Atlanta to attend the Associated General Contractors of Georgia's annual "Building Georgia" legislative event. Manning met with AGC Chief Executive Officer Mike Dunham to talk about Georgia's plans for infrastructure improvements and how AGC is working to alleviate the skilled labor shortage.

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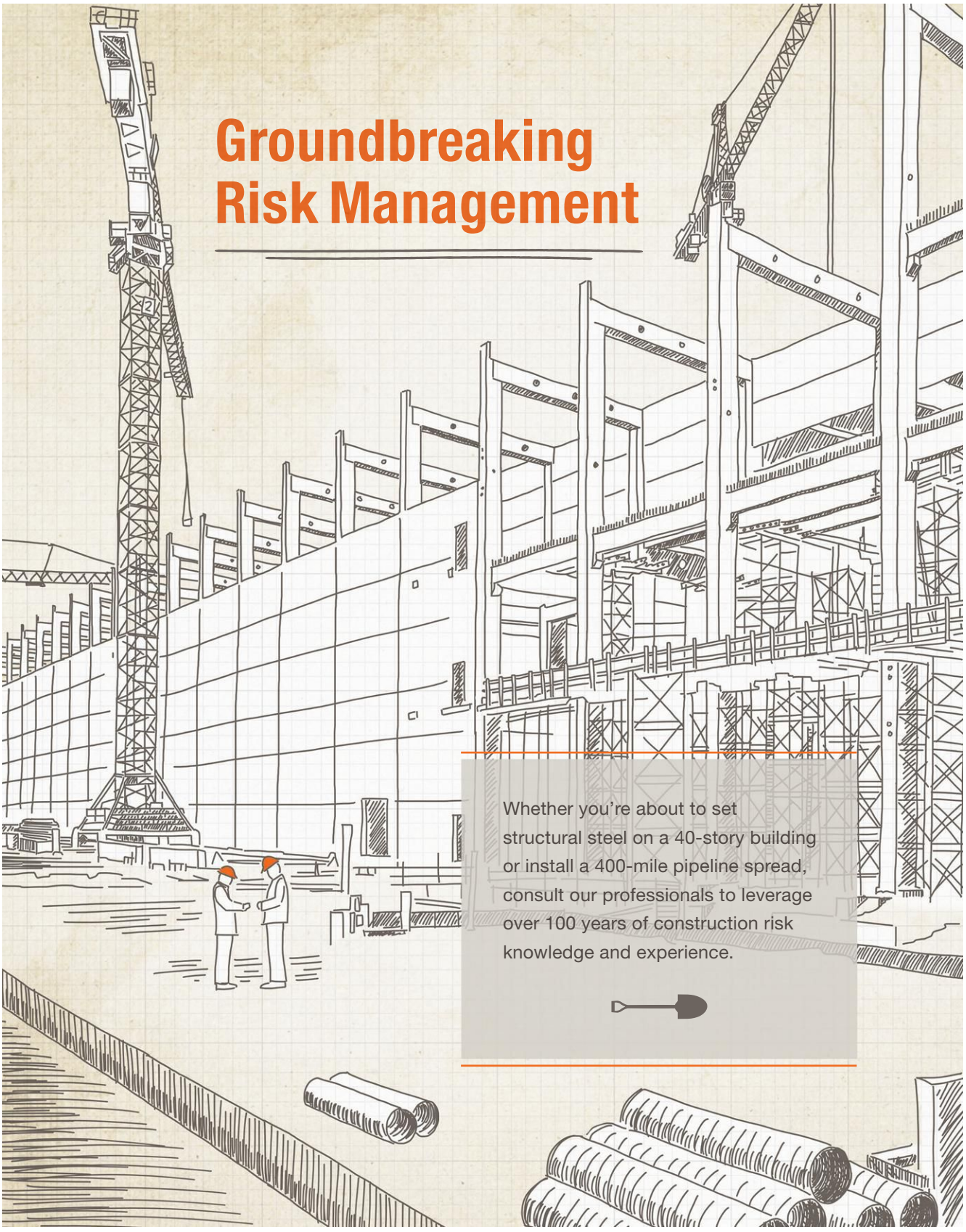
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CONSTRUCTION RISK SERVICES

McGriff.com/construction

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▶ Hino Trucks Appoints President & CEO of Hino North America


Shigehiro Matsuoka

Hino Trucks has appointed Shigehiro Matsuoka as president and chief executive officer (CEO) of Hino North America. Matsuoka succeeds Yoshinori Noguchi. Matsuoka joined Hino in 1981 and has held various overseas assignments in his 38-year career with the company. Most recently, he was responsible for the total support strategy and technical solutions, aftersales service, parts operations, and global production and parts logistics divisions for Hino Motors Limited. Matsuoka will lead the launch of the new Class 7 and 8 A09-powered Hino XL7 and XL8 series trucks, which were introduced in spring 2018 and are nearly ready to enter mass production at Hino Trucks' newly acquired one-million-square-foot facility in West Virginia. Visit hino.com.

▶ The Toro Company Acquires Charles Machine Works Inc.

The Toro Company has entered into a definitive agreement to acquire privately-held Charles Machine Works Inc., an Oklahoma corporation and the parent company of Ditch Witch and several other brands in the underground construction market, for $700 million, subject to certain adjustments set forth in the definitive agreement. The transaction is subject to regulatory approvals and, other customary closing conditions, and is currently anticipated to close before the end of Toro's fiscal 2019 third quarter. Headquartered in Perry, Oklahoma, Charles Machine Works Inc. designs, manufactures and sells a range of products to cover the life cycle of underground pipe and cable, including horizontal directional drills, walk and ride trenchers, utility loaders, vacuum excavators, asset locators, pipe rehabilitation solutions and aftermarket tools. Toro expects to finance the transaction with a combination of cash on hand and debt, including that from additional financing arrangements and borrowings under its existing credit facility. Visit thetorocompany.com.

▶ ACPA Announces Merger with Concrete Pumping Association of Canada

The American Concrete Pumping Association (ACPA) has announced the Concrete Pumping Association of Canada (CPAC) will now operate as an ACPA chapter, continuing under the CPAC name. The merger will give ACPA members from Canada a dedicated forum for addressing issues affecting Canadian pumpers. "[The merger] creates synergy and alignment on both sides of the border as we advocate and lobby for shared resources for the greater concrete pumping community," said Christi Collins, executive director of ACPA. The merger solidifies the concrete pumping industry's presence in the North American marketplace. At the same time, it brings increased visibility to concrete pumping across the United States-Canada border. Visit concretepumping.com.

▶ Skanska Civil Southeast Names VP of Environmental Health & Safety

Skanska USA, construction and development firm, has promoted Nick Bishop to vice president of environmental health and safety (EHS) for its Southeast civil operations. Bishop will be based in the company's Virginia Beach, Virginia, office and will report to Brian Stieritz, executive vice president for Skanska's civil operations in the Southeast. Bishop has 28 years of experience in the construction industry; 12 of those with Skanska. He most recently served as EHS director for Skanska's civil operation at the national level. He was also the national coordinator for the integrated ISO14001/OHSAS 18001 Safety Health & Environmental Management System (SHEMS) for occupational health and safety management systems. In addition to several licenses and certifications in environmental health and safety from the state of New York, Bishop also holds a bachelor's degree in industrial management from Manhattan College in the Bronx, New York. Visit skanska.com.

▶ The AZEK Company Appoints Board of Directors Member & Audit Committee Chair


Sallie Bailey

The AZEK Company, parent corporation to AZEK Building Products, Versatex, Scranton Products, and Vycom manufacturing companies, has appointed Sallie Bailey to its board of directors and the position of chair of the company's audit committee. Bailey served as executive vice president and CEO of Louisiana-Pacific Corporation, manufacturer of engineered wood building products for residential, industrial and light-commercial construction, until her retirement in July 2018. Prior to joining Louisiana-Pacific, she served as vice president and chief financial officer (CFO) of Ferro Corporation. Bailey has held various senior management positions of increasing responsibility with The Timken Company, including senior vice president of finance and controller. Bailey currently serves on the board of Harris Corporation. She holds a Master of Business Administration in finance and accounting from the University of Chicago, as well as a bachelor's degree from Wellesley College in economics and German. Visit azekco.com.

▶ HazTek Welcomes Fall Protection Expert


Dan Kane

HazTek Inc. has hired safety specialist Dan Kane as a principal consultant. His expertise in fall protection, rescue equipment and personal protective equipment (PPE) is expected to benefit the company's clients. Most recently, Kane held the position of director of safety services at Diamond Tool in Philadelphia, Pennsylvania, where he specialized in the evaluation, design, layout, sale and implementation of fall protection systems. Kane's 3 decades of safety knowledge has been instrumental in the design of systems and solutions for several fall protection manufacturers, Fortune 500 companies, universities, utilities plants and manufacturing facilities throughout the U.S. In addition, he has often been called upon to train product testing engineers. Kane is an active member of the fall protection community and speaks at events for Occupational Safety and Health Administration (OSHA); Mine Safety and Health Administration (MSHA); and industry associations, unions and universities. Visit haztekinc.com.

▶ UFPI Acquires Wolverine Wood Products

A Universal Forest Products Inc. (UFPI) affiliate has signed an agreement to purchase the operating assets of Wolverine Wood Products Inc. Founded in 2008 in Grand Rapids, Michigan, by Mike and Bernadette Petersen, Wolverine Wood Products manufactures wood panel components for furniture, store fixtures and case goods. The acquisition will expand UFPI's capacity to produce value-added wood components in the Midwest. Mike Petersen, owner and president of Wolverine Wood Products, will remain with the

company as general manager. Petersen has 32 years of experience in sales and automation integration. Visit ufpi.com.

▶ The UP Companies Expands with Addition of Hustle UP LLC

The UP Companies (UPCO) has expanded its family of companies dedicated to serving owners, general contractors and subcontractors in St. Louis, Missouri, with the addition of Hustle UP. Hustle UP offers general labor, selective demolition, general cleanup, site maintenance and final cleaning services. Hustle UP joins The UP Companies' design and build collaborative, which also includes Power UP Electrical Contractors, Square UP Builders and Keep UP Services. Paul Renaud, general manager of Hustle UP, will oversee the expansion of Hustle UP and focus on recruiting local residents for employment. The addition of Hustle UP further strengthens The UP-SIDE Advantage, which amounts to the efficiencies and pricing benefits customers receive when combining the services of Power UP, Square UP and Keep UP to create the "best value per square foot" in the Midwest. Visit hustleup.theupcompanies.com.

▶ Dallas Community Leader Named President of KAI Enterprises



Darren James

KAI Enterprises, an integrated architectural, engineering and construction services firm, has named Dallas, Texas, community leader Darren L. James, AIA, president of KAI Enterprises. James, a shareholder in the company since 2010, will explore innovative ways to increase and expand KAI's national presence and develop and oversee the sales and marketing strategy for each of the four business units: KAI Design, KAI Engineering, KAI Build and KAI 360 Construction Services. James joined KAI in 1993 as a recent graduate of the University of Kansas School of Architecture & Urban Design. Upon becoming a registered architect, he transitioned from design production to business activities and became a business development specialist. Showing success in the St. Louis, Missouri, market through gaining private and public clients, James approached KAI leadership to begin marketing and sales opportunities on a national level. In 2002, James was selected to help establish and grow KAI's presence in the Dallas area. In 2005, James was appointed president and chief executive officer (COO) of KAI Texas. KAI expanded to Atlanta, Georgia, and Omaha, Nebraska, in 2010, where he led sales efforts, office growth and large-scale projects in both locations, as well as in St. Louis. Visit kai-db.com.

▶ Dana Inc. Acquires SME Group

Dana Incorporated has acquired the SME Group, headquartered in Arzignano, Italy. The global SME Group designs, engineers and manufactures low-voltage alternating current, induction and synchronous reluctance motors, inverters and controls for a wide range of off-highway electric vehicle applications, including materials handling, agriculture, construction and automated-guided vehicles. The addition of SME's low-voltage motors and inverters significantly expands Dana's electrified-product portfolio. The privately held SME Group employs more than 100 people and operates in China, Germany, Canada and Italy. Dana's electrification capabilities will be further strengthened by the anticipated acquisition of the Drive Systems segment of the Oerlikon group, enabling Dana to provide products for a broad range of hybrid and electric-vehicle configurations. Visit dana.com.

▶ Ware Malcomb Names New Director of Workplace Strategy



Cynthia Milota

Cynthia Milota, FMP, LEED, NCIDQ, has joined Ware Malcomb as director, workplace strategy. She has more than 15 years of experience. In her new role, she is responsible for leading the firm's workplace strategy practice across all regions, partnering with a range of clients to formulate their unique objectives, including overall employee wellness, social responsibility, talent strategy, the workforce ecosystem and improved measures for success. Her team's scope of work spans pre-lease, data-driven decision making and robust change communications plans, to multiple workplace performance assessments. The service supports a variety of projects from enterprisewide portfolios to single-office locations. Milota's most recent position was overseeing workplace strategy for an international financial services firm. With experience on both the end user and the consulting sides of strategy, she brings a unique viewpoint to the workplace design dialog. Milota holds a master's degree in applied professional studies from DePaul University and a bachelor's degree in interior design from the University of Cincinnati. Visit waremalcomb.com.

▶ Tannenbaum Helpern Names Construction Law Practice Co-Chair

Tannenbaum Helpern, a provider of practical, business-centric and industry-focused legal solutions to private and public companies and government entities, has appointed Josh Levy as co-chair of the firm's construction law practice. Levy has more than 10 years of construction and environmental experience. He has advised developers, property owners, contractors, project managers and professionals on construction contracts, architect agreements, construction management agreements, consulting agreements and professional services agreements for both private and public projects. He also represents those clients in construction litigation in both federal and state courts and before state and city agencies and municipal bodies. Well-versed in environmental regulatory matters, Levy advises buyers, sellers, insurers and borrowers regarding the environmental impacts of anticipated transactions and guides clients through the complex regulatory regime for approvals. His environmental experience deals with contaminated properties, water and wetlands issues, land use, renewable energy, green building and National Environmental Policy Act issues. Visit thsh.com.

75 million

STIHL Inc. has produced its 75 millionth powerhead. Lorraine Wagner, vice president of operations at STIHL Inc. said, "This milestone is a tribute to both modern manufacturing in the U.S. and to our employees who uphold the STIHL standards of quality and commitment to excellence." Visit stihlusa.com.

NEED MORE NEWS?
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What about your business keeps you awake at night?
Our industry experts share their solutions to some of the biggest problems facing construction business owners & their teams.

What value does your company provide that has influenced you to continue working there?



KARLY O'BRIEN
Estimator
Structure Tone, New York

For starters, I work with amazing people. We all constantly feed off one another, and everyone is always willing to help. There's always someone to learn from, too, no matter what his/her position is in the company. There is a constant focus on challenging one another, which is one of the main reason I enjoy working for the firm.

Structure Tone has done a great job of pushing me out of my comfort zone, which has helped my personal and professional development. Specifically, I've had the opportunity to help launch a Women in Construction group at Structure Tone to support and empower women in our industry and create a more diverse construction community.

Finally, Structure Tone has opened up company ownership to employees in the last year. Now, as a shareholder myself, I am literally invested in our success, which is both exciting and motivating.



SCOTT KEENAN
Superintendent
PCL Construction, Denver

I've worked for PCL Construction for nearly 12 years, and the incentives I value most are the company's employee-ownership model, the culture of giving and the opportunities available to me that help further my career.

Being an employee-owner of the company gives my day-to-day more value. I appreciate that I—along with my team—have the freedom, responsibility and power to hold each other accountable, ensuring we produce the best products not only for ourselves, but also our clients.

PCL also prides itself on giving back to the communities in which we work, and it is this culture of giving that is embraced by our top leaders and inspires each employee to always do more.

Additionally, PCL's approach to professional development is refreshing, as we are encouraged to never stop learning, growing and finding ways to enhance our careers.



GLORIA COOK, CRIS
Pre-Qualification & Subcontractor Insurance Specialist
Robins & Morton, Birmingham

In the past 19 years at Robins & Morton, I've worked on a jobsite as an administrative assistant, in the corporate setting as an operations assistant, and in the risk management department. Each of these positions has given me the opportunity to grow and see firsthand how each person works to perform a top-notch job daily, which is in alignment with our culture of integrity.

Each year, Robins & Morton offers training in all aspects of construction, including risk management, safety, project management, sustainability, leadership and innovation. In the R&M Way course, all new hires engage with key people from our organization and learn about Robins & Morton's history and culture.

Through our Building Forward initiative, we are able to disseminate lessons learned to the organization in a rapid manner by utilizing an e-forum setting with strategic groups comprised of personnel from various projects, positions and states—an invaluable collaboration.

To submit your question, email Associate Editor Rachel Fulford at rfulford@cahabamedia.com.



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Help Wanted

Why making business decisions alone is not the best decision



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 best-selling author of "Get Your Construction Business To Always Make A Profit!," available on amazon.com. Email George at gh@hardhatpresentations.com to sign up for his free e-newsletter, start a BIZCOACH program, attend a 2-day BIZ-BUILDER Boot Camp or get a discount at hardhatbizschool.com online university for contractors. Visit hardhatpresentations.com for more information.

Ask George

To submit a question for George Hedley, email Editor Kathy Wells at kwells@cahabamedia.com.

Imagine yourself stranded in a jungle, trying to determine how to quickly and safely get back to civilization before you run out of food and water. Without the help of an experienced survival expert, it would be difficult to decide your next steps for surviving and finding your way back to safety.

Now, imagine a construction business owner sitting in his/her office alone, trying to make decisions about how to run his/her company, increase sales or improve project management systems. Strangely, these scenarios are very similar. As a business owner, making decisions based on what you know and your past experience, without also learning from experienced professionals, is no way to operate well.

Along with the fun and excitement of owning and running a company, comes much stress and strain. Overwhelmed with difficult decisions, frustrated business owners often delay making decisions and continue operating as they have been—which often means keeping mediocre employees, producing below-average results, using inadequate organizational systems, and taking on the wrong customers and projects.

Unfortunately, most of these frustrated owners fail to realize that two heads are better than one and that peers with experience might be able to offer help. You cannot do it alone, and you might as well be stranded in the jungle if you try.

ME, MYSELF & I

The best business advice comes from successful peers or outside, unbiased professionals who know your business, can give you real tips on how to improve and don't hold back the truth. I founded my commercial construction company in 1977. After 7 years in business, the company grew to 150 employees and $50 million in annual sales. Still, a friend suggested that a board of directors could help me take my company to the next level. So, I asked five successful businessmen to be on my advisory board. At our first meeting, I presented my goals, financials and plans for the future. One by one, they proceeded to ask questions I could not answer, including:

- "Is that all the money you make for the risk you take?"
- "Why is your employee turnover rate so high?"
- "Why do you do so much of the financial planning and decision-making yourself?"
- "What new customers and markets have you tried in the last year?"
- "What is your long-term, strategic business plan?"

These questions and many more made me feel inadequate. I couldn't answer any of them well because my inner circle and executive management team consisted of just me, myself and I. Does this scenario sound familiar?



After overcoming the shock of the board meeting, I decided to invest in the future of my company by getting some help. My advisory board recommended I join a peer group and hire a professional management consultant to draft a strategic business plan. So, I hired a construction business management coach who helped me look at my leadership style and analyzed my management team to determine which employees were assets to the long-term growth of my company.

He recommended improvements to our overall operational systems, standards and procedures to help us become more organized. He reviewed our numbers and gave us advice on how to make more money. Then, he facilitated a strategic business planning workshop for us. I couldn't have made the changes I needed to make without his leadership.

FINDING THE HELP YOU NEED

More than 20 years later, as a contractor business coach, I have worked directly with hundreds of construction business owners who also decided they needed help making the right business decisions. Some of the major concerns from clients have included:

- *Ken*—Struggled with keeping his project managers and estimators accountable for finishing projects on budget.
- *Harold*—Couldn't decide how to structure his organizational chart so he could work less and focus more on gaining and retaining customers.
- *Dave*—Struggled with a tight market and tough competition and needed to attract more, higher-margin customers.
- *Donald*—Was trying to figure out how to hand over his company to his son without upsetting his senior managers.
- *Ben*—Had field productivity problems and needed to create a program his foremen and supervisors would use.
- *Dale*—Asked me to help his 20 division managers work on a plan to expand their services and create loyal customers across the country.
- *Charles*—Needed help getting his managers, superintendents and foremen all doing their jobs in the same, systematic way.
- *Dennis*—Wanted to develop an accountability system that kept sales associates focused on profitable clients and expanding market share.

Every business owner has internal challenges and tough decisions to make. But without sound advice, these owners often remain trapped doing what they've always done.

When contractors come to me, they don't know what they need, but they know they need help. I begin with a confidential survey of their employees to study problems from their perspective. The survey includes questions like:

- What works, and what doesn't?
- What needs improvement?
- Which people are productive, mediocre or need to go?
- What additional responsibilities do you want to accept, let go of?
- What are your ideas for improving productivity, scheduling, retaining people and profits?

From the results of a survey like this one, a strategic business planning workshop can be built during a 1- to 3-day meeting, in which company leadership sits down and drafts the direction for the future of the business. Discussions often focus on answering key questions, such as:

- What are your 1-, 3- and 5-year business visions?
- What are your core values and financial growth goals?
- What is your organizational structure?
- What is your plan for winning work and building wealth?
- What improvements do you ultimately need to make?

Every business owner must invest time and money into his/her company's future. You and your management team will have to dedicate yourselves to the process of actively pursuing change and becoming a high-margin contractor. **CBO**

Outmaneuver the Competition

3 strategies you can borrow from Nick Saban's playbook



GREGG M. SCHOPPMAN is a consultant with FMI Corporation, management consultants and investment bankers for the construction industry. Schoppman specializes in the areas of productivity and project management. He also leads FMI's project management consulting practice. Prior to joining FMI, Schoppman served as a senior project manager for a general contracting firm in central Florida. He has completed complex construction projects in the medical, pharmaceutical, office, heavy civil, industrial, manufacturing and multifamily markets. He holds a bachelor's degree and master's degree in civil engineering, as well as a Master of Business Administration. Schoppman has expertise in numerous contract delivery methods, as well as knowledge of many geographical markets. Visit fminet.com or contact Schoppman by email at gschoppman@fminet.com.

Disclaimer: As a die-hard University of Florida football fan, the following fact is painful for me to hear—let alone write.

There is another team in college football's Southeastern Conference that has fielded one of the greatest football legacies ever—The University of Alabama's (UA) Crimson Tide has continually held a top ranking and serves as the pinnacle of collegiate football.

However, if you watch the press conference with UA Head Coach Nick Saban after a big win, you would think you were watching the losing coach's closing statements. Pronouncements like, "We made too many mistakes," or "We could've tackled/passed/run better in the third quarter," are typical phrases Saban utters.

Alabama is one team that consistently earns the term "legacy," epitomizing its long-term chronicles of success. But short of an amazing and dynamic playbook, many strategies to the team's success are not secrets. In fact, they are the same strategies construction organizations should attempt to replicate.

1. BECOME A MAGNET FOR TALENT

College football has the dubious distinction of undergoing an annual onboarding process due to the graduation or early exodus of athletes. Superior athletes often average 2 years of starting time before they are gobbled up by the NFL draft. As a result, the collegiate recruiting process is a grueling and time-consuming one that continues throughout each year, culminating in a series of signing days.

Without fail, the Crimson Tide achieves a top rating in terms of the caliber of athletes they sign for every position. Success attracts the best. Whether the recruits are promised playing time, top training facilities or even the premier stage on which to play during the season, UA leverages its winning ways to serve as a magnet for the next generation of offensive and defensive stars.

All college teams have the same number of scholarships and field an 85-person roster, so the competition is fierce for the top talent. Success attracts the best. Does this sound familiar?

Interestingly enough, only 11 people are on the field for a specific team, yet the best players clamor to be a member of the Crimson Tide. With over 100 top-tier universities vying for the nation's best athletes, UA has a competitive advantage. Likely, the speech on an Alabama recruiting visit goes something like this: "Join our team, and every year you will be in a position to play for the biggest trophy."

Imagine the possibilities for a construction organization that not only has its choice of the best projects, but also enlists the services of the best people available, working together in an environment that breeds better business.

2. USE TECHNOLOGY & DATA INSIGHT

Whether they are worried about the number of yards after the catch or the time of possession, data junkies can become immersed in a world of comparative statistics. However, the Crimson Tide took this affinity for data to a new level several years ago when they became one of the leading users of wearable technology. Small GPS receivers were attached to players during practice to determine their level of exertion. As players' efforts were transmitted, coaches could examine trends relative to overall stamina.

UA is not the first to use groundbreaking technology. However, there is definitely a correlation between the team's ability to use the data gathered and the making of strategic and tactical changes.

For instance, coaches can monitor not only how the heat is affecting the players physically, but they can also use the resulting predicative index to substitute fresher players into the game.

Using wearables in the construction industry is not a novel idea, but consider the various ramifications it has for the industry. Safety can be monitored and productivity can be measured in real time. The data can then be analyzed to the same degree (or higher) with which football coaches review game film.

3. REFUSE TO BECOME COMPLACENT

Some argue that Saban is arrogant. However, there is always a fine line between arrogance and confidence. For him, it might be confidence shaping his belief that his team should not merely win, but rather, win with conviction.

Simply going through the motions against a lesser opponent is not enough. For example, you should not assume that the conditions of today will be the same tomorrow. In other words, don't become complacent. In the construction industry, operating successfully in a strong market today should not be confused for business genius.

It is easy to be complacent in a strong construction environment; but it only takes a moment of reflection on the Great Recession to remind all of us that winning doesn't always come easy. Rather than operating like a champion who has reached the highest heights of success—and will, therefore, always be successful—plan, train, monitor and execute like a best-in-class firm every day. The season (hypothetical and theoretical) is short, and every game or project counts.

The run-pass option (RPO) is a variation on a strategy that leverages an athletic quarterback slightly differently from the previous play during each possession to keep the defense guessing. Good offenses evolve as necessary, which is part of the genius of the Crimson Tide. Adjustment is a never-ending aspect of the game, and even the season. Construction is no different.

Too often, businesses become fixated on the latest trend and fail to make it their own or implement it with precision to drive business excellence. In a world of competition, the Crimson Tide seems to thrive on its tried-and-true playbook, revising as needed, to provide the right version of the play for the situation.

Once again, none of these methods would be considered secrets, but rather the effects of an extremely disciplined approach to a select group of principles. In the end, construction businesses would be best served to study these habits and incorporate them into their corporate strategy. CBO



Circle 121 on card.

Rework? More Like Ridiculous

5 ways to fix the recurring problems plaguing your projects



DUANE CRAIG is a former construction superintendent who now writes about construction, technology and business. Many of his articles have been featured in ExakTime publications. ExakTime is a provider of digital time-tracking and workforce-management solutions for construction and beyond. ExakTime was built almost 20 years ago by a contractor who felt his crews were taking advantage of his inability to be on site at all times. Inaccurate, missing and even false timecards were killing business, which was the inspiration for ExakTime's now cloud-based software solution. Visit exaktime.com.

In 2012, Navigant Construction Forum of Navigant Consulting Inc. reviewed 15 studies—homing in on 19 projects discussed in those studies—to quantify the true price of rework in construction. The report defines rework as "activities that have to be done more than once in the field, or activities which remove work previously installed as part of the project—regardless of source—where no change order has been issued and no change of scope has been identified by the owner."

The responses of contractors interviewed in the studies allowed researchers to peg the direct cost of rework at almost 6 percent of the total contract amount, with indirect costs of 5.5 percent. Fortunately, contractors have a good chance of improving profitability by reducing or eliminating rework. But these tasks don't come without their challenges.

The first seeds of rework typically hide in your construction processes. Incomplete or delayed requests for proposal leave people working without the right information or specifications; inadequate resources encourage people to cut corners; poor scheduling ensures work sequencing gets out of whack; poor design and engineering not only raise safety concerns, but also guarantee people will be making changes on the fly.

Rework points to systemic issues, given that it arises from the systems or processes you use daily. But it's not just your problem. Much of what flows (or doesn't flow) into your systems comes from other project participants. Subcontractors, suppliers, fabrication producers and others who supply materials, components and resources leave you at the mercy of everything they do incorrectly. To truly tame rework, you have to start at the beginning.

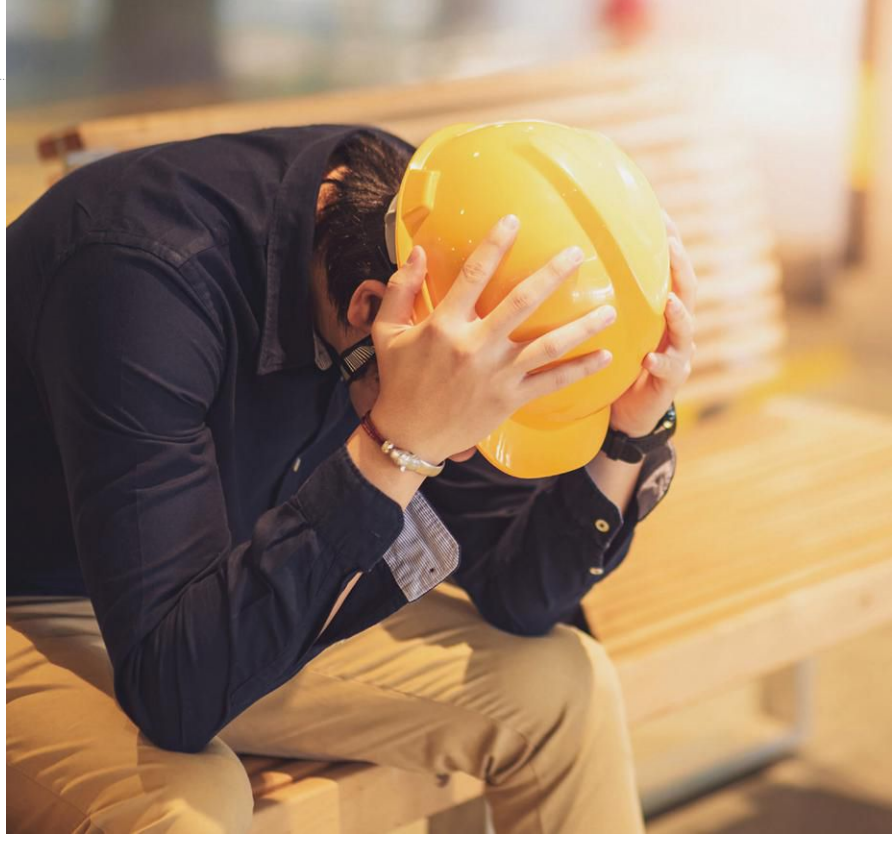
1. START WITH SCOPE

The project scope provides the first glimpse at the potential for rework. If you're looking at plans and scratching your head to understand how the pieces fit together, you have just been warned of possible changes. And changes spawn rework. The following tips can help you focus on the important factors when analyzing the scope of a project:

- Use a documented, consistent approach when studying plans.
- Confirm existing conditions.
- Compare the plans to the stated scope and intended use.
- Compare the plans to similar projects you have already built.
- Compare plan specifications with plan sections.
- Consider the expected completion date relative to the workload.

Carefully review the contract and look for vague or missing requirements. Use the review to inform not only your bid, but also your decision about whether to bid at all. After winning the job, focus on scheduling.

Time passes; things change; change is the precursor to rework.



2. ANALYZE THE SCHEDULE

As construction gets underway, a false sense of security leads us to believe all parties know what's going on and what their respective roles are. This is seldom the case, though. Wishful thinking will lead you to overlook the warning signs that rework is brewing.

Take a good look at the schedule—not just a cursory review, but a thoughtful, in-depth study. Identify the activities that might be lacking sufficient resources. Those tasks are where substitutions, improper methods and rushing will spin off quality issues.

Look for instances where activities are out of sequence or not well planned or thought out. The biggest variable here is time. Time passes; things change; and change is the precursor to rework.

So, watch your schedule like a hawk and move quickly to get ahead of the rework causes as soon as you spot them.

3. ENFORCE SPECIFICATIONS

You often encounter rework issues as a result of others' subpar work. Material substitutions and inappropriate methods creep into the project from all corners. If subcontractors decide not to ask for clarification on how to install a component, or off-site fabricators substitute one material for another, you end up owning the problems.

To help avoid this ownership of error, be sure to qualify all of your project partners, and make sure all documentation is easy to view and always up to date.

Regular checks on work in progress can also reveal issues that might create rework. Referencing your schedule, observe and review the activities in which you noted rework could blossom, making sure workers are using the right materials and methods.

4. FORMALIZE QUALITY CONTROL

If you don't have a formal quality control process, you will inevitably face rework. "Formal" doesn't have to mean complicated. A simple documented process works just fine for many project types and sizes.

With your quality control process in place, the next aspect is training. Beauty is in the eye of the beholder, and there is a lot of latitude in the phrase "acceptable workmanship." This means you must train your employees to understand the difference between "good enough" and "meets quality standards" at your company. Likewise, you and the client must take the time to agree on what constitutes quality.

Then, it's very important to make sure the same is conveyed to your quality control leaders, which includes supervisors, project managers and any others in a position of managing certain project components.

As today's projects include increasing amounts of high-tech components, you also have to manage more third-party inspections and verifications. Make these items easily visible on your schedule and allot time for reminders and for confirming technical aspects with installers.

5. ANALYZE & DOCUMENT

You can actually avoid rework by tracking rework—this could be as simple as attaching notes to the schedule wherever rework crops up. When you collect those notes at project's end, you can use them to improve your rework assessments on future similar projects.

Another benefit to tracking rework is studying the trends. Over time, you might notice a certain subcontractor has many small rework issues that never amount to a big deal but foretell bigger problems. Or you might discover shop drawings from a certain supplier often fail to specify materials that exactly match the plans. These all point to systemic lapses in reporting and are the kinds of rework precursors that go undetected until it's too late. Analyzing rework after the fact is a sure way to head it off in the future. **CBO**

No Disruptions, Please

Why technology shouldn't have to halt productivity to prove it's effective

BY NICK CARTER

It's a popular belief that disruption is good for any industry. Innovation breeds competition, which, in turn, provides smart new services, increases consumer choice and drives sector growth. However, while disruptive innovations have influenced changes in some aspects of the industry, there has been no single technology that has threatened a transformation of the basics. The reason? This industry doesn't need disruption to grow and flourish. While construction has always been innovative in engineering, design and building, it has consistently struggled with internal procedures mired in antiquated analog processes, disconnected communications, disparate systems and inconsistent data. The result is an industry that loses even as it's winning.

According to the 2017 McKinsey Global Institute (MGI) report "Reinventing Construction: A Route to Higher Productivity," this lag in productivity reduced the industry's value by an estimated $1.6 trillion in 2016. However, it points to one specific opportunity. Rather than disruption, what the industry needs is a galvanizing spark to bring owners, architects, engineers, contractors and subcontractors and others into the modern digital age and out of its fragmented, outdated workflow.



MODERNIZING WHERE YOU ARE

According to MGI, the industry possesses one of the lowest levels of digital adoption among all industries, contributing to a huge information management gap. And an industry hamstrung by disconnected processes can never realize its profit potential—in good economic times or bad. However, the explosion of recent business has created worker shortages, wage increases and material cost surges, making the reduction of inefficiencies even more critical. So, how can an industry with traditional ebbs and flows modernize to take full advantage of a business boom?

UNIFYING, NOT DISRUPTING

The construction industry's problem resides in systems still separated into silos, where there is no central source of information and no data sharing across all parties working on any given job. As such, suppliers cannot easily identify when materials are needed or if delivery might hamper a project that's been delayed; site supervisors can't easily ascertain

when equipment might be needed. Subcontractors are unaware of changes to a building's schedule; architects aren't informed of on-site challenges construction workers uncover during the building process. This level of poor communication (or miscommunication) can delay progress, create missed deadlines and ultimately cost thousands of dollars.

The solution is to deploy available technologies in data sharing and artificial intelligence (AI) that can immediately alert all parties of relevant changes in construction schedules. Collaboration is key. Therefore, your system must be cloud-based to allow everyone access to information anywhere, anytime, on any device. The system should focus on data over documents and ensure key information, like altered time schedules and even worker shortages, are shared in real time. The right solution closes communication gaps in project management, integrates with standard enterprise resource planning platforms, and supports growth and scale to accommodate fluctuations in business.

TAKING NOTES ON AI

So far, efforts to incorporate AI into the construction industry have failed, primarily due to incomplete application. In order to succeed in construction, AI has to be delivered from a data-driven perspective, pulling information from requests for proposals, available resources, budgets, requests for information, BIM drawings, work schedules, employee schedules, architect drawings and more. The AI-driven system creates a single source of truth for all events occurring on a project, with everyone from subcontractors, to architects, to suppliers. By utilizing the cloud, all parties can operate from the same platform and gain access to the same information, helping avoiding confusion and surprises in budget overruns, delays and other issues. When problems occur, they are recognized more quickly and resolved more easily.

Data intelligence won't disrupt the industry, but it will allow the construction business, as it exists, to operate in a more seamless manner. Moving beyond simply advancing document management processes, an AI-driven system enables true collaboration and creates an atmosphere of growth in any and all economic conditions. **CBO**

Nick Carter started his first company, Ingenious Development, at the age of 23. Carter is now the founder and CEO of IngeniousIO, a platform serving architects, engineers, contractors and owners. Visit ingeniousio.com.





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HR Distress? There's a PEO for That

Outsourcing administrative tasks to save time & be more competitive

BY JOHN G. ALLEN

In the crowded construction industry, competition for projects can be intense, and even the slightest edge can make all the difference. But with profit margins shrinking (thanks to rising material costs and the lack of skilled workers) it can be difficult to know where to turn for help. While it may feel like you've run out of ways to make your firm more competitive, there might be at least one strategy you haven't tried: partnering with a professional employer organization (PEO).

Contractors face a number of human resources (HR) challenges, such as staying compliant with employment laws and regulations, controlling labor costs, and maintaining jobsite safety—just to name a few. A PEO can help you more efficiently manage these administrative functions, allowing you and your staff to focus on completing current projects and winning more bids.



PEO DEFINED

A PEO is an all-in-one provider that offers outsourced HR services, such as processing payroll, administering employee benefits plans and handling new hire paperwork, through an arrangement called co-employment. In a co-employment relationship, the PEO becomes the employer of record for a client's workers, allowing the PEO to assume many of the company's administrative and HR responsibilities, and share some of the risks and liabilities associated with being an employer. Meanwhile, the company retains control over all its core business operations and functions, including the authority to direct workers' day-to-day activities.

LAWS & REGULATION COMPLIANCE

There are hundreds of laws governing employment in the United States, and that's just on the federal level. When you factor in state and local laws and regulations, it's easy to see why keeping up with shifting enforcement trends and law amendments is something that overwhelms many business owners.

Compounding this headache is the task of navigating employment law compliance, which gets even more difficult as your company grows its workforce or expands into new areas. Just crossing one county line can mean major changes. For example, take the recent movement regarding mandatory paid sick leave laws

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Having a PEO as an HR partner makes it easier to navigate the complexities of multistate compliance issues & minimizes the risk of costly penalties or lawsuits—no matter how many worksites you have or where they're located.

passed by individual cities. The regulations associated with these laws (how much sick time employers must allow employees to accrue, which employees are eligible to accrue paid sick leave, how employers must track the time accrued, etc.) can be complex and vary from city to city.

In this situation, a PEO can offer experts who understand the nuances of HR compliance, and can not only help employers understand which laws apply, but also craft policies and design strategies to help you maintain compliance with local, state and federal level laws specific to your business, projects and site locations.

LABOR COSTS

Employees are expensive, and not just in terms of payroll. When you add elements like employee benefits packages, workers' compensation coverage and company-provided training, the cost of maintaining a workforce goes far beyond compensation and only increases with every employee a company adds.

A PEO can help to control labor costs by improving operations through streamlining and automating processes for recruiting, hiring, onboarding, training and managing workers. And some offer newer technologies that can provide employers with detailed job costing, overtime tracking and other reports designed to allow for better insight into your workforce's productivity and company processes that need refinement.

JOBSITE SAFETY

Outsourcing HR functions to a PEO not only has the potential to help your company secure affordable workers' compensation coverage and develop an accident prevention plan; but it can also provide safety training for your employees, as well as guidance and assistance in complying with OSHA regulations and inspections. When utilized, all of this can lead to a lower experience modification rate (EMR) for your company.

COMPETITIVE EDGE FOR SUBCONTRACTORS

When subcontractors add up the costs of time spent on HR functions (e.g., payroll system, time-tracking system, recruiter, legal fees, benefits, safety training, etc.), they may find that they are spending thousands of dollars per employee, per year. Outsourcing all those functions to a PEO can give you access to a team of human resources experts and technology without the overhead costs associated with hiring staff. Subcontractors can then spend that time and money on more projects, workers, equipment upgrades or any number of other things that can help the company improve its profitability.

Additionally, partnering with a PEO helps make subcontractors more attractive to general contractors by instilling a mutual trust that your business possesses the expertise and resources to stay in compliance, provide any requested reports and efficiently manage your workforce.

COMPETITIVE EDGE FOR GENERAL CONTRACTORS

The larger the contractor, the more labor laws exist that are expected to be complied with. For many general contractors—particularly those operating in multiple states—the expertise and administrative support needed to stay compliant can be overwhelming. Having a PEO as an HR partner makes it easier to navigate the complexities of multistate compliance issues and minimizes the risk of costly penalties or lawsuits—no matter how many jobsites you have or where they're located.

With so many projects and teams to manage, it's imperative that contractors have the right people on their team. But, in today's tough labor market, attracting and keeping the best workers is difficult.

PEOs can help position your company as an employer of choice by providing an employee benefits package that is difficult for candidates to turn down, and equally difficult for current employees to walk away from. They can also provide recruiting services to bring in skilled workers and support for every other stage of the hiring process, from writing a compelling job description to processing new hire paperwork.

Whether you're a subcontractor or general contractor, outsourcing the tedium of HR administration to a PEO allows you to get back to what you are meant to focus on: the success of your company. **CBO**

John G. Allen is the executive vice president of sales for G&A Partners, a national HR outsourcing and PEO company, where he leads new business development efforts across all of the firm's offices and oversees the sales organization. Visit gnapartners.com.





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The Path to E-Discovery

How to get a jump on potential litigation with better document processes

BY BRIAN SCHRADER

In the construction industry, legal disputes are not uncommon. In fact, there are thousands of construction-related disputes filed every year.

Design and consultancy firm Arcadis's 2018 Global Construction Disputes Report found that the top causes for disputes in 2017 were the result of:

- Failure to properly administer the contract
- Poorly crafted or incomplete claims
- Failure to understand or comply with contractual obligations



Maybe you're thinking, "So what? Most disputes settle anyway." Well, you're only kind of right. Per the Arcadis report, 82 percent of construction disputes in North America settle before ever going to trial. However, even matters that settle usually require an electronic discovery process, or e-discovery—the process through which documents requested for legal matters are gathered and provided in electronic form.

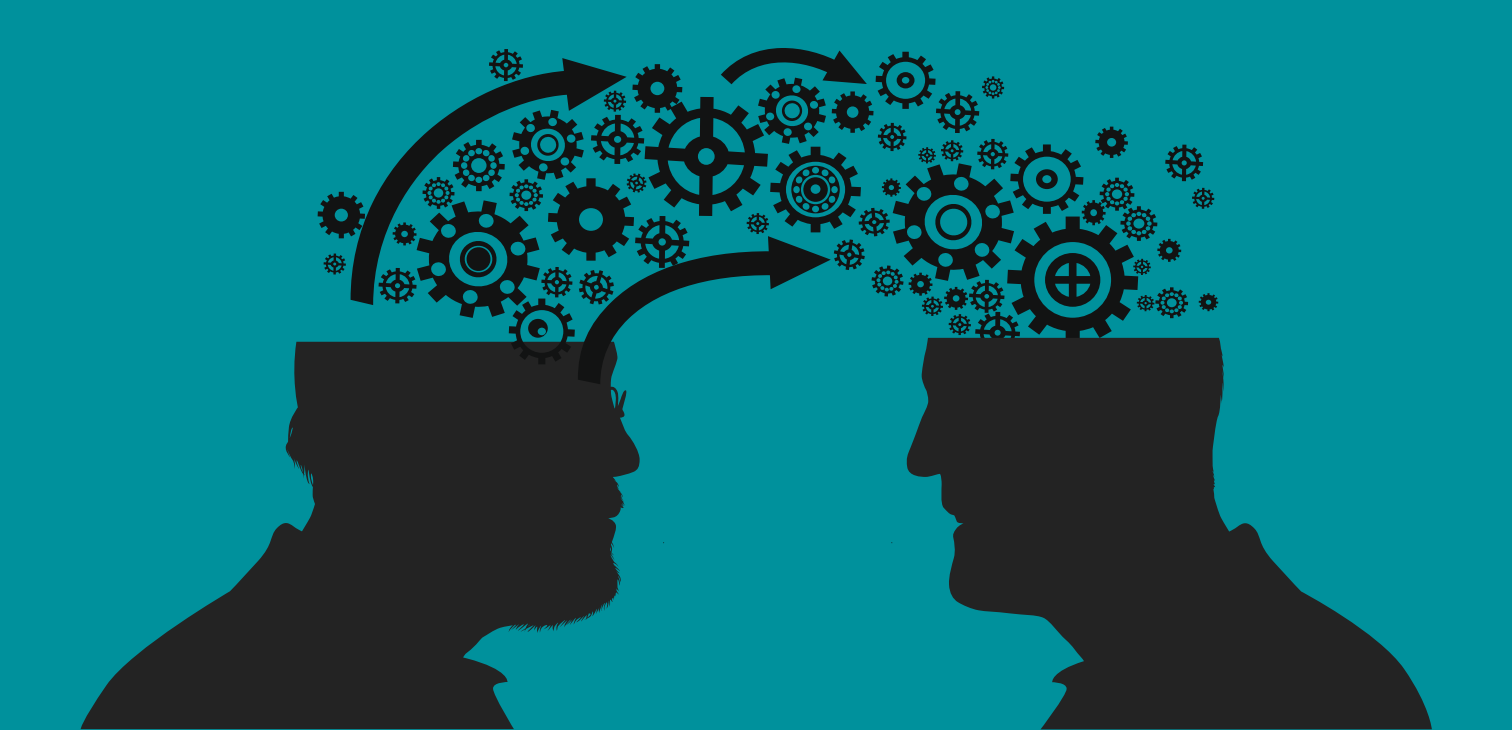
Presumably, industry veterans are used to preparing for litigation or a settlement, and they understand it involves compiling multitudes of data. Thousands, sometimes millions, of files are collected as part of the e-discovery process, which often requires attorney review and analysis of files, as well as production of files as needed for arbitration, litigation, settlement discussions and other proceedings. But these disputes take time and effort, especially for companies that have no standard procedure for handling such matters. And attorney's fees are not cheap.

If you are starting to fear the negative effects a dispute can have on your company, don't despair. With the proper protocols and technology in place, your company can maintain control of its data to better cope with common disputes, significantly hedging against the costs of complying with those requirements.

CREATE A STANDARD E-DISCOVERY PROCESS

For large construction companies with hundreds of employees, it's easy to lose track of data, especially as the number of data storage locations continues to grow, including email, mobile devices, social media platforms, computers, servers, etc.

The first step to mapping out your data is to determine exactly what exists, where it is located, who has access to it and who created it. This process often includes employee questionnaires and



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SPEAKER DAVE SWIDER
Industry Strategist, InEight

David Swider is an industry strategist at InEight, where he combines his experience and strategic perspective to help clients identify areas for increased efficiencies within their organizations. He is also responsible for driving InEight's expansion in the project cost management marketplace. With more than 25 years leading the efforts of top construction technology companies, he has a deep understanding of the strategic benefits of a truly connected project life cycle workflow, which he uses to help customers identify areas for increased operational efficiencies while minimizing risks. Swider holds a bachelor's degree in business from Catawba College.

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For large construction companies with hundreds of employees, it's easy to lose track of data, especially as the number of data storage locations continues to grow, including email, mobile devices, social media platforms, computers, servers, etc.

interviews, which provide insight into the aforementioned questions about your data—crucial knowledge should you find yourself entangled in a legal matter you didn't see coming.

Once you have a strong handle on your company's data and where it exists, the next steps to creating standard e-discovery procedures and processes involve deciding on the right people, policies and technology:

- *People*—Rather than allowing outside counsel to select your e-discovery vendor when a dispute arises, take control and determine who your e-discovery team will be for your company's legal matters. Determine what roles are needed for your company and who will fill them. An organized e-discovery team and process reduce your overall costs in both time and money.
- *Policies*—Establish detailed data-handling policies that meet compliance standards and industry best practices. Then, effectively communicate those policies to employees, contractors and subcontractors. Protocols specifying where to store data, how long to save it and who should have access to it not only decrease the time involved in preparing for a case, but also reduce the risk of data theft.
- *Technology*—Determine the e-discovery platform that best fits your needs. Look for a program that is capable of collecting and processing your data. Specifically, look for one that creates legal holds and remotely collects, catalogs and culls down the data. Some platforms also support fundamental data analytics, which kickstarts the process of weeding out irrelevant files. By utilizing the same technology and data sets across all your matters, you can realize substantial cost savings as well.

Don't wait and wonder if a dispute will emerge. It will. Create a standard process now, saving yourself time and money later. You wouldn't start a new construction project without well-thought-out planning, and legal matters should be no different.

When you have a clear plan in place, you can stop reinventing the wheel with each new legal issue, create remarkable efficiencies, ensure consistency and, as a result, mitigate risk.

WORK WITHIN ESTABLISHED PROTOCOLS

Once you have created a framework for a standard e-discovery process, delve into the specifics so that you're ready for any litigation. This should encompass:

1. *Legal holds*—The first step in any potential litigation is to notify custodians of their obligation to preserve any relevant or potentially relevant information and documents. This process is simplified through an e-discovery platform that allows you to easily manage the process and handle things like automatic email reminders, logging and reports.
2. *Data collection*—After a legal hold is in place, you and your e-discovery team can begin collecting relevant data. Make sure your platform allows you to specify what data to collect from each location and can automatically start collecting and processing that data.
3. *Data review*—The next step is to review all collected data using a professional review team and a review platform, which carries out a more in-depth analysis of the data and then sorts it by relevance. With the right analytical tools and professional review team, you can easily cut your legal fees by more than half.

Many people assume the e-discovery process stops here, but, in fact, there is one more step that is crucial to maintaining control of your data for the next time a dispute arises: securely hosting data in one database. The data collected throughout the e-discovery process will likely be used again in future situations and shouldn't just be tossed to the side and re-collected the next time it's needed.

Rather, implement one platform to host all company data for your legal matters, internal investigations and other such needs, so that when you're required to collect data in the future, it can be quickly located and easily accessed. This not only provides significant cost savings, but it also helps maintain greater consistency across cases and ensure your critical data remains secure. **CBO**

Brian Schrader, Esq., is president and chief executive officer of BIA, provider of e-discovery services. With experience in information management, computer technology and related law, Schrader co-founded BIA in 2002. Contact Schrader at bschrader@biaprotect.com. Visit biaprotect.com.




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How one documentary aims to

AMPLIFY ADVOCACY FOR WOMEN IN CONSTRUCTION

According to a report from the United States Bureau of Labor Statistics, 939,000 women are employed in the construction industry, meaning women make up only 9.1 percent of the construction workforce. And most of those jobs are in a back-office.

Only 1.2 percent of tradespeople in the industry are female. And although a career in the trades comes with its own challenges, especially for a woman, there are some promising statistics, too. For example—take the gender pay gap. In the U.S., on average, women earn 81.1 percent of what men earn for the same job. The pay gap in construction is much narrower—a woman earns 95.7 percent of what a man in the same role would make in this industry.

It's no secret that the industry is also in the midst of a widespread skilled labor shortage. Construction companies across the U.S. are struggling to find workers to fill jobs and move forward with projects in process. But what if the missing element is simply an untapped labor force?

What if the answer to the labor shortage—or at least a way to alleviate it—lies in building a more inclusive and welcoming environment for women working in the trades? What if taking a direct interest in encouraging women to explore a career in construction is exactly what your company needs to be successful in the future?

That's where "Hard Hatted Woman" aims to improve the dialogue. As the first feature-length documentary made to shed light on the lives of women in the skilled trades, the film follows five women who have built their careers in a world dominated by men. The film features a real-life cast of female electricians, welders, ironworkers and more. In "Hard Hatted Woman," viewers step inside the daily lives of these women—including the obstacles they face in an industry that isn't formulated to welcome them, how they are working to change it and how a career in construction has impacted their lives.

The women featured in the film join trade unions, industry organizations, and technical schools in a move to spread the word about why construction could be a lucrative, successful career for a female. Below, get an inside look at the film, the women behind it and what you can learn from it.

WHAT IT MEANS TO BELONG

Lorien Barlow, director and producer of "Hard Hatted Woman," didn't initially plan to focus on just one industry, but it was the women working in construction that caused her to narrow that focus.

"I quickly found out that this really makes their hearts sing. They identify so strongly with their trades," Barlow said.

"And to be honest, that's still the most surprising thing to me after all this time [working on the documentary]. Despite these never-ending challenges of being a woman in the field, tradeswomen still come back to the job every day."

When asked about what they would miss most if they left the



industry, Barlow said most of the women she has spoken to say, "the camaraderie—being part of a crew."

"That's why I repeatedly say this film is really a story about belonging," Barlow said.

Ambra Melendez, a welder and journey ironworker, Local 361, in New York, New York, got into the trades as a way to support her daughter. The promise of good wages and benefits appealed to her, and a nontraditional career didn't scare her. She went to a 7-month program at a technical school, and said she fell in love with welding.

While it was Melendez's dream to go into the Ironworkers Local 361 then, she felt her daughter was too young for her mother to undergo such a tough and time-consuming apprenticeship. So, she did concrete inspection for several years and entered an apprenticeship with the ironworkers when her daughter was older.

"That was 12 years ago. I specialize now as a production welder," Ambra said. "But I can do all kinds of ironwork. I've worked on almost all the bridges in New York City. I spent years rebuilding the World Trade Center. And in the meantime, I've been able to buy a house and provide for my family—while loving the work I do—most of the time."

Melendez said she chooses to stay in the industry to protect her sisters—the other women in the trades.

"I choose to stay to try to create some change, even if it's small," Melendez said. "But mainly, it's to protect my trade sisters and to make sure they have someone to talk to. If I left today, I could still talk to them, but being out there myself adds more credibility to the support I give them. It puts me in the trenches with them."

THE MAKING OF THE FILM

As it happens, "Hard Hatted Woman" came about almost by chance. Barlow said the stories she heard about tradeswomen had the "universal qualities of grit, and pathos, and humor, and heart." She was surprised to find there wasn't a lot of coverage on these women,

so she set out to fix it. Early on, Barlow said she met a steelworker who was close to retirement and was grieving the fact that her role was slowly being outsourced or automated.

"I thought, at least infrastructure will always have to be built," Barlow said. And with our nation's infrastructure in the derelict state it is, the industry seemed to provide the perfect backdrop for telling the story of tradeswomen. "That story is about women in male-dominated spaces, but it's ultimately about the desire to be on a team and belong to something greater than yourself," Barlow said. "It's about feeling valued on that team and within society."

Barlow said the work of skilled tradesmen and tradeswomen has been devalued in recent years, and in part, it has led to a skilled shortage that is well on its way to crippling the industry.

Support the film:
Visit hardhattedwoman.com to watch the trailer & find out how you can join the movement.

For Barlow, her role, as it pertains to the film, is jack of all trades. "As director, you are guiding the creative vision for the film, and as a producer, you're keeping the film moving forward logistically and financially," Barlow said.

Balancing the two roles hasn't been easy, according to Barlow. In addition to all of the regular duties that come with being director and producer—shooting the film, scheduling for the subjects and crew, managing the budget, fundraising for the film itself, writing grant applications, and doing speaking engagements to promote the film (to name a few)—Barlow said one of her most important roles is to be able to react to real life and then try to capture it beautifully and coherently.

"The role of a documentary director is to see the truth of a situation and reveal it in a way that the audience can see," Barlow said.

The truth of the situation is apparent, though—at least to the subjects involved. Barlow said she was lucky to have "honest and fearless" women involved, who understood why it was so important to tell their stories.

"I think each of my subjects has come to a place where they are so frustrated by how little has changed [in the industry], how many tradeswomen continue to suffer in their careers and how invisible they are as a group," Barlow said.

"And yet, they were also frustrated with exclusively negative portrayals of the situation. The truth is always complicated … Their willingness to put themselves out there comes from a place of really loving the trades but desperately needing these careers to be safer and more sustainable for women."

WHAT YOU CAN DO

One thing to be learned from "Hard Hatted Woman"—your company could benefit from adding a few well-qualified women to the mix. When you do, take a minute to consider how different workers might perform in different environments and:

1. **Ask women what they need.** According to Melendez, the best place to start is by asking women on the jobsite if they have what they need. "Nobody really asks me that, and on the rare occasion they do, when I start telling them what I need, they look like they regret asking," Melendez said. "When I say, 'I need a harness that fits me better,' and they start rolling their eyes and saying, 'Eh, we'll see how it goes,' as if they want to wait and see if I'm still on the job a week from now before going through the trouble of finding me a harness that fits."
2. **Help tradeswomen find mentorship and apprenticeship opportunities.** Melendez said one of the biggest barriers to entry and to staying in the trades is a lack of mentorship and education once a woman has begun her career. "I've seen apprenticeship coordinators eye promising young men and set them up for success and foremen grooming guys on the jobsite. But unfortunately, it is few and far between that an experienced tradesman will take a woman under his wing," Melendez said. "I was lucky—I had a few men who did that for me. Women need somebody who believes in their talent, too."

From Barlow's point of view, the biggest issue is that contractors and/or company leadership are not using the power they have to improve conditions on the jobsite for women and minorities.

"If you're a general contractor or subcontractor and you have tradeswomen working on your jobsite, start by assuming that she is already having a problem," Barlow said. Ask yourself and your team the following:

- How do we create safe lines of communication?
- How do we ensure everyone understands the company's zero-tolerance policy, and what are we doing to enforce this policy?
- Are the superintendents and foremen setting a positive example of inclusive leadership, or are they part of the problem?
- Do we have women in leadership positions?

Barlow pointed out that doing all of the above also garners interest from a new generation—millennials. "This isn't just about women succeeding. It's about inviting more millennials into the trades," Barlow said. "They are a different generation. They don't want to deal with all of this toxicity on the job either. When jobsites are better for women and people of color, they are better for everyone." CBO

Elizabeth Manning is the managing editor of Construction Business Owner magazine.

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GROWTH & DEVELOPMENT EXPERT BLAKE CAVIGNAC ON UNDERSTANDING & HARNESSING THE POWER OF MILLENNIALS

Millennials. Everyone has an opinion on them, and many of those opinions aren't favorable. But are millennials just getting an unfairly bad rap? Where are the lines dividing assumption, opinion and fact to be drawn?

As you attempt to make a decision, consider the following statistics from an analysis of United States Census Bureau data by Pew Research Center:

- The American labor force is 35-percent millennial—making millennials the largest working generation currently.
- The millennial population is the largest living adult generation in the U. S. and is expected to continue growing until 2036 as a result of immigration.
- Millennials have more outstanding student debt than earlier generations, and the amount they owe tends to be greater. (The median amount of debt is nearly 50 percent greater for millennials than for Generation X debtholders when they were approximately the same age.)
- Thirty-nine percent of millennials ages 25 to 37 hold at least a bachelor's degree, but the Great Recession made it particularly challenging for them to enter the workforce, thus negatively impacting their potential future earnings and wealth.
- Millennial workers are just as likely to remain at their job as Generation X workers were when they were the same age. (In 2018, 79 percent of millennials ages 22 to 37, and 77 percent of Gen Xers who were the same age in 2002, reported working for their current employer at least 13 months.)

Still unsure how you feel about this generation? Blake Cavignac isn't. Impressed with his work as founder and leader of YoungPro Elite (YPE)—a program focused on helping young professionals develop and grow their careers—Cavignac & Associates, a risk management and insurance brokerage firm, recruited him to be its growth and development advisor to "guide the company in identifying natural leaders, tailoring training programs, building the



The companies that will excel in attracting & retaining millennials will be the ones that don't stereotype the entire generation. Successful companies view every millennial as their own person, focusing on their strengths & how they'll make positive contributions to the organization.

right company culture, and managing millennials in the manner it desires." Find Cavignac's take on his new role and the issues that lead to its creation below.

CBO: WHAT INSPIRED YOU TO WORK WITH COLLEGE STUDENTS AND YOUNG PROFESSIONALS?

BC: Many young college graduates aren't sure what they want to do in their careers. Further, the skills required to excel in the professional environment aren't the primary focus in a traditional educational system. Many students graduate with a significant amount of debt. So, here we have a generation of people who are heavily investing in their education, and yet, when they graduate, they are not equipped, nor are they in a position, to succeed early in their careers.

CBO: CAN YOU FILL US IN ON YOUR BACKGROUND AND YOUR COMPANY, YOUNGPRO ELITE?

BC: My background working with young professionals started with two roles in college. The first was being president of a 150-man fraternity. The second was working for a commercial real estate investment company. Both jobs involved working in leadership roles that set me on a path to working with millennials.

After graduating, I became the chief operating officer of the company I worked for while in college. This role included recruiting young professionals to join the company and then taking a key interest in their development.

From there, I became president of Intellectual Innovations, a company that creates intellectual property (training programs, seminars, books, etc.) for executives. These executives would tell me they just couldn't figure out the millennial generation. They didn't understand the ways in which millennials operated, and were having a difficult time attracting, developing and retaining the generation. Given my background, and being a millennial myself, I was asked to build training programs.

That's how YPE got its start. YPE's focus is on providing young professionals with development programs and peer advisory groups to ensure they excel early on in their careers. Organizations invite us to deliver keynotes and workshops to executives; the focus of which is to help companies more effectively recruit, develop and retain millennial workers.

CBO: WHAT WILL YOUR ROLE AS CAVIGNAC & ASSOCIATES' GROWTH AND DEVELOPMENT ADVISOR LOOK LIKE?

BC: Cavignac & Associates aims to operate as an independent insurance agency in the future, and to do so, the company must double in size and triple its revenue. Effectively recruiting, developing and retaining young professionals—all of which I will be responsible for leading—will be vital to achieving this growth. For each of these areas, we'll be building custom-tailored programs to fit the needs of the firm. Then, we will be offering similar programming to the company's clients and prospects.

For recruitment, we have specific programs designed to attract millennials for every position within our agency. These programs are quite intensive, but we have structured them in a way that is simple to execute. We are already starting to see significant results and are expanding our current onboarding program.

Typically, onboarding programs last a few weeks up to a few months, but our program will last the entire first year of employment and cover every aspect of the company, including (but not limited to) the 10-year vision, company values and standards, the roles and responsibilities of different divisions within the company, relationship development with the team, the roles and responsibilities of specific positions, our leadership team, our systems and standards of procedure, and how we impact the future growth and success of our clients' businesses.

For development, we'll be creating training programs that cover a variety of topics like sales, leadership, communication and presentation skills, personal branding, adverse management, personal finances, customer service and career development. We have found (and studies have proven) that delivering 1- to 5-day workshops deliver minimal results—which is why we've built a program model that spans 6 to 12 months. Those involved in the program go through a customized curriculum that is delivered online, and they meet two to four times a month in person.

Effectively retaining millennials starts with executing the aforementioned programs. If you attract the millennials that fit within your culture and provide them with the resources to develop and excel, you will be very successful when it comes to retention. In addition, Cavignac & Associates is incorporating a number of other attractive benefits, such as more opportunities to take on positions of leadership early in their careers, whether that is through us allowing

them to lead company committees or by giving them the support needed to jump-start initiatives that will help the company realize its 10-year vision.

CBO: WHAT ARE THE SECRETS TO ATTRACTING AND RETAINING MILLENNIALS?

BC: I don't know if there are any secrets. However, I do think there is a misunderstanding about what millennials want. Many "experts" claim the secret is in creating a fun environment—one with pingpong tables, beanbag chairs, free food, nap pods, etc.

Maybe they are correct. Maybe these perks do attract and retain a certain type of millennial. But they're usually not the high-performing millennials that most companies desire and need.

If a company attracts through these tactics, they will likely end up with an employee who values comfort over a challenge (e.g., an employee who values immediate and materialistic satisfaction over everything else).

Of course, this is an assumption. It won't be true of every millennial who's attracted to a company because of these perks. However, I've seen this be the case far more times than not, as this type of recruitment tactic tends to attract what many have defined as the stereotypical millennial (lazy, entitled, selfish and so on).

CBO: SO, WHAT'S THE SOLUTION? WHAT ARE THE DOS AND DON'TS?

BC: I've found that the dos come down to addressing three desires throughout the entirety of the recruitment and retention process—clarity, growth and contribution. By understanding and creating ways to leverage these desires, a company can take one of the greatest challenges facing the industry and turn it into an advantage. Specifically, millennials want to know:

- *Vision*—The shared purpose of the company and how it impacts the greater good
- *Roles and responsibilities*—How their efforts will make a positive impact on the clients, the community they'll be serving and the industry as whole
- *Values and standards*—What the company stands for and how the company can help them grow, both personally and professionally

To understand the importance of growth, it may be worthwhile to think about the times in your own career when you felt the most fulfilled. During that time, there was probably some form of development or advancement taking place. Millennials are no different. They are looking for ways to continue to learn, and crave opportunities to grow and develop.

WORK SMARTER, NOT HARDER

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So, companies must express how new hires will supported and given opportunities to participate in mentorship and training programs. Then, the company must effectively and diligently execute these programs once millennials have been onboarded.

The third desire is contribution. High-performing millennials want to feel like they're making a positive impact. This comes down to a fundamental need that most want to experience: feeling significant. The good news is that when clarity and growth are successfully addressed, the immediate result is contribution.

Clarity provides vision and purpose. Helping millennials see how they'll be able to contribute and showing them how they'll be supported gives them confidence in their growth potential within the company, leading them to even greater levels of contribution.

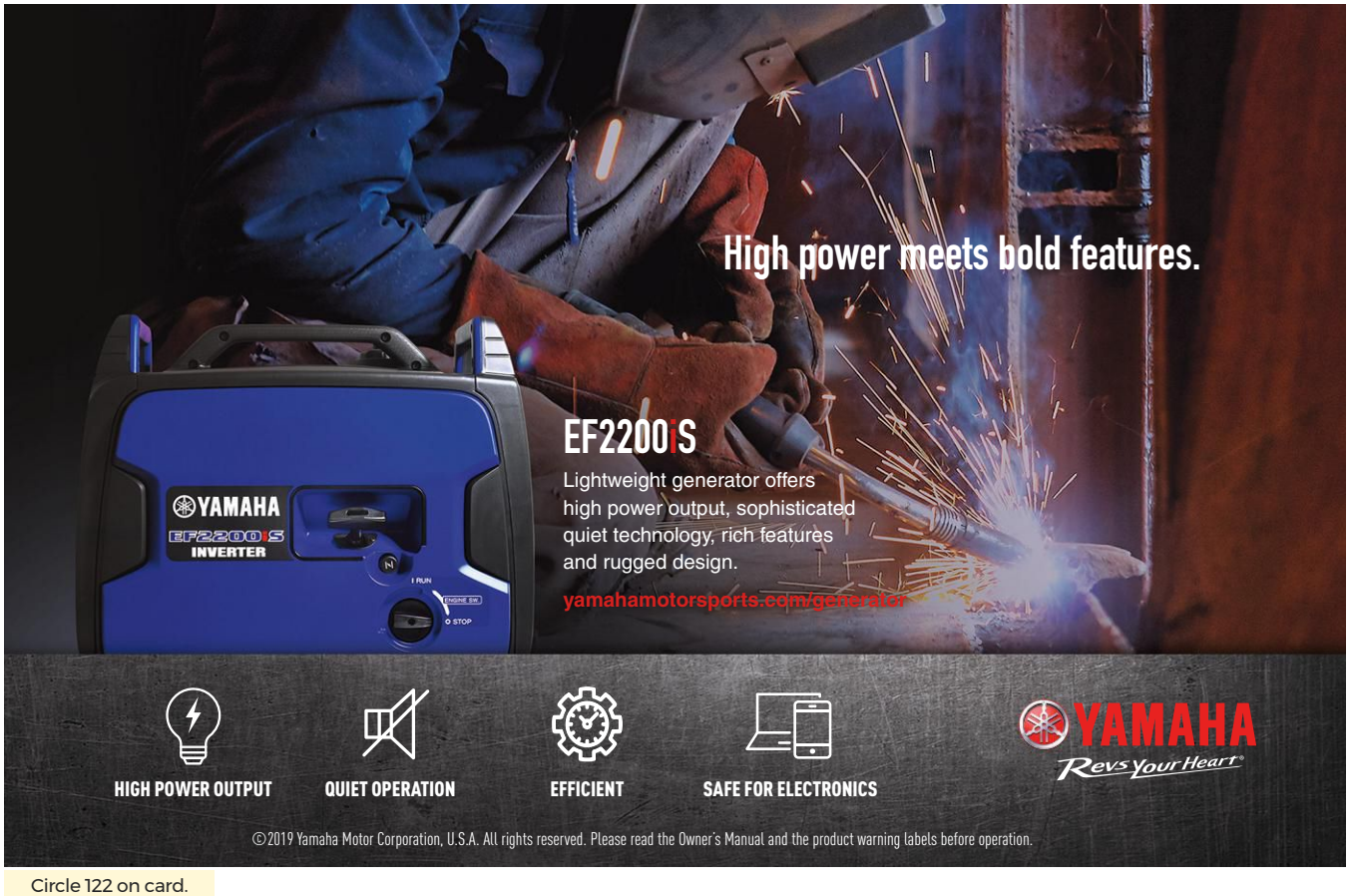
CBO: WHAT ADVICE WOULD YOU GIVE TO COMPANIES LOOKING TO BETTER HANDLE BOTH THE INFLUX OF MILLENNIAL WORKERS AND THE AGING OUT OF BABY BOOMERS?

BC: There is a misconception about all millennials being the same. For example, many articles and videos state that millennials are entitled, lazy and only look out for their own best interests. Yet, I know members in other generations who fit this mold perfectly. I also know many millennials who defy the stereotype; they're hardworking, humble and always looking out for others. That being said, the companies that will excel in attracting and retaining millennials will be the ones that don't continually stereotype the entire generation.

Successful companies view every millennial as his/her own person, focusing on their strengths and how they will make positive contributions to the organization. From my experience, the majority of millennials are looking for guidance in their careers, while baby boomers seem eager to share their knowledge and experience. The more opportunities a company can create for mentorship, the more success they will have with the influx of millennials and the aging out of boomers. If companies create alternative ways to transfer the knowledge of the older generations to the younger generations, the more effective they will be when it comes to perpetuation and bridging the generational gap. CBO

read more
For more on this topic, visit constructionbusinessowner.com/3leadershipstyles.

Rachel Fulford is the associate editor of Construction Business Owner magazine.



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EMPLOYEES: Incorporating Labor Strategy into Construction Collaboration | By Parke Jacquay

CREATE A BETTER PROJECT ENVIRONMENT BY ENGAGING TEAMS & STAKEHOLDERS

Commercial construction has traditionally been challenged by seemingly intractable issues in regard to cost, schedule, quality and safety. If you've ever posited that having construction projects run into roadblocks, blow past deadlines, squander resources and come in over budget is just "the cost of doing business," consider a new way to address these age-old problems.

Comprehensive digital integration, made possible by the increasing adoption of 3D technologies like building information modeling (BIM) and virtual design and construction (VDC), has led to ever-increasing opportunities for collaborative teams to approach architecture, engineering and construction (AEC) projects in novel, efficient ways.

Implementing a collaborative process, according to a 2018 Dodge Data & Analytics report, can result in benefits to cost, schedule, quality and safety, including increased productivity, reduced waste, and improved delivery performance

By prioritizing in the early phases of the project and practicing ongoing engagement with those in your connected supply chain, collaborative integration ensures that vendors and suppliers associated with downstream projects all have a seat at the same table.

ACKNOWLEDGE THE CURRENT PLIGHT

Construction employment has been on a steady rise since 2010, with a 31-percent increase in available jobs, according to the United States Bureau of Labor Statistics. Over the past 8 years, unemployment in the industry has plummeted by 80 percent.

Consequently, many employers are experiencing the effects of an increase in the competitive wage rate and an extended time-to-hire, both of which are driving up labor expenses and causing costly delays to project timelines.

STRATEGIZE FOR RECRUITMENT

Implementing this integrated project-delivery approach drives significant improvements in metrics across the board. So why not take it one step further and integrate labor resource management into the process as well? In this era of record low unemployment, recruiting employees could be the most difficult challenge that project owners face. Incorporating employment strategies into the early stages of project workflow can help solve the issue long before the first brick is laid. Whether project owners plan to use internal staff, subcontract it to another construction company, or work with a recruitment firm, this approach has undeniable benefits.

Project owners may prefer to use internal employees only, depending on a production schedule that moves workers from project to project. However, that system relies on timelines that do not change, which doesn't often happen in construction.

The scope of the original project could be expanded, running up against the finite number of available employees. Or, the company could bid several projects at once and win them all, causing the need to source additional workers quickly.

Having a trusted staffing partner involved from the start is helpful, whether or not you use staffing services, because any of these factors could crop up during the course of the work. And you want to be prepared to act without delays. Project owners who don't properly forecast procurement costs may find themselves paying top dollar to lure skilled trades workers, or even paying a significant per-diem cost to recruit nonlocal workers to meet deadlines.



UTILIZE STAFFING EXPERTISE

Without data and expertise guiding strategy on the front end, labor assumptions and cost projections made at the beginning of the construction planning process may no longer be accurate by the time the actual work is needed. And in a short labor market, this can lead vendors to underbid the true cost of the work.

Production timelines are fluid and always evolving, making it imperative to first budget and staff as accurately as possible so that you are prepared for challenges that might arise. By including the input of labor management experts in the initial planning stages, a more realistic production timeline can be created, and many issues can be resolved before expensive infrastructure begins. Recruitment experts can determine the availability and potential cost of labor for the project by accessing critical, third-party data, such as:

- Local market analyses
- Per capita density reports
- Local bill rates
- Market-rate wage data
- Regional competitors' pay scales

EVALUATE OFTEN

As construction progresses, having recruitment experts involved in the daily and/or weekly planning meetings at every phase of development helps troubleshoot potential issues that would require both architecture and resource changes.

Think about it this way: Project managers often order materials well in advance of when they're required. Why shouldn't we take a similarly proactive approach to human capital?

As construction planning evolves from a linear to a more inclusive, collaborative process, the benefits offer a clear advantage in streamlining production, reducing rework, avoiding staffing snags and—ultimately—delivering more money for the bottom line. CBO

Parke Jacquay is the director of business development, energy and construction at Aerotek, a provider of recruiting and staffing services. Headquartered in Hanover, Maryland, Aerotek operates a network of over 250 nonfranchised offices with more than 8,000 internal employees. Visit aerotek.com.





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A Cut Above the Rest

5 tips for better lifting with your compact excavator

BY JASON BOERGER

Lifting freely suspended objects with compact excavators demands preparation, special care and proper operator training. If correct lifting practices are not routinely followed, it may cause project delays and create machine instability, due to the additional stress being placed on the machine. This can lead to unnecessary downtime.



1. EXAMINE THE JOBSITE AND LEVEL SLOPES.

Operators are responsible for all jobsite- and lift-related conditions and need to respond to condition changes that have the potential to create hazards. These might include machine condition, strength of the surface beneath the excavator and method of moving the load. Before lifting, an operator should examine the area around the excavator to ensure there is nothing above or below the machine that could cause interference.

When working on a slope, level the work area, if possible. If leveling the work area is not an option, position the excavator with the blade downhill and lowered, and avoid working with the tracks across the slope or swinging the bucket in the downhill direction.

Always keep the boom centered and the load as low to the ground as possible for maximum stability. Move as slowly as the task allows and avoid sudden changes. Never travel on a slope measuring greater than 25 degrees.

2. KNOW YOUR LIFTING CAPACITY.

All excavator operators should understand that an excavator's lifting capacity is limited by one of two factors: hydraulic limitations or tipping limitations. "Hydraulic limited" means the excavator is governed by its hydraulic power to lift a load. "Tipping limited" means there is a point at which the excavator begins to lift off the ground when lifting a load.

Manufacturers test excavators to determine how much weight they can safely lift at various heights and distances from the centerline of the machine. Based on that information, they then create lift charts, which are printed in the owner's manual or posted within sight of the operator, such as on a decal located in the cab. To maximize the life of the equipment and minimize machine wear, always make

Operators are responsible for all jobsite- & lift-related conditions & need to respond to condition changes that have the potential to create hazards.

sure you and your operators follow the guidelines in the lift charts and do not exceed the machine's recommended lift capacity.

3. CORRECTLY INTERPRET THE LIFT CHART.

Even though lifting material with an excavator may seem simple to the experienced operator, it is always important to follow the excavator lift chart, as it designates the proper lifting capacity at any one lift height and swing radius. At the top of the lift chart is the machine's configuration information.

There may be several lift charts for an excavator, based on combinations of boom length, arm length, counterweight size and track-shoe width. Some manufacturers will include the bucket size in the lift chart.

If the manufacturer includes a bucket in the lift chart, the company will indicate the bucket's weight. However, if the lift chart does not include the bucket details, it is up to the operator to know how much weight is on the end of the machine. This may include the weight of a coupler or bucket, the lifting apparatus itself and the weight of the material or item being moved.

It is important to note that capacities typically marked with an asterisk on the lift chart are limited by the machine's hydraulic capacity and do not exceed 87 percent of the machine's hydraulic lift capacity, as defined by the International Organization for Standardization (ISO). Similarly, rated loads without an asterisk are limited by the machine's stability and do not exceed 75 percent of the tipping load capacity. Next, determine the lift-point height, which is typically located in the far-left column of the lift chart. The lift point refers to the distance from the ground to the bucket pin, not from the ground to the object you are lifting. When measuring the lift point height, consider how high or low (if below ground) you will need to lift the item, including the height of the item itself, the length of the lifting device, and at what height you want to place the item on a transport device.

After determining lift point height, examine the lifting radius from the centerline of the swing point. This distance is typically shown in the top row of the lift chart. The lifting radius is dependent on whether you are lifting over the front of the excavator or squarely over the side. Additionally, if you are operating an excavator with outriggers or a dozer blade, you must reference the portion of the lift chart that reflects its position during excavation.

Once you have determined the lifting radius, find the cell on the lift chart where the lift point height and radius intersect. The number shown is the excavator's rated lift capacity in pounds and/or kilograms. If the cell is blank, the excavator has no lifting capacity at that point, and lifting should not be attempted.

4. CONSIDER PICK-AND-CARRY PRECAUTIONS.

When traveling on or moving an excavator with a suspended load is necessary, it is recommended to use a safety lifting device, such as an excavator lift eye. But first, the lifting apparatus should be approved for the weight of the material, and operators should know how to properly hook the lifting apparatus to the material or object being moved.

Before attempting to pick and carry a load, align the boom with the forward direction of machine travel. Maintaining this boom position when turning the machine is best for stability. Operators should only turn when necessary, at the slowest speed possible and with a wide turning radius. Other tips for pick-and-carry applications include:

- Use the shortest lifting radius distance possible for the task.
- Keep the load as close to the ground as conditions permit.
- Attach strong ropes, otherwise known as tag lines, to prevent the load from swinging back and forth.
- Travel at speeds predetermined by jobsite conditions.
- Avoid sudden starts and stops.

5. MAKE USE OF OPERATOR TRAINING COURSES.

Some manufacturers offer mail-order or online excavator-training courses. And some equipment manufacturers have in-person training opportunities. Having your operators take one of these courses can be beneficial in helping to avoid typical operator problems. Ask your equipment dealership what training options are available for your machines. CBO

Jason Boerger is a marketing manager for Bobcat Company. Boerger has spent 5 years at Bobcat Company, during which time, he has held positions in the product training and marketing departments. Visit bobcat.com.



Calling in the Cranes

How to determine a rental strategy that lands your company the right equipment under the right contract

BY KEITH HOLMES

Negotiating agreements for professional responsibility and legal requirements is a top priority. And insurance is a major component, as you do not want to be responsible for any damage to machinery during construction.

Crane usage limitations and maintenance restrictions are typically based on the size of the particular machine being requested. Therefore, it is important to know your project needs before renting so that you do not breach any of the contract conditions.

This is best achieved by having the crane provider perform a walkaround of the jobsite (where the crane will operate) before signing to align your scope of work with the right machinery. The provider's inspection should take into account:

- Size of the site and ability to house particular cranes
- Ground and weather conditions
- Analysis of load charts to determine capabilities, strengths and exact dimensions of the required crane (including boom length)
- Rated capacity to asses: size and weight of the material being lifted, distance and radius to be covered with the crane, whether a rotating or non-rotating machine is needed
- Anticipated scale of the project and time required to complete it



In addition, there may be power lines, trees or other obstructions to consider. The type of crane used also depends on whether you are moving horizontally or vertically, as well as the machine's height and reach limitations and tail swing. In most cases, the more complex the needs, the higher the rental price.

CRANE TYPES

Traveling, rotating cranes are able to cover a larger project area, but the travel and transfer speed must also be considered. Fixed versus traveling equipment is largely dependent on change of use and amount of traffic on-site. The following are some crane options:

- *Tower cranes*—Excellent for the construction of tall buildings, and particularly for long-term projects, due to its static installation, providing both astonishing height and lifting power up to 20 tons. However, due to its size, extra safety measures are needed, and movement and usage can be hampered by high winds.
- *Gantry cranes (overhead cranes)*—More favorable for high projects, such as bridge work, as it has a higher lifting capacity, and the larger models can

take loads of more than 800 tons and reach over 600 feet.

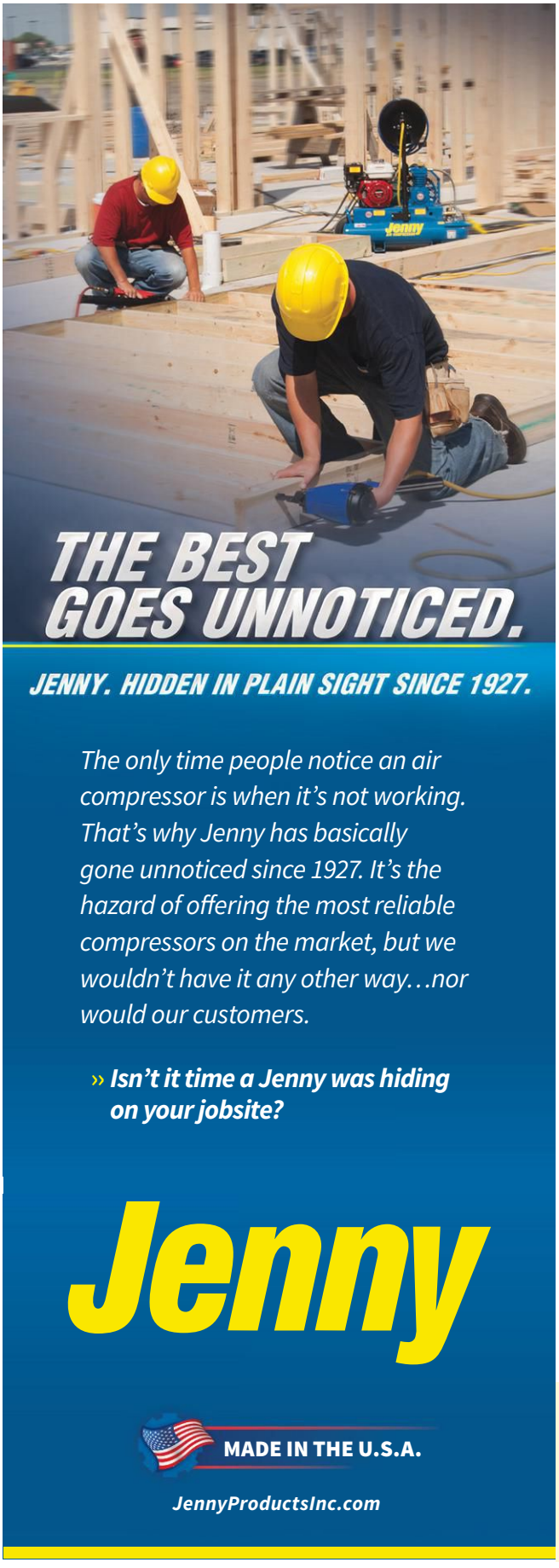
- *Crawler cranes*—Suitable for multiple ground types, including soft ground, and can move around the site with ease. They are mounted on moveable tracks and can lift extremely heavy loads. However, this means they are bulky and difficult to transport and assemble, making them more suitable for long-term projects.
- *Boom trucks*—Versatile and reliable for most daily construction sites. They are fitted with a hydraulic crane and a flat deck hauling area, allowing easy lifting of light- to medium-sized loads. They are also ideal for moving between different project locations, as the actual truck can travel at highway speeds.
- *All-terrain cranes*—Useful when the load is too large for a boom truck but not heavy enough for a crawler. They are typically used for commercial or industrial and retail sites. They drive easily through sand and gravel and have all-wheel drive for easy transport from one place to another (with driving speeds up to 55 miles per hour). Their lifting capacity generally ranges from 60 to 600 tons (and can even reach over 1,000 tons), and their reach height goes up to 500 feet.
- *Telescopic crane*—Provides a boom with tubes fitted inside one another and a hydraulic system that can extend or retract the tubes to increase length. They can rotate 360 degrees, allowing for gentler placement of fragile materials.

RIGGERS

All cranes must be operated by a qualified professional, of course, but rigger operators must have specific knowledge regarding moving and lifting large objects and be able to assess the jobsite quickly. They are responsible for the fastening of straps, chains and cables to execute the lift of the object. Most are certified by Occupational Safety and Health Administration (OSHA) standards to ensure that the load is well-secured before the movement or lifting occurs.

HOOKS & SWITCHES

The need for additional hooks depends on the speed and coverage area with which you are working. OSHA requirements for a safety latch on hooks do not depend on the size of the hook, but rather the activity for which the hook is being used. A crane may be equipped with auxiliary hooks to help speed up lifts of medium weight, and whip hooks come into play for lighter loads at a high speed. The more hooks used, the higher the cost due to increased maintenance and power requirements. Safety latches on hooks are required when used in conjunction with a personnel platform, overhaul ball assembly, lower load block or other attachment assemblies.



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EXTRA COSTS

There may be additional fees to take into consideration, such as the cost of tracks, reinforcement of paths, operating and maintenance. Fuel is also a major factor, and you may need a power supply, depending on whether the work being performed is in a remote location or is inside or outside.

DOCUMENTING CONDITION

Before being dispatched to a jobsite, cranes are generally inspected for the following: overall cleanliness; damages to hydraulic systems; fluid levels; issues with the engine, radiator, mechanical controls and hoisting instruments. Limit switches, hook springs, wire rope, emergency switches, brakes and lighting will all be checked for optimal condition also. If necessary, safety measures, such as load testing, may also be performed. The inspector will note all these items in a checklist and ensure tests, such as OSHA-required equipment functionality tests for crane and hoist operation, are performed and documented. Still, the operator should complete a walkaround of the machine before it is transported.

COORDINATING TRANSPORTATION

Transportation of the machine will be part of the cost of hire. Typically, counterweights and jibs are transported via semitruck. Many cranes are drivable, but certain large cranes are transported via tractor trailer. To transport cranes that require a tractor trailer, the dispatch team will sometimes coordinate the transportation with an outside hauler, as there is typically a need for multiple semi-trucks in order to get all the pieces of the crane to the jobsite. The timing of transport is key for coordinating the arrival of the crane, crew, rigger, equipment being hoisted and any additional rigging.

PERMITS

The type of permits required for your work are dependent upon city laws and what type of work is scheduled to be completed with the crane in a specific area. A permit may be required for multiple facets of the project. With so many variables dictating whether or not a permit is required for a particular project, it is important to know the scope of work and check with the city to see if a permit is necessary. Failure to do so can cause project shutdown, you to incur a fine, your company to accrue a reputation for being noncompliant, and someone's injury. CBO

Keith Holmes is vice president of operations at BigRentz, a construction equipment rental network with 2,000 rental partners in 8,000 locations across the United States. Holmes leads and oversees all operations aspects of the business. Visit bigrentz.com.



Do You Stack Up to the Competition?

The path to increased profitability with equipment performance benchmarking

BY GREGG CHRISTENSEN

Every minute a piece of equipment sits idle on your jobsite, it's robbing you of time and money. Excavators, dozers and other machines are the workhorses of construction sites, and they cost—whether they're working hard or sitting idle. That's why it is essential to optimize the use of your equipment if you want to maximize profits.

The reasons behind low equipment utilization vary by jobsite, but the common denominator is that underutilization can create cost overruns and move a project off budget. Some typical reasons equipment sits idle are:

- Rental equipment is kept on the job longer than necessary
- Equipment is hoarded because procurement processes are too much of a hassle
- A lack of visibility across operating groups or projects creates a poor line of sight into the field



Too often, contractors have a blind spot around equipment utilization. And it's understandable—you can't manage what you can't measure. Fortunately, blind spots can be resolved by leveraging digital tools, including low-cost sensors, GPS technology and equipment telematics, as well as today's new generation of high-powered, cloud-based software and services. Technology makes it possible to manage both owned and rented equipment more efficiently and provides valuable information about location, use and performance. These tools create a single digital record, which leads to more informed decisions. This can reduce days past due on rentals, pull unnecessary equipment off your rental books and increase the utilization of owned machines.

UNCOVERED OPPORTUNITY

While the insights gained from digital equipment management are helpful, they are largely inward-looking. Many contractors want to know how they are performing compared to their competitors, not just their own previous work. This approach to data is one way to help achieve best-in-class performance in the highly competitive construction industry. Some valuable questions are:

- How does my equipment utilization stack up against the industry average?
- Where does my company rank among its competitors in returning equipment on time?
- What kind of positive dollar impact can my company realize by changing a specific behavior?

The answers hold the secret to taking any gains generated by fleet management efficiencies to the next level. The process of scoring equipment utilization against industry benchmarks can pinpoint opportunities for improvement and quantify the dollar impacts involved.

The rental supplier a contractor uses should be able to provide data about how its equipment is utilized by market segment, job type and equipment specification—the starting point for benchmarking. This allows a company to understand where any utilization discrepancies lie. Only then can a contractor take the corrective actions that change operational behavior and sustain stronger financial results long term.

Through benchmarking, companies can view their performance holistically or drill down by focusing in on one jobsite or product type, or even by individual piece of equipment and project. This provides meaningful comparisons by showing how a company's asset management stacks up against the competition.

THE CONNECTION TO PROFITABILITY

At its core, benchmarking allows for a better bottom line. Bringing the contractor's performance up to peer level through the use of the data translates to less money spent on rentals and increased company profits.

The remedy for improving the company's utilization begins with understanding the problem and formulating corrective actions—always the best way to motivate permanent changes in operational behavior. Prior to benchmarking, this information was not available, or at least not with such depth and precision. Businesses across many different industries have taken advantage of benchmarking to realize financial gains. Now is the time for construction companies to look more deeply into overall equipment performance to achieve better profitability. CBO

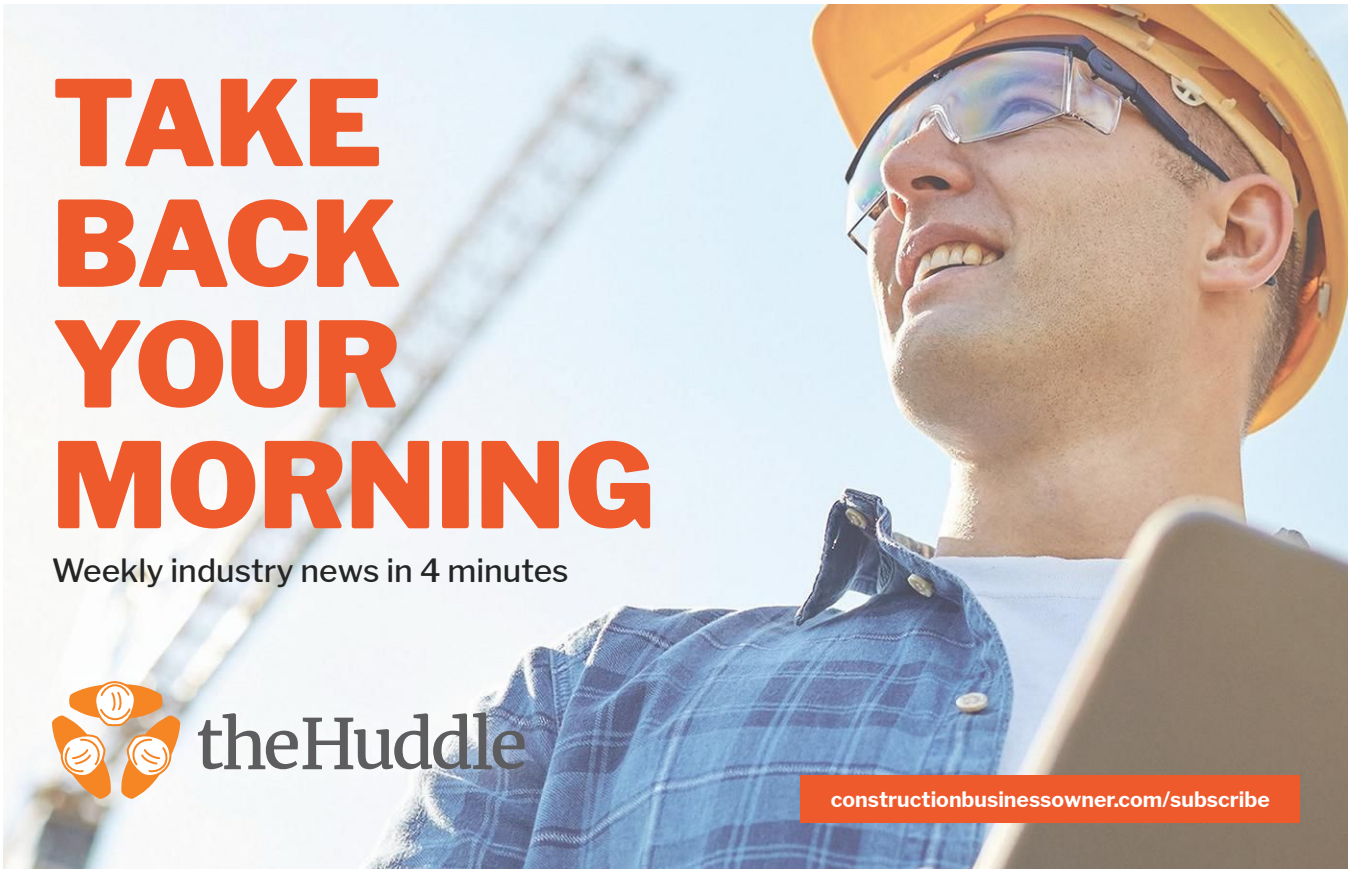
A Closer Look

For tips on successful benchmarking, check out:

constructionbusinessowner.com/10benchmarkingbestpractices

Gregg Christensen is vice president, national accounts at United Rentals. He has been in the equipment rental industry for more than 30 years and has served in several sales and management positions. Christensen holds a bachelor's degree in business administration from Florida Southern College. Visit unitedrentals.com.





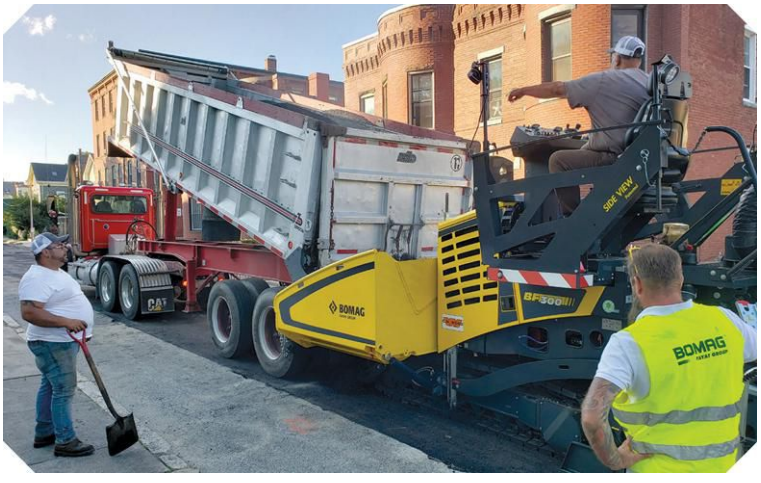
New Products to Watch

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.

WERNER CO.

Multi-Position Fiberglass Pro
Released: 10/1/18
Availability: U.S. market
What's new? Adjustable telescoping design that allows the ladder to be used in five different positions: twin step, stairway step, extension, wall, and as two scaffold bases
Specs: Features nonconductive fiberglass rails, compact storage, wide rungs for comfort, slip-resistant feet, adjustable telescoping design for maximum versatility, impact-resistant hand grips and shatterproof J-locks; is designed for one- or two-person jobs with a duty rating of 300 pounds per side
Circle 205 on card.





BOMAG

BF 300 C-2 Commercial Paver
Released: 2/12/19
Availability: U.S., Canadian & European markets
What's new? Delivers fast screed heat-ups with MAGMALIFE; offers unobstructed sightlines with SIDEVIEW; eliminates bumps in the mat with Load Control System (LCS)
Specs: Hydraulically variable paving widths from 5.6 to 11.2 feet; has a max of 16.4-foot width with extensions; offers 2.3-foot paving widths with through reduction skids; paves up to 10-inch thick mats; has 10-ton hopper capacity, 16.6-foot length, 9.2-foot height, 6.2-foot width; features a 74-horsepower Tier 4 Final engine
Circle 206 on card.

JLG INDUSTRIES INC.

ClearSky Access Control
Released: 2/19/19
Availability: U.S. market
What's new? Allows companies to safeguard machines, adding an additional layer of protection for users by preventing unauthorized personnel from accessing equipment
Specs: Machine operators receive unique ID number, or "smart card," allowing access to only the equipment they are authorized to operate; rugged, glove-friendly keypad is environmentally sealed and rated to withstand harsh weather conditions; bright LED display remains visible in bright sunlight
Circle 207 on card.





▲ KOMATSU AMERICA CORP

GD655-7 Motor Grader

Released: 3/11/19

Availability: U.S. & Canadian markets

What's new? Low-effort control levers, steering wheel and steering lever and a larger, more comfortable cab that offer a significant improvement in operator comfort and visibility

Specs: 218-horsepower (163 kilowatt), EPA Tier 4 Final-certified, SAA6D107E-3 engine; two-mode, three-stage variable horsepower control (VHPC) to match operating parameters with application requirements for optimal fuel savings; dual-mode transmission (8 forward, 4 reverse) that benefits from the high travel speeds and reduced fuel consumption of a direct drive and the increased tractive effort and control of a torque converter

Circle 208 on card.



◀ AMERICAN HONDA MOTOR COMPANY INC. – HONDA ENGINES

Honda GX50 Mini Four-Stroke Engine

Released: 2/18/19

Availability: U.S. market

What's new? The first Honda four-stroke model in the 2-horsepower class that is inclinable by 360-degrees during operation and storage

Specs: Lightweight and easy-starting; features a compact design, excellent fuel efficiency and a higher displacement for demanding rental, industrial, construction and professional landscape applications; powers products from brush cutters, to rammers and vibrators, to concrete screeds, post drivers and winches

Circle 210 on card.



GRIPPLE LTD.

Gripple Spider

Released: 1/1/19

Availability: U.S. market

What's new? Can be installed prior to concrete pour and cast-in-place, providing a solution for a range of threaded rod and cable hanger sizes

Specs: Low profile; max load weight of 3,000 pounds; color-coding system that makes it easy to identify where each service is to be located; suitable for use in both metal-deck and wood-form construction and more

Circle 209 on card.

PETTIBONE/TRAVERSE LIFT LLC ▶

Traverse T1258X Telehandler

Released: 1/22/19

Availability: U.S. & Canadian markets

What's new? Sliding boom that allows operators to safely place loads at full lift height without needing to coordinate multiple boom functions

Specs: Side-mounted, 117-horsepower Cummins engine; specified lift and landing height of 58 feet, 6 inches; 12,000-pound maximum load capacity; forward reach of up to 47 feet, 10 inches

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▲ AUGER TECHNOLOGIES

#9055 Tooth Extractor

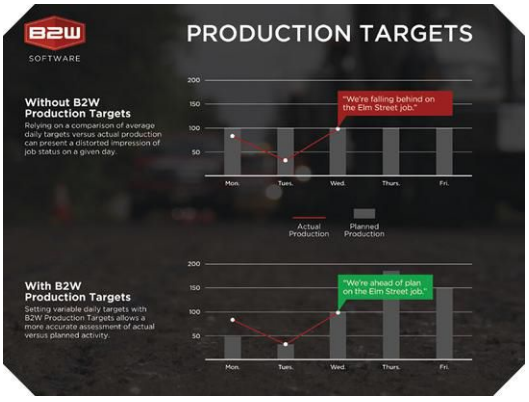
Released: 1/1/19

Availability: U.S., Canadian & European markets

What's new? Allows for fast and safe auger bit changes, speeding augers back into production—even if they've been idle for years

Specs: Fits standard 0.865-sized conical auger bits; powered manually or with impact wrench (not provided); quickly removes worn auger bits that are stuck; eliminates knuckle busting; in stock for immediate delivery

Circle 212 on card.



▲ B2W SOFTWARE

B2W Production Targets

Released: 1/14/19

Availability: U.S. & Canadian markets

What's new? Software that empowers heavy-construction contractors to assess job progress more accurately at any given point in time

Specs: Sets specific, variable targets for productivity according to conditions, plan and resources for each day; helps prevent a distorted impression of progress in comparison with the actual data

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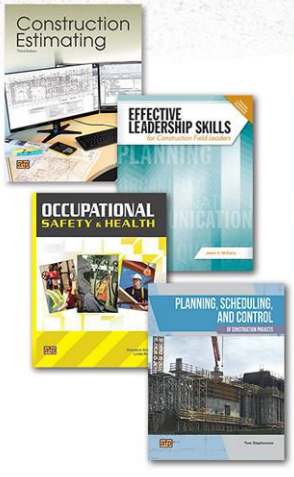
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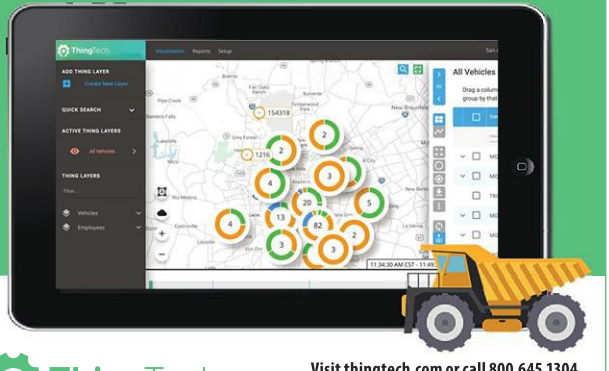
▲ COMANSA
New 21LC1050 Flat-Top Tower Crane
Released: 9/1/18
Availability: All global markets
What's new? Flat-top crane with a great jib and counter-jib modularity, allowing for perfect adaptation to and increased safety on each jobsite
Specs: Can load up to 110,230 pounds; has a maximum radius of 262.4 feet and high hoist speeds of up to 984 feet per minute; provides great performance in large industrial or infrastructure projects, as well as in construction with heavy precast or steel structures, including prefabricated prefinished volumetric construction
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▲ CRESCENT LUFKIN OF APEX TOOL GROUP
Shockforce & Schockforce Nite Eye Measuring Tapes
Released: 3/1/19
Availability: U.S. & Canadian markets
What's new? A measuring tape that can withstand a 100-foot drop with visibility in any lighting
Specs: Comes in three sizes (16, 25 and 35 feet); has a compact, 3-inch width; ranges in weight from 0.93 to 1.56 pounds; has a diamond-coated end hook and 14 feet of assisted standout
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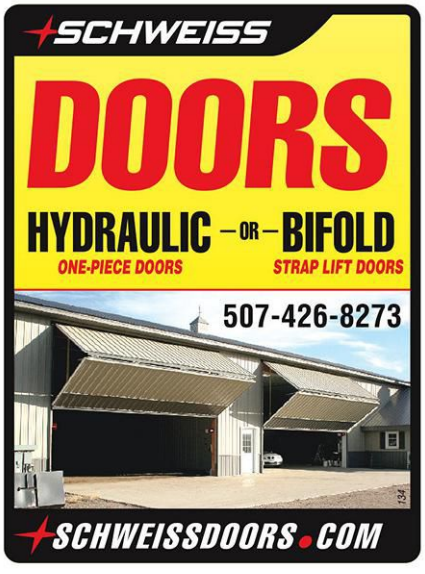
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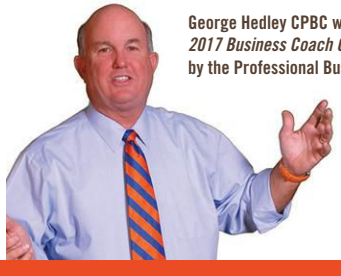
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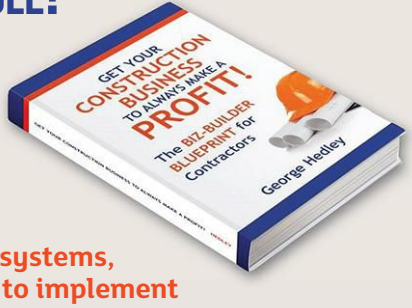
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Annual Value of Construction Put in Place

2017/2018/January 2019 Comparison

This chart compares the two previous years' total value of construction put in place to an annual forecast based on January 2019 figures. (Millions of dollars. Totals may not add up perfectly due to rounding.)

	2017*	2018**	Jan 19
Total Private Construction	**946,308**	**985,949**	**966,041**
Residential	501,971	541,810	511,375
Nonresidential	444,337	444,139	454,667
Total Public Construction	**277,194**	**290,311**	**313,595**
Residential	6,085	6,619	5,776
Nonresidential	271,109	283,693	307,819
TOTAL Construction	**1,223,501**	**1,276,260**	**1,279,636**

**Seasonally Adjusted Annual Rates. Source: United States Census Bureau.*
***With the May 2018 release, unadjusted data will be revised back to January 2016 and seasonally adjusted data will be revised back to January 2011. With each May release, seasonally adjusted data will now be revised for an additional 5 years beyond the revision period for unadjusted data. Research has shown that this revision span should produce more reliable seasonally adjusted time series.*

$1,279,636

JANUARY 2019 TOTAL ANNUAL VALUE OF CONSTRUCTION PUT IN PLACE

"The government shutdown affected architecture firms but doesn't appear to have created a slowdown in the profession," said AIA Chief Economist Kermit Baker, Ph.D., Hon. AIA. "While AIA did hear from a few firms that were experiencing significant cash-flow issues due to the shutdown, the data suggests that the majority of firms had no long-term impact."

AIA Architectural Billings Index (ABI)

	National		*Regional - Billings				*Sectors - Billings			
Month	Billings	Inquiries	Northeast	Midwest	South	West	Multifamily Residential	Commercial/ Industrial	Institutional	Mixed
Aug-18	54.2	58.0	46.9	52.5	57.0	54.2	55.6	53.6	52.3	51.7
Sep-18	51.1	58.8	46.6	59.7	54.1	53.1	54.9	50.8	55.1	53.4
Oct-18	50.4	58.6	51.8	57.8	48.4	46.9	52.3	48.9	52.0	52.7
Nov-18	54.7	63.1	56.8	53.1	50.5	49.0	51.2	53.8	50.8	53.8
Dec-18	50.4	55.6	51.6	56.3	49.4	49.2	49.8	51.2	53.1	50.2
Jan-19	55.3	59.6	52.4	54.4	54.7	51.5	52.6	52.6	52.9	53.8

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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