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CONSTRUCTION BUSINESS OWNER®

THE LEADING BUSINESS MAGAZINE FOR CONTRACTORS



LESSONS IN LASTING LEADERSHIP

Bill Woolwine Jr. on his career in the trades & leading 100-year-old Serenus Johnson Construction

IN THE OFFICE
Should I stay or should I grow? 7 stages to unlock your company's earning potential

IN THE FIELD
The alternate tire technologies offering operators & workers greater protection



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FROM THE EDITOR

KATHY WELLS



On the cover this month is Bill Woolwine Jr., president and chief executive officer (CEO) of Serenus Johnson Construction in Bay City, Michigan. Woolwine began his career as an apprentice, moved to journeyman carpenter, and rose through the ranks to eventually become the front man representing a 100-year-old company. Like Woolwine, many ambitious and eager construction workers are motivated to excel and grow into leadership roles. Whether they're business owners, department heads, team leaders, or the top dog in a two-man operation, it's important that every leader, at every stage in their career, shares their paths to success and helps shape new, emerging leaders. We're doing exactly that in our series of articles on leadership.

Starting with Woolwine's story on page 26, "Lessons in Lasting Leadership" provides a glimpse into a lifelong career in the trades and what it takes to grow and lead. Next, on page 30, "Leading the Craft Workforce Revolution" argues the case that positive influence, industrywide collaboration and proactive training can guide the next generation of successful construction professionals. Wrapping up the series on page 32, "Following the Leader" defines servant leadership and covers some common misconceptions and the 10 characteristics that often attract followers and drive success.

Regardless of where you stand in your current leadership efforts, it's important to take notice of where those responsibilities fall (or should fall) in your day to day. If you've stepped away from leadership to execute work on a project, then step back in. If you've postponed training that new apprentice to take care of payroll, then reschedule. One of the most important parts of leadership is sharing your story, your lessons, your advice, your experience, with your employees.

I probably say it every day, but here it is in print: Women are an undeniable force in the construction industry. In fact, as author Rachel Burris points out on page 30, women are projected to make up one-fourth of the industry by 2020. As a three-person team of female editors working to cover the construction industry, this year, we decided it's time for the brand to recognize the impressive and hardworking women in the industry with "Outstanding Women in Construction." By way of peer nominations, this special section slated for our November issue will profile and honor dedicated female construction professionals—from GCs to CEOs to specialty trade workers—who are advancing the industry and the women working in it. If you know a female construction professional in the United States who is respected by industry peers, leaders and clients, and shows outstanding skills, leadership, management or innovation, we'd like to hear about her. Submit your nomination at constructionbusinessowner.com/outstanding. Nominations close Sept. 3, 2019.

Take good care,



Ever wonder what tech construction teams across the pond employ on their projects? Managing Editor Elizabeth Manning recently traveled to London, England, to attend Autodesk University London and visit several jobsites where Autodesk solutions are used. Pictured here, a team member with BAM Construction shows how new laser technology is currently being used on one of its projects at Kings Cross. Visit constructionbusinessowner.com for more coverage.



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KAI Build Project Superintendent Inducted Into Boys & Girls Club, Greater St. Louis Alumni Hall of Honor



Cardin "Dean" Rackley

Growing up in St. Louis, Missouri, a young Cardin "Dean" Rackley attended summer programs at the Herbert Hoover Boys & Girls Club. Playing basketball and swimming at the club were his favorite activities. Rackley remembers the sense of pride, respect for others, sportsmanship, academics and teambuilding that the club's dedicated staff and directors instilled in his impressionable, young mind. A project superintendent at KAI Build, Rackley is now overseeing construction of the organization's new $12.4 million Teen Center of Excellence in Ferguson, Missouri. Expected to open in time for the 2019-2020 school year, the Teen Center of Excellence will offer after-school and summer programs to youth ages 12-18 in the North St. Louis County area. The 26,856-square-foot, three-level center will provide a safe place for area youth to gather and participate in a variety of activities, and will include a nutrition education center, gym, teen lounge, outdoor garden, auditorium, music and art studio, office space, intellectual commons, innovation center, and outdoor basketball and activity court. To commemorate Rackley's achievements, the Boys & Girls Clubs of Greater St. Louis recently inducted him into its Alumni Hall of Honor. Visit kai-db.com.

BIMobject & AEC Daily Announce Partnership

BIMobject, a building information modeling (BIM) content platform, has entered a strategic partnership with AEC Daily, a developer of online educational courses for the construction sector, to increase specification success rates, enhancing the BIM process from design through procurement. This collaboration streamlines the process of taking AEC Daily's educational continuing education unit (CEU) courses and connects the designer with the manufacturer-specific building products on BIMobject, allowing a more efficient design process. Additionally, designers and contractors searching for products on BIMobject will find associated training course links. At BIMobject.com, building product manufacturers (BPMs) are able to showcase their products to 1.4 million users, where those products can be specified and incorporated into construction projects. Architects can select from over 1,500 brands that represent 56,000 actual products. The BIM objects become shared knowledge that form a reliable basis for decision-making during the entire life cycle of a project. Visit bimobject.com.

Fluor Corporation Awarded Position on Department of State Diplomatic Platform Support Services Program Contract

Fluor Corporation has announced that the United States Department of State awarded the company a position on the Diplomatic Platform Support Services (DiPSS) program indefinite-delivery/indefinite-quantity contract. The period of performance is 5 years. As one of the winners selected for the large business portion of the DiPSS program, Fluor is eligible to compete on work worth a combined value of approximately $6 billion. "With the award of this contract, Fluor is able to bid on the largest operations and management and base life support task orders overseas with the Department of State," said Tom D'Agostino, president of Fluor's Government Group. DiPSS contracts provide program management, procurement of critical items, life support services, logistics services, operation and maintenance services, and construction and renovation projects at various government installations located in any country where the Department of State has a presence with a focus on difficult and demanding contingency environments. Visit fluor.com.

Hill International Elects New Board Members

Hill International, a construction risk management firm, has elected Grant G. McCullagh and Susan M. Steele to the company's board of directors. McCullagh has more than 35 years of technical, operational and corporate finance experience, having served as a top executive of a Fortune 500 company and chief executive officer (CEO) of multiple global business services companies, as well as successful entrepreneurial start-ups. He holds a master's degree in business administration (finance) from the University of Chicago; a master's degree in architecture from the University of Pennsylvania; and a bachelor's degree in science (architecture) from the University of Illinois. He is also a member of the American Institute of Architects (AIA) and the College of Fellows, and he served as past director and chairman of the Design-Build Institute of America. Susan Steele, CEO of Austin, Texas-based JMJ Associates since 2017, has more than 35 years of experience leading global businesses in the architecture/engineering/construction (AEC) industry. Steele joined Jacobs in 2010 as the vice president for global maintenance services, overseeing a workforce of 13,000. Prior to Jacobs, Steele worked for CH2M Hill as vice president of business development and vice president, manufacturing and life sciences. She also served as the program director for the Masdar development program in the UAE. She holds a master's degree in business administration from the University of Miami and a bachelor's degree in science from Auburn University. Visit hilintl.com.

Green Building Initiative Announces Release of Green Globes 2019 as a Revised American National Standard

The Green Building Initiative (GBI) has announced the approval of American National Standards Institute (ANSI)-GBI 01-2019: Green Globes Assessment Protocol for Commercial Buildings, which was formally approved by ANSI as a consensus document in April and published as an approved standard in ANSI's Standards Action publication May 3. "This represents more than 4 years of investment of time and effort by dozens of volunteer experts, hundreds of members of the public that participated and GBI staff members," said Dr. Charles Kibert, a professor at the University of Florida, who served as vice chair of the ANSI/GBI 01-2019 consensus body and is a member of GBI's board of directors. Vicki Worden, president and CEO of GBI, said, "More than 230 public meetings were held to deliberate the latest science and research, baselines and market advancements since the last update to Green Globes. Advances in the standard's content include language on resilience, life-cycle cost analysis, moisture-control analysis, health and effectiveness, and many other market advances, such as higher-efficiency plumbing fixture specifications and greatly expanded lighting and acoustic comfort sections. ANSI-GBI 01-2019 was registered and approved to continue its revision process through what ANSI calls "continuous maintenance." Green Globes references hundreds of other consensus documents that are periodically

revised, and for this reason, will ensure the system changes as needed and through an ANSI-approved process for regular updates. Visit thegbi.org/ansi.

▶ Brokk Inc. Appoints First Business Development Manager


Jeff Keeling

Brokk, a manufacturer of remote-controlled demolition machines, has appointed Jeff Keeling as its first business development manager. Keeling transitioned from the role of midwestern regional sales manager to the new position earlier this year. He works closely with regional sales managers to develop and grow the Brokk brand in key segments across the U.S. and Canada. He is also responsible for educational initiatives aimed at helping customers maximize their Brokk machines' potential. In addition to his 6 years at Brokk, Keeling has experience in the concrete cutting and construction industry with Husqvarna, Volvo Construction Equipment and Hilti. He served as executive vice president for Magnum Diamond & Machinery, his family-owned concrete saw and diamond blade manufacturing business. After the business was sold to DIMAS, now Husqvarna, Keeling worked with his father in their own heavy equipment sales business, Precision Demolition. It was there that Keeling was first exposed to Brokk machines, serving as a distributor of the equipment. Keeling holds a bachelor's degree in personnel administration from the University of Kansas. Visit brokkinc.com.

▶ AIA Advocates for Repeal of Foreign Investment in Real Property Tax Act

The AIA and its members have been on Capitol Hill advocating for the Invest in America Act (HR 2210), which would repeal the Foreign Investment in Real Property Tax Act (FIRPTA). "Under FIRPTA, global investment is discouraged in the U.S., and investors are driven to other countries," said AIA Executive Vice President/CEO Robert Ivy, FAIA. "The Invest in America Act will put the U.S. on equal footing in the competition for investment dollars, which can be put directly into American communities through partnerships with local and state governments." The Invest in America Act, which has the potential to create as many as 284,000 American jobs and attract as much as $125 billion in global investment in U.S. communities. Investments would support addressing America's aging buildings and crumbling infrastructure. Originally enacted in 1980, FIRPTA is tax that imposes a capital gains tax on global investors that finance any U.S. real property. Consequently, the law inhibits state and local leaders from partnering with global investors—in addition to leveraging domestic partners—to address infrastructure issues and renovate aging buildings; construct roads, bridges, tunnels, hospitals and airports; develop affordable housing; and utilize new opportunity zones. A partial repeal of FIRPTA occurred in 2015 with passage of the Protecting Americans from Tax Hikes Act, which increased global investment in U.S. cities of all sizes and locations by 33%. AIA and The Real Estate Roundtable pledged support for the Invest in America Act, which was introduced by U.S. Reps. John Larson (D-Connecticut) and Kenny Marchant (R-Texas) on April 10. Visit aia.org.

▶ Bomag Americas Inc. Appoints Vice President of Sales & Marketing


Cole Renken

BOMAG Americas Inc. has appointed Cole Renken as vice president of sales and marketing. Renken will be responsible for developing and executing short and long-term growth strategies to better optimize the sales and customer support for dealer and rental channel partners. Renken has more than 20 years of construction equipment sales, business development and sales management experience. Prior to joining BOMAG, he spent 10 years with Volvo Construction, with his most recent position as director of government and key accounts, and his prior responsibilities consisting of dealer development, regional sales and product management. Additionally, Renken worked for CNH Industrial N.V. in dealer sales management, government and military sales and marketing. Renken holds a bachelor's degree from Iowa State University and a master's degree in business administration from Marquette University. Visit bomag.com/us.

▶ IFS & Acumatica to Form Global Cloud ERP System Under EQT Partners

EQT Partners has announced the signing of a definitive agreement to acquire cloud-native enterprise software provider Acumatica through an investment vehicle owned by the same holding company that holds Industrial and Financial Systems (IFS AB). Following the closing of the transaction, Jonas Persson will serve as chairman for both companies. IFS, the global enterprise applications company, and Acumatica, a cloud enterprise resource planning (ERP) provider, will serve growth industries, such as manufacturing, distribution, construction, service, energy, and acquisitions and divestitures. "IFS can bolster Acumatica's ability to globalize and expand in key industries, while Acumatica can support IFS with increased functionality in business intelligence, analytics, and extensive experience providing a true born-in-the-cloud ERP software-as-a-service offering," said Mickey North Rizza, program vice president, enterprise applications, IDC MarketPlace. The closing of the transaction is subject to the satisfaction of customary closing conditions, including the receipt of regulatory approvals. The transaction is expected to close in Q3 2019. Terms of the transaction were not disclosed. The new global entity is ultimately designed to meet a growing range of customer requirements. Both companies are currently adopting artificial intelligence and machine learning features into their respective products and expect to achieve early success in that area. Visit eqtpartners.com.

30 years

Manitou North America strengthens a 30-year partnership with Road America racetrack in Elkhart Lake, Wisconsin, with the delivery of new equipment. Manitou's construction equipment keeps the 640-acre park-like grounds maintained throughout the year. The machines are used to remove any disabled cars from the track and position thousands of concrete dividers necessary to keep drivers during the race. Visit manitou-group.com.

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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 keeps you up at night?



JIM HEUER
Owner
Heuer & Company

As the leader of a small, regional construction firm, I've recently been wrestling with the issue of fully committing to a technology upgrade. I'm not referring to a new server, desktops or tablets. **Our stumbling block is the full implementation of a web-based project management platform** that—from top to bottom—changes the way we execute our commercial construction business.

Breaking down the tendencies of the individual to "do it my way" and come around to the idea of a new system has not been easy. Truth be told, we are 2.5 years into the process, and we still have not made a complete conversion. **The subscription cost is a big nut to crack, one that gets tougher as our company expands.** And at the annual renewal, we are forced to ask ourselves, "Are we in or not?"

We know the correct answer—we have to be in. For a company with a vision of continued growth, there is no other way. We've seen the light and know the arc of progress bends toward technology.

Going back to the old way is not an option, but the questions remain: How do we implement a brand-new way of doing things while still getting our work done? How long of an implementation process is too long? Will we ever be finished?



ANTHONY THOMPSON
Chairman & CEO
Kwame Building Group Inc.

In this booming economic climate and with increases in technology, recruiting talent is our biggest challenge. With the high price of a college education and the sophistication of modern construction techniques, **in order to stay competitive, construction companies must have individuals with high aptitude and managerial skills.**

Starting salaries in construction and engineering aren't keeping up with some other careers, so we are seeing a low number of graduates in those fields. To secure highly complex construction management assignments, we must have talented project managers with at least 5 to 10 years of industry experience. They must also be savvy enough to deal with the new generation of workers—some of whom have short attention spans and poor communication skills.

The fast pace of technology hasn't prepared the new generation to handle challenges like dispute resolution or contract negotiations, which will continue to plague the industry. It is becoming more imperative that we recruit talent capable of meeting those challenges.

However, it is not enough to recruit and retain talent. **What keeps me awake is whether the new engineer is capable of saying the right thing while representing our organization.** Recruiting and retaining staff is important, but securing and retaining clients is imperative.



MICHAEL KENNEDY JR.
CEO
KAI Enterprises

"What isn't keeping me up at night?" would be an easier question to answer. However, right now, I think **a one-word question plagues me most: Who?** If I find the right answer for that question and get those people to KAI, it will solve the rest of my issues.

The war for talent is crazy right now. It is expensive, and money isn't the only thing that people want. We must have the right culture as well. We are battling to recruit and keep our good people. The answer to "Who?" solves my finance, accounting, marketing, construction, safety and sales issues. **I must answer this question first, as talent is a rare resource right now.**

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

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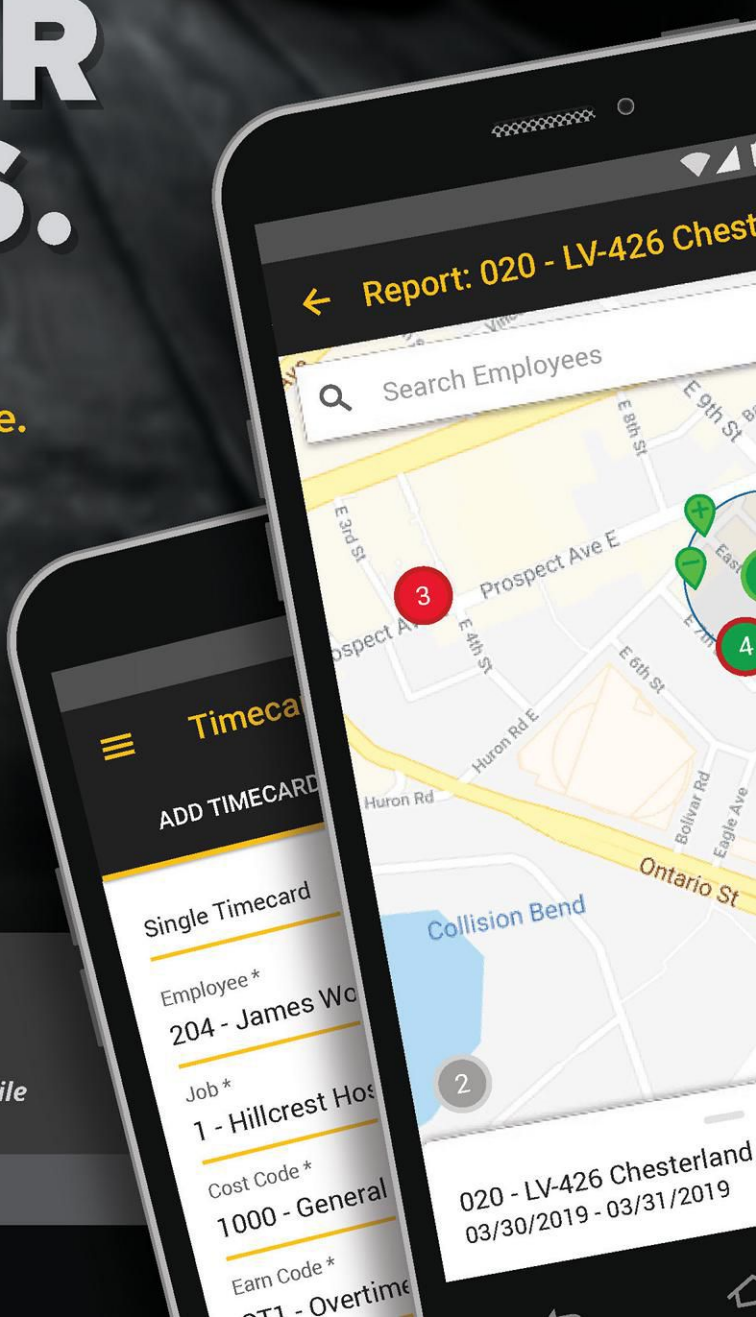

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Should I Stay or Should I Grow?

A study of 7 stages to unlock your company's earning potential



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.

Over 90% of all construction companies grow for several years, then stop and remain stuck at their current size indefinitely (adjusted for inflation). At its stuck size, a company's profit margins remain low, hiring slows, work suffers, and the company seems locked in place. So, what will it take to unlock the earning potential of your construction business?

The problem is not your employees, customers, competitors, subcontractors, suppliers or the market—it's you. To build a better business, you need to go back to the basics. Ask yourself what really matters to you? What do you want your business to become?

To build your business to its fullest earning potential, you must stop doing the little tasks and start doing what truly matters most to you. Review the following stages in the growth process and consider a new strategy to push your personal career development forward and get your company back on the road to growth.

STAGE 1: THE ENTREPRENUER

Entrepreneurs are never content working for others. They want to go out and make things happen and do things their way. Following company standards, rules and rituals makes them feel boxed in; they need to go it alone and make their own decisions about how to do business, who to hire, how many hours to work, which customers to do business with and how much money they can make. Then it finally happens. They're bitten by the entrepreneurial bug, quit their job and start their own business. After the initial shock, the entrepreneur must find the funds to get started. Fearless, the new entrepreneur knows they will figure it out.

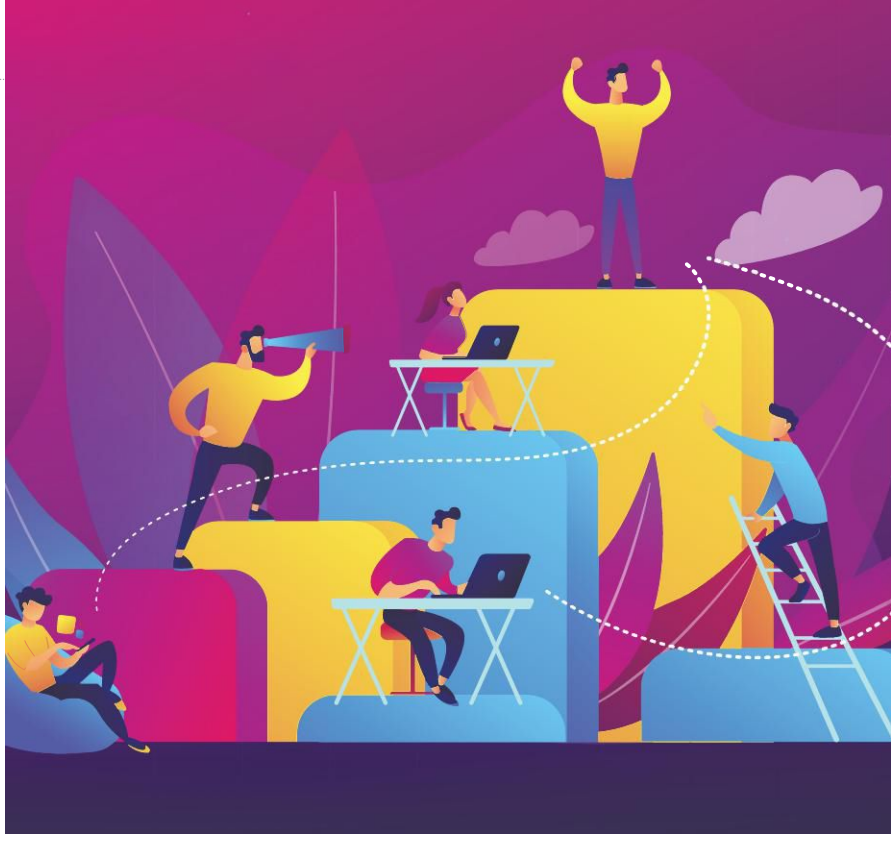
STAGE 2: THE SOLE PROPRIETOR

After starting the company, the entrepreneur moves on as a self-employed, sole-proprietor, small business owner. At this stage, they're the supervisor in charge of every decision, contract, customer conversation, price, purchase, delivery and job. They are on jobsites almost every day, performing the actual work with the help of a few other employees. Without them, there's no business and no company.

Some business owners remain sole practitioners forever as a choice, and that's OK. Many get forever-stuck with just two men and a truck, while others grow to staff the company with a foreman with two or three crews. Eventually, they have to make a decision: stay or grow.

STAGE 3: STAYING STUCK

The owner wins a few more contracts, and as the hands-on supervisor, performs excellent work, gaining even more referrals. Next, they rent a small office and hire a foreman or supervisor, more field workers and an office manager. At this stage, the owner is still serving as the



estimator, salesman, project manager, and general field superintendent, with everyone reporting directly to him.

The work keeps coming. The business owner next hires a junior project manager, estimator and full-time office manager to handle more of the workload. As a closeted micromanager, they begin to stress over everything. They are overworked and out of control.

Cash flow becomes tight, and too much time is spent chasing money, without much to show for it. The actual work becomes too much to handle, and the pressure of owning and running a business creates a high-stress environment for everyone.

This is where (and why) most small business owners get stuck, unable to manage, supervise and play a part in every decision. They know they need to do something different, let go of control, hire better employees, delegate, find new customers, improve service, improve costs, or find more hours in the day. In order to grow and be profitable, they realize they must build systems, structure, and a management team to oversee it all.

STAGE 4: PROFITABLE GROWTH

Instead of trying to handle every task, great business builders focus their energy on the vision of owning a business that works and delivers higher-margin results. By focusing their vision, changing their role and implementing a strategic action plan, their company will start moving in a positive direction.

They must replace themselves with written and trained operational systems; get the company organized so it will operate without their constant supervision; hire a management team that is accountable to run the company; and implement scorecards to track progress.

STAGE 5: SYSTEMS & MANAGEMENT TEAM

Building a great business takes time. Most owners require 1 or 2 years to turn the ship around and step off the hamster wheel. When the role of owner changes to the role of visionary leader, coach, system implementor and profitable revenue generator, the company's infrastructure will also need to change.

Start with an in-depth management team meeting to draft your strategic business blueprint action plan. Identify where you'll gain the biggest impact for your efforts. Typical top priorities include higher profit margins, sales revenue, field production, accurate estimating or experienced people. Make a list of what needs to be fixed and rank them—then get to work.

STAGE 6: BEST-IN-CLASS MARGINS

The top 5% to 10% of all contractors make the highest margins. They run a tight ship that attracts and retains the brightest employees, keeps reliable customers, does the best work and hits their targets. By focusing on your vision and investing in continuous improvement, you, too, can become one of the best. These improvements include high profit margins, steady growth, monitored business systems and processes, accurate estimates, the right people in the right positions, a safe workplace environment, a management-team-run company, a sales and marketing plan that delivers high-margin customers, steady workflow, and a wealth-building investment program.

STAGE 7: VALUABLE ASSET

At this final stage, owners become company stockholders, investors, developers and opportunity seekers. When your primary role is to be the owner instead of the manager or worker, you will finally find the time to seek better project opportunities, coach and mentor your key players, seek wealth building investments, develop new business ventures, and enjoy the benefits of business ownership.

No matter which stage of growth your business is currently in, there always comes a time to take the next step. Make your growth count by being prepared for what's ahead before you get there. **CBO**

The Difference Is in the Delta

Exploring variations between the leader & the first loser



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Contractors who live in the hard-bid world know the difference between first and second place is measured in dollars. The spread, or "delta" in the negotiating world, is often viewed in alternate terms. The fourth letter of the Greek alphabet—the delta—in math simply represents the difference or change in a certain quantity, or an increment of a variable. The delta may seem basic, but it's more complex than one might imagine.

On one side, losing a bid is always hard. For instance, how often has the losing side said, "There is no way they can do it for that price." Yet, 6 months later, the project is complete and the competition is still thriving. Of course, there are always competitors who do completely insane things in the bid process—bid at cost, below cost, no profit, etc. On the flip side, there are also competitors who are simply more efficient or better equipped than you are. A great litmus test is to have three estimators within one firm bid the exact same project. If you want to make it interesting, normalize certain aspects (e.g., labor cost, material prices) and examine the outcome. Without a doubt, there will be three dramatically different prices. This internal delta could be due to anything from crew sizes to methodologies.

HOW'S OUR BIDDING?

It is easy to take a home-field view of a bid loss because no one likes to think their approach was wrong. However, this is the time that the estimating team should conduct a post-bid analysis.

Assuming the firm knows the bid results and possibly the magnitude of the delta, conduct a careful examination of your competitor's approach through observing the following. (Disclaimer: This is not espousing or endorsing corporate espionage, but, rather, the observance of what is happening in the marketplace and reconnaissance on an ethical level.)

- *Approach*—For a site contractor, how is the competition approaching areas, such as mass excavation, clearing and grubbing, and hauling (as observed from a distance)? For a steel contractor, what sequence of erection is being taken? For other contractors, what is the approximate crew head count?
- *Vendor selection*—By simply driving past the jobsite, determine what vendors/trade partners are being utilized? What trucks are on-site? Are the names those of familiar players or new entrants to the marketplace?
- *General conditions*—If the bid tabulation is available, it is possible to reverse engineer for approximate general conditions? With all other areas equal, including assumptions on dumpster, buck hoists, cranes, etc., a firm could establish relative cost variances.

The endgame is not to recreate another contractor cost profile, but to determine

if the approach taken in the bid is the most effective way to build. There are an infinite number of ways to approach a problem, and firms must avoid fixating on their way as the single-handed solution.

WHAT DO CUSTOMERS THINK?

Another aspect of the delta that is often overlooked is customer perception. What about the delta works against you? For instance, are you lower in overall price, yet your competition is selected? Brand B may be more expensive if they are a known entity, so it helps if you have a relationship with the customer that you know will ensure their service.

Maybe the delta represents a higher commitment to quality or safety. The questions to ask a potential customer long begore the proposal or bid even goes in are:

- What are your biggest concerns when it comes to capital improvement projects within your firm?
- What are the biggest frustrations you've had with a contractor (or even Brand B)?
- Obviously, price is important, but what other things at your organization should I know (e.g., work in an occupied space, neighbor disruptions, conditions, etc.)?

Knowing the customer's hot buttons ensures the delta is covered appropriately and possibly helps trump deep-rooted relationships with Brand B.

WHY DO WE WIN OR LOSE?

Lastly, there is one other aspect of the delta that should be considered. If you are always the low bidder or contractor that is selected, this may be a great thing on the surface. Who doesn't like to win all the time? However, this begs an important set of questions. First: Is your firm selected for the right reasons? It is nice to think your firm is selected because of their quality and service, but if it comes down to a simple dollar decision because the customer sees no true differentiation between contractors, then you have a problem.

Every firm likes to think they are special, but you must confront the brutal fact that you may not be an industry leader, but simply the lowest number. Being the low bidder might mean you are more productive than the competition, which is a strong positive. However, careful introspection about how a firm starts a project and, more importantly, how it finishes, can be the difference between being like every other firm and being best in class.

The delta may also shed light on aspects of the business, such as overhead recovery and cost control. For instance, some firms introduce their organization to a customer with a low margin to get a foot in the door. However, achieving margin gain with these repeat customers becomes a harder proposition. If a contractor is failing to deliver top service, a customer will feel that delta and have a hard time accepting any price increase.

Firms that conduct a complete project analysis can learn jaw-dropping facts about margin contribution from customers, niches, sectors or divisions. Too often, firms are not only bidding below their project costs, but also failing to achieve a final gross margin that covers overhead. As these customers add to a firm's volume over a long period of time, the firm's profitability is negatively affected, and resource allocation is inappropriately assigned due to not understanding opportunity cost.

There will always be a first and rest of the pack. The leaders of top firms will always ask why they are or are not selected. Objectivity and a healthy dose of organizational improvement can mean all the difference between being the leader and the first loser. CBO



Circle 115 on card.

You Can Bank On That

4 types of financing that can help your business break through

BY GERRI DETWEILER

Many business owners are intimidated by the thought of discussing financing with a bank. Dan Wies is just the opposite: he interviews the banker to see if they understand his business.

"There are a lot of banks out there that say they 'do' construction," said Wies, vice president of a 48-year-old, family-owned commercial drywall contracting firm that serves clients in Missouri and Illinois. "Yet, in the course of my years in the business, I've found that very few of them really understand the construction industry."

For Alisa Bennett, vice president of Bennett Contracting Inc., an excavation and underground utility construction firm based in Bradenton, Florida, getting financing hasn't been a challenge—interest rates are the challenge. She and her husband founded the firm in 2000 to handle site-development packages for commercial projects, such as schools, parks, condominium complexes and retail establishments. Securing low-rate financing has become more challenging in recent years. "We were spoiled by so many years of low rates," said Bennett.

Just as choosing the right employees can make or break your business, choosing the right financing can make a significant difference in the success of your business. If you're considering financing for your construction business, the following are four options to consider.



1. BANK LOANS/LINES OF CREDIT

For most small businesses, loans or lines of credit are the most popular choices, and many owners turn to their bank or credit union first. The 2019 Small Business Credit Survey (SBCS) compiled by Federal Reserve Banks revealed that 85% of business owners surveyed applied for this type of financing. And of those who were successful in securing a loan, most were satisfied with the cost of financing they received. In fact, 67% were satisfied with the financing they received from a large bank, and 79% were satisfied with financing from a small bank.

Term loans offer a fixed amount of funding for a fixed period of time, and sometimes at a fixed interest rate. A line of credit offers a credit limit against which the firm can borrow as needed and pay off to replenish the line. Term loans are popular when firms need a specific amount of financing to meet a specific need. A line of

credit is more flexible, and interest is only charged on the amount used, so it's often used to solve cash flow issues or as a backup plan for unexpected expenses.

The biggest drawback with bank financing is the time involved to find the right financial institution and complete the paperwork required. In the SCBS survey, a long wait and difficult decision process were cited by business owners as the top challenges associated with bank funding.

"The most recent bank we did a deal with took a little time," said Wies. "They went through our financials and got an appraisal on a property. The start to finish of this deal was around 12 months. We vetted them as much as they vetted us."

Bank loan underwriting will almost always require a personal credit check of the owner(s) and may also involve a business credit check. Detailed financial information will be required as well. Many banks have pulled back on making smaller loans. For some banks, $150,000 to $200,000 is considered a small loan.

2. SBA LOANS

Bennett Contracting recently took out a Small Business Administration (SBA) 504 loan to fund property improvements. "It's been one of the best experiences I've personally had with financing," said Bennett. She found the application process "long and tedious," but ultimately worth it. "The end result is that 40% of our mortgage on our business property is a 20-year fixed loan at just 2.99%," she says. "Where else could you get that kind of deal?"

The program Bennett Contracting took advantage of is just one of several SBA loan programs available. The SBA doesn't make loans; it guarantees them. Funding comes from financial institutions around the country. For many of the programs, loan amounts go up to $5 million (some are lower), and proceeds can be used for a variety of purposes. There are SBA loans for purchasing commercial property (at least 51% owner-occupied), for working capital and to refinance debt.

The popular 7(a) loans for $350,000 or less will require the lender to prescreen the application using a Fair Isaac Corporation (FICO) score called the Small Business Scoring Service (FICO SBSS) Liquid Credit score. The owner's personal credit report data may be analyzed along with business credit data and even financial information. The SBA requires a minimum score of 140 out of a maximum of 300, but many lenders want to see scores of at least 160.

While the SBA has minimum requirements, the lenders that make these loans may also impose their own requirements. A rejection from one lender may mean you're not a fit for that lender, but it doesn't necessarily mean an SBA loan isn't right for you. Learn as much as possible about why you were turned down and consider talking with other lenders.

3. EQUIPMENT LEASING & FINANCING

Construction projects require large equipment, and any decision about what equipment to acquire will also involve an analysis of how to pay for it. Equipment financing has been key to Bennett Contracting's financial success.

"We primarily use financing for large equipment purchases," said Bennett. "We regularly purchase excavators, loaders and trucks, and we attempt to shop for the very best financing deal available." She's not shy about asking for a better deal, and recently it paid off. "At the end of 2018, we were able to purchase a large, $180,000 excavator for 0% interest and a $70,000 roller for 2.65% interest," she said.

The fact that the equipment serves as collateral for the loan or lease means lenders may have somewhat more flexible criteria for approval. But no lender or lessor wants to repossess an excavator. So, just as with a loan, make sure you've checked your business and personal credit scores and are prepared with financial data to share as requested.

4. FACTORING

Eight years ago, Kevin Christensen and Jordan Keith joined HK Composites, which manufactures insulated concrete sandwich panels used in construction projects around the world. They were essentially relaunching the company and relied on a patchwork of funding sources, including personal funds, microloans, and loans from friends and family members.

HK Composites has been on a growth trajectory ever since, but even with significant revenues, finding traditional financing has been tough. One bank turned them down for a bank loan but referred them to a subsidiary that provides invoice factoring. It's been a crucial source of financing for their business ever since.

"Our customers typically pay within roughly 60 to 70 days, but most of our suppliers require us to pay within 30 days net," said Christensen. "Factoring allows us to borrow against our invoices. In many cases, as soon as our customer receives the product, the lender will lend us 80% of the total invoiced amount. Essentially, this gives us immediate cash."

The cost of this type of financing varies, but effective rates of 20% to 35% or more are not uncommon. HK Composites has up to 90 days to repay the factoring company, and the fees are based on how long it takes to pay it back. "Factoring is expensive money, and we try to avoid it if we can, but without a traditional line of credit, that is very difficult," said Keith. CBO

Gerri Detweiler is a business financing and credit expert. She's education director at Nav, a site that matches business owners to their best financing offers based on their credit. Visit nav.com.



5 Steps to Better Project Communication

How your company culture is affecting customer satisfaction & litigation risk

BY JEFF KOZEK

There's a common quip in the construction industry: A badly planned project will take three times longer than expected, while a well-planned project takes only twice as long as expected. Though many expectations of construction projects are based on this concept, there are proactive steps that contractors can take to reduce the litigation risks that arise and create such delays during the construction process.

Often, construction managers take an informal approach to potential conflicts, avoiding communicating about problems in the hope they will be resolved or minimized before deadlines are affected. But, developing a stronger company culture through project planning puts the framework in place to address disruptions and defects immediately so that they can be remedied timely and effectively.

The process of creating a construction project plan needs to be as thoroughly undertaken as the project itself. Each step toward completion should be contingent on the successful execution of the one before it. While some contractors take a detached approach in which each stage, from preplanning to finish, has its own checklist, a culture of "process connectivity" strategy takes the long view. By developing a more cohesive planning process, companies can enhance performance and reduce litigation risk.



Too many project managers are focused on specific tasks and on moving to the next one as quickly as possible. The pressure to hit deadlines and avoid additional charges pushes the crew forward with the mistaken notion that any deficiencies that arise can be cleaned up in the end. These shortcomings often represent a significant disconnect between the project's end goal and the people who are decision-makers.

However, process connectivity encourages the team to apply foresight and anticipate potential claims categories to help eliminate surprises over the course of the work. Identifying weaknesses during preplanning is a straightforward way to put the company and managers in a better position to adapt and adjust.

One example that can create delays is the inability of contractors to provide sufficient skilled workers across the industry. Contractors and developers take on greater risk with crews that are too small and/or ill prepared for proper and timely installations. Rather than ignoring this deficit, management should have their personnel well-trained before a job begins and have foremen in place to

keep the crew on track for adherence to good construction practices. This may seem like a sizeable investment, but the commitment is a difference maker in reducing the number of costly claims and how they're resolved. The following are five concepts to help move from a process of detachment and reduce litigation risk:

1. *Take the long view on projects*—Consider the whole project before you begin any stage of planning. Design each stage according to its impact on the end result so that nothing gets lost or downplayed as work progresses.
2. *Embrace a realistic timeline during preplanning*—Submitting a proposal for a rushed building process is a sure way to create conflict. Focusing all of your team's attention on creating a winning bid ignores the upcoming work in favor of the short-term reward. Planning a more realistic timeline for work reduces litigation risk.
3. *Recalibrate through the process*—Contractors are not the only ones who experience obstacles that delay work or make it more costly. By taking a proactive approach to continually reevaluate the elements necessary for each stage, there is increased communication about progress and fewer surprises throughout the project.
4. *Communicate with customers frequently*—Expectations set the tone in many industries, but with so many external factors that can affect a construction project, keeping customers up to date on changes and problems through written notification reduces the risk of misunderstandings and dissatisfaction. Ultimately, the schedule can help demonstrate the effects of changes, delays, interruptions, etc., on the quality of work.
5. *Make your culture of process connectivity part of your brand*—Dependability is a major factor in selecting a contractor, one based on your ability to see a project through to the end as expected, without unresolved issues like litigation. Professionals would rather put their investment in the hands of someone who brings value to the project through reliability and partnership than one who adds unnecessary burdens due to short-term vision. **CBO**

Jeff Kozek is a principal at Resolution Management Consultants (RMC), a nationally recognized consulting firm in Marlton, New Jersey, specializing in avoiding, minimizing or resolving conflicts during construction. Founded in 1993 by veterans in construction, contracting and engineering, RMC helps private owners, public agencies and contractors achieve project goals or resolve disputes. Visit resmgt.com.





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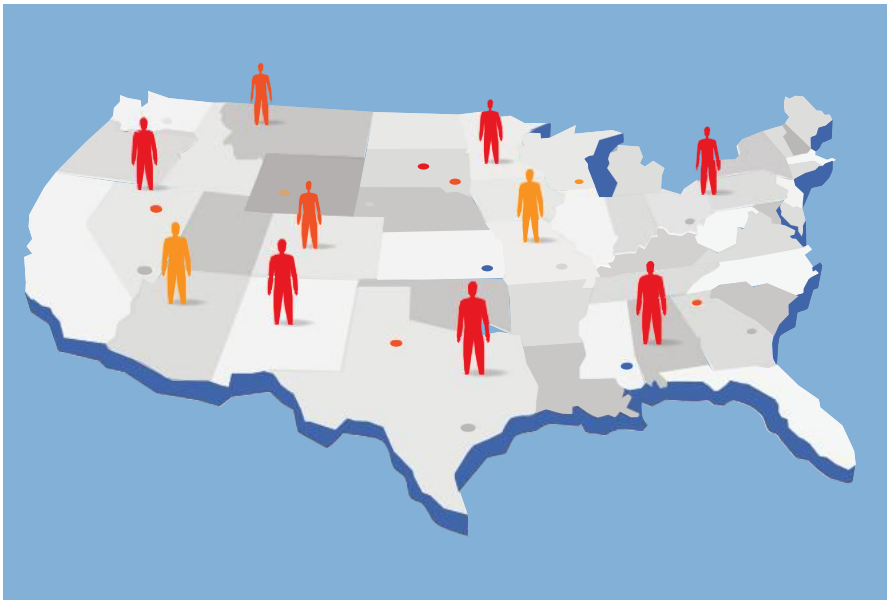
How to Create a Qualifier Contingency Plan

4 steps for hedging your business against multistate licensing issues

BY CHRISTIAN HARING

Getting a contractor's license is a complicated, time-consuming process. As a result, many large construction companies end up relying on a handful of qualifiers for licensing across a substantial operating territory. In fact, it's not uncommon for a company to have a single qualifier in a dozen states or more. This can leave the firm in a tough position if a qualifier suddenly departs or needs a leave of absence. In many states, firms have 30 to 60 days to appoint a replacement, which is not a lot of time considering the many steps that go into the contractor licensing process.

Creating a qualifier contingency plan is a simple, low-cost effort that mitigates those vulnerabilities while providing the added benefits of developing your qualifier pipeline and facilitating business development. Once you've completed the plan, you'll have all the information you need to respond quickly and effectively to the loss of a key staffer.



1. ASSESS YOUR LICENSING FOOTPRINT

Map out all the states where you're currently licensed and then layer in attractive geographies where you might benefit from obtaining licenses over the next 2 years. Then, research the licensing classifications, requirements and timelines in these new states. What licenses will you need to work in each state, and how far in advance should you begin the process when it comes time to pursue them? Do you need specialty licenses in any of those jurisdictions? Be sure to include the steps in each state for providing notice and appointing a replacement qualifier.

2. AUDIT YOUR QUALIFIER FORCE

Once you've mapped out your current and near-term licensing needs, the next step is to do the same with your cadre of qualifying professionals. Identify your qualifiers in all of your licensed states and document their license information. Then, for each state, consider what would happen if your qualifier left today.

Could you appoint a replacement within the time allotted by the state? Do you have any staff in that office who could step up and obtain a contractor's license? Do they have the required experience? Is it documented according to state requirements? Documenting experience is a challenging aspect of contractor licensing, leading to rejected applications.

Now, look at the new states you identified in step one as promising targets. Do you have staff who could qualify for

licenses in those states? How about backup qualifiers in case those staff members are unavailable when the time comes to enter that state?

3. ADDRESS ANY DEFICIENCIES

For any states where you lack a qualifier and backup, create a development plan for staff who could step up to qualify. Invest in training your B-team, if needed, and encourage all interested staff to carefully document experience with an eye toward state requirements.

4. CREATE THE PLAN

Now, it's just a matter of evaluating the results and putting together a plan of action. First, assess the depth of your bench. Ideally, you should have at least two staff members who are either already licensed or are qualified to obtain a license for every jurisdiction you included on your list. Wherever you lack a backup, identify staff members who have the potential to move into a qualifying position. What steps would it take to prepare them for licensure? Can you take those steps now?

You should also carefully consider the licensing spread of individual qualifiers. Do you have qualifiers who are licensed over wide territories? If they left, what would that do to your operations? It may make sense to license a second qualifier in certain states to avoid overreliance on a single staff member. Your final plan should contain all of the following:

- Detailed licensing information for all of the states in your plan, including license classifications and specialty licenses, licensing steps and estimated timelines
- Detailed instructions and time frames for notifying the state and appointing a replacement qualifier
- A primary qualifier and backup qualifier in each state, including documentation of experience and other information required to obtain a license
- A staff development plan for addressing any deficiencies

Your plan should be shared with more than one staff member to further protect your firm from unnecessary disruption. Once you have created it, your plan can be maintained with annual updates so it is always ready to deploy. CBO

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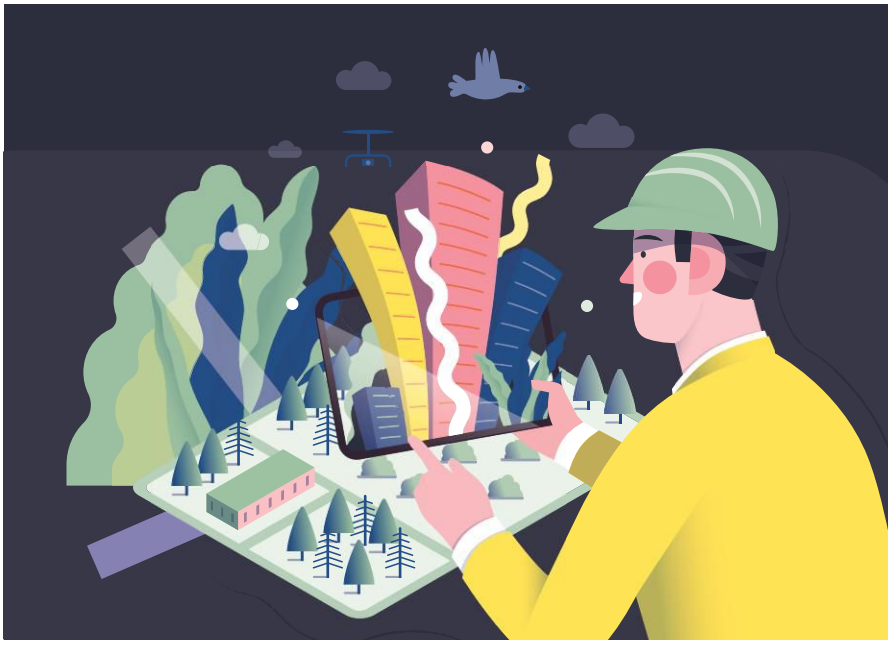
Check 113 on index.

The Devil's in the Details, but the Margins Are in the Data

Monitoring & managing the right information on a connected jobsite

BY JOSH BONE



I have done a lot of research over the past few months on how data is impacting other industries. This research has compelled me to create a new presentation, which I am now rolling out on the JBKnowledge ConTech Roadshow events, along with other selected conferences where I have been invited to speak. It's amazing how data is changing the world around us.

Take, for example, the way scientists and philanthropists spend their money fighting diseases like Parkinson's. The Michael J. Fox Foundation for Parkinson's Research revolutionized the way doctors are treating the disease through the collection of data. Opposed to the old way of testing specific drugs on small control groups (which was extremely time consuming and expensive), the foundation compiled a massive database of people diagnosed with Parkinson's from around the world and started texting them three simple questions every day—questions, such as: How do you feel today? What did you eat for lunch? What exercises did you do? What medication(s) are you taking? What is your medication dosage?

This data has led to the fastest progress of treating a disease in the history of medicine, which I find particularly fascinating. So, I decided to investigate similar uses of data my audiences could relate to and stumbled into the new world of sports analytics. As a sports fan, I was vaguely aware of the term "sabermetrics" and with sports analytics in general, but I had no clue about the level at which they are impacting the games I watch. In every pitch thrown, every formation assembled, every play called today in baseball, basketball, soccer, hockey and football, data plays a huge part in the decision-making process.

Who knew LeBron shoots 11% higher from the left side of the basket than the right? Who knew coordinators have been collecting data and know that when a team lines up in formation on the 32-yard line on third down with 7 yards to go until first down, that they are more likely to run a certain play? Today, change is occurring quickly, and there are a lot of important decisions to make. Everyone wants to make more informed decisions that improve their outcome—sports and construction professionals alike.

Construction is known as a high-risk, low-margin business. Any time contractors can decrease risk and improve margins, they should aggressively pursue these

"The key is making data-driven decisions & allowing us to track trends we didn't know were related before. We want to get more into predictive analytics, automation & alerts, but we have to lay the foundation now & ask the data the questions that we really want the answers to."

- Luis Berumen, *Bartlett Cocke*

new methods. I believe that, just as it is in other industries, data is going to fundamentally change the architecture, engineering and construction (AEC) industry in the coming decade. Companies like Autodesk, Procore and Trimble are investing heavily in tools that collect project data and in turn provide their users with insights, which results in decreased safety incidences, increased productivity through off-site construction methods and more certainty in schedules. Going forward, companies are going to be at a competitive disadvantage if they are not able to take action on their data.

Using simple apps on mobile devices is a great place to start. Tablets and phones are important tools on a jobsite, as they enable us to capture real-time data in a way that wasn't possible prior to cloud-based technologies. If you are still using paper-based forms, there are numerous apps available that enable companies to turn their paper forms into digital forms, allowing them to collect more data. And it is all about collecting as much data as possible.

The current world of construction reminds me of the Donald Rumsfeld quote: "There are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know." I believe there are so many unknown unknowns due to lack of standard operating procedures and siloed information that contractors do not know if they are making money on a job until sometimes long after the job has been completed. The devil's is in the details, but the margins are in the data.

You must first collect more data than you need to start defining project and department-level key performance indicators (KPIs). KPIs are important for all companies to define, as they provide a focus for strategic and operational improvement, create an analytical basis for decision making, and help focus attention on what matters most. Knowing where to start in this process can seem daunting, but it all starts with measuring your current processes through collecting data.

You might receive pushback from your project teams, saying that they are too busy to fill out all the forms on a regular basis. But it is everyone's job in management to communicate the importance of collecting this information so that you can act on the data to improve project outcomes. There is so much to learn from the information you collect at various stages of design and construction, but you have to be diligent in sharing what you are learning from the data with your project teams so that they have proof the data is impacting their work.

There are already numerous uses of construction data I have found in my research that could have tremendous value on your jobsites today. National Electrical Contractors Association (NECA) has been collecting data for years on overtime productivity. Who knew that after 3 weeks of working 60 hours, a worker's productivity decreases by 5% each week for the following 4 weeks? What percentage of your jobs are carrying overtime, and how many are hitting their scheduled delivery date?

How would it impact your decision-making process if you knew with a high level of certainty that workers making less than a certain amount were 30% more likely to get hurt on the job? What if you were confident that educating your project managers resulted in 20% less turnover in your employees?

These are just some of the things that data can tell us. I challenge you to explore areas of your business where data can reduce risk or increase your margins. Gaining insight into your current processes is critical to your future success. You can only manage what you can measure. **CBO**

For more than 2 decades, Josh Bone has been implementing, training and presenting construction technology solutions to architecture, engineering, construction (AEC) owners and professionals. Bone specializes in identifying best practices and methodologies for integrating building information modeling (BIM) and mobile applications into everyday workflows. Bone has served as manager, director and vice president of consulting and business development at JBKnowledge, Graphisoft and Stanley Black & Decker. Visit stanleyblackanddecker.com.



5 Digital Policies Every Construction Business Needs

A practical guide to minimizing risk & maximizing opportunity

BY KRISTINA PODNAR

In today's construction business world, the processes of creating and operating your website, executing online advertising, building your brand through social media, and managing subcontractors through online tools and systems are just par for the course. But, if you are not versed in the risks that accompany these digital undertakings, it can pose serious threats to your business. The following are some key issues that arise during these digital ventures, what you should know about them, and what you should do about them.



1. PRIVACY

Laws and regulations regarding online privacy vary by country, state and even industry—as do the penalties, which tend to be significant. For example, if you are bidding on a construction project in the European Union (EU), you need to know about the General Data Protection Regulation (GDPR). The law went into effect May 2018 and serves to protect the private data of EU's citizens, including work email addresses and cellphone numbers. If your company only operates in the United States, you still need to have privacy at the forefront of your mind. For example, in 2019, many construction companies will need to start complying with the California Consumer Privacy Act (CCPA). It's similar to GDPR but extends to manufacturers and installers of internet of things (IoT) devices.

What to do?

Create a spreadsheet that documents which laws and regulations apply to you; the countries, states and industries they apply in; and what you need to do to become compliant. If you're starting from scratch, it's almost impossible to do everything at once. In this case, your best strategy is to prioritize policy development based on your level of activity in a particular country, state, industry, as well as the potential for lawsuits and penalties.

2. SECURITY

According to TechHQ, in a recent study of both small and midsize organizations, the construction sector ranked as having the highest proportion of hack-prone employees. A whopping 87% of small business have no data security policies for their employees. Consider the following statistics:

- Many small businesses don't have an employee password policy that

addresses things like the characteristics that make a password secure, how often the password should be changed, the importance of not writing passwords down or sharing them, etc.
- Of those using a password policy, only 35% strictly enforce it
- Only 31% install regular software upgrades
- Only 22% encrypt their databases

What to do?

There are plenty of online resources for employee data security best practices. Find the ones that make the most sense for your company, document them in a digital policy (including the consequences for not following the policy) and implement them. If employees don't take the policy seriously at first, you may have to enforce the repercussions until they do.

One reason cybercriminals target small businesses is that they know how expensive top information technology (IT) talent is, and they know that few small businesses can afford it. Fortunately, there are plenty of security-as-a-service firms that can provide top talent, and outsourcing to them is a smart choice for small businesses. The PCI Security Standards Council LLC suggests considering outsourcing website hosting, payment processing, data processing and storage, vulnerability testing, and breach monitoring and mitigation.

3. INTELLECTUAL PROPERTY

As a construction professional, you face myriad issues related to intellectual property during complex projects, including patents, copyrights, trademarks and trade secrets. Intellectual property disputes can create substantial economic risks and even completely shut down an otherwise successful construction project. In a market with a hodgepodge of laws and enforcement efforts, copyright infringement and theft of intellectual property is complex and expensive.

What to do?

Protecting your intellectual property on the front end, with a copyright or trademark, before it's stolen or pirated, can save you a lot of expense and hassle down the road. Even the smallest businesses can and should protect their intellectual property.

So decide which strategies you're going to employ, formalize them in digital policy and ensure that all employees follow the policy's requirements. For help getting started, check out "10 Ways to Protect Your Intellectual Property" (inc.com) and "How to Protect Your Intellectual Property the Right Way" (forbes.com).

4. ACCESSIBILITY

Accessibility refers to whether and how well your site is designed to accommodate users with challenges in sight, hearing, mobility, etc. While most construction businesses are familiar with the Americans with Disabilities Act (ADA), many don't realize that courts have ruled that it applies to digital spaces as much as it does to physical ones.

According to Seyfarth Shaw LLP, the number of lawsuits filed against businesses whose websites aren't accessible has skyrocketed over the last few years. About one in five Americans have some disability. Do you want your website to broadcast a "You're not welcome here." message?

What to do?

One of the most important things you can do is add an accessibility statement to your website. The point is not to claim accessibility you haven't achieved, but to make a good-faith statement describing your awareness of the problem and your commitment to fixing it.

After adding an accessibility statement, there are many steps involved in achieving accessibility compliance, including adding captions to videos and descriptive alt-tags to images; using high-contrast text on light backgrounds; providing a number for people to call if they're having problems using your website.

But that's just the low-hanging fruit. You should consider additional ways of achieving accessibility and develop your policies based on what works best for your business. The Web Accessibility Initiative's website (w3.org) and essentialaccessibility.com are good places to begin researching.

5. SYSTEMS

Many businesses use so many software products that it's almost impossible to keep up. The most recent Ponemon Institute study on data security, the fourth edition of "The Cyber Resilient Organization," revealed that 65% of respondents said they had a hard time prioritizing what systems to patch first. The time required to implement the patches (particularly for small businesses with inexperienced employees) adds to the cost and inconvenience.

What to do?

The best way to address this issue is through digital policies. A policy that establishes a time table for reviewing channels and establishes triggers for acting helps keep small problems from accumulating into an impossible mess. When your policy tells employees what to do and the order in which to do it, you reduce the risk of a time-wasting debate and make sure the most important patches are prioritized. CBO

Kristina Podnar is a digital policy innovator. For over 2 decades, she has worked with some of the most high-profile companies in the world and has helped them see policies as opportunities to free the organization from uncertainty, risk and internal chaos. Podnar's approach brings in marketing, human resources, IT, legal, compliance, security and procurement to create digital policies and practices that comply with regulations, unlock opportunity, strengthen the brand and liberate employees. Podnar is a principal at NativeTrust Consulting LLC. Visit kpodnar.com.



CFMA's Annual Conference & Exhibition Provides Direction for the Industry

2019 event insights & economic guidance from the experts

BY KATHY WELLS

The Construction Financial Management Association (CFMA) is a nonprofit organization dedicated to serving the educational needs of the construction industry's financial professionals. With more than 98 CFMA chapters in major cities from Maine to Hawaii, the organization offers a conference, workshops, seminars and more to over 8,600 members in the United States and Canada. This year's Annual Conference & Exhibition was held at the Cosmopolitan of Las Vegas, June 1-5, in Las Vegas, Nevada.

Note: this conference was not created for the faint of math. These people are experts—advanced professionals who have undergone significant training to get to where they are now. They are controllers, chief financial officers (CFOs), managers, accountants, vice presidents (VPs), and more, all from general contractors, sub-specialty contractors, public accounting firms, heavy-highway contractors, construction management firms and others.

According to CFMA President and CEO Stuart Binstock, "We continue to ratchet up our content to provide more advanced sessions—members who attend the annual conference tend to come from larger companies that understand the knowledge transfer and networking









that makes the conference so valuable." And this year's conference drew record-breaking attendance totaling 1,888 attendees. In its eighth consecutive year of rising registration numbers, CFMA continues to ride a streak of success—it's something they know a bit about.

The theme of "Success Encompassed" was threaded throughout the conference's content and designed to remind us of the important roles we all play in the success and development of industry professionals. CFMA 2019-2020 Chairman Michelle D. Eastman, CCIFP, CFO at North Mechanical Contracting & Service in Indianapolis, Indiana, (pictured top right) came to hold her position by a combination of determination and happenstance. As is the case in many of our careers, we're often steered in one direction, but end up going another. In her speech, Eastman recognized several occasions when her career destination was driven by her own goals, rerouted by someone else's suggestions, or even halted by unforeseen circumstances. What's important to note is her determination to continue on the

journey. Eastman advised attendees to only pursue career destinations that they're truly passionate about (not just the next-highest title and larger paycheck), which sometimes requires a little extra support.

While conference sessions offer continuing professional education (CPE) certificates, for some CFMA members, it's about arriving to the destination with a few additional letters behind their names: CCIFP. The Certified Construction Industry Financial Professional (CCIFP) is someone who has voluntarily met the required certification criteria with regard to education, experience and a demonstrated understanding of the industry's body of knowledge. The CCIFP designation is accredited by the American National Standards Institute (ANSI) under ISO 17024:2012 and provides third-party verification of an individual's knowledge—essential to ethical financial management in the industry's complex environment.

The education offered by CFMA is used by construction financial managers (CFMs) to grow professionally and make strategic business decisions, and providing that education is a responsibility, the organization does not take lightly. Some of the top-attended sessions at this year's conference included "The Power of One: How One Attitude, One Action & One Person Can Change the World," "Advanced Work-in-Progress (WIP): It's Not as Simple as a Spreadsheet," Build Your IT Factor," and "Accounting Is More Than Numbers: How Finance & Accounting Can Add More Value."

In addition to the conference's four dynamic general sessions, 11 mini-conferences and 49 breakout sessions (including six advanced sessions and eight peer groups), CFMA reinforces its value with a great deal of resources, including a magazine, financial benchmarking studies and its CONFINDEX Quarterly Reading, a proprietary confidence-index survey of CFOs in the commercial construction sector. According to the June 2019 reading, "CONFINDEX saw a small increase during the second quarter of 2019; however, it will be remembered for what failed to happen as opposed to what did.

During 2019's initial quarter, CONFINDEX continued a collapse that began in 2017, but which gained momentum in late 2018. The first quarter reading on CONFINDEX was the lowest in many years (2012). Many construction CFOs have been unnerved by the combination of rising costs of delivering construction services and a sense that the current construction expansion is approaching its conclusion."

The full report goes on to deliver a verdict of "cautiously pessimistic," representing the feeling that CFOs are "concerned about broader macroeconomic forces in light of the fact that many economists and businesspeople are predicting the onset of recession in the U.S. sometime next year." CFMA Economic Advisor and Sage Policy Group CEO and Chairman Anirban Basu (pictured on page 22, bottom right) advised during his economic update session that several indicators point toward the possibility of an economic recession, based on factors such as U.S. unemployment rates, the gross domestic product, construction materials costs, global debt and the Architecture Billings Index (ABI).

For exhibitor Ajoy Krishnamoorthy, VP, platform and technology, and head of construction at Acumatica, attending the conference is an opportunity to learn more about the factors shaping such economic trends. "We gained an even greater understanding of today's economic trends and what to look for in the coming months for the construction industry," Krishnamoorthy said.

"In particular, many contractors now have a strong backlog, and it's a great time to prepare for the future and leverage technology to build an even more efficient business," he said.

A relative newcomer to the construction market, Acumatica has delivered enterprise resource planning (ERP) solutions to manufacturing, distribution, retail, service, software and technology industries since 2008. Now navigating an industry filled with burgeoning backlogs, Krishnamoorthy and his team will deliver cloud-based software to general contractors, subcontractors and home builders, and get them the information they need, such as job costing, reporting and customer relationship management data. And keeping an eye on the health of the industry is key to doing that well.

According to Basu, the industry need not melt down at the suggestion of a recession. Economic recessions have come and gone, and just because we're seeing some of the indicators we've seen before does not mean the construction industry's certain doom. Of course, it all relies on the outcome of several developing factors, including trade deals, an infrastructure spending plan, tariffs on steel, aluminum, etc., and the tightening of the fed. "Much of the negativity reflected in forecasts and in financial market volatility relates to things people believe will happen," Basu said, "But, important parts of the U.S. economy continue to perform well (e.g., consumer, corporate earnings, construction)."

The best way to safeguard your company against an impending recession is to make sure you're fit for defense, if or when the direction of the market changes. Make good use of the resources available from CFMA and visit cfma.org/kifi to keep up with the regularly tracked and reported performance of several key industry financial indicators.

CFMA's 2020 conference will be held May 30 - June 3, 2020, in Washington, D.C. Visit cfma.org to register and get more information. **CBO**

Kathy Wells is the editor of Construction Business Owner magazine.

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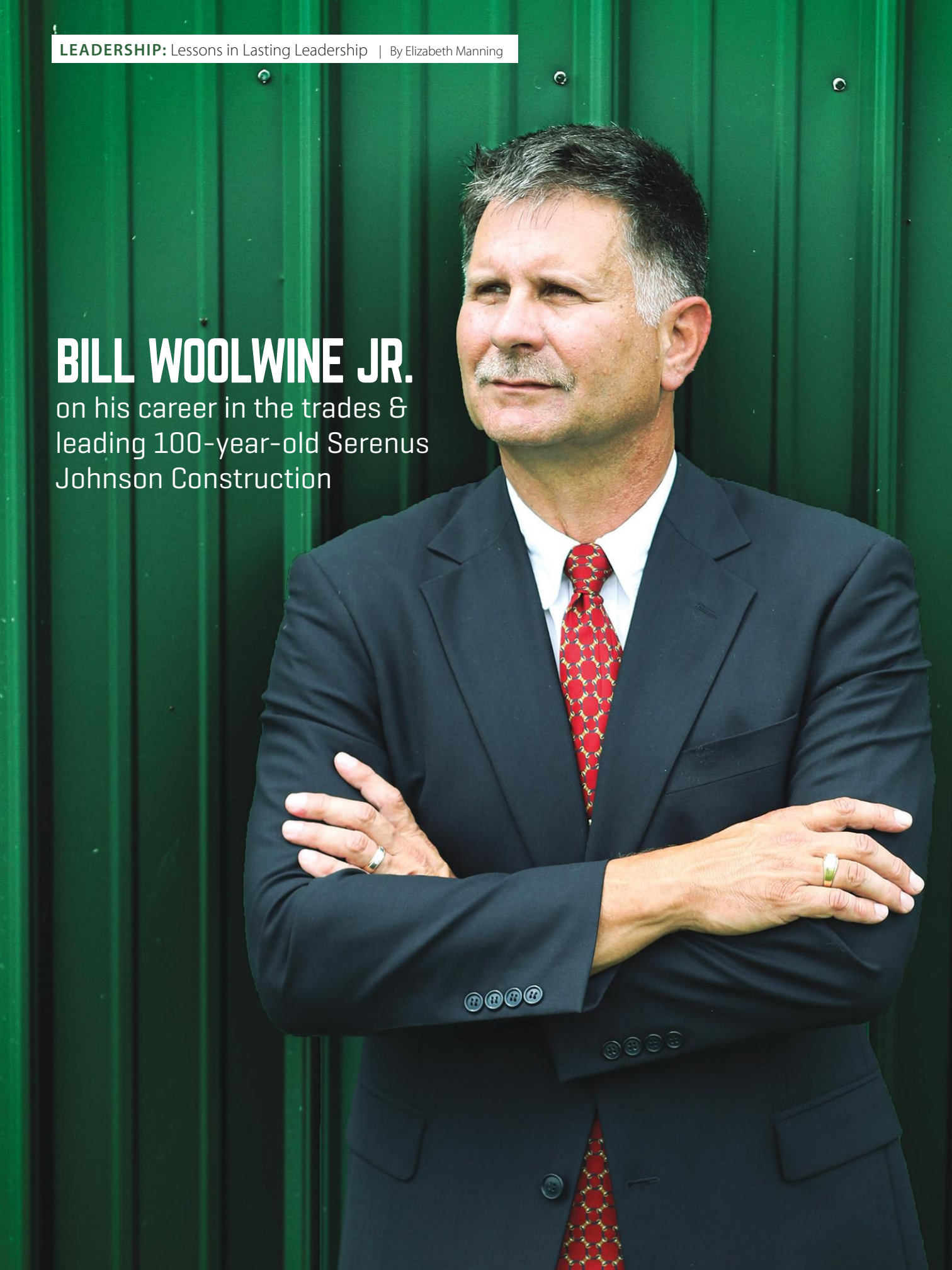

BILL WOOLWINE JR.

on his career in the trades & leading 100-year-old Serenus Johnson Construction

From apprentice to journeyman carpenter to project manager, all the way to president and owner of a construction company. It's the kind of story that makes working in an industry like construction worth the potential challenges—one where a graduate degree or connections in high places aren't the only routes to one day leading a company. Rather, a healthy work ethic and a passion for the job are sometimes all you need to go far in this business.

If you want to one day lead, though, you'll need to pick up the necessary skills somewhere along the way. For Bill Woolwine Jr., president and owner of Serenus Johnson Construction (SJC), based in Bay City, Michigan, acquiring those skills has been a lifelong process. And the company at which he acquired many of those skills has a long history in the construction industry.

SJC celebrates its centennial anniversary this year. The general contracting company was founded in 1919 by its namesake, Serenus Johnson. Johnson emigrated to the United States in 1912 and, after serving in World War II, returned to the Bay City area to start a family and, later, his construction company.

Johnson's son, Raymond Johnson, joined the company and took over in 1962 when his father retired. Raymond's son, Tom Johnson, continued the family legacy and served as president and owner from 1996, when his father retired, until 2014.

When Woolwine took over as president in 2014, Tom assumed the role of chief executive officer before retiring in 2018. With the company's history and its three-generation leadership legacy, the choice of who would lead SJC after Tom stepped down was likely a difficult one for the Johnson family. However, the family found an incumbent president who had, quite literally, worked his way from the ground up in the company.

THE PATH HE TOOK

It's this knowledge of all the different roles involved in the construction process that sets Woolwine up to be a better leader. He began working as a cooperative with contractors in high school, and, after earning an associate degree in construction technology and obtaining his state builder's license, Woolwine was self-employed for 2 years before joining a carpenter's union.

From there, he was hired as a journeyman carpenter for another commercial construction company—R.C. Hendrick & Son Inc. in Saginaw, Michigan—and worked for the company for a year and a half. In October 1989, Woolwine found his way to SJC as a journeyman carpenter.

Since then, his career trajectory has truly been about climbing the ladder. He went from working as a carpenter to becoming a carpenter foreman. Then, he moved into the company's office as a project manager and estimator. In 2001, Woolwine was named vice president, and moved to his current role as president and owner of the company in 2014.

In 2009, Tom asked Woolwine if he was interested in purchasing the company. Woolwine said he knew SJC was the company he wanted to retire with and didn't hesitate in saying yes. "It took 5 years of strategic planning before signing an agreement with SJC," Woolwine said. "I am pleased that I had those years to reflect on what my next role would require."

Woolwine says his entire career was invaluable in preparing him for his current role. "I've always had a passion for construction. From my perspective of learning the trade in the field, working closely with other craftsmen and other subcontractors allows you to appreciate the other talents and efforts [necessary] to complete a construction project," he said.

"It has been my view that construction will always be a team effort, and to be a part of a team, you need good leadership." Woolwine reiterates understanding the value of each team member's role as being imperative to his success as a leader.

THE COMPANY HE LEADS

From his perspective, Woolwine didn't expect the jump from vice president to president to be a large one where day-to-day responsibilities were concerned—he was already charged with looking for projects and the oversight of the project management division. However, he learned quickly that, as president, he was also responsible for the future of the company and its success.

"My thoughts turned to focusing on our management team and surrounding myself with great people," he said. "Our management team has always been strong, but I saw the need to expand to stay aggressive in the competitive market we live in."



Bill Woolwine Jr. (center) with his sons, Billy Woolwine III (left) and Justin Woolwine (right), both of whom work at Serenus Johnson Construction with their father.

As such, Woolwine's first move was to promote his oldest son, Billy Woolwine III, to the position of general superintendent in 2015. Billy was previously assistant superintendent and has been employed with SJC for 13 years. In his current role, Billy is tasked with overseeing the company's equipment and field crews. Woolwine then promoted his son, Justin Woolwine, to carpenter foreman, after Justin completed his 4-year apprenticeship. He has been with SJC for 11 years. Justin is charged with supervising prominent projects for the company.

It was also during this time that Woolwine recognized the need to expand the company's marketing strategy in order to find new clients and maintain standing customer relationships. He hired Emily Woodruff as assistant project manager and administrative assistant to spearhead the marketing division of SJC. Woolwine brought in Joel Keister to fill the role of vice president in March 2018. Keister has been in the industry since 1996. He is responsible for overseeing the estimating and project management divisions.

The team also divided the estimating and project management division into two separate departments. "I've seen great value in making this switch because it allows us to bid more work by freeing up the estimator/project manager role to spend more time in the demanding estimating world," Woolwine said.

With 100 years of success in the books, SJC has weathered quite a few storms. Woolwine said the lessons he has learned from the company's past leadership have been some of the driving factors in how he shapes his strategy today. One of those lessons? Stay optimistic. Construction, like anything else, will have highs and lows, and the industry will go through slow periods.

"Patience is a virtue, and if I've learned anything over my career, it's that we are going to have some slow times, but we'll have good times, too," Woolwine said. "Raymond told me that you should never overreact in good times or bad times, and that you cannot measure a construction company by one year, but an average of 5 years. Keeping an aggressive spirit is necessary to survive in this industry."

Woolwine said one of the secrets to SJCs success has been the choice to operate conservatively—whether in good times or bad. On the day he signed the contract to take over the company, Woolwine said Tom's advice to him was simply, "Make it better." According to Woolwine, he's taken Tom's statement to heart and made a solitary effort to continually improve.

Under his leadership, every employee is expected to be what he refers to as an "ACE"—have a positive attitude, be a good communicator and strive for efficiency. When asked to describe his leadership strategy for the SJC team in particular, Woolwine said much of his success as a leader comes from three practices:

1. *Be an encourager*—"I've seen great dividends come from investing time with individuals to encourage them and enhance their performance. There is value in treating people with respect and how you would want to be treated," he said.
2. *Stay diverse*—"SJC has always been a diverse general contractor. My intention is to stay on that path—with our eyes wide open to other opportunities in our region," Woolwine said.
3. *Be intentional*—Woolwine said the SJC management team has been charged with intention to be on the lookout for new opportunities in the industry and their own circle of colleagues.

How to Be a Better Leader

For Woolwine, being a strong leader is a continual work in progress. Here are a few action items he keeps top of mind:

1. Always look for additional opportunities.
2. Stay on the cutting edge of technology—both in management and in the field—to make your teams more productive.
3. Look for the most efficient methods. The better you manage your time, the more successful you'll be.
4. Training is key, so maintain a focus on continuing education in the areas of estimating, management and labor.

THE ADVICE HE GIVES

While Woolwine has only been in his current role for 5 years, he has decades of industry experience, including quite a few years heading up a construction team. And over the years, he's learned a few things about what works and what doesn't. Here's his advice for strong leadership in an industry where labor is tight and work is in flux:

1. *Efficiency*—Woolwine said he and his team see the value of continuous training for the company's field and office personnel. "It takes a lot of effort to stay current with modern technology, and to stay successful, we cannot fall behind the times," he said.
2. *Lean management*—This approach involves running the entire crew with the "intent of continually improving efficiency and quality in all areas." In the current construction climate and skills shortage, it's imperative that any team maximizes the talent that is already present or available. "I also work on the Associated General Contractors' Workforce Development Committee, and it's always been my desire to … make the younger generation aware of opportunities in the skilled trades," Woolwine said. He's also on the local joint apprenticeship and training committee for Carpenters Local 706, Michigan Regional Council of Carpenters and Millwrights, and is involved in the apprenticeship program.
3. *Advocacy*—Woolwine reiterates the importance of advocating for and hiring apprentices. "We must be intentional about integrating our apprentices with our skilled tradesmen to improve our future workforce," he said. CBO

Elizabeth Manning is the managing editor of Construction Business Owner.

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THE NECESSITY OF POSITIVE INFLUENCE, INDUSTRYWIDE COLLABORATION & PROACTIVE TRAINING

The skilled workforce shortage is not a new topic to those in the construction industry. By 2031, 41% of the current workforce will retire, and exiting baby boomers will only continue to exasperate the shortage. How many of your employees plan to retire in the next 5 years? It takes 8 to 12 years for a craft professional to be fully trained and gain competency—have you begun training the next generation yet?

Proactive training is something you can't afford to overlook. The research compilation "Construction Industry Training in the United States & Canada" found that with a 1% labor-cost investment, expected training benefits include an increase of productivity by 11% and a decrease in turnover by 14%, absenteeism by 15%, injury by 27% and rework by 25%. These numbers prove the benefits of training far outweigh any cost of time and money.

However, before you're even able to start training, you need to have a pipeline of workers entering the industry. By 2021, according to Forbes, Generation Z (those born between 1995-2012) is expected to make up one-fifth of the workforce. And, according to recent article by Kelsey Zibell at National Center for Construction Education and Research (NCCER), Gen Z employees are looking for five things: financial security, career advancement, diversity, both collaboration and independence, and technology.

Gen Z's priorities are important to take note of—the industry needs these young professionals to choose construction. And the industry checks all of their boxes. Most craft careers have the benefit of being financially stable without needing to accrue massive college debt. Apprenticeships and technical schools provide training at little to no debt. And the salaries are nothing to shrug at, either.

The trades offer a wide range of crafts and career paths to choose from. And while the Bureau of Labor statics reports that only 9.9% of construction workers are women, the industry is making strides to be more inclusive than ever. In fact, women are projected to make up one-fourth of the industry by 2020.

Working on a jobsite requires teamwork while also necessitating personal responsibility, offering both the collaboration and independence Gen Zers are looking for. Sean Ray, director of craft workforce development at Sundt Construction, likened the sense of community he found in construction to that of the military and one of "brotherhood."

Additionally, from building information modeling (BIM), to drones, to exoskeletons, the advancements in construction technology appeal to digital natives who have grown up with technology at their fingertips. So why isn't there a greater rush of individuals signing up for training? Why is the industry continuing to face a skilled-workforce shortage?

INFLUENCE

Parents are some of the main influencers in the career decision-making process, and many parents, and even school counselors and teachers, consider college the only acceptable path to success, as noted in the research project, "Restoring the Dignity of Work."

A recent survey sponsored by NCCER provides insight to what parents are thinking in terms of their children's futures. Over 500 parents in Virginia responded to the survey, and 81% would not advise their child to choose construction. Parents overwhelmingly saw the industry as tough (97%) and unsafe (52%).

However, there is hope—82% of parents would support their child to some degree if they chose a career in construction. And more importantly, 74% would strongly support their child taking an elective course in middle school or high school that teaches technical or occupational skills. This is where the industry has a chance to make an impact.

There are several steps that the industry can take to transform the U.S. workforce, and the first of these is to establish and strengthen career awareness and education opportunities. The construction industry rallying behind a public-awareness campaign has the potential to change parents' opinions and correct misconceptions.

The "Build Your Future" initiative, established by NCCER in 1996, was created to combat negative opinions and show the great depth of construction through a public-awareness campaign. The initiative

provides career steps from middle to postsecondary school, fact blogs, success stories, a free social media kit for any company to use in recruiting and changing public opinion of construction, and more.

COLLABORATION

Once parents are reached and, at the very least, their opinions changed from negative to neutral, the momentum needs to continue with local schools. Another step is to establish and expand collaboration between industry, education and government entities.

The construction trades program at Garret High School in Garrett, Indiana, has been in place for over 40 years, and the involvement of the community and the industry have been key to keeping the program successful. In Garrett, the community and industry are one and the same—area businesses remain involved in the program by interviewing the students, offering mentorships and providing gainful employment upon graduation. In addition, local companies provide funds and are active in the advisory panel.

Postsecondary involvement is just as important. Sundt Construction reached out to Central Arizona College in spring 2016 to discuss an apprenticeship partnership in heavy equipment operations, after which both parties realized there was room for improvement overall in the school's programing. Within 3 months, an updated and industry-vetted curriculum was being offered—a time frame unheard of in academia. Sundt led the way with specific craft competencies and skills they needed, which resulted in five customized academic pathways.

TRAINING

Building a pipeline of craft professionals is essential, and ensuring that you have the tools in place to train them vital. For contractors, NCCER's research compilation "Restoring the Dignity of Work" recommends measuring the performance and involvement of workforce development when awarding construction contracts. For both owners and contractors, commitment to workforce development should be a must.

Eddie Clayton, contracting and workforce development strategies manager for Southern Company, shared the following: "Our contractors are the employers of our skilled-labor workforce, predominantly. We have our own internal workers that we invest significantly in, training and developing training programs for specific skills limited to production, distribution and transmission of electricity, or natural gas."

"However, our contract workforce is much larger, and we spend much more money on our construction and maintenance activities through contracted labor than we do internally. We need to hire contractors who are actively involved in all facets of workforce development. We recently sent out a survey to find out where our primary contractors are in the engagement of workforce development and are developing a questionnaire with more specific



scoring metrics. At the end of the day, we'll only have the contractors who are most engaged on our bid list for our construction and maintenance projects," Clayton said.

Other companies, such as Exxon Mobil Corp., are beginning to implement similar systems. Still, the impetus falls to business owners to not only require their contractors to engage in workforce development, but to also encourage them to reap the benefits that training can bring to their company's culture.

Schaffhouser Electric provides commercial and industrial electrical services in Tennessee and Kentucky and has about 50 employees, all of which are in some sort of training. John Schaffhouser, president and chief executive officer, shared, "We've identified training as where we will separate ourselves from our competition." Part of the culture of this company is learning and working to get better. As the company recruits, relaying to potential hires how invested Schaffhouser Electric is in training is an important employee benefit that is also a big seller.

To build this pipeline of future workers, the industry must be involved—in schools and career and technical education, in training every employee to build up the skills of the workforce, in actively trying to change perceptions.

Somewhere along the way, the nation's respect of craftmanship has diminished. But industry representatives now have the chance to give construction a makeover. You and I have the opportunity to restore the dignity of working with one's hands and to show that construction is an industry of lucrative careers, successful pathways and advanced technology—that the skilled-trade industry is a great industry of choice. CBO

Rachel Burris is the communications manager at National Center for Construction Education and Research (NCCER). She has over 7 years of experience in communications and public relations, including writing and editing content for emails, social media, press releases, blogs and articles. She holds a bachelor's degree in English from the University of South Florida and a Master of Business Administration from Webster University. Visit nccer.org.



COMMON MISCONCEPTIONS & 10 CHARACTERISTICS OF SERVANT LEADERS

The term "servant leader" can be viewed as an oxymoron. How can a person lead and be a servant at the same time? A common misconception is that servant leaders are practically subservient to their followers. But that isn't true servant leadership.

A true servant leader leads with others in mind, but is willing to make decisions when the time is right. They build people up instead of keeping them down, lead by example and cultivate a culture of trust within their organization. Servant leaders are charismatic and often attract followers due to their willingness to acknowledge others.

COMMON MISCONCEPTIONS

It's not uncommon for an executive to wrestle with the idea of being a servant leader—"servant" often being the controversial keyword in question. Historically, the term has often been associated with indentured servitude or slavery. As such, there a number of misconceptions associated with servant leadership. Some of the most common misconceptions include:

- *Servants are subservient*—While one of the hallmarks of a servant leader is a desire to enable those around them to do their best, that does not mean they will offer unquestioning support. Servant leaders should do what's right for the group, even if the decision is an unpopular one.
- *Servants are slaves*—Slaves have no freedom and must do what's commanded of them without question. Servant leaders are not owned by their followers, and they have the free will to do what's needed while keeping everyone's best interests at heart.
- *Servants only serve their followers*—Servant leaders don't just focus on serving their followers. In a business setting, they serve all stakeholders. This includes not only partners and clients, but also employees.
- *Servant leadership isn't a leadership style, it's a philosophy*—It focuses on enriching the lives of those around them and building strong and ethical organizations. To be an effective servant leader, it's imperative you possess the right characteristics.

While servant leaders come from all walks of life, there are ten ideal characteristics they should possess. Read through the following to see which of these characteristics you feel are a fit with your leadership style.

1. Empathy

Are you willing to look at situations through the eyes of someone else? Are you willing to share their perspective? Empathy often comes from having an open mind. Servant leaders aren't afraid to put aside their personal viewpoints and show empathy toward others.



2. Willingness to Listen

Good leaders are willing to listen with an intent to gain understanding. Servant leaders give people their full and undivided attention and allow others to finish speaking without interrupting. If you strive to be a servant leader, it's crucial you put an emphasis on improving your listening skills.

3. Persuasiveness

Persuasion is a powerful tool that, when used properly, can take the place of fear or authority, inspiring people to follow you rather than regulating them into doing so. Servant leaders rely on persuasion to convince others to take action and take everyone into account when making decisions.

4. Emotional Awareness

Servant leaders should support their followers both mentally and physically, which means ensuring employees are working in a healthy work environment. Do they have the resources they need to perform their assigned duties?

Do they have support? Do they have sufficient training? Employees under a servant leader tend to be happier in general and often produce higher quality work as a result.

5. Foresight

We can all learn from our past experiences and strive to make improvements in the future. As such, servant leaders should be able to determine future outcomes by learning from past mistakes. They understand that all actions have consequences. It's the job of a servant leader to determine what those consequences are and guide their organization in the right direction.

6. Self-Awareness

Servant leaders should have the ability to step outside of themselves to see how their behavior and emotions affect those around them. This means not being afraid of your vulnerabilities and acknowledging your strengths and weaknesses. The more self-aware you are, the more you can confidently lead other people.

7. Sense of Community

Businesses run better by building synergy. This can be done by running your organization as a tightknit community. Servant leaders often hold relationship-building functions (such as parties, barbecues, etc.) to encourage people to get to know one another.

They may even set aside time before a work shift or a meeting to speak with employees on a personal level. Creating a sense of

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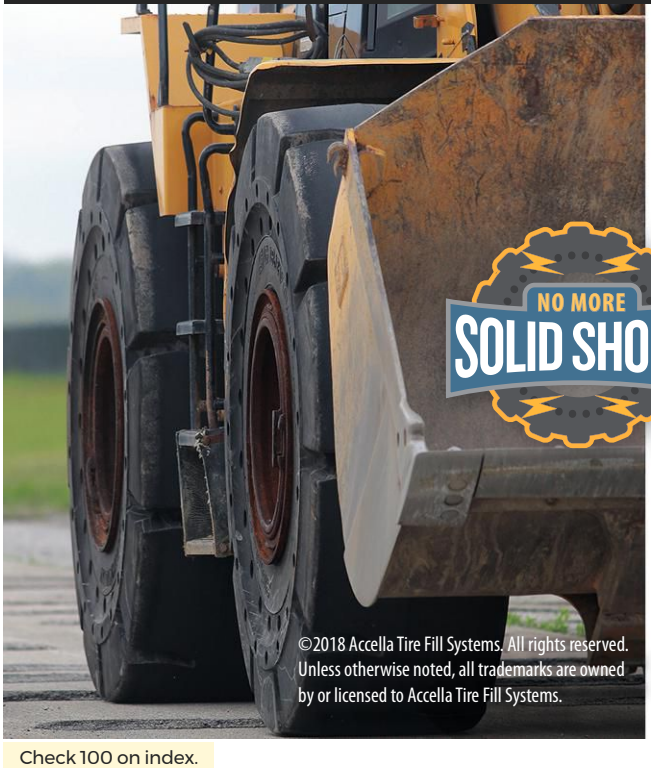

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community encourages a healthy work environment, which in turn creates an improved, cohesive workflow.

8. Accountability

Servant leaders are accountable for every employee in their organization, and they're willing to take responsibility when things go wrong. If a servant leader wants their employees to act according to the values of their organization, they must demonstrate those values themselves every day. Servant leaders lead by example and often do so by being accountable for their own actions.

9. Ability to Conceptualize

Servant leaders strive to see the bigger picture so they can plan for things to come later on down the road and always have the mission and vision statements of their organizations firmly in mind.

10. Commitment to Employee Growth

Servant leaders understand the value of growing their employees on an individual level. They understand that people make mistakes and are willing to work with and help employees grow and improve.

One way to promote growth and development is to identify employees' personal dreams and goals, and then give them assignments that align with this outlook so they can find fulfillment in their work.

BUILDING A STRONGER ORGANIZATION

While servant leadership is not a model that works in every organization, it is highly effective in the right environment. It can be difficult to identify a true servant leader for your organization. Thankfully, with reputation-based platforms on the rise, like completed.com, it will become easier to identify individuals who display the characteristics of a servant leader.

Defeating misconceptions and embodying the ideals of servant leadership are the building blocks for a strong organization, and it will take a strong individual to fill this role. Do you have what it takes to be a servant leader? CBO

Dan Khasis is the founder and chief executive officer of Route4Me. He has worked for several emerging startups specializing in full-stack performance optimization, particularly for high-write, real-time data warehouses; data analysis; 100TB distributed file systems; and distributed content delivery and storage networks. Khasis studied computer science at Montclair State University. Visit route4me.com.



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Ideal Equipment for Detailed Duties

6 tips for finding the compact excavator tailored to meet your jobsite's needs

BY JASON BOERGER

The productivity and maneuverability of a compact excavator makes it one of the most versatile machines on any jobsite. Equipment manufacturers have introduced new compact excavator models that can be tailored to your specific needs. But with all of these options, how do you select the compact excavator that's right for you?

1. PICK A SIZE & TAIL-SWING CONFIGURATION

To get the most out of your machine, ask whether the desired excavator is the right size to perform the required tasks. Can it access your required worksites? Does it achieve the expected performance in regard to dig depth, reach and dump height? Make sure it can access your jobsites and has the necessary capacity in terms of width, height and weight to do the work once it's there.

The tail-swing configuration you choose is critically important. Minimal-tail-swing and zero-tail-swing excavators provide more unrestricted rotation and flexibility when working close to objects or against a wall. The zero-tail-swing feature virtually eliminates the chance of the excavator's tail (house) inadvertently contacting surrounding objects and potentially damaging the structure and machine. The minimal-tail-swing feature significantly reduces the chance of inadvertent contact, minimizing the likelihood of damage to nearby objects or structures.

A zero- or minimal-tail-swing excavator of a given size will generally be wider than its conventional tail swing counterpart. If you anticipate routine work where you or your operators must pass through narrow property lines or gates, a conventional tail swing may be a better fit.

The typical width of a conventional tail swing on a 3- to 4-metric ton compact excavator, for example, will be about 60 inches, whereas a zero- and minimal-tail-swing excavator with similar performance will have a width of about 70 inches.

In addition, some manufacturers offer compact excavators with retractable undercarriages. Operators can retract the undercarriage, pass through a gate or fence, and then expand the undercarriage before they start working.

2. CHOOSE AN ARM OPTION

Next, choose the right arm configuration for your excavator and your jobsite. Standard arm configurations provide maximum breakout force with greater digging performance. However, if you need greater reach and dig depth,



consider an excavator with a long-arm option. Extra reach combined with higher dump height allows you to do more work without repositioning the machine and helps load trucks easier. The long-arm option typically includes additional counterweight to enhance your excavator's lifting capabilities.

If you need even more reach, some manufacturers offer a clamp-ready extendable-arm option for select compact excavators. It offers the best of both worlds: power and lifting performance combined with the ability to extend the machine's dig depth and reach when you need it.

3. CONSIDER COMFORT FEATURES

Your operators spend the majority of their time in the cab of a machine, so it's important to consider a compact excavator's comfort features before adding it to your fleet. Simple features like an enclosed cab with heat and air conditioning, operator-friendly controls, and overall ergonomics promote a comfortable work environment.

4. ADD VERSATILITY WITH ATTACHMENTS

A popular and practical compact excavator feature is an easy-to-use attachment quick-tach mounting system. Many manufacturers offer their own type of attachment mounting system for common work tools, such as trenching buckets, grading buckets, plate compactors, hydraulic breakers and augers.

A user-friendly attachment mounting system encourages operators to use the right attachment for the task at hand. Some hydraulic-powered quick-attach mounting systems enable operators to change attachments, like buckets, from inside the cab to best match the digging requirements and prevent over- or under-digging.

Building a healthy inventory of versatile attachments can allow you to expand your excavator's services and create additional revenue. For example, Ontario contractor Rick Alischer expands his company's offerings with excavator attachments to perform landscaping and grounds-maintenance projects throughout the year.

In addition to many common construction tasks, his company uses its compact excavator with a ripper attachment to extend his working season. He says the ripper can easily dig through the frost in March to install drain tile, sewer lines or water pipes, and is a natural complement to his compact track loader on many of his construction and landscaping projects.



5. PAY ATTENTION TO SAFETY & MAINTENANCE

Manufacturers have incorporated safety and maintenance features in their compact excavators to enhance uptime protection. Take, for example, safety features like a control console lock-out system to help avoid unintentional activation of the machine's hydraulic systems.

Most manufacturers also provide lift charts to assist operators in understanding their machines lifting capabilities. Check if the manufacturer offers tip-over protective structures/roll-over protective structures/falling-object protective structures (TOPS/ROPS/FOPS), rated cabs, and/or canopies and retractable seat belts. Evaluate ease of entry into and exit out of the operator station, grab handles and other related machine amenities.

When comparing compact excavators, investigate to see if routine maintenance items can be easily accessed. Look for a compact excavator that has convenient access to all of the daily checkpoints, such as vital machine fluid levels and other important maintenance items. And check to see if the machine has centralized grease points for the slew bearing and pinion gear.

Routinely inspect the excavator's undercarriage to look for any tears or cuts in the rubber tracks. Then, make any necesarry repairs immediately to minimize machine downtime.

6. TRY IT YOURSELF

Above all, the best way for you to compare compact excavator models is to operate them on your jobsite. Not all compact excavators are created equal, and operating a machine in everyday situations goes a long way in helping you see how it would perform as a member of your fleet. During the demo, be sure to examine the machine's versatility, operator comfort, ease of routine maintenance and, of course, performance, so you know exactly what to expect from your most recent equipment purchase.

The addition of a compact excavator could drastically improve your fleet's productivity and versatility. But before you buy, make sure you've considered all the factors involved so that you can find the best fit for you and your equipment operators. CBO

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





Leveraging Technology to Track Costs & Maximize Investments

How to determine the true cost of equipment ownership with fleet management software

BY MATT DZIAK

Equipment is the lifeblood that enables construction companies to achieve works of wonder. Productivity and the ability to complete projects are reliant on the healthy functioning of such assets.

With that, costs must be managed to maintain your bottom line. Understanding both the health and total cost of ownership (TCO) of equipment over its life span is a necessity that can be facilitated with the assistance of fleet management software.



LEVERAGE SOFTWARE

Your crew is probably all too familiar with grunt work. The necessary tasks few are willing to do are just as much a struggle in the back office (or truck) as they are on the jobsite. From filling out endless paperwork to handling project management spreadsheets, the list can be daunting and the calculations as long as a summer day.

Relying on cloud-based software presents a cost-effective solution with immediate return on investment (ROI), as well as a return on your time. It empowers you to become more active and accurate and gives insight into your operations.

The use of this software for construction companies culminates with a true TCO, revealed through the data. Purchasing a piece of equipment is costly but is only the beginning of the operating cost cycle. The primary costs factored in to TCO include:

- Fuel
- Maintenance
- Loan/lease payments
- Parts
- Asset depreciation
- Registration and insurance

Of these costs associated with equipment and other assets, fuel is by far the largest ongoing expense you will incur.

Depending on the size and operating conditions, an excavator can use anywhere from 6 gallons to 12 gallons of fuel per day. Even when fuel prices are trending lower, the fuel costs to keep your equipment running add up very quickly.

As such, having a system to track fuel costs for each asset is critical. Fleet management software will allow you not only to track and automatically calculate fuel costs, but it will also track the true cost per mile or cost per hour of use,

depending on the asset. This will give you a detailed understanding of how much an asset costs on a relative scale and provide clarity when trying to develop a budget.

It can also help determine your ROI from assets. Remember, the TCO is a variable amount. Your costs will constantly fluctuate, and it's imperative you routinely monitor and generate reports with the true cost of your equipment.

MANAGE MAINTENANCE

Equipment maintenance is inescapable if you want to prolong the life span of your fleet, but it doesn't have to negatively impact productivity or your bottom line.

One of the great advantages of using fleet management technology is being able to automate processes that otherwise bottleneck efficiency.

Using software automates workflows, eliminates entry errors and maintains a well-organized, easy-to-access maintenance history. Paperwork for invoices and work orders can be generated and transmitted electronically, thus eliminating the need for phone tag with a maintenance vendor.

One of the great advantages of using fleet management technology is being able to automate processes that otherwise bottleneck efficiency.

If you have spare parts on hand, you can manage inventory across multiple locations, see which pieces of equipment are using which parts and identify critical low levels to order more parts. From there, you'll be able to track completed work, as well as monitor the costs, helping you determine the best vendor prices and maintenance's impact on TCO.

INSPECTION GADGET

If you ask some operators, they might say they consider equipment inspections a mundane task. But as an administrator, it's imperative you educate your workers on the nuances and stress the importance of equipment health. After all, if equipment isn't running, it isn't earning.

Going digital is the best option for inspections, as electronic inspections offer extensive flexibility and expedite the transfer of information. Additionally, they provide a historical record of compliance and insurance in a single database.

Using a mobile app, operators can

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conduct inspections from anywhere in the field and report issues immediately. Instead of trying to scribble down information on a pad, they can tap, type and even take pictures of an asset.

Some electronic inspection forms are customizable, so you can add or remove any data you wish to gather. This is especially advantageous if you have some assets that operate on an hourly time frame and others based on mileage.

Since the data is entered from a mobile device, information is communicated in real time, so there's no delay or need to pull operators away from a jobsite to hand off a form. What's more, you can develop a preventive maintenance schedule and send alerts to your inbox when equipment is due for service. This way, you can easily manage all assets and take proactive measures to ensure they are running smoothly and avoid costly downtime.

MONITOR WHAT MATTERS

Maximizing equipment usage is a necessary component of proper fleet management. Telematics devices connect directly to each piece of equipment and to cloud-based software that collects and organizes data in real time.

Utilizing telematics devices and software integrations provide real-time updates on usage, odometer readings and fault codes—all of which are important to monitor. And odometer readings give insight when developing a preventive maintenance schedule.

You can set parameters for maintenance intervals and even customize alerts to warn you when servicing is due. This way, you can focus on other priorities instead of checking to see if your equipment is approaching or past due for maintenance. It is always best to have a system in place, to be proactive instead of reactive, to ensure the limitation of unexpected issues. There are other solutions to gather the necessary data that are cheaper but still effective. If you're on a tight budget, consider using software with an integrated mobile app and have your operators enter the data.

Remember: Fleet management tools should be customized to match your unique set of assets and desired objectives. There's more than one way to gather data, and the end goal is to find solutions to monitor trends and make informed decisions that are most beneficial to your business. CBO

Matt Dziak is the content marketing manager at Fleetio, fleet maintenance software that helps fleets of all sizes and various industries automate fleet operations and manage asset life cycles with the convenience of web-, cloud- and mobile-based apps. Visit fleetio.com.



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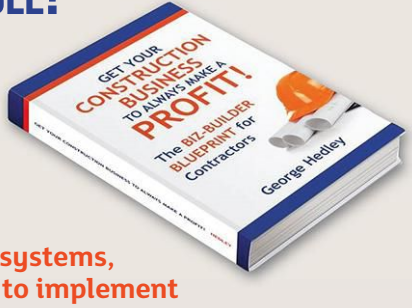

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How Safe Are Your Tires?

The alternate tire technologies offering operators & workers greater protection

BY MIKE ARNOLD

On-the-job safety in the construction field has captured headlines in recent months, with many statistics pointing to increased incidents of worksite injury. According to the Bureau of Labor Statistics (BLS), working in the transportation sector of the construction industry makes workers particularly vulnerable.

The BLS study concluded, "the transportation and material-moving occupational group and the construction and extraction occupational group accounted for 47% of worker deaths in 2017." And within this overall occupational subset, "heavy and tractor-trailer truck drivers had the largest number of fatal occupational injuries with 840."

Sadly, this figure represents the highest value for heavy and tractor-trailer truck drivers since the occupational series commenced in 2002. While the marketplace has taken this issue seriously and responded in kind—with additional measures to put injury prevention and awareness under a more prominent spotlight—the fact remains that ensuring the safety of construction workers and heavy-equipment operators in the field is still a challenge.



The increase in injury rates is likely endemic to broader growth within the industry. As construction grows on a global level to accommodate new building demands and the swell of commercial and residential development, so does the potential and risk for injury. For every aspect of the construction, building and rental equipment sectors, effective and more reliable supporting technology and solutions to injury-proof the growing end-to-end workforce has become more important than ever.

While traditional prevention measures—such as greater education, new training programs and increased regulatory involvement—have been shown to have a measured level of effectiveness, there are certain improvements on a technological level that can directly move the needle in terms of enhanced worker and field operator protection.

When it comes to keeping construction equipment drivers and operators as safe as possible, companies can look to simple, cost-effective ways to shore up their transportation resources—and this

Pneumatic tires with polyurethane fill allow equipment to operate over broken glass, nails, sharp metals, rocks, rebar & other damaging objects, without the risk of puncture.

includes taking a closer look at their overall road care and tire solutions to improve off-the-road (OTR) vehicle safety.

According to Grand View Research Inc., in a 2018 report on the size of the global construction equipment space, use of heavy construction vehicles was projected to only increase and "witness high demand from the infrastructure sector owing to rise in construction activities." Obviously, the equipment itself needs to be in safe operating form in all areas, receiving regular maintenance and technical checks and evaluations according to designated protocols. And these services are often subjective to the particular type of equipment and its application.

There is, however, one safety element that can be consistently deployed across construction fleets, and it revolves around tire technology selection. The use of tire-fill, or foam-fill, technology offers additional, often underrealized benefits related to worker and operator safety because of its vast tire flat-proofing capability.

Tire flats and blowouts present a major risk factor for transportation-related injuries on the job. The use of tire-fill technology, which injects polyurethane fill into pneumatic tires to generate a synthetic elastomer core, can help to reverse and mitigate this danger.

Pneumatic tires with polyurethane fill allow equipment to operate over broken glass, nails, sharp metals, rocks, rebar and other damaging objects, without the risk of puncture. With tire flat-proofing technology, OTR machinery can glide across this debris that would be extremely likely to cause immediate damage to air-filled tires.

Polyurethane is a highly suitable material for this application, and it has been proven to perform successfully in thousands of demanding applications for the construction and rental equipment markets. In addition to prevention of injury through the elimination of unanticipated tire flats, there are also other direct safety advantages of this technology.

While tire fill ensures that OTR vehicle tires won't go flat, it also helps to deliver a smoother, safer ride that is far less physically distressing for drivers than riding on solid aperture tires. In the end, anything related to shock resistance, cushioning, stability and traction plays a key role in keeping OTR heavy equipment and operators safe. And tire selection plays an important role in this equation.

A few other reasons operators may want to consider choosing a tire-fill solution, now widely available from various manufacturers across the industry, as an alternative safety measure are as follows:

- There are less tip-overs due to sudden flats with flat-proofing technology.
- Tire fill provides better ballast for steep hillside jobs and unusual overload conditions.
- Tire fill eliminates the potential for tires or wheels to fail with explosive force, oftentimes due to loss of air pressure.
- Operators experience fewer bent wheels.
- There is typically less mechanical downtime from tire malfunction.

Tire fill also delivers a rubber softness of 8 durometers that is great for skid-steer applications, especially because this type of equipment does not have shocks, which negatively impacts both vehicle and operator safety. Fewer unanticipated flats translates to greater operator control.

Along with tire-fill technology, operators may also want to consider utilizing various tire safety-promoting conditioners and sealants. These products are designed for field managers who are seeking additional safety for their drivers while also looking to keep their productivity maximized. They include various solutions to protect wheels from corrosion, rust and weathering due to extreme elements; to extend overall tire and wheel life; and to provide durable, high-tenacity fiber tire sealants that offer superior protection.

Dangers exist everywhere on a busy construction job. Project managers understand that proper technology choices can truly make the difference between a safe jobsite and a perilous work environment. And, when it comes to tire selection for OTR heavy equipment that is regularly exposed to the rigors of hazardous conditions, proper tire performance and flat-proofing are essential components of a successful and safe construction project. **CBO**

Mike Arnold is the vice president and general manager of Accella Tire Fill Systems, a Carlisle Company. Accella manufactures and markets TyrFil, a polyurethane fill and tire flat-proofing technology. The company has been at the forefront of research and development into bringing complete, 360-degree tire and road-care solutions to the OTR heavy equipment marketplace, and specifically to the construction industry, for nearly 50 years. Visit acellatirefill.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.

RHUMBIX

Field Intelligence Platform

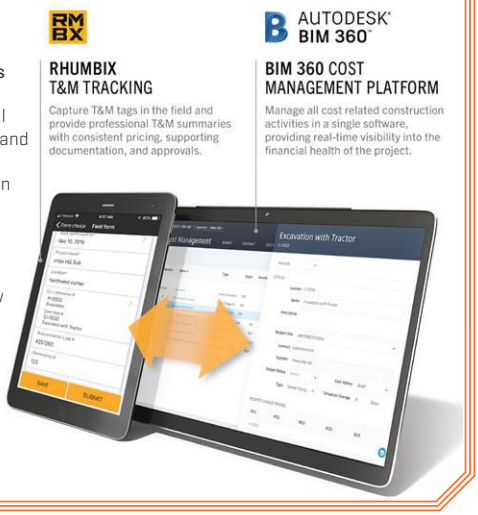
Released: 5/15/19

Availability: U.S. & Canadian markets

What's new? The ability to open, assign, track and document potential change orders to maximize visibility and transparency

Specs: A cloud-based mobile solution that collects and digitizes data from previously paper-based workflows, ensuring all project stakeholders have accurate data, when they need it, to make better decisions and draw actionable insights on all units

Check 207 on index.





◂ HILTI

Firestop Cast-In System

Released: 6/1/19

Availability: U.S. & Canadian markets

What's new? The ability to lose the torch, firewatch and extra steps, and simply place your device on a flat platform and cutdeck with no coming back for firestopping required

Specs: Designed for applications involving opening creation in corrugated metal deck slabs with thicknesses from 2.5 inches up to 6 inches from top of the deck; work in composite W3 and W2 floor decks; sealing combustible and noncombustible penetrations; concrete floor assemblies rated up to 3 hours

Check 208 on index.

PHILIPPI-HAGENBUCH ▸

Released: 2/12/19

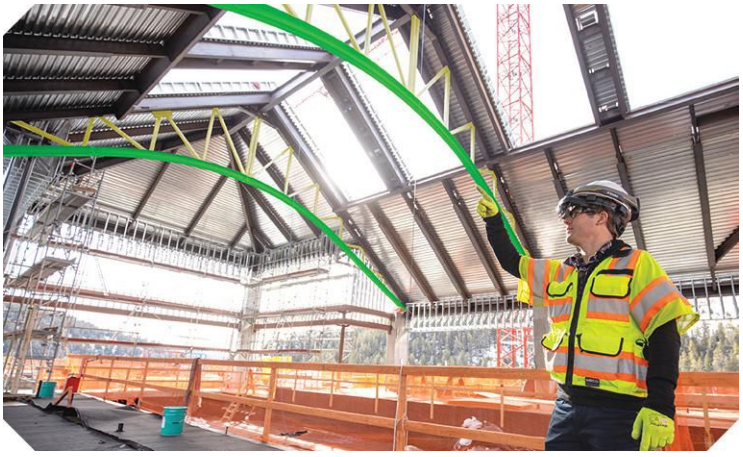
Availability: All global markets

What's new? Design that pairs with Philippi-Hagenbuch's proprietary fluidic seal material for 100% positive seal for liquid materials in off-highway trucks or roll-off containers

Specs: Works for any size off-highway truck or roll-off container; provides industry-leading opening clearance at full dump; positively locks into place and will not open under normal conditions; features 100% water-tight seal, optional sideboards and other custom options

Check 209 on index.





◂TRIMBLE

RX10 with HoloLens 2

Released: 2/25/19

Availability: U.S., Canadian & European markets

What's new? A wearable hard hat compatible device enables workers in safety-controlled environments to access holographic information on the worksite

Specs: Features a wider field of view, improved usability and a unique, flip-up viewscreen; combines mixed reality and safe operation in restricted access work areas; brings accessibility to 3D models by frontline workers

Check 210 on index.

CM LABS SIMULATIONS ▸

F3500 Drill Rig Simulator

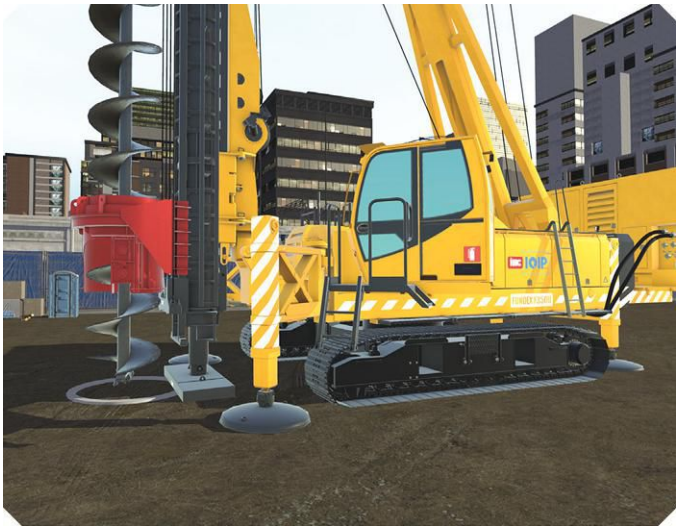
Released: 4/8/19

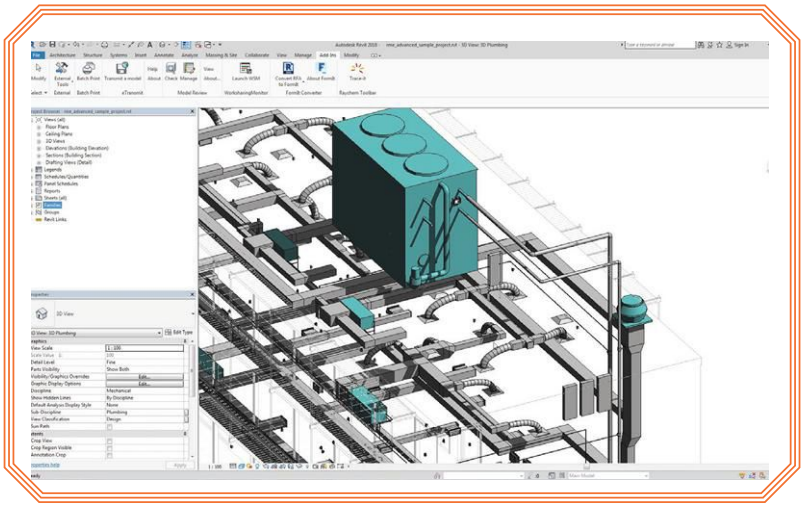
Availability: All global markets

What's new? The ability to scale up to additional simulation-based product engineering and development later; quicker testing and iterating

Specs: Can be used for a variety of drilling and pile-driving methods, such as soil displacement drilling, continuous flight augering (CFA) drilling, cast-in-situ and precast pile-driving; works as an engineering tool for enhancements, as well as a training tool

Check 211 on index.





◂NVENT THERMAL MANAGEMENT

Trace-It 2.0

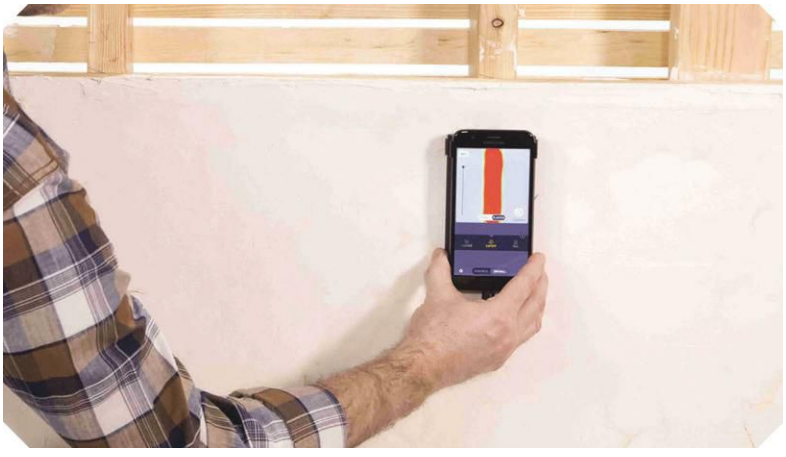
Released: 3/28/19

Availability: U.S., Canadian & European markets

What's new? An add-in that enables designers working in Autodesk Revit to design, calculate and specify reliable, high-quality heat-tracing solutions within their building information modeling (BIM) models

Specs: Automatically extracts relevant information from the Autodesk Revit model, such as pipe material, sizes, lengths and thermal insulation; provides a heat lost calculation, recommended heat-tracing circuiting information, loads and bill of materials for the heat-tracing application

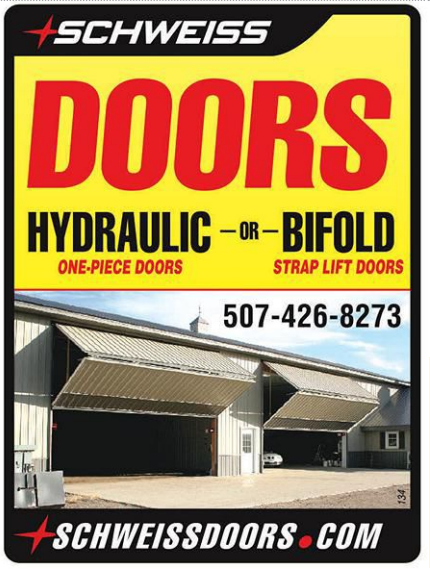
Check 212 on index.



▲ VAYYAR IMAGING
Walabot DIY Plus
Released: 5/7/19
Availability: U.S. market
What's new? A powerful wall scanner and the ultimate tool for any home improvement project
Specs: All-in-one tool capable of seeing through the densest materials, like lath and plaster, drywall and concrete, and able to see 4 inches inside the wall to detect studs, pipes, wires and even rodents
Check 213 on index.



◀ GPS INSIGHT
Roadside Assistance Powered by Allstate
Released: 6/3/19
Availability: U.S. & Canadian markets
What's new? Reduction in downtime due to roadside emergencies or inconveniences like dead batteries, empty fuel tanks, flat tires and more
Specs: Features vehicle towing up to 5 miles; vehicle winching for vehicles stuck in a ditch, mud or snow; fuel delivery to customer location; jump-start for dead batteries; help changing a flat tire; help gaining access to the vehicle if locked out
Check 214 on index.



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1. Your company's primary business is:
(Check Only One)
❑ 12 General Contractor – Commercial
❑ 02 General Contractor – Residential
❑ 10 Construction – Special Trade Contractors
❑ 03 Highway and Street Construction
❑ 04 Water, Sewer and Utility Construction
❑ 05 Heavy Construction
❑ 06 Concrete Work
❑ 07 Excavation Work
❑ 08 Wrecking and Demolition Work
❑ 13 Architecture, Engineering and Construction Management Services
❑ 11 Consulting Contractor
❑ 99 Other (please specify) _____

2. Your primary job title is: *(Check Only One)*
❑ 10 Owner, Partner, President, CEO, CFO, COO, Vice President, Director
❑ 11 General Manager, Manager, Foreman, Superintendent, Purchasing Agent, Controller, Accountant
❑ 12 Engineer, Architect
❑ 06 Consultant
❑ 99 Other (please specify) _____

3. Approximate annual contract sales volume:
(Check Only One)
❑ 01 Less than $500,000
❑ 02 $500,001 – $1,000,000
❑ 03 $1,000,001 – $2,500,000
❑ 04 $2,500,001 – $5,000,000
❑ 05 $5,000,001 – $10,000,000
❑ 06 $10,000,001 – $20,000,000
❑ 07 $20,000,001 – $50,000,000
❑ 08 More than $50,000,000

4. Which of the following products/services are you planning to buy during the next 12 months?
(Check All That Apply)
❑ 01 Earthmoving Equipment
❑ 02 Trucks, Trailers and Accessories
❑ 03 Compact Equipment
❑ 04 Lifting and Hoisting Equipment
❑ 05 Safety Equipment and Apparel
❑ 06 Attachments
❑ 07 Concrete and Paving Equipment
❑ 08 Survey and Site Prep
❑ 09 Compressors, Generators and Pumps
❑ 10 Financing and Accounting Services
❑ 11 Software and Technology
❑ 12 Insurance and Bonding
❑ 13 Training and Education
❑ 14 Telecommunications
❑ 16 Greases, Lubricants and Filters
❑ 17 Jobsite Lighting
❑ 18 Building Supplies
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Annual Value of Construction Put in Place

May 2017/2018/2019 Annual Rate Comparison

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

	2017*	2018**	May 19
Total Private Construction	**963,124**	**1,016,843**	**953,237**
Residential	519,556	561,940	498,946
Nonresidential	443,568	454,903	454,290
Total Public Construction	**290,473**	**307,504**	**340,635**
Residential	7,025	6,873	6,413
Nonresidential	283,448	300,632	334,222
TOTAL Construction	**1,253,596**	**1,324,347**	**1,293,872**

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

$1,293,872

MAY 2019 TOTAL ANNUAL VALUE OF CONSTRUCTION PUT IN PLACE

"The last 4 consecutive months, firm billings have either decreased or been flat, the longest period of that level of sustained softness since 2012," said AIA Chief Economist Kermit Baker, Ph.D, Hon. AIA. "While both inquiries into new projects & the value of new design contracts remained positive, they both softened in May, another sign the amount of pending work in the pipeline at firms may be starting to stabilize."

AIA Architectural Billings Index (ABI)

	National		*Regional - Billings				*Sectors - Billings			
Month	Billings	Inquiries	Northeast	Midwest	South	West	Multifamily Residential	Commercial/ Industrial	Institutional	Mixed
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
Feb-19	50.3	59.8	51.5	51.3	58.3	51.6	51.6	53.9	50.9	57.2
Mar-19	47.8	59.8	43.5	48.7	54.2	47.2	47.7	47.0	48.9	53.1
Apr-19	50.5	60.9	45.1	49.3	51.6	49.0	47.4	46.6	49.2	53.2
May-19	50.2	56.2	47.5	51.6	51.4	50.0	46.0	53.0	48.0	55.4

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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