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THE VARIABLES AFFECTING 2020 BIDS

Bidding mistakes to avoid, trends to watch & more methods for mastery



Hoar Construction on the resurrection of Atlanta's Colony Square & working in a tight city grid

IN THE OFFICE
Inside employee substance abuse & 6 steps to stop it

IN THE FIELD
Premier Structures Inc.'s digital check-in process prevents the spread of COVID-19 on-site

AIA Contract Documents

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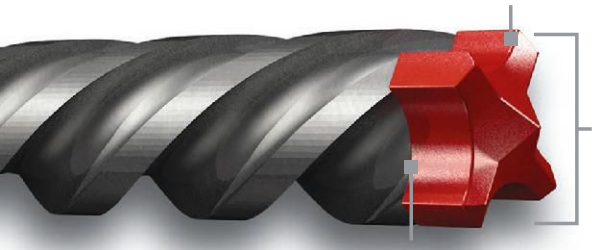
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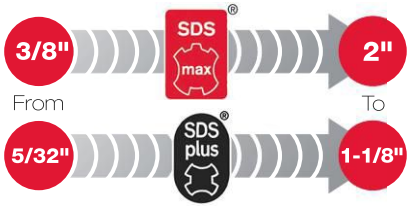
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If you're feeling run-down by the circumstances of today's pandemic environment, chances are your teams are feeling it, too. As a leader, how can you muster the energy to keep forging ahead? Optimism. While you might be running on fumes, it's optimism that the industry is running on, and it's what will take us all through the finish line.

According to Dodge Data & Analytics Chief Economist Richard Branch, COVID-19 has devastated most local construction markets, though construction starts have begun to increase from the lows experienced in Q1. Branch suggests there is a rising air of cautious optimism, and that United States construction markets could begin a modest recovery in the remainder of the year. This, like many situations in life these days, will depend on any resurgence of the virus.

At print time, the Centers for Disease Control and Prevention reported cases in the U.S. had risen above the 5-million mark at 5,119,711. As I, again this month, deliver stark statistics and rising death tolls to you in this letter, it's with optimism for the future that I do so. I'm optimistic that you will continue to take all precautions to prepare and protect your teams, both physically and emotionally, from the effects of COVID-19. And while you're working and pushing ahead in an effort to get back to normal, we're working to help you get there just a little bit sooner.

As long as there are communities to serve, you'll fight to build in them. And as long as there are new ideas and information, we'll find a way to bring them to you. In this issue, we're offering a harder look at a few areas of business that might need some attention under the current pandemic environment: bidding, employee wellness, workforce laws and project outcomes—the list goes on. But, what we'd like to know is "What do you want to know?"

We'd like to give you a better chance to tell us, and this month, you can share exactly what that is in our reader survey and pandemic poll, which will be deployed to readers later in the month. What's helping you during these unprecedented times? What's your No. 1 problem, your white whale? Using your feedback, we'll work with our expert contributors to develop new topics, find solutions to the problems you're facing, and report more on the concerns that you deem mission critical at this unprecedented moment in time.

Remember, you can always keep up with our ongoing COVID-19 coverage at constructionbusinessowner.com/covid19, but I want you to know that our team is available to answer your questions or connect you with an expert who can. We hope you share our optimism for the future and recovery of the industry and want you to know we're here to aid in that recovery however we can.

Take good care,

Kathy Wells

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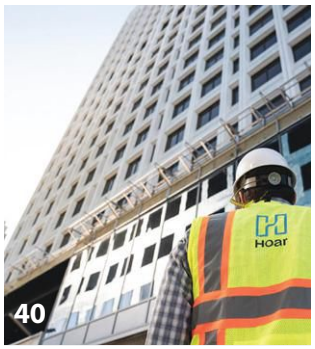
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Gilbane Building Co. Announces New Leadership in Washington, D.C.


Matt Sarver

Gilbane Building Company has announced the promotion of Matt Sarver to vice president, Washington, D.C., business unit leader. In his new role, Sarver is responsible for client satisfaction, safety, project performance and recruitment and retention throughout the D.C. metro area. Sarver began his career at Gilbane as a project engineer. He has worked on a wide range of projects across Washington, D.C., Maryland and Virginia. "Sarver is the ideal fit to run our Washington, D.C. business unit," said Paul Choquette III, senior vice president, Mid-Atlantic division. "He has been with Gilbane for 15 years and has worked all across the Mid-Atlantic. He understands our systems, our people and our culture, and embodies our core values." Visit gilbaneco.com.

PlanHub Appoints Vice President of Product Management

PlanHub announced the appointment of Evan Williams as the new vice president (VP) of product management. In this role, Williams will be responsible for scaling the product team and managing PlanHub's expanding product suite. Williams has more than 15 years of expertise in managing product strategy and operations in high-aptitude organizations. Most recently, Williams held the role of managing director at Independent Purchasing Cooperative (IPC). Before stepping into the role as managing director at IPC, Williams held other positions within the organization, such as a global purchasing director, driving continuous improvement through supply chains and global campaigns, as well as product owner, defining product vision and product roadmap strategy. At PlanHub, Williams will manage the vision and market strategy for PlanHub's new feature suite. Visit planhub.com.

Moss Construction Names New Chief Executive Officer


Scott Moss

Moss Construction announced that Scott Moss, one of the company's founders and a 30-year veteran of the construction industry, has been named chief executive officer (CEO). "When we founded Moss Construction, Scott Moss took the leap into the unknown with a deepfelt belief that we would not just succeed, but also thrive," said Bob Moss, who stepped down as CEO and will continue to serve as chairman and founder. Scott Moss grew up around construction jobsites and started working in the field at age 17. A certified general contractor, Scott Moss is an advisory board member of Urban Land Institute's Southeast Florida/Caribbean Chapter and is a member of the Construction Industry Round Table. He has also served as the chairman of Associated Builders and Contractors Florida East Coast Chapter. Visit mosscm.com.

Bentley Systems Inc. Acquires NoteVault

Bentley Systems Inc. has announced its acquisition of NoteVault. The acquisition expands Bentley's Synchro digital construction environment with mobile field applications to track and manage labor, materials and equipment. Together, these comprehensive offerings further extend the value of digital twins across construction management, enabling projects to combine immersive 4D models of the construction progress with detailed, up-to-date reports on resource expenditures, enabling more effective management of cost, schedule and risk, leading to better project outcomes. Peter Lasensky, CEO of NoteVault, said, "Bentley's vision for transforming construction through digital twins is the perfect vehicle to expand the reach and impact of our innovative voice-based field automation solutions. Updating 4D construction models through insights gleaned from our software for field-captured reporting fully extends the power of voice and positioning technologies together. Combining NoteVault and Synchro is a natural next step in our overall mission, with Bentley, to drive greater efficiencies in construction." Visit notevault.com.

Thunder Creek Equipment Names Ben Cox President

Thunder Creek Equipment and its parent company, LDJ Manufacturing, have appointed Ben Cox as the company's president. Cox previously spent more than 3 decades at Pella Corporation, the central Iowa-based building products manufacturer. Cox has extensive sales, finance, business strategy and leadership experience. He most recently served as the VP of Pella's luxury division, where he oversaw all operations selling to luxury architects, builders and consumer homeowners. During his time at Pella Corp., Cox helped turn around historically low-performing distribution centers; served as the business unit leader for newly acquired luxury businesses and helped integrate them into Pella Corp.'s portfolio; and also helped launch a new business unit including four manufacturing plants, 1,000 employees and a variety of new product designs. Visit thundercreek.com.

Skender Names New CEO of Skender Manufacturing, CEO of Skender Construction

To support its construction and modular manufacturing businesses during the next phase of the economic recovery, Skender announced that Mark Skender will step away from his role as CEO of Skender Construction and is formally assuming the role of CEO of Skender Manufacturing. Justin Brown will assume the role of CEO and continue his role as president of Skender Construction, which remains focused on general contracting services for all property types. This move solidifies Mark Skender's current leadership role in the manufacturing business and allows him and the other Skender Manufacturing leaders to concentrate on attracting investment and securing modular manufacturing projects. "I have long been passionate about the transformative possibilities

10K

To assist health-care workers on the frontlines of the coronavirus pandemic, Kioti Tractor, a division of Daedong-USA Inc., donated 10,000 N-95 masks and a K9 2440 utility vehicle to UNC REX Healthcare, located near Kioti's United States headquarters in North Carolina. The mask initiative was introduced by the executive team of Kioti Tractor, fully supported by employees and matched by the company. Employees, agency partners and leadership contributed donations to purchase and deliver the masks. Visit kioti.com.

of modular construction for our industry and society. I am excited to embrace a leadership role fully dedicated to realizing the potential of modular building," said Mark Skender. Visit skender.com.

▶ Morgan-Keller Hires Director of Corporate Safety

Kate O'Hara has joined Morgan-Keller as director of corporate safety. In this role, O'Hara will work to further enhance Morgan-Keller's safety programs and culture through safety training and risk assessment. She will be responsible for ensuring the safety of team members, clients, and subcontractors on all its project sites. O'Hara has 12 years of experience in the safety field. Most recently, she worked as safety director for one of the largest mechanical construction contractors in the U.S. Visit morgankeller.com.

▶ Principle Construction Corporation Promotes 5 to Leadership Positions

Principle Construction Corp., a full-service design-build general contractor, announced that it has promoted five employees to management and senior management positions. Those promoted include James W. Molzahn to VP of finance, Mark Frane to director of field operations, Darrin Dehmlow to director, Matt Cotherman to senior project manager, and Jon Anderson to project manager. Molzahn, who has worked at Principle since 2008, has developed a proprietary system to manage and project corporate finances. He ensures employee benefit and insurance programs are well-managed and that government reporting is accurate. Frane joined Principle Construction Corp. in 2001 and was promoted to senior superintendent in 2005. Frane is responsible for managing project field operations and overseeing the day-to-day operations of individual jobsites. He oversees subcontractor activities, safety practices and material and equipment management. Dehmlow, who has more than 25 years of project management experience, joined Principle in 2005. He has worked on many multimillion-dollar projects. He is responsible for reviewing proposals and awarding contracts, producing construction schedules, preparing and coordinating subcontractors and coordinating for review and submittal with the established specifications. Cotherman has worked on many projects with Principle since joining the firm in 2017. Anderson has worked for Principle since graduating from the University of Illinois at Urbana Champaign in 2017. He interned at the firm while earning his bachelor's degree and has also worked at the Village of Schaumburg Engineering and Public Works Department. Visit pccdb.com.

▶ TRC Companies Names Chief Information Officer

TRC Companies' new chief information officer, Rajeev Gollarahalli, will lead the continued advancement of TRC's IT capabilities and solutions. Previously, Gollarahalli was a VP of technology strategy role at a global manufacturer, where he led an international team to execute IT initiatives across their production facilities. Gollarahalli has also he held the position of chief business officer at 42Q, a Sanmina company that provides cloud-based manufacturing execution solutions, and previously served as the senior vice president of online and digital for a leading industrial thread company with the wide reach of over 50 countries. Additionally, Gollarahalli was critical in leading the digital transformation of their manufacturing facilities and the development and rollout of next-generation cloud-based customer, online and enterprise resource planning applications. Visit trccompanies.com.

▶ Bechtel Names 2 to Vice Chairman & President, Chief Operating Officer



Craig Albert



Jack Futcher

Bechtel Group Inc. announced that Craig Albert, who has led the company's infrastructure business unit since 2016, will succeed Jack Futcher as president and chief operating officer (COO) of Bechtel Group Inc. Futcher, who plans to retire at the end of 2020 following a 40-year career, will serve as the company's vice chairman until then and afterward will remain as a nonexecutive director on the company's board. In his new role, Albert will be responsible for overseeing the company's four global business units, as well as the EPC functions, strategy and business development, diversity and inclusion, and regions and corporate affairs organizations. He will also chair Bechtel's operating committee. Albert will be based at the company's headquarters in Reston, Virginia, and will report to Chairman and CEO Brendan Bechtel. The new appointments are effective Sept. 8. Visit bechtel.com.

▶ Caterpillar Acquires Robotic Expertise

Caterpillar Inc. announced it has acquired select assets and hired employees from San Francisco, California-based robot and autonomy technology solutions company Marble Robot, Inc. The acquisition is part of Caterpillar's automation and autonomy strategy and demonstrates its commitment to the next generation of jobsite solutions. Building on its leadership in autonomous mining, the company plans to leverage the deep expertise of the new team to bring scalable solutions to meet the changing needs of construction, quarry, industrial and waste industries. The new team is comprised of leading roboticists with a deep background in the robotics industry. Caterpillar intends to leverage the team's fully integrated on-board autonomy technology to continue delivering smart, safe, more productive and cost-effective solutions to customers. Caterpillar is positioned to grow services based on its large installed base of connected equipment, outstanding field technology and decades of product, service and application expertise to turn that experience into useful insights for its customers. The company will continue to make investments in emerging technologies, like automation and autonomy, to bring innovative solutions to meet industry challenges. Visit cat.com.

▶ Novak Commercial Construction Appoints New President

Novak Brothers announced the appointment of Morgan McLaughlin as its new president of Novak Commercial Construction. With over 18 years of experience in the construction industry, McLaughlin, who previously served as partner and VP, has an extensive background in developing, managing and delivering various nationwide roll-out concepts. "McLaughlin's character, passion and wealth of experience, made this a very easy decision for us," said Jeff Novak, Novak Brothers' founding partner and chief architect of business direction and development. "His success with client acquisition, along with his ability to build and maintain long-term relationships, has created a great number of opportunities for our company." During his 3 years at Novak, McLaughlin helped the company secure over 100 million in contracts. Visit novakconstruction.com.

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

ASK THE EXPERTS

What has your company's experience been using modular construction & what are your plans for the future?



Joseph Schultz
Senior Project Manager
JE Dunn Construction

Due to the benefits we have realized through off-site prefabrication, such as speed to market, improved schedule and cost certainty, decreased waste, and reduced jobsite congestion, we have been leveraging and optimizing prefabrication for our owners for years, especially in certain markets such as health care, mission critical and multifamily. The predictability of prefabrication also lends itself to other modular options. Advanced work packaging is another solution we have started utilizing. It combines planning, early design involvement, prefabrication and modular components and takes them to the next level. By breaking project scopes into smaller executable "packages," schedule and cost certainty increase, so the traditional project controls management style can shift toward production management.

As interest in these approaches continues to grow, we are collaborating with owners, design partners and trade partners to develop and refine prototypes for various premanufactured components; prefabrication production and installation processes; and our overall data-collection efforts to further quantify the benefits. As we look to expand our approaches, we are aligning our prefabrication plans with advances in lean processes, virtual design and construction and building information modeling.



Scott Cannon
Executive Vice President & General Manager of Building Operations, Georgia & South Carolina
Skanska USA

Prefabrication and modular construction are old hat—some have been done well and some not as well. For the last 100 years, schools have employed this type of construction for things such as "gang restrooms," in which rows of stalls are installed opposite of the rows of wash basins and designated only for males or females. But prefab and modular construction are evolving. The delivery methods are often commended for energy efficiency and sustainability.

Skanska recently created its own temporary prefab facility to assemble 500 10-by-6-foot nail-laminated floor decks for the Kendeda Living Building at Georgia Technical University. Two-by-fours recycled from dismantled movie sets, including the hit show "24" and the movie "Rampage," were assembled into floor decks by workers from the community through the Georgia Works training program.

Innovation often emerges during difficult situations, including the COVID-19 pandemic. Given the demand for hospital facilities that can be created quickly and cost effectively, we expect to see prefabricated modular solutions that can be deployed in diverse environments. Multiple independent modules that can connect to one another or to a hospital with segregated spaces for patient care and health-care workers.



Mark Drury
Vice President of Business Development
Shapiro & Duncan

Moving to prefabrication was a challenge for us as a company. There was a lot of pushback from our tradespeople. There is a misconception that moving to prefabrication takes away jobs, but the end result was the creation of new, highly sought-after trade jobs and increased capacity.

At each stage, we asked ourselves how we could do the process better. It started off with a school system that wanted to change out the ventilation systems—and they wanted it done over spring break. We asked ourselves internally how this would be possible, and the answer was starting in January and bringing all the trades into the shop. When spring break hit, it was just plug and play for us at that point. We were able to deliver the project 2 days early. From there, we moved to modular construction—or, as we call it—multitrade prefabrication.

Having our own prefabrication facility has absolutely been a benefit. Working in a factory environment where we control the climate, the scheduling and the process reduces our impact on-site, enhances quality, improves safety and almost eliminates waste. Early on, we discovered that the factory floor provided a better platform for training our apprentices and we have since invested in creating a full-time trade education area with full-time instructors conducting skill specific mini boot camps for five to 10 tradespeople at a time lasting a couple of days or weeks, depending on the subject matter.

What's on your mind?

To submit a question for this section, email Managing Editor Elizabeth Manning at emanning@cahabamedia.com.

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

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Bid Smarter, Not Harder

How a winning strategy starts with finding your niche market



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

Just Ask George.

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

When construction work is plentiful, there's more than enough projects for every general contractor, subcontractor and supplier in town. All you have to do is wait for the continuous supply of requests for proposals from your customers. Then download the plans, do your takeoffs, submit your bids, and wait for results.

With this estimating effort, odds are you will get awarded enough jobs to hit your sales revenue goals, generate enough margin to cover your overhead, and keep your crew busy. This simple, low-bid estimating strategy will keep your pipeline full and your field busy when opportunities are abundant. And because there are lots of jobs to bid, you don't need to implement a focused estimating and bidding strategy or be selective in what you bid to win enough work. But will this effort help you hit your profit goals?

My recommendation is to seek higher-margin work against fewer competitors. Doing this requires a strategy to better target customers and projects to win work that involves more than just low prices. Simply bidding a higher volume of projects is never the way to grow a successful construction business and make more money. You won't increase your yearly net profit by bidding the minimum against multiple competitors who only sell by low price. Bidding on projects with open bid lists wipes out your chances of making high margins. The only way to higher margins is bidding the right customers and projects, with the right profit margin potential and against the right competitors.

The long-term solution is to seek better customers, aim for better projects, and focus on better opportunities. Improving your bottom line means making the decision to find customers who value service, quality, professionalism, experience and trust.

SEEK THE CUSTOMERS & PROJECTS YOU WANT

To increase profitable sales against less competition at higher margins, you will have to implement an estimating and bidding strategy to get off the low-bid treadmill. By focusing on projects and customers you want, versus open bid lists, you will improve your profits.

Would you rather build your business doing repeat construction for hospitals and universities, or bidding on low-price shopping centers or public projects against every low-bid contractor in town? Or build high-end custom homes versus low-price remodels? The choice is yours to make as you fill your pipeline with either low-price or high-profit work.

SEEK QUALITY OVER QUANTITY

Construction companies continue to waste lots of time bidding on jobs they can't get unless they are really low priced. This doesn't help them make an above-average profit margin.

When your estimating department is busy bidding too many jobs you can't get without a low price, they generally pass on the good jobs they should be going after. Deciding to focus on projects where your company is the best choice, in specific locations, for certain types of customers, with specific qualification requirements, and a reasonable markup rate, will improve your bid-hit-win ratio dramatically.

SEEK PROJECTS WITH A HIGH BARRIER TO ENTRY

Many customers demand more from their general contractors than low prices, good work and on-time performance. These customers typically rely on a few qualified contractors to do all of their work. Generally, the harder it is to get on a customer's bid list, the fewer the competitors and the higher the profit margins. Many customers only hire recognized experts who specialize in a specific type of project. Other customers may demand specialized skills, design-assist capacities, engineering services, intense training standards, or multiple certifications from manufacturers, safety programs and specified product providers.

SEEK LOYAL CUSTOMERS WHO TRUST YOU

Another option to increase your margins is to develop loyal customers who award you at least a third or more of their regular work. Repeat customers award you contracts when you're the low bidder. Loyal customers try to give you their work whenever possible because, together, you have developed a trusted relationship.

Many contractors do good work and finish projects on time. Being a good contractor is expected, but it's not enough to build loyalty against a field of too many competitors trying to beat your bid. It takes a specific sales action plan to build customer loyalty. CBO

A Winning Strategy

The following outlines an estimating and bidding strategy that will generate higher-margin sales against less competition, improve your bid-hit-win ratio, and deliver a high net profit.

1. Projects

- Go after projects with the highest markup and margin potential.
- Look for low competition determined by experience and qualifications.
- Focus on the ideal project size for your company's capacity.
- Pay attention to project location.
- Search for advantages that give you the best opportunity to win contracts.
- Look at the chances you have to be awarded contracts at your price.
- Go after projects that require a high barrier to entry and require:
  - High qualifications or competitive advantages
  - Specific experience, skills and training
  - Safety performance or security clearance ratings
  - Industry certifications
  - Expertise, specialty or niche experience
  - Ability to build projects with a high level of difficulty, risk or intensity
  - An experienced project team

2. Customers

- Find customers who:
  - Know and trust you
  - Can offer regular and repeat construction project opportunities
  - Only hire a short list of prequalified, trusted, full-service contractors
  - Seem fitting for long-term, loyal relationships
  - Will negotiate with selected contractors or subcontractors
  - Offer design-build or open-book contracts with selected contractors
  - Use select, prequalified bid lists with a maximum of two to four bidders
- Avoid customers who:
  - Have bid lists open to almost any contractor
  - Only award contracts based on the lowest price
  - Shop bids or grind down contractor prices
  - Have a bad reputation for supervision, payment or change-order approval

3. Meetings

- Include company president, business development manager, project managers, estimators and estimating coordinator.
- Review updated bid-hit-win ratio tracking template monthly; sorted by job type, job size, location, customer, markup, competition, etc.
- Determine the ideal customers and best projects for bids based on estimating schedule, workload and company backlog.
- Make educated bid and no-bid decisions based on target criteria and the potential to win high-margin work.
- Review overall estimating, bid and proposal schedule.
- Review and assign current and new projects to estimate and bid.
- Set bid date milestones for subcontractor solicitation, proposal preparation, takeoff, preliminary estimate review and final bid price review.
- Develop aggressive bid follow-up action plans for all projects bid.
- Assign person responsible to follow-up on all bids and proposals in person.
- Review incoming and potential future projects.
- Review leads for future projects and assign sales action plans.

4. Business Plan

- Plan the company's future business development and sales opportunities.
- Implement customer contact action plans.
- Develop weekly customer sales calls, meetings, activities and events.

Measuring Trade Partner Greatness

Scoring subcontractors & vendors to improve internal & external performance



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Trade partners come in all shapes and sizes. For many contractors, greatness is simply based on how they perform on bid day. In competitive market situations, it becomes all about how low you can go. Unfortunately, there is a huge disconnect from this bid day dance routine and the actual performance in the field. It is this conundrum that creates internal friction as well.

Those same trade partners always seem to pop up on bid lists—much to the chagrin of the operations teams. In fact, many managers and superintendents feel as if their blacklist becomes the estimator's go-to list. With the risk of piling on the estimators, there is probably also a sizeable disconnect in the feedback loop that the teams use to gather true performance data. It's important to note that the phrase "They stink!" does not constitute actionable and objective data.

Figure 1 is an example of a trade-partner scoring criteria that is captured at the conclusion of a project. The grading scale on this sample is one to four, with four being the highest. It is important to note the different columns that constitute the grading scale. The first three (in dark blue focus) strictly on field performance.

The gray columns would be a combined office and field perspective. The light blue columns would probably be the manager's feedback while the yellow columns come from the finance office.

With a strong definition around what constitutes low and high scores, the firm can gather critical performance data on an entire project's body of trade partners from a cross section of the firm.

It is important to establish a strict grading criterion to avoid biases. Even with the best of intentions, a poor performer can be graded more harshly. For instance, a roofing subcontractor who meets the schedule requirements—but becomes a nightmare in the pay application process—should be graded appropriately. Put another way, if a trade partner scores well technically but fails in artistic impression, grade them accordingly.

The immediate benefit of this grading process is the rich feedback it can provide about an entire population of trade partners. There should be some strata to provide definitive actions that will drive a particular behavior. For instance, if grades of 2.0 and above define superior performance on one project, then what does a score below 2.0 mean?

What constitutes a change in direction or even being blacklisted? It is important to look at this as a rolling average. Everybody has a bad day at some point. In the case of Framing USA shown in Figure 2, what if its previous average score was a 3.0? The result of this one-time poor performance may simply be a phone call from the prime contractor's office to provide this feedback.

Figure 1. Trade-partner scoring criteria

Project: Hospital		Field	Field	Field	Office/Field	Office/Field	Office	Finance	Finance	Finance	Average Score
Sub (Name)	Trade	*Quality of the Work*	*Safety*	*Output - Ability to Keep up with the Schedule*	*Supervision Engagement (responsiveness)*	*Professionalism*	*Paperwork (Submittals, COs, etc.)*	*Meet Budget Obligations*	*Can They be Bonded*	*How is their Accounting Department*	
US Mechanical	HVAC	3	2	2	2	2	1	2	2	2	2.00
Volts and Amps	Electrical	3	3	3	2	3	2	2	2	3	2.56
Brown Civil	Site Civil	3	2	3	2	2	1	2	2	1	2.00
Brick and Mortar	Masonry	2	1	2	2	1	2	1	2	1	1.56
Framing USA	Drywall	2	2	2	1	1	1	1	2	1	1.44
US Carpet	Flooring	3	3	3	2	3	2	2	3	2	2.56
Division 7	Water Proofing	3	3	3	2	2	2	2	1	1	2.11
Clear Paint	Painting	3	2	3	2	2	1	2	2	1	2.00
US Windows	Glass/Glazing	3	2	2	2	2	1	2	1	1	1.78
Division 8 Doors	Doors	3	2	2	1	1	2	2	2	1	1.78
Super Steel	Steel	2	2	2	2	2	1	1	1	1	1.56
	Average Scores	2.73	2.18	2.45	1.82	1.91	1.45	1.73	1.82	1.36	

Figure 2. Individual trade performance

Figure 3. Strong field performance

Figure 4. Weaker administrative performance

It is also important to note that while the average score in the example used here was a 1.44, the performance was largely impacted by that firm's challenges related to paperwork and finance.

Another phenomenon that occurs in the world of trade contractor management is when a subcontractor or supplier performs well, their services become more in demand. It is important to always look at a subcontractor's workload in totality and avoid taxing resources. Additionally, there should be some internal escalation plan to deal with repeat offenders. For instance, if this is Framing USA's fifth project and also the fifth in a long line of unmitigated disasters, there should be concrete steps to not only provide this meaningful feedback to Framing USA's management team, but also a rational explanation for that particular firm making it to that list of undesirables.

> It is important to establish a strict grading criterion to avoid biases. For instance, a roofer who meets the schedule requirements—but becomes a nightmare in the pay application process—should be graded appropriately.

A second examination of this same project scorecard shares another piece of evidence (shown in Figures 3 and 4). While looking across at the average scores provided critical feedback on those individual subcontractors, looking at the column averages illustrates another telling trend. For the most part, the average scores in the field, office and finance followed consistent logic—while the participating trade partners performed adequately in the field, there were issues surrounding their paperwork and financial acumen. What does this say about the process within the firm?

This is not to say that the firm should adopt a stance devoid of control, but rather, has it actively engaged with its trade partners effectively to educate them on pay application processes, bonding, lien waivers/releases, etc.? It is important to note that one trade contractor may work with many general contractors or prime contractors in a year's time, and each of their customers may have multiple processes. Does this scorecard speak more about your firm's internal machinations rather than the individual trade contractor performance? What is it telling you?

Scorecards such as this are hardly new. Consistent application of not only a grading scale and a track record of performance require discipline. Often, feedback about suppliers and trade partners is limited to one-off data points or conjecture. Consider some of the biases that occur—a project manager hears from a superintendent that a subcontractor is weak. Like the telephone game of lore, that project manager tells an estimator and that estimator tells another estimator. Before long, that trade partner is deemed unworthy and roasted, without the benefit of a fair trial. **CBO**

Big BIM Breakthroughs

Study shows contractors both up & down the supply chain stand to gain the most from a firmer commitment to technology

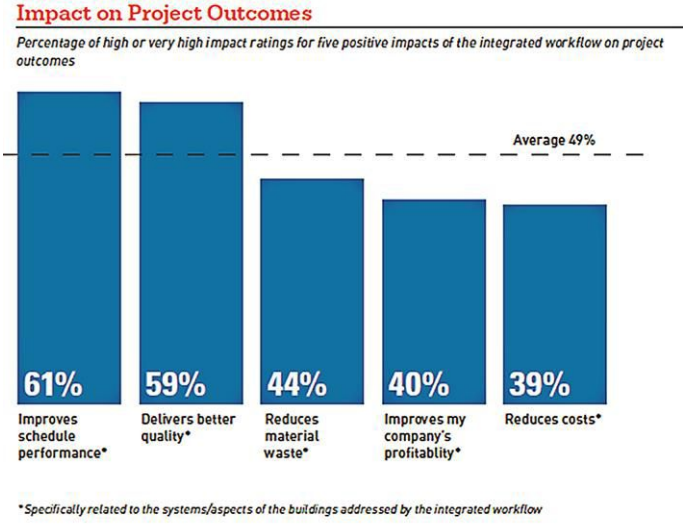


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The latest research from Dodge Data & Analytics on building information modeling (BIM) focuses on mechanical, electrical and plumbing (MEP), and heating, ventilation and air conditioning (HVAC) contractors. It reveals that these contractors have embraced BIM and are seeing extraordinary value from its use. However, it also demonstrates that a major challenge for many of these contractors is a lack of commitment to BIM use by other key parties involved in a project.

The research findings—published with the support of the Mechanical Contractors Association of America (MCAA) and Pinnacle Infotech, along with Autodesk, the Air Movement and Control Association (AMCA) and Innovative Construction Technology, as the "Business Value of BIM for Mechanical and HVAC Construction SmartMarket Report"—demonstrate that BIM users among mechanical contractors have high levels of BIM implementation, with 95% reporting that they are responsible for producing the model on at least some of their projects, and about two-thirds (67%) using internal resources to do so on 50% or more of their projects. This high degree of BIM use shows that MEP and HVAC contractors are among the most committed users of BIM. The study also provides support for why BIM use is so prevalent among mechanical contractors. It looks at the benefits they receive in two ways: the overall benefits to projects, processes and business performance that they experience from engaging in BIM and the benefits they specifically derive due to use of model-driven prefabrication. Both sets of findings are highly positive.

1. For the overall benefits, contractors were asked to identify the top three



company- and project-related benefits they have experienced, and the factors that emerge at the top are increased labor productivity, increased profitability, improved fabrication process and better utilization of resources. These are critical benefits that directly accrue to the company's bottom line and are difficult to achieve otherwise.

2. For the benefits of model-driven prefabrication, contractors were asked to indicate whether they experienced a series of improvements to their projects when using BIM to prefabricate as compared to site construction, and the majority of contractors (over 70%) agreed that using model-driven prefabrication improved labor costs, quality, schedule performance, worker safety, site logistics costs and reduced material waste and the need to purchase extra pipes and fittings.

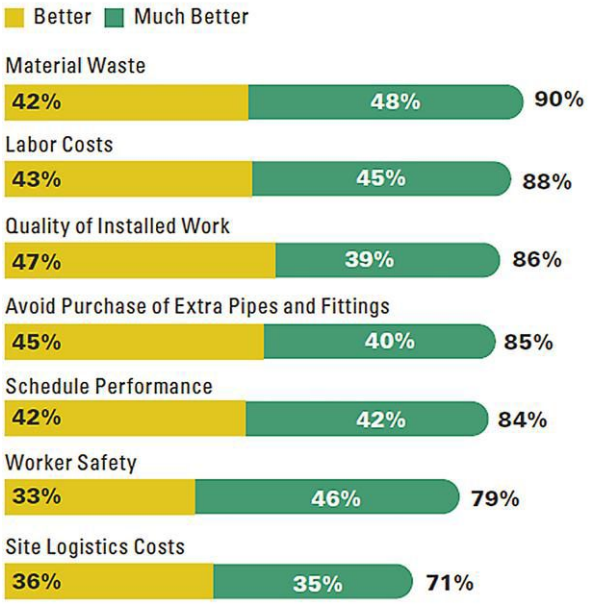
However, despite this wide recognition of the benefits of using BIM and the broad implementation, many contractors are also still not yet using BIM on the majority of their projects. Therefore, the study also explored the top obstacles to wider BIM use, and two clear issues emerge:

1. The most significant obstacle is with having enough BIM-skilled employees, with contractors most frequently selecting training needs for employees and lack of available manpower to create BIM models among their top challenges.
2. The second cluster of issues are related to a lack of commitment to BIM across the full project team, including lack of support for BIM from other trade contractors, other project stakeholders not using BIM and poor-quality BIM use by other stakeholders. Some also place lack of support for BIM from general contractors among their top challenges in using BIM more frequently.

The findings of this study provide more support to the importance not just of using BIM, but having it be part of an integrated digital workflow across the project team. Another Dodge study, published with support from Autodesk in the "Connecting Design and Construction SmartMarket Brief," demonstrates the material value that teams gain from being part of an integrated workflow that includes BIM.

Positive Impact From Using BIM to Prefabricate Versus Site Construction
(Percentage of BIM Users Reporting Improvement Compared With Site Construction)

Dodge Data & Analytics, 2020



For example, general contractors/construction managers (GCs/CMs) who use BIM on 50% or more of their projects were asked what benefits they receive when engineers and trades also engage with BIM. All of the GCs/CMs (100%) report that they experience improved on-site coordination of materials, 73% report improved overall quality/performance in the final building, and 64% report improved overall control/compliance with the project budget and schedule. Thus, getting the entire team on BIM helps more contractors do better on the three key project performance indicators—quality, budget and schedule.

The study also examines the benefits of having an integrated workflow for structural and MEP systems, which is based on sharing model information throughout design, detailing, fabrication and installation. Over half of GCs/CMs and structural and MEP engineers who have worked on projects with an integrated workflow report that it enables better communication during design, detailing and fabrication (74%), produces better coordinated designs in less time (60%), produces better coordinated shop drawings in less time (58%), reduces errors in field installation (58%), reduces duplication of tasks (53%) and provides more accurate trade contractor estimates (53%). Not surprisingly, these process improvements also result in positive impacts on project outcomes, with 61% reporting that they see improved schedule performance and 59% better quality in the systems of the building addressed by the integrated workflow.

The two studies make a powerful argument for the use of BIM on projects, but more importantly, they also demonstrate the value of BIM as a tool to connect the entire project team together, and how the increased ability to share data throughout the entire design and construction life cycle can improve projects, including the most central aspects on which most projects are judged: quality, budget and schedule. CBO

Employee Wellness Risks & Recommendations

A 6-step strategy for the proactive prevention of substance misuse

BY CAL BEYER & SCOTT STAFFON

For the past 2 decades, the construction industry has experienced a steady decline in both recordable injuries and lost workday cases. Yet, the rate of serious injuries and fatalities (SIFs) has remained steady without an associated decrease. Many company owners, operational leaders and safety professionals wonder aloud at why and how these SIFs continue to occur in their companies despite the expansion of their safety training efforts.



WHAT'S UNDER THE HARD HAT

A factor that needs to be evaluated in looking at safety incidents is whether the employees involved were mentally distracted at the time of the incident. It has been reported that approximately 20% of the adult population has an underlying mental health condition. However, many more workers are distracted by the pressures of daily living.

The reality is that employees bring these worries to the workplace, and this can lead to breaks in focus. It is important for construction leaders to consider the invisible crisis in construction: the mental health and well-being of the workforce.

Company leaders are admonished to rethink the possible effect of alcohol and substance use as a major source of distraction that increases the risk of incidents and injuries. Before COVID-19, construction had issues with mental health, alcohol and substance use and suicide. The aftermath of the pandemic has multiplied the pressures on workers and their families. Many turn to alcohol and other substances when times are tough.

SIGNS OF SUBSTANCE MISUSE

There are many challenges with substance misuse in construction, but four substances in particular lead the way: alcohol, opioids, marijuana and cocaine. It is important to understand how these substances impact workers' coordination, judgement and ability to perform their jobs, increasing their risk of an accident or injury by four times. The following examples are representative issues of the prevalence of substance misuse in construction:

- *Alcohol*—Alcohol in moderation is not the problem; binge drinking into the late hours at night without enough time for the alcohol to be eliminated from the system before work the next day is the problem. The industry rates the second highest in heavy drinking, with 16.5% of workers reporting heavy drinking of more than five to seven drinks in a single setting.
- *Opioids*—Opioids are one of the most misused substances in construction,

leading to dependency and addiction. This has been partly due to the physical demands of construction, which has led to a higher rate of musculoskeletal injuries and long-term chronic pain in workers. Opioids have been highly prescribed for pain management to help workers deal with injuries and chronic pain issues.

- *Marijuana*—Marijuana is fast becoming a more acceptable drug. Much of this is attributed to the decriminalization and legalization of personal use in many states with many more considering legalizing it. The challenge with marijuana is two-fold:
  - o The tetrahydrocannabinol (THC) potency in today's marijuana (30% THC versus 10% THC) is much stronger than it was even 5 years ago. This stronger THC content has the potential to cause significant impairment of workers and increase their dependency upon it.
  - o Marijuana is no longer a drug that is just smoked; manufacturers are now extracting the THC from the plant and creating drinks and edibles. This makes it virtually impossible to detect use by a worker on a jobsite.
- *Cocaine*—Cocaine is a readily used substance on jobsites for its ability to be easily concealed and used virtually undetected during the day. Also, stimulants like cocaine can only be detected in the system for a short time frame of up to 72 hours.

HOW COMPANY LEADERS EXCUSE SUBSTANCE MISUSE

There are many ways that companies have "excused" substance misuse as being normal. As the industry struggles to find workers to fill open positions, an interesting trend is emerging related to drug testing. Some companies have either suspended or contemplated stopping pre-employment testing requirements just to fill open positions. The simple question contractors should ask themselves before thinking about this approach is, "Are the risks of this questionable practice are worth the reward?"

EFFECTS OF SUBSTANCE MISUSE

Generally, individuals who are misusing substances are more unreliable, with higher absenteeism or tardiness. Employees with substance use disorders have poor work performance and unprofessional conduct. These factors can create resentment among the rest of the crew, which affects jobsite morale, productivity, quality and safety. Substance misuse by workers poses serious risk for workplace accidents and injuries to themselves, other workers on the site or the general public.

These injuries can adversely affect workers' compensation experience modification rates, Occupational Safety and Health Administration statistics, and medical costs, which can have adverse impacts on prequalification requirements on projects. With these accidents there is increased risk of third-party liability, defense and settlement costs, increased insurance premiums and reputational risk. It is imperative for companies to remain vigilant with their detection.

STRATEGIES FOR EMPLOYERS

Now is the time for companies to take a fresh look at their alcohol and substance use policies and testing procedures. Many employers have found that substance use testing is no longer a deterrent against substance misuse by a small percentage of workers. Below are six key steps for companies to move into proactive prevention steps:

1. Conduct a review of your company's policies and testing protocols by qualified subject matter experts to help ensure your practices are current with recommended best practices and legally defensible.
2. Review your company's historic results for substance use testing by evaluating the results for each category of testing.
3. If your company is a union contractor, check with the business agents of your locals to see if the union(s) has an employee assistance program (EAP) or a member assistance program for its workers. If your company does not have an EAP, consider the benefits and the relatively low cost associated with such a program.
4. Expand education for company leaders on recognizing the warning signs of substance misuse and the eligibility and services available through the EAP. It is important for employers to understand the difference between voluntary and mandatory EAP referrals.
5. Share resources with employees and their families about your company's EAP resources, the Substance Abuse and Mental Health Services Administration (SAMHSA) helpline number, and community-based organizations offering services.
6. Expand education for all employees to include information in new hire orientation programs, pre-project kickoff meetings or a safety stand-down on substance misuse. **CBO**

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Understanding the Advantages of Audit

4 questions to help improve your company's internal financial controls

BY JAKE ORTEGA

Guaranteed maximum price (GMP) construction contracts are audited more often due to the nature of the reimbursable costs. And the contractors on these projects often have questions when the client notifies them that their project may be audited. Does the client mistrust the contractor? Is the client looking for something specific? Is this just a way to beat up the final costs? Don't forget to add in the perception of the unforgiving auditor who ransacks the mounds of paperwork searching for any shred of evidence or mistake. These questions and ideas lead many contractors to have a cynical attitude toward an audit.



But consider another point of view. The client, who is spending millions of dollars to have something built, wants to ensure that the project is being built correctly and efficiently and that the money is being spent carefully. In addition to the bank loan, there may be layers of investors, funding sources and stockholders that all have various fiduciary requirements as part of the fiscal responsibility of their money. Think about how many news reports there are on the misuse of funds.

There is a growing need from many organizations to have assurance that they are being diligent stewards of the money they are spending or lending. Audits are not necessarily a reflection of concerns with project performance. An increasing number of contractors are welcoming construction audits in order to support their position on projects and to prove that they have acted responsibly within the bounds of the contract.

Despite the common misperception, an auditor's main role is not to find mistakes to make you look bad or to penalize you. In fact, a construction auditor's primary function is to provide a systematic and independent examination of data, records, operations and performances to verify the final contractually allowable costs. A neutral audit can serve to help the owner confidently discuss the care and diligence put into the managing of the funds.

The main steps of a construction audit are the same as the steps that should be taken to financially close out a project. There are contractors who perform their own audits as part of their project controls process. These are much more streamlined, given that it is being done internally. The quality of a firm's project controls often has a direct correlation to the magnitude of findings, if any.

1. WHY IS THE PROJECT BEING AUDITED?

When contractually allowable, the invocation of an audit clause is a reasonable and responsible action that may be taken to ensure accurate total billing. Beyond the financial aspects, many organizations will audit construction projects to help plan for future projects by understanding the differences between their budgets and final costs. Audits can be used for internal compliance verification, as well as a review of how the terms of the construction contract were executed in comparison to the stakeholder's expectations.

It is common for an audit to be requested simply to verify the final project value. Many organizations are not accustomed to spending large amounts of capital on construction. Audits with small or insignificant findings can be just as meaningful as audits that uncover large mistakes. Minimal findings can strengthen the relationship between the owner and contractor by showing that the process was working as planned.

2. WHERE ARE THE ERRORS?

The pay application represents a finite point in time with a cumulative view of the project to date. Many auditors will look at the data in different ways to validate that the total of all the payment applications matches the totals of all the supportable cost documentation. It is also important to understand that some costs are not reconcilable until the end of the project. Some examples of these types of costs include bonds, insurances and certain types of allowances.

It is entirely possible that the sum of the pay applications exactly matches the total value of the project. While this may be the internal requirement for some construction companies, it does not make it universally true. The auditor cannot assume that all data is contained within the pay application until they have performed their diligence. The results can validate the accuracy of the pay application process.

3. WILL THE AUDITOR BE FAIR TO BOTH PARTIES?

It is in the auditor's best interest to present an unbiased report of audit findings. Most construction audits are a verification of what has been presented by the contractor as valid and verified costs. If the contractor believes that there are valid unsubmitted costs, then they should present these in billings, change orders or some type of communication with the owner. Contractors who are unsure of their own numbers can also engage an auditor (internal or external) to perform a similar task.

In the end, it helps the contractor to be as forthcoming with their data and documentation as possible. Even in an adversarial situation, cooperation demonstrates the intention to comply with the contract. The easiest way to understand the auditor's intent is to ask yourself what you would want from someone else if it were your money. Some owners and contractors will jointly hire auditors so both parties are equally represented. There are owners who seek, and some audit firms that sell "recovery audits" based on contingency fees. Certain states and federal entities, like the Securities and Exchange Commission, have discouraged contingency-based fees for financial auditing with the premise that it can distort the objectivity of the auditor. A good auditor should have the professional integrity to provide the same service regardless of their fee structure.

4. HOW DOES THE AUDIT BENEFIT THE CONTRACTOR?

A construction audit can also have benefits for a contractor. An audit can help to strengthen the trust from the project owner. Working through findings and being open to correct mistakes demonstrates the willingness to be part of the overall capital improvement team. This increased trust and cooperation helps to build a long-term relationship, which can potentially lead to more work. Furthermore, it can build a reputation of integrity that can open additional doors of opportunity.

> An increasing number of contractors are welcoming audits in order to support their position on projects & to prove they have acted responsibly within the bounds of the contract.

Audits can provide confidence in the contractor's fiscal stewardship of the project funds. The results can confirm good project control practices or be a catalyst for a contractor to improve their controls. Good cost and document controls does take additional time during a project. But it ultimately saves time in the long run by helping a construction firm be prepared for audits, claims or disputes with owners as well as subcontractors and vendors.

Nearly every GMP contract has audit rights for the project owner. There are advantages when a contractor is both accepting and supportive. It enforces the relationship of trust and confidence between the contractor and owner. The ultimate result is better internal controls and industry reputation. **CBO**

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Do You Know Who's on Your Jobsite?

Adjusting subcontractor regulations & on-site visitor policies for a pandemic

BY CAPREECE SERNA

As business owners across the country have discovered, adapting to a new normal in the middle of the COVID-19 pandemic is no easy feat. You face pressure to be there for your customers and return to pre-pandemic levels of operation. At the same time, it's up to you to help keep your employees safe and healthy while implementing potentially lifesaving recommendations from the Centers for Disease Control and Prevention (CDC), as well as Occupational Safety and Health Administration (OSHA) guidelines. In the construction industry, close quarters and shared equipment can make following these guidelines difficult. But it's essential that you clarify expectations and educate your employees on the dangers of COVID-19. This is particularly important as your jobsites become increasingly populated. In a time when human proximity needs to be closely monitored, any visitors to your jobsites introduce an element of risk. Here's how you can modify your on-site visitor policies and subcontractor regulations in this new climate.



ESTABLISH PROCEDURES FOR JOBSITE VISITORS

By now, you should have a comprehensive COVID-19 exposure control plan in place. Apply the same safety protocols you use for your employees to visitors. Consider implementing the following guidelines:

- *Require all visitors to make appointments prior to entering your jobsite.* This will help you:
  - o Accurately monitor exactly who's on-site at a given time
  - o Give your employees time to prepare for visitors
  - o Keep the number of on-site visitors to a minimum
- *Require visitors to fill out a daily assessment before entering the jobsite.* Include questions on recent travel, symptoms they're experiencing, and any recent contact they've had with an individual who's tested positive. Ask visitors not to enter your jobsite if they're experiencing any symptoms. If they're already on-site when the symptoms develop, ask them to leave and contact their health-care provider.
- *Identify customer-accessible areas and provide visible, clear signage.* Be sure all of your employees know procedures for redirecting customers away from restricted areas on and around the jobsite.
- *Modify your delivery and pick-up process.* Here's what to include:
  - o Coordinate site deliveries and pick-ups to minimize employee contact
  - o Implement cleaning protocols to disinfect deliveries

- Establish a drop-off location and procedures at jobsites
- Minimize interaction and practice social distancing during deliveries

DEVELOP A SUBCONTRACTOR PROTOCOL PROGRAM

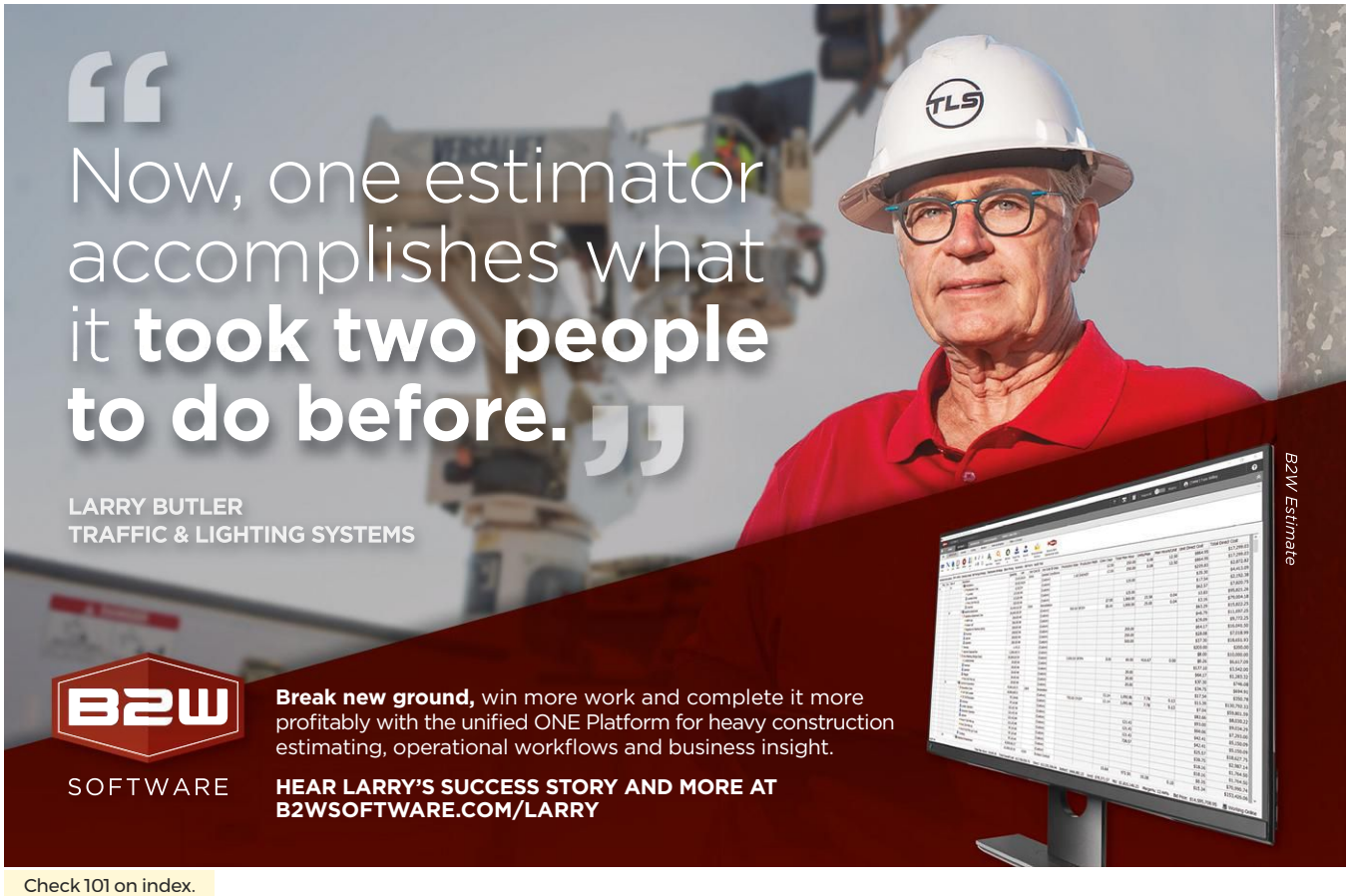
Subcontractors may spend extended periods of time on your jobsite, which increases the likelihood of close contact with your employees. To help mitigate the risk to everyone involved, consider developing protocols specifically for subcontractors. Include the following:

- *Establish a daily sign-in/sign-out sheet.* Being able to determine who visits your jobsite on a given day could prove vital in the event that a subcontractor or one of your employees is exposed to COVID-19.
- *Stagger task assignments and work schedules.* This will help you reduce population density in specific work locations at specific times and make it easier for everyone on the jobsite to maintain social distancing.
- *Assign responsibilities to the jobsite superintendent.* The superintendent, project manager or safety director should be responsible for evaluating daily tasks and performing site inspections. As part of their duties, they should communicate:
  - Any modifications to standard operation procedures
  - The tasks scheduled to be performed throughout the day
  - Guidelines and tips for incorporating social distancing
  - Requirements and guidelines for personal protective equipment
- *Increase frequency of breaks.* Some workers may report struggling to breathe while wearing a mask in warm weather. To help minimize this risk, encourage workers to take frequent short breaks—ideally in a location that allows for social distancing, so they can temporarily remove their mask.

By demonstrating your commitment to helping your employees, subcontractors and other visitors stay safe and healthy—and making modifications as the CDC and OSHA learn more about this constantly evolving virus—you play a key role in our country's collective goal of returning to normalcy as soon as we safely can. **CBO**

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Check 101 on index.

Demystifying the Surety Process

What construction execs need to know to get it right every time

BY KEN CHAPMAN

Contract surety bonds provide essential protection for key parties involved in a construction project. They secure both project performance and payment of project-related costs in the event of unforeseen circumstances. Despite this, many projects are not bonded—potentially creating significant risks for project owners, subcontractors and suppliers.

One reason surety bonds are not used more often might be the perception that securing them is a complicated, burdensome process. That is unfortunate, as the benefits far outweigh the effort necessary. In addition, construction companies could be cutting themselves out of bidding opportunities on publicly funded projects, as most require surety bonds. Construction executives serious about growing their business would be wise to invest some time in establishing a relationship with a surety provider. It does not have to be a confusing or laborious process, as detailed below.



WHAT IS A CONTRACT SURETY?

It can be helpful to think about the surety process as a way to pre-qualify a construction company for a project. Securing a contract surety bond means a company has passed a rigorous assessment of its financial health, organizational capabilities and its ability to complete the project. Contract surety bonds are generally provided by insurance companies specializing in this area with the product representing a three-party obligation. The insurance company is the first party, the surety, and guarantees the performance of the second party, the contractor, to a third party, the obligee, such as a developer or project owner. An important distinction here is that surety is not insurance for the contractor, it's a credit guarantee very similar to what a lending institution provides.

In most cases, if a developer (the obligee) wants to build a project, they hire a construction company (the second party). In order to ensure that the project will be completed and financial obligations to suppliers, subcontractors and others are met, the developer can ask the contractor to provide bonds. Then it is up to the construction company to go to a surety agent who works on the company's behalf to find the best surety provider to secure the bonds.

The insurer will conduct a detailed review of not only the project, but also the construction company itself (more on that below). A knowledgeable surety agent will help you navigate the process smoothly and efficiently. If everything meets their requirements, the surety company establishes a relationship with

the construction company and provides the necessary bonds.

TYPES OF CONTRACT BONDS

The type of contract bond a contractor will have to secure depends on the project, parties involved, and the requirements of the developer or project owner. The most common are the following:

1. *Bid bonds*—These provide financial protection for a developer or project owner in cases where a contractor submits the low bid but either doesn't actually sign a contract or fails to secure payment and performance bonds. Bid bonds are also a way to ensure only qualified contractors submit bids, as a surety will not issue one to a construction company that is not capable of handling the project.
2. *Performance bonds*—Performance bonds protect developers and project owners when a contractor defaults or doesn't finish a construction project. They allow the developer to have the project completed as laid out in the contract (i.e., by hiring another contractor as one option). There are detailed terms and conditions in the contract bond outlining how this can be accomplished.
3. *Payment bonds*—Developers and project owners need to have their projects delivered free of liens. In the public sector, generally speaking there are statutes meant to protect those supplying labor or materials on a project. With a payment bond in place, these entities can make a claim with the surety and seek restitution. Having a payment bond also lessens the chance that unpaid subcontractors will stop work and cause delays or even derail a project.
4. *Warranty bonds*—These are sometimes known as maintenance bonds and ensure any defects in workmanship or materials will be taken care of during the warranty period.

NAVIGATING THE SURETY PROCESS

As noted above, a surety essentially prequalifies a contractor and guarantees that they will finish a project and pay their bills. The process for securing a surety is very similar to applying for a mortgage or business loan and your agent should help advise you through the process. It's an evaluation that reviews a contractor's financial health, operations and work history. As it conducts its assessment of the contractor, the surety will review a number of things, including:

- Areas of expertise/experience
- Balance sheet
- Banking history and relationships
- Cash flow
- Contractor's character and reputation
- Credit score and history
- Current and past projects or work
- Details of the proposed project
- Net worth
- Profit and loss statement
- Working capital

This is a thorough process, and there are things a construction company can do to ensure it happens as efficiently as possible. Mostly, it's about being organized and having all the documentation the surety company will need in order to do its work. This documentation should include:

- Complete personal and company information
- Details of any bank loan agreements, including lines of credit
- Information on the project to be bonded, including the contract
- Personal financial statements for company owners
- Proof of insurance
- References from suppliers, creditors and project owners
- Resumes or detailed bios for owners and key company employees
- Schedules of work for current and completed projects

> Securing a contract surety bond means a construction company has passed a rigorous assessment of its financial health, organizational capabilities & its ability to complete the project.

- Signed indemnity agreement in which company and owners pledge their guarantees to the surety
- Three years of complete financial statements, along with the current year's interim statement

Having all of this ready and available for the surety can go a long way to keeping the review process on track.

Navigating the surety process is similar to the process of applying for a loan. It doesn't have to be confusing or laborious. While securing a surety relationship can take some time and involve a bit of effort, there are many important reasons why it's crucial—the least of which is that it can open up additional project opportunities.

The surety relationship should also be seen as an important business partnership—one that can last decades in many cases and brings key benefits. Taking the time to find the right surety partner for your company is an investment in your business that will pay off. **CBO**

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Traversing the Post-Pandemic Workplace

What workforce laws could look like after COVID-19

BY RICHARD D. ALANIZ



The reopening of America's workplaces, temporarily paused in some states due to spikes in COVID-19 cases, is creating a variety of challenges for employees and employers alike. In some cases, employers attempting to resume operations have been hampered, and in some instances, they are unable to do so due to laid-off employees' reluctance or refusal to return to work. Until its expiration at the end of July, many workers were receiving more in unemployment benefits than they would make working as the result of the $600 per week federal enhancement.

At print time, Congress remained deadlocked over the specifics of a new stimulus bill. While the need for a continuation of a federal unemployment supplement is acknowledged by both Democrats and Republicans, they continue to disagree on the exact amount. In the face of a continuing stalemate, President Donald Trump implemented a $400 add-on through executive order. It is unclear when such payments will become a reality and whether it will be the amount finally agreed upon in the pending stimulus bill when it becomes law.

Given the continued double-digit unemployment, with many jobs lost permanently due to business closures, there is little question that a continuation of enhanced unemployment benefits will be needed for some time to come, even if it causes some to forego a return to work, exacerbating the refusals to return to those jobs that are available. For some, the short-term additional benefits outweigh returning to a job they fear may be lost in the near future anyway.

Even if they are able to reopen, employers are immediately confronted with the reality of the need to implement and consistently enforce, for at least some period into the future, the safety protocols against coronavirus recommended by the Centers for Disease Control and Prevention, the Occupational Safety and Health Administration (OSHA), and the various state and local public health agencies.

These well-known protocols include the social distancing that has become commonplace, handwashing stations, the use of face masks, regular monitoring of employees for COVID-19, and also, where feasible, the reconfiguration of workstations to protect employees from possible exposure to the virus. Some employers are also requiring for COVID-19 before permitting employees to enter the workplace.

COVID-19 LAWSUITS

In addition to the need to take reasonable measures to ensure their employees' safety and health, employers are also seeking to avoid possible federal or state agency enforcement actions—as well as the potential liability—from lawsuits to which others have been subjected. OSHA has received over 5,000 complaints related to worker safety involving possible COVID-19 exposure.

More than 2,000 lawsuits raising claims regarding coronavirus have also been filed in courts across the country. Some of these lawsuits accuse employers of not providing adequate personal protective equipment (PPE) to their employees. Others involve claims that the employer has endangered employees by permitting persons into the workplace without testing for COVID-19. Some allege that the employer has neglected to inform them of possible exposure from an employee who

has tested positive. Many involve claims of employer failure to adequately enforce social distancing or related safety protocols. In those workplaces where jobs have been permanently eliminated, the potential for claims of discrimination based upon a legally protected status, such as gender, race, age, or disability, could also be filed. Employees who have lost their jobs after months unemployed may see little downside in filing such claims. As more workplaces reopen, most experts are predicting an increase in all of these types of lawsuits against employers.

WORKERS' COMPENSATION LAWSUITS

Another issue that is already confronting many employers is the increase of workers' compensation claims related to coronavirus. As all employers are aware, it generally covers any injury or illness "arising out of and occurring in the course of their employment." The complicating factor in COVID-19-related claims is that workers' compensation does not apply to the "ordinary diseases of life." Proving that the disease was contracted in the workplace may be difficult.

The well-known community spread of COVID-19 may cause state workers' compensation commissions to find that the illness is not work-related. Employers and their insurers have a viable argument for arguing against such claims.

In order to avoid the automatic denials of these types of claims, at least nine states, including Arkansas, California, Florida, Kentucky, Minnesota, New Hampshire, North Dakota, Utah and Washington, have issued executive orders that for the duration of the pandemic, create a rebuttable presumption that workers became infected on the job if they have worked during that period. It is likely that more states will take similar action.

WORKPLACE IMPACT DUE TO COVID-19

The ability to convince a sufficient number of employees to return to work, maintaining strict coronavirus safety protocols, and avoiding legal actions—while significant—are not the only issues confronting employers as they try to resume operations.

In an effort to maintain some level of business continuity, many workplaces instituted operational changes that impact employees. In some workplaces, where feasible, employees were permitted to work remotely, and many continue to do so. Some employers made job consolidations to work with reduced staff, many made work schedule changes and similar restructuring of normal operations.

Where such changes were viewed as positive by employees, there will be pressure to continue the changed procedures after the resumption of operations. For example, recent estimates indicate that approximately 30% of people who have been working from home want to continue to do so. Absent evidence that such remote work created operational difficulties, it may be difficult for an employer to end the practice without significant employee pushback. Similarly, the ability to successfully operate leaner during the pandemic will cause employers to want to make any job consolidations and eliminations the new normal.

In addition to the need to take reasonable measures to ensure their employees' safety & health, employers are also seeking to avoid possible federal or state agency enforcement actions—as well as the potential liability—from lawsuits to which others have been subjected.

The temporary layoffs of several months ago will become permanent. This could in some cases precipitate the types of discrimination claims previously mentioned. It might also cause employees who were recalled to view the treatment of their terminated coworkers as unfair or arbitrary.

UNION ORGANIZING & THE CORONAVIRUS

The perception of mistreatment of former employees whose jobs were eliminated, along with any potential concerns over the uncertainty of their own continued employment, could lead to a disgruntled workforce. If there are miscues in maintaining the COVID-19 protocols that are perceived as causing an increase in positive cases, employees may view the employer as not sufficiently protecting their health and safety.

Such employer frustrations could create a fertile field for union organizing. It is apparent that unions see the disorder in many workplaces caused by the pandemic as a unique opportunity to ramp up organizing efforts. The June 15 edition of Politico's "Morning Shift," its regular update on labor and related issues, had as its headline, "Coronavirus fever incites union drives."

The post-pandemic workplace in many cases will be rife with obstacles that could overwhelm some employers. Knowing what may be around the corner and taking steps to avoid it may help employers successfully acclimate to the new environment. CBO

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COVID-19 Risk & Liability Prep

4 factors to consider for better project outcomes amid the pandemic

BY JEFFREY KOZEK



With commercial construction back to work and projects across the country continuing to add jobs, one study indicates 56% of industry losses since the beginning of the pandemic have been recovered. This indicates owners face new or different aspects of liability due to the COVID-19 environment.

While many contracts account for the effects of force majeure events, the unique nature of this year's disruptions and return-to-work adaptations may open the door to some equally unique claims or litigation. New and frequently changing parameters across the industry will require all parties—including owners, developers, design professionals and contractors—to adopt a targeted approach to their preparedness, while maintaining flexibility to stay successful.

One of the riskier things construction business owners can do right now is to view the return to work as a return to normal, whether that means disregarding safety and health protocols or failing to be on top of the primary issues impacting others across the industry.

With so much uncertainty about longer-term impacts, communication is essential through every level of the project to make sure all team members are in sync with the changing parameters. Adapting operations and expectations is worth the time and consideration in order to help reduce a project's risks.

While factors outside of personal control continue to influence all facets of the work, a large part of making sure that COVID-19-related liabilities don't continue to severely impact a project is careful oversight of vendors and contractors. Though many of the risks facing each are specific to their own work, the nature of litigation means all parties involved in the building project are susceptible to being brought into a suit. Their lapses are not separate from the project itself, particularly if owners have also failed to set the tone through their own preparedness for the potential impacts on the project.

What does preparation look like under current, and potentially ongoing, circumstances? The following four factors can help put your team and its projects in the best possible position to successfully navigate the effects of the pandemic.

- *For ongoing projects, begin by thoroughly documenting the project's progress—as well as any disruptions and delays that can be attributed to the pandemic's impact—to establish a clear record.* This includes segregating known or claimed impacts pre-shutdown to those impacts created solely by the shutdown due to varying issues and fact patterns and different facets of recovery under each contract. For upcoming projects, accept the reality that time and cost of performance may be higher than in the pre-COVID-19 era.
- *Make sure you are knowledgeable about the specific details in your own contracts and coverage, rather than assuming you're protected or won't be affected.* For example, under one contract, a contractor may be only entitled to an extension of time; while another contract may allow recovery of extended general conditions; while another contract may, under a suspension of work provision, allow for an extension of time for a reasonable period and then permit recovery of both time and money once it is determined that the period of delay is "unreasonable." If you're not sure what your contract calls for, you won't know what liability you have.

- *Remember that your agreements don't exist in a vacuum, and federal, state and/or local directives may continue to alter plans.* Prepare to the best degree possible by establishing plans of action that properly address the required changes for COVID-19 compliance while remaining flexible as conditions or parameters change. Take the time to reach out to experts like consultants, brokers and lawyers to clarify your understanding and prepare for possibilities you hadn't previously considered.
- *You are only as good as your people, so protect them.* Create an environment in which they can safely work. An unhealthy employee or worker not only risks that person's well-being, but also could impact the health of others. Projects are still constructed by people, not machines, so surviving each project with minimal economic harm is dependent upon administrative, management, supervisory and craft personnel being available to work.

As so many elements of the industry have already been impacted, from cost and schedule to personnel, we know the new risks will be an ongoing element of work this year. There's great possibility that such effects will also continue into 2021 and beyond. Don't risk further liability by not preparing, periodically revisiting preparations, and revising preparations for existing and planned construction. CBO

New & frequently changing parameters across the industry will require all parties to adopt a targeted approach—including owners, developers, design professionals & contractors—to their preparedness, while maintaining flexibility to stay successful.

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BIDDING: Variables Affecting 2020 Bids | By Steven Mroczkowski & Alex Koltsov

BIDDING MISTAKES TO AVOID, TRENDS TO WATCH & MORE METHODS FOR MASTERY

The construction industry has been hit hard by the COVID-19 pandemic. The United States Small Business Administration has reported that approximately $65 billion of Payroll Protection Program loans went to construction industry participants. As the country attempts to transition into the uncertainties of recovery, those up and down the contract chain should be mindful of operational and legal considerations for current and ongoing projects.

This article is intended to provide an overview of some of the variables that have and will continue to affect the construction bidding process in the coming months. It also provides an overview of key legal concepts applicable to the bidding process.

Bidding does not occur in a vacuum. There is more to it than merely performing a scope review and assigning a price. The bid will also consider other project-specific factors (e.g., schedule requirements, location of the work, means and methods) and external dynamics like the volume and type of future opportunities and confidence level in the ability of third parties to deliver services at a transparent cost. The pandemic has increased volatility associated with many of these variables and, therefore, has augmented risk. Understanding the implications of the broader economic landscape and the downline translation to current and future project bids are critical.

MACROECONOMIC TRENDS

According to the National Bureau of Economic Research, the U.S. economy entered a recession in February 2020. This is an important designation for the construction industry because during periods of economic downturn, future demand for certain segments decreases, while activity in other segments is often accelerated. The following is a brief overview of factors that indicate a decrease in the commercial construction market but an increase for public works and infrastructure projects.

Commercial Construction

The Architecture Billings Index (ABI) published by the American Institute of Architects captures the change in architecture billings on a monthly basis and is considered an indicator of future nonresidential construction activity (9 to 12 months of lead time). The May 2020 edition of the ABI indicates that design contracts, inquiries to architects and architect billings decreased sharply from February 2020, with the commercial and industrial sector



experiencing the largest drop. A recent report by Dodge Data & Analytics supports this assessment as only seven commercial projects valued at over $100 million entered the planning stage in June 2020 (compared to 17 in June 2019).

Infrastructure & Public Works

It is well established that one lever the U.S. government can pull to stimulate the economy is through investment in infrastructure. This occurred after the Great Recession with the injection of more than $830 billion associated to the American Recovery and Reinvestment Act of 2009 and is currently under consideration as part of the Moving Forward Act.

The Fact Sheet for the Moving Forward Act states that it is a $1.5 trillion plan to "rebuild American infrastructure—not only our roads, bridges and transit systems, but also our schools, housing, broadband access and so much more."

As construction companies implement a more robust review of their business processes and related costs to help streamline bidding, it is important to have a working knowledge of the basic legal tenets of the bidding process so that operational realities align with the legal bidding framework. An understanding of some general bid dispute scenarios can serve as a starting point for analyzing a bid dispute, whether it was caused by the pandemic or not.

WHAT IS A BID?

Construction bidding is governed by a combination of bidding/contract documents, state-specific contract law principles, and, in the public context, the applicable procurement law. On private and public projects, bidding instructions and documents will be critical.

Review them, know them and also understand that while it may be a stated goal in the documents, a private bidding process does not always result in the lowest, responsive bid being accepted. A bid submission on a private project is an offer to enter into a contract that can be accepted, modified (resulting in a technical rejection and counteroffer) or rejected outright.

On public projects, a bid is typically treated as an option extended to the public body by the bidder that might be quasi-revocable. Whether the bidder can be released from a bid that is otherwise responsive (and possibly low) depends on what the applicable procurement law provides. Some allow releases for mistakes, passage of time without a response from the public body or just cause. However, knowing these "outs" before bidding is important.

REMEDIES RELATED TO BID DISPUTES

Several scenarios can cause bid disputes. Below are four common scenarios, each of which can change significantly if facts or assumptions differ slightly. However, understanding the general framework of these scenarios can help construction industry players navigate bid disputes that have already occurred and manage, prepare for and mitigate the effects of those to come as a result of the coronavirus pandemic.

General Delay

On private projects, a bidder's ability to withdraw a bid due to a general delay will depend on whether the party seeking bids has already accepted. As a general matter, an offer (here, a bid) can be withdrawn any time prior to acceptance. If a delay occurs after bid acceptance, withdrawing the bid can be more difficult—arguably, the offer has been accepted and a court might find that a contract exists. Further, equitable doctrines—like justifiable reliance, promissory estoppel—might prevent the bidder from withdrawal.

On public projects, withdrawing a bid can be more difficult, even where the process has encountered a delay. However, procurement laws provide some relief. For example, many acknowledge the economic concept of opportunity cost and allow bidders to withdraw where there has been a delay in making awards. Where the public body has failed to act (due to lacking funding, a pandemic and political upheaval), bidders should not be held hostage to a stalled project in the bidding phase and can be released if they follow the procedure outlined for doing so. This usually entails submitting a written notice the public body within a certain time frame.

Mistakes in a Bid

If a bidder makes a mistake while bidding a private project and the mistake is significant enough to justify withdrawal, it can make business sense to promptly withdraw the bid prior to acceptance. If the bidder does not discover the mistake until after acceptance, quick, clear communication can prevent future disputes. This can allow the parties involved to identify the mistake, its magnitude and potential effects.

However, generally, a unilateral mistake of fact in contracting does not entitle the mistaken party to rescind or reform a contract. Other doctrines may be available that relieve the bidder from performance, such as impossibility, frustration of purpose or force majeure, but the parties will not know whether they apply, legally, absent court or other dispute resolution, proceedings.

Mistakes in bids on public projects can be costly and time-consuming for the bidder and the public body. Also, because of the legal framework, a bidder is not automatically allowed to withdraw a mistaken bid even if the public body has not accepted it. The type of mistake matters. Clerical, obvious mathematical and typographical mistakes are usually uncontroversial and can be corrected. But procurement laws might not allow substantive corrections to bids. Often, correcting a substantive bid mistake that renders an otherwise nonresponsive bid a responsive one, is not allowed. If a mistake is discovered after a bid award has been made, as is the case in the Federal Acquisition Regulation, dispute resolution, rather than mistaken bidding, procedures will apply.

Bidding does not occur in a vacuum. There is more to it than merely performing a scope review & assigning a price. The pandemic has increased volatility associated with many variables &, therefore, has augmented risk.

Bid Protest

Private project bidding is not subject to the same legal protections as public bidding. As such, awards sometimes do not go to low bidders. Barring rare circumstances, there is little recourse for challenging an award that a lower bidder feels is "wrong."***

Public projects are supposed to be competitively bid and awarded to the lowest, responsive bidder.*** Generally, a party protesting a bid award must contest the bid at an administrative level before pursuing relief in court (also known as exhausting administrative remedies). Processes and procedures for doing so vary depending on the procurement law that applies. Missing a step in the process can be fatal to a bid protest claim.

Project Cancellation

On private projects, cancellation before an award results in a de facto rejection of the bid (the "offer," in contract terms). Whether other doctrines will apply that allow bidders to pursue damages against the party soliciting bids will depend on the facts of each case and is beyond the scope of this article.

Public bodies do not solicit bids for projects that they do not intend to pursue. However, there is almost always a way out for the public body to provide notice of bidding cancellation and a "reject all" scenario. Procurement laws often bestow discretion on the public body to cancel bidding where moving forward would not be beneficial to the public (e.g. due to lack of funding).

Whether a project can be cancelled after awards are made can be a matter of contract for both public and private projects. Bidders and those soliciting bids should review bidding documents, instructions, procurement laws, and in the contract documents themselves, the termination for convenience clause.

To address the evolving business landscape, all contractors should proactively consider incorporating an enhanced level of analysis to understand their internal cost structure, key production assumptions and relationships with critical third parties.

Specifically, contractors should focus on the following areas for competitive bids while considering the applicable legal and contractual framework:

1. Openly communicate with project partners and agree to key assumptions that will formalize cost-sharing decisions. This may require additional analysis regarding the appropriate contract type to leverage for phased projects with unknown cost and schedule implications.
2. Analyze base (minimum) cost structures and include COVID-19 related costs, such as (multiple) remobilizations, additional costs for permitting/inspections, personnel for mass cleaning, reduced efficiencies due to a partially remote office staff, and other costs related to state or project-specific guidelines.
3. Track current and ongoing production rates, the impact of shift work and other jobsite constraints and clearly explain assumptions and allowances into bid estimates.
4. Understand changing material prices and the downline impact to bids. The Bureau of Labor Statistic publishes changes in raw materials on a monthly basis. (For example, steel mill products decreased by 8.9% between June 2019 and June 2020 while softwood lumber increased by 18.6%).
5. Perform enhanced diligence on business partners to validate solvency and confirm ability to perform under various scenarios. Similarly, diversify supplier base should supply chain constrains arise in the future. **CBO**

Footnotes

*Nothing herein constitutes legal or accounting advice nor does it create an attorney-client or accountant-client relationship

**However, certain tort remedies may provide recourse, such as tortious interference with contract or with business expectancies and civil conspiracy claims. Again, these causes of action are governed by state law and, are not easy to plead, let alone prove.

***A quasi-exception may exist for some P3 projects depending on what the P3 enabling legislation says. If a contractor is bidding P3 work, it should have an understanding of changes, if any, that were made to the traditional competitive bidding process that would otherwise govern public project bidding by the P3 enabling legislation.

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YOUR NOMINATIONS ARE IN



Look for this special section in CBO's November issue!

OUTSTANDING WOMEN IN CONSTRUCTION 2020

Nominations are closed and we're only a month away from announcing Construction Business Owner Magazine's Outstanding Women in Construction 2020.

From GCs to CEOs and specialty trade workers, our November issue will showcase the hardworking female professionals who are advancing the construction industry.The special section will recognize some of the construction's best, based on nominations submitted by readers across the country.

Follow along for more information and the announcement of this year's finalists at constructionbusinessowner.com/owic2020.

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CONSTRUCTION BUSINESS OWNER

BIDDING: Estimate Quantity to Improve Quality | By Safeer Ullah Khan

6 STEPS TO FINE-TUNE YOUR TAKEOFFS & BANK ON BETTER BID ACCURACY

As a leader in the construction industry, one should know what they are committing to before bidding on a project, and quantity takeoffs are the definite way to attain that knowledge. They not only get a company suitable projects, but quantity takeoffs also help create seamless construction processes, which, in turn, helps teams stay within budget while preparing for contingencies and optimizing workflows. However, the cost fluctuations, errors, missing items, unforeseen circumstances and even small mistakes in calculations can easily make a quantity takeoff redundant, sabotage a project and eventually come back to haunt the contractor and its reputation. Therefore, it is a wise business move to invest time, money and energy into creating a process that produces consistently better quantity takeoffs. Quantity takeoffs involve breaking down the whole project into a detailed list of material quantities and activities alongside their feasible prices. When added up, the individual costs create the material cost of the project, which is then factored for material waste, surcharge, overhead, taxes, contingency costs and, of course, labor costs. The following article outlines six steps to help improve the quantity takeoffs being done at your company.

1. BUILD AN IDEAL ESTIMATING DEPARTMENT

An estimator has the spotlight during the bidding stage. They create the quantity takeoffs, so they should possess certain technical and soft skills that will help ensure their report can be trusted. An ideal estimator should have the following skills:

- A technical background
- An attention to detail and recordkeeping
- A proficiency with the latest takeoff technologies

More often than not, a small or midsize business owner may not delegate this responsibility. It is understandable, because trusting others with your quantity takeoffs is a huge leap. But your business needs to grow, and you should actively look for professionals who can wear this hat.

2. UNDERSTAND THE PURPOSE OF QUANTITY TAKEOFFS

Quantity takeoffs are prepared at many stages of a project life cycle. The estimator should know the level of detail needed to match the requirements. During the conceptual phase, a takeoff report could be brief, whereas bidding against a construction set will require more details. Similarly, preparing takeoffs for material procurement, bidding and change order approvals all have different requirements. The desired quality cannot be achieved unless the purpose is clear. Quality and utility of a takeoff are often perceived by how the information is presented and organized.



3. FOSTER COMMUNICATION DURING THE PROCESS

The quality of takeoffs greatly depends on communication with all the stakeholders involved in the process. Therefore, it's critical to have a system in place to keep a record of all the communications. Traditionally, emails have been used to raise requests for information, but the industry is adopting new software solutions that allow everyone to raise questions and provide answers within the system. Therefore, any changes in the takeoffs should be properly referenced.

4. LOOK FOR INDUSTRY-SPECIFIC TAKEOFF SOFTWARE

There are many takeoff software options available on the market, but choosing the right tool is the key to high-quality takeoffs. Always look for a software solution that fits the need your segment of the construction industry. The right software will use details in designs and construction documents to analyze and generate a list of all materials. The kind of customization options that comes with these tools means that an estimator can easily go into the system later and make the right adjustments as needed to uphold levels of quality.

5. STORE IT IN THE CLOUD

All involved parties must have the same understanding of the job, and that is only possible if the data is managed in a cloud-based application. This allows a realistic and competitive—yet profitable—bid. This requires a holistic technological adoption and a complete mindset change within the organization. The industry is embracing digital mediums where information flows fluidly. Plan rooms and collaboration portals are being used now more widely than ever.

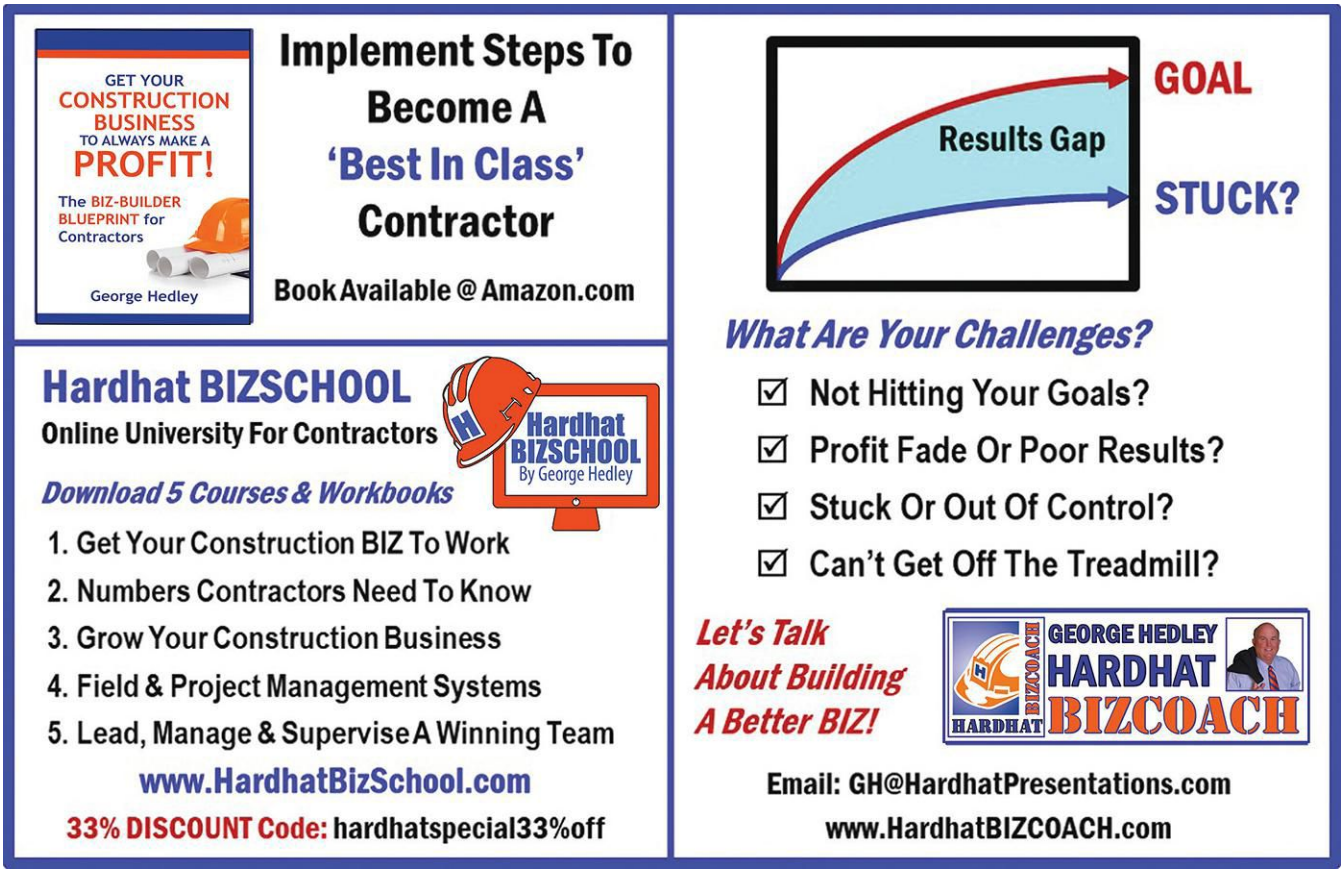
6. EMBRACE 'ESTIMODELING' USING BIM

Building information modeling (BIM) and 3D modeling are inextricably linked. It's this information—the cost, materials, time, etc.—that distinguishes BIM from 3D modeling. BIM has made estimation far more profound than the traditional spreadsheet and Excel templates.

If you are not integrating technology to aid preconstruction processes, your competition will. It is becoming a necessity and not just a nice option for preconstruction planning. CBO

Safeer Ullah Khan is a professional civil engineer with 7 years of experience in the preconstruction field. He founded Bidding Enterprise, a New York-based construction estimating company that assists general contractors and subcontractors in streamlining their quantity takeoffs. Visit biddingenterprise.com.





BIDDING: Bringing Private Processes to Public Projects | By Elizabeth Manning

BNBUILDERS & AUTODESK ON PUBLIC SECTOR BIDDING, THE TECH TO HELP & MORE

It's an election year, and opportunity is present for private contractors looking to cross the divide into the public sector. While much of the industry is experiencing a slowdown in new projects due to the pandemic, the infrastructure and nonbuilding segments are some of the least affected overall. FMI Corporation's North American Engineering & Construction Outlook, Second Quarter 2020 Report, forecasts 2020 declines of just 3% in highway and street, 4% in transportation, and 4% in public safety, compared to declines of 17% in multifamily residential and 15% in lodging. Whether you're new to public projects or you've worked in the sector for years, you know that bidding on and executing these projects successfully can be a whole different ballgame. But perhaps the secret to your public sector strategy lies in relying on your own expertise. Below, BNBuilders' Brian Dague explores how contractors can rely on their experiences working in the private sector to parlay into federal projects; and Autodesk Construction Solutions' Jen Jewett talks about what's to come for bidding in the public space and how technology can help you prepare for it.

Brian Dague
Project Executive,
Los Angeles/Orange County Region
BNBuilders



Dague serves as the day-to-day project leader on a variety of public and private projects for BNBuilders (BNB), a general contractor located on the West Coast. He is also a member of BNB's regional leadership team. Dague is an active member of the Design-Build Institute of America (DBIA) and a certified DBIA professional. Visit bnbuilders.com.

CBO: WHAT PROJECT APPROACHES DO YOU SEE WORKING ON THE WEST COAST, AND WHY MIGHT THEY DIFFER FROM APPROACHES USED IN THE REST OF THE COUNTRY?

BD: BNB works with a range of public and private clients, often on highly complex projects that require extensive involvement during the preconstruction and design phases. Negotiated delivery methods, such as design-build and construction management at-risk, are often utilized as they allow the engagement of the contractor well before the design is completed.

These methods help facilitate a highly integrated approach focused on partnership, honesty and transparency. They also prevent the adversarial situations often found in traditional design-bid-build delivery. While negotiated delivery methods are utilized throughout the country, they are more commonly found on the West Coast, especially in public work. The result is often reduced costs for changes after construction begins, faster schedules and more efficient and safe construction execution.

CBO: AS IS OFTEN THE CASE DURING TIMES OF ECONOMIC UNCERTAINTY, THERE'S AN INCREASED FOCUS ON PUBLIC PROJECTS AROUND THE COUNTRY. HOW DO YOU THINK APPLYING APPROACHES FROM THE PRIVATE SECTOR MIGHT BENEFIT PUBLIC PROJECTS?

BD: One of the key benefits of utilizing the negotiated methods often found in private work is the one-project approach, with a focus on team integration and collaborative project delivery. This tends to result in more productive and long-lasting relationships based on shared goals, while also allowing the contractor to engage the owner and architect to help drive value, solve project challenges ahead of the start of construction, and maximize project funds. It also enables public institutions to create partnerships with contractors that can last over many years and projects, resulting in streamlined delivery of projects over time.

We have found the one-project approach, which includes the adoption of project management technologies like Autodesk Construction Cloud for facilitating our processes and team integrations, advantageous on both our private and public projects. We have had great success with these deliveries for public entities, especially in higher education and K-12 originations, including the University of California system, the University of Washington, Western Washington University and multiple school districts throughout the West Coast.

CBO: DO YOU THINK THE IMPACT OF COVID-19 ON THE INDUSTRY WILL IMPACT PROJECT APPROACHES IN THE PRIVATE AND PUBLIC SECTORS?

BD: While we are still waiting to find out the extent to which COVID-19 impacts all aspects of the construction industry, integrated delivery models enable contractors, owners and architects to face ever-evolving challenges in a highly collaborative manner that results in the best outcome for the project.

Jen Jewett
DOT Solutions Executive
Autodesk Construction Solutions



Jewett's first professional degree is in dentistry, but after 15 years of practice, she returned to college for a degree in civil engineering. Jewett began working for the Montana Department of Transportation (DOT) while attending college. Her 13-year career at the Montana DOT began in road design and progressed to design supervision and project management. She has spent most of her engineering and construction career in project management, where her focus has been on implementation and adoption of technologies. She's been involved with the Federal Highway Administration (FHWA) and the Highway Engineering Exchange Program (HEEP). Jewett recently joined Autodesk, where she works with customers and the internal team to enable building information modeling (BIM) for public project workflows. Visit autodesk.com.

CBO: WHAT IS YOUR OUTLOOK ON THE STATE OF BIDDING IN THE PUBLIC SECTOR FOR THE REST OF 2020 AND THE COMING YEARS?

JJ: Traditionally, bidding in the public sector—where it's a priority to keep costs that are ultimately paid by taxpayers low—hasn't seen a lot of technology adoption. Digitizing the process requires sifting through all of the technology available for construction, determining what technology is right for the company, then developing an implementation plan.

It's a significant time and money investment, and requires modifying workflow processes, which translates into additional risk for contractors. This year has shown us digitization is essential, especially for project resiliency and success in the face of these unexpected challenges.

Consequently, I anticipate an uptick in technology adoption and use for bidding, team collaboration, asset collection and expedited project turnover for construction projects in the public sector.

As the economy regains its balance, we will also likely see an influx of investment in public projects that need to be turned around quickly. This demand will require more productivity across the board—including for bidding—and leveraging technology.

CBO: HOW CAN CONTRACTORS EMPLOY TECHNOLOGY TO FURTHER SIMPLIFY BIDDING PROCESSES, SPECIFICALLY IN THE PUBLIC SECTOR?

JJ: For contractors, the margins on public projects are often narrow, as public sector owners are usually required to award contracts to the lowest bidder. In turn, contractors often need to send out and compare a plethora of bids. Additionally, the demand for increased collaboration is shifting—public sector owners need a high degree of project collaboration in order to be fiscally responsible with state and federal dollars. General contractors (and subcontractors) need technology that streamlines workflows in one common data environment so they can leverage data from bid comparisons, requests for information, plan sets, team communication and collaboration to derive insights and maximize return on investment.

General contractors also often need to contract with Disadvantaged Minority/Disadvantaged Women Business Enterprises (DM/DWBEs) on public projects. Connecting with the right DM/DWBE based on the project scope can be a tedious and time-consuming process that often leads to the contractors partnering with the same DW/DWBEs on multiple projects.

At first blush, this seems great, but it unconsciously undermines the public sector's overall mission of distributing economic opportunity. Contractors can connect with and simplify their search for DM/DWBEs by adopting bid management solutions that showcase partners within those categories. Autodesk Construction Cloud's BuildingConnected, for example, provides drop-down filters for DM/DWBEs in its search field. CBO

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

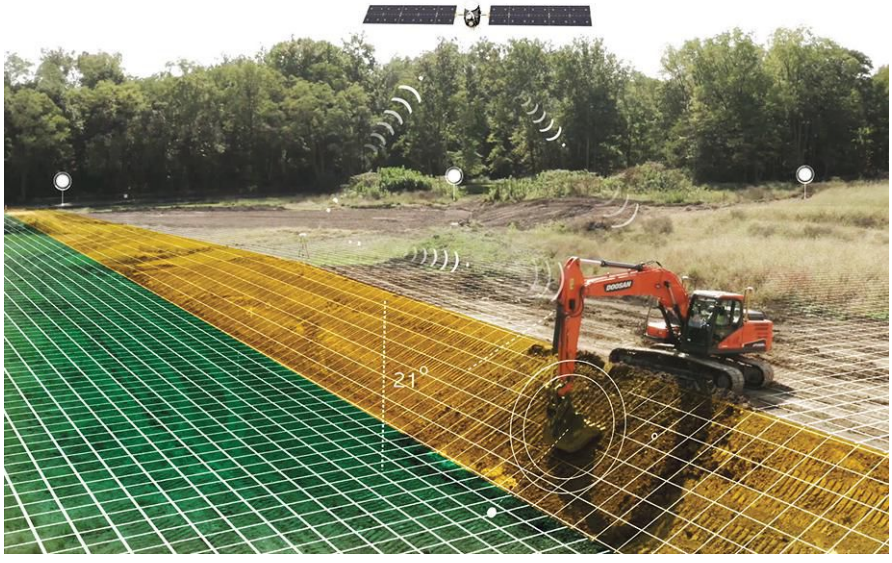


Are You Making Good Grades?

Determining whether an excavator grade control system is right for your work

BY AARON KLEINGARTNER

Have you considered a grade control system for use with your excavating equipment? If not, what's holding you back? The system can increase your productivity, reduce your material expenses and create a safer jobsite. Grade control systems for use with excavators are not new. You may have some experience with these accessories on your machines. If so, you've likely seen the benefits firsthand. If not, the following explores things to consider.



DIG WITH CONFIDENCE

Your operators can work more efficiently with a little technology help from a grade control system. They will know they are delivering a product to grade to match a design file provided to them.

Among the most common applications for these systems with excavators is digging a utility trench at a uniform grade over short distances.

They are also beneficial in excavating footings and producing a finished slope. With a system installed on the excavator, the operator can accurately dig, place a pipe and add fill material.

With a grade control system, you can also eliminate the need for an employee to check the grade, freeing them to do other work at your jobsite while your excavator operator maintains an accurate grade. And it can be safer to have fewer employees working outside of equipment on a construction jobsite. Another system benefit is avoiding overdigging.

When this happens, you are required to add material back in your trench. And that means adding more Class 5 base material before the footing can be done.

2D OR 3D GRADING

You can choose between two grade control systems—2D or 3D—depending on the type of work that you're doing. Two-dimensional grade control systems allow your excavator operator to work off a single plane—whether it be flat, single or dual slope. Your operator knows the grade is correct from point A to point B to dig a straight-line trench. You can expect a consistent grade on a vertical plane.

Three-dimensional grade control systems allow you or your excavator operator to add variable distances, such as a curved line or a curved trench. The excavator can be moved on your jobsite and still dig on grade.

The 3D guidance system is especially beneficial for operators working on complex designs, like larger-scale drainage projects.

Once the grade control system is installed on your excavator, your operators have a wealth of information available to increase their proficiency. The system provides real-time information to ensure the project is being done correctly.

TECHNOLOGY

You can choose from several tech companies that have developed the technology for grade control. One such company is Trimble. Its GC900 Grade Control System is available for excavators and can be particularly useful in the 25- to 35-metric-ton excavator size class, based on the type of work these machines perform on a regular basis.

Once you decide to add a grade control system to your excavator, you will need to work with your local dealer and a technology expert from the company that developed the system. They can help you properly install the components on your excavator, provide training and ensure it's working correctly before you transport your machine to the jobsite. Components of grade control systems include:

- Two receivers (masts) situated on the back of the excavator above the counterweight
- Mainframe sensor
- Boom tilt sensor
- Arm tilt sensor
- Bucket link sensor
- Angle tilt sensor
- Monitor (inside the cab)



Once installed, these components are likely to stay on that machine for the its useful life. In addition, a monitor is installed in the excavator cab that provides vital information to the operator.

Grade control systems use information gathered from global navigation satellite systems, GPS, laser, sonic or total station technology. These information sources help your operator accurately position the excavator bucket in real time as the bucket, boom and arm move.

DETAILED INFORMATION

Once the system is installed on your excavator, your operators have a wealth of information available to increase their proficiency. The system provides real-time information to your operators to ensure the project is being done correctly.

Your operators are still in control of the excavator. Using the second monitor installed in the cab, your operator can see the location of the bucket and the programmed dig depth requirements. The system gives an indication of how far above or below grade you're working, based on the tip of the bucket.

If you aren't routinely on your jobsites, you can still monitor your excavator operator and the machine's grade control system. Some grade control system manufacturers provide their customers with website access, making this information available to remote fleet managers or owners who are not at the jobsite.

AUTONOMY IS THE FUTURE

Although some grade control systems allow an extra benefit that controls the work, it is still routinely left up to the operator to properly follow the programmed coordinates. What you can be sure is coming within the next 5 years is more machine automation.

Some heavy construction equipment manufacturers are already developing this technology. They have showcased some of their successes at live events where viewers saw excavators working autonomously. Instructions were provided wirelessly from an on-site workstation to the excavator.

Until this sought-after autonomous jobsite is available, you can still benefit immediately from adding a 2D or 3D grade control system to your excavator. Reach out to your local heavy construction equipment dealer to inquire about a system for your machine. CBO

Aaron Kleingartner is the product and dealer marketing manager for Doosan Infracore North America LLC, headquartered in Suwanee, Georgia. Kleingartner has 17 years of product development, analytics and strategic marketing experience with Doosan. Visit doosan.com.



How to Manage the Risks of Working at Height

A fall protection guide to making sure jobsite workers & their tools are safe

BY WARREN FABER

There were 7,014 Occupational Safety and Health Administration (OSHA) violations related to fall protection in 2019. That same year, 298 workers died because of a fall. More than 20% of those people were working in the construction segment when the incident occurred. There are two ways a person can be injured due to a fall on a construction jobsite:

- A person could fall from their work location
- An object could fall from above onto someone below



PROTECTING A PERSON FROM FALLING

For years, the industry has been aware of fall protection for workers at height. "At height" is generally the definition of a work location where a person could be at risk of falling. In the construction industry, that height is 6 feet.

When working on scaffolding, it is 10 feet. A worker at height uses active fall protection, passive fall protection or some combination of the two. A personal fall arrest system (PFAS) is comprised of three components:

1. Anchorage (a secure point of attachment for equipment)
2. Body wear (equipment designed to be worn on the torso or waste of a person that distributes fall arrest forces and has a means to attach to other components of a PFAS)
3. Connecting device (a device used to connect parts of the fall protection system together)

The products are designed to work together to prevent a fall from occurring or, in the event of a fall, to prevent severe injury to the body by arresting the fall. Passive fall protection products are static, nonmoving barriers that prevent encounters with an edge, such as warning lines, guardrails and safety monitoring products. Examples of passive fall protection equipment include cable chokers, rebar chain assembly, lanyards and self-retracting lifelines (SRLs).

The active fall protection category of products includes certain SRLs, such as those designed specifically to accommodate SRLs for leading edges (edges made up of varying substrates that

are in between working surfaces), SRL lanyards, harnesses, lanyards, horizontal lifelines (HLLs) and cable chokers.

100% TIE-OFF

However, having all the fall protection equipment in the world won't save a life unless workers at height understand what fall protection fits their application, how to inspect the equipment prior to use, and are adequately trained on how to use the equipment. Often, jobsite workers encounter dangerous situations when moving from one location to another while working at height. Maintaining 100% tie-off allows the worker to remain connected and protected at all times.

In 2017, OSHA mandated the 100% tie-off regulation for fall protection of workers at height. OSHA states that, when the employer can demonstrate that it is infeasible or it creates a greater hazard to use guardrail systems, safety net systems or PFAS, the employer must develop and fully implement a fall protection plan that meets the requirements of 29 CFR 1926.502(K). Specifically, OSHA 29 CFR 1926.501(b)(1) addresses unprotected sides and edges, and states that each employee on a walking/working surface (horizontal or vertical) with an unprotected side or edge which is 6 feet or more above a lower level, shall be protected from falling by the use of guardrail systems, safety net systems or PFAS.

In certain instances, however, 100% tie-off may not be feasible, given the specifics of a unique work environment, such as when the employer can demonstrate using fall protection equipment poses more of a risk than not using it. The employer is still required to develop a fall protection plan that meets the requirements of 29 CFR 1926.502(k)(5), which calls for documentation of the reasons why the use of the equipment is not possible or is hazardous to the workers' safety. Components include:

- *Warning line systems 29 CFR 1926.502(f)*—A barrier erected on a roof to warn employees they are approaching an unprotected side or edge, designating an area in which work may take place without the use of guardrail, body belt or safety net to protect employees in the area.
- *Controlled access zone 29 CFR 1926.502(g)*—When used to control access to areas where leading edge and other operations are taking place. The controlled access zone shall be defined by a control line or by any other means that restricts access.
- *Safety monitoring systems 29 CFR 1926.502(h)*—The employer shall designate a competent person to monitor the safety of other employees. The employer also must ensure that the safety monitor complies with OSHA requirements.
- *Fall protection that provides 100% tie-off and includes leg lanyards and SRLs*—100% tie-off is beneficial considering work tasks, such as moving from an aerial lift basket onto the roof of a building for steel erectors working on a beam.

ANSI/ASSE Z359.2-2017, which addresses the minimum requirements for a comprehensive managed fall protection program, recommends (5.2) Authorized Person Training, with (5.2.2.2) practice training that "shall include instruction and performance assessments of the following … principles of 100% fall protection and how to remain protected while transferring from one fall protection system or structure to another." Interpreted, this means all authorized persons shall be trained on 100% tie-off.

DROPPED OBJECTS ARE HAZARDOUS, TOO

Tying off a worker to an anchor point is vital for preventing injuries and fatalities. Increasingly, there is greater awareness of the danger caused by tools that fall from a worker at height, onto infrastructure or other people located below. In fact, every 10 minutes, a dropped tool on a jobsite injures someone. In addition to making sure they are tied off when working, it is important workers take precautions when it comes to securing their tools from a fall. Like people, tools can also be tied off to an anchor point. In most cases, the anchor is the worker's body; tools are tethered to a belt worn by the worker. Or tools are tethered to storage and transport equipment when they are being lifted to a workstation at height.

When used at height, tools should be tied off with tethers appropriate for the tool's weight. Tethers should never be overloaded beyond the manufacturer's published weight rating. They are to be used in accordance with all other manufacturer instructions and should be as short as practical to prevent swing hazards and impact with persons working below if dropped. Until recently, it was much more difficult to tie-off tools 100% of the time. And there were brief periods when a tool was being transferred from one location to another when a risk of a drop was present because the tool was not connected to anything.

Keeping everyone and everything 100% tied off when working at height is imperative to the team's safety. The fall protection equipment market continues to advance the concept with intuitively designed products that make 100% tie-off easy to comply with on the job. **CBO**

Warren Faber is the engineering manager at Pure Safety Group. Faber is a product design and development driven engineer with a master's degree in mechanical engineering from Washington State University. He specializes in product design, product development, certification, testing, manufacturing and compliance. Faber has over 6 years of fall protection experience. Visit puresafetygroup.com.



Building a Ship in a Bottle

Hoar Construction on the resurrection of Atlanta's Colony Square & working in a tight city grid

BY MICHAEL OHLSON

All projects have challenges, but the location and environmental setting of a construction site is perhaps the most influential factor in a project's complexity. Specifically, working in tight, occupied spaces brings unique conditions that require extensive planning, communication and problem-solving from a project management standpoint.

Consider this—while nearly half of all construction in the United States is expected to take place in the country's 20 largest cities, it's estimated that 90% of urban infrastructure projects are over budget or delayed. That statistic highlights how challenging of a work setting the urban landscape can be. The redevelopment of Atlanta, Georgia's Colony Square, the first mixed-use community in the Southeast, is a prime example of how general contractors can plan for and overcome those types of challenges, while maintaining the schedule and budget.

Located on Peachtree Street in Midtown Atlanta, Colony Square sits between towering skyscrapers and busy sidewalks in the middle of one of the city's most populous neighborhoods. Every day, the site is exposed to more than 25,000 cars and thousands of residents, visitors, office workers and pedestrians. Because of the dense and populated site conditions,



renovating this site was like building a ship in a bottle.

As general contractor, Hoar Construction was tasked with leading a massive overhaul of the 50-year-old property while keeping the site open and operational for current tenants and visitors. This complicated process required tearing down an indoor mall and dated office building to make way for a new theater, food hall and office tower with ground-floor retail. The extensive demolition, combined with building new structures in the middle of the existing and operating development, made this project one of the more challenging projects the company had worked on in recent years.

Before demolition began, and before any new construction could be started, the team had to reinforce the three-story parking garage on which Colony Square sits. Essentially, the team had to make the building stronger just to tear it down safely. The existing structure was not capable of supporting the weight of the new buildings or the 100-ton crane needed for construction. A total of 275 micropiles between 15 inches to 60 inches were



drilled to help support the new structures and the 2,550 tons of steel that were erected throughout the four phases.

Next, 15,000 square feet of buildings had to be demolished before construction could begin, all in the same tight space on Peachtree Street. Because of the legacy structure's deteriorated condition, the team had to dismantle it—an intricate process requiring surgical-type methods to remove parts piece by piece. In addition, the team had to remove 5,000 cubic yards of concrete from the site.

When working alongside functioning businesses and occupied residences, communication is a vital component for ensuring the safety and satisfaction of all parties. One of the main challenges was maintaining constant communication with current tenants to keep them up to speed with what was happening on a daily basis. This required close coordination with Colony Square personnel as well as the tenants that worked in and adjacent to the development.

Hoar also had to communicate clearly with its own team and trade partners. To keep the entire team on the same schedule and ensure logistics ran smoothly, pull planning was incorporated at the beginning of this project. The collaborative process was used to get buy-in from everyone involved. This helped set the stage and ensure everyone was on the same page from the start. In addition, weekly schedule meetings and daily huddles were used to continually coordinate and collaborate throughout construction.

When executing a project of this scale, minimizing disruption for local businesses and people is a priority. One of the tenants of the office building being renovated in the first phase was a television studio. Jackhammers and video recordings don't mix well, so detailed schedules were created to reduce the noise and disruptions around the station's scheduled recording times each day. Construction was also scheduled around the lunch rush to accommodate the restaurants that were open and serving throughout the process.

Of course, with a little creative thinking, construction work can be an opportunity as opposed to a disruption. A prime example of this was Hoar's coordination with a daycare facility whose playground was located next door to the initial demolition site. Instead of normal fencing for the demo site, plywood was brought in and covered with chalkboard paint so the children could draw on it.

A superintendent also took the prekindergarten class on a "field trip" to watch some of the construction through the fence and to talk about building the new school. The ability to be resourceful and nimble is what kept the project running smoothly and prevented major disruptions from arising in what was already a challenging situation.

A key aspect of the Colony Square project was the delicate balancing act of transferring material into and out of the site for installation. As mentioned earlier, the busy site was constantly surrounded by traffic, and limited ports of entry into the tight site posed obvious challenges. If someone brought something out or in at the wrong time, it would create a disruption in the flow of traffic and negatively impact the surrounding community—not to mention delay the team's own progress. An app, Teamup, was used to coordinate all deliveries for Hoar, its trade partners and the other tenant general contractors working on-site.

Overall, the work at Colony Square generally required more communication outside the site than it did within. No matter how many times a general contractor has worked in urban environments, each project poses a new learning curve that requires out-of-the-box thinking and precise planning. The tight entrance from which materials must flow in and out—or the neck of the bottle—certainly creates additional speed bumps in the path to completion but offers a learning experience in the process of building the "ship" itself.

Colony Square is now a highly activated, urban destination with ample community gathering spaces in the middle of Midtown Atlanta's vibrant streets. Through efforts involving closely monitored communication, productive problem-solving and extensive preplanning, the project continues to be a success and created a new playbook for how to navigate the complexities of demolition and construction in the midst of these urban bottleneck areas. **CBO**

Michael Ohlson is a senior superintendent at Hoar Construction and has worked on multiple renovations, including The Parks Mall in Arlington, Texas, the Federal Court House in Roanoke, Virginia, and The Mall at Wellington Green outside West Palm Beach, Florida. Visit hoar.com.



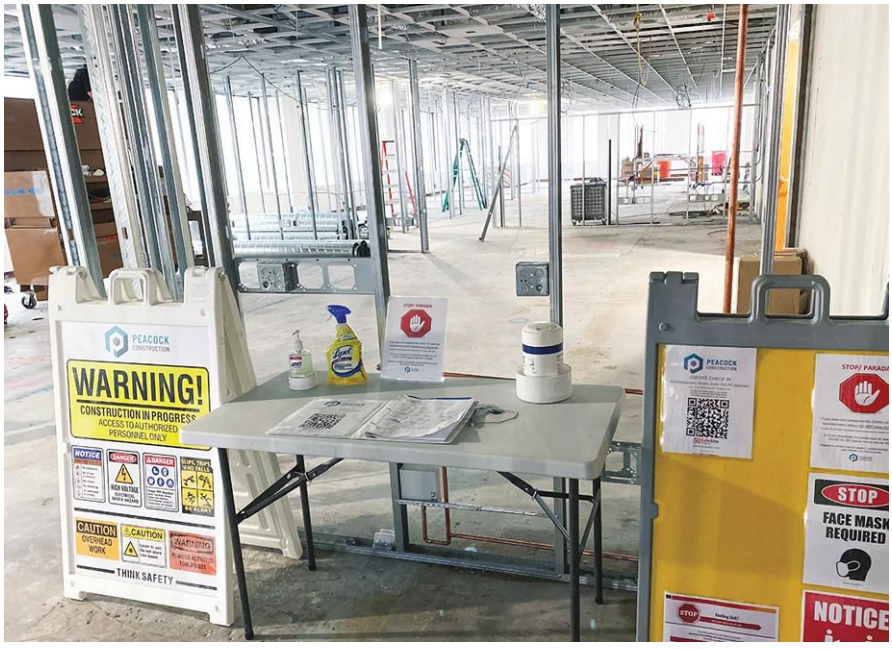
Guiding Safety On-Site With a New Digital Check-In Process

The app Premier Structures Inc. uses to streamline the prevention of COVID-19

BY KYLE PEACOCK

Earlier this year when construction sites were closed, every firm spent the downtime researching how they would safely reopen. There were lots of questions and considerations to be addressed—a shortage of personal protective equipment, rereading medical privacy law guidelines and Occupational Safety and Health Administration regulations, adjusting project timelines, and more. It wasn't surprising that several COVID-19-related technology solutions emerged. One area that's seeing a lot more activity is the jobsite check-in process. It's been a long time coming. Everybody knew the clipboard and pen that got passed around was fraught with issues in terms of accuracy, accountability and taking too much time to start the day.

Prior to the pandemic, the sign-in process was more of a nuisance than an urgent business issue. Today, streamlining and digitizing the way workers, subcontractors and visitors enter a jobsite is nonnegotiable. General contractors need to comply without impacting productivity. Technology companies are including COVID-19 health-related questions. The questions are designed to identify and address potential issues before a worker enters the jobsite and is exposed to others for an extended period of time.



THE FIRM'S ACCOUNTABILITY

Where it gets tricky is in managing the employee's check-in information. The technology, compliance and social issues around contract tracing and federal privacy guidelines adds complexity to the process—not to mention the general uneasiness when it comes to sharing personal health information. Arguably, it's more complex than is necessary. One way to address these issues and make it easy for workers to sign into a jobsite is by using the worker's own cell phone. For example, Premier Structures Inc. in San Francisco, California, is tackling the sign-in process using a combination of touchless thermometers and a touchless app called Safe Site Check In. After a temperature check, workers are directed to the app. They point their smartphone at a QR code poster on the jobsite, answer COVID-19-related health questions, and are either admitted or denied access to the site. The health information stays with the worker, but the site supervisor is immediately alerted if someone is denied access. It was Matthew Bickerstaff's role to help define the company's approach to

jobsite check-ins since COVID-19 began to spread in the United States. He spent time researching the latest pandemic-related construction technology solutions.

"A lot of the apps that came out early on couldn't document what we needed. Then we looked at survey solutions. Those are customizable, but it would have taken time and resources and it was more technology than we needed. We just wanted a simple way to check in to work and immediately notify supervisors if an employee or subcontractor was at risk of having COVID-19," he said. Premier is spending $2 a day for Safe Site Check In, and Bickerstaff says the technology pays for itself.

THE RIPPLE EFFECT OF PROACTIVE MEASURES

Think about it. If the No. 1 concern on a jobsite right now is the spread of COVID-19, one of the simplest things a firm can do is address the issue before it becomes one. Ask employees how they're feeling at the start of the day. For firms like Bickerstaff's, this includes temperature checks, because the reality is workers aren't always aware if they're running a fever.

Digital check-in technology that's executed on the worker's phone keeps personal health information on the phone. It also gives site supervisors accurate and immediate information about who's on the jobsite at any given time.

This way, everybody on the jobsite can focus on the work, knowing they're surrounded by people who aren't exhibiting signs or potential indicators that they have contracted the virus. And the technology is simple enough that it doesn't require a lot of heavy lifting from the IT department.

As we work through this period in history, it makes sense to take a closer look at the systems and processes that are working. And those that aren't. While streamlining the jobsite check-in process is simple and small in the whole scheme of things, it has a positive ripple effect when you consider the industry employs over seven million people in the U.S., according to the latest numbers from the Bureau of Labor Statistics. CBO

Kyle Peacock is the president and chief executive officer of Peacock Construction. Peacock got his start managing construction for Boston Properties, then joined Peacock as a project manager, eventually becoming CEO. One of his favorite projects to date was the renovation of a 22,000-square-foot forensic lab for the Bureau of Alcohol, Tobacco, Firearms and Explosives. Visit peacockconstruction.com.



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New Products to Watch

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



MAX USA CORPORATION ▶

TwinTier RB401T-E

Released: 7/1/20

Availability: U.S. & Canadian markets

What's new? Reduces back strain, especially when tying rebar for slabs forces ironworkers to tie while consistently being bent over. It is an ergonomic solution for backbreaking slab work.

Specs: The tool weighs 10.2 pounds with battery; can work with applicable rebar sized #3 by #3 to approximately #6 by #6; and can complete 4,000 ties per charge.

Check 200 on index.



◀ HILTI NORTH AMERICA

Layout Tool PMD 200

Released: 7/23/20

Availability: U.S., Canadian & European markets

What's new? It takes a layout from a two-worker to single-worker task, helping you complete layout projects like drywall installation or finding anchor points faster, safer and with more efficiency.

Specs: Features system accuracy 0.12 at 80 feet; a 12-volt battery; cordless power care; IP-54 rated, maximum operating distance of 50,000; maximum operating time of 8 hours, maximum operating temperature of 104 degrees Fahrenheit; and a self-leveling range at room temperature 3.5 degrees.

Check 201 on index.

AMERICAN EAGLE ▶

40P Air Compressor

Released: 3/10/20

Availability: U.S. market

What's new? A reciprocating air compressor that uses a combination of aluminum and steel to control the weight of the unit while maintaining market-recognized longevity.

Specs: A lightweight, hydraulically driven air compressor. By being direct-driven off of a hydraulic motor, there is no need for belts that require replacement over time, saving the operator time and money. The hydraulic requirements to operate the compressor fit most applications at 12 gpm and 2,100 pounds per square inch.

Check 202 on index.





▲ WERNERCO
Adjustable Pro Work Platform
Released: 8/3/20
Availability: U.S. market
What's new? The platform is height adjustable. It provides up to a 9-foot reach and has 10 feet of height adjustability on both sides, making it easier for jobsite employees to work on uneven surfaces and along stairways.
Specs: The compact, lightweight aluminum work platform supplies users with a large 46-inch by 14-inch work surface that is easy to carry and maneuver on the job. It can be configured to 10 different height positions with one-handed adjustment and locking, accommodating a variety of needs for any job. The platform has protective bumpers that help shield contact surfaces from damage.
Check 203 on index.



▲ HTC VIVE
ElevateXR
Released: 7/14/20
Availability: U.S. market
What's new? Developed for workplace training and safety, it encourages safe workplace behaviors by engaging trainees in realistic environments. It increases the effectiveness of training programs.
Specs: Addresses three top workplace hazards: fall protection, lockout/tagout—also known as the control of hazardous energy—and confined spaces. Each module contains three lessons that take users through the steps of navigating these complex workplace scenarios. These lessons complement existing annual certification tests, reinforcing the importance of proper on-the-job training.
Check 204 on index.





◂ ATLAS COPCO POWER TECHNIQUE

XAS 188 Air Compressor

Released: 5/27/20

Availability: U.S., Canadian & European markets

What's new? It brings a lower total cost of ownership, the highest efficiency in compressed air, a best-in-class service experience, user-friendly features, easy transportation and is environmentally friendly.

Specs: Delivers 189 cubic feet per minute at 2.37 gallons per hour; a 27-gallon fuel tank is adequately sized to operate the XAS 188 for more than 11 hours at full load. The diesel engine offers and output of 49.6 horsepower at a rated speed of 2,700 revolutions per minute. The engine also starts the compressor at 14 degrees Fahrenheit with a standard glow-plug. The HardHat heavy double polyethylene shell is noise dampening, and dent and ultraviolet resistant.

Check 205 on index.



▲ FARO TECHNOLOGIES

Focus Swift

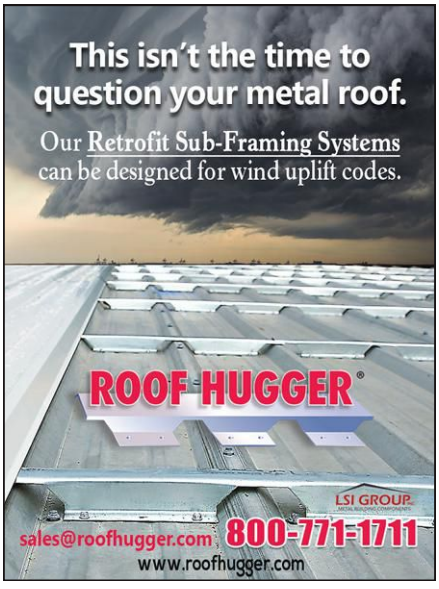
Released: 7/21/20

Availability: U.S., Canadian & European markets

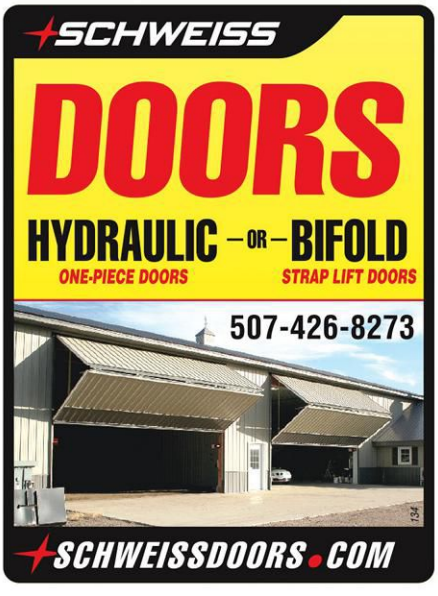
What's new? The first fully integrated indoor mobile mapping system designed to accomplish large-area, as-built capturing tasks with minimal time and effort.

Specs: Lightweight and mobile at 38.5 pounds; designed for a wide range of thermal conditions, operating from 41 degrees Fahrenheit to 104 degrees Fahrenheit; compatible with FARO As-Built BuildIt Construction and WebShare Cloud; directly imports in any CAD system with 3D point cloud capabilities; and compatible with ASTEM 57, LAS, XYZ file formats

Check 206 on index.



Check 109 on index.



Check 111 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
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Annual Value of Construction Put in Place

June 2018/2019/2020 Annual Rate Comparison

This chart compares the two previous years' total value of construction put in place to an annual forecast based on June 2020 figures. (Millions of dollars. Totals may not add up perfectly due to rounding.)

	2018*	2019*	2020
Total Private Construction	**1,019,788**	**962,943**	**1,001,889**
Residential	568,295	507,231	534,170
Nonresidential	451,494	455,712	467,719
Total Public Construction	**297,443**	**324,055**	**353,300**
Residential	6,525	6,013	8,137
Nonresidential	290,918	318,041	345,163
TOTAL Construction	**1,317,231**	**1,286,997**	**1,355,189**

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

$1,355,189

JUNE 2020 TOTAL ANNUAL VALUE OF CONSTRUCTION PUT IN PLACE

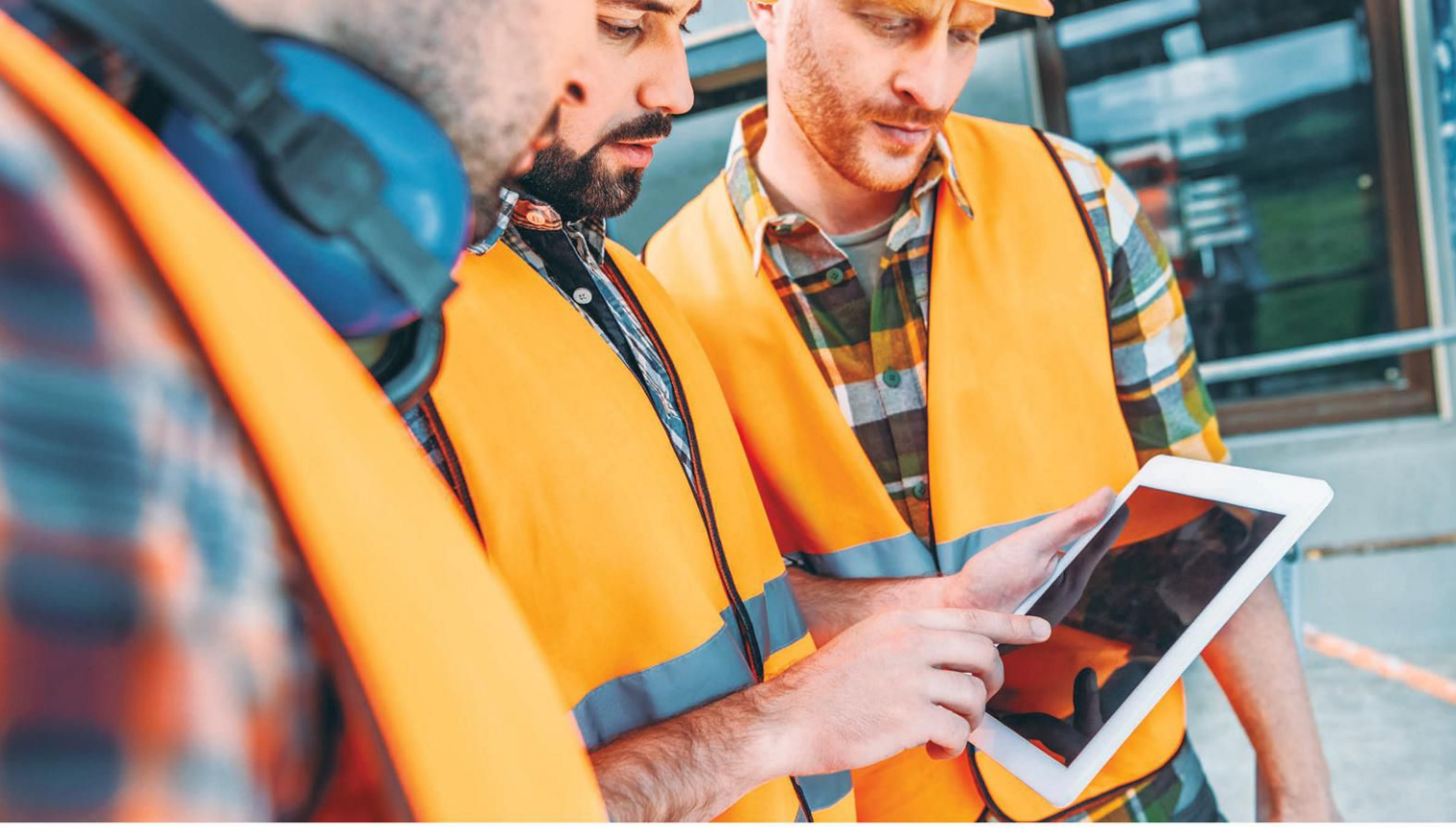
"While business conditions remained soft at firms across the country, those with a multifamily residential specialization saw the most positive signs," said AIA Chief Economist Kermit Baker, Ph.D., Hon. AIA. " ... Conditions at firms with a commercial/industrial specialization are likely to remain weak for an extended period of time, until hospitality, office & retail facilities can fully reopen, and design demand for this space begins to increase."

AIA Architectural Billings Index (ABI)

National			*Regional - Billings				*Sectors - Billings			
Month	Billings	Inquiries	Northeast	Midwest	South	West	Multifamily Residential	Commercial/ Industrial	Institutional	Mixed
Jan-20	52.2	57.9	45.3	51.3	56.7	52.1	51.2	51.5	51.1	51.6
Feb-20	53.4	56.5	49.4	53.6	58.0	49.8	53.5	52.4	52.8	52.7
Mar-20	33.3	23.8	38.4	44.2	44.2	45.3	43.3	41.9	46.9	40.6
Apr-20	29.5	28.4	23.0	31.2	31.1	38.1	30.3	27.8	36.1	29.0
May-20	32.0	38.0	25.1	29.7	30.6	36.0	34.8	24.8	35.7	28.5
Jun-20	40.0	49.3	34.2	36.8	35.9	36.8	44.7	30.1	38.9	35.3

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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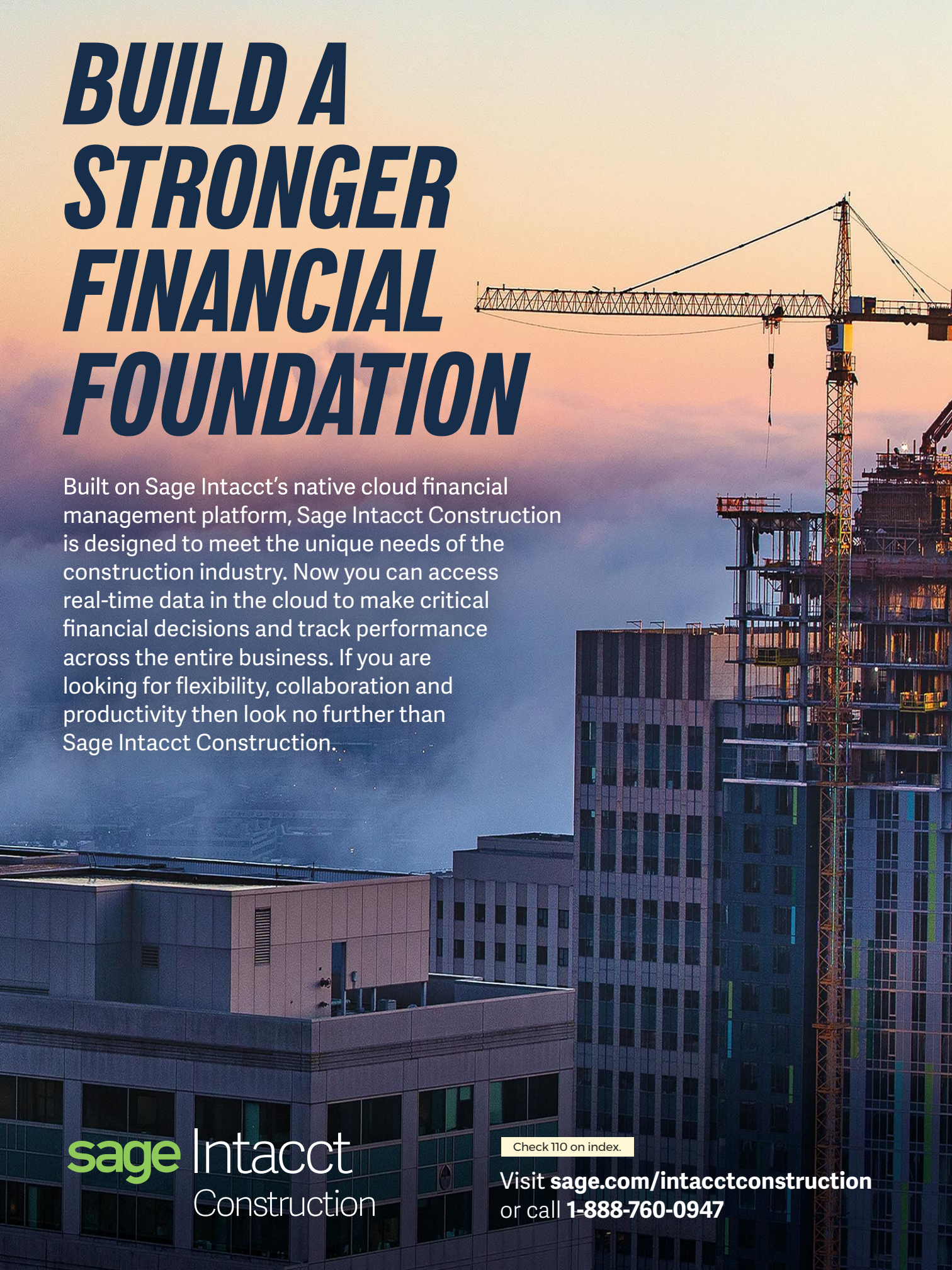
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