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Maximizing Cash Flow
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4 Strategies to
Get Construction
Projects Back on Track
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How to Manage, Schedule,
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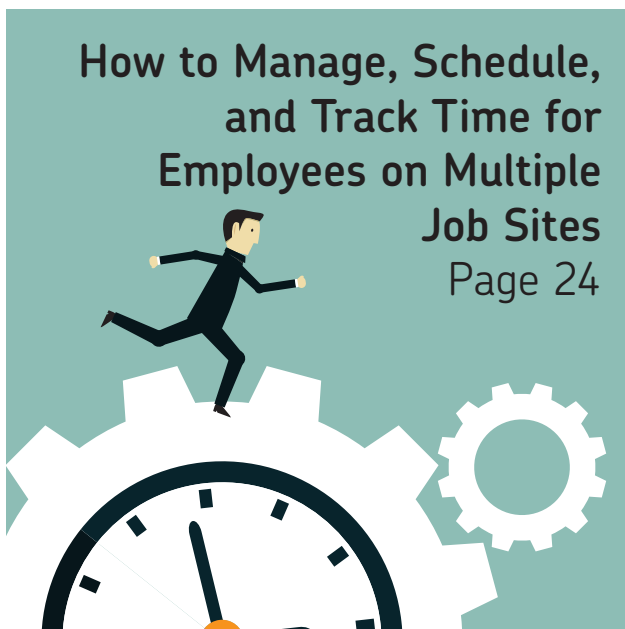
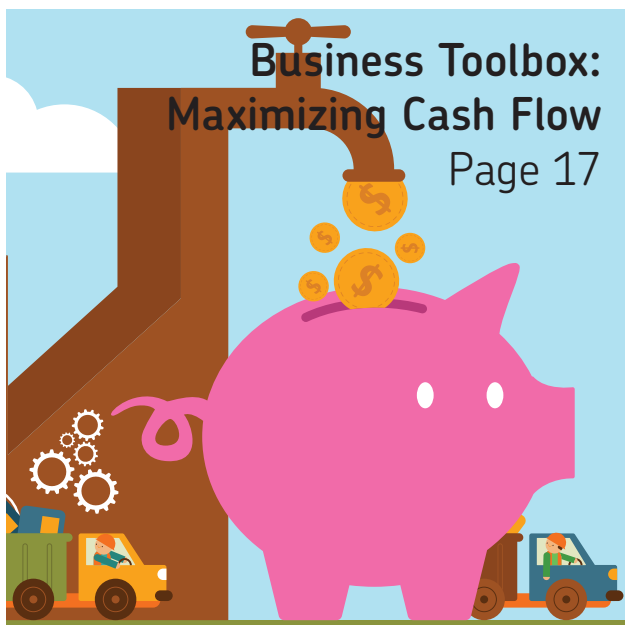
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Letter from the PRESIDENT

CRSMCA held their 66th Carolinas Mid-Winter Roofing Expo in Raleigh, North Carolina in January. The conference was a great event with wonderful speakers representing the roofing industry, over 80 exhibiting companies, and over 75 contractor companies in attendance. Of course, this conference is never possible without the support of the sponsors:



CAROLINAS ROOFING & SHEET METAL CONTRACTORS ASSOCIATION

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Carolinas Contacts addresses issues and concerns of the roofing industry. Technology, test, and building codes are constantly changing, and such changes may not be reflected herein. All information is presented for the benefit of our readers and does not necessarily reflect the views of CRSMCA. Press releases and product information presented do not reflect all available materials. Before purchasing, installing, using, or recommending any product, system, or method, readers should make independent evaluations.

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If you are looking to be a part of the next big event from CRSMCA, be sure to join us at the 2nd Annual Spring Golf Tournament at the Rocky River Golf Club in Concord, North Carolina. The tournament will be held on THURSDAY, MAY 2, 2019... there are a few sponsorship opportunities still left and foursome-team registrations are now open. You can register online or contact the CRSMCA office for a form... **DON'T MISS OUT!** This event was sold out with over 150 attendees and replaces the Spring District Meetings!

The CRSMCA Executive Committee is continuing to work on several members only programs. The most recent program was rolled out this past summer and all members can participate. Please

take the time to set up an appointment to discuss these members only programs.

Extended Insurance Benefit Programs for dental, disability and life insurance for CRSMCA member employees and family members. Pricing offered is established for all association members, with no medical underwriting requirements (unless specified). Each CRSMCA member/employee can pick their effective start date with an option to align with other existing benefits or fiscal year. For more information, questions or to sign up, contact Cindy Shumpert with AssuredPartners at 800.845.3263 or cindy.shumpert@assuredpartners.com

Charlotte Payroll services provide CRSMCA members an opportunity to receive discounts for new hire, payroll and other human resource needs. Your company could receive as little as 20% in cost savings. For more information, questions or to sign up, contact Rod Beard 704.609.1256 or rod@charlotte-payroll.com

CRSMC – Self-Insurers Fund is the oldest workers' compensation group funded in the Carolinas and could be saving you money! To request a quote or for specific workers compensation questions, please contact Cindy Shumpert at AssuredPartners at 800.845.3263 or cindy.shumpert@assuredpartners.com

MORE TO COME... we are working with fuel companies to provide members additional discounts on their fuel purchases!

Lastly, I look forward to seeing everyone at the 76th Annual Meeting/ Summer Convention, June 20-23! CRSMCA will be meeting at the Marriott Resort & Spa Grande Dunes with top speakers, family-fun events, beach socials, networking opportunities and more; registration with CRSMCA will open in mid-March. You and your family are sure to have a great time... **RESERVATIONS ARE OPEN AT THE MARRIOTT, BOOK BY MAY 19!** –*Scott Mathias, Watts & Associates Roofing, Inc.*

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THE CRSMCA MISSION STATEMENT

To promote and safeguard the common business interest of its members and to improve conditions by educating all persons concerning the roofing and sheet metal business and industry. To work for the development and progress of the roofing and sheet metal business industry and to work with individuals' organizations and governmental agencies toward the achievement of a stronger profession of the roofing and sheet metal industry.



Letter from the ASSOCIATE GROUP PRESIDENT

It is with great pleasure that I address you after coming off of the 2019 Carolinas Mid-Winter Roofing Expo in Raleigh, North Carolina. Turnout was good and the closing attendance numbers are still being finalized at this time and will be available to share very soon. With that said, CRSMCA offered the Master Installers Certification Class no. 15, which had 10 attendees; and the OSHA 10-Hour certification class, which had five attendees.

I wanted to pass on that due to recent cost changes, this has forced CRSMCA to remove the Raleigh Convention Center from future events. I think that we have all seen recent success in the "hotel ballroom" format and that's what we will continue to maintain moving forward. Thanks to all that attended and providing support to the Association and this great event.

Some of the items that I wanted to make sure to highlight in this article are the **Dottie Nagle Scholarship** opportunity and the **NEW! CRSMCA Packet** for potential/existing members.

The Dottie Nagle Scholarship is an opportunity to provide CRSMCA member companies and their employees and family members a chance at one of the two \$2,500.00 one-time pay out scholarships. CRSMCA Board members feel this is a great way to honor a wonderful person that has done so much for the CRSMCA and a way to give back to the members. Please reach out to Carla Sims at the CRSMCA office for further info. The other item was the NEW! CRSMCA Packet for potential/existing members. In the next few weeks a round-table will be held to go over the message that we want to equally push out to members and potential members. This message will cover benefits for the contractor base that are offered, upcoming events and scholarship application info. The packets will be offered based on the state in which the company is based. The reason for this is due to law changes that benefits change from state to state. The purpose of this packet is to ensure CRSMCA has a unified message to the supporters, members and potential members. Any suggestions of the info you would like to see in the packet are welcomed, so please let Carla know of any ideas you might have, and we will make sure to take under review.

Once again, I would like to say thank you for the continued support of the sponsors and attendees to these events. Your support helps to make this possible and if you're interested in becoming a member or would like to attend an event please reach out as we are happy to show you what the CRSMCA association has to offer. *—Drew Buchanan, GAF Materials Corporation*



Association IN ACTION

Here we are two-months strong into 2019... we have celebrated the New Year and hosted the 2019 Carolinas Mid-Winter Roofing Expo in Raleigh, North Carolina and already looking ahead to the 2nd Annual Spring Golf Tournament.

The 2019 Carolinas Mid-Winter Roofing Expo was a great conference from employee recognition to the networking on the trade show floor and the general sessions with industry professions... and most of all, strong support from the sponsors. The Carolinas Contacts Magazine will feature the conference in the March/April 2019 issue, to get a preview of the photos and rec-

ognition and articles, visit the CRSMCA website (www.crsmdca.org)! Please be sure to give your fellow members a handshake and sincere thank you the next time you talk to them and remember to SUPPORT THE MEMBERS THAT SUPPORT YOUR ASSOCIATION!

In this issue, readers can find various articles pertaining to new regulations affecting the roofing industry and various articles on project management. Following are a couple of events to look forward to in the coming months:

CRSMCA's 2nd Annual Spring Golf Tournament, sponsored by Beacon Roofing Supply, will be taking place on THURSDAY, MAY 2, 2019 at the Rocky River Golf Club in Concord, North Carolina. This will be an opportunity for the roofing industry to unite in a networking and fun environment; vendors will be set up on sponsored holes to interact with the players. IKO Premium Roofing Products will be sponsoring the Poker Run during the tournament play, Atlas Roofing Corporation is sponsoring the lunch, and players will have an opportunity to purchase Mulligan Packages as well as raffle tickets for prizes during the reception and awards dinner.

CRSMCA will be celebrating their 76th Anniversary at the Annual Meeting/Summer Convention at the Marriott Resort & Spa Grande Dunes in Myrtle Beach, South Carolina, from June 19 – 23, 2019. MAKE YOUR RESERVATION ONLINE OR VIA PHONE BY MAY 22, 2019. View the details on the CRSMCA website (www.crsmdca.org) and will be featured in the March/April issue.

The CRSMCA Board members and staff continue to work together to bring the CRSMCA members increased member benefits and currently have the following available to all CRSMCA Members:

- Workers Compensation: CRSMC-Self Insurers Fund program offers contractor companies workers compensation benefits at competitive market prices. Additional benefits include interest refunds on escrow deposit held as well as possible dividend premium payments due to safe work environments and approval from the NCDOL.
- Extended Health Benefits: Partnered with AssuredPartners, members can provide employees and family members extended health benefits of dental, short-term, and life insurance benefits.
- Charlotte Payroll: companies looking for human resource assistance, payroll assistance, tax assistance and time & labor management services.

As always, if your company needs any form of training, please contact the CRSMCA office to discuss how CRSMCA can help your company stay safe and educated when on the job!

I look forward to seeing you all at the next CRSMCA events that are coming up in the Spring and Summer. There is always growth and strength in numbers and opportunities to grow not only YOUR CRSMCA, but YOUR roofing industry!
—Carla B. Sims, CRSMCA Executive Director

Commercial, Industrial

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CRSMCA IS SEEKING VOLUNTEERS FOR THE CRSMCA BOARD

The CRSMCA Board of Directors and Executive Committee develop the CRSMCA policies and manage the business surrounding CRSMCA. As a Board Member



in your District, you will have the opportunity to serve in the following aspects:

- Bringing forth your knowledge, energy and expertise to your Association and industry
- Assist in furthering the CRSMCA and industry with new ideas
- Review of Contractor Membership applications and advise of any needed proprietary information prior to approving the member
- Attend the Board of Director meetings held at the Carolinas Mid-Winter Roofing Expo & the Annual Meeting/ Summer Convention to review the CRSMCA current and future business and financial status
- Coordinate with your Associate Group Liaison on the planning of your Fall District Meeting
- Gain the opportunity to serve on the Executive Committee



If you or someone in your company is interested or have questions, please feel free to contact your CRSMCA President, Scott Mathias (scott@wattsroofing.com) or me at any time. WE WOULD LOVE TO HEAR FROM YOU!

CARLISLE COS. TO ACQUIRE PETERSEN ALUMINUM FOR \$197 MILLION

Carlisle Cos. Inc. has entered into a definitive purchase agreement to acquire Petersen Aluminum Corp. for about \$197 million, the companies have announced.

Carlisle Cos. is among global leaders in commercial and industrial building envelope products through its Carlisle Construction Materials (CCM) operating segment.

Headquartered in Elk Grove Village, Ill., Petersen's primary business is the manufacture and distribution of market leading architectural metal roof panels, steel and aluminum flat sheets and coils, wall panels, perimeter roof edge systems and related accessories for commercial, residential, institutional, industrial and agricultural markets. Founded by Maurice R. Petersen in 1965, Petersen, through its premier brand PAC-CLAD®, has grown to become a leader in its served markets with approximately \$160 million of annual revenue.

Chris Koch, CEO and president, Carlisle, said in a release, "The acquisition of Petersen is part of our strategy of

providing customers with a portfolio of high quality, innovative products and solutions that meet an increasing array of their building envelope needs. Petersen is an excellent fit with our recent acquisitions in the metal roofing space, including Drexel Metals, Sunlast Metal and Premium Panels, as well as a significant complementary addition to our single-ply roofing systems.

Carlisle is a publicly traded company and reported 2017 revenue of about \$4.1 billion with net income of \$365 million. Petersen is privately held.

"We anticipate achieving annual synergies of \$4 million across our metal roofing platform as a result of the acquisition," Koch continued. "Petersen further broadens our scale and geographic penetration of the attractive and fast-growing regions of Texas, Arizona, Georgia and the Midwest as we continue to execute on our metal roofing growth strategy. I look forward to welcoming the Petersen team to Carlisle and driving further growth and innovation with the help of the Carlisle Operating System."

Upon completion of the transaction, the business will be reported as part of the CCM segment.

Zack's Research said the transaction is in line with Carlisle's policy of acquiring businesses to gain new customers while expanding geographic reach and product lines.

"Prior to the Petersen Aluminum buy-out-deal, Carlisle added a similar line of businesses to its portfolio by acquiring Drexel Metals, Sunlast Metal and Premium Panels. Drexel Metals was acquired last July while Sunlast Metal and Premium Panels were bought in June 2018," Zacks wrote.

"Significantly, Carlisle spent approximately \$19.5 million on acquisitions (net of cash acquired) during the first nine months of 2018. Further, acquired assets added nearly 11.7 percent to sales growth in the third quarter of 2018."

The deal is the one of more than 30 Roofing Contractor has written about during 2018. The complete list can be found here.



SC DEPARTMENT OF LABOR, LICENSING AND REGULATION/ SC OSHA

General Information

803-896-7665 askscoha@llr.sc.gov

FREE! Training Classes are available for employers and employees of both the public and private sector; please contact Van Henson at (803) 896-7769.



LEARN ABOUT THE CRSMC SELF-INSURERS FUND

Carolinas Roofing and Sheet Metal Contractors – Self-Insurers Fund is the oldest worker's Compensation group funded in the Carolinas and could be saving your company money! Members within the CRSMC-SIF program are not just purchasing their workers compensation, but investing into a program that brings additional value to their company through a commitment to ensure the safety of their employees. As a member/customer within the program, you participate in building a fund that is beneficial for all members/customers within the program, you could receive competitive rates within the insurance industry, and you could receive a return of interest determined by the CRSMC-SIF Trustees and other approved returns during the year. In the year 2016, the CRSMC-SIF returned more than \$1 MILLION DOLLARS to the CRSMC-SIF members!

Additionally, the CRSMC-SIF is large component of support for the CRSMCA through sponsoring the CRSMCA Annual Meeting/Summer Convention and attendance of Trustees at the event. HAVE YOU CONSIDERED CRSMC-SIF FOR YOUR WORKERS COMPENSATION NEEDS?



WHAT IS THE CRSMCA MASTER INSTALLER CERTIFICATION?

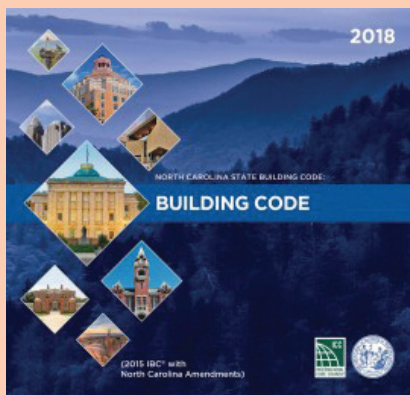
The CRSMCA Roofing Academy Master Installer Certification Program is designed to promote safety issues and concerns in the application of the roof systems to prepare the employee for best practices in their job performance. It is intended for the use by anyone with an interest in these roof systems,

from roofing workers to foremen to supervisors. It is a culmination of efforts by contractors, manufacturers, suppliers and others who are dedicated to promoting safety.

Enrolled students will learn and train the basics of roofing, increasing their knowledge and skills to make them more valuable to their respective companies, as well as build future leaders in the roofing industry.

HOW CAN YOU GET INVOLVED?

The CRSMCA Roofing Academy Committee is always searching for instructors of the classroom material and the hands-on demonstration. View the class and hands-on courses in this issue. Should you wish to be an instructor, donate materials, and/or be a hands-on instructor; please contact the CRSMCA office at 704.556.1228 or cbsims@crsmca.org or the Committee Chairman, David Griffin, at dgriffin@coastalcommercialroofing.com.



2018 BUILDING CODES AVAILABLE ONLINE

The 2018 North Carolina Building Codes are available for order on the NCDOL webpage. Once you get to the page, click on the link marked "Purchase State Building Code On-Line" and you will be taken to a separate page where you may select which 2018 NC Building Code you wish to purchase.

When you go through the "NCDOL webpage," the price offered will be the same as the price offered to an ICC member who purchases a NC Building Code direct from the ISS Store, meaning you will receive the ISS-member-discount without being a member.

These codes will go into effect on January 1, 2019. Remember, early use of a specific 2018 NC code section is permitted using the 2012 NC Administrative code & Policies Section 102.5 which states:

102.5 Any rules that are adopted by the Building Code Council and approved by the Rules Review Commission shall be accepted by the Code Enforcement Official as an alternate method of construction prior to the effective date if requested by the owner or his agent.



NC DEPARTMENT OF LABOR/OSH

Compliance Bureau Contacts

Tim Childers
336-776-4420
tim.childers@labor.nc.gov

Phil Hooper
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phil.hopper@labor.nc.gov

Training information, registration and training course and dates can be found at https://www.labor.communications.its.state.nc.us/OSHPublic/ETTA/class_regist/calendar.cfm

OSHA ISSUES FINAL RULE ON CRANE OPERATOR CERTIFICATION REQUIREMENTS

OSHA issued a final rule that clarifies certification requirements for crane operators. Under the final rule (<https://www.federalregister.gov/documents/2018/11/09/2018-24481/cranes-and-dericks-in-construction-operator-qualification>), employers are required to train, certify/license, and evaluate operators to safely perform crane activities. Operators can be certified based on either the crane's type and capacity, or type only, ensuring that more accredited testing organizations are eligible to meet OSHA's certification program requirements. Most requirements in the final rule will become effective on Dec. 9, 2018. The evaluation and documentation requirements will become effective on Feb. 7, 2019. For more information, see visit <https://www.osha.gov/news/newsreleases/trade/11072018>.

OSHA ANNOUNCES NATIONAL SAFETY STAND-DOWN TO PREVENT FALLS MAY 6-10, 2019

Employers and workers are invited to participate in the fourth annual National Safety Stand-Down to Prevent Falls in Construction, May 6-10, 2019. The weeklong outreach event encourages employers and workers to pause during the workday to discuss fall hazards and how to prevent them. Falls are the leading cause of death in the construction industry, accounting for 37 percent of fatalities industry-wide. For resources on fall prevention visit <https://www.osha.gov/StopFallsStandDown/>.



EMPLOYERS CONCERNED ABOUT SAFETY INSPECTION DRONES

Inspectors from the Occupational Safety and Health Administration (OSHA) now are authorized to use camera-carrying drones as part of their inspections of outdoor workplaces, according to Bloomberg Law.

In a written Nov. 27 statement, OSHA said drones have been used for nine inspections under the guidance issued this year, often at worksites following an accident where it was too dangerous for compliance officers to enter the worksite, such as an oil drilling rig fire and a building collapse.

Attorneys who represent businesses in OSHA cases say employers should be wary of giving OSHA inspectors blanket permission to fly remote-controlled aircraft above worksites. Some are concerned OSHA will try to use drones to get around Fourth Amendment rights, which protect people from unreasonable searches and seizures; inspections could be broadened if an inspector spots a serious hazard in plain sight using a drone.

OSHA asks for an employer's approval of a drone flight before it is launched; if the employer objects to its use, it will not be used.

Attorneys from Ogletree Deakins PC, Tampa, Fla., recommend employers participate in flight planning and don't allow drones over worksites if they don't agree with the flight plan; require OSHA to immediately share any images taken by the drone; and have someone from the company sit next to the OSHA drone crew on the ground—similar to accompanying an OSHA employee on a walking inspection. On worksites that have a general contractor and several contractors, it also is recommended that consent from all onsite contractors regarding the drone flight should be required.

A staff member is designated as an unmanned aircraft program manager for each of OSHA's 10 regions. Missions require a three-member flight team—a pilot, a "visual observer" and a safety monitor. Drone crews must follow Federal Aviation Administration rules.

JOIN NRCA TO TAKE OVER CAPITOL HILL

The purpose of the event is to bring the roofing industry together to meet with members of Congress and their staff and deliver the industry's message with "one voice".

On March 6-7, 2018, the roofing industry came together in Washington, D.C., for Roofing Day in D.C. 2018. The event was

Continued on next page



NRCA HAS ANNOUNCED ROOFING DAY IN D.C. 2019 IS APRIL 3-4, 2019

All contractor members and other roofing professionals are urged to participate in this transformative event in Washington D.C.

Mark your calendars – Save the Date!
www.nrca.net/roofingday

a success with more than 400 professionals from all segments of the roofing industry coming together to deliver our industry message with “one voice” to Congress. From states as far as Hawaii and Alaska, roofing professionals from all segments of the industry showed up and made a lasting impression on legislators, bringing to their attention our urgent need for regulatory reform, enhanced career and technical educational programs, and immigration reform that meets our workforce needs.

START SAFELY, END SUCCESSFULLY

Online educational programs for all levels...
Register at www.nrca.net/nrcauniversity

NRCA's Health & Safety Resources available to you:

- NRCA's Pocket Guide to Safety – new and updated! This pocket guide explains the latest federal and state-plan OSHA regulatory requirements along with EPA and DOT rules affecting roofing work.
- NRCA's Toolbox Talks – teaching safety never has been this easy. Review more than 100 safety lessons with your crews.
- The NRCA Safety Manual [Third Edition] – this manual gives updated and expanded explanations to improve worker safety at roofing job sites.

NRCA University provides essential training in Spanish for all your workers, including:

- NRCA Toolbox Talks
- Serving Up Safety: A Recipe for Avoiding Falls on the Job
- NRCA Pocket Guide to Safety
- Roofing Industry Fall Protection from A to Z
- And many more Spanish-language offerings

NRCA has a vast array of NRCA benefits to help your business prosper. Visit www.nrca.net/membervnavigation to learn more.

NRCA is continuing their popular series of FREE WEBINARS on the third Thursday of each month. These new and innovative webinar topics and presenters have been selected to expand your knowledge by giving you new ideas that you can implement into your company immediately. Each webinar offers a unique experience specifically tailored to roofing professionals. Don't miss out on these live opportunities to stay up to date with industry issues affecting your business.

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ICC Releases Collaborative 2018 Green Building Code

By Kim Slowey@kimslowey Published Nov 13, 2018

DIVE BRIEF

The International Code Council has released the 2018 edition of the International Green Building Code (IgCC), developed in collaboration with the U.S. Green Building Council, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and the Illuminating Engineering Society. The new version addresses energy efficiency, resource conservation, water safety, land use, site development, indoor environmental quality and building performance.

The 2018 IgCC integrates ANSI/ASHRAE/USGBC/IES 189.1 —«Standard for the Design of High-Performance Green Buildings Except Low Rise Residential Buildings» into the ICC's existing green codes, and the organizations maintain that this will make it more cost-effective for local jurisdictions to adopt green building codes — since they don't have to develop their own — and easier for designers and contractors to use given the alignment with ASHRAE and other ICC codes. According to the most recent available data from the ICC, 14 states plus Washington, D.C., have at least one jurisdiction that has incorporated previous versions of the IgCC.

The USGBC said it will “recognize and reward” within LEED those projects that conform to certain 2018 IgCC measures. “Our hope

is that building professionals and policymakers alike adopt better, greener building strategies that help them better implement LEED and achieve higher performance in sustainability,” said Mahesh Ramanujam, the USGBC's president and CEO.

DIVE INSIGHT

The only one of the ICC's codes to be in use in all 50 U.S. states is the International Building Code, with the International Residential Code (49 states) and International Energy Conservation Code (48 states) close behind.

Those jurisdictions that routinely incorporate ICC codes into their own building regulations will have a big decision to make when updating their building codes if the ICC membership votes to allow high-rise wood building construction in the next edition of the IBC.

Last month, at the ICC's annual meeting, the leadership moved forward 14 proposed code changes that would allow wood high-rises to be built as high as 18 stories and that would put three new types of construction on the books — Type IV-A, Type IV-B and Type IV. These new types would govern the construction of tall wood buildings from 85 feet to 270 feet. The full membership is currently voting on the change, and the results are scheduled to be revealed sometime next month. If successful, the changes would be included in the 2021 edition of the IBC. How many of the jurisdictions that now use the IBC as a model for their own regulations will adopt the tall wood codes is another matter since some view tall wood construction as a potential fire hazard.



Number, Rate of Nonfatal Construction Injuries Fell in 2017

By Kim Slowey@kimslowey, Construction Dive,
Published Nov. 19, 2018

DIVE BRIEF

Both the number and rate of nonfatal construction injuries and illnesses fell in 2017 for the second year in a row, according to the latest data from the Bureau of Labor Statistics. The number of nonfatal injuries and illnesses fell 2.7% to 198,100 in 2017 from 203,500 in 2016, and the rate fell from 3.2 per 100 workers to 3.1 during in the same period.

Specialty trade contractors had the highest number of recordable injuries and illnesses in 2017 —

130,800, down from 138,000 in 2016 — followed by building equipment contractors, a group that recorded 56,800 injuries and illnesses in 2017, down from 61,700 in 2016. Heavy and civil engineering contractors recorded 24,700 injuries and illnesses in 2017 (26,900 in 2016), while building finishing contractors (drywall, paint, flooring, carpentry and other finishing trades) recorded 23,400 (24,200 in 2016).

The specific categories with the least number of recordable injuries and illnesses last year were land subdivision contractors (900); siding contractors

Continued on next page

FORT BRAGG PLANS \$699M, 6-YEAR CONSTRUCTION PROGRAM

By Kim Slowey@kimslowey,
Construction Dive, Published Nov 21, 2018



DIVE BRIEF

In a recent presentation, Fort Bragg officials outlined a \$699 million plan for six years of construction projects in addition to the \$343 million the Department of Defense has underway at the U.S. Army installation in North Carolina, The Fayetteville Observer reported.

Planned projects include the GFF Architects-designed Freedom Crossing at Fort Bragg, a LEED-certified entertainment and retail district for active and retired duty service members and their families. The project has a \$27 million budget, according to military retailer Army and Air Force Exchange Service and will include three retail buildings totaling 40,000 square feet, a 42,000-square-foot movie theater and an outdoor public entertainment and event plaza. Other projects include more retail offerings, but the bulk of construction will be for the benefit of the installation's special operations mission. Fort Bragg officials will work off a \$788 million "wish list" that includes a fire station, airfield upgrades, tactical equipment maintenance facilities, barracks, infrastructure and training areas.

During the past 33 years, Fort Bragg, which is home to 54,000 troops and accommodates 14,000 civilian workers, has grown from 20.3 million square feet to 53.6 million square feet and seen \$6 billion of construction projects. The base, which is the world's largest military installation by population, is expected to continue to grow in the coming years.

DIVE INSIGHT

The U.S. Air Force has a reported \$1 billion effort ahead in trying to rebuild Tyndall Air Force Base near Panama City, Florida, after it was devastated by Hurricane Michael in October. The base is still operational thanks to tents and temporary structures, but the division in charge of Air Force contracting, the Air Force Installation and Mission Support Center at Joint Base San Antonio Lackland, will oversee a complete rebuild, the San Antonio Business Journal reported, after damage assessments are complete. The San Antonio unit has an annual operating budget of \$10 billion, according to the Journal, and supports all of the Air Force's U.S. bases and installations.

Maj. Gen. Brad Spacy told the Journal that the Air Force would take the opportunity to incorporate new technology and efficiencies into the base's reconstruction, working with the construction industry to "find the right answers" in making base infrastructure more resilient.

Military construction projects often provide an opportunity for private contractors. For instance, the U.S. Army Corps of Engineers has a hand in projects as varied as veterans' hospitals, coastal barriers and the U.S.-Mexico border wall, keeping both large and small civilian contractors busy, and maintains a list of contacts that can assist construction companies in becoming qualified to bid on its projects. •

Number, continued from previous page

(1,200); oil and gas pipeline and related structures contractors (1,300); foundation, structure and building exterior contractors (1,400); and tile and terrazzo contractors (1,400).

DIVE INSIGHT

OSHA requires most employers to maintain information about injuries and illnesses that happen on the job. Construction and other firms must use Form 300 Log of Work-Related Injuries and Illnesses to record details about incidents, including the name and job title of the employee, where on the job the incident occurred and the circumstances that preceded it. Employers provide even more details on Form 301, the Injury and Illness Incident Report. Contractors also are required to post an annual summary of all injuries and illnesses on Form 300A on each job site.

The construction industry waged a somewhat successful battle against OSHA during the last few years, leading the agency to alter some requirements under its new electronic recordkeeping rule. Construction organizations and employers mostly objected to having to submit forms that contained job and employee details based on privacy concerns but also pushed back against the extra cost burden of compliance they said would be placed on small businesses.

This summer, OSHA proposed a rule that would relieve companies with 250 or more employees to of electronically submitting information from Form 300. They would still have to report the summary information from Form 300A. •

OSHA REVERSES POLICY ON DRUG TESTING, INCENTIVE PROGRAMS



Written by Travis Rhoden, Workplace Safety Advisor, provided by Florida Roofing magazine, FRSA

OSHA has changed course in its view of employers' post-incident drug testing programs and injury rate-based incentive programs. In a Memorandum to Regional Administrators and State Designees published October 11, the Agency now says most of these types of programs do not run afoul of the anti-retaliation provisions of the injury and illness recordkeeping regulation at §1904.35(b) (1)(iv).

This is a huge shift in policy guidance from that published when the Agency issued the final rule in May 2016 requiring employers to electronically submit injury and illness records. As part of that rulemaking, OSHA added a provision that employers not have any barriers for employees to report injuries or illnesses. The rule also said that employers could not discriminate or punish employees for being injured.

While the rule itself didn't address drug testing or incentive programs, policy guidance published along with it indicated that most post-incident drug testing programs would be in violation. The same thing was said about incentive programs that were tied to injury rates.

But now, OSHA says that many employers who implement safety incentive programs or conduct post-incident drug testing do so to promote workplace safety and health. In addition, the Agency says evidence that the employer consistently enforces legitimate work rules (whether or not an injury or illness is reported) would demonstrate that the employer is serious about creating a culture of safety, not just the appearance of reducing rates. Thus, action taken under a safety incentive program or post-incident drug testing policy would only violate §1904.35(b) (1)(iv) if the employer took the action to penalize an employee for reporting a work-related injury or illness rather than for the legitimate purpose of promoting workplace safety and health.

In the new policy, OSHA says that incentive programs can be an important tool to promote workplace safety and health. One type of incentive program rewards workers for reporting near-misses or hazards and encourages involvement in a safety and health management system. "Positive action taken under this type of program," the Agency says, "is always permissible under §1904.35(b)(1) (iv)."

OSHA describes another type of incentive program that is rate-based and focuses on reducing the number of reported injuries and illnesses. These programs typically reward employees with a prize or bonus at the end of an injury-free month or evaluate managers based on their work unit's lack of injuries. The Agency says these rate-based incentive programs are also permis-

sible under §1904.35(b)(1)(iv) "as long as they are not implemented in a manner that discourages reporting."

So, if an employer takes a negative action against an employee under a rate-based incentive program, such as withholding a prize or bonus because of a reported injury, OSHA would not cite the employer under §1904.35(b)(1) as long as the employer has implemented adequate precautions to ensure that employees feel free to report an injury or illness.

What Would be "Adequate Precaution?"

OSHA says that a statement that employees are encouraged to report and will not face retaliation for reporting may not, by itself, be adequate to ensure that employees actually feel free to report, particularly when the consequence for reporting will be a lost opportunity to receive a substantial reward. However, an employer could avoid any inadvertent deterrent effects of a rate-based incentive program by taking positive steps to create a workplace culture that emphasizes safety, not just rates. For example, the Agency says that any inadvertent deterrent effect of a rate-based incentive program on employee reporting would likely be counterbalanced if the employer also implements elements such as:

- An incentive program that rewards employees for identifying unsafe conditions in the workplace;
- A training program for all employees to reinforce reporting rights and responsibilities and emphasizes the employer's non-retaliation policy;
- A mechanism for accurately evaluating employees' willingness to report injuries and illnesses.

In addition, OSHA says that most instances of workplace drug testing are permissible under §1904.35(b)(1) (iv). Examples of permissible drug testing include:

- Random drug testing.
- Drug testing unrelated to the reporting of a work-related injury or illness.
- Drug testing under a state workers' compensation law.
- Drug testing under other federal law, such as a U.S. Department of Transportation rule.
- Drug testing to evaluate the root cause of a workplace incident that harmed or could have harmed employees. If the employer chooses to use drug testing to investigate the incident, the employer should test all employees whose conduct could have contributed to the incident, not just employees who reported injuries. •



OSHA ANNOUNCES LONG-AWAITED UPDATES TO CRANE OPERATOR CERTIFICATION REQUIREMENTS

November 8, 2018, National Safety Council

Washington — OSHA is set to publish the long-awaited updates to its crane operator certification requirements in the Nov. 9 Federal Register.

As anticipated, the agency will require certification by type of crane, but will accept certification by crane type and its lifting capacity. This will ensure “more accredited testing organizations are eligible to meet OSHA’s certification program requirements,” a Nov. 7 press release states.

In the forthcoming final rule, OSHA specifies that “certification/licensing” must be accomplished via an accredited testing service, an independently audited employer program, military training, or compliance with qualifying state or local licensing requirements.

OSHA originally sought to certify operator by crane type and capacity in its Cranes and Derricks in Construction Standard in 2010. That certification requirement was supposed to go into effect in 2014, but the agency later was notified that two of the

four accredited testing services were issuing certifications for type of crane rather than type and capacity.

Stakeholders also expressed concerns about the rule’s language – that certification did not mean an operator had the necessary skills. Those concerns compelled the agency to delay the requirements for another three years in September 2014 and one additional year in November 2017. The certification requirement for type and capacity was scheduled to take effect Nov. 10, but OSHA issued interim compliance guidance Nov. 5 that it would accept certifications by type or type and capacity.

Most of the new final rule will go into effect Dec. 9, except for requirements that employers evaluate crane operators and document those evaluations. Those requirements will take effect Feb. 7.

Employers also are required to “train operators as needed to perform assigned crane activities” and provide training when it is necessary to operate new equipment, according to the release.

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Organizations that have completed evaluations before Dec. 9 will not need to conduct them again, OSHA states, but will need to document the completion of those evaluations.

"The new effective date provides some additional breathing room for operators and employers who have not yet completed the certification and evaluation process," the National Commission for the Certification of Crane Operators states in a Nov. 8 press release. "But the message for those who have not is unchanged: Don't wait!"

NCCCCO adds that it will release a briefing document for stakeholders during the week of Nov. 12.

CERTIFICATION ORGANIZATION RELEASES EMPLOYER GUIDES ON UPDATED CRANE OPERATOR REQUIREMENTS

December 4, 2018, National Safety Council

Fairfax, VA — The National Commission for the Certification of Crane Operators has published three employer guides on OSHA's updated crane operator requirements, a final rule scheduled to go into effect Dec. 10.

The two-page guides, released Nov. 21, address the rule's training, certification and evaluation regulations, providing an overview of its essential elements in a question-and-answer format.

"Since OSHA has identified a three-step process to achieving qualification as a crane operator, it seemed to make sense to create individual guides for each," NCCCCO CEO Graham Brent said in a press release.

OSHA published the long-awaited updates to its crane operator certification requirements in the Nov. 9 Federal Register. The agency is mandating certification by only the type of crane, but will accept certifications by crane type and its lifting capacity.

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Employers also are required to "train operators as needed to perform assigned crane activities" and provide training when it is necessary to operate new equipment, OSHA states in a Nov. 7 press release. Organizations that have completed evaluations before Dec. 9 will not need to conduct them again, the agency adds, but will need to document the completion of those evaluations.



CONSTRUCTION WORKERS HAVE HIGHEST RATE OF SUICIDE AMONG AMERICAN WORKERS

*By Kim Slowey@kimslowey,
Construction Dive, Published Nov 20, 2018*

DIVE BRIEF

The Centers for Disease Control and Prevention in its Nov. 16 Morbidity and Mortality Weekly Report identified construction and extraction as the occupational group with the highest rate of male suicide among American workers. The CDC based its conclusion on data from 17 states and the 2012 and 2015 National Violent Death Reporting System.

The construction and extraction group's rate of suicide per 100,000 civilian non-institutionalized workers was 43.6 in 2012 (1,009 total workers) and 53.2 in 2015 (1,248 total workers). In comparison and reflective of the relatively small number of women in construction and extraction, the number of female workers who committed suicide in 2012 was nine and then 14 in 2015. The suicide rate among all American workers aged 16 to 64 from 2000 to 2016 increased 34% from 12.9 per 100,000 workers to 17.3. Those not working at the time of their death — including those who were unemployed, disabled, incarcerated or in the military — were not included in the CDC's calculations.

CDC recommendations for possibly decreasing the number of suicides is the fostering of social connections and economic supports, improving access to appropriate mental health and other resources and services and encouraging at-risk individuals to seek mental health treatment if necessary, without the stigma that sometimes goes along with it. The CDC also sug-

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Suicide, continued from previous page

gests developing strategies to reduce at-risk individuals' access to "lethal means," company-wide plans for post-suicide response, support for surviving friends and family members and media reporting policies that don't sensationalize the details around incidences of suicide.

DIVE INSIGHT

One of the ways that the construction industry has responded to the high rate of worker suicides is through the creation of the Construction Industry Alliance for Suicide Prevention. Comprising groups like the Construction Financial Management Association, Associated General Contractors of America, Associated Builders and Contractors, Dodge Data & Analytics and several local chapters of the International Union of Operating Engineers, the alliance provides information about mental health services and other resources.

"In addition to working through this coalition," said Brian Turmail, AGC vice president of public affairs and strategic initiatives, "we also have been working aggressively to educate our chapters and members about suicide within the industry and to provide resources to them on ways they can help identify at-risk workers and what to do once they have identified them."

Some of the AGC's efforts include:

- Holding suicide prevention sessions at the AGC's Annual Convention
- Annual safety meetings
- Annual meetings of chapter leaders
- Covering the issue in the AGC's *Constructor Magazine*
- Sharing information and updates about the issue via various member newsletters

"At the same time," Turmail said, "we continue to seek better information about the root causes of the industry's too-high suicide rate and work to identify or, if needed, create additional resources for our member firms. We can, and must, do a better job as an industry to prevent suicides within our workforce." •



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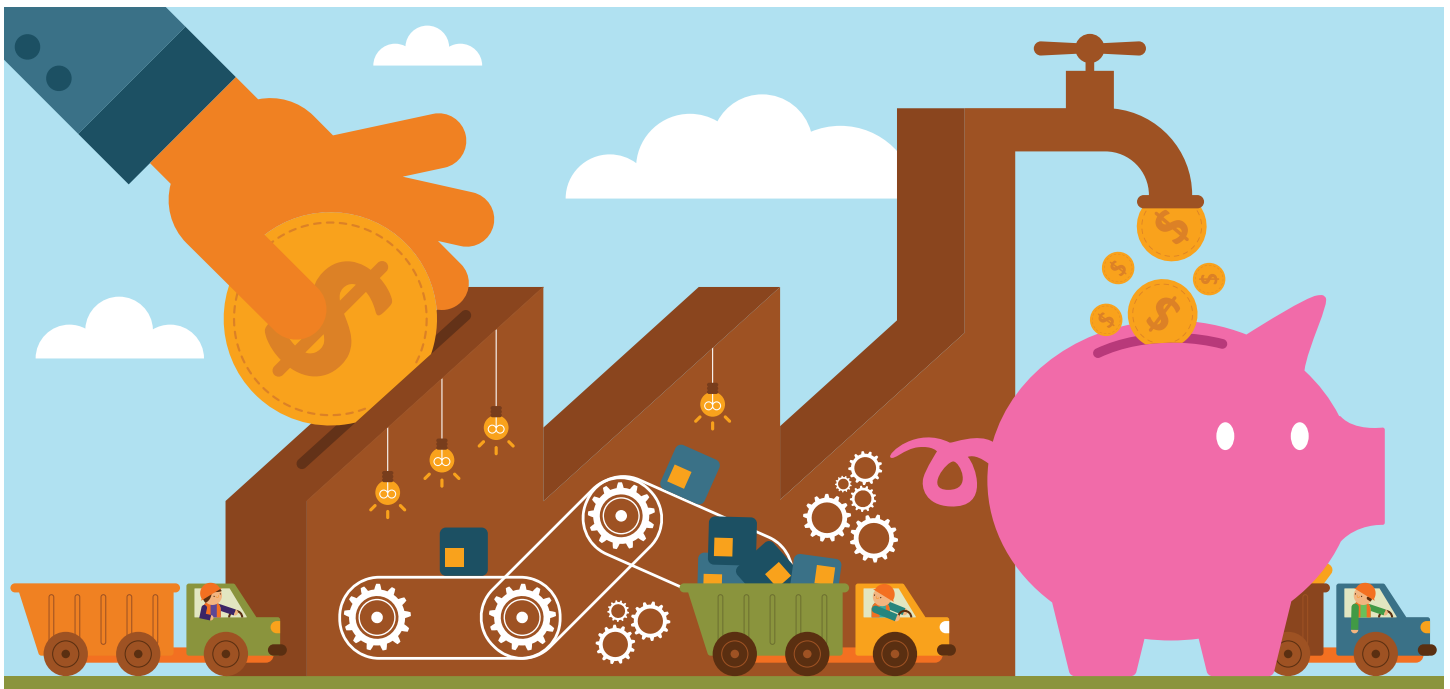


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BUSINESS TOOLBOX: Maximizing Cash Flow

By Kim Slowey, Construction Dive Published on July 11, 2018

Having cash at the ready to procure materials, pay salaries, fund new projects and finance all the other functions of a construction business is essential for the smooth operation of a company. When financial obligations outpace the influx of money, it doesn't take long for a business to become overwhelmed by debt or, in the worst-case scenario, go under.

"Too many [contractors] fail," said Steven Goldstein, audit partner at accounting and consulting firm Grassi & Co., "because they don't manage cash properly. They don't understand what's happening until it's too late."

First, though, it's important to recognize that there is a difference between being profitable and having healthy cash flow. A contractor could be killing it on margins, but if money is not making its way into the company coffers, it could feel like the firm is on its way down — and out.

CASH FLOW CHALLENGES

One of the primary cash flow challenges facing contractors, particularly in active building areas like New York City, Gold-

stein said, is that firms are doing a lot of work and possibly overshooting their cash capacity in the process. Opportunities for growth should be taken advantage of whenever possible, but those lucky breaks have to be funded, often-times upfront and before receiving a single payment.

In that scenario, if a large customer is late making a payment or has financial problems and fails to pay altogether, contractors could be forced to rely on profits from other projects to pay the bills. And successful projects can't take up the slack of late or no payments forever. Subcontractors are particularly vulnerable, as they are footing the lion's share of labor and material costs.

So, the primary cash flow mission for subcontractors and general contractors is getting paid in a timely fashion for the work they perform. General contractors typically pay subcontractors after receiving payment from the owner, so they shouldn't be quite as stretched for cash as subcontractors.

For general contracting firm Broadway Construction, collecting on accounts receivable has not been an issue, according to its president, Everard Martin. However,

Martin said he won't dismiss the possibility that the company will face such challenges in the future. Martin said GCs should have an open conversation with owners and subcontractors at the beginning of a project to establish how and when payments will be made so that everyone is on the same page from the start.

SETTING PAYMENT TERMS

As a subcontractor, Bill Weber, principal at Gaston Electrical, said the terms of payment can vary from project to project, and the sub should always have discussions before the projects starts about payments without the conversations becoming contentious. This is possible if the GC and sub have a good relationship, Weber said, but added that there are some general guidelines for negotiations.

"On short-duration projects, we certainly don't want to wait 90 days for payment, in which case we could be substantially complete on a project before we see our first payment," Weber said. "On larger and longer-duration projects, we expect our customers to establish a predictable payment cadence so that we can understand our cash flow needs and plan accordingly."

And it's to the GC's benefit to have agree-

able payment terms with its subcontractors. "If you pay your subs on time, you can get better leverage on price points and better participation," Martin said. "You may [end up with] better quality, but what you get at a minimum is responsiveness."

That could manifest itself in a few ways. The subcontractor might be willing to expedite certain tasks on short notice as a sign of appreciation or even extend invoice terms occasionally because of previously consistent on-time payments.

Material suppliers can also be partners in payment talks. Weber said Gaston's material suppliers are typically willing to negotiate invoice terms so that they fall in line with the expected general contractor-to-subcontractor pay schedule, but subcontractors already need to have a healthy relationship with that supplier to begin with.

"If a subcontractor both provides a steady flow of business to vendors and builds trust by consistently honoring their commitments," he said, "a supplier is almost always willing to negotiate special payment terms on projects."

So what should contractors and subcontractors do if their customers consistently pay late or refuse to pay a legitimate bill? After all, there are certain expenses like payroll, insurance and office rent that can't wait.

If one of Gaston's key customers is late with a payment, Weber said, they try to be flexible. However, the company will pursue its full rights if in its best interests, and that includes the option of filing a mechanics lien. However, Weber said that's a rare occurrence since it often creates tension between the general contractor (Gaston's customer) and the owner.

MANAGING RETAINAGE

The issue of retainage can also be an area of negotiation. Retainage of typically 10% is commonly withheld by the owner from payments to the general contractor, who passes that on to subcontractors. In theory, this temporary reduction in net payment is to ensure that contractors are motivated to take care of any end-of-project issues like punch lists.

At a certain point in the project, retainage is sometimes reduced to 5%, and the owner will sometimes even release retainage in full to early trades like the excavation contractor who would otherwise have to wait months or years, depending on the size of the job, until substantial or full completion to receive the withheld amount.

"I think it's important for subcontractors to advocate for themselves when it comes to collecting retaining," Weber said. "Our customers are focused on so many other things that retainage could be held far longer than needed if we don't ask for that payment as soon as we believe we are entitled to collect those funds."

In order to manage the collection of retainage effectively, Martin said, a contractor must first know what its release is being tied to, like the completion of a punch list or some delivery milestone. Then, he said, make sure the work is performed according to the plans and specification and address the punchiest items quickly.

Change orders are another area where contractors can lose out on cash. Without proper tracking of the extra work a customer requests, the contractor could end up bearing the cost without being able to invoice for it.

Checks and balances at Broadway, Martin said, reduce the chance of that happening, but every so often someone drops the ball. By the time the project team realizes the company paid for work and never billed for it, it could be hard to assemble the paperwork and other proof to justify submitting a bill for those services.

But once all the cash is collected for work performed under the contract, plus the aforementioned changes, there are ways contractors can save some of that money through internal policies and procedures.

INCREASING CASH FLOW

One way to ensure contractors are maximizing cash flow is to make sure the billings reflect the work performed and that they're turned in on time, Goldstein said.

Inventory control is also important, which

means it can be detrimental to tie up cash by stocking up on materials that aren't needed for work in progress. If there is a need to warehouse a large quantity of materials, Weber said, Gaston uses pictures, inspection reports, etc. to prove to the owner that the company has taken ownership, then bills for it.

Quick payment could also increase cash in the long run. "Our vendors are also very cash-flow conscious and most are willing to provide discounts for quick payment of invoices," Weber said. "If a subcontractor can provide positive cash flow from their projects, they can use that [money] to increase margins by taking advantage of vendor discounts."

Looking to outside financing when cash reserves are low is another option, Goldstein said. Establishing a line of credit with a bank is a good business move, but some companies may also turn to factoring. Factoring is when a company sells its receivables to a third party at a discount. So, if a contractor is waiting on payment for \$100,000 in invoices, a factoring company might provide them with 75% of the money, or whatever percentage the two agree on, and then collect the money from the customer themselves. A large chunk goes to the factoring company, but a service like this comes in handy if it's a matter of making payroll or not.

The construction industry, Goldstein said, is a business like no other, so it's important to engage an accountant or financial advisor with appropriate experience. Not only will they be able to give the right tax advice, but they can provide a warning about new regulations that could have costly implications, such as the recently enacted safety training requirement in New York City. Noncompliance with that rule, according to city officials, could result in a \$5,000 violation issued to the employer, permit holder and owner.

There are, of course, actions contractors can take, like keeping expenditures low and not overstaffing, but for Martin, cash flow is a simple calculation. "It comes down to having substantial working capital in place and understanding how much you need in reserve to cover the inevitable," he said. •

TAX CUTS AND JOB ACT A BIG VICTORY FOR ROOFING INDUSTRY

2017 proved a significant year for the roofing industry. Not only was optimism high and demand still on the uptick in both the new construction and re-roofing marketplaces, but when The Tax Cuts and Jobs Act of 2017 passed in December last year, it marked a huge victory for those involved in roofing. The tax reform essentially opened the door for a series of tax related benefits likely to boost business in 2018 and beyond.

There are a few key areas of the tax reform applicable to roofing entities. One of the key sections — IRC Sec. 179 expensing provision (deduction) — intends primarily to benefit small businesses who can purchase equipment, then write-off the amount of those purchases during the same calendar year. For 2018, qualifying property purchases include most business equipment such as computers, certain vehicle types, virtually all construction equipment and machinery.

“For contractors in our sector specifically, this portion of the reform is key, as it allows them to write off the equipment and vehicles, they purchase specific to transporting and installing spray foam roofing on the jobsite,” says Kurt Riesen- berg, executive director of the Spray Polyurethane Foam Alliance (SPFA). “Some of our members have been quite pleased to learn about these tax changes, and although we worked hard with other groups to make them happen, they still seem like one of the best kept secrets. We need to change that, so all of our members know about them.”

Perhaps one of the most notable aspects of IRC Sec. 179, however, is that the qualified property listed under it now includes non-residential roofs. Hailed as a huge win, the new limit on the total amount of Sec. 179 property that a business can purchase each year before being totally phased out is

\$2.5 million (up from the previous \$2 million), and the annual limit for the

deduction itself has been raised to \$1 million (up from \$500,000). A property owner is now able to write off up to \$1 million the same year that a commercial roof is purchased. Additionally, the \$1 million annual deduction and \$2.5 million business investment limit are now permanent and indexed for annual inflation starting in 2019.

“The commercial roof inclusion in the tax reform is likely to spur increased sales and installations of new roofs this year, and we want our members making the most of the opportunity.”

**Kurt Riesen- berg,
Spray Polyurethane Foam Alliance**

“The commercial roof inclusion in the tax reform is likely to spur increased sales and installations of new roofs this year, and we want our members making the most of the opportunity,” adds Riesen- berg.

There was one tradeoff made in order to make commercial roofs eligible for Sec. 179 — the elimination of the deduction for the interest on loans to finance the purchase. However, it’s still a significant benefit for contractors able to leverage IRC Sec. 179’s equipment purchase write-off.

BONUS DEPRECIATION DEDUCTION

Another key area of note is IRC Sec. 168(k) — the Bonus Depreciation Deduction — which the act raises to 100 percent for qualifying new and used property acquired, and placed in service, after September 27, 2017 and before January 1, 2023. Property with a depreciable tax life of 20 years or less generally qualifies and includes: machinery and equipment, furniture and fixtures, computers and computer software, and vehicles utilized

primarily for business (with a dollar cap on cars and trucks with a loaded vehicle weight of 6,000 pounds or less).

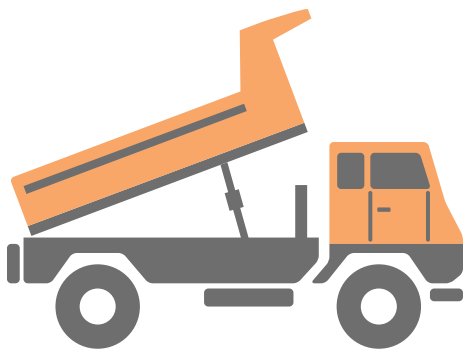
More broadly, the tax rate for C corporations, or the corporate tax rate, was cut through the new reforms to 21 percent (from 35 percent). Also, of note to many roofing contractors and contractor firms, pass-through entities organized as S corporations, partner- ships, LLCs and sole proprietorships now receive a 20 percent deduction on taxable income up to \$157,000 or \$315,000 if filing jointly that is phased out at \$207,500 or \$415,000 respectively.

Many contractors are structured as pass-throughs and pay their business taxes on individual returns, so it also helps that the top individual rate has been lowered from 39 to 37 percent. However, the rules for pass-throughs are complex and consulting with a tax expert is encouraged.

For contractors that are family businesses, the new tax code doubles the estate tax exemption so that estates of up to \$11 million (\$22 million for couples) are now exempt from taxation. In addition, the Alternative Minimum Tax (AMT) exemption and phase-out amounts for individuals have been sharply increased.

Finally, in a separate bill, Congress renewed the Residential Energy- Efficiency Tax Credit (IRC Sec. 25C), the Energy Efficient New Home Tax Credit (45L), and the Commercial Building Tax Deduction (179D). While renewed retroactively only for tax year 2017, the door remains open for these incentives (tax extenders) to be renewed for 2018 and beyond.

“These incentives help, but the tax act’s reforms are a big, long-term win for both the spray polyurethane foam sector and the roofing industry at large,” says Riesen- berg. “All indications point to this act giving the roofing industry and its many players a boost in business. It’s business and jobs that drive the economy, and when you add in the resulting benefits direct to our members, this news hits the trifecta for an exciting and optimistic 2018 and beyond.” ●



WHAT'S THE COST?



Changes to NRCA's equipment cost schedule could mean significant changes to your bottom line



By Kurt Fester, NRCA's project engineer

The accountability use and cost of trucks, cranes and roofing equipment are important elements in a roofing contractor's operation. You need to make sure you have accurate information—improperly determining equipment cost rates can negatively affect your bottom line.

The 11th edition of NRCA's Roofing Contractors Equipment Cost Schedule recently was released and lists some of the most common products used in roofing operations. In addition, the publication provides help when determining equipment costs for your roofing business based on depreciation, major repairs, interest, taxes, storage and insurance. Following is an overview.

WHAT IT IS

NRCA's equipment cost schedule is an electronic document to help roofing contractors make informed decisions when setting roofing equipment cost rates. It includes descriptions of the pieces of equipment as they commonly are sold; their selling prices; and monthly, weekly, daily and hourly expense rates.

The cost rates established for equipment represent an approximate average of conditions under which the equipment is expected to operate.

The equipment costs are based on the average list prices of known suppliers, free on board from their points of manufacture plus 10 percent for freight.

The prices and rates are provided as a guide to be used only when estimating direct costs. The prices and rates do not account for operating and maintenance costs or profit. This means adjustments may be required for particular conditions, such as weather, job locations and length

of a construction season.

The costs also do not consider loading, erecting, operating or dismantling equipment; fuel; lubricants; expendable items; wages or transportation of operating crews; or general business expenses. Sales and use taxes also are not included. All these items should be considered when calculating actual costs.

WHAT'S NEW

The following changes have been made to better reflect the costs incurred by roofing contractors when using equipment:

Costs: The most apparent change is the values of the average costs have been updated to more accurately reflect the current marketplace. This includes increasing the additional cost for freight and setup from 6 percent to 10 percent.

List updates: New items have been added to stay current with the evolving technology of the industry.

Insurance percentage: Insurance costs include premiums for policies covering risks to equipment, including fire and theft. They do not include contingency allowances for uninsurable losses. Insurance costs are estimated at 2 percent, an increase from 1 percent.

Depreciation percentages and average use: The conservative average months per year a roofing contractor can reliably use equipment and the average life of each listed item were evaluated. Changes to the values used in the schedule to arrive at expense per month were made.

HOW IT WORKS

Cost schedules for each item are first determined by figuring the percentage of the equipment cost that should be ex-

Item	Depreciation (percent)	Maintenance & repairs (percent)	Interest, taxes, storage & insurance (percent)	Total of columns 1, 2 & 3 (percent)	Average use (number of months/yr)	Percentage of cost of equipment per month
Tankers	33	12	12.5	57.5	8	7.2

Figure 1: The Schedule to Arrive at Expense per Month

pensed each month. This is done using "The Schedule to Arrive at Expense per Month Chart" (see Figure 1). This percentage is calculated by combining key factors about each listed item or piece of equipment such as useful life; months in a given year it can be used; and other associated expenses like maintenance, repairs, insurance, taxes and storage.

The expense per month as a percentage of the cost of the product then is multiplied by the average cost to get the expense per month figure in the equipment cost tables. This also is the base number used to derive the per month, week, day and hour values listed alongside the monthly total.

Using tankers as an example, in Figure 1, the useful life is estimated to be three years; therefore, 33 percent annual depreciation is listed in Column 1. The average use in months per year (Column 5) is estimated from industry averages (eight months). Maintenance and repairs are estimated to be 12 percent, and interest, taxes, storage and insurance are estimated to be 12.5 percent. The total percentage of depreciation (Column 1);

Description	Cost	Month
7.5-ton, truck-mounted 2,000 gallons	\$35,341.90	\$2,540.20

Figure 2: Calculated monthly rate

Description	Cost	Month	Week	Day	Hour
7.5-ton, truck-mounted 2,000 gallons	\$35,341.90	\$2,540.20	\$889.07	\$330.23	\$40.64

Week: \$2,540.20 x 0.35 = \$889.07

Day: \$2,540.20 x 0.13 = \$330.23

Hour: \$2,540.20 x 0.016 = \$40.64

Figure 3: Calculated weekly, daily and hourly rates

maintenance and repairs (Column 2); and interest, taxes, storage and insurance (Column 3) is 57.5 (Column 4). When divided by the estimated average use in months per year (eight), the total expense percentage is about 7.2 (Column 6).

Therefore, for our tankers example, the monthly rate is 2,540.20 (\$35,341.90 x .072) (see Figure 2). The weekly, daily and hourly rates (see Figure 3) are calculated by multiplying the monthly rate by

the following percentages, respectively: 0.35, 0.13 and 0.016.

WHERE TO GET IT

The updated electronic version of NRCA's Roofing Contractors Equipment Cost Schedule is available free for NRCA members and can be downloaded at www.nrca.net/store. Nonmembers may purchase the document or download it. •

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By Jean Dimeo, Construction Dive,
Published Nov 16, 2018

Contractors usually see indicators in their jobsite and financial data when something is going wrong with a project. But sometimes, a project succumbs to troubles even when the data looks great, two construction industry veterans said during a session at Procore's Groundbreak Construction Conference this week.

"Sometimes metrics can be deceiving depending on who is putting them out and how they are received," Nancy Novak, senior vice president of construction for Compass Datacenters, told several hundred attendees. "You've got to dig in and understand ... what they mean."

Novak and Tamara Yang, Balfour Beatty Construction's director of learning and development, said there are four key things contractors should do besides looking at data when a project is going south: monitor and adjust the team's behavior; use empathy to understand all stakeholders' issues and to implement solutions; quickly "course correct" the situation; and "future proof" your company's next jobs by learning from troublesome projects and creating a culture where bad news isn't bad.

MONITOR AND ADJUST TEAM BEHAVIOR

Poor team behavior shows up on the jobsite long before it shows up in the financials, the presenters said. For instance, Novak described one large project from her decades-long career that looked successful on paper: Despite "tons of changes," it was on schedule and on budget. But something very different was happening at the jobsite. "Heads were hanging low" when managers visited, she said. "We had a team morale problem."

Novak discovered that workers were stressed about the project and not gelling as a team. She became concerned that capable employees and subs would start jumping ship. To boost the "team health," Novak bought dinners and stayed on-site to listen to concerns and filter issues. "We didn't lose anyone on the jobsite," she said.

On another project, the team's energy was high, the group had a great rapport and the owner was good to work with. But the project leader was burned out, which was beginning to impact the team, so Novak brought in another manager. "The switch in leadership made all the difference," she said.

It's important for contractors to observe how their teams behave with each other, as well as how well they work with subs, Yang said. "See if there is finger pointing and blaming going around, and if they have a good relationship with the owner and the leadership."

Yang said that Balfour has a "smart start" meeting with all stakeholders before the project's onset to set behavior expectations. "It's all about building trust," she said.

Team behavior also includes how the contractor's executives react to problems. What executives say and do impacts work on the jobsite, she said. "If they are going to go off the ledge, they might be taking the whole team, project and earnings off the ledge."

SHOW EMPATHY

It's very easy to blame others, particularly subcontractors, when something goes wrong on the site. Novak and Yang said contractors must find out what the issues are and then use empathy to understand all sides in order to do what's best for the project.

Novak recounted a project where a sub was complaining about losing money. "I told the sub, 'show me your books and

how much the damage is,” she said. After seeing the sub’s financials, “I said, ‘I am going to do everything in my power to make the job easier and recover some of the job for you.’” Novak said she spent some money to improve the sub’s situation on the project.

Although the project didn’t end up being as lucrative as the sub would have liked, Novak said he told her afterwards he wanted to do all her firm’s work going forward. “He’s going to be there for me,” she said. “Preserving the relationship [with a good sub] is most important.”

Being empathetic not only means understanding the subs’ point of view, but also taking responsibility for problems your firm created on the job, Yang said. “Transparency is key,” she added. “You might not be able to make the subs whole, but they’ll know they were treated fairly.”

IMPLEMENT A COURSE CORRECTION

What should you do if you’ve improved the team’s behavior and applied empathy, but the project still is off-track? You should quickly shift gears to do what’s best for the project, Yang said.

Novak recounted one project where “everybody was suing everybody. The owner, even the caulk guy.” She brought in a team to unearth what had happened and found that her company and the owner had “screwed up a lot of things. But we and our subs were the ones who paid the price for this.” Not only was there a financial cost to the stakeholders, but there also was high turnover of workers.

Novak set out to get every party to pay its fair share as well to keep her firm out of court. Although she was told it couldn’t be done, she got all the subs to align with the contractor. “It took months, a lot of meetings and deep dives, but they all got on board.” In the end, there was no litigation, all the subs stayed in business and the contractor preserved its relationships.

‘FUTURE PROOF’ FOR MORE JOBS AND WORKERS

That executives at many construction firms don’t want to discuss failed projects, but leaders should take lessons for problem projects and share them internally. “Let’s talk about what we did to get there and what we did to turn it around.”

Contractors need to create cultures where employees are not afraid to report bad news to their supervisors, Yang said. “Reward the bad news early because bad news later is really bad,” she said.

Likewise, construction firms should take a long view on every project decision because “you are going to be dealing with those subs and architects on future jobs. We want those subs to bid on future jobs, and if they are fairly treated, they’ll give favorable bids. If you can be fair, that’s when you’re going to grow your reputation and get you more jobs and employees,” she concluded. •



CONTRACTORS CHARGING MORE FOR CONSTRUCTION AS PRICES RISE

By R.A. Schuetz, LMTonline, November 12, 2018

Construction crews work along Post Oak Boulevard on Feb. 14, 2018 in Houston. Construction costs have been on the rise according to an analysis of federal data by the Associated General Contractors of America.

The prices contractors say they’ll charge for nonresidential construction has made the sharpest increase since 2009, when the Bureau of Labor Statistics began recording them.

In October, prices jumped 2 percent from the previous month and 5 percent from the previous year, marking both the largest monthly and yearly increase on record.

An analysis of federal data by the Associated General Contractors of America suggests that costs have increased even more quickly, rising 6.6 percent year over year.

“Contractors and subcontractors raised their bid prices in November to make up for past cost increases, but the cost of goods and services that they buy rose even faster,” the association’s chief economist, Ken Simonson, said. “That makes further bid-price increases likely but also implies some contractors will just stop bidding on projects where costs are too unpredictable to ensure they can be built profitably.”

The association said materials necessary for construction that saw sharp rises in costs included diesel fuel, up 27 percent year over year, steel mill products, up 18 percent, asphalt paving mixtures and blocks, up 12 percent, and truck transportation of freight, up 7.1 percent.

“It appears that the tariffs imposed on steel, aluminum and thousands of Chinese imports are starting to affect the cost of many items used in construction,” Simonson said. “As inventories of goods purchased before the tariffs took effect are depleted, contractors are likely to face even higher costs, which they will need to put into their bid prices if they hope to make any profit on future projects.” •



HOW TO MANAGE, SCHEDULE, AND TRACK TIME FOR EMPLOYEES ON MULTIPLE JOB SITES

By Guest Post | In: Accounting & Budgeting, Compensation & Benefits, Housing, Real Estate & Construction, In partnership with Simply Business, Written By Rieva Lesonsky

With the economy at nearly full employment, it's increasingly difficult to find workers—especially for small businesses. Some 61% of employers in the NFIB's most recent monthly jobs report are either hiring or trying to hire; of those, 87% say there are few or no qualified workers available.

How are employers handling the situation? A record net 37% of small business owners NFIB polled say they are raising overall employee compensation to try to attract and retain workers. In the construction industry,

where 75% of employers plan to hire this year, average hourly construction wages recently hit record highs. Despite the increase, jobs are still going begging.

Being short-staffed can have serious ramifications, especially for construction, remodeling, or field service businesses.

- Projects will fall behind, negatively affecting customer satisfaction.
- Employees may have to work overtime, costing you extra in overtime pay.
- Employees working long shifts or multiple days without time off can increase the likelihood of accidents and injuries, leading to insurance claims or even lawsuits.

What's a small business owner to do? If you are struggling to find qualified full-time employees, you need a backup plan. Review upcoming projects to estimate whether you'll need extra workers, skilled tradespeople, or specialty subcontractors. Create a shortlist of alternatives you can call in if necessary.

Using a temporary staffing service is one way to meet last-minute labor needs. A service that specializes in construction workers can provide temporary employees who have the specific skills you need. In addition, temporary staffing companies handle payroll, tax withholding, background checks and hiring, and may even provide workers' compensation insurance.

NEW RULES ON INDEPENDENT CONTRACTORS

In some states, regulations about independent contractors are changing, which may make hiring the extra help you need more complicated. A California Supreme Court ruling in April 2018 revised the guidelines for determining whether a worker is an employee or an independent contractor. Essentially, workers are assumed to be employees unless all three of the following criteria are met:

1. The worker is free from the control and direction of the employer;
2. The worker performs work that is outside the hirer's core business; and
3. The worker customarily engages in "an independently established trade, occupation or business."

This 3-factor "ABC Test" is already used in Massachusetts and New Jersey to restrict the number of workers classified as independent contractors, reports Forbes, noting, "Other states use the ABC Test for specific situations, such as determining unemployment compensation."

If you have both independent contractors and employees working at multiple job sites, then tracking time and accurately calculating compensation, overtime, time off, and other factors just got even more complex.

SCHEDULING AND TIME-TRACKING TIPS

How can you effectively track employees' time, manage their schedules, and keep on top of legal issues when you have workers at different job sites? Start by taking advantage of technology. Let's face it: the construction industry is unpredictable at best, and there's no way to schedule a multitude of workers at multiple sites with pencil and paper.

Scheduling software simplifies the task. Look for software that

1. Has a robust mobile app so you can adjust schedules when you're on the go
2. Offers time-saving features such as drag-and-drop scheduling
3. Automatically notifies employees of schedule changes
4. Syncs with the calendaring apps your employees use

Software that handles both scheduling and time-tracking can really simplify your life. Save your employees time by using time-tracking software that lets them clock in at the job site using their smartphones or a tablet instead of driving to your office to punch in. For example, TSheets by QuickBooks offers a time clock kiosk that works anywhere with an internet connection. Supervisors can use the time clock's crew function to clock in the whole crew at once.

Today's time-tracking apps offer features such as:

- Geofencing technology that tracks when employees leave or enter the job site

- and reminds them to clock in or out
- PIN user codes, biometric ID, and face detection identification to prevent "buddy punching"
- The ability to clock in via a phone call
- Integration with your payroll and accounting software to eliminate repetitive data entry and reduce human error
- Calculating wages, overtime, salary costing based on local laws, union regulations, or industry requirements

Check out these popular job scheduling and time-tracking apps designed specifically for workers at multiple job sites:

- FieldAware
- Replicon
- Snap Schedule
- Shiftboard
- TSheets
- When I Work

You rely on technology to run so many other aspects of your business. Why not harness it to manage your employee scheduling and time tracking, too?

Be sure to read all our "Countdown to 2019" posts:

- How to Manage Your Business Cash Flow During the Slow Season
- How Local Marketing Can Transform Your Small Business
- Hot Marketing Trends That Are Essential to Your Small Business Success
- The Hottest Consumer Trends Your Business Should Tap Into This Year

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November 13, 2018, *Engineering News-Record*

HOW TO MAKE SURE YOUR SUBS CAN FINISH THE WORK

The first step in the pre-qualification process is to obtain a clear picture of a prospective subcontractor's financial stability. While there is no one-size-fits-all method when it comes to requesting financial information, contractors should generally require a current set of financial statements and the past three years of gross earnings. It can be used to evaluate the subcontractor's stability and track record. Contractors should also make sure that their subcontracts allow them to obtain additional information if they need more data as the work progresses. When you receive a set of financial statements, review the balance sheet to develop a picture of what assets the subcontractor has. Then consider whether you are comfortable with their debt levels as compared to those assets.

Understandably, asking a subcontractor for detailed financial information can be a sticky subject. If a prospective subcontractor balks at providing financial statements or other detailed information, ask for a document listing their revenues in each of the past couple of years and dollar amounts for their currently-committed projects for the current year as a back-of-the-envelope way to evaluate if they may be overextended. Another good strategy is to ask how many workers they employ and how many they have hired in the past six months, which may give you a sense of whether a subcontractor is growing sustainably or too rapidly.

COMPLETE PICTURE NEEDED

Equally important, contractors should solicit a complete picture of the prospective sub's under-contract projects, including contract value, location, square footage, estimated date of completion and staffing levels. This allows the contractor to evaluate whether the subcontractor will have sufficient staff and resources to meet the contractor's needs and to evaluate whether the subcontractor has fully considered and planned for its obligations. For each project, the subcontractor should provide a reference that the contractor can call to find out whether there have been any timing, safety, or other issues with the sub's performance on the project.

Information on safety and accidents also is useful. At a minimum, contractors should require information regarding a prospective sub's current experience modification rate to get a feel for the subcontractor's past safety performance and level of


going-forward risk. For risks above a certain threshold, contractors should request detailed information about past jobsite injuries and the subcontractor's safety program. Contractors should also ask for a list of OSHA citations and injuries that caused employees to miss work over the past five years.

Contractors considering less-familiar subcontractors should start by calling references for the sub's most recent completed projects. Ask about whether the project was completed on-time and on-budget, and whether any major issues came up during the project that would make the contractor think twice about using the subcontractor in the future. Following through on these calls often uncovers revealing patterns about a subcontractor's reliability, adaptability, and success in completing work on time. It is likewise a good practice to solicit and call references for a sub's critical suppliers to identify potential downstream issues that could arise if the subcontractor has a history of slow paying its subs and suppliers.

Prequalification data is only valuable to the extent it is reasonably current. For this reason, contractors should require all of their subs to periodically update some or all of their pre-qualification materials before bidding on new work. In particular, we recommend requiring that subs provide updated financial information and information about current projects annually, or biannually for trusted subs who have successfully completed multiple projects for the contractor. Subcontractor pre-qualification should not be seen as a one-time exercise; financial circumstances and project commitments can (and do) change between when information is first submitted and when a subcontractor is bidding on its second, third, or fourth project with a contractor.

Contractors with strong pre-qualification programs typically enjoy greater stability from their subcontractors and have stronger relationships with their subcontractors, who have earned greater trust that they will perform as needed. Ultimately, the risk of subcontractor default, even if not obvious, never goes away. A bit of extra diligence might just be enough to avoid a painful loss. •

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TECH CAN TACKLE THE RISKY BUSINESS OF CONSTRUCTION, SAYS PCL

By Laurie Cowin@lauriethewrite,
Construction Dive, Published Nov 26, 2018

This feature is part of a series that takes an in-depth look at risk in construction. To view other posts in the series, check out the spotlight page (<https://www.constructiondive.com/news/what-you-need-to-know-about-risk/543053/>)

Construction companies are three times more likely to fail in an economic recovery than in a downturn, according to Ryan Howsam, a principal at FMI Corp., so managing risk is one of the most important aspects of running an AEC business.

“Contractors die of gluttony, not starvation,” he said during a September webinar.

With the U.S. experiencing one of the longest recoveries in history, contractors must be especially vigilant not to run out of cash. “This is a time managing risk is more important than ever,” said the certified risk and insurance specialist.

For contractors, risk falls into several buckets, each with its own set of considerations for how to manage it. Most organizations, said Holsam, view risk in various silos, including finance, operations, business development, estimating, self-perform and project management.

PCL Construction’s vice president of risk management, Hugh McLellan, told Construction Dive the company puts risk into three buckets:

1. Enterprise — things that impact any company, including the economy, interest rates, a change in political parties, local governments, regulatory changes and even reputational risk.
2. Organizational — things that affect cash flow, such as recruiting and retaining talent, cyber liability, the cost of financing and working capital.
3. Operational — things that impact a project, including health and safety issues, quality assurance, design risks, constructability, subcontractor defaults, faulty workmanship or products and the supply chain.

WAYS TO MITIGATE RISK

Perhaps one of the most important tools

for managing project risk is to communicate early and often. Project kickoff meetings are commonplace, said Mike Kennedy, general counsel for the Associated General Contractors of America, where risk managers and in-house lawyers converse about a project’s characteristics and potential risks.

“The best claim you had is the one you never got,” Kennedy told Construction Dive.

Most contractors expect to see more change in the industry during the next five years than in the past 50 years, according to a FMI and AGC survey, and Kennedy believes collaboration from all project team members “seems destined to become one of the fundamental strategies for managing the increased risk” that comes with change.

Having appropriate insurance coverage also is vitally important, as well as the placement of risk in contracts. “An awful lot of risk is allocated by those contracts and how they’re written,” he said.

In addition, construction firms must anticipate risk, develop plans on how to mitigate it and figure out how to minimize claims that result when risk is not managed well, Kennedy said. For example, every general contractor bears the risk of a subcontractor defaulting, so many large construction companies now purchase subcontractor default insurance, he said.

“[Contractors] often put risk mitigation plans into effect where they think there could be a problem,” said Kennedy. “They’re more proactive.”

HOW PCL REDUCES RISK

McLellan said PCL Construction actively mitigates the risks in each of the buckets he defined. Regarding enterprise risk, the company maintains an abundance of working capital and stays liquid so that if interest rates rise, the firm can generate investment income.

Cyber-liability, which falls under organizational risk, is managed by the PCL’s chief information officer and what McLellan calls a “very robust cyber crew and business technology group” that not only looks at potential threats, but also examines opportunities

Continued on next page



74% OF CONTRACTORS EXPECT TO **ADOPT ADVANCED TECH** IN 3 YEARS

By Kathleen Brown @KathleenBrownCD, Construction Dive,
Published Dec 19, 2018

While it's more common for large construction companies to be using sophisticated technologies on their jobsites that smaller firms, a new study shows that more than half of contractors (both general and trade contractors) are using an "advanced construction technology." Included in this category are drones, equipment tagging, wearables, RFID tagging (used to track inventory, equipment and tools), augmented or virtual reality, reality capture, automated equipment/robotics and 3D printing.

Drones are the most widely used among the 54% of contractors who indicated in USG Corp. and the U.S. Chamber of Commerce's fourth-quarter Commercial Construction Index survey that they have dabbled with at least one of these tools. Thirty-four percent of respondents are conducting flights over their sites while 39% expect to do so in three years.

The use of each technology is expected to grow, as more contractors responded that they plan to implement them in three years than those who are currently using them. Plus, contractors will likely have more than one advanced tool in their arsenal by 2021—almost three-quarters said they expect to adopt one or more before then. Drones, equipment tagging, wearable devices and RFID tagging are to be the most widely adopted, the study found, with wearables use increasing by the greatest amount.

THE GREAT DIVIDE

There is a clear divide between contractor type: 73% of general contractors use at least one advanced technology compared with 21% of trade contractors. This extends to expected technology adoption, as well, with 85% of GCs expecting an increase over three years compared with just 59% of trade contractors.

There's no better incentive for technology adoption than increased labor productivity, 66% of contractors responded. The labor pain point is most felt by trade contractors, though, 77% of whom chose labor productivity as a top factor compared with 57% of GCs. Next on contractors' list of top reasons for tech investments are improvements to schedule management (52%), delivery on budget (51%) and safety (51%).

Contractors are most confident in the safety benefits of advanced technology, the report found, with 78% believing technologies like robotics, automated equipment, RFID tagging and especially wearables, will help them on this front. Meanwhile, 77% believed budget management would improve, 76% that their schedules could be better managed and 75% that labor productivity will increase. •

Tech Can, continued from previous page

to leverage technology and innovation to make the company more competitive.

Under operational risk, McLellan said his firm strives to maintain safe jobsites, which it enforces through its employees as well as its trade contractors. "If we run a clean, safe and good worksite, typically that comes out to be a profitable job," he said. "An indicator of a poor-performing job could be the kind of work-safety issues you could incur on it."

Safety is the single-most-important part of a construction business, Howsam said, adding there's a direct correlation between companies that have safe jobsites and ones that are profitable. He encourages contractors to start each meeting by addressing safety and to use every incident as a teachable moment. "I hope you're talking about it so much people are sick of hearing about it because that means you're just starting to make a program," he said. "Everyone deserves to come and leave the jobsite with 10 fingers, 10 toes and two eyes."

HOW TECHNOLOGY CAN HELP

Technology can be an effective tool in risk management, but McLellan emphasizes it is just that — a tool. "Decisions are made by humans ... and how you mitigate loss and risk is by making more good decisions than bad decisions." Metrics and analytics often are best used to help people make those good decisions, he added.

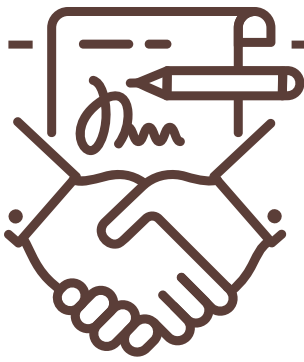
PCL engages a quality assurance group, which employs a tremendous amount of technology, such as BIM 360, 3D scanning, 4D animation and 3D printing, to name a few, to ensure that "when we put something in place it's done well and done right at the beginning."

Kennedy said that although technology creates risk, it also provides opportunities to better manage it. "More data is good if you can make sense of it and have the analytical capability to determine what it's really telling you."

But there is a such thing as too much data. Drones, for example, can take "umpteens" hours of video, he said, but contractors are tasked with finding the best ways to use it. They must determine where and how to use technology to improve productivity and efficiency as well as maintain quality, he added.

Increasing communication between technology and construction leaders may lessen that gap. Kennedy said that though IT experts might not have a lot of experience in construction, which has unique processes and requirements, he believes the next five years will see an increase in communication between the construction industry and IT leaders.

"Those bridges have yet to be built," Kennedy said. "IT and construction are now very much in the process of trying to connect those dots." •



A SUCCESSFUL PROJECT CLOSEOUT 'STARTS AT THE BEGINNING'

By Kim Slowey@kimslowey, *Construction Dive*, Published Nov 27, 2018

This feature is a part of “The Dotted Line” series, which takes an in-depth look at the complex legal landscape of the construction industry. To view the entire series, visit <https://www.constructiondive.com/news/construction-contracts-resource/429229/>.

Closeout for a general contractor encompasses several tasks, including the gathering of warranties for work and materials; providing to the owner operation manuals, as-built plans and other information necessary for maintenance and repair of the property; completing punch list items and making sure all change orders have been booked and submitted to the owner.

Subcontractors play a major part in this process as they're the ones typically performing punch work, generating change orders and amassing the assorted paperwork and documents the general contractor will eventually hand over to the owner.

So how can contractors ensure a smoother closeout process? As it turns out, the time to start closing out a job is well before the owner wants to take possession and certainly before the last equipment and finishes are installed.

“The end starts at the beginning,” said Jason Mehlhaff, senior project manager at Layton Construction in Sandy, Utah.

MANAGING EXPECTATIONS

Closeout is more than just paperwork and punch out, though. It's important, Mehlhaff said, for the general contractor, subcontractors and other project

stakeholders to have the same level of expectations from the outset, not only as it pertains to documentation and organization but to performance as well.

This is especially true for the owner who might have something other than the actual finished product in mind and could be in for disappointment if the reality doesn't align with what he or she has imagined. “The architect has communicated a vision to the client in what they've drawn,” Mehlhaff said.

Layton tries to bridge that potential gap — and avoid disappointment — via good communication early on and then with transparency throughout the project, he said, so clients understand exactly what they're getting. As part of this effort, it's also essential that subcontractors and the general contractor be thoroughly familiar with all the job details themselves so that they can communicate correct information about the project.

FINAL PAPERWORK

Of course, documentation still is a major element of the closeout process. One-way general contractors and subcontractors can start early preparations for the administrative aspects of closeout, said Adam Shihadeh, a project manager for Bullseye Builders in Orange County, California, is to amass what they can along the way rather than waiting until the job is near its end. For Bullseye, this means a robust and pointed system of communication with subcontractors.

“Education is the best way,” Shihadeh said. Bullseye uses email to send subcontractors a series of notices, starting with an explanation of how closeout for the project will work and that no retainage

— a percentage of the contract amount held back to ensure 100% performance — will be released until they fulfill their obligations to the project.

The takeaway? Start gathering documents sooner rather than later. Otherwise, he said, subcontractors might become concerned with what information they need to provide only when they want their retainage payments, typically near the end of the project.

READ THE CONTRACT

Contractors and subcontractors can start forming their understanding of expectations with a careful read-through of their contracts. However, Shihadeh said he can “guarantee” that many subcontractors skip this step. Bullseye uses an electronic signature system for its subcontracts, and Shihadeh said it often takes just a few minutes for them to be signed and returned via email, which is typically not enough time for an in-depth review of the documents. When that happens, he said Bullseye contacts the subcontractor and advises them to take another look.

This is all part of the contractor's mission to plan every aspect of the project, even if subcontractors don't. “We're supposed to be the brain of the plan,” Shihadeh said. “It's on [us] to make sure we have that plan.”

Reading the contract is especially important for subcontractors, said attorney Quinn Murphy with Sandberg Phoenix & Von Gontard in St. Louis, when it comes to punch work. Otherwise, he said, some might end up paying for work or repairs of items that weren't supposed to be part

Continued on page 31



ROOFING FOREMAN INJURES BACK WHILE HELPING TO FIX A LEAK

This Safety Talk tells about Ken, a roofing foreman who injured his back while attempting to fix a leak on a flat roof.

Ken's employer is a relatively large regional roofing contractor. They have 73 employees and specialize in commercial and industrial flat roofs. Ken was hired 3 years ago and had very little roofing experience when he was hired. But Ken did have quite a bit of supervisory experience, good business sense and he wasn't afraid to get his hands dirty. In fact, you would often see Ken jumping in and helping wherever there was a need.

On the day on Ken's injury, his crew was working on a job that involved repairing several leaks on the flat roof of a school. One of the leaks was located underneath a rubber mat that had been glued to the roof. To fix the leak the rubber mat had to be removed.

To help, Ken attempted to remove the rubber mat by bending over at the waist, grabbing one edge of the mat, and pulling upward. Although Ken was a fairly large man, the mat was glued- down really well, and he had a difficult time pulling it up. When he finally got the mat detached from the roof, he stood up and felt a burning pain in his back. The pain was bad, so Ken took it easy for the rest of the day. But by the end of the day, the pain

started to radiate down his left leg from his hip and Ken knew that he did some real damage to his back.

DISCUSS WITH YOUR CREW

This incident summary does not provide much detail about the mat that Ken was trying to remove. It also does not let us know if there was an alternative method for removing it.

However, it does paint a mental picture of Ken's posture as he was pulling on the mat. It says that he was "bending over at the waist, grabbing one edge of the mat and pulling upward." What's wrong with that posture?

What do you think would have happened if the mat detached from the roof suddenly and unexpectedly?

- It's scary to think what would have happened if there was an unprotected skylight or short parapet wall directly behind him.

With the limited information we have about this incident, what would have made this task safer?

- Is there some type of tool that he might have used to pry up the mat?
- What if he had asked for help in pulling-up the mat?

Have any of you had similar situation that didn't result in an injury? •

CAPATAZ DE TECHOS LESIONA LA ESPALDA MIENTRAS AYUDA A REPARAR UNA FUGA

Esta charla de seguridad habla sobre Ken, un capataz de techos que se lesionó la espalda al intentar arreglar una fuga en un techo plano.

El empleador de Ken es un contratista regional de techos relativamente grande. Tienen 73 empleados y se especializan en techos planos comerciales e industriales. Ken fue contratado hace 3 años y tenía muy poca experiencia en techos cuando fue contratado. Pero Ken tenía bastante experiencia de supervisión, buen sentido de los negocios y no tenía miedo de ensuciarse las manos. De hecho, a menudo verías a Ken entrando y ayudando donde fuera necesario.

El día de la lesión de Ken, su equipo estaba trabajando en un trabajo que involucraba la reparación de varias fugas en el techo plano de una escuela. Una de las fugas estaba ubicada debajo de una estera de goma que había sido pegada al techo. Para reparar la fuga se tuvo que retirar la esterilla de goma.

Para ayudar, Ken intentó quitar el tapete de goma doblando la cintura, agarrando un borde del tapete y tirando hacia arriba. Aunque Ken era un hombre bastante grande, la alfombrilla estaba muy bien pegada y le costaba mucho levantarla.

Cuando finalmente logró separar el tapete del techo, se puso de pie y sintió un dolor ardiente en la espalda. El dolor era intenso, por lo que Ken se lo tomó con calma el resto del día. Pero al final del día, el dolor comenzó a irradiar su pierna izquierda desde su cadera y Ken supo que le había hecho un daño real en la espalda.

DISCUTA CON SU EQUIPO

Este resumen del incidente no proporciona muchos detalles sobre el tapete que Ken estaba tratando de quitar. Tampoco nos permite saber si existe un método alternativo para eliminarlo.

Sin embargo, sí pinta una imagen mental de la postura de Ken cuando estaba tirando de la colchoneta. Dice que estaba “agachándose en la cintura, agarrando un borde de la colchoneta y tirando hacia arriba”. ¿Qué hay de malo en esa postura?

¿Qué crees que hubiera pasado si el tapete se separara del techo repentina e inesperadamente?

- Da miedo pensar qué habría pasado si hubiera un tragaluz sin protección o un corto muro de parapeto directamente detrás de él.

Con la información limitada que tenemos sobre este incidente, ¿qué hubiera hecho esta tarea más segura?

- ¿Hay algún tipo de herramienta que podría haber usado para levantar el tapete?

- ¿Y si él hubiera pedido ayuda para levantar la colchoneta?

¿Alguno de ustedes tuvo una situación similar que no haya resultado en una lesión? •

Successful Project, continued from page 29

of their contracts in the first place.

“Punch is difficult to define in a contract,” Murphy said. In order not to get stuck paying for things outside the scope of their work, subcontractors should:

Make sure their scope of work is as specific as possible and included as part of the contract.

Communicate with the general contractor or construction manager verbally on the job and in writing about any issues that arise dealing with possible interference or damage to their work by other trades.

Take photographs of put-in-place work immediately upon completion to prove the work was done correctly. This is especially true for finish trades like drywall and painting because oftentimes, Murphy said, they find their work smudged, scuffed or otherwise damaged as other trades complete their own scopes of work.

Making sure punch items are resolved is also important because retainage is often that little piece — or big piece — of leverage used by the owner or general contractor in order to make sure companies return to complete the punch phase. Depending on the project, a typical 5% to 10% retention can even surpass a contractor’s estimated profit on the job.

The amount of punch out is also one of those areas, Shihadeh said, that can be reduced by quality control throughout the project. To that end, Bullseye holds two-week look-ahead meetings with subcontractors every week in an effort to help avoid work conflicts between trades and to assess the current state of the job. The aggressive approach, he said, sometimes makes subcontractors feel as if they’re being “hounded” by superintendents, but it’s all part of ensuring that the punch list is kept to a minimum. Their goal is a zero-item punch list, Shihadeh said.

But general contractors are only justified in taking that stern approach when they’re starting off with a fair request. “I can’t tell you how many subcontractors

absolutely a list of general contractors have they’ll bend over backwards for but also general contractors that have been unfair and asked them to perform work [not within their original scope],” Murphy said. “It gets back to construction being one of the most heavily trust-based professions.”

And when that trust is violated, closeout can become a showdown that sees the subcontractor withholding documentation like warranties and manuals until they receive final payment, and the general contractor insisting on getting that information in their hands before forking over the last check.

“Everybody [in those situations] is worried that the other side is going to renege on their deal the second they finally deliver,” Murphy said. “They do the best they can to make sure everybody walks away at the same time.” It could also pay off, Shihadeh said, to take a look back at the end of the project and reevaluate processes and policies that maybe didn’t work as anticipated. Along these same lines, Melhaff said, Layton does a “360-degree review” of each project upon completion as well, looking for the great and not-so-great things that happened.

Bullseye even takes the opportunity to share some of that information with the owner as a way to show how proactive the company is when it comes to problem-solving.

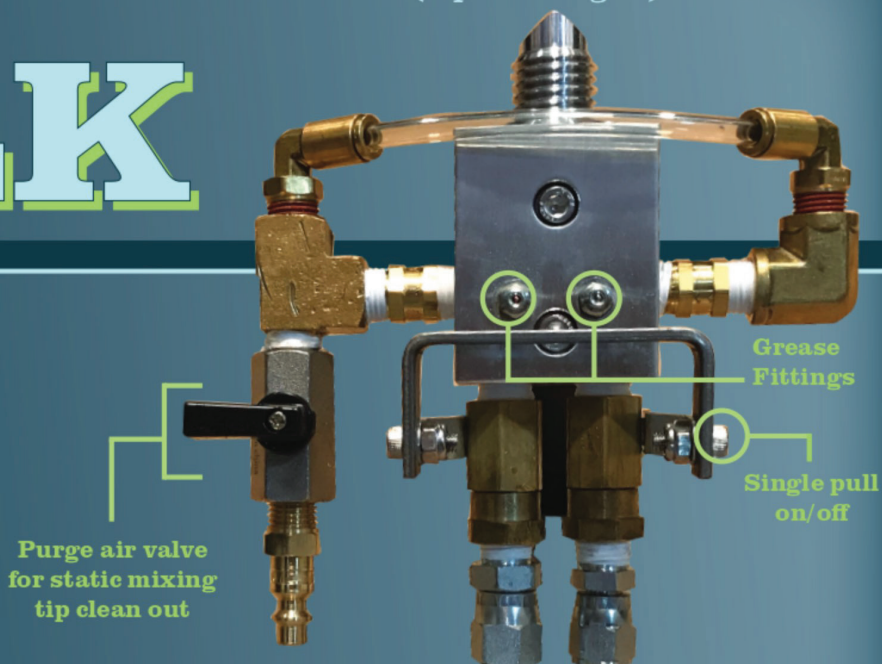
“We try to have as much transparency as possible,” he said. “There’s nothing wrong with letting them know how we’re trying to improve our operations.”

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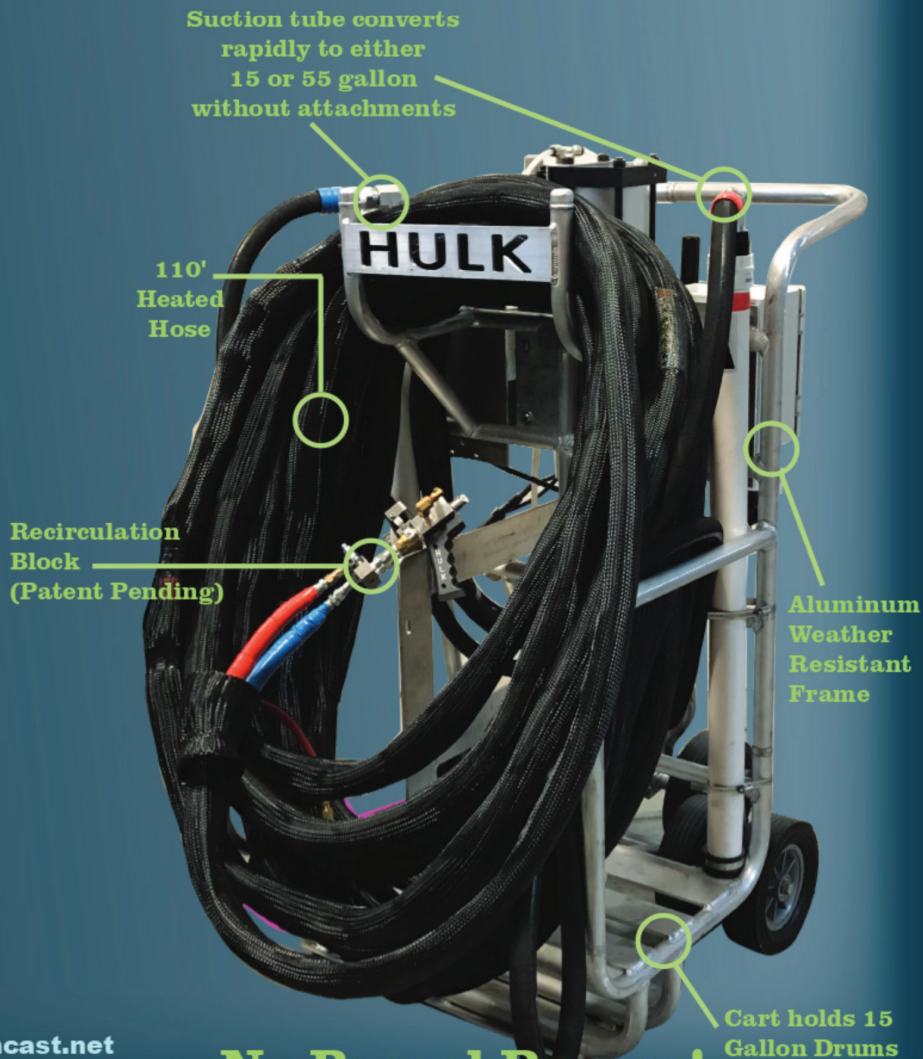


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