

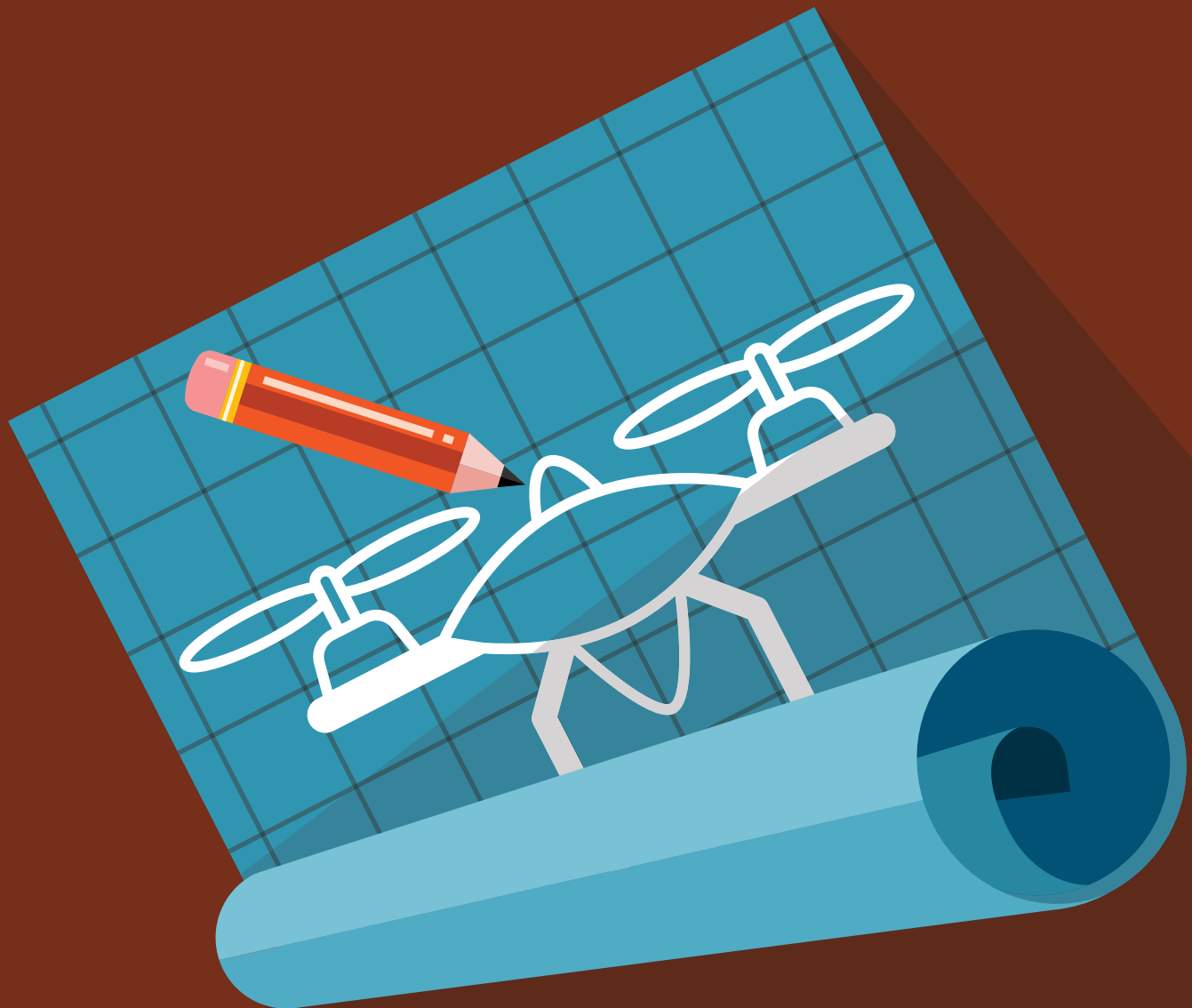
COVID Corner
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Construction Industry
Can Leverage Technology
During COVID-19
PAGE 17

Picture Perfect: Roofing
Contractors Taking Advantage
of Aerial Imagery
PAGE 26

CAROLINAS CONTACTS

CRSMCA – Covering the Carolinas for over 65 Years



DRONES ARE CHANGING CONSTRUCTION

MAY/JUNE 2020

NEW DATE DUE TO COVID-19

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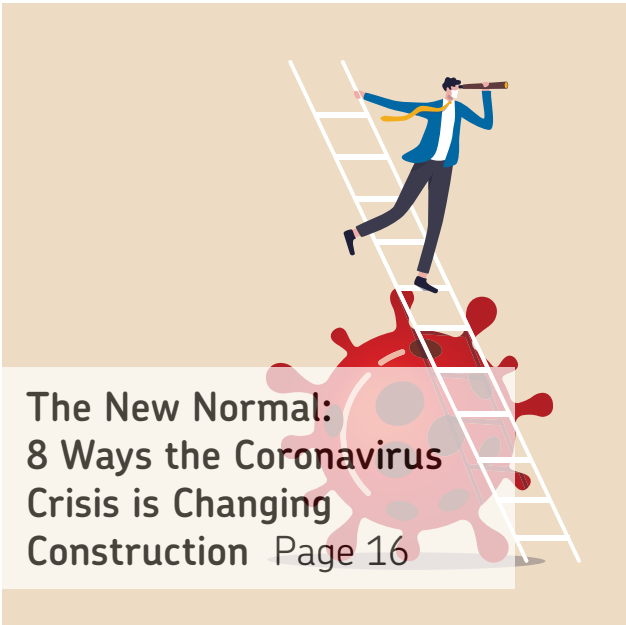
*Fee includes golf play, cart rental, lunch, two complimentary beverages, dinner at awards ceremony

Registration online at www.crsmda.org or contact the
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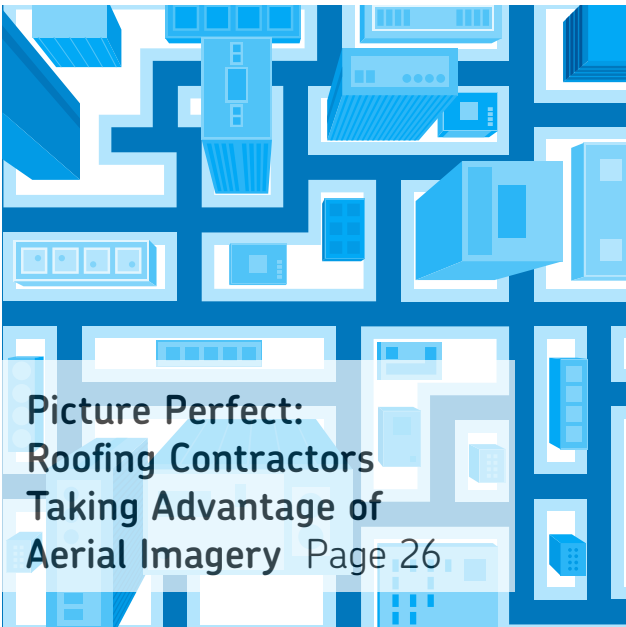




**The New Normal:
8 Ways the Coronavirus
Crisis is Changing
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Can Leverage Technology
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Letter from the **PRESIDENT**

Happy Summer! I hope that you and your family are well amid this pandemic and the challenges our country is facing. We have learned to navigate this new business environment and manage the obstacles being faced. We, as an association, have had to be fluid in planning and organizing events with the health and safety of our members at the forefront of our minds. Difficult decisions were made to cancel some events considering these circumstances. I look forward to the day we can all come together again soon.

In this issue, you will find good resources and information in the COVID Corner. These are designed to help you continue to

navigate these uncharted territories. You will also find the latest on technology in our industry.

As my term as president is coming to a close, I would like to extend a heartfelt thank you for allowing me to serve on your board. I look forward to continuing the work to grow our community and industry. It cannot be done without your continued help. This association is only as good as the people that participate, volunteer and act on behalf of the industry. If you would like more information on how you can get involved, please contact the CRSMCA office. We would love to connect you with opportunities. I look forward to seeing you all soon. Stay healthy.
—Mickey Childress, Triad Roofing Company, Inc.

METAL DECK REPLACEMENT?



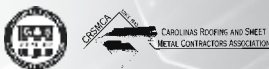
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710 IMPERIAL COURT
CHARLOTTE, NC 28273

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**AFFILIATED WITH:
NRCA - ASAC/STAC**



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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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

The COVID pandemic has made the past couple
of months very different from previous years. As the states
start to open up, 2020 looks like it will finish strong. The CRSM-
CA Annual Meeting/Summer Convention typically is when we
move chairs; I am excited to pass the torch of Associate Group
President over to Bubba Kearse (ABC Supply Company, Inc.). I
would also like to welcome in the incoming contractors Presi-
dent, Eric Campbell (Campbell Professional Roofing). CRSMCA
will be in good hands as we finish out this year and get life back
to normal. I hope everyone stays safe and has an enjoyable
summer. —Erik Hauck, ABC Supply

Commercial, Industrial

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President

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Association IN ACTION

CRSMCA is closing the 2019-2020 fiscal year in June and normally we would be celebrating with a trip to the Carolina coast gathering with our peers and friends in the industry for the Annual Meeting/Summer Convention. Unfortunately, the 2020-year has not gone according to plans and instead of being able to recognize the 2019-2020 outgoing President's and incoming 2020-2021 President's, the CRSMCA Staff will be sharing their personal messages with you all via video in late June!

THANK YOU... thank you to Mickey Childress (CRSMCA 2019-2020 President, Triad Roofing Company, Inc.) and Erik Hauck (CRSMCA 2019 -2020 Associate Group President, ABC Supply Company, Inc.). In the past five years, you both have

served through the chairs from Secretary/Treasurer to President. A simple "Thank you" does not feel like enough. On behalf of the CRSMCA members and staff, I give you my gratitude and appreciation for your leadership and for supporting the vision of CRSMCA. The future of CRSMCA is looking better because of each of you!

Although the construction industry has not slowed down during the COVID 19 epidemic, the events for the CRSMCA members and peers has been interrupted. CRSMCA Staff and Board members are postponing events as allowable and canceling events that can not be planned for later in 2020. Be sure to check out the "News in the Carolinas" section to view the new dates and canceled events.

The CRSMCA Carolinas Contacts Magazine Committee has developed a "COVID-19 Corner" in this issue to assist you with any information that you may need to refer to while we all continue our day-to-day operations. Should you need additional assistance for your business, please reach out to the CRSMCA and we will be happy to assist and direct you further.

AN UPDATE OF THE NC LICENSING BOARD FOR GENERAL CONTRACTORS CONTINUING EDUCATION:

CRSMCA will be hosting classes at the CRSMCA headquarters in Charlotte, NC. Registration will open in late summer on the CRSMCA website ONLY! Continue to check your emails for the CRSMCA e-Newsletter with updates and the CRSMCA website for registration.

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 hope everyone stays safe and healthy, as well as having an amazing summer! I look forward to seeing you all in the coming months. 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*

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CONGRATULATIONS TO THE CRSMCA 2020-2021 DOTTIE NAGLE SCHOLARSHIP RECIPIENTS

The Dottie Nagle Scholarship Program is available to assist employees of CRSMCA contractor and supplier members. Employees and their families who plan to pursue post-secondary education in college or vocational programs are eligible for the merit-based scholarships. Scholarship recipients will receive funding for one year of full-time study at any accredited post-secondary institution of the student's choice.



The purpose of the Dottie Nagle Scholarship Program is to assist individuals seeking to further their education and pursue a career. CRSMCA will provide the next open application window for CRSMCA members in August 2020.



Jacey Shelton, daughter of Mike Shelton (d7 Marketing Solutions) Attending UNC



Ryley Anderson, daughter of Chris Anderson (Allcon Roofing), attending Western Carolina University



EVENT UPDATES DUE TO COVID-19

CRSMCA 3rd Annual Spring Golf Tournament (Concord, NC) NEW DATE!
Thursday, October 22, 2020

77th Annual Meeting/Summer Convention (Hilton Head, SC)
CANCELED

NCLBGC Continuing Education Courses
Friday, September 18, 2020

- **2 hour NCLBGC Mandatory Class** (Instructor: Brian Schoolman, Safran Law Offices)
- **2 hour "Licensure, Administrative Law, and Risk Management"** (Brian Schoolman, Safran Law Offices)

NCLBGC Continuing Education Courses Friday, October 16, 2020

- **2 hour NCLBGC Mandatory Class** (Instructor: Bobby Hopson, Metal Roofing Systems)
- **2 hour "Metal Roofing – A Permanent Roof Solution & Keys To A Successful Project"** (Bobby Hopson, Metal Roofing Systems)

**Registration for NCLBGC Continuing Education will be listed on the CRSMCA website at www.crszca.org*



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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 2018, 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?**



SC DEPARTMENT OF LABOR, LICENSING AND REGULATION/ SC OSHA

General Information

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

OSHA’s Office of Outreach and Education provides a variety of training programs and presentations designed to reduce or eliminate safety and health hazards in the workplace. Training is available to employers and employees of both the public and private sector upon request and may occur on-site (requiring participation of 12 or more employees).

General industry, health, and construction areas are covered in the training curriculum. Examples of training programs offered include:

- The OSHA Inspection Process
- Bloodborne Pathogens
- Lockout/Tagout (LOTO)
- Trenching/Excavation
- Hazard Communication
- Fall Protection (General Industry or Construction)
- Personal Protective Equipment
- Workplace Violations
- Scaffolding
- Confined Spaces
- Industrial Truck Safety Requirements
- OSHA Injury & Illness Record Keeping

To inquire for training, please visit <https://eservice.llr.sc.gov/OSHAOutreach/>.



NC DEPARTMENT OF LABOR/ OSH

Compliance Bureau Contacts

- Tim Childers | 336-776-4420
tim.childers@labor.nc.gov
- Phil Hooper | 919-779-8512
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

TRAINING EVENTS

- Heat Stress (webinar) June 1
- Complying with OSHA Construction Industry Standards (Raleigh) June 10
- Heat Stress (webinar) June 10
- Heat Stress (webinar) June 25
- Complying with OSHA Construction Industry Standards (Raleigh) July 15
- NC 500 Trainer Course for Construction Industry (Raleigh) July 21
- NC 501 Trainer Course for General Industry (Raleigh) July 21
- NC 502/503 Trainer Course for Construction & General Industries July 21
- Recommended Practices for Safety and Health Programs (webinar) August 10
- 10-Hour Construction Industry Awareness Course (Raleigh) August 24
- 30-Hour Construction Industry Awareness Course (Raleigh) August 24
- Complying with OSHA Construction Industry Standards (Raleigh) September 23

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, in-



creasing 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.



TRAINING REMOTELY

Keep your new and inexperienced employees engaged during this unprecedented time with NRCA's Training for Roof Application Careers. Purchase a TRAC package today and help your workers start learning how to become quality roof system installers—from home—by taking the online portions of TRAC now!

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Want to learn more about TRAC? Contact Brad Martz, NRCA's services sales manager, at (800) 323-9545, ext. 7574, or bmartz@nrca.net. For more information about NRCA educational opportunities, click here or contact NRCA's Customer Service Department at (866) ASK-NRCA (275-6722) or info@nrca.net.



NATIONAL ROOFING WEEK

Aug. 23-29

Organized by NRCA, National Roofing Week takes place each June. Its mission is to increase awareness across the U.S. about the significance of roofs to every home and business and share the good deeds of the industry. National Roofing

Week also promotes the importance of hiring a professional roofing contractor and making informed decisions about maintaining or replacing any roof system.

The roof is one of the most important components of a home or business' structure, yet it is often taken for granted until it falls into disrepair. NRCA encourages members to participate in National Roofing Week by engaging in their communities and informing the public about the essential role roofs and professional roofing contractors play in every community.

In celebration of National Roofing Week, NRCA will host the "We are Family" Raffle (<https://nrca.net/news-events/national-roofing-week/raffle>), sponsored by A.C.T. Metal Deck Supply. Open to all NRCA member companies, the raffle involves companies taking a group photo of all employees—their roofing family—and submitting it to NRCA for a chance to win a prize.

NRCA also will be sharing its members' stories through its various social media outlets and Professional Roofing magazine. Members throughout the U.S. are encouraged to share their stories of charitable giving, crew and staff appreciation, and signature roofing projects with NRCA at <https://www.nrca.net/news-events/national-roofing-week/social-media>.

Additionally, roofing professionals will be able to help make a difference in the lives of students pursuing construction careers through NRCA Giving Day, which will be held Tuesday, Aug. 25. Visit <https://www.nrca.net/news-events/national-roofing-week/giving-day>.

National Roofing Week 2020 is sponsored by National Women in Roofing (title sponsor); ABC Supply Co. Inc.; A.C.T. Metal Deck Supply; Carlisle SynTec; GAF; and Polyglass U.S.A., Inc.

View more information about National Roofing Week at <https://www.nrca.net/news-events/national-roofing-week>.

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U.S. ROOFING INDUSTRY AND WORKFORCE STUDY

The roofing industry always has suffered from a lack of reliable workforce data available, making it ill-equipped to fully understand the magnitude of labor shortages and worker retention issues. But no more!

This new study by Roofing Alliance And Arizona State University reports on current roofing workforce demographics, including:

- Types of work
- Skilled and unskilled labor shortages
- Effects of labor shortages at national and regional scales
- Industry challenges & potential solutions

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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.

For upcoming webinars and all previous webinar recordings, visit www.nrca.net/webinars.

UP AND DOWN EASTERN U.S.

- Virginia Association of Roofing Professionals, www.varoofingprofessionals.org
- Tennessee Association of Roofing Contractors, www.tarcoof.org
- Kentucky Roofing Contractors Association, www.krca.org
- Roofing & S/M Contractors Association of GA, www.rsmca.org
- Florida Roofing & Sheet Metal Association, www.floridarooof.com

ROOFING DAY IN D.C.

NRCA will begin planning for Roofing Day in D.C. 2021, will be held on March 23-24, 2021, so please save these dates. Your registration fees for Roofing Day in D.C. 2020 will be rolled over and applied to Roofing Day in D.C. 2021. If you will be unable to attend in 2021, please contact NRCA's Washington, D.C., office at (800) 338-5765.

Please know this was a difficult decision, and NRCA is extremely disappointed Roofing Day in D.C. 2020 will not take place. However, it is clearly the correct decision at this time given the threat to the health and safety of participants and recent actions by government bodies. Your patience and understanding are greatly appreciated.

We look forward to seeing everyone at Roofing Day in D.C. 2021.

Carolinas Contacts Magazine Touches Hundreds within the Roofing Industry



The CRSMCA *Carolinas Contacts* Magazine is published every other month, six-times a year, and is placed in over 800 roofing industry professional email inboxes throughout the Carolinas, Georgia, Virginia and more located in the southeast region. The CRSMCA *Carolinas Contacts* Magazine is also displayed on the CRSMCA website page with archived issues.

The magazine provides valuable information from products to services and regulations that are important to the roofing industry businesses as well as news and events within the roofing industry.

2020 EDITORIAL SCHEDULE

January/February: Labor and the Lack of; Promotion of Carolinas Mid-Winter Roofing Expo and Annual Spring Golf Tournament

March/April: Ladder Safety Awareness; Review of the Carolinas Mid-Winter Roofing Expo; Promotion of National Roofing Week, Annual Spring Golf Tournament and CRSMCA Annual Meeting/Summer Convention

May/June: Drones and other Technology; Review of the Annual Spring Golf Tournament; Promotion of CRSMCA Annual Meeting/Summer Convention

July/August: Metal in the Roofing Industry; Review of the CRSMCA Annual Meeting/Summer Convention; Promotion of the 2021 Carolinas Mid-Winter Roofing Expo and 2021 Annual Spring Golf Tournament

September/October: The Varieties of Coatings; Fire Prevention Awareness; Promotion of the 2021 Carolinas Mid-Winter Roofing Expo and 2021 Annual Spring Golf Tournament

November/December: Cold Weather Awareness; Promotion of the 2021 Carolinas Mid-Winter Roofing Expo, 2021 Annual Spring Golf Tournament, 2021 CRSMCA Annual Meeting/Summer Convention



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Ad Size	6xs	3xs
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1/2 Page	\$345	\$360
1/3 Page	\$255	\$268
1/6 Page	\$199	\$210
Contractor Card Ad	\$165	-

NON-MEMBER PRICING

Ad Size	6xs	3xs
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1/2 Page	\$408	\$428
1/3 Page	\$299	\$314
1/6 Page	\$236	\$248

AD SPECIFICATIONS

Size	Horizontal (Width x Height)	Vertical (Width x Height)
Full Page	7.5" x 10" (no bleed)	-
1/2 Page	7.5" x 4.625"	3.625" x 10"
1/3 Page	5" x 4.625"	2.375" x 10"
1/6 Page	3.625" x 4.625"	-
Contractor Card Ad	3.5" x 2"	-

Submit full-color, high-resolution pdf artwork to Carla Sims at cbsims@crsmca.org.



IRS OFFERS MORE INFORMATION ABOUT EMPLOYEE RETENTION CREDIT

April 2, 2020

Under the Coronavirus Aid, Relief, and Economic Security Act, the Treasury Department and IRS have launched the Employee Retention Credit, which is designed to encourage businesses to keep employees on their payroll. The refundable tax credit is 50% of up to \$10,000 in wages paid by an eligible employer whose business has been financially affected by COVID-19.

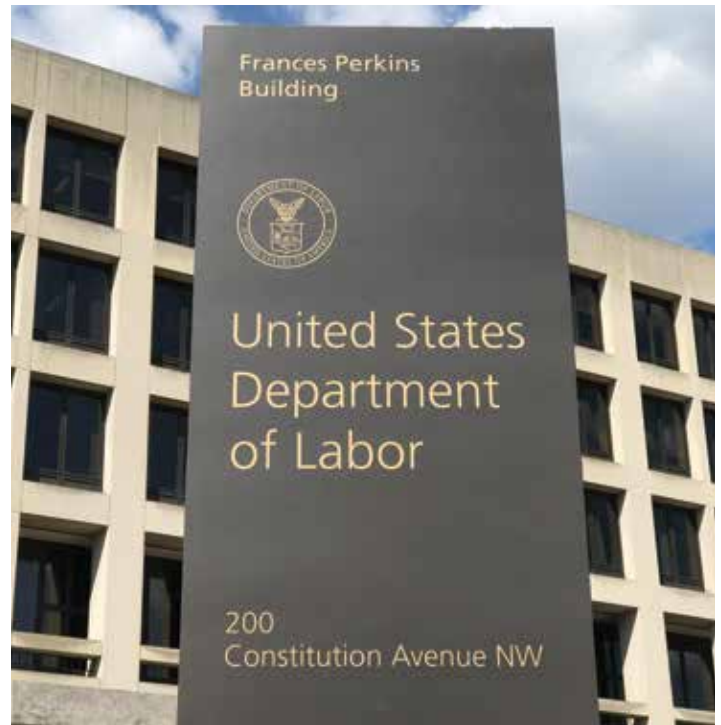
The IRS has made available FAQs regarding the Employee Retention Credit. View more information.

PAYCHECK PROTECTION PROGRAM TAKES EFFECT APRIL 3

The Treasury Department and Small Business Administration have announced that starting Friday, April 3, participating lenders can begin processing loan applications for the Paycheck Protection Program, as specified in the Coronavirus Aid, Relief, and Economic Security Act, emergency legislation approved by Congress March 27.

The Paycheck Protection Program provides for private sector loans to businesses with fewer than 500 employees that are designed to provide an incentive to keep employees on the payroll during the COVID-19 crisis. These loans can be forgivable by the SBA if employees are kept on the payroll for eight weeks and the loan is used for payroll, rent, mortgage interest or utilities.

The Paycheck Protection Program will be available through June 30. For more information and the application, please visit the CARES Act section of the COVID-19 Resources for Roofing Contractors page of NRCA's website or visit the Assistance For Small Businesses section at home.treasury.gov/cares.



DOL GUIDANCE EXPLAINS PAID SICK LEAVE UNDER FFCRA

The Department of Labor's Wage and Hour Division announced its first round of published guidance to provide information to employees and employers about how each will be able to take advantage of the protections and relief offered by the Families First Coronavirus Response Act when it takes effect April 1, according to www.dol.gov.

FFCRA is meant to help the U.S. combat COVID-19 by giving all U.S. businesses with fewer than 500 employees funds to provide employees with paid leave, either for the employee's own health needs or to care for family members. The legislation will ensure workers are not forced to choose between their paychecks and the public health measures needed to combat the virus while at the same time reimbursing businesses.

The guidance is provided in a Fact Sheet for Employees, a Fact Sheet for Employers and a Questions and Answers document and addresses critical questions, such as how an employer must count the number of their employees to determine coverage; how small businesses can obtain an exemption; how to count hours for part-time employees; and how to calculate the wages employees are entitled to under this law.

The guidance is just the first round of information and compliance assistance expected from WHD. A workplace poster required for most employers will be published later this week, along with additional fact sheets and more Q&As.

View additional information WHD provides regarding common issues employers and employees face when responding to COVID-19, as well as its effects on wages and hours worked under the Fair Labor Standards Act and job-protected leave under the Family and Medical Leave Act.



JULY

15

EMPLOYERS CAN HELP EASE WORKER ANXIETY ABOUT RETURNING TO THE JOB SITE

Throughout the U.S., construction workers are failing to show up for work because they are afraid they will pick up the virus and bring it home to elderly or immunocompromised family members, according to www.constructiondive.com. A recent Construction Dive survey found handling anxious employees is contractors' biggest challenge of the crisis so far, with 78% of respondents saying it's one of the top ways the crisis has affected their business.

David Perecman, founder and lead trial attorney at The Perecman Firm, New York, said keeping employees engaged and reassured is key to keeping job sites open. Being proactive can help prevent the high rates of absenteeism many contractors currently are facing.

Perecman said contractors must ensure employees' anxieties about job-site cleanliness and social distancing are addressed to help employees feel safe and reduce employer liability.

Many employers are creating safety protocols and ensuring they are being communicated clearly to employees, focusing on transparency so their workers always are informed. Others are focusing on positive messages and interactions, providing breakfast and lunch for employees and checking in to see how they are doing.

Still, some workers continue to struggle with high levels of anxiety during this unprecedented time. Tricia Kagerer, executive vice president of risk management at Jordan Foster Construction, El Paso, Texas, said it is important managers recognize signs of stress among team members, such as excessive worry, anger, loss of concentration and difficulty sleeping; unchecked stress can lead to increased risk and injuries.

DEADLINE FOR FILING TAXES NOW IS JULY 15

The Treasury Department and IRS announced the federal income tax filing due date is automatically extended from April 15 to July 15, according to www.irs.gov.

Taxpayers also can defer federal income tax payments due April 15 to July 15 without penalties and interest, regardless of the amount owed. This deferment applies to all taxpayers, including individuals, trusts and estates, corporations and other non-corporate tax filers, as well as those who pay self-employment tax.

Taxpayers do not need to file any additional forms or call the IRS to qualify for this automatic federal tax filing and payment relief. Individual taxpayers who need additional time to file beyond the July 15 deadline can request a filing extension by filing Form 4868 through their tax professionals, tax software or by using the Free File link on IRS.gov. Businesses who need additional time must file Form 7004.

The IRS urges taxpayers who are due a refund to file as soon as possible. Most tax refunds still are being issued within 21 days.

The IRS will continue to monitor issues related to the COVID-19 virus, and updated information will be posted on a special coronavirus page on IRS.gov.

OSHA ISSUES ENFORCEMENT GUIDANCE FOR RECORDING COVID-19 CASES

The Occupational Safety and Health Administration has issued interim guidance for enforcing OSHA's recordkeeping requirements (29 CFR Part 1904) regarding recording cases of COVID-19, according to www.osha.gov.

Under OSHA's recordkeeping requirements, COVID-19 is a recordable illness. Employers are responsible for recording cases of COVID-19 if the case:

- Is confirmed as a COVID-19 illness
- Is work-related as defined by 29 CFR 1904.5

· Involves one or more of the general recording criteria in 29 CFR 1904.7, such as medical treatment beyond first aid or days away from work

In areas where there is ongoing community transmission, employers other than those in the health care industry, emergency response organizations (such as emergency medical, firefighting and law enforcement services) and correctional institutions may have difficulty determining whether workers who contracted COVID-19 did so as a result of exposures at work.

Accordingly, until further notice, OSHA will not enforce its recordkeeping re-

quirements to require these employers to make work-relatedness determinations for COVID-19 cases, except where there is objective evidence a COVID-19 case may be work-related and the evidence was reasonably available to the employer. Employers of workers in the health care industry, emergency response organizations and correctional institutions must continue to make work-relatedness determinations pursuant to 29 CFR Part 1904.

OSHA's enforcement policy is meant to provide certainty to the regulated community and help employers focus their response efforts on implementing good hygiene practices in their workplaces and otherwise mitigating COVID-19's effects.



OSHA ISSUES GUIDANCE REGARDING SHORTAGES OF N95 RESPIRATORS

The Occupational Safety and Health Administration has issued interim enforcement guidance to help combat supply shortages of disposable N95 filtering face piece respirators, according to www.osha.gov. The action marks

the department's latest step to ensure the availability of respirators and follows President Trump's Memorandum on Making General Use Respirators Available.

Because of the effects on workplace conditions caused by limited supplies of N95 respirators, employers should reassess their engineering controls, work practices and administrative controls to identify changes they can make to decrease the need for N95 respirators.

If respiratory protection must be used, employers may consider use of alternative classes of respirators that provide equal or greater protection compared with an N95 respirator, such as National Institute for Occupational Safety and Health-approved, non-disposable, elastomeric respirators or powered, air-purifying respirators.

When these alternatives are not available or where their use creates additional safety or health hazards, employers may consider extended use or reuse of N95 respirators, or use of N95 respirators that were approved but have since passed the manufacturer's recommended shelf life, under specified conditions.

This interim guidance will take effect immediately and remain in effect until further notice; it is intended to be time-limited to the current public health crisis. Visit OSHA's COVID-19 web page regularly for updates.

To view more COVID-19 information relevant to the roofing industry, be sure to visit NRCA's COVID-19 Resources for Roofing Contractors page.



OSHA ISSUES COVID-19 SAFETY ALERT FOR CONSTRUCTION INDUSTRY

The Occupational Safety and Health Administration has issued a safety alert for the construction industry, COVID-19 Guidance for the Construction Workforce. The agency will be issuing a series of industry-specific alerts designed to keep workers safe.

The alert provides tips for employers to help reduce the risk of exposure to coronavirus for their workers when working in the construction industry.

To view the OSHA alert in English and Spanish, visit the OSHA section of NRCA's COVID-19 Resources for Roofing Contractors page at <https://www.nrca.net/covid-19-resources-for-roofing-contractors>.

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Worker Exposure Risk to COVID-19

Classifying Worker Exposure to SARS-CoV-2

Worker risk of occupational exposure to SARS-CoV-2, the virus that causes COVID-19, during an outbreak may depend in part on the industry type and need for contact within 6 feet of people known to have, or suspected of having, COVID-19.

OSHA has divided job tasks into four risk exposure levels, as shown below. Most American workers will likely fall in the lower exposure risk (caution) or medium exposure risk levels.

Occupational Risk Pyramid for COVID-19

VERY HIGH EXPOSURE RISK

Jobs with a high potential for exposure to known or suspected sources of COVID-19 during specific medical, postmortem, or laboratory procedures. Workers include:

- Healthcare and morgue workers performing aerosol-generating procedures on or collecting/handling specimens from potentially infectious patients or bodies of people known to have, or suspected of having, COVID-19 at the time of death.

HIGH EXPOSURE RISK

Jobs with a high potential for exposure to known or suspected sources of COVID-19. Workers in this category include:

- Healthcare delivery, healthcare support, medical transport, and mortuary workers exposed to known or suspected COVID-19 patients or bodies of people known to have, or suspected of having, COVID-19 at the time of death.

MEDIUM EXPOSURE RISK

Jobs that require frequent/close contact with people who may be infected, but who are not known or suspected patients. Workers in this category include:

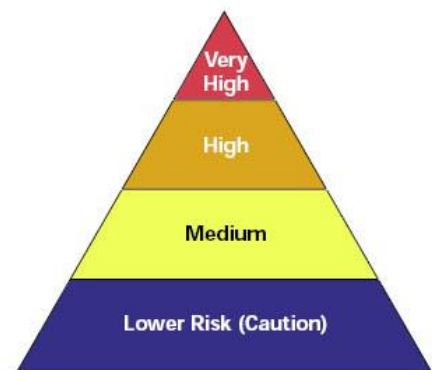
- Those who may have contact with the general public (e.g., schools, high-population-density work environments, some high-volume retail settings), including individuals returning from locations with widespread COVID-19 transmission.

LOWER EXPOSURE RISK (CAUTION)

Jobs that do not require contact with people known to be, or suspected of being, infected.

- Workers in this category have minimal occupational contact with the public and other coworkers.

For more information, see the [Guidance on Preparing Workplaces for COVID-19](#).



The four exposure risk levels represent probable distribution of risk.



THE NEW NORMAL: 8 WAYS THE CORONAVIRUS CRISIS IS CHANGING CONSTRUCTION

Written by Jenn Goodman, Construction Dive,
Published on April 30, 2020

1 Jobsites will be cleaner and safer

The virus put a spotlight on the importance of worker health and safety, and U.S. contractors responded by implementing new jobsite policies such as staggered shifts, employee temperature checks and top-to-bottom disinfections of jobsites, tools and machinery.

Medical experts' belief that outbreaks across the world will come in waves for months or even years to come make safety plans important now and into the future.

2 Distancing will be the norm, via technology

The need for social distancing has also changed how contractors interact with project teams and with customers and companies have developed unique solutions to stay in touch.

In addition, in some areas of the country, building departments are implementing remote technology for inspections, a trend that will continue after the health crisis is over.

3 Projects will take longer

Many of the major safety changes on construction sites will add to the time it takes to complete projects. While crucial to keeping workers healthy, techniques such as suiting up with PPE, only allowing one trade on a site at a time and staggering work shifts will slow down progress and the days of fast-tracking a project may be over — at least for now.

4 Telework will become more common

The coronavirus has also brought major changes to construction's back offices. Forced to stay at home, many office employees have kept business operations running via remote work, relying on technology like videoconferencing, emailing and texting to stay in touch.

While the trend toward remote work will lead to a dramatic reduction in the need for office space for many companies, others may think about expanding.

5 Union influence will grow

Since the pandemic began, trade unions have taken on renewed influence in many areas of the country by advocating for members' best interests in keeping sites operational and safe.

Other unions have wielded their influence to keep members on the job.

6 Demand for project types will change

The coronavirus outbreak has reshaped the types of projects that will be built this year and for many years to come. Hospitality, retail and entertainment projects are likely to be in less demand while healthcare construction and healthcare-related manufacturing projects could see more activity, according to Charles Hewlett, RCLCO Real Estate Advisors' director of strategic planning.


7 Supply chains will recalibrate

Even before the outbreak hit the U.S., the coronavirus created major global supply chain disruptions, especially of goods from China, the source of about 30% of U.S. building materials last year. Government containment efforts and quarantines in China slowed or shut down factories in dozens of cities and provinces, leading to a falloff in production of everything from cars to smartphones. U.S. builders have noted delays and shortages in items like steel, surfacing and case goods.

8 Modular adoption will increase

An enhanced focus on worker safety will help accelerate the industry's move to offsite construction methods. While contractors have relied on prefabrication for many years, the coronavirus pandemic will motivate more firms to investigate the benefits of offsite building.

To read the full article and details, please visit <https://www.constructiondive.com/news/the-new-normal-8-ways-the-coronavirus-crisis-is-changing-construction/576681/>



To survive and thrive beyond COVID-19, contractors must find better ways today to collect and share field data and deploy agile cloud-based resource management solutions that allow contractors to rapidly respond to any project issues with real-time data.

FOUR WAYS THE CONSTRUCTION INDUSTRY CAN LEVERAGE TECHNOLOGY DURING COVID-19

Written by Ryan Remkes, Published on April 7, 2020

The sudden onset of COVID-19 hit the world like a ton of bricks, bringing industry after industry to a screeching halt. The construction industry is being affected as well, but the outlook for 2020 still has promise.

Before the virus hit, construction had been enjoying a strong upward trajectory, with many builders booked months and even years in advance. While the health crisis the country faces today is a serious one, by most estimates, it's expected to be short-term, as opposed to the housing crisis of 2008, which devastated the sector for years.

So how can the construction industry mitigate damage and stay steady until this public health crisis passes and the economy returns to solid ground? It starts by understanding what can be

done to protect employees, jobsites and clients from this crisis, and then quickly implementing the options that make the most sense.

Here are four actionable ways technology can help the construction industry contend with COVID-19:

Screening COVID-19 symptoms at clock in/out

Safety managers need fast, timely access to health data in order to monitor whether employees are experiencing any symptoms of the coronavirus. If and when employees do report symptoms, supervisors can immediately remove and separate the employee from their co-workers. If supervisors are uncertain or managing multiple jobsites, both the safety manager and supervisor can automatically receive the health screening

in real time and immediately assess the situation and decide if an employee needs to be removed from the jobsite and separated from their co-workers.

This is where an integrated real-time resource management app comes in. With an integrated resource management app, construction businesses can prompt employees to complete health screening forms on clock in and/or clock out and receive the information instantly. These health screening forms can also be automatically emailed upon completion to all stakeholders or all the forms can be viewed on a web browser upon submission.

As employees enter their time and their health data when work begins and ends, supervisors can effectively confirm the health and well-being of each crew on every shift and at every site, and deter-

Continued on page 18

mine if certain workers should report to the next shift or not. These mobile forms can also include COVID-19 training videos, reminders for employees to take temperatures, use masks and sanitize equipment, to name a few.

Enabling remote information collection and sharing

Companies who rely solely on sharing information on paper or in person are struggling to deal with sudden changes to how and where employees are working. With many construction business offices shifted to employee's homes, field supervisors that normally dropped off timesheets, daily progress and safety reports, can no longer do so.

Prior to COVID-19 there were existing time lag issues getting the field data to the business office, and it's even worse now because they don't have a central business office to deliver the field data to — this is why now is the perfect time to update data collection methods and sharpen the office's digital toolbox. By implementing real-time resource management solutions such as cloud-based labor tracking, field reporting, project tracking and system integration, managers ensure that key business functions needed to keep the wheels turning can seamlessly be performed from remote locations.

Cloud-based solutions also see increased rates of use as they can be conveniently accessed through smartphones, tablets, iPads and other devices, no matter where the user is located. Even when field employees are working in remote locations without service, their data can be captured as it happens and can be shared and synced with the payroll and ERP system as soon as there is service.

Accuracy of the field data is dramatically increased with a real-time resource management platform that syncs with the payroll and ERP systems. It also eliminates manual data entry, keying errors and reallocation of job costs; and it connects your employees no matter where they are working to accurate field

progress data to make them as efficient as possible and keep projects on budget. Everyone in the company that needs access to resource management data has global visibility and can see the data in real time.

Maintaining project management from a distance

Because this crisis is sure to expand the already existing worker shortage, technology solutions are giving construction companies the ability to be more efficient with the teams and resources they have. Take resource management solutions, which enable supervisors to manage projects remotely with real-time updates from employees in the field on job costs. These software's also help supervisors to manage projects without unnecessary physical interactions and site visits, which is especially relevant if they have multiple projects in different parts of town.

Employees can embed photos and videos into forms, so managers can stay engaged, answer questions and track progress. This visual addition to the tracking grants global visibility across the organization, limiting physical interactions and reducing the chances of spreading COVID-19. Additionally, the photos and videos help the entire team to collaborate if they run into problems on the jobsite without being there.

Contractors can leverage the power of their entire team to problem-solve issues using the high quality photos and videos to clearly communicate the problem while they're working from their home remotely — or wherever they are working from with fewer people on the jobsite — to reduce the COVID-risks. The use of mobile forms with rich media like photos and videos can also reduce the need to assign a project manager to smaller jobs.

A North Carolina electrical contractor using real-time mobile forms with photos and videos found that real-time media-rich mobile forms transferred project status information more accurately, effectively and efficiently than project managers. The mobile forms helped them hit project-specific milestones better than

when they assigned project managers on smaller projects.

Utilizing new coding and features to remove the need for shared devices

If businesses previously relied on multiple employees sharing a mobile device for clocking in and out, flexible real-time labor tracking apps will allow supervisors to change how they collect their time while still being able to capture photos at an appropriate social distance for a face recognition feature to work. Cloud time tracking apps are agile, and permissions can be changed quickly and easily to allow a supervisor to clock in other employees to reduce the COVID risk on shared mobile devices.

In moments, all supervisors can now clock in or out other employees by selecting one checkbox on their system permissions. As another COVID-19 precaution, supervisors clocking in their crew can now use the rear-facing camera on their phone to capture photos from a further distance and maintain proper social distancing. Previously, the front camera was used for face recognition photos on clock in or out and there wasn't enough safe distance between the supervisor and the employee. With this new workflow, the contractor still has documentation that the right employee is clocked in, and if another supervisor clocks them out, they know it's the right person with facial recognition verification.

It is the responsibility of each contractor and supervisor to run the cleanest and safest jobsite they can. By doing so, the construction industry can maintain productivity throughout this crisis and come out on the other side teaching the rest of the workforce that it is possible to be socially responsible and continue to work. Now is the time to critically assess jobsites and identify areas where technology can be utilized to support remote employees, protect the health of field employees, avoid jobsite closures and maintain project budgets and progress.

Some contractor's projects are being put

Continued on page 25

POST-CORONAVIRUS CONTINGENCY PLANNING FOR CONTRACTORS, OWNERS

Written by Kem Slowey, Construction Dive,
Published on April 8, 2020

One would be hard-pressed to find any construction industry player that hasn't been affected by the COVID-19 pandemic. While a few U.S. jurisdictions have banned construction work altogether, many more have limited which projects can move forward.

However, according to John Robbins, managing director and USA and North America head of real estate for Turner & Townsend, developers and contractors that find their project pipelines in a stall pattern still have plenty of planning to do for the reboot of work. Some experts say this could come as soon as the next few weeks while others say it might be in a few months.

One thing is certain: When construction comes back to full strength, U.S. contractors will face some new short-term and long-term realities.

First, Robbins said, when contractors are cleared to begin work, they could find themselves waiting in a long line for building inspections; materials, tools and equipment; and skilled trade workers and other labor, particularly as some seek to make up for schedule delays.

"It will be a strategic balancing act of demand with resources and available materials," Robbins said. He added that city, state and municipal agencies will have to deliver "high levels of cooperation" to maintain a quick turnaround of permits and other approvals.

Robbins also said that owners, consultants and contractors should work together to ensure a smooth reboot. That includes exploring funding options for cash-strapped contractors and settling matters related to coronavirus-related costs.

In the long term, the stay-at-home orders issued in most states have forced owners and contractors into what Robbins called the "great remote working experiment," which could usher in a more permanent digital transformation. "I believe we will see the future of project and program management digital innovation now come to the fore," he said.

Also, Robbins said, now that social distancing has become a permanent part of the construction industry lexicon, techniques that allow for a reduced level of human interaction like modular construction, remote and robotic drone inspections, autonomous rovers, 360-degree cameras and artificial intelli-

gence may become more popular. "[This technology] is not only a good idea, but [it is] perhaps a necessary one," he said.

WHAT'S NEXT?

Robbins offered other ways that construction will look different once the coronavirus crisis passes. In order to be ready for these changes, he said owners might want to:

- Take another look at each project's material specifications and make sure they include options for locally sourced or readily available products in order to provide enhanced levels of cost and schedule controls.
- Review project delivery methods. Consider a construction management at risk (CMAR) model and, engage a contractor using a "fee only" bid while construction documents are still in production. With the design team and cost manager acting as an integrated project team, look for long-lead items that can be sourced early to avoid future schedule delays.
- Perform a quantitative risk analysis of each project to gain a thorough understanding of potential exposures to the cost and schedule.

During the bidding process, contractors should expect that some owners and developers will:

- Decide whether to pursue competitive bids in an environment of tight contractor and material supply.
- Extend the length of the procurement period, potentially impacting the schedule.
- Consider rewriting the Request for Proposal (RFP) to include multiple shifts, overtime or other labor-acceleration mechanisms that will help make up for any delays incurred during planning and procurement and mitigate potential future delays. Using multiple shifts will also assist contractors in adhering to social distancing requirements by reducing the density of workers on site.
- Update risk analyses and include those potential impacts in their projections.

Construction companies, suppliers, owners and developers will need to stay in touch with each other during downtime as decisions could change one or more elements of the project, he added.

The types of projects that will be in demand will also be slightly different from pre-coronavirus days, according to RCLCO Director of Strategic Planning Charles Hewlett.

He told Construction Dive that demand for distribution and warehouse space may likely increase as U.S. companies favor higher inventory levels and emphasize supply chain resiliency over efficiency. Market reports have calculated that a 5% increase in total business inventories would translate into the need for an additional 500 million to 700 million square feet of industrial space.

"In the long run, expect more manufacturing facilities to locate in North America to ensure supply and access to markets during episodes like this one, a boon to economic growth and industrial and logistics facilities in the U.S. and Mexico," he said.



DECONSTRUCTING A CRISIS: AFTER AN ACCIDENT, 1 TWEET COULD RUIN A CONTRACTOR'S REPUTATION

False information can spread on social media and become “almost impossible to manage,” according to a communications consultant, unless the right strategy is in place.

Written by Jenn Goodman, Construction Dive; Published on November 25, 2019

Minutes after the partial collapse of the Hard Rock Hotel in New Orleans last month, videos of the devastating accident flooded the internet. Using just their smartphones, bystanders captured the destruction and chaos that left three workers dead and 30 people injured. Videos and images from the horrific accident spread quickly on social media, from Facebook and Twitter to Instagram and Snapchat.

Partly because of the shocking footage, the incident quickly became national news, where the videos were replayed on news programs repeatedly throughout the days and weeks afterward.

The fast pace of social media has changed how construction companies need to respond to a crisis, said Anthony Huey, president of Columbus, Ohio-based consulting firm Reputation Management. It makes quickly communicating with the news media more important than ever to make sure the correct information gets out.

In fast-changing situations, platforms like Twitter, Facebook and Instagram sometimes breed misleading and wrong information that often goes viral, said Huey, who has been helping U.S. contractors sharpen their crisis communications skills since 2004.

In fact, most problems Huey has seen in the dozens of crises he's been involved with relate to misinformation that spread in the first minutes and hours after an accident. He tells clients to make an initial statement within the first 45 minutes to help “set the record straight.”

Here is one example of a video that was tweeted by a bystander that quickly was picked up by the local news station:

“If it takes several hours for you to get back to the media or update your employees, in that vacuum of silence people are speculating and misinformation is leaking out,” he said.

PERFECT STORM OF EVENTS

An example of this, Huey said, is the day the newly opened Florida International University pedestrian bridge collapsed in 2018. Heavy equipment had to be moved out of the way to make room for emergency vehicles. As the operator of a construction crane moved the piece of equipment off-site, a bystander took a photo and posted it on social media.

The image was picked up by the *Miami Herald* with the headline “Crane operator flees scene.” Readers quickly jumped on social media to speculate that the driver might have had something to do with the accident, which was later proven to be false. The report also appeared in other local media outlets and as far away as the *New York Post* and the *Daily Mail*, a U.K.-based publication.

Huey said the case is an example of how incorrect information can quickly go viral and said the contractor and crane operator should have quashed the report when it first appeared. But no one from either company called the *Miami Herald* or took to social media to refute the story, he said. “To this day, it's still out there for anyone to see.”

“NOW [NEWS] LIVES FOREVER ON GOOGLE.”

Anthony Huey, Ohio-based communications consultant

Via photos and videos, social media can also record small problems and amplify them into big ones, Huey said. “In the past, if someone made a blunder on a jobsite and the TV news didn't pick it

up, it would not make it into the public's awareness, but now it lives forever on Google,” he said.

Patricia Kagerer, executive vice president of risk management at Jordan Foster Construction in Dallas, agrees, saying that construction firms of all sizes must have a process to monitor online comments.

“Old school thinking was to ignore it,” she said, “but today that is no longer the case.”

IT ‘WON'T HAPPEN TO US’

The power of social media to amplify or distort bad news is just one reason why firms need to have a crisis communications plan in place, said Huey. However, a majority of construction companies don't have one and prefer to think a major catastrophe “won't happen to us.”

He looks at social media as a double-edged sword, one with the power to spread misinformation but also to create an opportunity for general contractors and subs to communicate to a large number of people very quickly.

Platforms like Facebook and Twitter offer potential benefits for promoting positive company news, but they can also be drivers of bad news, making accidents seem worse than they are. Not having a plan for how to handle negative information on social media can impact future business, according to Kagerer, who helps to oversee the emergency response plan at Jordan Foster Construction.

“If you don't have a plan as to how to handle the fact that somebody's out there saying that your company kills people or if you're not even aware of it, it could cost you a potential job in the future,” she said. “I can assure you that your owners are aware of it.”

COMMUNICATION BEST PRACTICES

Bethesda, Maryland-based Clark Construction has a comprehensive emergency action plan in place, according to Sara Guthrie, vice president of communications. She said while she hopes they never have to use it, the plan includes a communication protocol and process for responding to media inquiries. Spokespersons are determined on a case-by-case basis depending on the location and type of event, she said.

“When there is an unexpected event, it’s important to make sure that there is a clear plan for notifying and coordinating with everyone involved — company leadership, the client, local authorities and the media,” she said. “This includes clearly assigning responsibility for notifying and coordinating with each of those entities.”

Because Clark’s first priority is always the safety and security of employees, trade partners and the public, Guthrie said, company leaders want to make sure they are taking proper steps to communicate necessary information to those parties.

“When it comes to media relations, it’s important that everyone involved understands the process for fielding and coordinating approved responses to inquiries so that they can respond in a timely manner with accurate information,” she said.

The challenge for a large firm like Clark, which employs 4,200 people and has offices in eight states, is that employees are spread over many jobsites, which takes extra work to make sure everyone understands communication protocols.

“We reinforce the plan regularly with our senior leadership and ensure that our project management guidebook is updated with the latest approach,” she said.

The company also developed a short video that is posted on its intranet to explain the process for responding to the media and established a media hotline to ensure employees can quickly notify a member of the communication team regarding a media inquiry.

Other ways that construction firms can be ready to respond to social media reports during a crisis include some of the following imperatives:

- Prepare a website in advance that can go live when needed and keep news of the incident separate from the company’s main website.
- Keep reporters in the loop, Huey said, even with just minimal news in the early hours of an incident. “If reporters can’t get information from you, they will look elsewhere,” he said. “They’re not going to stop reporting on something just because you have no information for them, so give them some facts to use in their reporting.”
- Use “buy time” statements that contain basic information and that let the media know that company representatives are working on getting answers to their questions, said Carla Thompson, senior marketing consultant for Zweig Group, an AEC consulting group, during a recent webinar sponsored by Engineering News-Record.
- Designate an employee to monitor the media for disinformation and quickly correct anything that’s false, whether in print, broadcast or social media. “The problem with social media is that what used to be just another channel for the dissemination of information like a TV station or newspaper or radio now has the potential to become a crisis in and of itself if it’s mismanaged,” Huey said. “Once it goes viral it’s almost impossible to manage.”
- Provide media training for employees, who are often the first line of information in a crisis. “If they complain about taking time out for training, ask them how they will feel with 20 to 50 microphones in their face,” said Thompson.
- Make sure subcontractors and other partners are on the same page. Guthrie said Clark requires subcontractors to obtain company approval before releasing any information, statements or images to the media or on social media.
- Consider all the types of risks to a contractor’s reputation. In her 20 years in construction risk management, Kagerer told Construction Dive, she typically sees

construction firms only planning for two types of incidents: weather events and employee accidents. She urges companies to undertake a hazard vulnerability assessment to look at all aspects of risk, including issues like cybersecurity, worker strikes and construction defects. “What are any of the things that could harm a company’s reputation?” she said. “Realize that negative social media posts or comments don’t always warrant a response. Kagerer recalled a disgruntled former employee of a contractor she worked with who posted many negative comments about the company’s projects and leadership. The company was aware of the posts and its social media manager and legal and risk departments worked together to come up with a plan of action but decided not to respond because it would have resulted in an online battle with a potentially dangerous individual, she said. Instead they continued to monitor the remarks for a period of time until they stopped. “Instead of responding directly, the social media manager posted other stories on the company’s feed that showed the company’s positive culture, benefits, community outreach and happy employees,” she said.

COSTS VS. REWARDS

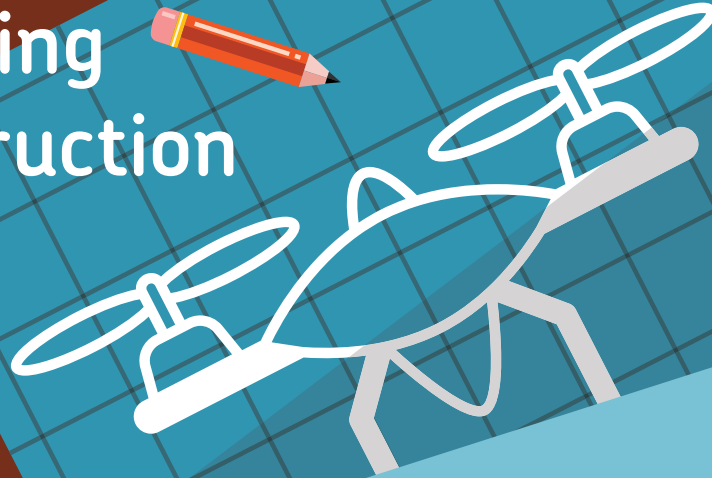
While developing a crisis communications plan can be expensive and time consuming, the extra costs and time are well worth it, experts say.

“Remember,” Thompson said. “When stuff starts hitting the fan, that advance planning will help you navigate and survive. Hopefully it will work out like you hope your home or car insurance does, where you’ll never need it.” Another webinar participant, Magnusson Klemencic Associates Senior Principal Jon Magnusson, an engineer who worked on the World Trade Center during the Sept. 11, 2001, attacks and helped to respond to media inquiries, said he’s even seen companies emerge stronger after a crisis.

“Many clients judge a company more keenly based on how they behave when things go wrong,” he said.

8 WAYS

Drones are Changing Construction



Written by Ethan Smith, Equipment Trader

More than any other industry, drones are being put to use on construction worksites, with drone use surging by 239 percent from 2017 to 2018. Infrastructure work now makes up 35.5 percent of professional drone use, far ahead of the next two biggest drone-using industries, agriculture (25.5 percent) and transportation (10.2 percent).

Typically operated by project managers, technology managers and superintendents, construction drones have many functions. They can be used in every phase of the project lifecycle. Equipped with GPS technology as well as cameras and sensors that can capture images, video, thermal readings and infrared data, drones help improve project conceptualization, planning, measurement, building, management, reporting, monitoring, inspection, safety, security and even marketing. Drones are revolutionizing construction at a break neck pace. Here are eight ways drones are changing construction:

1. Preconstruction Surveying and Mapping Drones have the ability to survey and map large geographic areas, quickly helping building planners get a sense of a site's topography. With high-resolution drone imaging, construction teams can

develop 3D models to help identify constructability challenges ahead of time, make accurate estimates and sufficiently prepare for the job. Drone mapping and modeling can also be conducted throughout a project and the data can be used by architects, engineers and others in conjunction with leading construction software programs, including AutoCAD, Bluebeam, Civil 3D, BIM 360, Procore and others.

2. On-Site Measurements On a smaller scale, drones can be used to make measurements on a worksite, including measuring stockpiles of materials, such as piles of fill dirt, sand or gravel. Increasingly, builders are using drones in coordination with ground control points (GCPs), which are ground markers equipped with GPS to calculate exact global positioning. This approach to making site measurements has skyrocketed in recent years as it achieves up to 99 percent accuracy when measuring distance, area and volume.

3. Progress Reports A drone's ability to observe and record almost anything on a worksite makes them a valuable tool for keeping all relevant parties up-to-date with accurate information about the project's progress. Clients appreciate a high level of access and visibility that helps them feel assured of quality-control, and everyone from owners to managers

to laborers are able to stay on the same page and able to identify anything that looks out of place.

4. Workforce Monitoring Many project managers have also turned to drones for the general supervision of their workers. Many places of employment record the day-to-day activities at their business, but mounted cameras don't always work on a construction site where structures, equipment and materials are frequently moved around and could impair visibility. Drones may soon allow for the necessary mobility for supervisors to fully oversee the workforce, which is especially helpful if there are specific concerns that a particular person or group is not adhering to protocol. OSHA has not yet released official protocols for drone inspections but stay tuned.

5. Structural and Equipment Inspections The maneuverability of drones, which can easily fly around project structures, makes them useful for examining and evaluating stability and repair needs. High-resolution images can provide finer visual details, measurements can determine if a structure is straight or leaning (and by how many degrees) and thermal sensors can identify heat leaks, cold spots and electrical malfunctions. Similarly, a drone may be able to quickly analyze a broken-down piece of machinery and send equipment data to the technician to begin their diagnosis before the equipment even reaches them.

6. Safety Improvements Increasingly, drones are being used to make measurements and to even perform simple maintenance on structures like towers, roofs and scaffolding that can be more dangerous for human workers to reach. Regular worksite monitoring with drones can also help managers be on the look-out for on-site safety concerns, such as employees not following safety regulations or structures and equipment that may be loose or unstable. As an added bonus to protecting workers, construction companies that use drone inspections and patrols as preventative and responsive

safety measures may be eligible for risk-mitigation insurance discounts, depending on the provider.

7. Securing Equipment and Worksites The construction industry loses \$1 billion every year due to equipment theft and 83 percent of equipment owners have been the victim of theft. A flyover of the worksite is a fast and easy way for supervisors to ensure that machinery is secure and located where it is supposed to be. Likewise, drones are able to be the eye-in-the-sky that can surveil the site and check for unauthorized trespassers. Even the presence of patrolling drones may serve as an effective deterrent against thieves. As of now, drones cannot autonomously fly nighttime patrols on their own. They're currently limited by battery life, an inability to judge if they are sensing authorized or unauthorized personnel and federal regulations about flying drones at night in certain areas, but the day is soon coming that self-flying drones will be able to better secure the worksite.

8. Marketing and Promotion Drones are a great way to promote your business. Expert aerial photography can help you show off finished projects with captivating shots that enhance and elevate your company's portfolio and marketing materials. Drone images, as well as scale models and 3D rendering using data from drone surveys and mapping, can also help prospective clients visualize what you can offer them. And finally, simply the fact that your construction firm uses drones can attract customers who are interested in all the benefits we've described above and want to contract a cutting-edge company that uses the latest technology.

Ethan Smith is a Content Curator for Trader Interactive, serving the commercial brands Commercial Truck Trader, Commercial Web Services and Equipment Trader. Ethan believes in using accessible language to elevate conversations about industry topics relevant to commercial dealers and their buyers.

Four Ways, continued from page 18

on hold right now but know they will be scrambling in a few months and bombarded. To survive and thrive beyond COVID-19, contractors must find better ways today to collect and share field data and deploy agile cloud-based resource management solutions that allow contractors to rapidly respond to any project issues with real-time data. If you don't act now, the choice may be made for you; make the most of your time now.

CEO Ryan Remkes founded AboutTime Technologies in 2003, after owning Better Builders Inc., a general contracting firm for residential and commercial construction. Remkes is a serial entrepreneur and has successfully led Better Builders, Inc., a multi-million dollar real-estate development company, Ridgestone Development and AboutTime Technologies. He and his three founding partners were visionaries in solving the most challenging issue for contractors with a mobile workforce: how to collect accurate field data to track and improve project profitability with mobile technology. They overcame initial resistance to mobile technology for field data collection to become the leader in mobile resource management. In 2014, recognizing the power, agility and flexibility of cloud technology for the construction industry and beyond, he drove the development and creation of a groundbreaking cloud-based mobile resource management platform, WorkMax.

Remkes has been recognized for his entrepreneurship and received the Top 40 Under 40 in 2010 for Utah's most promising executives. In 2009, AboutTime Technologies was selected by Inc. 5000 for record revenue growth. Additionally, AboutTime Technologies has won numerous construction industry awards for Most Innovative Product for the World of Concrete, Constructech Top 50 Products, Constructech Vision Awards, and Gold Stevie Award for Mobile Solutions. In his free time, Remkes enjoys hunting, coaching his son's baseball, supporting his daughter's competitive dance career and spending time with his wife and three kids.

Written by Jenn Goodman, Construction Dive published on Jan 8, 2020

Construction Dive's new series, *Tech 101*, provides quick, top-line information about emerging construction technologies. Click here for the latest article in the series. What type of tools would you like a primer on? Email construction.dive.editors@industrydive.com.

Drones provide construction teams with an overhead view of jobsites, materials, machinery and people. Contractors are using the autonomous flying machines to record images and videos that help optimize everything from grading plans and operations to identifying differences between as-designed and as-built site plans. Their usefulness can be enhanced with thermal cameras and other add-ons like mapping tools and GPS units.

Also called unmanned aerial vehicles (UAVs), drones can be fully or partially autonomous but are usually controlled

remotely by a human pilot on the ground. "Drones have become the go-to tool for construction firms to track, map, survey, inspect, and manage worksites more efficiently and safely," said Dan Burton, founder of DroneBase, a drone pilot network that provides support for construction companies. "Through aerial imagery and data, builders can map projects, report progress updates and gain insights through advanced analytics to make better, faster and more reliable decisions."

CONSTRUCTION APPLICATIONS

Because UAVs provide a bird's eye view of a jobsite, they offer builders a range of benefits that can't be matched by any other technology, and the top applications in commercial construction are for logistics, progress monitoring, as-built surveying and marketing, said Dustin Williams, CEO and founder of FlywheelAEC, a reality capture service provider based in San Francisco. Among other projects,

his company provides weekly drone flights over the Raiders' Allegiant Stadium job-site in Las Vegas (see video below). Denver-based PCL Construction has utilized drones for more than three years on nearly all of its major projects to improve jobsite communication, perform volumetric analysis, overlay design documents with installed work for visual verification, verify grades and provide historical documentation.

"The old adage that a picture is worth a thousand words has never been more true," Bill Bennington, PCL's national quality manager, told Construction Dive.

New England contractor Windover Construction uses drones to establish a 3D model of jobsites, which managers import into the company's BIM workflow.

Drone provider Skycatch is recording all construction activity on Microsoft's Redmond campus renovation project, feeding data into more than 100 models



CONSTRUCTION DRONES



that contain almost 3 million 3D building components.

For marketing purposes or for client updates, drones can capture detailed, close-up images that are not possible with a photographer on the ground or even in a helicopter, Burton told Construction Dive. "It's also a much safer solution than taking pictures from a crane and more affordable than a helicopter flight," he said.

UAVs are also useful tools for accident prevention, according to Drone Enthusiast. Overhead images showing erection sequences, crane locations or perimeter security can help pinpoint where projects get congested and even predict where hazards could pop up. The improved transparency and collaboration decreases inefficiencies that often lead to a reduction in change orders, Williams said.

More drone-related advancements are on the horizon. Burton said that drones with thermal sensors and ground control points (GCPs) will gain more traction this year, enabling construction managers to identify problems like water leaks or concrete cracks more quickly.

Unpiloted UAV systems such as the University of Michigan's autonomous system that nails shingles to a roof, are also upping drones' usefulness for construction pros.

WHAT YOU SHOULD KNOW

Before implementing a drone program, it's important to select the right model for the job, starting with the choice of fixed-wing or rotary. With an airplane-like design, fixed-wing drones can glide on a set path and reach higher altitudes, making them efficient for mapping topography and surveying greater distances, according to Big Rentz. However, fixed drones are only able to fly forward.

For closer aerial inspections and photography, rotary drones are the better option since they are easy to control and their rotating blades allow them to hover and remain stable.

Contractors also need to know that despite the perceived low barrier to entry due to the affordable cost of consumer

drones, many specialty technical skills are required, as well as professional-grade hardware and software, said Williams. There are dozens of apps that help control and program drones; a recent JBKnowledge report found that the top three apps were DJI Go, Drone Deploy and Pix4D.

"Having a drone program is becoming essential; but having it implemented internally is not practical for everyone," Williams said. "If implementing internally, contractors should budget money and time appropriately to go from R&D through implementation."

That said, he added, many contractors would benefit from partnering with a specialized drone service subcontractor. These specialists can help decide the best products and approach for the specific project and ensure that local and federal regulations regarding the use of airspace are followed. They also have trained and FAA-licensed operators.

A newly proposed identification system for commercial drones will help expand usage in the United States for everything from drone-delivered packages to emergency medical supplies. The FAA's Remote ID system, announced late last month, will require the vast majority of drones in the U.S. to broadcast tracking signals that will help authorities to identify their operators and locate them, according to a press statement.

"Remote ID technologies will enhance safety and security by allowing the FAA, law enforcement, and federal security agencies to identify drones flying in their jurisdiction," Transportation Secretary Elaine Chao said in the statement.

When the new regulations hit in a few years, according to the Washington Post, FAA compliance for drone operators will be more important than ever, Burton said. "Companies will need to make sure they have proper clearance, insurance and licenses before flying," he said.

ROADBLOCKS

Drone technology rapidly continues to

evolve and bring new applications and benefits every month, but the quick pace of innovation can also be a drawback for contractors who are trying to keep up with the changes, Williams said.

A few other challenges include:

- Getting buy-in from construction company leaders. Because there are costs associated with starting a drone program, whether in-house or through a third party, some firms are reluctant to make the investment.
- Deciding whether to invest in hardware and training for an in-house pilot or soliciting a drone service provider. The choice between DIY or using a contractor comes down to how spread out the need is, Burton said. If firms are working on multiple sites across the country, a drone operations company can be helpful so companies don't have to worry about buying hardware, getting insurance or training operators.
- Finding a drone service provider that understands the needs of the AEC industry, such as how to coordinate flights around active construction such as cranes or how to integrate drone data into the BIM/VDC process. "While drones are invaluable tools on construction sites, like anything else, they need to be a cost-effective and scalable solution in order for the program to be successful," said Burton.
- Ensuring secure transmission of data. The U.S. Department of Homeland Security issued an alert last year citing "strong concerns" that Chinese-made drones could be sending sensitive flight data to manufacturers and potentially to the Chinese government. The drones "contain components that can compromise your data and share your information on a server accessed beyond the company itself," said DHS's Cybersecurity and Infrastructure Security Agency memo. DHS cautioned users to be wary of purchasing Chinese-made drones and to take precautions such as turning off a unit's internet connection and removing secure digital cards.



PICTURE PERFECT

Roofing contractors are taking advantage of aerial imagery

By Natasha Ridley, Director Of Product

The number of available jobs in the roofing industry is projected to increase 12% through 2028, an above-average rate for most U.S. occupations, according to the Bureau of Labor Statistics. Outpacing teaching and accounting positions, the growing number of roofing jobs reflects a competitive industry driving roofing business owners to use every advantage they can to thrive.

Homeowners, building owners and general contractors hire roofing contractors for their skills in assessing, installing, maintaining and repairing roof systems of all kinds—from thatch and wood shingles to slate and clay tiles. Many skills needed for successful roof system installations have remained consistent over time, but rapid changes in technologies have improved ways you can prospect, estimate and quantify roofing projects.

During the past few years, aerial imagery technology has taken off in the roofing industry. The ability to use aerial images to survey, inspect and generate accurate job quotes has become a new reality. Now with an eye-in-the-sky vantage point, you can use aerial imagery from oblique 45-degree angles to top-down orthographic perspectives at your work sites.

SATELLITES AND DRONES

The most common forms of sky-to-Earth imagery people recognize are satellite and drone imagery. Thousands of miles

away, satellites capture far-reaching images of Earth's surface. The downside of this incomparably broad perspective is a lack of clarity. Shooting 30 cm per pixel means zooming in for details and finding fuzzy results. Capturing images of the same location also can take years, resulting in old and often inaccurate data.

At the same time, the drone revolution is putting affordable aerial photo and video cameras into the hands of amateurs and professionals. These miniature marvels offer custom images with superior detail from almost any angle and altitude. However, drones often lack software that provides intuitive tools required to create accurate roofing estimates. In addition, Federal Aviation Administration certification requirements and ensuring you are flying in authorized areas create challenges that can outweigh results.

AERIAL IMAGERY

Aerial imagery shares many benefits with satellites and drones and provides high-resolution images, access to current

and archived photos, and the means to quickly assess emergencies and natural disasters, as well as anywhere, anytime convenience, making it a valuable tool for roofing contractors.

Aerial imagery capture can be performed by helicopters, balloons and—most efficiently—airplanes. A satellite captures images from great distances, but an airplane can get much closer to job sites and photograph them at a much higher resolution. Airplanes also can cover far more territory than a drone, flying across the U.S. to canvass a massive range of land and properties.

MORE ACCURATE ESTIMATES

Aerial imagery gives your roofing business access to industry-leading technology that helps you generate accurate estimates. By using an application such as MapBrowser, you can estimate the work needed on a roof from a variety of angles, annotate the image and use a copy of that image in a report or pre-

sentation to clients.

Exploring properties with aerial imagery can help you create informed designs and visually engaging customer quotes while managing labor and material requirements.

CLEAR, HIGH-RESOLUTION IMAGES

Because airplanes can fly at lower altitudes than satellites, aerial imagery provides up to four times greater resolution than satellite imagery. The detailed imagery means you can analyze how a roof is degrading or maintaining its integrity over time using historical data. Higher resolution also equals high-fidelity and dependable estimates.

Aerial imagery also has the capability to manipulate photos, zooming in close without losing visual integrity. An excellent way to earn trust with your customers is sharing high-resolution images of their properties. Aerial imagery helps you show homeowners damaged areas and explain the work you plan on doing for them.

For commercial roofing contractors, high-resolution imagery provides powerful insights while assessing large roofing projects. Using aerial imagery, you can identify HVAC equipment, note key access points, analyze parapet depth and make notes of other important roof features. The ability to inspect images with clarity also enables you to diagnose trouble spots and prepare for material and workforce needs.

Using highly detailed aerial images also is a powerful way to generate word-of-mouth business opportunities. After completing a project, you can create follow-up opportunities with customers by sharing updated aerial photos of their new roof systems. It's an excellent way to ensure customer satisfaction while creating an opening to their network of homeowner friends.

ACCESS TO ARCHIVED IMAGES

Capturing 330,000 square miles of land including most U.S. cities is impressive. However, doing so multiple times per year is what makes aerial imagery valuable. For instance, shooting in different seasons means you can compare property images with and without leaves on trees.

The ability to access archived images means you can make compelling side-by-side property comparisons to track how a roof system changes over time. Because aerial image planes chart overlapping courses, an end-user always will have access to seamless and detailed views your competitors don't have.

QUICK RESPONSE TO EMERGENCIES

In 2017, 5.2 million property and casualty insurance catastrophe claims were made, totaling \$101.9 billion, according to the Rocky Mountain Insurance Information Association. With historical archives dating back to 2014, roofing professionals

can view before and after images that can be invaluable after natural disasters.

The days following an extreme weather event often are an essential time for you to help homeowners and building owners repair their roof systems. Whether it's high winds, snowstorms, hail, rain, hurricanes or tornadoes that occurred, having instant access to property images gives your roofing business an advantage when communicating with prospective customers.

On a similar note, using up-to-date aerial imagery also can help you generate business by identifying damaged roof systems. One sure-fire method is to scan for blue tarps—a telltale sign homeowners are in need of roof system repairs or replacements. These potential customers want their estimates fast and accurate, which you can provide with aerial imagery. With instant access to thousands of roof images, your ability to generate new business leads increases when using aerial imagery.

ANYWHERE, ANYTIME AVAILABILITY

Inspecting roof systems always has been a necessary yet time-consuming part of operating a roofing business. Instead of spending hours every week driving from site to site, consider all the time your team members can save by having all the quote-building information available on their mobile devices.

With aerial imagery data stored in the cloud, you can access high-resolution property images from your laptop, tablet and other mobile devices. Regardless of current weather conditions, time of day or location, you will have instant access to a wealth of vertical, panoramic and oblique rooftop views at your convenience.

Although aerial imagery is not without cost, unlike free sources such as satellite imagery or government data sources, aerial imagery provides a higher resolution and is more up-to-date. When using aerial imagery, you can be confident that what you see is a clear and current representation of what's on the ground, which leads to more accurate estimates and more time saved by avoiding unnecessary site visits. This efficiency ultimately translates to freeing up more resources to invest in your business.

YOUR FUTURE SUCCESS

Making a long-term plan for your roofing business is a necessary step to achieving your professional and personal goals. That plan includes growing your market share by reaching more customers and providing fast and accurate bids. Aerial imagery gives your business the ability to view locations in detail without stepping foot on-site. When you begin using aerial imagery, you see how vital it can be for the future success of your roofing business.

Natasha Ridley is director of product—apps for Nearmap, South Jordan, Utah.

By Ethan Kirk, Director of Marketing of Loveland Innovations

Roofing companies are using drones for many reasons; they are efficient for gathering roof system information and help workers stay safe by remaining on the ground. Thanks to drone technology, roofing contractors can inspect, estimate, bid, sell and plan roofing work without stepping onto a property.

AN EVOLVING INDUSTRY

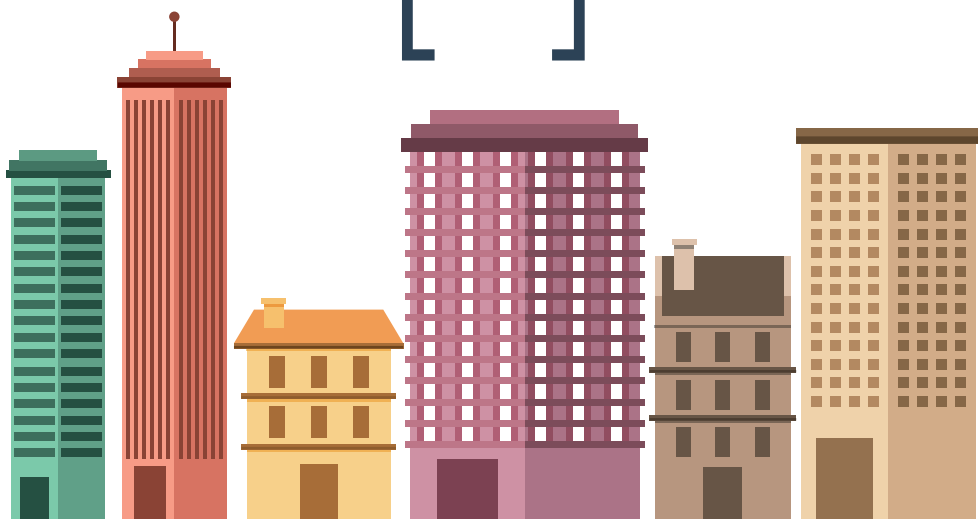
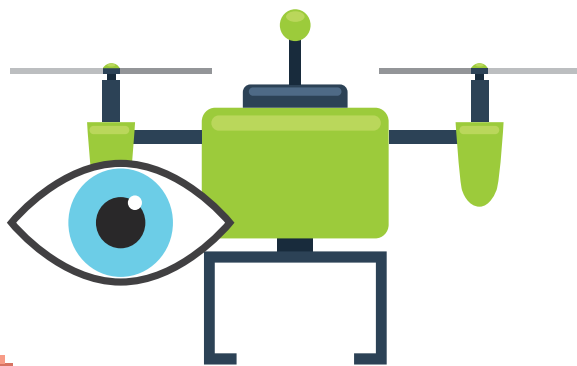
Many roofing contractors say they have plenty of work but finding experienced labor is a challenge. To keep up with roofing projects, you need ways to help your workers be more productive. Drones can help by streamlining tedious tasks such as finding roof system damage and taking roof measurements.

Property owners also are more demanding than ever. According to Microsoft Corp.'s 2019 State of Global Customer Service Report, 95% of people say customer service is essential to brand loyalty and 61% of people never will do business with a company after a single bad experience. When it comes to winning business and retaining customers, you have to get everything right the first time. Drones help you provide customers with the accurate data they expect from a roofing professional.

In addition, climate change means more storms and more work are coming. According to NASA: "The intensity, frequency, and duration of North Atlantic hurricanes, as well as the frequency of Cat 4 and 5 hurricanes, have all increased since the early 1980s."

TAKING OFF

Drones are becoming a valuable tool for roofing contractors



To keep up with storm claims, insurance companies already are adopting drones. Travelers' Claim University has estimated 550 certified pilots fly drones to estimate claims. And large insurance carriers such as State Farm® deployed drone technologies to handle claims demand following 2017 and 2018 storms and will continue to do so. Insurance carriers are advancing their technologies, and they expect companies that work with them to do the same.

BENEFITS

With industry challenges compounding competitive pressures in your market, the effectiveness of your sales process matters. Bidding and selling without using drones only will get you so far. When you use a drone solution, the following are possible to amplify your sales process.

PRODUCE MORE BIDS

Many roofing contractors canvass areas following storms and weather events or in neighborhoods with older homes that need roof systems replaced. These processes require quick inspections and quality information to provide homeowners. According to a 2018 case study, How Elevated and IMGING Bring Roofing Into the Digital World, conducted by my company, Loveland Innovations, when you adopt a drone solution, you can produce two to three times as many bids using the same number of employees.

CANVASS MORE AFFORDABLY

Some drones make it possible for anyone to gather information on a job site. Instead of hiring a seasoned estimator, a drone makes it possible for your workers who may not have drone experience to canvass homes and create polished, effective bids. Some roofing contractors have a dedicated drone estimator; others hire a college student part-time to canvass as commercial drone work has become a popular source of income for hobbyists. The point is a drone creates more flexibility in terms of who you send

to visit homeowners as you generate leads and make sales.

PROVIDE HIGHER-QUALITY DATA

Your bids are only as good as your data. Homeowners and building owners (and often insurance carriers) need to see what caused roof system damage, the extent of the damage and the costs to repair it. Drones gather incredibly high-quality data and never get tired or frustrated. After a quick drone flight, your salespeople can view and share measurements and imagery detection. This information arms your sales team with all the information they need to help homeowners and building owners understand the conditions of their roof systems so they can move forward with repairs. With detailed drone imagery, your customers will know they're trusting a market leader.

REDUCE RISK

When drones get everything a roofing contractor needs from the sky, there's no need for estimators to get on a roof, which reduces safety risks for employees and financial risks for employers. Depending on your workers' compensation classifications, it may be possible to move your estimators from the roofing classification to the sales classification. This could save your company thousands of dollars in workers' compensation premiums.

GETTING STARTED

Before you can reap the benefits of a drone solution, you will need the following:

- **Hardware:** You need a drone and a controller. Accessories such as multiple batteries or car chargers are optional but will increase your company's capacity.
- **Software:** Most drones are built with basic software for manual flight. To get more value from your solution, consider working with a vendor that can provide a full platform to help you move from measurements to bids to closing sales.
- **Pilot certificate:** The Federal Aviation

Administration regulates commercial drone flights under CFR 14 Part 107. To fly a drone, you need a Remote Pilot Certificate you can obtain from the FAA by passing a Knowledge Test. The Knowledge Test focuses on airspace management and unmanned aerial vehicle regulations.

In general, there are two ways to get started with drones. You can do it yourself, or you can work with a vendor.

DO IT YOURSELF

If you go out on your own, you'll essentially be buying a drone off the shelf to fly manually. It's affordable but limited. Do you want a flying camera, or do you want something more advanced? Following are some things to consider if you opt to

DIY:

- **Cost:** Buying a drone off a shelf is an affordable way to get started with drone technology. With quality hardware starting around \$1,000, this may be a good option for a limited technology budget.
- **Images only:** With manual flight, data is limited to images and videos.
- **Manual measurements:** An off-the-shelf drone won't provide roof measurements, which means you'll still need to purchase measurement reports or measure manually.
- **Learning curve:** Because a manual solution requires you to fly on your own, expect to spend some time understanding the nuances of how to fly, getting acquainted with the systems, etc.
- **Memory storage:** A manual solution will require you to personally manage your data storage through file transfers onto external hard drives, cloud photo storage providers or multiple memory cards.
- **Remote Pilot Certification:** You'll need to study for the Knowledge Test by reviewing the test preparation materials provided by the FAA and then schedule an appointment to take the test at an FAA-approved Knowledge Testing Center.

WORK WITH A VENDOR

If you want more value from a drone platform, work with a partner. A software provider can turn an off-the-shelf drone into a platform for gathering imagery and measurements. You can expect the following from a vendor partnership:

- **Quick startup:** With automated flight, it's easy for anyone to inspect roof systems, find damage and obtain accurate, up-to-date roof measurements. Some drone platforms allow a user to create a flight plan so the drone flies itself.
- **No learning curve:** Because of the easy nature of flying an automated solution, you can hire a pilot from a large talent pool of FAA-certified pilots to fly and canvass neighborhoods. This makes it easy for you to create more bids and find more business.
- **Access to training:** Flying a drone commercially requires a Remote Pilot Certificate. Off-the-shelf drones typically don't come with training to become certified, but most vendors offer online training to help you obtain your pilot certificate(s).
- **Tailored solution:** One of the biggest benefits of working with a vendor is the ability to build a custom solution to fit exactly what you need. Features such as on-site measurements and automated damage detection make it easy to get information and create bids while you are still with a customer.
- **Vendor costs:** Any vendor-provided solution will come with an associated cost. An ideal vendor provides enough benefits to outweigh the cost of adoption and may save you money if it also replaces your existing measurement solution.

LEARNING TO FLY

Nearly all roofing companies can benefit from drone technology. To adapt in a changing industry, consider adding a drone solution to your sales process. You'll reach more neighborhoods, produce more bids and close more sales.

Ethan Kirk is director of marketing for Loveland Innovations, Pleasant Grove, Utah.



IS YOUR WARNING LINE A HAZARD?

With this week's Safety Talk, I would like to share a personal observation as a safety consultant. A while back I was conducting safety inspections of several roofing jobsites. One thing that many of those jobsites had in common was that a warning line system and safety monitor was being used for fall protection. As long as that is done correctly, it is a perfectly acceptable practice. However, if done wrong it can create a greater hazard. That is what I saw on not just one, but several jobsites. Each of the jobsites had a flat roof and had a warning line erected around the perimeter of the roof. The warning lines were located 6 feet from the edge of the roof and had flags at least every 6 feet. So far, so good – right?

Where the hazard existed on these jobsites relative to the use of warning lines, is how the men got to and from the ladder, hoist area, and disposal area of the roofs. On all of these jobsites, the men walked up to the warning line, lifted it, and then walked underneath. Take a minute and think about the hazards that this practice

creates while only 6 feet from the unprotected edge of a roof.

When you lift the warning line and walk under it, where are your eyes focused? At least while you are going under the warning line you are likely looking down and may even be looking to the side to make sure you are not pulling-over the rest of the warning line. Taking your attention off of the edge of the roof when you are that close is not a good idea.

Now consider this. Have you ever stood up quickly and felt light-headed or dizzy? That can happen when you bend down and then stand back up to go under a warning line too. You don't want to be dizzy and light-headed within feet of an unprotected edge of a roof.

If you have an arm full of debris, tools, or roofing materials; or if you are pushing a wheelbarrow or cart, lifting a warning line to walk underneath is awkward and could cause you to twist or turn in a manner that creates a strain injury.

Repetitively lifting and lowering the warning line causes it to sag. Before long, the sag can be so great that the warning line (which is intended as protection) becomes little more than a trip hazard hovering 8 to 12 inches above the roof surface.

DISCUSS WITH YOUR CREW

What are some other hazards associated with lifting and walking under a warning line?

If you are using a warning line as a part of your fall protection on a roof, OSHA fall protection standards require that ensure that points of access, materials handling areas, storage areas, and hoisting areas be connected to the work area by an access path formed by two warning lines. When the path to a point of access is not in use, a section of warning line must be placed across the path at the point where the path intersects the warning line erected around the work area to form sort of a warning line gate.



CHARLAS

De Seguridad

¿ES SU LÍNEA DE ADVERTENCIA UN PELIGRO?

Con la charla de seguridad de esta semana, me gustaría compartir una observación personal como consultor de seguridad. Hace un tiempo estaba realizando inspecciones de seguridad de varios sitios de trabajo de techado. Una cosa que muchos de esos sitios de trabajo tenían en común era que se usaba un sistema de línea de advertencia y un monitor de seguridad para la protección contra caídas. Mientras eso se haga correctamente, es una práctica perfectamente aceptable. Sin embargo, si se hace mal, puede crear un mayor peligro. Eso es lo que vi no solo en uno, sino en varios sitios de trabajo. Cada uno de los sitios de trabajo tenía un techo plano y una línea de advertencia erigida alrededor del perímetro del techo. Las líneas de advertencia se ubicaron a 6 pies del borde del techo y tenían banderas al menos cada 6 pies. ¿Hasta aquí todo bien, no?

Donde existía el peligro en estos sitios de trabajo en relación con el uso de líneas de advertencia, es cómo los hombres llegaron y salieron de la escalera, el área de elevación y el área de desecho de los techos. En todos estos sitios de trabajo, los hombres caminaron hasta la línea de advertencia, la levantaron y luego caminaron debajo. Tómese un minuto y piense

en los peligros que crea esta práctica a solo 6 pies del borde desprotegido de un techo.

Cuando levantas la línea de advertencia y caminas debajo de ella, ¿dónde están enfocados tus ojos? Al menos mientras se encuentra debajo de la línea de advertencia, es probable que esté mirando hacia abajo e incluso puede estar mirando hacia un lado para asegurarse de que no está deteniendo el resto de la línea de advertencia. Quitar su atención del borde del techo cuando está tan cerca no es una buena idea.

Ahora considere esto. ¿Alguna vez te has levantado rápido y te has sentido mareado o mareado? Eso puede suceder cuando se inclina y luego se levanta para pasar también por debajo de una línea de advertencia. No querrá marearse y marearse a unos pies de un borde desprotegido de un techo.

Si tiene un brazo lleno de escombros, herramientas o materiales para techos; o si está empujando una carretilla o un carro, levantar una línea de advertencia para caminar debajo es incómodo y podría hacer que gire o gire de una manera que genere una lesión por tensión.

Levantar y bajar repetidamente la línea de advertencia hace que se hunda. En poco tiempo, el hundimiento puede ser tan grande que la línea de advertencia (que está diseñada como protección) se convierte en poco más que un peligro de tropiezo que se cierne de 8 a 12 pulgadas sobre la superficie del techo.

DISCUTA CON TU EQUIPO

¿Cuáles son otros peligros asociados con levantar y caminar debajo de una línea de advertencia?

Si está utilizando una línea de advertencia como parte de su protección contra caídas en un techo, las normas de protección contra caídas de OSHA requieren que se garantice que los puntos de acceso, las áreas de manejo de materiales, las áreas de almacenamiento y las áreas de elevación estén conectadas al área de trabajo por una ruta de acceso formado por dos líneas de advertencia. Cuando la ruta a un punto de acceso no está en uso, se debe colocar una sección de la línea de advertencia a través de la ruta en el punto donde la ruta se cruza con la línea de advertencia erigida alrededor del área de trabajo para formar una especie de puerta de línea de advertencia.

THANK YOU

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