

SEPTEMBER 2021

# concrete openings

THE OFFICIAL MAGAZINE OF  CSDA™



**New England Contractor  
Sees New Opportunities  
with Remote-Controlled  
Demolition**

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**C**SDA had a good showing at the World of Concrete 2021 in June (postponed from January due to the COVID-19 pandemic). Erin O'Brien (Executive Director of CSDA) joined a cast of dignitaries including the Governor of Nevada and the Mayor of Las Vegas for the ribbon cutting ceremony for the grand opening of the new West Hall expansion at the Las Vegas Convention Center. It was the first major in-person post-pandemic trade show in not just Las Vegas, but the entire U.S. It was a treat to join in person with so many from our industry.

News of the COVID-19 Delta variant added a new wrinkle to the near future in-person meetings. We are still planning to have in-person meetings for the September quarterly board and committee meetings in Seattle and the December quarterly board and committee meetings in Nashville. We will add a hybrid option for internet-based attendance to both those meetings to hopefully increase participation for those unable to join us in person, for whatever reason.

The shift in our paradigm for how we communicate with each other from the COVID-19 shutdowns has opened brand-new opportunities for internet-based meetings on platforms like Zoom and Microsoft Teams. During the pandemic, we held many more committee meetings with very good participation from all parts of the country. Several members are currently working with the International Association of Concrete Drillers and Sawers (IACDS) to harmonize slurry collection, management and disposal standards using these internet-based systems. We are enhancing our ability to effectively share new techniques and technologies to better our niche specialty construction trade. The power of our association in bringing the best

knowledgebase of the industry together is a success that continues to drive our membership.

Online training has recently been launched in a beta format for members. The CSDA.org website has many details on these new training options. This includes the new online version of Cutting Edge (a prerequisite to the 101 course and the advanced 201 operator certification training).

We still plan on training in-person for hands on application lessons and physical skills assessment. Our Sawing and Drilling 101 training is currently scheduled for October 18-22, 2021, at the Husqvarna training facility in beautiful Olathe, Kansas. Our advanced Sawing and Drilling 201 Operator Certification training is currently scheduled for November 1-5, 2021, at the CSDA training facility on the campus of St. Petersburg College in beautiful Clearwater, Florida. There will be a GPR Certification training immediately following both trainings at the same locations (October 22 in Olathe, KS and November 6 in Clearwater, FL). Consult our CSDA.org website for registration materials and additional information.

Registration for our 50th Annual CSDA Convention and Tech Fair in Bermuda will be opening soon. Plan on joining us at the Fairmont Princess Hamilton Resort in Hamilton, Bermuda for this highly anticipated event March 29-April 2, 2022. Look for details and registration materials on the CSDA.org website. We have a lot to celebrate and knowledge to share. Our highly specialized niche specialty construction trade is focused and flourishing because of the involvement and passion of our members.

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## CONCRETE CASES



### New England Contractor Sees New Opportunities with Remote-Controlled Demolition



### GPR Keeps Workers Safe from a 13,000 Volt Shock

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# New England Contractor Sees New Opportunities with Remote-Controlled Demolition

**A**nation's buildings stand as a visual representation of its history. In New England, that history is written in stone and red-brick facades overlooking century-old neighborhoods. Recent trends are bringing people and businesses back to these urban centers, forcing developers

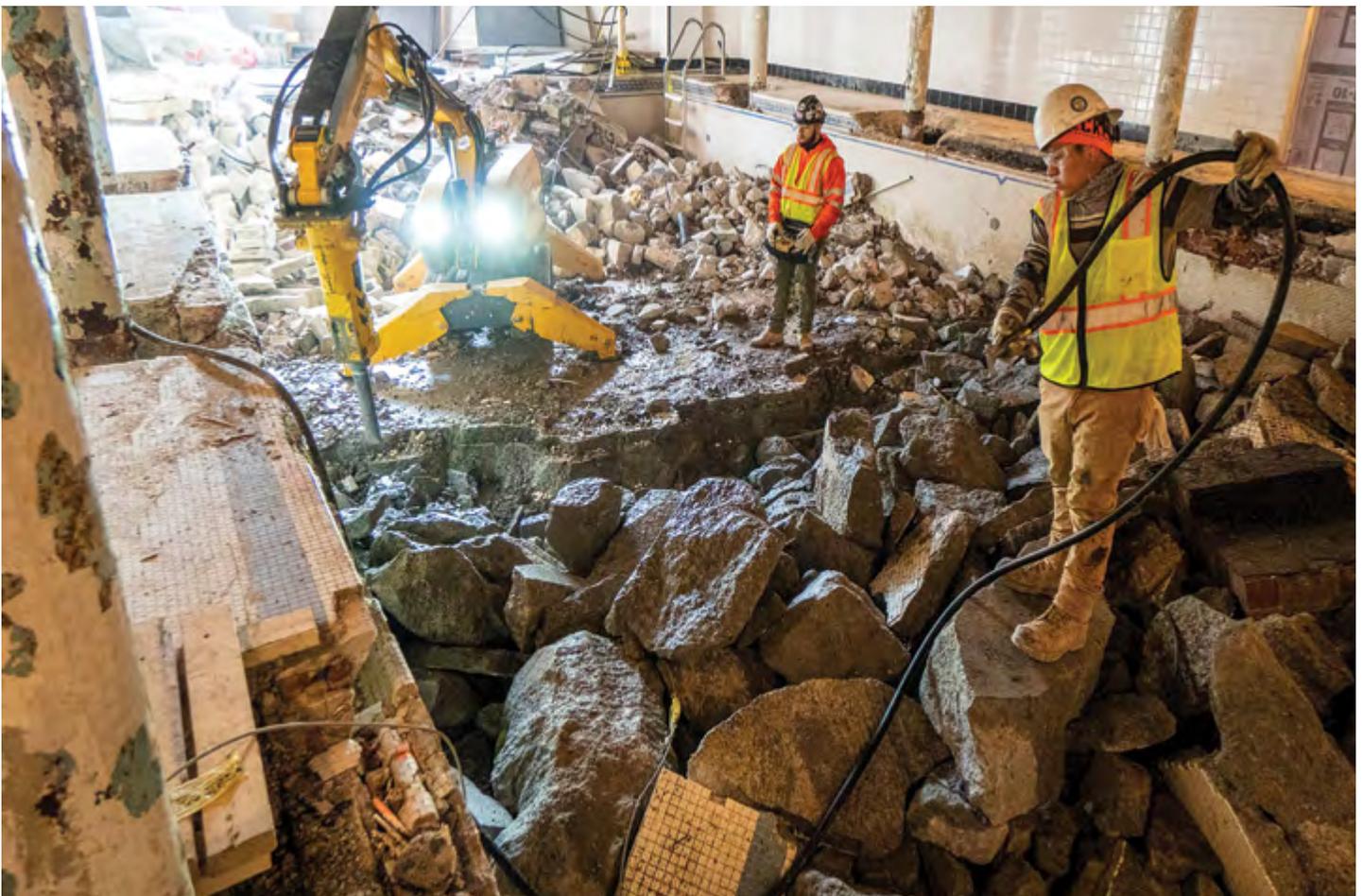
and city managers to find ways to reimagine spaces to provide modern conveniences with historic charm. This has given rise to several firms specializing in remediation and historic renovation/rehabilitation. Old buildings are rife with asbestos, lead and other hazardous materials. Additionally, previous construction wasn't designed to handle the weight of today's large equipment.

So, modern contractors — like ADEP Group, a rapidly growing minority business enterprise (MBE) — must find ways to keep employees safe while juggling limited floor loads and restricted machine access. These aren't the founding father's contractors. Instead, the next generation successfully combines experience, education and cutting-edge technology to tackle remediation and interior demolition. Faced with a full-scale interior demolition on a tight timeline, ADEP partnered with CSDA member Brokk to provide a robotic solution to one of the more challenging aspects. During the renovation of a 120-year-old YMCA facility in Beverly, Massachusetts, ADEP needed to remove a 36-inch-deep concrete pool in the basement of the building. With a Brokk 200, ADEP was able to reduce crew size in the confined space while increasing productivity 50% over alternative methods, allowing them to proceed to subsequent phases quickly for an on-time project delivery.

ADEP Group — short for American Demolition Environmental Professionals — is a demolition and remediation contractor founded less than a decade ago. President/Owner Kelvin Severino, who helms the fast-growing corporation, recognized a need in the local

market for a professional, organized and experienced renovation/rehabilitation response. “New England has a rich architectural history — many buildings from the late 1800s and early 1900s are still in use,” Severino said. “They were well-built. But contractors have learned a lot over the years, and some of the materials used aren't considered safe anymore, like asbestos and lead paint. New England developers like to make use of the rich history and attributes that these historic buildings have, so renovation and restoration have become very popular. Usually this involves a full interior demolition then rebuilding within the shell of the existing structure.”

When the Cabot Street YMCA project came up, ADEP realized it was the perfect opportunity to add a Brokk demolition robot to their fleet. The project was part of a \$22 million dollar renovation aimed at creating 67 studio-like apartments for low-income residents and those with developmental disabilities. The interior of the building needed to be completely gutted —including removal of a concrete pool, tucked away in a 1,300-square-foot room in the historic building's basement.



Access presented the key challenge. A mechanical demolition method capable of tackling the pool's 36-inch-thick concrete that was also compact enough to fit through a standard door was needed for this job. Additionally, the small room made for cramped working conditions, and they needed to limit crew size to maintain COVID-related social distancing, as well as limit confined-space liabilities.

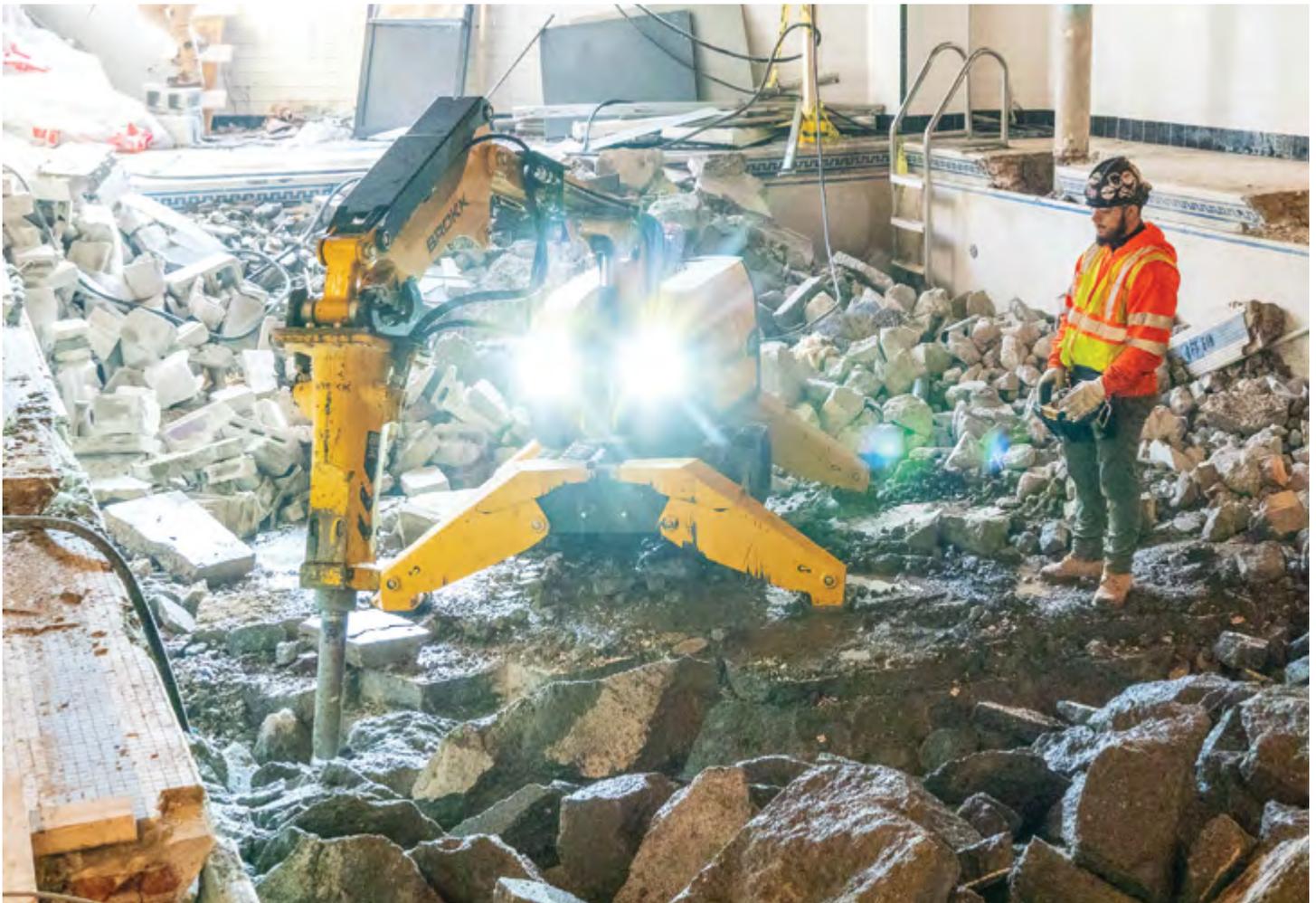
No matter how ADEP looked at it, traditional methods couldn't tick all the boxes for safe, efficient demolition of the 4,000 cubic feet (113.3 cubic meters) of concrete within the timeframe. Larger crews with handheld equipment were another option but filling the small room with 10 to 12 employees during a pandemic risked crew safety and jobsite shutdown. Management knew robotic demolition could provide the power and precision they needed.

It was the perfect robotic demo job — confined space, limited access, the need for lots of power in a small package. Severino reached out to Brokk and Bob McCabe, the company's Northeast Field Applications Specialist and Regional Manager who has more than 45 years of industry

experience and has worked daily with Brokk robots for 35 years. Together they assessed the project requirements and concluded a Brokk 200 was the right tool for the current job and a perfect fit with ADEP's growth goals. The 2.1-ton machine pairs with a 650-pound BHB 305 hydraulic breaker to deliver 450 foot-pounds per blow. Within 48 hours, the robot, McCabe and Matt Lyons, Brokk Training and Application Specialist, were on site to provide hands-on training to the ADEP team.

With their operator trained, ADEP was ready to begin demolition. The Brokk robot and mini excavator were lowered into the basement with a boom truck. Each machine had a dedicated operator as well as six additional crew assigned to the asbestos abatement of flooring throughout the building and selective demolition of the gym. To mitigate dust, ADEP used a combination of fans, water and a negative air machine.

"We knew the Brokk had an excellent power to weight ratio, but when we saw it on the job, it was still incredible," Severino said. "It cut through the concrete like butter, which





was good since the concrete ended up being 36-inches deep instead of the 24-inches from initial reports. Our operator was able to power through while maintaining pinpoint accuracy to work around footings and columns.”

A 7-foot by 11-foot breach in an exterior wall provided easy access for material removal. Once the Brokk broke apart the concrete, the mini excavator passed it through the hole to a Volvo 250 DL excavator positioned outside. The demolition was completed in just eight days with a crew of four – well ahead of schedule and 25% under their original budget. Severino estimates the Brokk saved 456 hours of labor on the job. Additionally, there were no complaints from tenants or neighbors.

“As a company, ADEP is always looking ahead,” Severino said. “Small, strategic crews keep our employees safe, most importantly, but they also reduce labor costs and liabilities so our business can continue to grow. Brokk demolition robots, combined with our experience, professionalism, and drive, give us the edge we need to keep moving forward.” CSDA manufacturer members like Brokk are in a unique position to help many contractors solve any type of problem a job presents!

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## COMPANY PROFILES

### Contractor ADEP Group

ADEP Group is a Minority Business Enterprise that offers turnkey solutions in environmental remediation and demolition. ADEP Group consists of hard-working, goal-oriented men and women that come together to provide the highest quality service to any project. As a team they are honored to have the opportunity to complete each project within budget and on time, while keeping their environment, employees, and the public safe. From beginning to end their team will work with you until the project is 100% complete to your satisfaction.

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### Methods Used

Robotic Demolition



# GPR Keeps Workers Safe from a 13,000 Volt Shock

The average voltage in a standard household socket, 100-250 volts, is enough electricity to be fatal if a person is shocked. In Phoenix, Arizona, new infrastructure on the existing American Express Center was an exciting prospect with a major complication—a large conduit inside the high voltage duct bank that powered the existing buildings, energized with 13,000 volts.



General Contractor Layton Construction was working on the expansion of this center, which included the addition of a fourth building and an additional parking structure. As the existence of the conduits was known, Wilson Electric was working in conjunction with GC Layton. It was determined that of the two conduits, one was pumping out a whopping 13,000 volts to power the existing three buildings as well as the parking structures, and the other was empty. CSDA contractor American GPR was called out by Wilson Electric, a long-time customer of theirs, and asked what could be done to ensure safety on this project. Joe Long of American GPR agreed to scan the bank to locate the conduits and demonstrate the accuracy and credibility of their GPR machinery and reporting.

Under close supervision of the Wilson Electric safety department, Joe Long performed the preliminary survey of the area to be scanned. The scan revealed that the concrete for the slurry duct bank had been poured too thick where the loading dock driveway crossed over it. The high voltage banks are built to encase the energized conduits for everyone's safety, and with the duct bank poured as thick as it was, there was no space as required between it and the concrete driveway. This meant that the top of the duct bank had to be lowered to accommodate the concrete pavement crossing over without endangering the workers or interrupting the service to the tenant.

Although a small electromagnetic frequency (EMF) signal could be detected from the top of the duct bank, the



depth of the duct bank was beyond what American GPR's equipment could read. A backhoe was used to excavate the duct bank with safe sloping so each side could be accessed to read the EMF signal from the hot side. American GPR used the GSSI StructureScan Mini XT with Linescan applied for EMF detection. Doing so revealed the air void inside the conduits, approximately 12 inches in from each side. The StructureScan Mini provided very clear readings, despite the rough and uneven side surfaces of the poured-in-place slurry duct bank. The conduit location was marked with heavy bright orange paint in case the trenches would have to be backfilled, and to ensure removal could take place. The duct bank was approximately 3.5 to 4 feet thick, a little over 3 feet wide and the work area on each side was about 35 total feet of duct bank.

On Long's second trip to the job site, the site was excavated and cleaned up, providing much better access and ability to mark the surfaces. American GPR was able



to answer all questions and concerns posed by the GC and other personnel on site. The excavations were refilled to allow access to the work site, and the readings were shared in real time with the electrical foreman and safety officer. American GPR was again able to detect the conduits and confirm the readings were clear and shared the results with all the supervisors until everyone was comfortable with the results. After the conduits had been located and marked by Long, a laborer from the electricians' crew revealed where the duct bank had been chipped out months prior before it was energized. Slightly exposed in small window was the conduit that carried all 13,000 volts, only 12 inches from the excavation, confirming that the marks were exactly right. As a precaution, no operator on site got closer than 12 inches away from the conduit, and all remaining work would be performed at least 2 feet away from the encased conduit. The accurate location of the power was critical in ensuring that the workers would be safe, and the power would be uninterrupted.

Feeling confident with American GPR's readings, the safety department submitted the report and a plan of action to proceed to the General Contractor, ensuring no danger to operators as well as no risk of interrupting service to the three American Express buildings. Layton Construction wanted to be included in the inspection because of the enormous liability that this much electrical





power entails, and they were also satisfied with the plan and approved the proposal.

Locating the conduits before removing any concrete was the only way to safely accomplish this job. Beginning demolition of the slurry duct by cutting or breaking the concrete prior to scanning would be incredibly dangerous and needlessly put operators in jeopardy. The slurry duct is there to warn of the presence of high voltage and stop any equipment from reaching it unexpectedly. Joe Long of American GPR said about this job, “Contact with 13,000 volts would have been fatal and the interruption of power to this major financial institution would be a huge liability, not to mention an embarrassment to these professional companies. None of us take unnecessary or unreasonable risks, ever.” With everyone involved satisfied with the readings and resulting report, this job was safely completed with no injuries or incidents. This CSDA contractor shows why GPR scanning is often the best choice in locating possible dangers in concrete slabs and structures, and why hiring a professional and experienced operator is paramount for safety and success.

## COMPANY PROFILE

American GPR is a CSDA Certified Company with a single employee, who is also a CSDA Certified GPR Technician with over 30 years of experience in the concrete cutting and demolition industry. American GPR has been serving Wilson Electric for over 6 years throughout Arizona. American GPR has been a CSDA member since 2016.

## RESOURCES

### General Contractor

Layton Construction

### CSDA Contractor

American GPR Services

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### Methods Used

GPR Scanning

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## Using Hydrodemolition to Fix 5 Common Concrete Errors

by Keith Armishaw

**P**ouring concrete is a complex process. One slight miscalculation on any of the numerous variables can spoil a whole batch. And unfortunately, mistakes aren't always evident right away. While concrete errors can certainly cause problems for timetables and budgets, advances in robotic concrete removal methods are making them easier to fix — without demolishing everything and starting over. For large, multi-phase construction projects, Hydrodemolition offers a fast, cost-effective solution that can minimize the overall impact of concrete errors — often getting contractors back on track for on-time project delivery.

Here are five common concrete errors Hydrodemolition can help solve.

### #1 – FORMWORK FAILURE

Whether it's a minor shift or a full-on blowout, formwork failures can spell disaster in terms of lost productivity, since correcting it often relies on handheld equipment. There are several downsides to this approach. First, it's slow, backbreaking work that takes a huge physical toll on crewmembers. Additionally, heavy vibrations damage rebar and leave microcracks throughout the remaining concrete, which leaves contractors with no choice but to demolish most, if not all, of the structure.

Hydrodemolition is an impact-free concrete removal method that is up to 25 times faster than jackhammers and other handheld equipment. Using high-pressure water jets as powerful as 40,000 psi, Hydrodemolition blasts away layers of concrete, cleaning and descaling rebar in the process. This method also eliminates the risk of microfractures, creating a structurally sound foundation for any necessary concrete repairs. This high-tech, robotic solution also minimizes labor requirements, freeing up the rest of the crew to focus on other tasks — like getting concrete forms back in place — to keep the job on schedule.

For one contractor dealing with a formwork shift on a small overpass project, Hydrodemolition provided an ideal solution.



While part of the pour met specifications, the contractor needed to remove part of the deck and abutment to a depth of 3 feet (.9 meters) and repour to correct the shift. Reaching the necessary depth with jackhammers wasn't possible without destroying rebar and overall structural integrity. Using Hydrodemolition, the contractor was able to complete removal with minimal impact on the structure.

### #2 – CONCRETE SEGREGATION AND OTHER BATCH PROBLEMS

Another contractor relied on Hydrodemolition's selective removal capabilities to help solve a difficult concrete segregation problem. When water infiltrated the forms and washed out the cement paste, leaving just the aggregate behind, the contractor was able to set parameters for the Hydrodemolition robot that removed just the segregated material. The sound concrete was left intact and ready for repair.

Let's face it, a breaker doesn't have a lot of finesse. In addition to damaging rebar and causing microfractures, this method can't differentiate between segregated and sound concrete. In cases of obvious segregation, this might not be as much of a concern. But when removing poor-quality concrete in close proximity to good concrete, it might result in contractors removing too much or too little material.

Hydrodemolition robots allow contractors to adjust the robot's stroke to control the depth of cuts and vary the pressure of the water jet depending on whether they

are removing loose, deteriorated concrete or lowering the sound concrete to a pre-determined depth. This enables pinpoint accuracy in concrete segregation and bleeding situations. Once the parameters are set, the robot meticulously maneuvers over the designated area removing material according to set values. In some situations, this might include taking out everything to a specific depth. In others, it might involve demolishing only weak or deteriorated concrete by adjusting Hydrodemolition robot's settings, such as stroke or flow. Jackhammers and other methods cannot match this precision.

Additionally, the Hydrodemolition robot's selective removal capabilities can provide a cost-effective solution for other concrete mix problems. For example, during a recent bridge construction, delivery of a bad batch of concrete threatened to derail the entire project. The concrete was already setting as crews poured. Vibrating and other correctional methods were unsuccessful, and the concrete fell 13.8 inches (350 millimeters) short, leaving a mesh of exposed rebar. The contractor used Hydrodemolition to selectively remove the poor-quality concrete without damaging rebar or the overall stability of the structure. The productivity of the Hydrodemolition robot meant correcting the concrete error didn't impede the overall schedule of the project. Because they were able to save the rebar and existing structure, the cost of repairs was minimal.

### #3 – OFF-SPEC IMBEDDED MATERIALS

Sometimes the concrete error isn't a result of the concrete mixture itself. In situations where off-spec materials such as rebar or anchors need to be removed from set concrete, Hydrodemolition provides the power and precision necessary for fast, efficient removal.

In addition to setting parameters for stroke and pressure, cutting-edge Hydrodemolition robots can be programmed to cut geometric shapes, such as circles, triangles, squares or parallelograms. This allows contractors to remove just enough material to reach the imbedded item, whether it's just below the surface or several feet down.

For example, one contractor discovered they needed to replace bolts on anchors imbedded 3.3 feet (1 meter) into the concrete. To reach that depth with a jackhammer would require a large hole — not to mention the resulting microfractures and damage to rebar and anchor. With a Hydrodemolition robot, they were able to cut circular holes — just big enough to free the anchors — minimizing removal and increasing efficiency of the repair project. The contractor was able to correct 12 to 15 anchors in 12 hours using a Hydrodemolition robot.

### #4 – CONCRETE REPAIRS TO EXISTING STRUCTURES

Hydrodemolition also provides an efficient solution for fixing concrete errors in existing structures — whether the repair is needed because something went wrong in the initial construction or as part of a renovation or rehabilitation, such as removing fire damaged concrete.

One contractor tasked with removing an 8-foot-thick concrete pier on an active construction site for a hydropower plant was able to remove 4,944 cubic feet (140 cubic meters) in just 53 days, averaging 141 cubic feet (4 cubic meters) in a 12-hour shift. Once the demolition was complete, the repoured concrete benefited from the superior bonding surface created by the Hydrodemolition process.

The main reason for this is the absence of microfractures thanks to the impact free process. Hydrodemolition also provides a cleaner surface, which eliminates the need for additional steps, such as sandblasting after using a jackhammer. The Hydrodemolition process also leaves behind a rough, irregular surface. These combined features create the perfect profile for superior bonding strength,

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resulting in repairs that can last up to three times longer.

Additionally, Hydrodemolition is recognized as one of few methods capable of achieving Concrete Surface Profiles 3 through 10, making it a versatile option for surface preparation applications. For example, a contractor could tackle a concrete water tank where old coatings need to be removed and the surface roughened to apply new paint or epoxy. This might require a CSP 3. On a subsequent project, where a bridge pillar needs reinforcement, the same contractor might be asked to provide a CSP 8 for the application of new concrete. This wouldn't be a challenge with a Hydrodemolition robot.

### #5 – COMPRESSIVE STRENGTH FAILURE

By now it should be clear that Hydrodemolition is the ideal solution for concrete fixes that require productivity and precision. And nowhere is that more necessary than when facing compressive strength failure. Once a failure has been identified, Hydrodemolition allows contractors to quickly go in and remove only the weak material without jeopardizing the overall

structural integrity of remaining concrete or damaging rebar. When removal is complete, they're left with a superior bonding surface that will provide a lasting correction.

Additionally, Hydrodemolition robots from industry-leading manufacturers are highly maneuverable, allowing contractors to tackle compressive strength failures wherever they occur — on horizontal, vertical or even overhead surfaces. Some manufacturers also offer additional equipment that extends the robot's reach or allows for specialized removal applications such as around columns, inside tunnels or under water. Lightweight, highly adaptable models are also available that make confined space applications safer and more productive.

Concrete errors can happen to anyone. Being ready with a fast, cost-effective solution allows forward-thinking contractors to maintain productivity in the face of unexpected delays.

*Keith Armshaw is the business development manager for CSDA member Aquajet's North American subsidiary. He has more than 25 years of industry and leadership experience.*



# Cardinal Sin—Construction Contractor’s Alleged Failure to Abate OSHA Citations Results in Big Penalties

By: Mark A. Lies, II and Adam R. Young



**S**ynopsis: By ignoring the terms of a settlement agreement it had with the Occupational Safety and Health Administration (OSHA), a New Jersey roofing contractor now faces more than \$600,000 in penalties after numerous citations for allegedly failing to abate 2020 OSHA citations.

Employers often receive OSHA citations. Any citation the employer receives must be “abated,” meaning that the violation must be corrected to comply with the law, within 20 days of a settlement, unless a longer abatement term is prescribed by the settlement agreement. OSHA regularly conducts follow-up inspections to ensure abatement. Failure to abate can be fined

with huge penalties — \$13,653 per violation, per day beyond the abatement date. For example, just 60 days after the abatement date, four citations could result in a fine of more than \$3,000,000.

OSHA’s Hasbrouck Heights, New Jersey Area Office recently penalized a construction employer following a series of inspections at multiple worksites. In December 2020, OSHA allegedly observed the contractor’s employees working on a residential roof project without required fall protection, the most commonly cited occupational safety issue. In January 2021, OSHA visited another work site where “inspectors identified unsafe use of ladders and failures to ensure that workers used head, eye and fall protection.”

These two inspections resulted in two willful, four repeat and three serious citations and \$420,521 in penalties. According to OSHA, the “contractor ... agreed to make safety improvements after federal safety inspections in 2019 identified nine violations with proposed penalties of \$121,687.” The employer then “violated its settlement agreement with the U.S. Department of Labor. Following inspections in 2020 and 2021, the company now faces \$600,741 in penalties for 10 more violations.” The new citations include a \$180,220 citation for failure to abate one Serious violation.

The huge citation was coupled with a public relations disaster when OSHA

released a damaging press release: OSHA Area Director Lisa Levy excoriated the contractor's alleged "failure to honor its agreement with OSHA and knowingly put workers at risk of serious injuries or worse is inexcusable."

Any allegedly non-compliant conditions that OSHA raises during an inspection should be promptly abated during the inspection (if possible) to reduce the probability of citations and to secure a Quick Fix penalty deduction. If OSHA issues citations, employers would be wise to carefully consider what citations they accept, and how those citations can be abated. Abatements can be explicitly detailed in settlement agreements, to ensure that all parties have the same views of abatement. Citations must be abated within 20 days of the settlement agreement becoming a final order, and additional "enhanced" abatements — that do not correspond to specific citations — should also be addressed promptly. If OSHA raises concerns about abatements that were submitted, employers should be responsive and prompt to get any issues addressed.

Under OSHA's Violation-By-Violation penalty policy, a failure to abate identified in a subsequent follow-up inspection could also result in an "egregious" type of citation where OSHA decides to separately cite each piece of equipment that is non-compliant, each employee who may be non-compliant (for example, failure to wear PPE) or each policy that may be non-compliant instead of "grouping" similar instances of violations. In these circumstances, the employer will also be identified as a Severe Violator and become subject to OSHA's Severe Violator Enforcement Program.

Employers should consult with outside counsel on how to structure settlement agreements and avoid large Failure to Abate citations like the one received here.

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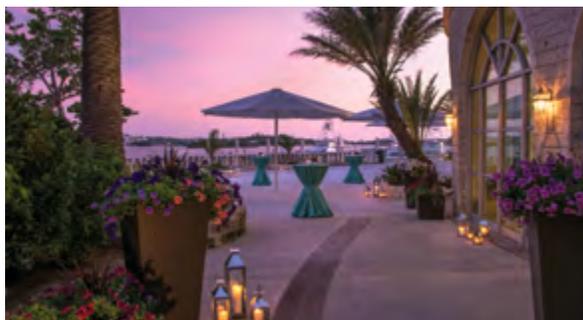
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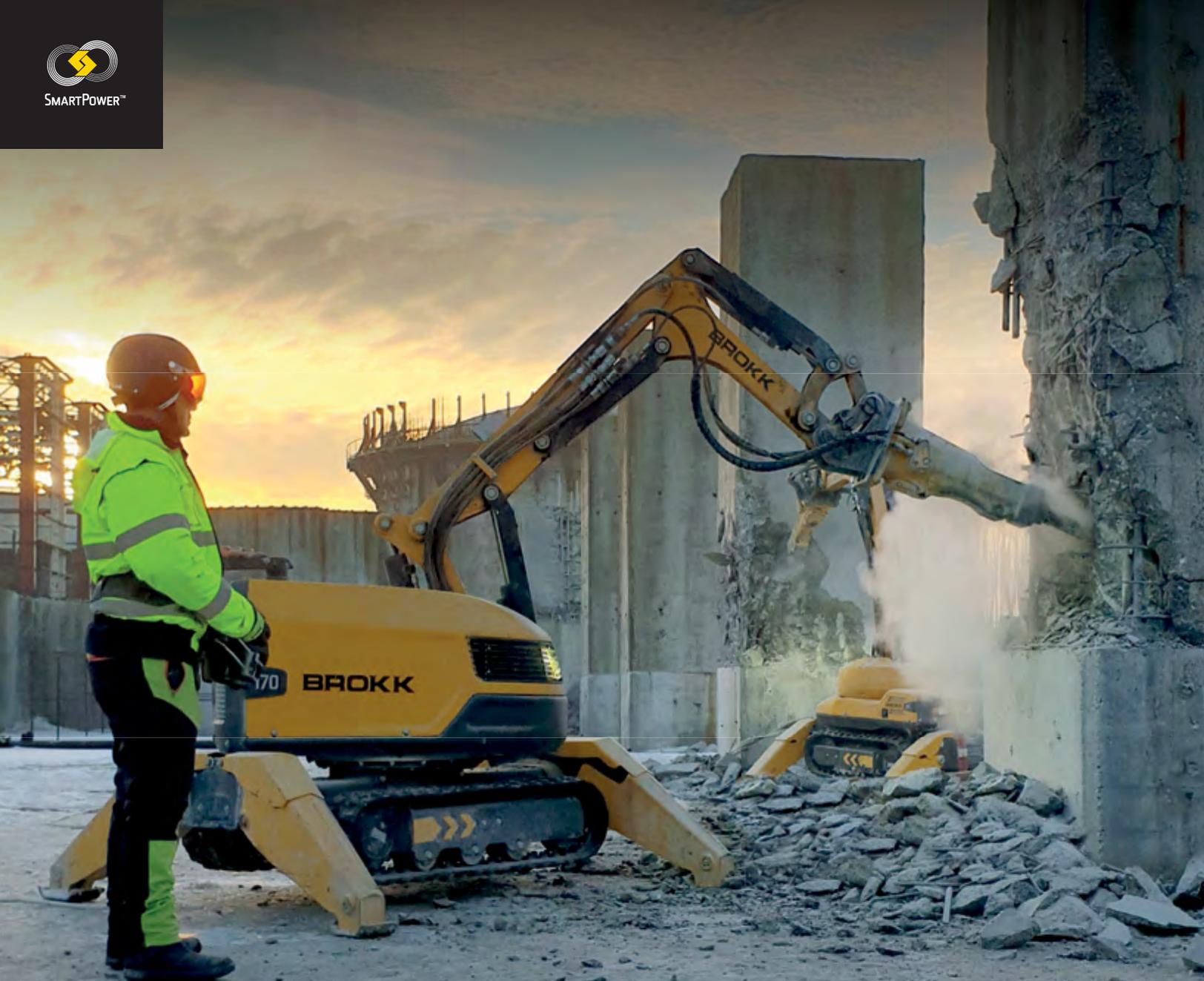


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**MICHAEL FINDEIS**  
*IACDS President*

**W**e have almost made it through the second summer of the pandemic, yet we are now dealing with the 4th and 5th corona waves despite a broad vaccination. But think positive is motto these days, and that's why we're going into the autumn in a positive mood.

That is why I am particularly pleased this year that the IACDS will be addressing the topic of slurry management with a focus paper. As an international association that is committed to the continuous improvement of the working conditions of the employees and the reduction of environmental pollution in and by the service companies, I am very pleased that we are tackling this topic now. In autumn, there will be another structural survey with the aim of transparently documenting and comparing global developments in our industry. As in the past year, I would ask you to take part in this survey in large numbers. Participation is voluntary and of course anonymous. The results will be published on our website at the end of the year.

Also this year, there will be a yearbook in which the member associations and manufacturers participate on the subject of innovation. I am looking forward to many exciting and interesting reports. This year the annual general meeting of the IACDS took place virtually for the second time. We would like to thank Anders Anderson, the representative of the Swedish Association for his work as Treasurer and warmly welcome Linda Dahlin as the new representative of the Swedish Association.

On September 23, the annual general meeting of the German trade association will take place in Willingen without the normally accompanying trade fair (BeBoSa).

There is a change in the board of directors. After more than 12 years, Thomas Springer is handing over the baton to Manfred Witzke. Thomas Springer has shaped this association like no other. He was largely responsible for the creation of the building mechanic profession. It is also thanks to him that the German association was able to build a museum in Hamm with the help of the training center there. And it is also thanks to him and his vision of a tool-free drill bit connection that the PQ-6 has been fully developed and introduced. Thomas Springer has always been a friend and advocate of international exchange and has always supported the IACDS and its work. For this I would like to say "Thank you Thomas" very loudly at this point. With Manfred Witzke we welcome a man from the practice who can refer to many years of successful board work.

Last but not least, I would like to refer to the "Diamond Award", which will be presented in two categories at Bauma next year. The contractors apply in the category "Best Job" and the manufacturers for the category "Best, Innovative Product". As always, information on this and our work can be found at [www.IACDS.org](http://www.IACDS.org).

Stay healthy and hopefully see you next year.

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Tech Talk is a regular feature of *Concrete Openings* magazine, focusing on equipment, maintenance and technical issues of interest to concrete cutting, polishing and imaging contractors. Readers wishing to have a particular subject addressed can call or email CSDA with their suggestions at 727-577-5004 or editor@concreteopenings.com.

## Choosing the Correct Blade RPM for the Application

By Austin Beachler and Garry Henderson

**T**here are an exceeding large number of variables involved with diamond blades cutting safely, quickly and effectively. Human factors, equipment selected and the condition of the equipment, material to be cut, blade selection, the amount of water and the correct revolutions per minute chosen based on diameter of the blade or core bit all will affect what the blade does. The combination of these factors will determine the cost and profitability achieved on any job. Not all of these factors are able to be controlled, but the revolutions per minute (RPM) of the machine is one that can. If the tool rotates too slowly, it can drag and destroy the diamonds' ability to cut. This can lead to excessive heat by the metal bond grinding against the cutting material. If the RPMs are too high, then it can cause the blade to skip, because the diamonds are polishing over, again leading to excessive heat being generated on the blade, which can cause loss of tension or lead to core cracking. Cracking of the segments could lead to breakages or catastrophic failure of the tool. This will slow down your operation and cause higher costs of materials and potential machine damage.



### Choosing the Correct RPM

Assuming you have a variable speed gearbox, it is important to set the gearbox to the correct gear for the blade diameter to achieve the correct RPM. The blade will perform optimally at the correct RPM recommended by the equipment manufacturer for the diameter of the blades being used. Once the RPM is dialed-in, it still might need adjusting depending on if your cutting media changes. If you do not have a variable speed gearbox, it may be worth adjusting the belt sheave diameter, if possible, to get the correct RPM or SFM, if you can still reach your depth of cut. RPM of the machine are really a measure for the SFM, or how fast the diamond segments are running on the cutting material. The formula below shows how to calculate the SFM from the RPM on the machine. ANSI standard has a maximum safe operating SFM for any blade of 16,000 ft/min.

$$SFM = \frac{RPM \times D\pi}{12}$$

SFM= Surface feet per minute

RPM= Revolutions per minute

D= Diameter of blade or core in inches

If you change blade size and keep the same RPM on the machine, the SFM will still change. Any blade size change should come with an adjustment of the machine speed to make sure the SFM is in the correct range for what you are cutting.

When you start a job and are unsure about the RPM needed, refer to the charts below:

Blade Diameter	RPM Target Range Hard Aggregate, and/or Heavy to Medium Steel	RPM Target Range Soft to Medium Aggregate, and/or Light to Medium Steel	Max RPM
12	2764-3055	3177-3511	5096
14	2369-2618	2723-3010	4368
16	2073-2291	2383-2633	3822
18	1843-2036	2118-2341	3397
20	1658-1833	1906-2107	3057
24	1382-1527	1588-1756	2548
26	1276-1410	1466-1621	2352
28	1184-1309	1361-1505	2184
30	1106-1222	1271-1404	2038
32	1036-1146	1191-1317	1911
36	921-1018	1059-1170	1699
42	790-873	908-1003	1456
48	691-764	794-878	1274

Core Diameter	RPM Range Min to Max
2	1187-1989
3	791-1326
4	593-995
5	475-796
6	396-663
7	339-568
8	297-497
9	264-442
10	237-398
12	198-332
15	158-265
20	119-199
24	99-166

All blade manufacturers will have a recommended RPM chart similar to these that can be used as a reference. You normally want to start out at a lower RPM speed to see how the blade cuts, then adjust

higher to get the life you are looking for. The bit or blade should stay rough to the touch with well exposed diamonds if the speed and bond are correct. Always work with your blade or bit supplier and give as much information about the cutting material as possible to get the best tools for the job.

Harder cutting media and higher steel reinforcement will need a lower cutting RPM than softer cutting material and less steel reinforcement. The difference could be around 10-25% less RPM with harder media.

### Troubleshooting

Glazing or polishing of the diamonds can happen if the RPM of the machine are too high for the conditions. When this happens, the machine may start to shake or bounce more than usual. If you feel this happen, pull out the blade and check the roughness of the segments. If they feel smooth, you can redress them with cutting a concrete block or cutting in something abrasive. When you start cutting again, back down on the RPM and see if that helps avoid the issue.

Skipping and skating can happen if the RPM are too low, and the diamonds are being crushed. If you pull out the blade or bit you should be able to see missing diamonds or less diamonds on the surface. The feel should be smooth to the touch. You should be able to put it back in the cut and increase the RPM and it should open the segments back up and start cutting better.

If the blade or bit is needing constant attention with redressing or RPM change, then it may be that the bond is not quite right for the material being cut. If that is the case, reach out to your supplier and see if they have something more suited for the job.

If you use diamond tools on a regular basis with alternating sizes of blades or cores, it is suggested to get a machine with a variable speed capacity or consider altering your machinery to have that capability. This will allow you to get more out of your blades or bits and maximize your profit on the jobs. It is also suggested to verify the RPM of the machine with tachometer, which can be purchased for around \$30, to help avoid unwanted issues with machinery or cutting.

*Austin Beachler is a Manufacturing Engineer with CSDA member DDM Concut Diamond Tools, based out of Lilburn, GA. Garry Henderson is the National Sales Manager for DDM Concut Diamond Tools. Garry can be reached at [ghenderson@ddmconcut.com](mailto:ghenderson@ddmconcut.com)*

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## Upcoming training classes

**Sawing & Drilling 101** in Olathe, KS October 18-22,  
**Operator Certification 201** in Clearwater, FL November 1-5  
**GPR Certification** in Olathe, KS on October 22  
and Clearwater, FL on November 6)



## Husqvarna Construction Launches a New Elite Cut Generation of Diamond Blades

The new generation of Elite-Cut diamond blades is developed for cutting specialists who demand top performance in their diamond tooling. By combining two innovative segment designs - the Exo-Grit and Z-Edge - the new blades have increased cutting times and blade life.

This new generation of Elite-Cut diamond tooling was developed for contractors who spend most of their day cutting concrete and can feel the difference between a low performing and high performing blade.

Husqvarna developed the Elite-Cut diamond tooling using two segment designs the brand-new Exo-Grit and the Z-Edge. This created a series of diamond blades that cut smoother, faster and lasts longer than anything before it.

Smarter features to keep operation safer to reduce the risk of accidents related to pinching and/or kickbacks, the blades have Smarter Features. These clear, visual indicators give the contractor instant feedback on the blade's wear, side clearance, direction of rotation, cutting depth and intended application.

The new Elite-Cut range uses three different segment types.

Exo-Grit Z-Edge segment gives the segment a controlled active surface, enabling smoother and more efficient cutting. This also helps to extend the speed of the blade, while also improving slurry evacuation.

Flat Exo-Grit segment helps increase the life of the blade by minimizing the segment's friction against kerf walls, while also improving slurry evacuation.

Flat Exo-Grit Plus segment is designed to increase the blade's life by protecting the core from excessive wear when cutting in abrasive materials.

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## Screening Eagle Launches New Ultrasonic Method for Pile Testing

At the recent #KEY21SETInspectionTech Keynote and Product Launch event, Screening Eagle introduced a brand-new multi-application impact echo testing device, specifically focused on the inspection and integrity assessment of concrete piles - the Pundit PI8000.

The Pundit PI8000 was released for defect detection, slab thickness measurements and testing concrete piles with a single sensor and a single app.

Concrete piles are vertical structural elements which are commonly used when large loads need to be transferred further down into the ground. The integrity of concrete piles might be compromised by defects occurring at different stages and could lead to catastrophic consequences. Therefore, conducting preventive testing before the construction process continues is vitally important.

The small but powerful PI8000 has been carefully designed to perform in the toughest conditions while being ergonomically optimized to provide a comfortable experience for the user. The 2-in-1 patented design supports both pile integrity testing and impact echo testing in one sensor for increased versatility and efficiency.

Together with the PI8000, the Pundit Impact software delivers an intuitive and efficient workflow with app assisted checks and seamless comparison of multiple piles directly from the construction site. The Pundit Impact app brings data visualization to a whole new level with the flexible heatmap for instant uniformity assessment.

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## Brokk Relocates Washington State Facility for Increased Service

Brokk, the world's leading manufacturer of remote-controlled demolition machines, relocates its Monroe, Washington headquarters, consolidating service for customers in western North America. The move brings administration, sales, training, parts and service under a single roof for better customer response and a more streamlined operation. The new facility provides an additional 7,000 square feet (650 square meters) over the company's former locations, creating more room for in-house mechanical training for customers. The move also increases equipment and parts inventory for both Brokk demolition robots and Hydrodemolition equipment from sister company Aquajet, providing greater availability and faster delivery throughout the region. The new facility will function as the North American headquarters for Brokk and Aquajet and the main parts distribution center for North America. The address is 17321 TYE Street SE, Suite B, Monroe, WA 98272.

"Brokk has grown exponentially in North America over the years – expanding to include three facilities and a sales network that reaches every corner of the continent," said Lars Lindgren, president of Brokk Inc. "We're always looking for ways to better support our customers, such as continued training. The new facility gives us ample room to stock more inventory and offer more services to better serve our West Coast customers."

The added space at the new facility allows Brokk to increase in-house training offerings for both robotic demolition and Hydrodemolition equipment. Brokk has always offered on-site training with each machine commissioning and customized training thereafter through their facilities in Washington, Stanhope, New Jersey, and the Demonstration and Service Center in St. Joseph, Missouri. The new facility accommodates classroom space and a state-of-the-art maintenance bay, similar to the amenities available at the Demonstration and Service Center. This opens up greater opportunities for personalized in-depth mechanical training on in-stock Brokk and Aquajet equipment from an experienced technician. With the relocation, West Coast customers will now have convenient access to courses tailored to their team and unique applications to increase safety, productivity and machine utilization.

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## ASCE Statement on Bipartisan Infrastructure Framework

The American Society of Civil Engineers (ASCE) is encouraged by today's bipartisan agreement on an infrastructure framework that includes over \$550 billion in new investments to revitalize the nation's road, transit, water and electric grid.

These investments will help address our nation's ten-year, \$2.59 trillion infrastructure funding gap that was identified in ASCE's 2021 Report Card for America's Infrastructure, which assigned our nation's infrastructure a grade of 'C' across 17 categories, most of which are addressed in this plan.

Deteriorating infrastructure deficiencies is costing each American household on average \$3,300 per year if swift action is not taken. This bipartisan framework could mitigate those losses. American families and businesses are counting on Congress to work together to deliver safe roads and bridges, clean drinking water, reliable electricity, and climate-resilient communities.

We commend this group of Senators for their leadership and urge the full Congress to act quickly on the agreed upon framework and pass legislation.

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## Vacuworx Introduces Online Training Program for RC Series

The Vacuworx commitment to safety does not end with product development. Recognizing that

implementing and enforcing safety protocols can sometimes be quite difficult, especially amid rising costs of doing business, Vacuworx has introduced an industry-leading training program to provide unparalleled access to information to help ensure that dealers and contractors are able to use and service its equipment correctly and safely.

The new online Vacuworx Training Center is available to anyone who operates or services Vacuworx Vacuum Lifting Systems through the company's website (vacuworx.com). The self-guided program currently includes five modules, each with course certifications, focused on the RC Series lifters including Installation, Daily Operation Checklist, Operation, Maintenance and Troubleshooting.

The overall goal of this program is to provide convenient access to training at any time. It enables customers to quickly educate new hires rather than waiting to schedule in-person training from Vacuworx as well as standardize instruction for the entire team.

According to Vacuworx owner Bill Solomon, "We are constantly looking for new ways to make good on our promise to deliver the safest product for our customers. And we realize that part of that equation is making sure the user knows how to operate and take care of the machine properly. This new program allows us to be a resource to our customers whenever and wherever they need training."

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### Concrete Scanning Course on SensoftU

SensoftU, launched one year ago, is an innovative, online learning platform for advancing GPR education. We are proud to add another course to SensoftU: Concrete Scanning with GPR.

This course focuses on the use of GPR for scanning concrete. Like the other courses on SensoftU, it features user interactions to improve learning and retention of key concepts. While still providing the necessary theory and operational information, this course emphasizes data examples to illustrate the various situations that concrete scanners can encounter in the field (post-tension cables, pan decking, beams etc.). Upon completing the course and obtaining a passing grade, the user can print a certificate of completion.

SensoftU was created to augment our existing training offerings, giving our customers additional options for learning. Hundreds of people have logged into www.SensoftU.com to further their GPR knowledge in a convenient and cost-effective way. The feedback has been very positive: "Videos and animations clearly show the concepts being taught", as one user described what they liked about SensoftU. Another user commented that "in a very short time, a full learning package was provided". As to why they took courses on SensoftU, "not having to travel" and "progress at my own pace", topped the list of reasons.

There are three other structured courses on SensoftU: Utility Locating with GPR, IceMap™ and Rescue Radar™. These courses were developed following years of experience teaching people about the use of GPR for a variety of applications. All these courses aim to recreate the experience of live, in-person courses, using videos and interactions. It has the added advantage of allowing users to progress at their own pace, and at their schedule.

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**www.sensoft.ca**

### Screening Eagle Presents the New Wave of AI-Powered Ultrasonic Innovation

The Pundit PD8050 was released to complement Screening Eagle's multi-technology portfolio and improve the safety of concrete buildings, bridges and structures. As demonstrated at the keynote event, the multi-technology approach is the key to having the full picture of information needed to accurately assess the health condition of concrete. With this unique ultrasonic imaging system, users benefit from high-resolution 3D imaging, artificial intelligence, and augmented reality for superior data clarity.

After listening to their customers, the company developed the sensor to be 30% lighter than previous Pundit ultrasound models and far lighter than anything else available today. This first of its kind innovation will benefit many inspection engineers who may have to carry several technologies on-site such as Ultrasound and GPR. They can be more agile, getting the job done faster and with a richer set of inspection data.

Some unique applications of the Pundit PD8050 include detecting voids and delaminations, measuring thickness of tunnel linings, defect detection in mass concrete nuclear containment structures, detecting poorly grouted tensioning ducts, concrete strength and uniformity testing.

Combined with the Pundit Live Array app, the PD8050's AI positioning system and immediate data visualization with 2D, 3D, heatmap and AR views, allows users to expand their inspection capabilities in ways never done before. The ever-evolving software is fully integrated with Screening Eagle Workspace and is set for some further exciting updates later this year.

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**Brokk Hires Midwest Regional Sales Manager**

Brokk, the world's leading manufacturer of remote-controlled demolition machines, announces Chad Diacek as its Midwest regional sales manager. Diacek manages sales for both Brokk robotic demolition machines and Aquajet Hydrodemolition robots. He provides support to customers throughout Illinois, Iowa, Wisconsin, Minnesota, South Dakota, North Dakota, Nebraska, Kansas and Missouri.

"Chad has worked in demolition and rental industries for five years and has spent a portion of that time educating customers on the benefits of electric-powered equipment," said Lars Lindgren, president of Brokk Inc. "He understands the benefits and will be an excellent resource for Brokk customers looking to improve efficiency and safety."

Diacek has worked in equipment sales for five years. He most recently served as a regional sales manager for Hy-Brid Lifts. Before that, he worked for Cratos Equipment, which supplies state-of-the-art, battery-powered demolition equipment, including European mini-loaders and wheelbarrows. He also served as regional sales manager for a major appliance part distributor, developing connections across Illinois, Wisconsin, Minnesota, Indiana, Michigan and Iowa.

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### Demolition Company Operates North America's Largest Brokk

FREDERICO Demolition, a leading New York-based demolition company, recently began operating the largest demolition robot in the North America construction market. The 24,361-pound (11,050-kilogram) Brokk 800S — designed and manufactured by Brokk, the world's leading manufacturer of remote-controlled demolition machines — provides a 32-foot (10-meter) reach, and power on par with a machine three times its size. The industry-leading power to weight ratio makes the robot an ideal choice for FREDERICO Demolition's heavy-duty applications.

The Brokk 800S features the company's signature three-part arm which provides unrivaled maneuverability and an attachment capacity on par with much larger equipment. For heavy-duty demolition, the 800S can be equipped with the 2,646-pound (1,200-kilogram) Epiroc MB 1200 breaker, an attachment usually recommended for 33,000 to 57,000-pound (15,000 to 26,000-kilogram) excavators. The 800S can be used with concrete crushers, drum cutters, grapples, buckets, drilling equipment and metal shears, as well for maximum application flexibility.

Through several generations, FREDERICO Demolition has built a reputation for superior performance through creative solutions and cutting-edge methodology. Their passion for smarter and safer demolition work has led to a growing fleet of robotic demolition equipment. The Brokk 800S is their seventh robot and rounds out the capabilities of their fleet for tunneling and specialty applications, including mass, structural and concrete demolition. FREDERICO Demolition also offers disaster recovery and environmental cleanup services in addition to specialty demolition for both private and public entities along the Eastern Seaboard.

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### Screening Eagle Unveils the Future of Ground Penetration Radar

The GP8100 features the world's first large scan width GPR with the new Superline scan to deliver fast object detection, and never-seen-before data clarity alongside deep penetration depth. One Superline scan with the GP8100 is the equivalent to 6 classical line scans.



The new portable concrete GPR enables quick detection of objects of any size, allowing inspection engineers to collect dense inspection data with just one Superline scan. Users also benefit from the unique data clarity with 2D time-slice, 3D tomography and augmented reality in real-time.

The GP8100 can be used for multiple applications including concrete inspection of large areas in all buildings or bridge decks, object detection and damage prevention before drilling, coring or cutting into concrete, and GPR data collection for concrete structural assessment and post-processing data.

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### Diamond Products Announces CV258LC CORE VAC Hepa Vacuum

Diamond Products Limited announces its updated CV258LC can-style vacuum. This mid-size model is used dry and features a Hepa filtration system, and two motors at 120V, 2700-Watt power and 258 CFM. This unit has a patented self-cleaning filtration system that collects dust into a solid steel constructed lifting can. The lift-can system makes it fast and easy to dispose of dust and debris. The CV258LC can be used with our Dust Bandit shrouds and our full line of floor grinders while maintaining OSHA compliance.

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### Husqvarna Construction Launches Next Generation Battery Power Cutter

With K1 PACE, Husqvarna takes a big step forward and offers customers a high-power battery cutter that can handle the heavy-duty jobs. This is the first product to be launched on the company's new battery system, PACE.

With more than 60 years of experience as a power cutter manufacturer and with a leading position in handheld cutters, Husqvarna Construction has the expertise it takes to lead the development from petrol to battery powered equipment. With K1 PACE customers can expect power and performance equivalent to petrol-powered cutters with all the additional benefits battery powered equipment brings to both operators and the environment.

The PACE battery system can be utilized for more machines as the battery-powered family expands. In addition to the power cutters and battery system, diamond blades in 12" and 14"/300 and 350 mm have been optimized for battery operation. The machine is also equipped with X-Halt® brake function capable of stopping the rotation of a blade in a fraction of a second for enhanced safety.

"We know what it takes to do the high demanding jobs done, and we do not compromise on quality and safety. With K1 PACE, customers get a high-performance battery power cutter that provides zero direct emissions. They can expect lower vibrations, smoother cutting and that the machine's low weight and optimal center of gravity help reduce the strain on their body," says Mattias Holmdahl, Global Product Manager Power Cutters at Husqvarna Construction.

#### For More Information

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### See What's Inside Concrete Using Artificial Intelligence and Augmented Reality

The latest additions to Screening Eagle's concrete portfolio include a revolutionary Ground Penetrating Radar array for scanning large concrete areas, the world's most powerful yet lightest Ultrasonic array imaging system. Visitors to the Screening Eagle and Proceq booth will be among the first to experience these new innovations with LIVE demos, and see how the intelligent inspection workflow software, INSPECT, can benefit the construction industry with AI defect digitalization and 3D reality replica scans of structures.

As previous participants of the World of Concrete, Screening Eagle will be presenting its concrete portfolio covering the latest developments in GPR, Pundit Ultrasound, Schmidt Rebound technology and Profometer Eddy Current, combined with smart imaging software.

**For More Information**  
**Contact: Sonia Giron**  
**Tel: +41 43 355 38 00**  
**Email: [media@screeningeagle.com](mailto:media@screeningeagle.com)**  
**[www.screeningeagle.com](http://www.screeningeagle.com)**

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### Vacuworx Introduces New Product Lines for In-Plant Manufacturing Applications

Vacuworx has leveraged its experience in vacuum lifting technology for material handling in the field to introduce a full lineup of vacuum lifting systems for in-plant manufacturing applications. The modular battery and electric vacuum lifting systems can be configured to fit a wide variety of applications and are customizable based on specific needs.

**PHD Portable Vacuum Lifting System:** Powered by a 12V 30 Ah rechargeable LFP battery, the Vacuworx PHD offers a flexible, low-cost material handling option. When paired with the PHD Forklift Assembly, the 2,500 lb. (1.13 ton) capacity lifter can be put to work in manufacturing environments to handle loads on both a forklift and gantry crane. It is a great solution for smaller plants or those that only have occasional material handling needs.

**VT/VRT Vacuum Lifting Systems:** The electric VT and VRT vacuum lifting systems are the perfect solution for lighter loads that need to be manipulated in different orientations. Both models can tilt up to 90 degrees, while the VRT can also rotate 360 degrees with pin stops every 45 degrees. Standard models have either 4 or 8 vacuum cups, with horizontal lift capacities of 640 and 1,280 pounds respectively.

**VPL Vacuum Lifting Systems:** The VPL line is also fully electric and can be configured with two, four, six or eight 8" x 12" (203x305 mm) pads. Lift capacities for the VPL range from 1,264 to 5,056 pounds. The pad arms are easily adjustable across the width of the spreader bar, as well as at different angles to work with a variety of material shapes and sizes.

**CM Modular Vacuum Lifting System:** Vacuworx has adapted the CM 3 modular vacuum lifting system to be a heavy-duty manufacturing workhorse. With a lift capacity of 6,600 pounds (3 ton), customers can choose standard spreader bars from 6 feet to 15 feet long to accommodate up to 10 vacuum pads in varying sizes. The system is available in single phase or a 3-phase operation.

The Vacuworx engineering team works with every customer to make sure that the product meets their specific needs and takes into account the size, weight and thickness of the material to be handled. Vacuworx also offer fully customized solutions to handle unique or oversized materials.

**For More Information**  
**Contact: Bill Solomon**  
**Tel: 918-591-3004**  
**Email: [bsolomon@vacuworx.com](mailto:bsolomon@vacuworx.com)**  
**[www.vacuworx.com](http://www.vacuworx.com)**

## Son of CSDA Member to be Awarded the Navy Cross

Staff Sgt. Nicholas Jones of the 2nd Marine Raider Battalion, son of CSDA member Carl Jones of Coring & Cutting Group, Kansas City, MO, received the Navy Cross – the service’s second-highest award for valor, behind only the Medal of Honor – during a



ceremony at Camp Lejeune, North Carolina, on Aug. 26. Commandant of the Marine Corps Gen. David Berger presented the award to Jones.

Jones, originally from Olathe, Kansas, was an element leader accompanying Iraqi security forces in the mountains of northern Iraq on March 8, 2020, on a mission to clear ISIS positions, the command said in its statement. Multiple ISIS fighters barricaded in caves ambushed another nearby element with heavy fire. A French special operator was wounded in that barrage, and two Marine Raiders were wounded shortly afterward.

The command said that Jones took the lead on the counterattack to rescue his comrades. He made his way to the wounded French operator despite heavy, close-range attacks. He fought back with his rifle and grenades to suppress enemy fire, while helping move the French operator to a protected position, from which he was later medically evacuated. At that point, Jones turned his attention to the two Raiders who had been wounded in the first volley of

fire, who were in a steep ravine, the press release said. Those Raiders, Capt. Moises Navas and Gunnery Sgt. Diego Pongo, died in the battle.

Jones again fought the enemy at close range, until their heavy fire forced him back. He launched a third attack almost five hours after the battle began, but was hit in the leg by enemy small-arms fire. The command said he refused medical treatment and pain medication to continue fighting, until he was medically evacuated.

“By his decisive actions, bold initiative, and unconquerable spirit, Staff Sgt. Jones reflected great credit upon himself and upheld the highest traditions of the Marine Corps and the United States Naval Service,” the release said.

The command said Jones will be the eighth of its service members to receive the Navy Cross as part of Operation Inherent Resolve.

### For More Information

Contact: Carl Jones

Email: [cjonezn1@yahoo.com](mailto:cjonezn1@yahoo.com)

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## OPERATOR CERTIFICATION

CSDA's Operator Certification is a comprehensive six-day program that combines detailed classroom instruction with on-slab demonstration and evaluation of advanced concrete cutting techniques. Safety, proper equipment use and efficiency are emphasized. CSDA certified operators are recognized industry-wide for their proficiency in the full range of sawing and drilling applications.

## MINIMUM REQUIREMENTS

- Successful completion of CSDA Cutting Edge, Slab Sawing & Drilling 101, Wall Sawing 101 or Wire Sawing 101
- Three years field experience (4,500 hours)
- Successful completion of 10-hour OSHA Construction Safety course
- No more than one lost-time injury within the last three years
- Unrestricted driver's license
- Negative drug test within 30 days of taking the course



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Hammonton, NJ



## COMPANY CERTIFICATION

The CSDA Company Certification Program is the first of its kind in the industry. This program has been created for cutting contractors to provide owners, architects, engineers, general contractors and government officials with a valuable pre-qualification tool that acknowledges sound business practices. It is available to all sawing and drilling contractors.

## A COMPANY MUST MEET THE FOLLOWING CRITERIA TO ACHIEVE CERTIFICATION:

- Meet the basic safety and insurance requirements of the industry
- Undertake sound operational and financial best practices
- Provide evidence it has taken part in basic training or certification programs to better its employees and the company as a whole
- Successfully pass a written application review

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## GPR CERTIFICATION

GPR Certification is for experienced GPR technicians who have expanded their knowledge of the methods, theory and practical application of GPR imaging. Certified technicians receive classroom and hands-on time with experienced instructors and representatives from leading GPR manufacturers.

## A GPR CERTIFIED OPERATOR:

- Has shown proficiency in performing scans and reading and interpreting results
- Can select the appropriate GPR scanner for the job
- Passed a written and practical test
- Was issued a certification card upon completion of the class

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### AFFILIATE:

ALL GPR LLC  
Scottsdale, AZ

OPOC.US  
Worthington, OH

### MANUFACTURER:

SLURRYMONSTER, LLC  
Livonia, MI

## MEMBER BENEFITS

### SAFETY RESOURCES AND TOOLBOX SAFETY TIPS (TSTs)

- 230-page CSDA Safety Manual
- Safety Handbook in English/Spanish
- Safety Videos for concrete cutters
- Over 100 Toolbox Safety Tips (TSTs)



### DISCOUNT PROGRAMS

The Association negotiates member benefit programs with national vendors like Staples, UPS and V-beltsupply.com in order to provide cost-savings opportunities for CSDA Members

### NETWORKING

#### AT THE ANNUAL CONVENTION AND QUARTERLY MEETINGS

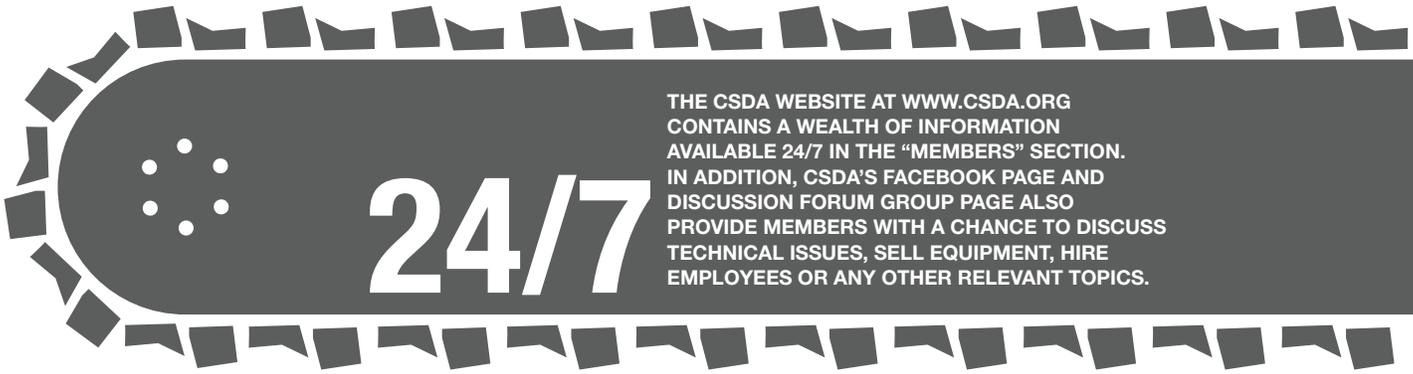
The number one benefit for members has always been the opportunity to network with cutting professionals at the annual convention and quarterly meetings. This networking provides opportunities to forge new relationships and learn from other experienced professionals.



### NEXT GEN

#### CSDA NEXT GENERATION GROUP

The group aims to continue the growth of the association while serving the needs and wants of the younger generation, with the goal of continuing to set a standard of excellence.



# 24/7

THE CSDA WEBSITE AT [WWW.CSDA.ORG](http://WWW.CSDA.ORG) CONTAINS A WEALTH OF INFORMATION AVAILABLE 24/7 IN THE "MEMBERS" SECTION. IN ADDITION, CSDA'S FACEBOOK PAGE AND DISCUSSION FORUM GROUP PAGE ALSO PROVIDE MEMBERS WITH A CHANCE TO DISCUSS TECHNICAL ISSUES, SELL EQUIPMENT, HIRE EMPLOYEES OR ANY OTHER RELEVANT TOPICS.

## TRAINING

OVER 4,000 INDUSTRY PROFESSIONALS HAVE GRADUATED FROM MORE THAN 20 CLASSROOM, HANDS-ON AND ONLINE CSDA TRAINING AND CERTIFICATION PROGRAMS FOCUSED ON CUTTING DISCIPLINES, ESTIMATING, POLISHING AND SAFETY. ONLINE TRAINING AT [WWW.CSDATRaining.COM](http://WWW.CSDATRaining.COM) OFFERS A COST-EFFECTIVE ALTERNATIVE TO THOSE NOT ABLE TO AFFORD THE TIME OR THE MONEY TO SEND OPERATORS TO CLASSES.



## DUES SCHEDULE

REGISTER ONLINE AT [WWW.CSDA.ORG](http://WWW.CSDA.ORG)

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\$3 – 5M	\$2,335			\$4,425	\$3,330		
\$5 – 10M	\$2,955			\$5,985			
> \$10M	\$3,705			\$7,375			



For more information about CSDA membership, visit [www.csda.org](http://www.csda.org), call 727-577-5004 or email [info@csda.org](mailto:info@csda.org).



## CSDA Fall Board & Committee Meetings September 1-2, 2021

The Westin Seattle  
Seattle, WA  
Tel: 727-577-5004  
Email: info@csda.org

## CSDA Sawing & Drilling 101 Training October 18-22, 2021

Husqvarna Training Facility  
Olathe, KS  
Tel: 727-577-5004  
Email: info@csda.org

## CSDA GPR Certification Training October 22, 2021

Husqvarna Training Facility  
Olathe, KS  
Tel: 727-577-5004  
Email: info@csda.org

## CSDA Operator Certification 201 Training November 1-5, 2021

St. Pete College  
Clearwater, FL  
Tel: 727-577-5004  
Email: info@csda.org

## CSDA GPR Certification Training November 6, 2021

St. Pete College  
Clearwater, FL  
Tel: 727-577-5004  
Email: info@csda.org

## World of Concrete Asia November 30- December 2, 2021

Shanghai New International Expo Centre  
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Tel +86 21 6157 7250  
Email: info@wocasias.com

## Construct Canada / World of Concrete Pavilion Dec 1-3, 2021

Metro Toronto Convention Centre, South Hall  
Toronto, ON CANADA  
Tel: 416 512 3815  
Email: frank.scalisi@informa.com

## CSDA Winter Board & Committee Meetings Dec 8-9, 2021

Loews Vanderbilt Hotel  
Nashville, TN  
Tel: 727-577-5004  
Email: info@csda.org

## World of Concrete January 18-20, 2022

Las Vegas Convention Center  
Las Vegas, NV  
Tel: 727-577-5004  
Email: info@csda.org

## Canadian Concrete Expo February 17-18, 2022

The International Centre  
Toronto, ON CANADA  
Tel: 519-300-2635  
Email: rod@exposition.com

## CSDA Annual Convention March 29 – April 2, 2022

Hamilton Princess Resort & Beach Club  
Hamilton, BERMUDA  
Tel: 727-577-5004  
Email: info@csda.org

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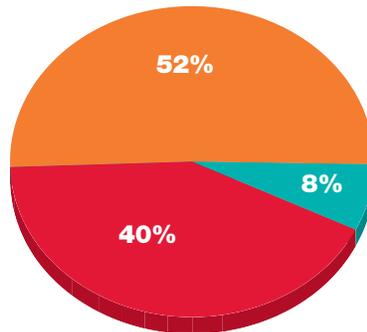
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- Contractors
- Manufacturers, Distributors

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### Circulation

- 19,000+** minimum, per issue
- 12,000+** member and prospective member companies made up of contractors, manufacturers, distributors and affiliates
- 7,000+** general contractors, engineers, architects and government officials who specify cutting, polishing and imaging



### Readership Per Issue

A poll of *Concrete Openings* subscribers revealed that 66% pass on their copy of the magazine to at least one other person, with almost 25% stating that the magazine is passed on to four or more people each issue. This translates to an average of four people reading each issue of the magazine for a total readership per year of approximately 60,000.



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## CSDA Launches NEW Online Training Site!

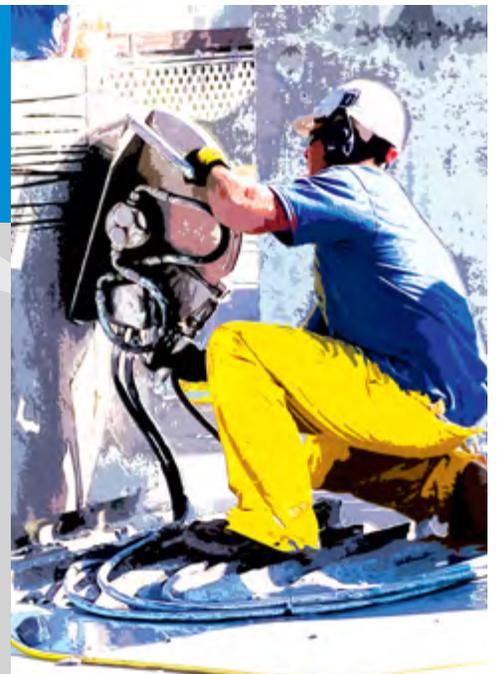
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**ERIN O'BRIEN**  
*Executive Director*

## Where Did All the Operators Go?

**T**he pandemic aside, the biggest challenge facing not just the concrete construction industry, but the entire national workforce is a shortage of employees. This was a concern prior to COVID-19, and it continues to be the most commonly listed need of employers. As COVID-19 starts to wind down (or not, thanks variants), the entire national workforce is facing a shortage of workers.

In early 2020, the construction industry was already at a massive deficit for tradespeople. The demand for qualified, willing employees has only increased each month since. It's now experiencing explosive demand, which coupled with a worsening worker shortage – 388,345 jobs posted for skilled trades-related workers between May and June, a 50% increase from pre-pandemic levels – with most positions remaining unfilled for an average of 24 days. This is a challenge facing each sector of our industry, from multi-national manufacturers to one-truck contractors.

CSDA, as a trade association, is in a unique position to help our members find solutions to this increasingly frustrating problem. We have recently expanded our online training platform, allowing contractors to start the onboarding process right away by running new hires through Cutting Edge when and where you choose. This online class can be taken at the student's own pace and covers the basics of the concrete cutting and diamond tool industry, as well as safety best practices and troubleshooting tips. Additional classes will

be added soon, covering GPR, silica training and project estimation. We are also increasing our outreach to potential new operators, which will drive new workers into the industry. Recruitment has gone digital, and CSDA is increasing our online presence via enhanced online search targeting, aimed at driving potential new operators to the industry. Our digital marketing experts are constantly researching the latest and best methods for reaching a new audience and increasing engagement.

While online training and engagement are great, nothing beats the hands-on training CSDA offers, taught by industry experts and supported by our manufacturer members. CSDA is excited to hold in-person classes again this year. Our Sawing & Drilling 101 class will be held October 18-22 in Olathe, KS, while our Operator Certification 201 class will be held November 1-5 in Clearwater, FL. We will also host two GPR Certification classes on October 22 and November 6 in Olathe and Clearwater, respectively.

I hope that by the time you read this, the country is continuing to open and get back to work. I know CSDA members are ready! If you are able, please join us in-person at one of our upcoming training classes or meetings. We'll meet again in Nashville December 8-9 and for our 50th Annual Convention (and 50th birthday!) March 29-April 2, 2022, in Bermuda. I would love to see you at any of these events. In the meantime, stay safe and let us know how else we can help you find your operators!

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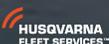


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More holes drilled per working hour. That's what makes a Husqvarna core drill system your most profitable investment. When developing and improving our core drill motors, drill stands and diamond bits we look at the whole system, and at every part, to find ways to make skilled drill operators work even more efficiently and effortlessly. Whatever your demands are when it comes to core drills, it's the focus on productivity that makes a Husqvarna concrete core drill system stand out.

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