

SMART SOLUTIONS

SUMMER 2020

Helping contractors save money and enhance productivity

Contractors, Suppliers Team Up with FEMA, Army Corps to Transform Chicago Convention Center into COVID-19 Field Hospital

As the coronavirus pandemic flared up around the country, the U.S. Army Corps of Engineers rapidly built alternative care facilities to alleviate strain on local hospitals—and MCAA member contractors and manufacturer/supplier partners were there to help. In Chicago, **Ferguson**, **Bradford White**, **Laars**, and **Sloan** all provided needed materials in record time, and **Helm Group** (formerly **Mechanical, Inc.**) was among those working on the ground nonstop as the HVAC and plumbing contractor for the job. Ferguson; LAARS, a Bradford White Company; and SLOAN are all benefactor sponsors.

While most of the Army Corps facilities were designed to handle non-COVID-19 patients, Chicago's McCormick Place convention center was planned to care for up to 3,000 people with mild or moderate coronavirus infection, freeing up hospital beds for more severe cases. Patients would be separated in the convention center halls by the level of care they required, spread throughout the facility's 2.6 million square feet of exhibit space. Construction for the first 500 beds was completed April 3. (As the pandemic spread, the project was scaled back to 1,000 beds, because the state lockdown "flattened the curve"—or slowed the pace of infection—and area hospitals were able to keep up with the cases.)

Plumbing Industry Responds

As construction got underway, a plumbing contractor reached out to Ferguson Enterprises for help sourcing 17 Bradford White, 120-gallon, 54 kW, 208-volt water heaters and five LAARS Heating Systems 200-gallon jacketed and insulated vertical storage tanks to generate and store sufficient hot water for the facility. The first treatment area, with 500 beds, needed water heaters and a storage tank for the staff showers and another heater for showers that met Americans with Disabilities Act standards—all within four days.

"We didn't know what to expect, when we got the call to help on the COVID-19 Care Center project at McCormick Place,"



With the cooperation of vendors like Ferguson, Bradford White, Laars, and Sloan, Helm Group (formerly Mechanical, Inc.) and others had the first 500 beds ready to go for COVID-19 patients in a Chicago field hospital set up in McCormick Place convention center.

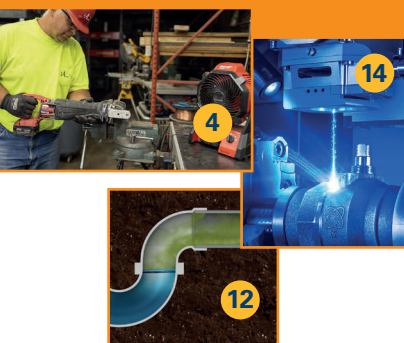
said Jim Kuenn, director of commercial—Central Midwest, Ferguson Enterprises. "We got involved midday on March 31 and needed to turn around a huge amount of product in just a few days. We reviewed the mechanical schedule and specifications provided to us. It was a daunting task that most of our associates had not seen before. We said 'yes' because we wanted to not only help our customer but also the community during this time of need."

While the factory could not supply the heaters in the timeframe required, one of Bradford White's consigned inventory warehouses in Atlanta, GA, had a sufficient number in stock. The heaters were delivered within 17 hours of ordering. The plumbing contractor and sales representatives credit their long history and experience with Bradford White, along with a vast local and national distribution network, as crucial to overcoming the logistical challenges.

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SMART SOLUTIONS

Helping contractors save money
and enhance productivity

Smart Solutions showcases new technologies and promotes cost-saving and productivity-enhancing applications available from members of MCAA's Manufacturer/Supplier Council. *Smart Solutions* is published biannually for contractor members of MCAA and its subsidiaries.

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MANUFACTURER / SUPPLIER COUNCIL

MCAA

Adding Value to Your Supply Chain



Partnership Fuels Productivity in a Pandemic

Facing a global pandemic, member contractors and manufacturer/supplier partners are working together to respond to urgent needs and keep projects on track. Ferguson Enterprises, Bradford White, and Sloan all provided needed materials in record time—with Helm Group (formerly Mechanical, Inc.) among those working on the ground nonstop—to convert Chicago's McCormick Place convention center into a field hospital. In New York City, The Harris Products Group rapidly customized and delivered oxygen systems for two field hospitals. Also in New York City, Xylem - Bell & Gossett helped a small public hospital quickly increase the number of intensive care beds for COVID-19 patients.

Responding to new concerns in light of the pandemic, Sloan provided touch-free plumbing systems to a new office building designed specifically to promote employee health. While some businesses struggled with the Paycheck Protection Program loan application, Johansen & Anderson pulled the necessary data in less than 30 minutes, thanks to Jonas Construction Software. John W. Danforth Company is using Raken's app to demonstrate what they have done during the pandemic so they can get paid for it.

Member contractors like Braconier continue to seek out competitive advantages. They adopted eSUB's platform to standardize project management and operations, dramatically cutting down timecard and payroll processing time. Using XO!, SiteLogIQ is including video and photos in quotes, expediting quote approval.

Our supplier partners are helping contractors who face tight timelines and budgets. Anvil International's Gruvlok® products helped Holmberg Mechanical meet a short turnaround time for Seattle's new Colman Dock and also to secure the Buy America Act certification needed for the public project. Victaulic's newest pipe joining system enabled Shoemaker Mechanical to replace a cooling tower in less time than planned and with fewer people than expected.

With a range of Sioux Chief Manufacturing Company products, Murphy Company dramatically cut down its plumbing installation time for a new St. Louis high-rise. Guy's Mechanical Systems discovered that the Viega MegaPress Press-In Branch Connector saved time in its remodeling of an aging 20-story building in downtown Pittsburgh. Testing out MILWAUKEE TOOL's new MX FUEL™ Equipment System, J.F. Ahern Co. deemed the handheld core drill to be much more efficient than a traditional drill, providing more control and more power.

Also in this issue, CNA explains how to protect your business from risky drivers. Jay R. Smith Mfg. Co. describes how to manage potential water problems in buildings that have been closed. ServiceTrade offers one way to analyze your own data to reveal current opportunities in the market. NIBCO INC. examines different types of welding, with an emphasis on the benefits of laser welding for precision and speed.

MCAA appreciates its 2020 sponsors. We encourage you to learn more about how all of our manufacturer/supplier partners can help you stay productive during these uncertain times.

William Hughes

William Hughes, Chair

Join me in welcoming our newest supplier partners:

- Lochinvar, LLC
- Procore Technologies, Inc.
- Raken
- Ridge Tool Company
- SF&P Advisors
- Sioux Chief Manufacturing
- Sunbelt Rentals, Inc.

Guy's Mechanical Systems Saves Steps, Time with Viega's Branch Connectors

Pressing Proves Simpler than Welding

Guy's Mechanical Systems discovered that the Viega MegaPress Press-In Branch Connector saved them time by reducing the steps for installation in the process of remodeling a 20-story high-rise in downtown Pittsburgh. Renovating the aged building—constructed in 1902—into a hotel has been a complicated process, and Foreman Josh Mitchell said MegaPress has made it simpler. Viega is an MCAA benefactor sponsor.

"MegaPress has really sped up the project. Due to the fact that it's 20 stories, you have to catch the elevator to move your tools from floor to floor," Mitchell said. "Pressing is much simpler than welding. You can't hike 20 stories, especially carrying welding equipment."

Mitchell was also excited by the use of the branch connectors. The technology is an innovative way to create branches from main runs or to install instrumentation onto existing piping. When Mitchell discovered the product, he knew it could come in handy on this project.



Guy's Mechanical Systems used around 50 Viega MegaPress Press-In Branch Connectors on its 20-story renovation project. Workers found that installing them was as simple as making other Viega presses and much easier than welding.

"I really like them, and I think they could be used in a lot of different applications," said Mitchell. "They're super easy to install, and quick. It's much simpler than using a tee, less steps to installing it, and I feel like where we convert over to copper, it makes it much simpler."

In the hotel-to-be, carbon steel lines were run for a condenser water system to heat and cool the building. There are 16 pipe risers from the ground level to the 20th story, all using MegaPress Branch Connectors. The main lines are 2 1/2" to 4", and the branch connectors allow 3/4" lines to run directly off the main line.

"With a tee, we went through a process of making a union and threading, and then a process to go from [carbon steel to copper]," Mitchell said. "With the branch connector, there are fewer steps, because you don't have to do all of that."

"Also, we ran 20 stories of pipe straight up and down, and when we went through and started drilling holes, if we missed one it was no big deal. We would have been cutting out a whole section of pipe to put in a tee, but instead we just drill a hole for the branch connector and go. The same goes for the mechanical room—if we decide we need a thermometer here or a sensor there, we're not taking apart whole sections of the boiler room."

Mitchell estimated that Guy's used around 50 branch connectors on the project and said that installing them was as simple as making other Viega presses. Renovation on the building started in September 2019 and was estimated to finish this summer.

For more information, visit <http://www.viega.us>. MCAA thanks Viega for being a benefactor sponsor.



To renovate a century-old, 20-story building, Guy's Mechanical Systems used Viega MegaPress Press-In Branch Connectors to run pipe from the ground level to the top floor for a condenser water system to heat and cool the building. The branch connectors took fewer steps to install than a tee, speeding up the process.

Ahern Boosts Productivity in the Field with MILWAUKEE TOOL's Battery-Powered Lineup

MILWAUKEE TOOL's product lineup has long been J.F. Ahern Co.'s choice of power tools because the same batteries could be used for a broad range of tools, saving time and money. Recently, Ahern had the opportunity to test out some of MILWAUKEE TOOL's new MX FUEL™ Equipment System, including the first-ever cordless core drill, on a project that required drilling more than 1,500 holes through various types of walls, including block and concrete. Ahern found that the handheld core drill was much more efficient than a traditional drill, providing more control and more power. MILWAUKEE TOOL is an MCAA benefactor sponsor.

One Battery, Many Options

Nearly a decade ago, it was not uncommon for a major mechanical contracting company to use power tools from two or three manufacturers, each with its own unique battery. When Tyler Gumm became manager of Ahern's Tools and Equipment Shop in 2012, he was faced with an inventory of hundreds of power tools

and batteries that spanned multiple brands. Soon, the feedback from the field would lead Gumm to overhaul the company's choice of power tools.

Ahern was frustrated by the amount of time crews were spending chasing down the right batteries for the tools at hand. No batteries were compatible with one another, which left field crews idle for the time it took to recharge once their tools died. The Tools and Equipment Shop tried to alleviate this frustration by matching tool manufacturers as much as they could when setting up jobsite boxes, but it was clear the time spent was negatively affecting productivity.

"Stocking these many brands of tools and batteries affected inventory. At the time we were stocking four different batteries from four different manufacturers, and it took a considerable amount of time to look up tool brands and models to match batteries," said Gumm. "It's hard to quantify exactly how much productivity was lost directly because

of this, but it wasn't anything short of significant."

The problem presented Gumm an opportunity to find a better solution for the tools being supplied to the field. After meeting with various manufacturers, visiting their plants, and testing out a fair amount of different batteries and tools in the field, a clear leader was identified, and a new partnership was formed.

"MILWAUKEE TOOL came out as the frontrunner because, overall, they had the best line of tools and battery compatibility that far exceeded any other manufacturer," said Gumm.

The efficiency of MILWAUKEE TOOL's M18™ battery platform is important for Ahern. The same batteries fit every single tool. The crews in the field do not have to spend valuable time searching for a spare battery when one dies or is left behind.

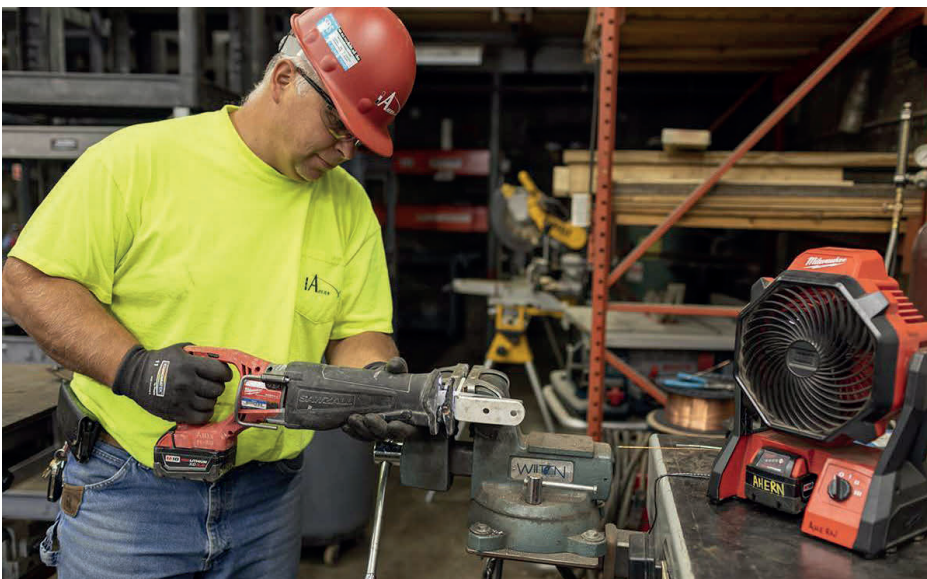
More Than Just the Batteries

Outside of the battery platform, MILWAUKEE TOOL has distinguished itself by its breadth of products, service, and opportunities for additional innovation and collaboration.

"It's incredible the number of new tools becoming cordless that we never thought would be," Gumm observed. "No cords is the best thing to come from the world we're living in now, because it is safer for the guys in the field. At the time of our decision to move over to MILWAUKEE, they had the most breadth of line for the work we did. Now, nearly a decade later, their offerings have only grown—and it's all still on the same system!" said Gumm.

Gumm notes that the company used to have to fix a lot of tools internally.

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Chuck Quackenboss, maintenance mechanic at J.F. Ahern, relies on MILWAUKEE TOOL's battery-powered products like the M18 FUEL™ SAWZALL® and the M18 Jobsite Fan to save time and money in the field and in the shop.

Sloan Products Deliver Hygienic Solutions for First 'Post-COVID-19' Office Building

Thanks to Sloan's integrated lineup of touch-free commercial plumbing systems, Chicago's new Fulton East office and retail building is the nation's first office building designed specifically to address employee health, safety, and wellness in the post-COVID-19 environment.

The 90,000-square-foot building located in Chicago's Fulton Market District includes a number of leading-edge products. In addition to Sloan touch-free solar-powered faucets, soap dispensers, flushometers, and SloanTec® Hydrophobic Glaze for vitreous china fixtures, Fulton East is the world's first new construction building to be equipped with Mad Elevator Inc.'s Toe-To-Go hands-free elevator system. Fulton East is also the first multistory office building to employ airPHX, nonthermal plasma technology throughout the entire building to help reduce cross-contamination risks and provide employees with cleaner air and work surfaces.

"Sloan is proud to support the next generation of commercial buildings as our society makes personal wellness a top priority," said Jim Allen, Sloan co-president and CEO. "It is our responsibility to develop hygiene-friendly products that provide people with a sense of safety when they enter the restroom, and it was a privilege to be a part of this project in our backyard of Chicago."

The project specified Sloan's vitreous china Designer Urinal and wall-mounted water closet, each paired with a Sloan SOLIS® solar-powered and sensor-operated flushometer to deliver an energy-efficient and clean flush complemented by touch-free technology.

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Situated in a historic Chicago neighborhood, Fulton East is the nation's first office building designed specifically to address employee health, safety, and wellness in a post-COVID-19 business environment—thanks in part to Sloan's touch-free commercial plumbing systems.



Sloan's Designer Urinals and wall-mounted water closets provide Fulton East with an energy-efficient and touch-free solution.

CONTRACTORS, SUPPLIERS

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In addition to the water heaters themselves, conversion kits were flown by next-day air from Bradford White's Middletown, MI, manufacturing facility.

A Team Effort

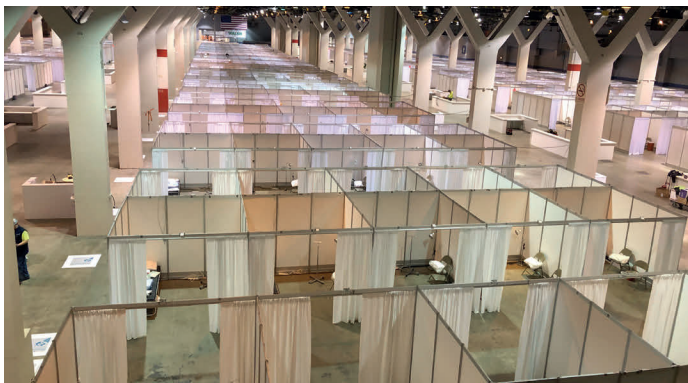
Those on the scene were impressed to see representatives from every trade working side by side with representatives from the Federal Emergency Management Agency (FEMA) and construction managers coordinating efforts. They would gather together throughout the day to reassess, resulting in constant coordination with FEMA.

"It was impressive to see everyone working together to get this project done quickly," said Brian Helm, Helm Group (formerly Mechanical, Inc.) CEO and MCAA president. "You need to remember that this was the earliest stages of COVID-19 in the U.S., when we really didn't know how the virus spread and what the mortality rate was. The trades saw it as their mission to get this facility built, and that's exactly what they did."

Helm pointed out that the 500 people working in the space had to remember to stay at least 6' apart at all times. "The biggest



Helm Group (formerly Mechanical, Inc.) rapidly installed ductwork for the Chicago field hospital, recognizing that good ventilation is key to protecting against transmission of COVID-19.



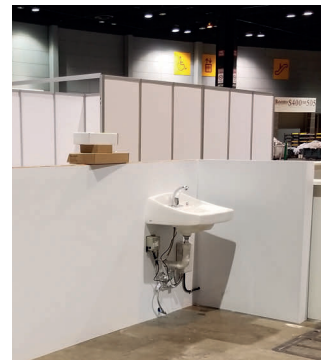
Ferguson Enterprises, Bradford White, Laars, and Sloan all provided needed materials in record time to contractors like Helm Group (formerly Mechanical, Inc.) to stand up a field hospital in Chicago's McCormick Place convention center in just 4 days. Photo courtesy of Ferguson.

challenge was that all the trades were learning how to do their jobs while staying apart," noted Helm. "For people's entire careers, it was always the opposite—help someone out, watch out for the other guy, lift with a buddy, etc."

As each stage of work was completed, FEMA required testing to make sure that everything worked, so the contractors coordinated with the International Brotherhood of Electrical Workers (IBEW) and others. Challenges arose, but the plumbing crews succeeded in providing enough hot water to service 3,000 beds. Some described themselves as proud to be able to respond during a time of crisis and noted that plumbing is essential to public health.

"The Ferguson team in Chicago stepped up to the challenge, rolled up their sleeves, and worked 24/7 to make it happen," Kuenn stated. The tight deadlines were met because, Kuenn said, "everyone—from contractors like Helm Group (formerly Mechanical, Inc.) to various vendors—found a way to say 'yes.' I get prideful chills from what was accomplished."

Bradford White supplied water heaters for several major field hospitals, including Javits Convention Center in New York City and McCormick Place, according to Mark Taylor, executive vice president and general manager at Bradford White.



Sloan provided touch-free commercial restroom products to the McCormick Place convention center to facilitate hygiene-friendly handwashing without the risk of cross-contamination.

"We are extremely proud of the work being done by our reps, as well as our wholesaler and contractor customers, who are making sure that medical facilities have the hot water they need to combat the COVID-19 pandemic," said Taylor. "Hot water is critical for cleaning, sanitizing, and hygienic purposes, and it's important for us to do our part to support the health care workers on the front lines."

"In Michigan, where our water heaters are produced, we reached out to Gov. Gretchen Whitmer and offered to provide products for any temporary field hospitals in the state of Michigan that need water heaters to help address the pandemic. Michigan is one of the states hit particularly hard by COVID-19," Taylor noted.

Todd Young, vice president of commercial, Ferguson Enterprises, noted the crisis has undoubtedly changed the way everyone lives and works. "We've implemented new processes in order to help our customers and communities during this time," he said.

"To support local hospitals and pop-up facilities across the country, we've organized a new response and product

procurement system to handle the many inquiries coming in—because it's the right thing to do," Young explained. "From delivering jobsite trailers and emergency water heaters to providing products for field hospitals at facilities like CenturyLink Field and Sleep Train Arena, we're working with a variety of essential businesses in different industries to help our communities push forward ... and we're happy to do it."

Hygiene Is High Priority

Sloan also joined the effort, providing its touch-free commercial restroom products to the McCormick Place convention center to facilitate hygiene-friendly handwashing without the risk of cross-contamination.

"At Sloan, we understand that the touch-free products we manufacture

across the entire commercial restroom play an essential role in the fight against the COVID-19 pandemic," said Graham Allen, Sloan co-president and CEO.

"We are proud to support those in our backyard of Chicago ... and anyone in need across the country, and we will continue to do everything in our power to supply sensor-operated products."

Plumbing requirements at McCormick Place called for over 200 Sloan sensor faucets in handwashing stations, and Sloan partnered with local suppliers to deliver these hygiene-friendly solutions.

For more information, visit www.bradfordwhite.com; www.ferguson.com; and www.sloan.com. MCAA thanks Ferguson; LAARS, a Bradford White Company; and SLOAN for being benefactor sponsors.

Sloan Outfits Yale Gym with Touch-Free Fixtures

In New Haven, CT, Yale's Payne Whitney Gym was also converted to a temporary field hospital and needed to retrofit its existing manual faucets and flushometers to provide a more sanitary environment for the influx of patients. The facility removed its existing faucets and replaced them with Sloan sensor-operated faucets, while also installing new Sloan sensor flushometers to provide a touch-free experience.

Portions of this feature were adapted from a story in Plumbing & Mechanical magazine.

Holmberg Mechanical Saves Time, Meets Regulatory Requirements with Help from Anvil International

Timeline on Track for Seattle's New Colman Dock

Holmberg Mechanical knew Anvil International's Gruvlok® products would help them meet the quick turnaround time required for the new Colman Dock in Seattle, WA, which will service the largest ferry system in North America. But the job posed another challenge. Because the dock is a publicly funded project (with a price tag of \$455 million), Holmberg Mechanical had to comply with Buy America Act (BAA) standards. They needed to secure the right materials on time and with the proper BAA certification.

Anvil's Gruvlok products met both criteria. Holmberg installed hundreds of Gruvlok fittings and couplings for the first hydrostatic test, which involved more than 1,000 linear feet of 6" piping. The test was successful, and all Gruvlok products performed perfectly. Randy Hart of Holmberg Mechanical, who has been in the industry nearly 30 years, commented that Gruvlok technology "is a foolproof design that reduces labor when compared to welding." Anvil International provided Holmberg all the required documentation to comply with BAA standards. Anvil is an MCAA major sponsor.



Sean Pullin, second-year plumber apprentice for Holmberg Mechanical, installed Anvil's Gruvlok fittings and couplings at Seattle's new Colman Dock. Using Gruvlok took less time than welding and allowed the contractor to meet regulatory requirements for the public project.

The combination of Gruvlok technology, excellent communication, and the ability to deliver all materials and documentation in a timely manner made the project a success for Holmberg Mechanical and Anvil International. This five-year project is expected to be complete in 2023.

For more information, visit www.anvilintl.com. MCAA thanks Anvil International for being an MCAA major sponsor.

SLOAN

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Sloan's vitreous china undermount lavatory with Optima® solar-powered deck-mounted faucets and matching soap dispenser provide a hygienic handwashing solution. Each Sloan vitreous china fixture features SloanTec Hydrophobic Glaze, a proprietary water-repellant glaze that inhibits the growth of germs and bacteria to make the fixtures easier to clean. The building also includes a comprehensive set of other health, safety, and wellness enhancements, such as touch-free thermal scanning at the lobby security desk, continuous floor-to-ceiling low-E glass to provide the maximum amount of light into the building, and much more. All restrooms were constructed with one additional fixture than required by Chicago city code to help enhance social distancing measures.

"We have made a major investment of time and capital to bring Fulton East to market as a next-generation office building that prioritizes health, safety, and wellness for our tenants' employees in a coordinated and comprehensive way," said Bob Wislow, chairman and CEO of Parkside Realty, Inc., the developer of Fulton East. "We believe this is extremely important today, as employees and their families are deeply concerned about safety and well-being in the workplace environment."

For more information on Sloan's work in delivering touch-free commercial restroom solutions, visit <http://www.sloan.com/company/news-press/hygiene-wellness>. MCAA thanks Sloan for being a benefactor sponsor.

Right: Sloan's touch-free faucets and matching soap dispensers provide a hygiene-friendly handwashing experience in the new Fulton East office building.



MILWAUKEE TOOL

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With MILWAUKEE's 5-year warranty and additional service support, Ahern mechanics no longer need to work on power tools, so they can focus on other work crucial to the business.

Frequently, MILWAUKEE TOOL's Research & Development and Engineering Teams have reached out to Ahern when they are looking for some real-life users to test new tools and provide feedback. This arrangement is a unique opportunity for field crews to get their hands on new-to-market tools and equipment, preview it far in advance of competitors, and provide feedback to help make the current tools and future releases even more effective. And with Ahern celebrating its 140th anniversary this year, MILWAUKEE TOOL gains insights from an organization that has withstood the test of time.

For more information, visit www.milwaukeetool.com. MCAA thanks MILWAUKEE TOOL for being a benefactor sponsor.



Jamie Brenner, Ahern plumber foreman, uses MILWAUKEE TOOL's M18™ FORCE LOGIC™ Press Tool on a copper pipe. The cordless, handheld tool makes installation easier and safer.

Protect Your Business from Risky Drivers

CNA Explains How to Avoid Negligent Entrustment

“Negligent entrustment” can stem from employees driving company-owned vehicles, their personal vehicles, or other vehicles on company business. Employers have a responsibility to know if an employee has something in his or her driving background that creates a risk to others. Negligent entrustment implies a company knew or should have known that it put an unsafe driver behind the wheel of a vehicle and allowed that employee to drive on behalf of the company. (CNA is an MCAA benefactor sponsor.)

A party injured by the company driver must generally prove five elements to establish liability in a lawsuit for negligent entrustment:

1. The owner company entrusted the vehicle to the driver or knew the person was driving on behalf of the company.
2. The driver was unlicensed, incompetent, or reckless.
3. The owner company knew or should have known that the driver was unlicensed, incompetent, or reckless.
4. The driver was negligent in the operation of the vehicle.
5. The driver’s negligence resulted in damages.

A driver may be judged incompetent if he or she is intoxicated, unlicensed, inexperienced, or has a record of reckless driving. Examples include the following:

- The driver does not possess a drivers’ license or is driving with a suspended license.
- The driver does not possess a commercial driver’s license when it is required for the type of vehicle being operated.
- The driver does not have experience or lacks training in operating a specific type of vehicle.
- The driver’s motor vehicle record (MVR) has several at-fault accidents or moving violations in the past few years.

Some jurisdictions use the Federal Motor Carrier Safety Regulations (FMCSR) to establish minimum competency for drivers. FMCSR is increasingly being referenced as a benchmark to measure the qualifications of an individual when driving is a regular part of his or her job duties. The FMCSR standards are also utilized by companies that are not under the authority of the Department of Transportation. In simple terms, FMCSR requires that a driver:

- hold a valid driver’s license;
- be physically qualified to operate the vehicle;
- be able to read and speak English;

- by reason of experience or training, be able to safely operate a vehicle; and
- by reason of experience or training, be able to determine whether the cargo is securely loaded.

Negligent Entrustment Example 1

On his way to work, an employee was driving a vehicle owned by Business A when he passed out from a medical condition. His vehicle struck several other vehicles and killed one of the passengers. Business A knew this employee’s license had been revoked because of his medical condition, but still allowed him to drive a company vehicle to and from work.

Negligent Entrustment Example 2

Driving his own vehicle on company business, an employee of Business B pulled out into the path of a motorcycle. The rider of the motorcycle was killed. The employee had been driving on business for Business B about five years and did not have a driver’s license. Business B never requested a copy of the employee’s license and never reviewed the employee’s MVR.

What You Can Do To Reduce Your Exposure to Negligent Entrustment

While the driver’s negligence in causing an accident is usually the primary issue, the investigation of negligent entrustment charges must focus upon two main issues: the company’s policies and the company’s actual practices. Were policies in place, and were the policies followed?

Your fleet management program must be followed and documented. Management must be held accountable for implementing the fleet management program. The following list includes areas that your company’s program should include:

- Driver selection procedures that include review of employee MVRs
- New employee orientation and training
- Ongoing driver training
- Post-incident or post-accident review and training
- An enforced policy limiting driver distractions, such as cell phone usage and texting
- A drug and alcohol testing program
- Adherence to local, state, and federal laws
- A strictly enforced, with no exceptions, disciplinary procedure for violations, which includes revocation of driving privileges

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With HDPE Pipe and Victaulic Couplings, Shoemaker Mechanical Makes Light Work of Cooling Tower Replacement

By using high-density polyethylene (HDPE) pipe rather than carbon steel and pairing it with Victaulic's HDPE pipe joining system, Shoemaker Mechanical replaced a cooling tower in less time than planned, with fewer people than expected, and avoided potential weather delays. Tulsa Community College's (TCC's) system has performed with no issues since it was installed. Victaulic is an MCAA major sponsor.

Attractive Alternative

Ranked in the top four percent of community colleges in the United States, TCC has more than 25,000 students attending four locations spread across the city of Tulsa, OK. Recently, an academic building on the college's Metro campus, located downtown, needed a new cooling tower to provide water to its HVAC system.

TCC initially favored carbon steel for the tower's piping system, but after consulting with Shoemaker Mechanical, the contractor responsible for the cooling tower and related mechanical room installation project, as well as considering various other factors, the college agreed to explore alternative pipe materials that could streamline installation without sacrificing performance.

The budget and the timeline for the cooling tower project were tight, so any change in the piping materials selected had to allow for quick and efficient installation. And since the new cooling tower would be located on the roof, the system needed to be durable and withstand the elements.

Shoemaker Mechanical ultimately proposed HDPE pipe, which matched the construction type of the new specified cooling tower and offered

compelling benefits. Not only does HDPE pipe weigh less than carbon steel, making it appealing to installation crews, it can be joined with Victaulic mechanical couplings more efficiently and with fewer workers and resources than traditional methods.

“HDPE helped us beat our piping installation schedule, and with Victaulic couplings, we did it with a smaller crew.”

— Richard Shoemaker III, Project Manager, Shoemaker Mechanical

“Looking at the schedule, logistics, and potential weather conditions, as well as seeing they'd previously used HDPE on the cooling tower construction, it made sense to use HDPE and keep everything consistent,” said Richard Shoemaker III, project manager for Shoemaker Mechanical.

After evaluating the labor and material costs and benefits to the overall project by pairing HDPE pipe with Victaulic's new Style W907 couplings, TCC and the engineer ultimately approved the proposed plan. The TCC cooling tower replacement was the first project in the country to use Victaulic's new 14" Style W907 couplings.

Despite Weather, Swift Completion

In preparation for the installation, Victaulic worked alongside Shoemaker Mechanical to review project drawings to integrate their system solution for HDPE pipe into the plan, then the project went to prefabrication. The teams collaborated to amend plans as change orders came in and adjusted accordingly when the timeline was pushed back to limit disruptions to the TCC class schedule.



By using Victaulic's HDPE pipe joining system, Shoemaker was able to install a new cooling tower in less time and with fewer people than planned.

Once onsite, Shoemaker Mechanical had one weekend to move materials from the street to the roof of the seven-story building without bucket hoists, pulleys, or elevators. The team used a crane to lift parts into position, while crews easily maneuvered the lighter-weight piping into place by hand. Workers then joined the HDPE pipe with hand tools and visually verified correctly installed joints by ensuring bolt-pad-to-bolt-pad contact, giving them confidence in the system's durability and longevity.

As the installation progressed, winter arrived in Tulsa. Some days were cold and wet, while others were warm and sunny. On snowy days, workers were especially grateful for Victaulic's couplings, because they did not have to lie in the snow to weld steel pipe together. If Shoemaker Mechanical had decided to fuse the pipe, the snowy conditions would have forced the crew to use tarps during their fusion process, making it even more laborious.

Despite the unpredictable weather conditions, Victaulic's HDPE pipe joining system allowed the crew to quickly and safely install more than 360' of 4", 10", and 14" pipe. By choosing Victaulic, Shoemaker Mechanical reduced the number of work hours by more than 50 percent and finished ahead of the original project timeline by 15 percent, all while using a smaller, four- to six-person crew.

"HDPE helped us beat our piping installation schedule," said Shoemaker. "And with Victaulic couplings, we did it with a smaller crew."

A Successful Combination

Plastic piping continues to gain ground as materials like HDPE offer greater corrosion resistance at a competitive cost when compared with materials like carbon steel pipe. Victaulic's HDPE pipe joining system allows you to install plastic piping quickly and in any weather condition compared with traditional methods like fusing.

"Victaulic made multiple visits over to us, the engineer, and the owner to make sure everyone understood Victaulic's HDPE products and ensured our team was up to date on the proper installation methods," said Shoemaker. "Their support throughout the project helped make it a success."

For more information, visit www.victaulic.com. MCAA thanks Victaulic for being a major sponsor.

Top: Victaulic's HDPE pipe joining system allowed Shoemaker's crew to quickly and safely install more than 360' of 4", 10", and 14" HDPE pipe in just two days, faster and more easily than expected.

Bottom: Using Victaulic's new 14" Style W907 couplings—for the first time anywhere in the country—Shoemaker cut the number of work hours required to install a new cooling tower by 50 percent over estimated time.



Essential Considerations for Reusing Empty Buildings During the Pandemic

Academic Researchers, Jay R. Smith Mfg. Co. Offer Expert Advice and Solutions

Because of shelter-in-place and stay-at-home orders around the world during the COVID-19 pandemic, many buildings have been sitting empty for months. Those vacancies mean fixtures and drains are being used infrequently, if at all, which could lead to severe problems.

Many of these issues, such as sewer gas emissions and water stagnation problems, are familiar but have never happened on such a large scale. The fact that many buildings have been closed up for months has much more significant implications than just one structure here and there. There is little consensus on how to handle this novel situation.

Researchers Offer Recommendations

Researchers and engineers at Purdue University studied this issue and recently published a report, *Considerations for Large Building Water Quality and Extended Stagnation*, that can offer a bit of guidance.

Where there is prolonged water stagnation, one issue of particular concern is the growth of *Legionella* bacteria that can cause disease. Many buildings have experienced problems with stagnation after just hours or days of being closed. The widespread

effects of weeks to months of stagnation is unknown.

The presence of other microbes should also be considered. Most cities add a disinfectant to potable water to eliminate the problem. However, those disinfectants' residual stability dissipates rapidly over time. In fact, the Purdue paper stated that decay occurs at a stagnant tap more than 140 times faster than in the corresponding municipal water. It also pointed out that the rate could be even faster in "green" buildings designed for low water use. Pipes holding stagnant water also experience more corrosion because of the decreased effectiveness of corrosion control over long periods.

The Purdue paper recommended periodic flushing, but even that is not without drawbacks. There are over 5.6 million commercial buildings in the United States. Imagine the stress a dozen or so large buildings could put on municipal water and sewerage departments. Therefore, Purdue researchers recommended drawing up a recommissioning plan and reviewing it with local authorities and health departments.

The safety of workers must also be considered. Flushing can release high concentrations of chemical and

microbiological contaminants. The Purdue researchers recommended screening workers for preexisting conditions that may make them particularly vulnerable to contaminants and issuing the proper personal protective equipment to avoid exposure.

Quick Fix for Emissions

Fortunately, sewer gas emissions are easier to address. For this problem, Jay R. Smith Mfg. Co.[®] has an easy and affordable fix that takes just a minute or two to implement. No special tools are required, and this fix comes with a ten-year warranty. Jay R. Smith Mfg. Co.[®] is an MCAA major sponsor.

The labor-saving "Stink Stopper" Quad Close[®] Trap Seal Device automatically closes to minimize evaporation in floor drains and opens to allow water in. The Stink Stopper is made from a chemically resistant elastomer and is available in several sizes guaranteed to fit almost any drain.

You simply pop the Quad Close Trap Seal into the drain's strainer throat, and sewer gases are sealed off. Installation is usually a one-step process. However, in the current situation, where buildings have been vacant for weeks, priming the floor drain trap with water after installing the device is recommended.

Installing Quad Close Trap Seals is also an excellent preventive measure for buildings that have already opened. No one could have predicted the shutdown of so many buildings, and it is unlikely that anyone can predict what we might face in the future. Taking simple steps now could prevent potential problems.

For more information, visit www.jrsmith.com. MCAA thanks Jay R. Smith Mfg. Co.[®] for being an MCAA major sponsor.



Left: When buildings are closed for weeks or months, sewer gas emissions are a concern. Insert Jay R. Smith Mfg. Co.'s Quad Close Trap Seal into a drain's strainer throat, and sewer gases are sealed off.

Right: Jay R. Smith Mfg. Co.'s Quad Close Trap Seals minimize evaporation and reduce sewer gas in infrequently used floor drains, which is particularly important in buildings that go unused for a long time.



Mine Your Own Data to Find Opportunities for Faster Recovery

ServiceTrade Gives an Example Using Nationwide Data

Since March 2020, the commercial and industrial mechanical service contracting industry has been reeling from the impacts of COVID-19. In the early days of the pandemic, when cities and states started shutting down, the uncertainty made everyone question the future of our business—for our employees and for our livelihood. At **ServiceTrade**, we looked at usage data from over 550 facility service companies using our software application, which is designed to help service contractors manage their operations and deliver better customer service, to measure the effects of COVID-19 on business.

Appointment Volume Drop, Recovery, and Stall

In the second half of March and into the first week of April, mechanical service, repair, and maintenance appointment volume dropped by 28 percent from February levels. This low point is marked with a yellow circle in Figure 1. From the first week of April until the end of May, the appointment volume recovered to about 120–125 percent of February levels with a jump after the Memorial Day holiday week (marked by a brown triangle in Figure 1). Appointment volume has held steady since then, with the exception of a small dip during the July Fourth holiday week (marked with a gold star in Figure 1).

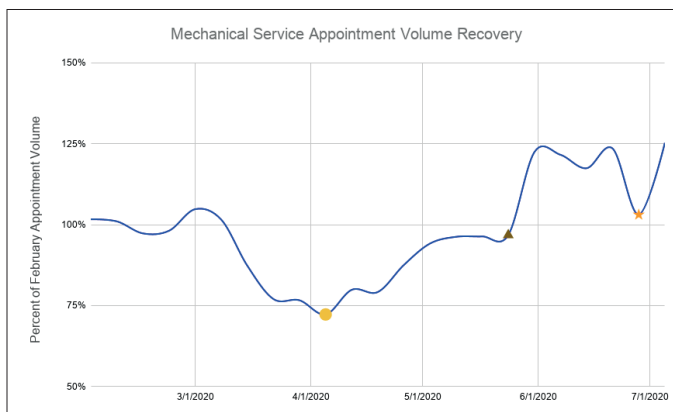


Figure 1. Mechanical Service Appointment Volume Recovery in 2020

Although 20–25-percent growth in service appointment volume during a global pandemic might seem like fantastic news, 2019 data show us that the mechanical industry typically sees a significant seasonal increase in appointment volume from February to July, because warming weather causes system failures. In fact, data from the first week of April 2019 (the green line in Figure 2) suggest that appointment volume in April 2020 should have been 27 percent more than February 2020 levels. That means that during the first week of April, with the gap between the expected appointment volume (27 percent higher than February) and the actual appointment volume (28 percent lower than February), the industry was actually 54 percent behind where it should have been.

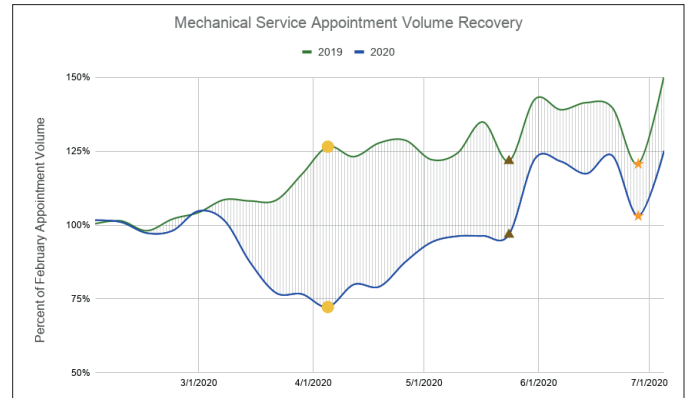


Figure 2. Mechanical Service Appointment Volume Recovery, 2019 vs. 2020

The Gap Between 2019 and 2020

When we graph the gap between expected and actual appointment volume as a line in Figure 3 (instead of an area, as in Figure 2), it is easy to see some recovery, as the gap narrowed through April and May. However, as the number count of newly reported COVID-19 cases started to increase again in June (red line in Figure 3), the recovery stalled, and the gap between the expected and actual appointment volume grew after the July Fourth holiday to 26 percent.

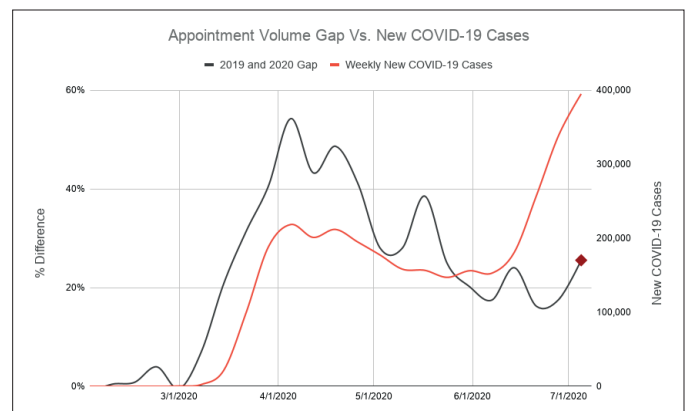


Figure 3. Appointment Volume Gap with New COVID-19 Cases

This view of the data helps us better understand the timing of the appointment volume drop compared with the onset of new cases. In March, the sudden drop in appointment volume preceded the spike in new COVID-19 cases, as governments proactively put in place stay-at-home and shelter-in-place orders. Initially, like the rest of the country, the mechanical service contracting industry was hit very hard by these orders.

Not only were contractors losing work and considering how to keep their businesses afloat, but many who had not adopted technology had to scramble to put systems in place so they

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Get Precise, Consistent Joints with Laser Welding

NIBCO INC. Appreciates the Benefits of Laser Over Other Welding Processes

Many types of welding have been proven performers for a long time. Welding is, at its core, simply a way of joining two materials. While there are other ways to join metal (e.g., riveting, brazing, or soldering), welding has become the method of choice for its availability, high performance, and high strength.

Essentially, all welding processes are the same: melt the metal in a seam so that it can blend, then fuse—forming one piece. This process is achieved (more or less) satisfactorily depending on the materials in the two pieces, the welder's experience, the method used, and the costs in time and labor. Weld strength and appearance are also factors. **NIBCO INC.** favors laser welding for its strength and efficiency. **NIBCO INC.** is an MCAA major sponsor.

Bringing Metals Together, One Weld at a Time

The welding process dates to the Bronze Age (~3300 BCE to 1200 BCE), when copper alloys were heated until the metal softened, then pounded together with a hammer on an anvil to create a forge weld. Now, 5,000 years later, there are three basic welding techniques:

- Gas welding
- Arc welding
- Laser welding

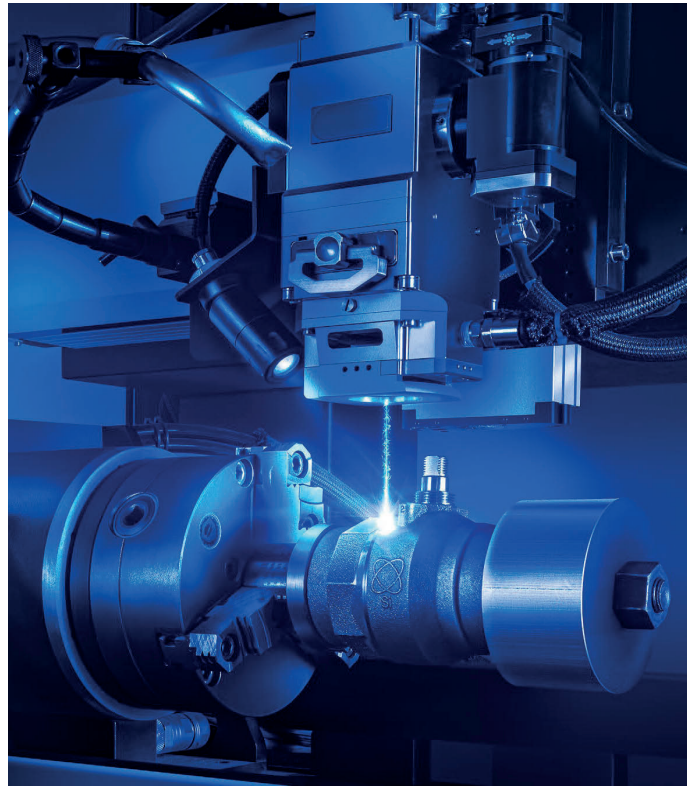
Traditional welding methods (e.g., gas and arc) generate large amounts of heat. Some techniques can create so much heat that the welded pieces can warp and distort, which can ruin the work piece or require a heat treatment or other remedial actions (adding to the cost). Welding requires skill, training, and specialized, expensive equipment.

LASER is an acronym for:

Light **A**mplification by **S**timulated **E**mission of **R**adiation.

Gas welding requires bottles of acetylene and oxygen. The acetylene is mixed with the oxygen to create a flame that can be used to melt metal. Gas welding is a slow process.

Arc welding uses closely controlled, high-amperage electricity to form an arc from the electrode to the work pieces. The welding power source is a transformer that modifies incoming AC power so that it can create an arc



Laser energy can be focused precisely, making it ideal for welding thin, heat-sensitive products, and for joining dissimilar materials, such as copper and aluminum.

that melts the work pieces. Filler rod is typically used in this process.

The Future Is Now

Laser welding, compared with forge welding, is a relatively new technology. It is used in many high-tech industries, including automotive, aerospace, and oil and gas. Laser welding uses a high-energy laser beam to melt the materials being joined. The metals then rapidly solidify after the laser moves on or turns off. Laser welding, when used for joining valve components, increases the pressure-containing ability of the valve as compared with a traditional, threaded assembly. The process is repeatable, efficient, and strong, producing high-quality assemblies.

Laser welding is very precise, fast, and clean. Lasers are also flexible. Different operations, such as cutting or drilling, can be accomplished through straightforward machine setup changes. Depending on the types of materials being welded, different welding equipment and supplies are required. Although laser welding equipment is capital intensive, operating costs are low.

Lasers provide the accuracy, repeatability, speed, and confidence modern manufacturers want. Lasers generate more concentrated heat (high-power density) than arc and gas welding. Laser energy can be focused precisely to make the smallest-possible weld seam. Those attributes make the laser ideal for welding thin,

heat-sensitive products, as well as for joining dissimilar materials, such as copper and aluminum. Bronze alloys lend themselves well to most welding processes, and laser is no exception.

So, for what types of applications would laser welding offer the most advantages? Laser welding is best applied to

production lines where its precision, repeatability, speed, and safety can be controlled. Laser welding consistently repeats the weld from the first part to the final part in the production run.

For more information, visit www.nibco.com. MCAA thanks NIBCO INC. for being a major sponsor.

Bell & Gossett Helps NYC Add ICU Beds ASAP

When New York City was confronted with a surge in COVID-19 cases in March, Xylem brand Bell & Gossett quickly provided the design assistance and products needed to increase capacity at North Central Bronx Hospital (NCB), the smallest of 11 public hospitals in the city's health system. The hospital went from 15 intensive care unit (ICU) beds before the COVID-19 outbreak to 135 ICU beds in just a few months.

New York City Mayor Bill de Blasio, in consultation with the Federal Emergency Management Agency, identified NCB as one of several target locations for the construction of 120 additional ICU beds in preparation for the crisis. To accommodate the additional beds and support space for the executive administration staff, two existing floors within the hospital had to be renovated and converted into specialized COVID-19 support wings—all within an expedited time frame.

As part of the emergency construction project, a new hydronic system design was needed for both floors. Bell & Gossett provided engineering design assistance, selecting high-quality, energy-efficient equipment matched to the specific application and a complete hospital hydronic system.

To meet the hospital's accelerated construction schedule, Bell & Gossett fast-tracked the manufacturing of the hydronic system equipment through Xylem's Quick Ship Program. Within two weeks, the hospital received the necessary hydronic equipment, including e-1510 pumps, e-80 pumps, variable frequency drives, balanced triple duty valves, 3X suction diffusers, Rolairtrol air separators, shell and tube heat exchangers, and domestic watchman units.

The project, which began in March, was finished in just a few months. Construction moved at record pace, with the first set of 20 ICU beds available in early May, and the rest completed by mid-July.

"That is a dramatic change from everyday business here," said John Doyle, a spokesman for the hospital.



With design assistance and products from Xylem brand Bell & Gossett, the North Central Bronx Hospital rapidly added ICU beds to address the surge in COVID-19 cases.

Bell & Gossett is proud to have supported NCB during this emergency building project, helping get critical building systems online quickly and safely and allowing the hospital to treat more COVID-19 patients sooner.

For more information, visit www.bellgossett.com.

Harris Products Group Responds Rapidly During COVID-19 Crisis

Oxygen Regulators and Systems Provided Throughout the U.S.

Within weeks of the outbreak of the coronavirus, the **Harris Products Group** had produced and supplied thousands of medical regulators and hundreds of gas systems to distributors throughout the United States that were scrambling to meet critical needs.

In one case, a gas supplier, rushing to respond to the urgent need for oxygen delivery systems, turned to Harris for custom solutions for two New York City field hospitals. Working with the supplier, Harris designed, produced, and delivered systems with 78 panels and 1,170 regulators to serve the needs of 1,092 patient beds.

The supplier had received a call from a contractor who needed oxygen tanks for a planned alternative care facility—first estimated to

“COVID-19 has been a heartbreaking tragedy, but it is inspiring how our employees and partners are working together to overcome so many obstacles.”

—David Nangle, President, Harris Products Group

accommodate 20 to 40 beds and then, two days later, as many as 120 beds. A week later, the contractor announced it would be installing a 350-bed field hospital in Queens in the Billie Jean King National Tennis Center in Flushing Meadows–Corona Park and another field hospital at the

Brooklyn Cruise Terminal with 750 beds.

With the coronavirus exploding in the area, health care facilities everywhere needed oxygen. Because smaller oxygen tanks would not be available, the supplier contacted its bulk gas supplier and then developed a plan to pipe the oxygen throughout the buildings and regulate the pressure at each bed using flowmeters. Unfortunately, the medical regulator supplier could not provide regulators until June.

The supplier explained the situation to Harris Sales Representative Joe Prunty, who consulted the Harris technical support team, which provided another solution. Instead of regulating pressure at each bed



Left: In response to an urgent need for oxygen for COVID-19 patients, the Harris Products Group quickly designed panels to regulate the pressure near the oxygen source, then distribute it throughout a New York City field hospital.



Right: The Harris Products Group redeployed employees to their Gainesville, Ga., facility to provide equipment needed for the 350-bed field hospital located in the Billie Jean King National Tennis Center in Flushing Meadows–Corona Park.

with flowmeters, the technical team proposed accomplishing the task with a series of panels that would regulate the pressure near the oxygen source and then distribute it throughout the facility.

The supplier recognized that the alternative solution was ideal. It could pipe the oxygen supply right to the panels. Each panel would have 14 regulators that would provide oxygen to 14 beds. Harris quickly provided a CAD/CAM drawing of the design, which the contractor and the health care providers immediately approved.

Harris then focused on producing and delivering the systems. Time was of the utmost importance, and Harris formed a plan to ensure the project could move forward rapidly.

Harris Regional Manager David Sprague coordinated the effort with David Gailey and Tom Trame from Harris' Specialty Gas Group. Employees were redeployed to work on the project at Harris' Gainesville, GA, facility, where the Specialty Gas Group is based and medical-related equipment and systems are produced. They added production lines and

called on supply chain partners to find and provide materials expeditiously.

The plant ran multiple shifts, 24 hours a day, seven days a week. The contractor assigned drivers to pick up systems daily, taking them directly to New York so that the plumbers could begin connecting them into the main lines as soon as they arrived.

The initial call from the contractor came in on a Thursday. By Friday the supplier had the gas delivery system approved, and products began arriving on Monday in Queens for installation. An independent third-party company tested the entire system after it was installed, and approvals for medical use were obtained on a Thursday night. The Tennis Center facility began accepting patients the next morning, eight days from the first call.

Harris' ability to adapt as circumstances changed was impressive. At the Brooklyn Cruise Terminal, a shortage of bulk gas trailers for the oxygen could have been a problem. However, Harris suggested using dewar tanks attached to a backup supply from high-pressure

tanks. This solution allowed the supplier to provide the equipment and connect it with the panels and hoses and avoid delaying the start of the project.

Harris' staff are proud of their role in providing a solution to meet the needs of those caring for COVID-19 patients. Harris has been tirelessly working with their other distributors to meet their business demands during this challenging time. They have delivered thousands of medical regulators and hundreds of medical gas systems for health care facilities battling the pandemic.

"COVID-19 has been a heartbreaking tragedy, but it is inspiring how our employees and partners are working together to overcome so many obstacles," said Harris Products Group President David Nangle. "I am proud that Harris is using its knowledge and resources to design and deliver gas systems that are contributing so greatly to saving lives during this global crisis."

For more information, visit www.harrisproductsgroup.com.

CNA

continued from page 9

To help avoid a negligent entrustment situation, your fleet management program needs to include:

- reviewing the MVRs for all drivers, at least on an annual basis;
- removing the employee from driving positions if he or she develops an unacceptable driving record; and
- ongoing training of drivers on safe driving behaviors.

School of Risk Control Excellence (SORCE®)

CNA offers educational courses to help policyholders improve their fleet risk management:

- Driver Selection
- Distracted Driving

- Drug and Alcohol Testing
- Regulatory Requirements of Commercial Fleet Ownership

Additional tools and resources from CNA are available to help reduce auto and fleet risks at www.cna.com/driverperformance.

For more information, visit www.cna.com/riskcontrol. MCAA thanks CNA for being an MCAA benefactor sponsor.

The information is intended to present a general overview for illustrative purposes only. It is not intended to constitute a binding contract. Please remember that only the relevant insurance policy can provide the actual terms, coverages, amounts, conditions and exclusions for an insured.

Johansen & Anderson Perseveres Through the COVID-19 Pandemic with Jonas Construction Software

While some businesses struggled to produce the information needed to apply for a federal Paycheck Protection Program (PPP) loan when the pandemic spread, Rick Cronholm, owner of **Johansen & Anderson**, was able to pull all the necessary reports in less than 30 minutes, thanks to **Jonas Construction Software**.

Having already done payroll, time entry, and union reporting in the Jonas software, Cronholm could run reports for any pay period within minutes. The guidelines for comparison for the PPP were not clearly outlined, so the ability to be flexible and run multiple scenarios for the application was a huge win for Cronholm—and one less challenge for him to worry about.

“Since Jonas tracks all visit schedules associated with the maintenance agreements, this allowed us to optimize routes and keep our technicians busy, while rescheduling visits when needed.”

— Rick Cronholm, Owner,
Johansen & Anderson

“It’s so easy to pull all the reports for any scenario and to filter them by specific date and different periods,” said Cronholm. “When it comes to job costing or union reports, I could pull any scenario for the PPP loan just by putting the dates in.”

For many businesses, the COVID-19 pandemic revealed technology and communication gaps across the company as a whole. With construction deemed an essential service, businesses had to react quickly to continue operations safely within government guidelines. Those that did not have the right technologies

in place ultimately struggled or failed, while others, like Johansen & Anderson, successfully resumed business with minimal disruptions.

Johansen & Anderson has been using Jonas for over 10 years, and it has made life a little easier for them during the pandemic. The software provided a level of comfort that helped them continue doing business as usual from a technology standpoint.

“A big help to us was having the maintenance agreements in Jonas so we were able to manage visits efficiently,” said Cronholm. “Since Jonas tracks all visit schedules associated with the maintenance agreements, this allowed us to optimize routes and keep our technicians busy, while rescheduling visits when needed.”

Even before COVID-19, reporting was important to Cronholm. “The Executive Dashboard within Jonas always gave me a great snapshot of the company financials in order to keep an eye on how well the business [is] doing,” he noted. So when COVID-19 hit, Cronholm already had full insight into Johansen & Anderson’s business and financials.

As the pandemic rapidly spread across the country, states shut down businesses. Cronholm stated, “My first concern was definitely whether we were going to be declared essential or not. When it was decided that we were essential, my concern went straight to the safety of my employees and what we will have to do differently to keep our employees and customers safe.”

Everyone was stocking up on personal protective equipment, including masks and gloves. While Johansen & Anderson had gloves stocked up, it was a problem finding masks. From

Company: 47 - Jonas Construction & Serv Period: Jul 2020

DO	Account/Description	This Month	Last Month	%Chg	Year to Date	YTD LY	%Chg
	INCOME STATEMENT:						
	Revenue	73,605	69,362	6.1	2,583,923	3,025,526	-14.6
	Direct Expenses	24,361	103,657	-76.5	713,596	196,293	263.5
	GROSS PROFIT	49,244	-34,294	243.6	1,870,327	2,829,233	-33.9
	Indirect Expenses	0	0	0.0	500	0	0.0
	Other Income/Expense	0	0	0.0	0	0	0.0
	NET INCOME	49,244	-34,294	243.6	1,869,827	2,829,233	-33.9
	PROFITABILITY:						
	Net Income to Sales	66.9%	-49.4%		72.4%	93.5%	
	Gross Profit to Sales	66.9%	-49.4%		72.4%	93.5%	
	Direct Exp. to Sales	33.1%	149.4%		27.6%	6.5%	
	SOLVENCY RATIOS:						
	Quick Ratio	6.29:1	6.3:1		6.29:1	6.57:1	
	Current Ratio	6.32:1	6.32:1		6.32:1	6.59:1	

Jonas Construction Software provides quick snapshots of company data, such as income comparisons over time. Johansen & Anderson took advantage of the technology to rapidly gather the payroll information needed to apply for a Paycheck Protection Program loan.

Company: 47 - Jonas Construction & Serv Period: Jul 2020

DO	Account/Description	This Month	Last Month	%Chg	Year to Date	YTD LY	%Chg
	BALANCE SHEET:						
	Cash	58,476,145	58,433,445	0.0	58,476,145	52,533,875	11.3
	Receivables	29,030,525	28,968,963	0.2	29,030,525	33,519,360	-13.4
	Inventory	340,480	345,294	-1.4	340,480	294,620	15.6
	Other Current Assets	15,500	15,500	0.0	15,500	15,500	0.0
	Fixed & Other Assets	546,080	546,080	0.0	546,080	-428,920	227.3
	TOTAL ASSETS	88,408,730	88,329,281	0.1	88,408,730	85,934,435	2.9
	Accounts Payable	10,820,398	10,790,939	0.3	10,820,398	10,070,487	7.5
	Taxes Payable	296,458	295,712	0.3	296,458	291,220	1.8
	Other Current Liab.	2,795,484	2,795,484	0.0	2,795,484	2,736,014	2.2
	Long Term Liabilities	0	0	0.0	0	0	0.0
	Shareholders' Equity	0	0	0.0	0	0	0.0
	Retained Earnings	74,496,390	74,447,146	0.1	74,496,390	72,836,714	2.3
	TOTAL LIAB. & EQUITY	88,408,730	88,329,281	0.1	88,408,730	85,934,435	2.9

Johansen & Anderson has been using Jonas Construction Software for 10 years; Owner Rick Cronholm appreciates that the software provides “a great snapshot of the company financials in order to keep an eye on how well the business [is] doing.”

Company: 47 - Jonas Construction & Serv Period: Jul 2020

Description	This YTD	Last YTD	Description	This YTD	Last YTD
LEVERAGE RATIOS:			LIQUIDITY RATIOS:		
Working Capital	73,950,310	73,265,634	Earnings before Other	1,869,827	2,829,233
Current Ratio	6.32	6.59	Debt to Total Assets	15.7%	15.2%
Quick Ratio	6.29	6.57	Times Interest Earned	0	0
Sales to Work.Capital	0.03	0.04			
ACTIVITY TURNOVER:			PROFITABILITY RATIOS:		
Average Sales/Day	13,672	16,008	Gross Profit Margin	72.4%	93.5%
Aug Collection Period	2,123	2,094	Net Profit	1,869,827	2,829,233
			Return on Assets	2.1%	3.3%
			Return on Investment	2.5%	3.9%

Johansen & Anderson relies on Jonas Construction Software to stay on top of the company's financial status.

“Luckily, we have all of our data in one system [with Jonas], so we could easily see and contact clients with visits coming up.”

— Rick Cronholm, Owner, Johansen & Anderson

a technology standpoint, Cronholm was not sure about how the phone forwarding would work or how to keep the communication lines open between departments with everyone working from home. Limited staff could come into the office, but he wanted to make sure all bases were being covered.

Cronholm went on to say that it was overwhelming at first to have to reschedule commercial site service visits. The residential side of business was even more of a challenge, because approximately 30 to 40 percent of clients did not want anyone coming into their homes. “Luckily, we have all of our data in one system [with Jonas], so we could easily see and contact clients with visits coming up,” Cronholm observed.

After surviving the initial impact of the pandemic, Cronholm realized that there were technological improvements Johansen & Anderson could make to better prepare for the future. The first was to review their firewall and network restrictions and possibly move towards using the cloud, as many Jonas clients have already done. The second was to start using the Jonas mobile solution to set up their technicians with tablets to complete work orders from the field. “I think that COVID-19 really showed a lot of companies any holes, room for improvement, and how they can be better streamlined overall,” Cronholm concluded.

For more information, visit try.jonasconstruction.com/mcaa.

With eSUB Software, Braconier Cuts Payroll Processing Down to Minutes

Braconier VP Touts ‘Transparency and Accountability Across the Board’

Braconier adopted eSUB’s comprehensive software platform to standardize project management and operations, cutting processes such as timecard inputting and payroll processing from a full day down to minutes. The platform also helps Braconier document every aspect of their projects, which helps keep things running smoothly.

Braconier prides itself on providing systems that the community and public rely on, such as hospitals, aerospace facilities, and government buildings. They attribute much of their success to a culture of treating each other as family and supporting one another in their continuing efforts to be the best in the industry.

A critical piece of supporting employees is empowering them to do their jobs effectively with the latest technology. “We get the best out of our people because we give them the best information,” said Scott Calahan, vice president of Operations for Braconier. “That’s what eSUB does. It gives our people information.”

‘People Were Doing Their Own Thing’

Braconier has successful, experienced leaders in the field, but many used manual processes without standardization. “Several project managers and field leaders were doing things their own way—spreadsheets, Word documents, PDF documents,” said Calahan. “With timecards, some would take a picture of paper timecards and email them to the office, while some would call in their time. A lot of people were doing their own thing, not a real standard process.”

The Braconier team selected eSUB to help standardize their core

processes. Developed exclusively for trade contractors, eSUB mobile and cloud-based project management and document control software seamlessly link the field and office. eSUB standardizes project management procedures so users can easily enter data, site events, labor activities, material costs, workforce information, documentation, and more into a fully searchable database updated in real time.

“The ability to go back in time and gather information on a project is valuable. ... We have everything documented.”

—Steve Van Wormer,
Project Manager, Braconier

Calahan continued, “We used to track RFIs [requests for information], change order requests, and project documents in our spreadsheet or accounting software. The accounting software was too complex for those purposes, and everyone had to take the time to modify the spreadsheet. With eSUB, the project cost tracking is in real time, and we receive notifications if we’ve passed the time limit to get a receivable back.”

eSUB’s comprehensive platform delivers the ability to create and track project documentation for complete visibility on project information. Project managers and field leaders can create RFIs, change requests, purchase orders, and more using eSUB’s customizable templates. The two-way email integration delivers a

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John W. Danforth Relies on Raken to Capture Detailed Productivity Data

Tracking Unplanned Costs Daily Ensures Contractor Gets Paid

John W. Danforth—a founding member of MCAA—is using Raken’s digital time cards and daily reporting to keep a record of all the impacts the pandemic has had on their productivity—so they can demonstrate what they have done and get paid for it. Construction companies have been forced to change the way they operate to ensure safety and compliance, and jobsite data are critical for contractors to maintain a record of productivity and streamline their workflows.

Digitally Tracking Overtime

From social distancing to health verification paperwork, all the extra minutes and materials spent following new protocols can add up to substantial costs over the duration of a project, negatively affecting both your completion deadline and budgets. When faced with these impacts on planned labor and productivity, you have two choices: pay overtime to get the work done on time or delay the project. Most companies will choose overtime, but who exactly will pay for these extra hours?

Danforth uses digital time cards to track and report unplanned labor and to demonstrate loss of productivity through measured mile analysis. By importing their estimated labor codes and budgets into Raken software, they are able to measure all their labor against the estimate to see what is affected. “Everything with COVID-19 has been an unplanned cost, but we’re able to show the impacts to labor and material, and we’re able to report that on a daily basis to the GCs and the CMs,” said Todd Follis, Danforth’s vice president of Pre-Construction Planning.

This type of documentation gives Danforth reliable standardized data to know exactly how their jobs have been affected. The more accurate the information, the more powerful

“Most people who don’t have this level of insight [from Raken software] will just keep on doing the same thing again and again until someone sees it on a financial statement ... and by then it’s too late.”

— Todd Follis, Vice President of Pre-Construction Planning, John W. Danforth

it is for proving the added costs and pinpointing who is responsible.

Solid Defense

Having labor productivity data and daily reports digitally stored means you have credible evidence to address the inevitable disputes over loss in productivity and improves your chances of getting compensated. No one wants to go into litigation, especially if you do not have incredibly complete documentation. By using Raken, Danforth has a reliable and repeatable method to support claims successfully and avoid litigation in most cases.

Danforth has used Raken to successfully defend contracts on both

private and public projects, most recently on a major federal project. Using digital documentation, they have successfully demonstrated and won claims with indisputable proof of what happened and why.

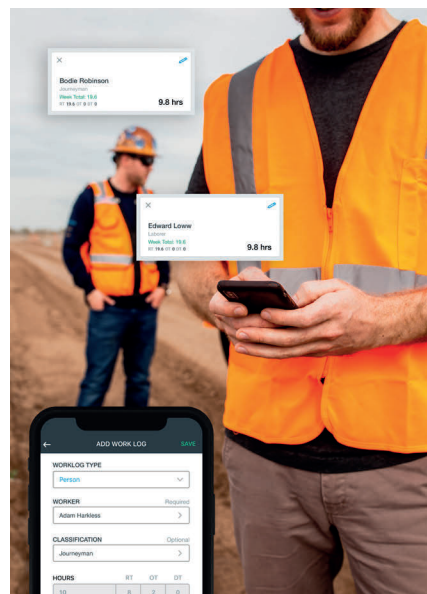
Follis explained, “We’ll continue to win because we’ve standardized our labor metrics and are able to produce reliable data that correlates to our estimates and credible, proven industry databases such as WebLEM. By having reliable, credible data, it’s just a matter of ensuring we maintain accurate schedule data ... so when delays and productivity impacts occur, it’s just a matter of providing proper notification and organizing the data to present the costs that are owed.”

Improving Communication

One of the biggest values Danforth sees in Raken is the ability to communicate and catch any issues early on. “If we have a bad week on a labor code, we’ll see the projected productivity start to drift away from the budget,” said Follis. “Most people who don’t have this level of insight will just keep on doing the same thing again and again until someone sees it on a financial statement ... and by then it’s too late.”

Strong communication is essential to overcoming challenges. The earlier you can communicate with stakeholders about added hours and potential costs, the less likely a project will come to litigation.

Good internal communication comes from empowering the crews on the job. As Follis stated, “The most important



All of Danforth’s foremen had the Raken app up and running in just three weeks. Now, crews can easily track their time in the field using their smartphones, providing Danforth with reliable, detailed data.

thing we have is communication with our people—they're the ones doing the work onsite. If we're not listening to them and can't react to what their needs are, we've really missed the boat. Our project managers and foremen operate as partners, and Raken allows us to respond to daily changes/issues immediately even when the project manager is not onsite."

Finding software your team will actually use is key. When Danforth implemented Raken, they were able to get all their foremen up and running in just three weeks. Follis said, "They picked it up no problem. Whether they were inexperienced, young, old, it didn't matter. It was easy for our field staff to grasp since the app was so intuitive." Giving your

team a tool that is easy to use and saves time will improve the quality of data and communication from the field to the office.

For more information, visit www.rakenapp.com.

MCAA welcomes Raken as a new member.

eSUB

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detailed project correspondence with date and time stamps to serve as the contractor's historical timeline of the project. The timeline can help resolve conflicts before they arise and improve collaboration and communication with general contractors and customers.

Steve Van Wormer, project manager at Braconier, explained, "The ability to go back in time and gather information on a project is valuable. We can search previous field notes and daily reports or delayed responses to see where we got held up. We have everything documented."

Because eSUB is integrated with Braconier's accounting software, "There's no double entry—everything is sent to eSUB and streamlines the entire process."

—Liz Vigil, Project Coordinator and Estimator, Braconier

Standardizing Operations to Save Time

As an operations platform, eSUB captures critical labor and cost information on projects. Because eSUB integrates with the Sage 300 construction and real estate accounting system, Braconier's project coordinators, project managers, and field supervisors minimize double entry while getting real-time cost information.

"eSUB ... serves as a central location to get an overview of the job and know if your job is going in the right direction."

—Scott Calahan, Vice President of Operations, Braconier

"I set up all the jobs and phasing with cost codes in Sage 300, and that information is sent to eSUB," said Liz Vigil, project coordinator and estimator at Braconier. "There's no double entry—everything is sent to eSUB and streamlines the entire process."

The Braconier leadership team adopted a phased implementation process that started with timecard management. The previous timecard process included either handwriting timecards on paper or taking pictures of the timecard itself. Some field supervisors had collected time on spreadsheets. The payroll administrator received all this information via email and fax and manually entered it into the payroll system.

"We used to spend a full day of inputting timecards and processing payroll, and now with eSUB, it takes minutes," noted Calahan. "The way that eSUB combined timecard management with daily reports is brilliant. It takes only an extra couple of minutes to take a picture and note what happened onsite that day.

It was successful starting out with timekeeping, then daily reports, and additional modules such as RFIs and other pieces of eSUB. It helped us get more adoption across the board."

Easier Onboarding

With the standardized processes now in place at Braconier, the onboarding process for new project managers has become much easier. Once they learn eSUB, any project manager or foreman can jump into the middle of a project and know exactly where it stands. When customers are not responding to them, anyone from the team can view the status of the documents.

Mr. Calahan elaborated, "eSUB gives us a good platform for our core project management processes. It serves as a central location to get an overview of the job and know if your job is going in the right direction. A foreman, project manager, or even the president can log into eSUB and get the same project information in real time.

"We have very skilled and self-sufficient field supervisors," Mr. Calahan went on to say. "eSUB is an empowering tool for them to see where they stand financially and with working hours on a project—and it's something they can easily do themselves. It allows for transparency and accountability across the board."

For more information, visit www.esub.com.

Murphy Company Cuts Project Installation Time with Sioux Chief Products

Using a range of **Sioux Chief Manufacturing Company** products, **Murphy Company** dramatically cut down its installation time of plumbing products for a new high-rise in St. Louis. Murphy also turned to Sioux Chief for custom products, which were rapidly produced in nearby Kansas City, MO, ensuring the project stayed on schedule.

Ballpark Village is a dining and entertainment district across from the St. Louis Cardinals' Busch Stadium. It played a major role in the revitalization of downtown St. Louis, MO. When Murphy was awarded the plumbing work for the high-rise portion of the project, they knew that keeping such a large job on schedule would be a challenge. Recognizing the time constraints, they called on Sioux Chief to offer solutions in several areas of the plumbing installation.

The FinishLine drain and cleanout system was a key factor for ensuring a quick, clean installation without having to worry about whether the floor height would be correct or level, because the system is designed to account for variations in jobsite conditions. Using the FinishLine system, Murphy Company saved many hours, because



Murphy counted on Sioux Chief products to cut installation time and stay on schedule for the Ballpark Village high-rise in downtown St. Louis.

they could quickly install the parts during the rough-in as well as the top-out and finish stages of setting the drains and cleanouts. Murphy Company found that the FinishLine products allowed for a perfect finish every time.

The Ballpark Village high-rise also had fire-rating requirements at all floor penetrations that needed to be addressed. The method that had been used on the first few floors was time-consuming and expensive, so Murphy looked for an alternative. Sioux Chief designed a custom drain anchoring and penetration system that filled the bill. Because its FinishLine components are interchangeable and manufactured in Kansas City, Sioux Chief was able to provide the customized products and get them to Murphy quickly.

For the rough-in of the pressure piping, Sioux Chief offered solutions in several areas. Its Ox Box for washing machine and icemaker installations was the clear choice, and Murphy also decided to use the Ox Box for the lavatory and kitchen supply. Their decision was based on the fact that installers only had to touch the terminations twice, reducing the risk of leaks. Murphy also took into account the amount of time to fill the system for testing, drain the system to install supply stops, turn the water back on, and run water to each unit to check for leaks. They estimated saving 20–30 minutes per installation. All of Sioux Chief's Ox Box products offer heavy duty, dezincification, and stress corrosion cracking-resistant brass ball valves.

Dave Book, Murphy's vice president of Purchasing and Facilities, said "We have used Sioux Chief products on many of our projects. Besides using all of their access boxes on the Ballpark Village project, Sioux Chief gave us even more insight to their capabilities with their ability to custom-build accessories for a quick and inexpensive FinishLine floor drain installation."

Sioux Chief also supplied a number of brackets, shower drains, and closet flanges for the Ballpark Village project, which was completed in 2019. Murphy has been using many of these Sioux Chief products for years and continues to see the value of installing products that are not only innovative but also made in Kansas City.

For more information, visit <http://www.siouxchief.com>.

MCAA welcomes Sioux Chief as a new member.



Top: Murphy estimated that using Sioux Chief's Ox Box for various plumbing connections in the new Ballpark Village building saved them 20–30 minutes per installation.

Bottom: Using Sioux Chief's FinishLine system saved Murphy hours of time during the rough-in, top-out, and finish stages of setting the drains and cleanouts for the new St. Louis building.



SitelogIQ Speeds Up Processes Using XOi Technologies

SitelogIQ, a full-service facilities solution provider in California, has proof that seeing is believing—and they are speeding up their quote approval process as a result. “We’re capturing XOi content—physical video, pictures—onto quotes, which has expedited how fast those quotes are approved. We seem to get less contested quotes, less questions,” said Jason Saunders, service operations manager for SitelogIQ.

“If we can show them rather than tell them, it gives them a nice verification,” explained Service Manager Eric Yocum. “We’ve had some customers tell us right away that they want video on every future work order.”

In addition, SitelogIQ found that using XOi reduced the lead time for sales follow-up on field-originated opportunities from two weeks to one or two days.

Although they initially purchased XOi to help technicians, the company



SitelogIQ has found that quotes that include videos and photos captured using XOi technologies are approved faster than others, which allows them to move projects forward quickly.

realized many additional benefits, including increased customer transparency. In particular, SitelogIQ found that partnering with XOi:

- improved the clients’ perceived value of mechanical services;
- improved workflows throughout the organization, resulting in greater efficiency;
- helped property managers provide

better documentation to offsite supervisors and building owners;

- eliminated most of the data collection from field service calls; and
- spurred creation of a video training library featuring senior journeymen.

For more information, visit <http://www.xoi.io>.

XOi’s Six Tips to Create Safe Business Practices During COVID-19

During the COVID-19 pandemic, businesses of all sizes and types are wondering how to stay active and safe given the need for social distancing. Using the XOi platform can help you protect your teams and your customers by taking advantage of video, photos, and augmented reality tools. XOi offers some techniques for using its technology to keep workers working and businesses running while ensuring safety.

1. Social Distancing

By sharing content from workflows virtually, rather than in person, Vision allows your team to connect to the home base and customers using videos, photos, and written recaps of services provided instantly and with no face-to-face interaction. XOi’s Live Call functionality allows technicians to get live support from an technician, who can see what the tech in the field is seeing and use augmented reality tools for collaborative problem solving.

2. Limiting Exposure to Team Members at Risk

Protect those on your team who are at higher risk for contracting COVID-19 by utilizing them in the virtual environment. Record their expertise and create training videos that capture their years of know-how.

Let them support others in the field through the augmented reality support of Live Call.

3. Maintaining Quality Work While Limiting Field Exposure

A quick and customizable review workflow will allow quality control from service managers directly in the field without requiring them to travel to a jobsite or engage in multiple diagnostic conversations. Technicians can see “what right looks like” for each step in a process through video, photo, or text instructions and know what must be completed for the job to be finished. XOi customers show an average 35-percent increase in service requests completed after implementing XOi. That means more jobs completed in less time with high quality, protecting your employees and your bottom line. XOi customers also use these workflows to institutionalize the knowledge and make it readily available to their entire teams through the XOi platform.

4. Growing and Establishing Differentiation While Social Distancing

Sharing a quality recap that includes photos and videos virtually after each service builds trust and respect among customers. Showcasing this

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could go paperless, enable office employees to work from home, and help technicians limit face-to-face interactions with other employees and customers. It was a big distraction during a stressful time.

As contractors adapted to the new work environment and states began reopening, the gap between expected and actual appointment volume decreased. The general recovery trend from the beginning of April until the end of June was heading in the right direction, but it appears that, as of the end of June, the recovery had stalled or even reversed. These data suggest that the industry could be negatively impacted by spiking COVID-19 cases.

Approved Quotes for New Work

So, what do the data suggest you can do to speed up your company's recovery? For that, we looked at quote approval rates for over 120,000 service, maintenance, and repair quotes processed through ServiceTrade for February through June of 2020. When we measure the number of ServiceTrade quotes approved in a week and divided by the number of quotes submitted to customers in that same week, we can chart a normalized quote approval rate over time.

For all quotes, there was a dip in the normalized quote approval rate in March during the initial response to the pandemic. The normalized quote approval rate mostly returned to prepandemic levels in April and May. However, there is a noticeable difference between quotes above and below \$5,000. Historically, quotes over \$5,000 (gold line in Figure 4) are approved at a lower rate, but they are not recovering to prepandemic approval

rates as quotes under \$5,000 are (purple line in Figure 4). Just like you, your customers are still recovering and are likely sensitive to price. These data suggests that you should keep sending repair quotes and focus on the smaller repairs that could prevent more costly breakdowns in the future to help replace your lost workload with planned repairs.

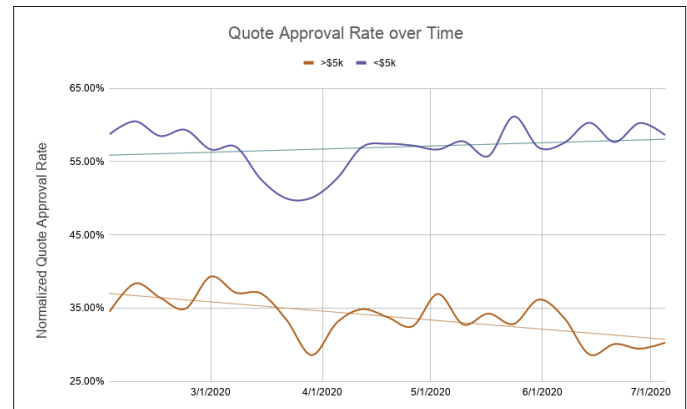


Figure 4. Quote Approval Rate February to June, 2020

At ServiceTrade, we have a saying: “Feelings fool, and data rules.” If the recovery stalls and the appointment volume slows again, mechanical service contractors must be prepared to respond. The companies that respond based on data about what is happening in their business and with their customers will make better decisions than those who have to rely on their gut feelings. We have focused here on appointment volume and quote approvals. If you are not plotting those data points every week, you should start now.

For more information, call 919-246-9900 or visit servicetrade.com.

XOi

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automatic transparency not only will help reassure existing customers but also can be a positive factor when you head to the bidding table.

5. Not Over-Burdening Experienced Techs

New technology can be intimidating or seen as a burden by techs who have been operating well without it. The ease of implementation is the deciding factor in workforce adoption. Users on XOi's platform average only two minutes of use to capture meaningful information shareable with both their companies and their customers. The platform was created with simplicity in mind, with features such as automatic note dictation, electronic workflows that replace paper ones, and instant submission. Users can

take a picture of a data plate and automatically generate tags for unit make, model, and serial number. They can easily access an extensive knowledge base with over 50,000 schematics, wireframes, and manuals. Users can also import their existing libraries of information into the platform, tagging all content to create a fully searchable source of relevant information to help technicians solve problems.

6. Reducing Unnecessary Jobsite Visits

Live Call can connect your techs safely to your customers virtually to put eyes on the site or on the unit before making the decision to send someone to the location. Once you know what you are looking at, you can ensure that you are sending the right technician with the right skills—and avoid sending out additional trucks and employees when they are not needed.