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MARCH 2026



**Building a Community
for Women in
Restoration and
Engineering**

16



**Small Town
With Big
Electrification
Goals**

26



**OSHA Recommended
Practices:
Management
Leadership**

32

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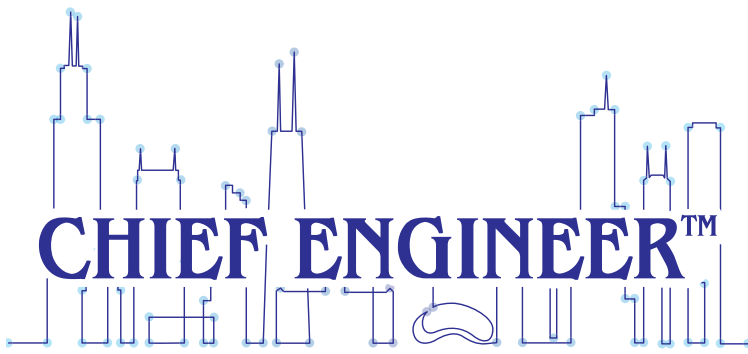
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16 Building a Community for Women in Restoration and Engineering

We look at the growing impact of Women in Restoration & Engineering — WiRE — an organization that encourages and empowers women in the built world.

26 Small Town With Big Electrification Goals

When a small town finally got the green light for a new school building, solid relationships made specifying a new HVAC system to suit its needs a lot easier.

32 OSHA Recommended Practices: Management Leadership

In the first of a series of pieces on OSHA recommended practices, we look at the role of senior leadership in setting the tone for health and safety in your organization.

President’s Message	5
ASHRAE Update	6
Events	8
Member News	10
Best Practices	12
New Products	38
Tech Edge	41
Boiler Room Annex	44
Dependable Sources	46

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Dear Members,

It was lovely to see all of the families come out to take part in our annual CEAC Skatfest last month, as it always is. Events like this are a great reminder of the best reason why we do the work we do — to support our families and to help them to flourish. We owe our thanks to the Events Committee for their planning and execution that enabled everyone to have so much fun on the ice and in the gymnasium facilities, and especially to our Event Sponsors Air Comfort and HOH Water Technology for making it all possible. We can't do events like this without our sponsors, so let's please remember to call them when we need outside help with our building systems.



And that brings us to March and our annual St. Patrick's Day dinner. All but our newest members will know that this is one of the year's most popular and most anticipated of the monthly meetings of the year, so we ask that if at all possible, to register early at the Events page at chiefengineer.org, so that we can plan accordingly and ensure that everyone gets a seat at the table. The meeting will take place Wednesday, March 18, at 4:00pm, at the Irish American Heritage Center at 4626 N. Knox Ave., Chicago. Our thanks again to our Events Committee for all they do to make this such a popular event. I look forward to seeing everybody for this year's banquet, and to the Boils for making their Irish trad music an integral part of the proceedings.

At the same time, remember that we are in the process of planning our now-annual Vendor Fair, which will be held Wednesday, April 22, at the Morgan Arts Complex at 3622 N. Morgan St. in the Bridgeport neighborhood of Chicago, beginning at 3:00pm. This is a major event for our Associate Members and for everybody, and requires abundant planning, so the earlier you are able to register your booth and your attendance at the event, the better. It takes a lot to put on an event like this, so your cooperation is greatly appreciated in advance.

It was a fiercely cold winter this year — more so than we've seen for a while in Chicago, but with warmer temperatures giving way to spring, we'll be wanting to prepare our buildings' systems for the summer heat to come. Now is the time for seasonal inspections and maintenance to our cooling towers, inspections of our chillers, and our roofing and drainage systems. PM now avoids expensive headaches down the road, so stay on top of it all, and if you need an outside assist, please remember to call on our Associate Members from your QuickShopper. Let's stand behind the businesses that stand behind us and that help make the CEAC the fine association to be a part of that it is.

Sincerely,

Larry McMahon



ASHRAE Learning Institute Offers Free Publication With Online Course Registration

ASHRAE is offering a new benefit to enhance the value of its online instructor-led courses through the ASHRAE Learning Institute (ALI).

Starting with its 2025 online course schedule, ALI is offering a free recommended ASHRAE publication with each online course registration. The goal of the free bonus publication is to reinforce the course material and support deeper understanding of the subject matter.

“This benefit underscores our dedication to providing a comprehensive learning experience by pairing expert instruction with a complimentary publication,” said 2024-25 ASHRAE President M. Dennis Knight, P.E., BEMP, Fellow Life Member. “Together, these resources not only enhance knowledge retention but also empower professionals to apply their skills effectively in advancing their careers and the industry.”

Participants will receive a link, which will be available for 30 days, to download the publication.

The free publication aims to attract a broad audience, including those who may have hesitated to enroll in an ALI course in the past. By providing a tangible resource alongside expert instruction, ASHRAE demonstrates its dedication to empowering professionals across all experience levels.

Registrants should note that no substitutions or hard copies of the publication are available as part of this offer.

For the schedule of online instructor-led course offerings through ALI, visit ashrae.org/onlinecourses.



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The 2026 American Coatings Show and Conference (ACS) is the premier event for professionals across the paints and coatings value chain. As the largest coatings industry gathering in North America, ACS brings together thousands of attendees and hundreds of exhibitors for three high-impact days focused on innovation, sourcing and technical excellence.

ACS offers a complete view of the marketplace in one location: raw materials, additives, production and testing equipment, automation tools, digital technologies, and the latest advancements in sustainability. The exhibit floor features hands-on demonstrations, new product launches, and direct access to leading global suppliers, enabling attendees to streamline product evaluations, compare solutions side-by-side, and form valuable new partnerships.

The concurrent American Coatings Conference deepens the experience with expert-led presentations, scientific research, and trend-focused sessions addressing the industry's most important topics, including next-generation formulations, bio-based materials, advanced application methods, and the role of digitalization and AI in the industry.

Whether you work in R&D, procurement, manufacturing, sales, or business development, ACS 2026 provides unmatched opportunities to expand your network, gather market intelligence, and stay ahead of a rapidly evolving industry. It is the most efficient and influential place to drive your business forward and connect with the coatings community at the highest level.


ACS will feature a curated, varied program across multiple topical tracks, offering some 96 technical sessions. The American Coatings Conference brings together members of the coatings industry's technical and scientific community with members of the academic world of coatings and their students for three days of learning and sharing the latest scientific research and advancements in coatings technology.

The dynamic offerings to which attendees can look forward include:

- The Product Presentation stage, where dynamic new innovations in the coatings industry are featured in presentations that take place each day of the event.
- The Industry Buyers Lounge, which provides a designated area for show participants to set up important meetings.
- The trade show and conference newspaper, the American Coatings Show Daily, published all three days of the show, features daily highlights, interviews with industry experts, exhibitor booth locations, and more.

Dr. Bedri Erdem, Chief Technology Officer (CTO) at Rust-Oleum Corporation and RPM Consumer Group, will provide the keynote address at the 2026 American Coatings Conference. Dr. Erdem's keynote is titled, "Reimagining Chemistry as the Catalyst: Driving Innovation, Sustainability, Performance to Fuel Growth in the Coatings Industry." His keynote will challenge attendees to rethink possibilities, innovate differently, and embrace partnerships that unlock the next era of performance, discovery, and sustainability in the materials and coatings sector. 

For more information about the 2026 American Coatings Show and Conference, please visit www.american-coatings-show.com.

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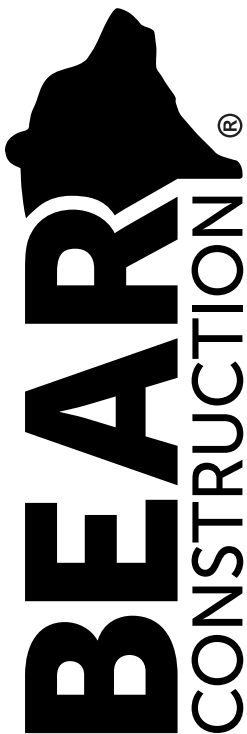
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Jamerson & Bauwens' General Foreman Electrician John Dela Rosa has been recognized as 2025's Technician of the Year.

Jamerson & Bauwens Awards John Dela Rosa With 2025 Technician of the Year

Jamerson & Bauwens Electrical Contractors recently recognized John Dela Rosa as its 2025 Technician of the Year. General Foreman Electrician Dela Rosa started at Jamerson & Bauwens more than 30 years ago, and has become one of the nation's only Level III Thermographers, possessing the knowledge and experience to employ TEGG's full range of tools.

Dela Rosa describes TEGG's offerings as "efficiency-enhancing, facilitating seamless input, collation and interpretation of infrastructure-wide detail drawings, thermographic, maintenance and warranty information."

"It's a huge deal for facilities' personnel to go from documents scattered on paper somewhere in some drawer to having all a system's or network's information coalesced in one place," he says.

TEGG tools also are a straightforward path to compliance and the NFPA70B requirement, of which Dela Rosa says, "'You should' is now 'You shall.'"

Congratulations, John, and to Jamerson & Bauwens on maintaining such skilled personnel. 🏆🏆



Cyclone Energy Group was instrumental in Elmhurst University's Health and Sciences Building earning its recent LEED Gold designation. (Photo: Elmhurst University)

Cyclone Energy Group Helps Elmhurst University Building to Earn LEED Gold

Cyclone Energy Group's work on the new Elmhurst University Health Sciences Building has led to the facility earning LEED Gold status. According to a feature in Prospect magazine, Cyclone Energy Group's innovative approach to sustainability was a collaborative journey that helped bring this state-of-the-art facility to life. By prioritizing sustainability, through its use of locally sourced building materials, solar and other energy-efficient systems, carefully maintained water consumption and indoor air quality, Cyclone Energy Group helped to create an environment that saves money, maintains a reduced environmental impact, and offers its occupants a healthy, enriching environment for learning.

Sustainable features were part of the blueprint of the project at the start, including large windows accommodating a great deal of natural lighting, reducing reliance on electric lighting. Windows and insulation were selected to aid with thermal efficiency, and to further bring down energy costs. Low-flow faucets and toilets were installed to minimize water consumption. The facility's four boilers in the basement offer customization and redundancy, and can be used to melt ice and snow from the sidewalks outside the building. The ventilation system detects and responds to the carbon dioxide levels in each room. And a photovoltaic solar panel system on the roof generates nearly half the building's needs.

The building recently received its LEED Gold certification from the U.S. Green Building Council. Congratulations to the team at Cyclone Energy Group on a job well done! 🏆🏆



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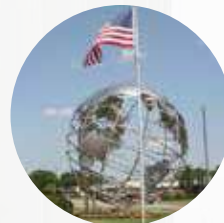
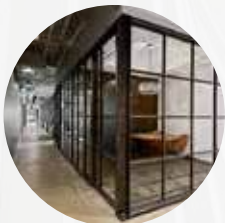
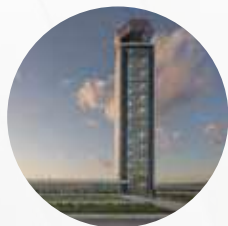
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EFFICIENCIES IN FAN OPERATION & CONTROL

Observing proper operation and control of fans in our facilities can have a significant impact on their energy efficiency. Let's look at some of the most prevalent operation and maintenance recommendations that can maximize the impact on our facilities:

Oversized Fans: A common problem in many facilities is the purchase of oversized fans for their service requirements. These oversized fans will not operate at the most efficient point and in extreme cases, these fans may operate in an unstable manner because of the point of operation on the fan airflow pressure curve. Oversized fans generate excess flow energy, resulting in high airflow noise and increased stress on the fan and the system. Consequently, oversized fans not only cost more to purchase and to operate, they create avoidable system performance problems. Possible solutions include, amongst other replacing the fan, replacing the motor, or introducing a variable-speed drive motor.

System Resistance: The fan operates at a point at which the system resistance curve and the fan curve intersect. The system resistance has a major role in determining the performance and efficiency of a fan. The system resistance also changes depending on the process. For example, the formation of the coatings/erosion of the lining in the ducts changes the system resistance marginally. In some cases, the change of equipment or duct modifications drastically shift the operating point, resulting in lower efficiency. In such cases, to maintain the efficiency as before, the fan has to be changed. Hence, the system resistance has to be periodically checked — more so when modifications are introduced and action is taken accordingly for efficient operation of the fan.

Fan Maintenance: Regular maintenance of fans is important to maintain their performance levels.

Maintenance activities include:

- Periodic inspection of all system components
- Bearing lubrication and replacement
- Belt tightening and replacement
- Motor repair or replacement
- Fan cleaning

Fan Control: Normally, an installed fan operates at a constant speed. But some situations may require a speed change; for example, more airflow may be needed from the fan when a new run of duct is added, or less airflow may be needed if the fan is oversized. There are several ways to reduce or control the airflow of fans. These are summarized in the table atop the next page. ■■

Fan System Operational-Efficiency Considerations (UNEP 2006)

- Use smooth, well-rounded air inlet cones for fan air intake
- Avoid poor flow distribution at the fan inlet
- Minimize fan inlet and outlet obstructions
- Clean screens, filters and fan blades regularly
- Minimize fan speed
- Use low slip or flat belts for power transmission
- Check belt tension regularly
- Use variable speed drives for large variable fan loads
- Use energy-efficient motors for continuous or near continuous operation
- Eliminate leaks in ductwork
- Minimize bends in ductwork
- Turn fans and blowers off when not needed
- Reduce the fan speed by pulley diameter modifications in case of oversized motors
- Adopt inlet guide vanes in place of discharge damper control
- Reduce transmission losses by using energy-efficient flat belts or cogged raw-edged V-belts instead of conventional V-belt systems
- Ensure proper alignment between drive and driven system
- Ensure proper power supply quality to the motor drive
- Regularly check for vibration trend to predict any incipient failures like bearing damage, misalignments, unbalance, foundation looseness.

Source: U.S. Dept. of Energy



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Type of Fan Flow Control	Advantages	Disadvantages
Pulley change: reduces the motor/drive pulley size	Permanent speed decrease Real energy reduction	Fan must be able to handle capacity change Fan must be driven by V-belt system or motor
Dampers: reduce the amount of flow and increases the upstream pressure, which reduces fan output	<ul style="list-style-type: none"> Inexpensive Easy to install 	<ul style="list-style-type: none"> Provide a limited amount of adjustment Reduce the flow but not the energy consumption Higher operating and maintenance costs
Inlet guide vanes: create swirls in the fan direction thereby lessening the angle between incoming air and fan blades, and thus lowering fan load, pressure and airflow	<ul style="list-style-type: none"> Improve fan efficiency because both fan load and delivered airflow are reduced Cost-effective at airflows between 80-100% of full flow 	<ul style="list-style-type: none"> Less efficient at airflows lower than 80% of full flow
Variable Speed Drive (VSD): reducing the speed of motor of the fan to meet reduced flow requirements <ul style="list-style-type: none"> Mechanical VSDs: hydraulic clutches, fluid couplings, and adjustable belts and pulleys Electrical VSDs: eddy current clutches, wound rotor motor controllers, and variable frequency drives (VFDs: change motor's rotational speed by adjusting electrical frequency of power supplied) 	<ul style="list-style-type: none"> Most improved and efficient flow control Allow fan speed adjustments over a continuous range For VFDs specifically: <ul style="list-style-type: none"> Effective and easy flow control Improve fan operating efficiency over a wide range of operating conditions Can be retrofitted to existing motor's compactness No fouling problems Reduce energy losses and costs by lowering overall system flow 	Mechanical VSDs can have fouling problems <ul style="list-style-type: none"> Investment costs can be a barrier

Fan-flow control comparison (adapted from DOE 2003)



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Building a Community for Women in Restoration and Engineering

By Kate Gawlik

An ICCP system was installed on the iconic 80-foot buttresses that adorn the top crown of the Tribune Tower Residences.

WiRE WEBINAR SERIES

December 3, 2025 at 1:00 pm CT

Forensic Engineering for Historic Structures

Amy Woods, PE, FAPT



WiRE's webinar library, accessible only by members, now hosts a wide variety of topics for women.

Gloria Vanderbilt famously said, "I've always believed that one woman's success can only help another woman's success."

The Chicago-based organization known as WiRE, or Women in Restoration & Engineering, encourages and empowers women in the built world. Founder Amy Woods, PE, FAPT, a principal engineer with Braun Intertec Corp. in Chicago, specializes in forensic engineering for historic structures, petrographic examination and mortar analysis. She started WiRE in 2015 because she believed that emerging professionals needed more community, support and educational opportunities in the industry.

Woods says, "Most of us do not plan a career in forensic preservation and restoration. This is a hybrid field, and you usually fall into it. For me, in undergrad, I attended a presentation on the terracotta restoration of the Reliance Building, given by Deborah Slaton, principal with Wiss, Janney, Elstner Associates Inc., and that was it. At that moment, I knew that forensic engineering is exactly what I wanted to do.

"Years later, I hit a point in my career where I wanted to create a platform that would allow more women to attend events and hands-on workshops about construction that would hopefully speak to their passion. Our careers are not always straightforward paths. More women need to educate each other so that younger women can figure out where their passions lie. My wish is for that passion to be in some version of a trade or as a property manager, engineer or something else in construction. We have endless possibilities."

Recognizing the need for more resources for women in construction is what spurred the creation of WiRE.



A WiRE workshop focused on stained glass.

Education and Mentorship

In 2015 when WiRE was founded, there were only a few organizations in Chicago focused on events for women in the construction industry. Woods joined forces with other WiRE founders to bring workshops, site visits and networking events to emerging professional women. The intention was to offer hands-on experiences, build comfort on job sites and develop a community of women in the construction industry.



The WitBW symposium ran for several years in Chicago in partnership with other women-focused groups, like Chicago Women in Architecture and Women in Structural Engineering, known as WiSE.



Gina Crevello, MSc, FAPT, principal and founder of Echem Consultants LLC, Kingston, N.Y., became a member of WiRE in 2018. She admires how WiRE brings together so many professional women.

Eventually, this effort led to the creation of the Women in the Built World (WitBW) that ran for several years in Chicago in partnership with other women-focused groups, like Chicago Women in Architecture and Women in Structural Engineering, known as WiSE.

“The symposiums were a combination of technical topics by women, panel discussions focused on women-related issues, a keynote presentation and a networking reception,” Woods says, noting the annual event sold out every year even as it progressed into larger spaces.

WitBW drew in national WiRE members, like Gina Crevello, MSc, FAPT, principal and founder of Echem Consultants LLC, Kingston, N.Y. Crevello became a member of WiRE in 2018 after having known Woods for many years. Crevello, who admired Woods’ ability to bring together so many professional women, stepped up her involvement as a presenter for the group.

Echem Consultants is a sponsor of WiRE because Crevello believes organizations like it are critical for women in the construction industry who are working in a male-dominated field.

She says, “Many of the more-established and longer practicing members of the organization have faced significant barriers either entering the field or while working in the field. The WiRE events and networking opportunities provide a safe space for collaboration and support. The mentorship aspect and educational component of the organization is an immense resource for those entering the field. A female network is more likely to provide greater encouragement and support for those within the industry. There are very few organizations that bridge the gap between trades and professionals, and there are even fewer that focus on women in the construction industry.”

Like it did for many organizations, the pandemic shifted WiRE’s plans to virtual half-day symposiums. Woods was encouraged by the success of the virtual platform and predicted the impact could remain in a post-COVID era. At the same time, several well-established organizations and women-focused groups began offering more in-person events. WiRE, being a smaller group, decided to halt WitBW and to fill the void for other groups with virtual technical content that is released monthly.



Women from many areas of expertise come together to network at WiRE events.



The WiRE events and networking opportunities provide a safe space for women to collaborate and find support.



A WiRE group comes together to review practices in stone repair.

“Through several other organizations that I have been involved with for decades, the request we hear from emerging professionals is the need for technical content basics,” Woods says. “Two years ago, we began a monthly webinar series where we present a variety of topics along with partnerships from other like-minded organizations. Topics include job-site preparedness, concrete repair, roofing assemblies, mass masonry and insulation, structural engineering design, terracotta restoration, steel reinforcing, timber truss analysis, corrosion, specification writing, welding, nondestructive evaluation and more.”

Thanks to speakers and their willingness to share their expertise and content, WiRE’s webinar library now hosts a wide variety of topics for women. The topics educate women who want to explore different fields or elevate their understanding in a particular one. Dues from members and sponsors fund the webinars and other content, which are only available to members/sponsors. Crevello finds that WiRE content pulls in a component of mental health and wellness that is not typically addressed at other industry organization events. WiRE also addresses women-specific concerns, such as finding properly fitting PPE (harness, vests, boots, etc.), and directing members to companies that cater to women’s physical safety needs.

In 2026, WiRE is bringing a webinar series of “Big

Sexy Projects” to build additional technical content and showcasing professional collaboration between women in various aspects of the project team. In-person symposiums may happen in the future as the need and opportunity arise. Either way, members eagerly await the content because the impact has been profound.

Rachel Autenrieth Jackson, S.E., LEED AP, associate principal with Thornton Tomasetti in Chicago, says, “Amy has always generously shared the knowledge she has gained from her extensive background in repair work and expertise in concrete. I still refer to notes I took when she gave me a crash course on epoxy repairs in concrete cracks! Founding WiRE was a natural outlet for her passion for teaching and lifting women in the industry. WiRE stands out from other industry organizations aimed at women by giving women a platform to present highly technical information, in lieu of asking them to discuss topics like work-life balance, which affects all professionals, but are commonly only asked of women. I’ve always come away from WiRE events or continuing-education seminars having learned something new while also enjoying the warm community that Amy has fostered.”

Chicago Impact

A significant benefit of WiRE is it has allowed members to network beyond both their profession and hometown. For Crevello, her



Tifanni Sterdivant, CAM, CMCA, AMS, the General Manager of the Tribune Tower Residences, is a Local 399 member who actively participates in WiRE events and webinars.

professional network consisted of consultancy-based building envelope, structural engineering and diagnostics professionals. Now, she interacts with tradeswomen, local union members, and others both in New York and beyond.

Echem Consultants has a strong Chicago connection because of its involvement in the restoration of the Tribune Tower as it was converted to residences. The firm provided specialist design and installation support of a corrosion mitigation system, referred to as Impressed Current Cathodic Protection (ICCP), for the building's steel frame. The ICCP system was installed on the iconic 80-foot buttresses that adorn the top crown of the building. Echem Consultants continues its involvement with ICCP monitoring and maintenance, giving Crevello the opportunity to work closely with the Tribune Tower team, led by Tifanni Sterdivant, CAM, CMCA, AMS, the general manager of the Tribune Tower Residences, managed by FirstService Residential. Sterdivant also is a member of WiRE and Local 399.


"This was a fortuitous connection, and Tifanni and I immediately bonded over our existing network of professional women," Crevello says. "Tifanni has also been very supportive of women in the industry and has provided a platform for Echem to further our outreach by promoting ICCP technology, which saves clients significant repair costs when installed as a preventative system."

Professional organizations like WiRE create networking opportunities, help foster new relationships and build connections with professionals, according to Sterdivant. She

says, "As a woman working in engineering and managing large scale projects, it is even more important to be overprepared and ready with a solution. WiRE has helped to give me extra tools and confidence, with the latest and greatest techniques, specifications, products and testing methods. The community also is a great sounding board for ideas."

Membership has grown through word of mouth, with people like Sterdivant touting the benefits to other property managers and like-minded professionals. Sterdivant says the content offered by WiRE has led to time and money savings for projects while enhancing the knowledge base of Chief Engineers based in the Chicagoland area.

Sterdivant adds, "Over the years, I have worked with SEIU Local and Local 399 Chief Engineers on various projects, including roof replacements, balcony renovations, curtainwall maintenance and façade restoration. I can reference resources from WiRE workshops with Chief Engineers onsite, and that is invaluable."

Ladies, to become a member, visit www.womenwire.org. Gentlemen, talk with the women in your organizations about the benefits of WiRE for the overall advancement of the construction industry. 

Kate Gawlik is a Chicagoland area-based writer who focuses on uncovering construction and business trends.



Echem Consultants provided design and installation support, with continued monitoring and maintenance, of a corrosion mitigation system, referred to as Impressed Current Cathodic Protection (ICCP), at the Tribune Tower Residences.

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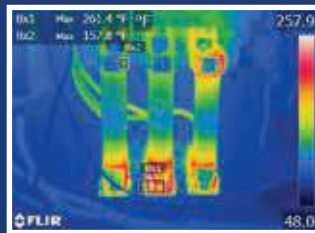
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Small Town With Big Electrification Goals

By Dan Vastyan



Foreman Jonathan John pipes a Fujitsu AIRSTAGE VU-V heat recovery system.

In the bottom left-hand corner of Colorado, about 50 miles from the Four Corners monument, is the blink-and-you'll-miss-it town of Dove Creek.

The tight-knit community of 667 residents depends heavily on the agricultural industry. Dove Creek, in fact, is known as the Pinto Bean Capitol of the World, thanks to the high-quality beans produced there.

While the town is small, the support residents show each other is big. For example, the last varsity basketball game created a standing-room-only situation at the old school's gymnasium.

An over-capacity basketball game was the least of the school district's concerns before construction began on the new Dove Creek in late 2023. The old school struggled to meet the town's needs in other ways, too.

The 1950s-era building was just too small, and the heating system was uncomfortable and inefficient. Cooling, if it could be called that, was only provided in a few specific areas. Outdated classrooms and insufficient space hindered the implementation of advanced learning programs.

Topping off the challenges, the little district simply didn't have the funds to improve its facilities.

That changed in 2022 when a BEST grant from the Colorado Department of Education kick-started discussions about building a new school. After 70 years, Dove Creek was getting a new school.

Neenan Archistruction, out of Fort Collins, Colo., was the architect and general contractor for the project. Their work includes a

plethora of design-build educational projects. Neenan brought on Comfort Air Mechanical Inc. to design and install the HVAC system for the 30,000-square-foot project, though at the time, a system type hadn't been selected.

Comfort Air Mechanical was founded in 1988, is based in Cortez, Colo., with 17 people who serve all southwest Colorado.

"Early on, the school board didn't know exactly what they wanted in an HVAC system," said Nic McDonald, VP and Partner at Comfort Air. "We discussed the priorities of the project, and it became obvious they wanted simultaneous heating and cooling. Southern Colorado is sunny, and Dove Creek is about 6,800 feet above sea level. There's a lot of solar gain."

This led to a conversation about energy efficiency and system longevity. In their words, the board wanted a "cutting edge" system that would bring Dove Creek's educational system into the 21st century, and a building that would serve as the de facto community center.

"I suggested a heat recovery VRF system," explained McDonald. "The school board wasn't aware they could heat and cool the structure with electric heat pumps. As soon as that option was on the table, it was as though none of the others existed. At that point, I hired ME&E Engineering under my contract. At that point, things proceeded quickly."

A Deep Bench

At the 2023 AHR Expo, McDonald met with Johnstone Supply's Jay Castle, Fujitsu General America's Dale Young and manufacturer's representatives from GSC Tempered Air Group.



The project went off without any major challenges due to the friendships built between the manufacturer, wholesaler and installing contractor.



Comfort Air Mechanical technicians install Fujitsu AIRSTAGE heat recovery units on the roof of the new school.



Foreman Jonathan John discusses heat recovery piping with a colleague.

Together, along with the engineers at ME&E, they designed a mechanical system based on Fujitsu's new AIRSTAGE VU-V three-phase VRF equipment.

A great advantage for the project was the strength of the relationships McDonald has at every level of the supply chain. Comfort Air had a previous relationship with the school district, and they had also worked successfully with ME&E Engineering on similar projects in the past.

Comfort Air's relationship with Johnstone Supply and Fujitsu goes back even further.

"I've known Jay Castle at Johnstone for more than a decade," said McDonald. "He helps design projects, walks through jobs with our team, and he's invaluable when it comes to commissioning. We have the same core values, and I value his advice and opinions. The same goes for Dale Young, our regional Fujitsu sales engineer."

Comfort Air Mechanical has been a Fujitsu Elite dealer for more than six years, and Elite Plus since the program began.

Surprising Simplicity

Long before groundbreaking at the new school, McDonald had a 3D model of every mechanical component in the school. That design, which he reviewed regularly with Comfort Air Foreman, Jonathan John, kept the jobsite running ahead of schedule and with no real challenges to speak of.

"The work was surprisingly simple, despite this being one of the larger VRF jobs I've personally been involved with," said John, who spent seven months on the Dove Creek project.

"It was also the first VU-V installation we've done as a company," John continued. "The system was spec'd as a heat recovery system, though based on the grant funding for the project, there was a slight possibility that it could have been changed to a heat pump. The fact that the AIRSTAGE VU-V units can be field-configured for heat pump or heat recovery means that we wouldn't have had to change the equipment order if the design was changed to heat pump."

The system included four banks of AIRSTAGE units. Banks one and two each total 24 tons, bank three is 10 tons, and bank four is six tons. These serve a variety of low-, medium- and high-static fan coils. Several office spaces are served by ceiling cassettes.

In addition to the AIRSTAGE V-Series equipment, two H-Series systems are also used: a 2.50-ton wall-mount system in the IT room and an identical unit in the electrical room.

Heat Recovery

Southern Colorado offers a great opportunity to capitalize on the benefits of heat recovery. The area enjoys roughly 240 sunny days per year, and its relatively high elevation means that solar radiation has much less atmosphere to travel through than at sea level. As a result, buildings in Dove Creek receive high solar gain.



One benefit of the Fujitsu AIRSTAGE VU-V system is the ability to field-configure the system for either heat recovery or heat pump with piping changes.



Braden Yoder and Jonathan John pipe one of several heat recovery system on the roof of the school.



A four-port refrigerant branch unit in the foreground with a high-static air handler in the background.



A Fujitsu AIRSTAGE VU-V heat recovery system was selected for the heating and cooling system at the new Dove Creek Elementary School.

This creates widely varying loads within the building and increases the likelihood of different zones simultaneously calling for heat and cooling. Heat recovery systems essentially “recycle” heat, extracting BTUs from one space that’s calling for cooling and rejecting it into a zone calling for heat. This is especially beneficial in the shoulder seasons.

Summer temperatures in Dove Creek can exceed 90°F, and winter lows are frequently in the single digits, so makeup air was carefully considered during the design phase. In addition to the VRF systems, the rooftop system components include a large CaptiveAir DOAS unit capable of supplying 8,800 CFM of conditioned fresh air. Two RenewAire ERVs are also installed for further efficiency.

“With AISTAGE VU-V units, installing a heat recovery system isn’t much different than installing a heat pump system,” said John. “There are a few piping differences, which are well outlined in the I&O manual, and the addition of branch boxes inside, but that’s about it. Our team moved quickly, and we called Jay Castle any time we had a question.”

“Jonathan has been with us for six years,” said McDonald. “This was the largest job I’ve turned him loose on as project lead, and he had an extremely solid crew working under his direction. I was not at all shocked that he handled it as well as he did. If I could just figure out how to clone him, I’d have it made.”

While John’s aptitude and work ethic are exemplary, he claims

that training is the reason the job went so well.

“I’ve attended many heat-pump-training events, including those hosted by Fujitsu in New Jersey, as well as training hosted here in Colorado by Johnstone Supply,” said John. “I’m very familiar with this equipment, even though the VU-V is new to me. That helped immensely.”

The VRF equipment was started in late June, with commissioning taking place immediately afterward. Castle joined McDonald and John onsite for a full day. The new building, now home of the Dove Creek Bulldogs, was turned over to the district long before the 2024 Fall semester began.

There have been serious discussions about adding a large solar photovoltaic array to the school’s rooftop, bringing the district’s dream of electrification full circle.

“Whether solar is added or not is yet to be determined,” said McDonald. “If funding is available, solar is likely.”

“With or without solar, the relationships we have in this industry have served this project well,” said McDonald. “Our core values are shared by everyone in our supply chain. Together, we can be proud that we’ve made a massive improvement for this community by providing a school that will serve them well into the future.”

Dan Vastyán, president of Common Ground, is a journalist who has covered the plumbing and HVAC industry exclusively since 2010.



OSHA Recommended Practices: Management Leadership

First in a series focusing on the core elements of OSHA's safety and health program.

For senior-level management, leading by example is a must, especially where employee safety is concerned. It's your example that sets the tone for safety to be taken seriously, and for improvements to be prioritized. Continued commitment to health and safety in your organization demonstrates expectations and responsibilities for all levels of management and staff. By providing adequate resources and ongoing program support, you maintain health and safety as core values for your team, and maximize the likelihood that best practices will be observed at all times.

Action Item 1: Communicate your commitment to a safety and health program

A clear, written policy helps you communicate that safety and health is a primary organizational value — as important as productivity, profitability, product or service quality, and customer satisfaction.

How to accomplish it:

Establish a written policy signed by top management describing the organization's commitment to safety and health, and pledging to establish and maintain a safety and health program for all workers.

- Communicate the policy to all workers and, at appropriate times and places, to relevant parties, including:
 1. Contractors, subcontractors, staffing agencies, and temporary workers at your worksite(s)
 2. Suppliers and vendors
 3. Other businesses in a multi-tenant building
 4. Visitors
 5. Customers
- Reinforce management commitment by considering safety and health in all business decisions, including contractor and vendor selection, purchasing, and facility design and modification.
- Be visible in operations and set an example by following the same safety procedures you expect workers to follow. Begin work meetings with a discussion or review of safety and health indicators and any outstanding safety items on a "to do" list.

Action Item 2: Define program goals

By establishing specific goals and objectives, management sets expectations for managers, supervisors, and workers, and for the program overall. The goals and objectives should focus on specific actions that will improve workplace safety and health.

How to accomplish it:

- Establish realistic, measurable goals for improving safety and health. Goals emphasizing injury and illness prevention should be included, rather than focusing on injury and illness rates.

- Develop plans to achieve the goals by assigning tasks and responsibilities to particular people, setting timeframes, and determining resource needs.

Action Item 3: Allocate resources

Management provides the resources needed to implement the safety and health program, pursue program goals, and address program shortcomings when they are identified.

How to accomplish it:

- Estimate the resources needed to establish and implement the program.
- Integrate safety and health into planning and budgeting processes, and align budgets with program needs.
- Allow time in workers' schedules for them to fully participate in the program.
- Provide and direct resources to operate and maintain the program, meet safety and health commitments, and pursue program goals.


Note: Resource needs will vary depending on your organization's size, complexity, hazard types, and program maturity and development. Resource needs may include capital equipment and supplies, staff time, training, access to information and tools (e.g., vendor information, Safety Data Sheets, injury/illness data, checklists, online databases), and access to safety and health experts.

Action item 4: Expect performance

Management leads the program effort by establishing roles and responsibilities and providing an open, positive environment that encourages communication about safety and health.

How to accomplish it:

- Identify a frontline person or persons who will lead the safety program effort, make plans, coordinate activities, and track progress. Define and regularly communicate responsibilities and authorities for implementing and maintaining the program, and hold people accountable for performance.
- Provide positive recognition for meeting or exceeding safety and health goals aimed at preventing injury and illness (e.g., reporting close calls/near misses, attending training, conducting inspections).
- Establish ways for management and all workers to communicate freely and often about safety and health issues, without fear of retaliation.

Note: Maintaining a positive and encouraging tone is important. Successful programs reward, rather than discipline, workers who identify problems or concerns, much like successful quality programs. Disciplinary measures should be reserved for situations in which an individual manager or worker is uncooperative or becomes an impediment to progress. 

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Taco's TridentBoost offers booster system solution engineered to deliver versatility, performance and ease of use in commercial and industrial water applications. ease of use.

Taco Launches TridentBoost™: A Smarter, High-Performance Booster System Built for the Future

Taco, a leader in innovative pumping and water control solutions, introduces TridentBoost, a next-generation booster system engineered to deliver unmatched versatility, performance, and ease of use in commercial and industrial water applications.


TridentBoost represents Taco's commitment to delivering reliable, high-efficiency solutions, engineered as it is for smarter performance and simpler installation.

Designed to meet the evolving demands of today's system designers, facility managers, and installers, TridentBoost introduces a suite of forward-thinking features that set a new standard for booster performance:

- **10" full-color HMI touchscreen**
A user-friendly interface provides real-time system insights, diagnostics, and multi-level secure access, putting complete control in the operator's hands.

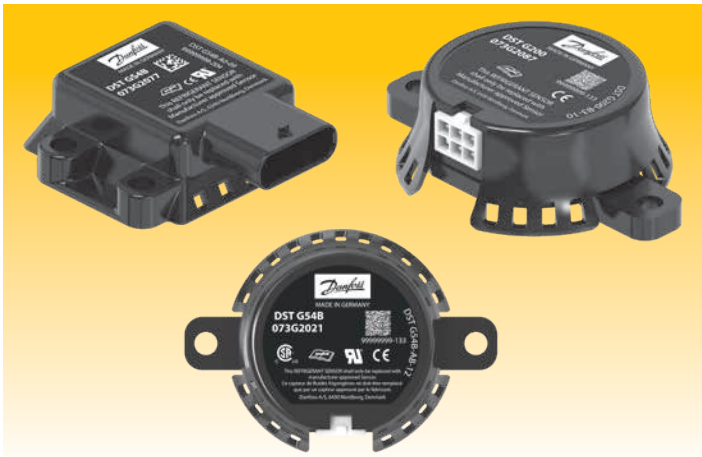
- **Field-configurable, no-gasket header design**
The gasket-free design streamlines installation, reduces maintenance, and eliminates common sealing issues, offering greater flexibility in the field.
- **Dual pump compatibility**
Compatible with both end-suction and vertical multistage pumps, TridentBoost allows for seamless integration across diverse applications, giving system designers unmatched freedom.

"Bringing TridentBoost to market has been a true team effort," added Paolo D'Amico, Director of Commercial and Industrial Product Management. "It's easy to install, intuitive to operate, and engineered for long-term reliability. TridentBoost is more than just a booster system — it's peace of mind."

TridentBoost is now available for order through Taco's global network of representatives and distributors. 

For more information, visit www.tacoinc.com.





Danfoss' new A2L gas sensors were also presented at the 2026 AHR Expo in Las Vegas.


Danfoss Highlights Newest Sustainable HVAC/R Solutions at AHR Expo

Danfoss recently showcased its newest sustainable HVAC/R solutions at the annual AHR Expo in Las Vegas, Nev. Reflecting its theme of "Go Beyond," Danfoss presented a broad range of energy-efficient industry technologies and contractor-focused solutions.

Attendees witnessed a firsthand view of Danfoss' newest products, including:

- PSG Heating Scroll Compressor for high temperature heating applications up to 1 MW, an AHR Innovation Awards finalist in the Heating category
- The new iC7-HVACR variable speed drives, ultra-low harmonic drives, and bypasses — delivering unmatched performance for indoor climate and infrastructure demands
- VPH Variable Speed Scroll Compressor with Injection for Cold Climate Heat Pumps, which provides energy-efficient operation in cooling, while enabling low temperature heat pump operation through enhanced refrigerant injection technology

- Optyma™ iCO2 Condensing Unit, a high-performance outdoor condensing unit engineered for transcritical low- or medium-temperature refrigeration applications
- Universal TR6 valve, an all-in-one solution that reduces complexity and job time for contractors
- The improved Turbocor VTX 1600 compressor, revised to optimize installation, performance and service
- Danfoss' newest A2L gas sensors

The "Go Beyond" theme at its booth was intended to reflect Danfoss' commitment to expanding its footprint in North America to better serve its customers, as exemplified by its Nov. 5, 2025, opening of an expanded factory in Monterrey, Mexico. The need for the facility was driven by increased demand for reliable, energy efficient HVAC/R equipment in North America and Latin America, and is also an important part of Danfoss' LEAP 2030 strategy, which aims to reduce delivery times and further strengthen supply chains for customers in all markets. 

For more information, visit www.danfoss.com/en-us/about-danfoss/events/cf/2026-ahr-expo.



Franklin Electric's new VersaBoost Pro series offers a compact, all-in-one system that empowers professionals to deliver reliable, consistent water even when demand fluctuates.

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Schneider Electric Showcases Grid and Transmission Solutions to Help Utilities Maintain Power During Severe Weather and Wildfires

Schneider Electric, a global energy technology leader, recently announced new solutions to help utilities manage major grid-disrupting events, such as severe storms, hurricanes and wildfires, that impact power and lead to widespread outages. The new software innovations were unveiled at DTECH®, the leading transmission and distribution trade show in the United States.

Building on its long history supporting utilities, Schneider Electric also announced enhancements to its industry-leading EcoStruxure™ ArcFM Web, a Web-based geographic information system (GIS) application that gives planning, operations and emergency response teams a shared, accurate view of the grid. The company also debuted its updated EcoStruxure™ Energy Transmission Operation (ETO) software, helping utilities to strengthen enterprise-wide system visibility and improve coordination between transmission and distribution networks.

Schneider Electric's One Digital Grid Platform — introduced last November and previewed at DTECH last year — integrates these enhancements. The expanded capabilities extend the platform's predictive, AI-enabled architecture to help utilities anticipate threats and take faster, more coordinated action. These updates support risk mitigation actions such as Public Safety Power Shutoffs (PSPS) and help utilities recover from disruptions more quickly. The platform also provides insights from partners including Microsoft, AiDASH, and Technosylva to enhance risk modeling and emergency response.

Enhancing Transmission and Distribution Coordination

Schneider Electric's enhanced ETO software enables utilities to coordinate T&D planning, modeling and operations to make more informed resilience and efficiency decisions. It also supports utilities' efforts to meet evolving reliability and operational regulations in North America and internationally.

The latest generation of EcoStruxure™ ArcFM Web extends this coordination by providing utilities with a modern, Web-based GIS that delivers consistent, up-to-date network context across planning, operations and emergency response teams. Its scalable design supports organization-wide workflows, while improving data quality and cross-team collaboration.

Together, these capabilities come to life through the One Digital Grid Platform, which unifies Schneider systems and third party applications for end to end situational awareness and coordinated action.




As severe weather and wildfires become more frequent, Schneider Electric is developing new tools to help utilities strengthen grid resilience, limit power outages, and restore service faster when the system comes under strain.

Strengthening Utility Readiness for Major Events

Extreme events such as wildfires and severe storms, like those that gripped the U.S. in late January, are increasing in frequency and severity, posing existential risks to utilities and communities. Without streamlined event coordination, utilities face prolonged outages and costly recovery efforts.

Schneider Electric's solution empowers utilities to predict, prepare, respond and recover by providing:

- **Predictive risk modeling** analyzes live weather data, vegetation maps and asset health insights
- **Automated workflows** trigger actions for inspection, reconfiguration and dispatch
- **Real-time situational awareness** through EcoStruxure™ systems, including Advanced Distribution Management System (ADMS) for grid control, Distributed Energy Resource Management System (DERMS) for renewables, and ArcFM Web geospatial situational awareness to provide wildfire and severe weather situational context and support risk model validation.
- **Enterprise Asset Performance Management (EAPM) system:** Incorporated as an additional input to the advanced risk model, strengthening asset-level prioritization and event readiness.
- **Digital twin** ensures simulations reflect live grid conditions for informed decision-making. 

To register for Schneider Electric's major event grid-management webinar series, visit tinyurl.com/ypwddd6x.



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However, just like other systems in your building, it's essential that a fire sprinkler system is inspected, tested, and maintained (ITM), especially since lives and your investment are dependent on it.

Don't let a devastating fire happen in your building. Comply with state requirements by incorporating a regular fire sprinkler system ITM program in your building.

Illinois state code, NFPA 101: Life Safety Code (2015 edition), requires all automatic fire sprinkler systems, standpipe

systems, and fire pumps to follow ITM procedures according to the NFPA 25 standard.

And in accordance with state law (225 ILCS 317/17), **building owners must utilize a fire sprinkler inspector who is employed by a state-licensed fire sprinkler contractor.**

As of 2024, all inspectors must be in possession of an individual Fire Sprinkler Inspector license issued by the Illinois Office of the State Fire Marshal. This license ensures that the individual has been vetted by OSFM to have met the necessary qualifications for such work. Do not allow any individual to service a fire sprinkler system in your community without the proper state license.

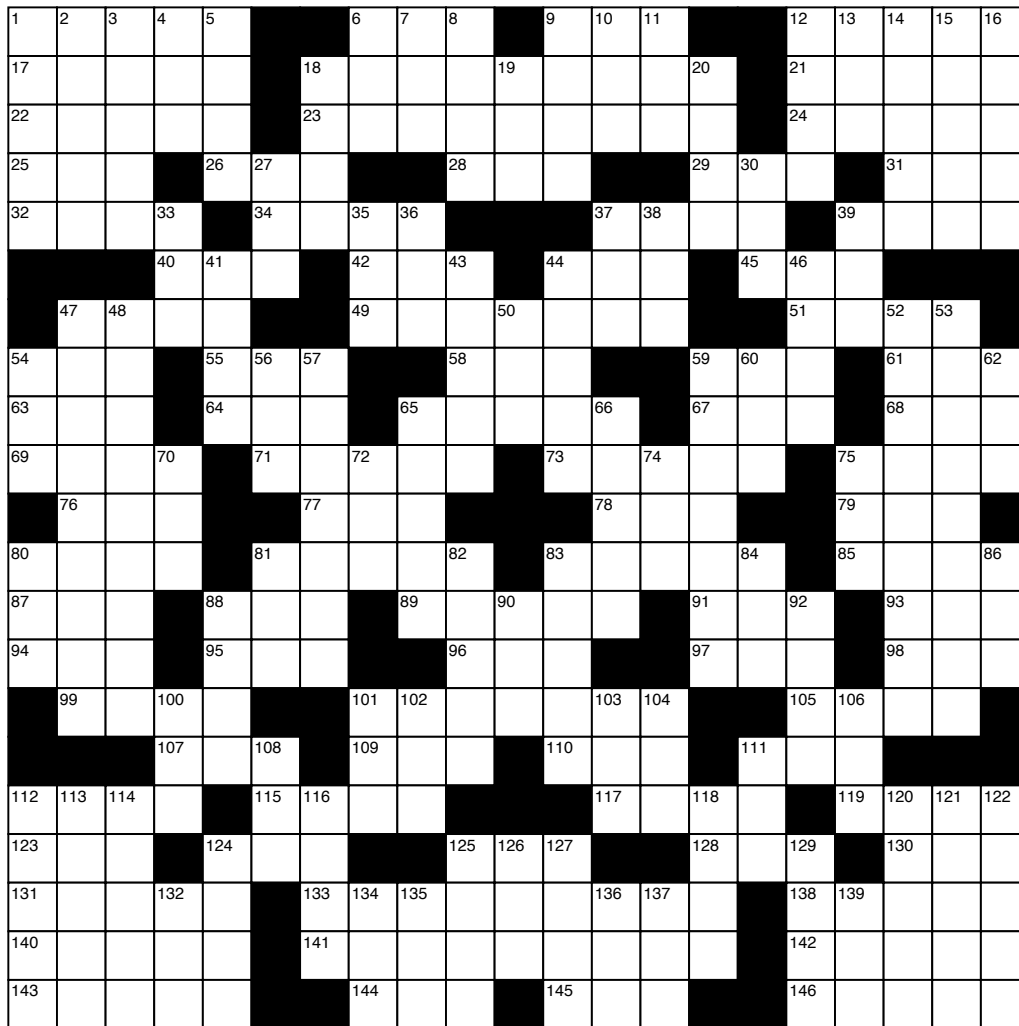


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ACROSS

- 1 Wand
- 6 Remnant
- 9 Pen brand
- 12 Japanese dish
- 17 Scent
- 18 Type of pen
- 21 Painter Richard
- 22 British princess
- 23 Deck
- 24 Dukes
- 25 Ingest
- 26 Furrow
- 28 Hurricane center
- 29 Lodge
- 31 Flightless bird
- 32 Prod
- 34 Grating sound
- 37 Simple
- 39 Niche
- 40 Licensed practical nurse
- 42 Heat unit
- 44 Computer part
- 45 Calorie
- 47 Be fond of
- 49 Hand towel
- 51 Goody two shoes
- 54 Skin
- 55 Abdominal muscles (abbr.)
- 58 Garden tool
- 59 Container
- 61 Electroencephalograph (abbr.)
- 63 Cease

- 64 Thai
- 65 Doled
- 67 Avenue
- 68 ___ shot (2 wds.)
- 69 Aegis
- 71 Singer
- 73 Journal
- 75 Blitz
- 76 Picnic pest
- 77 Lab animal
- 78 ___ of the covenant
- 79 Rock group
- 80 Stuff
- 81 Revolve around, as in planets
- 83 Prayer position
- 85 Center of rotation
- 87 Compose
- 88 Those who make the food laws (abbr.)
- 89 Female singer ___ Apple
- 91 Snake like fish
- 93 That (possessive)
- 94 Part of a min.
- 95 Spots
- 96 Deuce
- 97 Luau dish
- 98 Animal doc
- 99 Search
- 101 Highest hill part
- 105 Ogled
- 107 Ocean
- 109 Female sheep
- 110 Take to court
- 111 Employ

- 112 Citrus fruit
- 115 Corn syrup brand
- 117 Duces
- 119 Water film
- 123 Winter hazard
- 124 Tap
- 125 Scarf
- 128 Pacific Standard Time
- 130 Spanish "one"
- 131 Cubic decimetre
- 133 Asthma reliever
- 138 Several feet
- 140 Eagle's nest
- 141 Along a diameter
- 142 Uses a lever
- 143 Hood
- 144 Terminal abbr.
- 145 Gender
- 146 Nail filing board

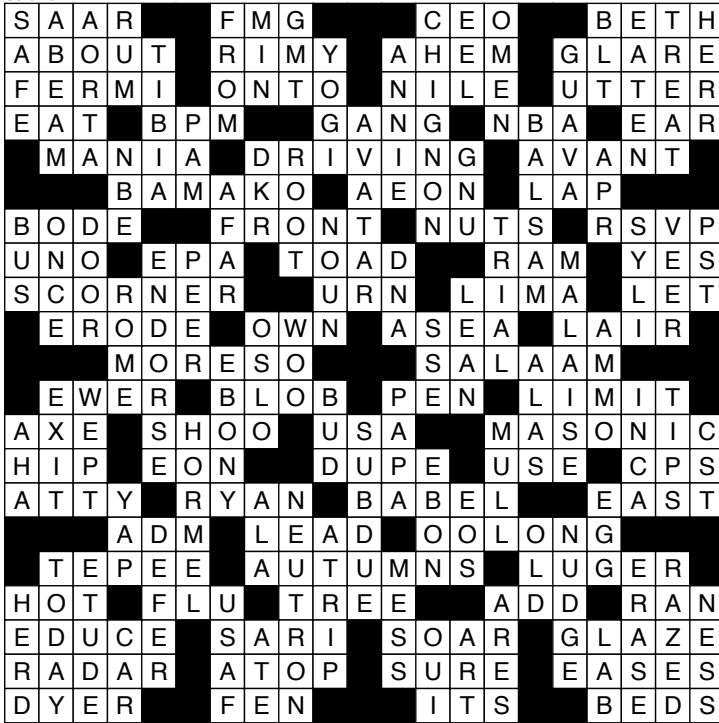
DOWN

- 1 Fireproof storage areas
- 2 Give a present
- 3 Main artery
- 4 Madagascar franc (abbr.)
- 5 Equitable
- 6 Ewe's mate
- 7 Loose gown worn at mass
- 8 Satisfaction
- 9 Tree trunk
- 10 Roman three
- 11 Nervous system
- 12 Was looked at

- 13 North American nation
- 14 Throat infection
- 15 What pilots use
- 16 Distribute
- 18 Second letter of the greek alphabet
- 19 Sheet
- 20 Not that
- 27 Pot
- 30 Big Apple (abbr.)
- 33 Sandwich
- 35 South by west
- 36 School group
- 37 Environmental protection agency (abbr)
- 38 August (abbr.)
- 39 Lager
- 41 Type of moss
- 43 Conduct
- 44 Teaching
- 46 Green Gables dweller
- 47 Denim work trousers
- 48 Law
- 50 Stolen
- 52 Verb type
- 53 Marked boundaries
- 54 Charge
- 56 Upside-down sleeper
- 57 Mountains
- 59 A bartender
- 60 Wall plant
- 62 Ammo. holder
- 65 Design
- 66 Goddess
- 70 Short-term memory
- 72 Arrest
- 74 Be
- 75 Lingerie
- 80 Cycles per second
- 81 Unpaired
- 82 Designation
- 83 Loops the rope
- 84 MGM's Lion
- 86 Supersonic transport
- 88 Pretend
- 90 Night bird
- 92 Fibs
- 100 Compass point
- 101 She
- 102 The other half of Jima
- 103 Away
- 104 Church bench
- 106 Yea
- 108 Also known as (abbr.)
- 111 Ship initials
- 112 Light purple flower
- 113 Colder
- 114 Railroad track
- 116 Imitated
- 118 Organization of Petroleum Exporting Countries
- 120 Radioactivity unit
- 121 Nether
- 122 Covered with a soft green plant
- 124 Stink
- 125 Torah table
- 126 Poem of praise
- 127 Branch of learning
- 129 Kind
- 132 River (Spanish)
- 134 Desert
- 135 Derby
- 136 Wrath
- 137 Nichts
- 139 Fortify

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Admiral Heating & Ventilating, Inc.	42	Maron Electric Company	8
Air Comfort Corporation	22	Metropolitan Industries.....	Inside Front Cover
Air Filter Engineers	Back Cover	Milburn Demolition	6
Air Flows Chicago	15	MVB Services.....	34
Airways Systems	22	Nalco Water	39
Altorfer Power Systems.....	7	National Lift Truck	42
AMS Industries.....	37	Neuco.....	24
Atomatic Mechanical	7	NIFSAB	43
Balanced Load Electric.....	6	Olympia Maintenance	12
BEAR Construction	9	Parkside Restoration.....	14
Beverly Companies.....	42	Premier Mechanical, Inc.....	4
Big Dan Contracting	4	Preservation Services.....	25
Boilersource.....	13	Rotating Equipment Specialists	7
Bornquist, Inc.....	36	Ryan Fireprotection	7
Building Technology Consultants, Inc.....	42	ServPro of Downtown Chicago – Team Nichols	4
Bullock, Logan & Associates, Inc.....	9	Syserco	13
Centre Construction Group	15	Temperature Service Company	7
Chicago Backflow, Inc.	42	ThermoScan.....	24
Chicago Cooling Tower	14	United Radio	15
Chicago Filter Supply	15	USA Fire Protection	34
Chicago Water Treaters	36	Valley Fire Protection & Plumbing.....	6
Christopher Glass Services	11	Western Specialty Contractors	34
C.L. Doucette Inc.....	9	Windy City Representatives	34
ClearWater Associates, Ltd.....	46	Zentel Tech.....	9
Competitive Piping Systems	14		
Contech	24		
Core Mechanical.....	37		
Corona Craft Restoration	46		
CRB Water.....	10		
Cyclone Energy Group	4		
DefendEdge	11		
Door Service, Inc.	22		
Dreisilker Electric Motors.....	40		
Durkin Electric	40		
Economy Disposal Service.....	15		
Everest Energy and Control Technologies.....	45		
EverLights.....	36		
F.E. Moran Group	Inside Back Cover		
Filter Services	39		
Flood Brothers	45		
Grove Masonry Maintenance.....	13		
Hard Rock Concrete Cutters	15		
Hart, Travers & Associates, Inc.	4		
Hayes Mechanical	14		
Hudson Boiler & Tank Co.....	40		
Interactive Building Solutions	45		
Jamerson & Bauwens Electrical Contractors	40		
Johns Plumbing.....	34		
Johnson Supply Company	4		
Kroeschell, Inc.	40		

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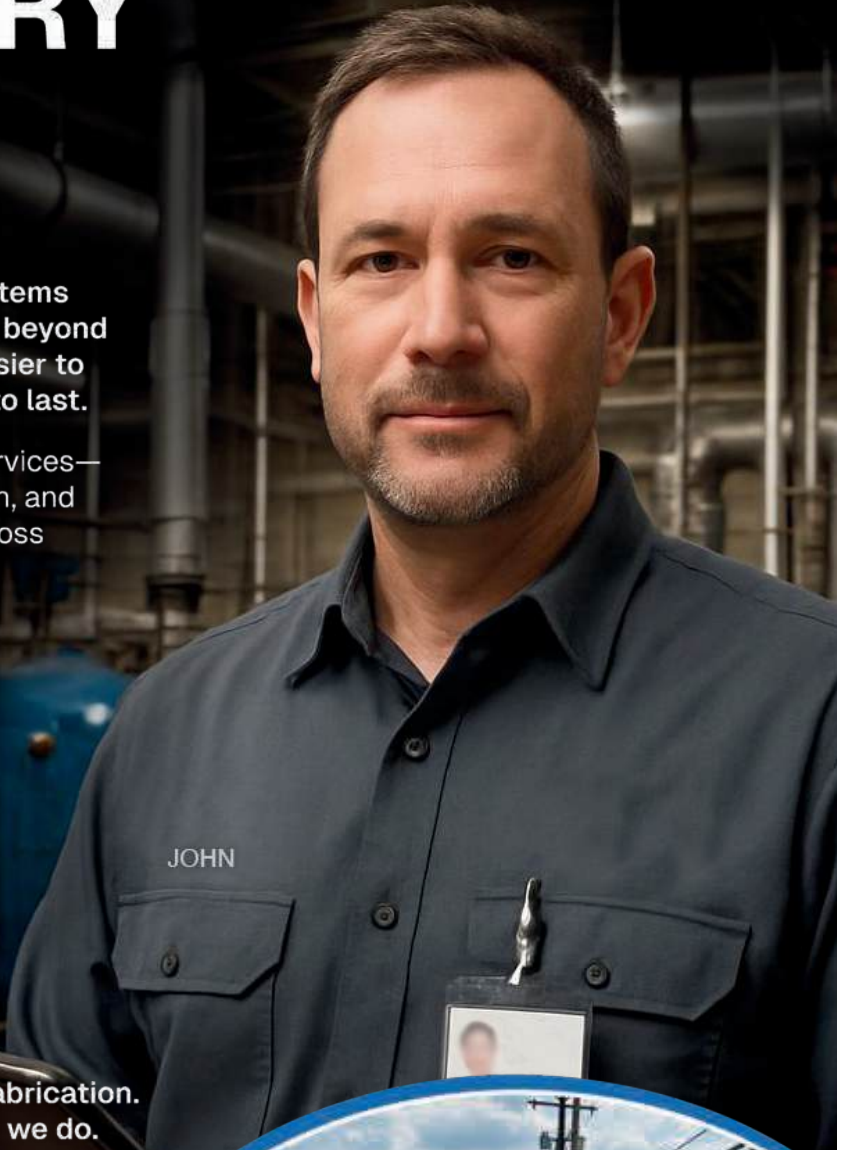
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