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DECEMBER 2025




Going Up: Blackstone Elevator Consulting's Edge on Vertical Transportation

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Smarter Hydronic Systems: How Energy Valves Are Changing the Way Chief Engineers Manage Building Performance

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Better Design, Better Cleaning, Better Drainage

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CARES ACT

The Coronavirus Aid, Relief, and Economic Security (CARES) Act closed a loophole that was included in the TCJA by making QIP 15-year property. This change made businesses of all sizes, regardless of the amounts spent on equipment, eligible to deduct the full cost of commercial fire sprinkler systems using bonus depreciation.

The time is now to upgrade your building's fire safety with a fire sprinkler system or a sprinkler retrofit. Under the new Section 179 guidelines, the one year deduction period phases out after 2022. Any new sprinkler system or retrofit completed between September 27, 2017 and December 31, 2022 will be able to be fully expensed in one year. After 2022, the allowed deduction percentage is as follows:

2021: 100%	2023: 80%	2025: 40%
2022: 100%	2024: 60%	2026: 20%

2027 and after: The depreciation schedule becomes permanently set at 15 years.

WHAT IS QIP?

The Tax Cuts and Jobs Act (TCJA), passed in December, 2017, gave small businesses the ability to deduct the full cost of Qualified Improvement Property (QIP) up to \$1.04 million in the year of installation using Section 179.

QIP is defined as improvements to the interior of an existing building that is not residential property. Commercial fire sprinkler systems, including upgrades of existing systems or retrofitting in existing structures, are considered QIP.

The Section 179 deduction is not phased out over time. However, there is a phase out of the amount allowed as a deduction based on a maximum spending amount of \$2.59 million on equipment in a year. Businesses that spend over that amount will see a dollar for dollar reduction of their eligible deduction. So a business that spends \$3.63 million or more on equipment in a given year would not be allowed any Section 179 Deduction.

WHAT HAS CHANGED?

Prior to the TCJA allowing Section 179 on qualified improvement property, including sprinkler systems, property of this type was only allowed a deduction on a straight line basis over a period of 39 years. In other words, a company spending \$390,000 on a commercial sprinkler system prior to the TCJA would only deduct \$10,000 per year for 39 years.

While many believe that the intention of Congress was to make Qualified Improvement Property 15-year property, which would have made this property eligible for bonus depreciation, the TCJA left the life of this property at 39 years. So, a taxpayer who did not elect to use the Section 179 Deduction or who has that deduction phased out would have been left to depreciate the remaining balance of the assets over a 39-year period.

Neither of these deductions is currently available for fire sprinkler systems installed in residential high rises. The National Fire Sprinkler Association (NFSA) continues to fight to obtain incentives for residential structures.

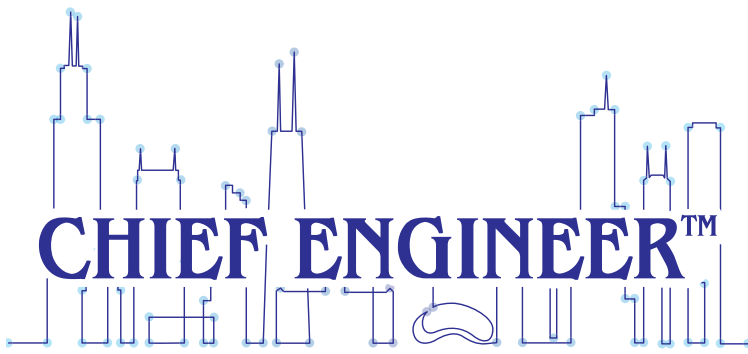
For more information on how these tax incentives might impact the business of your contractors, we would recommend that they contact their tax professionals, as situations differ based on the facts and circumstances for each business. As a general rule, we would not recommend that the Local provide tax advice to the contractors.



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Blackstone Elevator Consulting brings decades of experience in vertical transportation to its clientele.

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We look at the evolving role of Delta-T management and data-driven efficiency in modern facilities.

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A better design leads to more effective cleaning of drains, providing fluid drainage in relevant applications.

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Dear Members,

Is it possible that the holidays are really almost here? It seems like just a few short weeks ago that we were doing everything we could to reduce the cooling loads on our buildings, and here we are, ensuring that our buildings' heating systems are running efficiently and that their tenants are comfortable and warm. This being the last month of 2025, it also means that my tenure as your president of the CEAC is nearing its end. I'll still be at the helm until the new slate of Officers and Directors is sworn in at the Inauguration Gala on Jan. 24, 2026. It has been an honor to head up this organization for the last two years, and I have every confidence that the CEAC will be in capable hands going forward.



We recently convened for our November meeting at the Rate Field Stadium Club, where a great time was had by all in attendance. We're grateful for our Events Committee and to Tom Phillips for helping to secure the space once again. As you know, at this year's November meeting, we formally voted on the new slate of Officers and Directors who will be taking over in January, so we are especially grateful for everyone who made the effort to be there to participate in the process of elevating our new slate for the 2026-2027 period. Participation is everything in an organization like ours — it's the lifeblood that ensures that we will continue into the future with the vitality and vision we need to serve our profession.

The December Holiday Event will be held on Wednesday, Dec. 10, from 4:00-7:00pm at Maggiano's on Clark. Be aware that this is the second Wednesday of the month, not the usual third Wednesday, as we hope to keep everyone's calendars free for whatever you have going for this holiday season. While we celebrate, please don't forget those who are less fortunate than we are. As usual, the CEAC Board of Directors will select a charity to which CEAC members can donate in the spirit of the season. Please be as generous as you can in these difficult times.

Speaking of generosity, I would like to take this opportunity once again to thank all of our Associate Member organizations, from those who have recently joined our ranks to the stalwart, longtime supporters who have been there for us, supporting our events and helping to make this the dynamic association that our industry deserves. Please don't forget to reach for our QuickShopper and give them your business whenever you need outside assistance. We're here to help each other, and they're the specialists we need who are always there for us.

Wishing all of you a safe and merry Christmas, and a happy New Year.

Sincerely,

Doug Kruczek
Doug Kruczek



Buildings XVI Conference to Focus on Thermal Performance of Exterior Envelopes

The Buildings XVI Conference, organized by ASHRAE and Oak Ridge National Laboratory (ORNL), will take place Dec. 8-11, 2025 in Clearwater Beach, Fla.

Held every three years, the Buildings Conference series is the leading international forum on building envelope science. At this year's conference, attendees can expect an in-depth exploration of how building envelope design and performance directly influence energy efficiency, durability, indoor environmental quality and occupant comfort.

"Our technical program highlights advances in materials science, modeling techniques and construction practices that improve thermal resistance and moisture control while supporting decarbonization and resilience goals," said André Desjarlais, conference chair. "We're emphasizing a whole-building perspective, examining how envelope systems interact with mechanical, lighting and ventilation systems to deliver high-performance, low-energy buildings in all climates."

The Buildings XVI Conference will feature three program tracks designed to balance fundamental research with real-world applications:

- Principles – Cutting-edge research and development in thermal and moisture performance of building envelopes.
- Practices – Case studies, field applications and innovative design strategies.
- Residential Buildings – Practical insights and advancements improving performance and resilience in residential construction.

Some notable sessions include:


"Assessing Residential Deep Energy Retrofit Performance Based on Resilience to Future Weather Conditions"

- "Smartphone Application for Visualizing Building Air Leakage"
- "Impact of High-Rise Buildings on Wind Driven Rain, Wind and Thermal Comfort"
- "Scalable Thermal and Resilience Exterior Envelope Strategies for the Manufactured Housing Sector: Results from a year of simulated field testing"

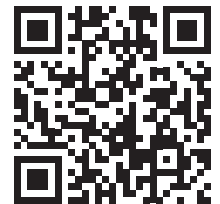
Two keynote sessions will offer global perspectives on the past, present and future of building envelope science:

- Sam Rashkin, Senior Researcher, Oak Ridge National Laboratory
- "Charting a Path to Scaling Deep Energy Retrofits and How This Impacts Building Science Research"
- Angela Sasic Kalagasidis, Professor, Chalmers University of Technology
- "A 21-Year Retrospective and an Outlook on Hygrothermal Building Simulation Tools"

Pre-conference workshops will also be offered, providing attendees the opportunity for deeper engagement with emerging research, analytical tools and best practices.

In-person registration to attend the Buildings XVI Conference is \$700 for ASHRAE members (\$750 for non-members). Additional registration options are available. 

For more information and to register for the Buildings XVI Conference, visit ashrae.org/BuildingsXVI.



For more information on joining



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The logo for the Midwest Energy Solutions Conference features the word "MIDWEST" in dark blue at the top. Below it, "ENERGY" is written in large, multi-colored letters (orange, red, grey, blue, green, orange). Underneath "ENERGY" are the words "SOLUTIONS" and "CONFERENCE" in smaller, blue and orange letters respectively. The entire text is framed by a stylized sunburst or gear-like border.

Midwest Energy Solutions Conference
Jan. 27-29, 2026
Chicago Marriott Downtown Magnificent Mile
Chicago, Ill.

Once a year, the Midwest Energy Efficiency Alliance invites all energy stakeholders to gather at its annual Midwest Energy Solutions Conference (MES) to raise awareness and reinforce the importance of energy efficiency in the Midwest. MES is about celebrating accomplishments in energy efficiency, as well as laying out the efficiency program and policy landscape for the coming year.

From Jan. 27-29, 2026, MES will return to Chicago for three days of unparalleled networking and discussion opportunities and engaging presentations covering policy, programs, energy codes, tech innovations and more.

Take a look at some of the discussions, workshops and breakout sessions highlighted at this year's MES ...

Pre-conference Workshop: Human-Centered Design Sprint: Solving Wicked Problems Together

Tuesday, Jan. 27

9:00am-12:00pm

Bring your own "wicked problem" to solve in this hands-on, equity-centered design sprint. Guided by experienced facilitators, you'll use human-centered tools to break your complex challenge into manageable parts, co-create equity-driven solutions, and leave with actionable next steps, fresh clarity, and energy to keep moving forward. Don't have a challenge? You can still join a team working on a real-world issue and learn how human-centered design sprints can help you get unstuck on tough challenges.

Plenary 1: High Voltage and Higher Stakes: A Conversation With the Midwestern RTOs

Tuesday, Jan. 27

1:30-2:45pm

Back by popular demand, leaders from the Midwestern Regional Transmission Organizations, PJM, MISO and SPP, will kick off this year's MES with a discussion about what's on everyone's mind: transmission. More specifically, load growth and meeting demand while maintaining a resilient and reliable grid in a time of rising energy prices.

Break Out A2: Notes from the EE Underground

Tuesday, Jan. 27

3:15-4:15pm

Geothermal heat pumps are more than just a high-efficiency heating and cooling system for buildings. They are a grid resource that reduces electricity consumption and GHG emissions, reduces generation needs and transmission losses, and reduces summer and winter resource capacity needs. This session will dig deep into geothermal, the benefits for Midwest utilities and customers, and the innovative ways this market-ready technology is already being deployed in the region. If you are ready for high-value energy savings, it's time to get down with the underground.

Plenary 2: Tipping the Scale: Selling EE in this New Era

Wednesday, Jan. 28

9:45-11:00am

For years, EE kept our nation's demand flat. But now, the scale has changed. Between soaring demand and delayed generation retirements, the work our industry has done to decarbonize is threatened. What's next for efficiency in this new era? Do we need policy changes to support EE's evolution, or do we need to reimagine efficiency to fit this current moment?

Break Out B1: Check Your Grid Before You Wreck Your Grid

Wednesday, Jan. 28
11:30am-12:45pm

The demand side has more to offer than just load reduction. As electricity needs skyrocket, demand-side programs are increasingly recognized as a tool for grid optimization and flexibility. This panel will explore how program administrators can overcome state statutory and regulatory constraints to deliver DSM to the grid as a valuable part of the resource stack.

Break Out C1: No Need to Freak, Let's Talk Winter Peaks

Wednesday, Jan. 28
2:00-12:15pm

The landscape for demand-side management (DSM) planning is swiftly changing. As utilities face rising demand from electrification not only are loads rising — peaks are shifting. Utilities across the Midwest are now facing the prospect of winter electric demand peaks and are tasked with reducing this new strain. In this session, we'll hear from researchers modeling the rise of winter peaks and DSM solution pathways, implementors advancing winter DR, engineers enhancing winter heating solutions and utilities seeking to control their winter loads. Join this session to ask all of your "freezing" questions.

Closing Plenary: Federal Update

Thursday, Jan. 29
10:45am-12:00pm

With the federal energy landscape shifting constantly, join us in a discussion with leaders across the energy efficiency industry to get perspectives on how their work is being impacted by federal changes. You'll hear from experts on state programs, national energy policy, appliance standards and energy affordability on how they're staying flexible and powerful, in uncertain waters. ■■

For more information or to register, visit www.meeaconference.org.





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BEAR Construction's Alicia Gabriel recently was honored with the Laurie Stone Woman of the Year Award by the Schaumburg Business Association.

BEAR Construction's Alicia Gabriel Recognized as Woman of Year by Schaumburg Business Association

BEAR Construction's Alicia Gabriel recently was recognized with the Laurie Stone Woman of the Year Award by the Schaumburg Business Association — an honor recognizing her dedication, compassion and leadership.

Through BEAR Cares, the company's employee-driven volunteer program supporting numerous nonprofit organizations, Gabriel has helped to shape BEAR Construction's community outreach in profound ways.

BEAR was also honored to be nominated for the Brian H. Burke Business of the Year award.

Congratulations to Alicia Gabriel and to all the other nominees and winners recognized at The Toast of Schaumburg – Kaleidoscope Connections (Schaumburg Business Association) that celebrates local business excellence, and supports future leaders through the SBA Scholarship Program. 



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Aero Performance Group Acquires CEPro, Inc., Expands Leadership in Critical Environment Solutions

Aero Performance Group (APG) recently announced its acquisition of CEPro, Inc., a premier provider of critical environment solutions. This strategic expansion marks a significant milestone in APG’s continued growth, building on the momentum of its 2024 rebrand, which focused on elevating total building performance and the comprehensive portfolio of services APG provides.

CEPro is highly regarded for its extensive expertise in the design, construction, maintenance and certification of critical environments, such as cleanrooms, laboratories, and healthcare facilities. With a strong commitment to compliance, innovation and operational excellence, CEPro’s integration into the Aero Performance Group family enhances APG’s capability to serve clients with even greater depth and breadth.


“This acquisition is a natural alignment of values, capabilities, and vision,” said Nick Muscolino, Vice President of Aero

Performance Group. “CEPro’s proven track record in critical environments complements our mission to elevate building performance through smart, dynamic solutions. Together, we’re better positioned to meet the evolving needs of our clients with unmatched quality, compliance, and service.”

“Joining Aero Performance Group allows us to scale our impact while continuing to deliver the high standards our clients expect,” said Mike Kosinski, President of CEPro. “We’re excited to bring our expertise to a broader platform and collaborate on innovative solutions that define the future of critical environments.”

The combined organization will offer a unified portfolio of services that can be tailored to each client’s needs, including:

- Critical Environment Design, Construction & Certification
- Laboratory Services, Including Controls and Compliance
- HVAC Testing, Adjusting & Balancing
- Commissioning, Retro-Commissioning & Monitoring Based Commissioning
- Utility Rebate & Energy Optimization Programs
- Facility Assessment & Remediation
- Quality Assurance Testing

This acquisition reflects APG’s ongoing investment in people, technology and partnerships that drive performance, sustainability and safety across every facility it touches. 



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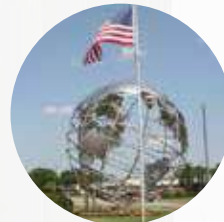
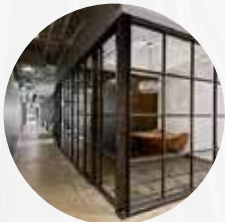
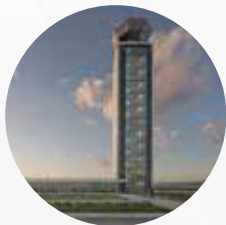
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Ultimately, it's up to employers to make a good-faith call on whether or not an employee's symptoms indicate cold or flu.

OSHA STANDARDS REGARDING ILLNESS REPORTING

We're in that time of year when cold and flu make the rounds, and people with symptoms seem to be everywhere. But there are many instances in which symptoms can appear — post-nasal drip, coughing, aches, etc. — and the cause may not necessarily be virus-related. We may be reacting to the cold, dry air of winter, dust and allergens from the heating ducts in our homes or buildings, or we might be sore because that neighbor took your parking space on the street even though you had dug it out and put out furniture to call “dibs,” forcing you to dig out another space for yourself.

But there are certain times and conditions in which symptoms emerge and employers may have to take official note. According to OSHA recordkeeping regulation at § 1904.5(a), employers “must consider an injury or illness to be work-related if an event or exposure in the work environment either caused or contributed to the resulting condition or significantly aggravated a pre-existing injury or illness. Work-relatedness is presumed for injuries and illnesses resulting from events or exposures occurring in the work environment unless an exception in Section 1904.5(b)(2) specifically applies.”

Section 1904.5(b)(2)(viii) states that employers are not required to record injuries or illnesses if “the illness is the common cold or flu (Note: Contagious diseases such as tuberculosis, brucellosis, hepatitis A, or plague are considered work-related if the employee is infected at work).”

This exception regarding cases of the common cold or flu in § 1904.5(b)(2)(viii) is applied regardless of whether the employee contracted the illness in the work environment or outside of work.

This brings up a pertinent line of questioning for employers:

- How does OSHA define the common cold and flu as used in § 1904.5(b)(2)(viii)?
- How should employers determine whether the common cold and flu is the source of an employee's illness, and thus exempt from recording and reporting requirements?
- How should employers handle a work-place exposure that can cause illness that mimics the symptoms of the common cold and flu?


Under OSHA's recordkeeping regulation, employers are responsible for making accurate and good faith determinations about the recordability of a specific illness or injury. Employers may not be required to record

incidents of the common cold or flu, but that doesn't mean that they simply can assume that cold or flu like symptoms in an employee automatically trigger the exception without further investigation and analysis. Generally, the employer should apply the same analysis used to evaluate the recordability of any other employee injury and illness.

If it's not obvious that an employee has the common cold or flu (i.e., a healthcare provider has not diagnosed the employee as having one of these illnesses), the employer should go about assessing whether the employee's illness is cold or flu, or some other illness with similar symptoms, using the same techniques employed when it's not obvious whether or not the event or exposure precipitating an injury or illness occurred in the work environment. See § 1904.5(b)(3). Specifically, the employer should evaluate the employee's work environment and job duties to make a reasonable determination of whether the employee is suffering from the common cold or the flu — just like they would assess whether a given illness and injury is work-related. In this situation, the employer would consider the employee's report of illness, the possible presence and risk of exposure to hazardous substances or chemicals in the employee's work environment, and other available information to determine work-relationship. Such evaluation may also include consultation with a healthcare professional.

In making an accurate and good faith determination about the recordability of any underlying injury or illness which is causing an employee to experience cold or flu-like symptoms, the employer generally should not rely exclusively on an employee's initial report of cold or flu-like symptoms by itself, but the employer should make sure to consider any information that may come to light after the employee's initial report.

Employers may seek and consider an opinion from a physician or other licensed healthcare professional in determining whether an employee's illness is the common cold or flu. But ultimately, the responsibility for making this determination rests with the employer. This responsibility includes ensuring that an advisory physician's opinion is based on all available information and application of relevant part 1904 recording criteria.

Please note that OSHA's enforcement guidance may be affected by changes to OSHA rules. Also, from time to time OSHA updates its guidance in response to new information. To keep apprised of such developments, consult OSHA's website at www.osha.gov. 

Source: OSHA.gov



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Going Up: Blackstone Elevator Consulting's Edge on Vertical Transportation

By Karl J. Paloucek



Original control operating panel (COP) also known as elevator fixtures.



50-year-old Otis DC gearless machines.

It's one of those things we do every day without thinking about it, even if we're a dozen or more floors up. Stepping onto an elevator, every time, involves a moment of trust that that elevator is going to function as it should, and that it's going to get us where we need to go, safely and comfortably. But as much as building tenants and guests should be able to take that for granted, chief engineers, building managers and property owners need to take the servicing of their vertical transportation very seriously. You want that technology in the right hands, and functioning as it should every day. Ensuring that standard is what Blackstone Elevator Consulting does, putting its combined decades of experience to work as part of your team. We sat down with Blackstone Elevator Consulting Founder Matt Jackson and Midwest Regional Vice President Jose Perez to talk about the state of the industry, how they evolved their mission, and what they can do for you.

Jackson got his start in the industry nearly 20 years ago, working on the contractor side with KONE and ThyssenKrupp — now TK Elevator. Perez similarly worked at ThyssenKrupp and later with Schindler and Urban Elevator before working at VDA in the position that Jackson had vacated. "It was funny — in our local market, at least, if I ever lost a job, it was generally to Matt,"



Closeup view of the Otis DC gearless machine.

Perez recalls. "And if Matt generally lost a job, it was generally to me, so it was just 'Hey, why are we fighting against each other? Let's join forces.' And it's been great."

As experienced consultants, Jackson, Perez and the rest of the team typically find themselves being called if there are issues



25-year-old submersible pump unit.

with a property's current elevator maintenance provider, or in advance of major capital budgets and projects. "It is all-too common," Jackson says. "We get involved with a building and someone will call us and say, 'Hey, we've got x issue,' and the first thing that I'll ask is, 'Send me a copy of your current service agreement.' And 90 percent of the time, that service agreement has an elevator company's name on the letterhead, which effectively means it's an agreement that they've written, that's written in their favor, that is oftentimes very ambiguous or vague into what is actually covered. So our goal is to kind of flip that script and educate the client to structure agreements and relationships with their contractors where they have input in from a scope, and they're protected.

"Almost every elevator company service agreement says, 'We will regularly and systematically maintain your equipment,'" he continues. "Well, that means nothing, effectively. What is 'regular and systematic'? We specify based upon make, model, type of equipment, application, that you need three hours of preventative maintenance a month, or a quarter. And then, ultimately, build in KPIs — key performance indicators — that we can help manage the success of how that contractor's performing. Are they meeting these things? Are safety tests

current? Are they meeting callback response times? Are they doing their PM? Our clients are certainly very educated, smart people, but they're not experts in the elevator trade. And the experience that we've been able to obtain over the years working on the contractor side, we know the shortcomings. We know the workarounds. And we know how to structure things to both cost-protect, but also ensure that they're getting what they need."

As buildings age and equipment gets replaced, the importance of having a team on top of your elevator performance and maintenance doesn't become less important — it's at least as important, if not more so. The equipment installed 70-100 years ago was made considerably differently than it is now, both in terms of engineering and durability. "With technology, and with just manufacturing in general, one of the biggest challenges we face is phased obsolescence," Jackson says. "These circuit boards and/or drives, or other components that are no longer available to source unless you're going through repairs and what-not. So I think one of the biggest challenges we face is working with our clients to maximize the life of their asset."



Old Montgomery hydraulic controller.

Modernization is a core mission for Blackstone Elevator Consulting, which means they also keep keenly abreast of what's new in the vertical transportation industry. The innovations coming into focus today show advanced thinking not just in terms of technology, but interplaying with the dynamics of daily living. He cites the rising popularity of destination dispatch (DD): "Where a traditional elevator had buttons inside your elevator cab — so you walk in an elevator, you push a button and then you go to your floor. You're seeing more and more, now, commercial buildings where they have the DD in the hallway. So you come in, there's a kiosk, and you press the 10th floor, and it says, OK, go to elevator B. It's a dispatching system that groups people and drops them off the most efficient way."

Other innovations include a double-decker elevator that the Blackstone team recently visited in New York, and elevators with no attendant machine rooms, in which the machine is located in the actual hoistway. Then there's the inevitable discussion around AI, which has its pros and cons, its adherents and skeptics. "I think, on the OEM side, I would argue, as a consultant, it's something to be wary of — not necessarily bad, not necessarily good — but you're seeing a lot of this predictive maintenance with AI and remote monitoring, and things like that," Perez offers. "Obviously, everybody spins it a different way, but that's what we're seeing, and our job as a consultant is to go through the weeds and sniff out all the fluff and just say, listen — this is what a building of this caliber and this type of equipment need."

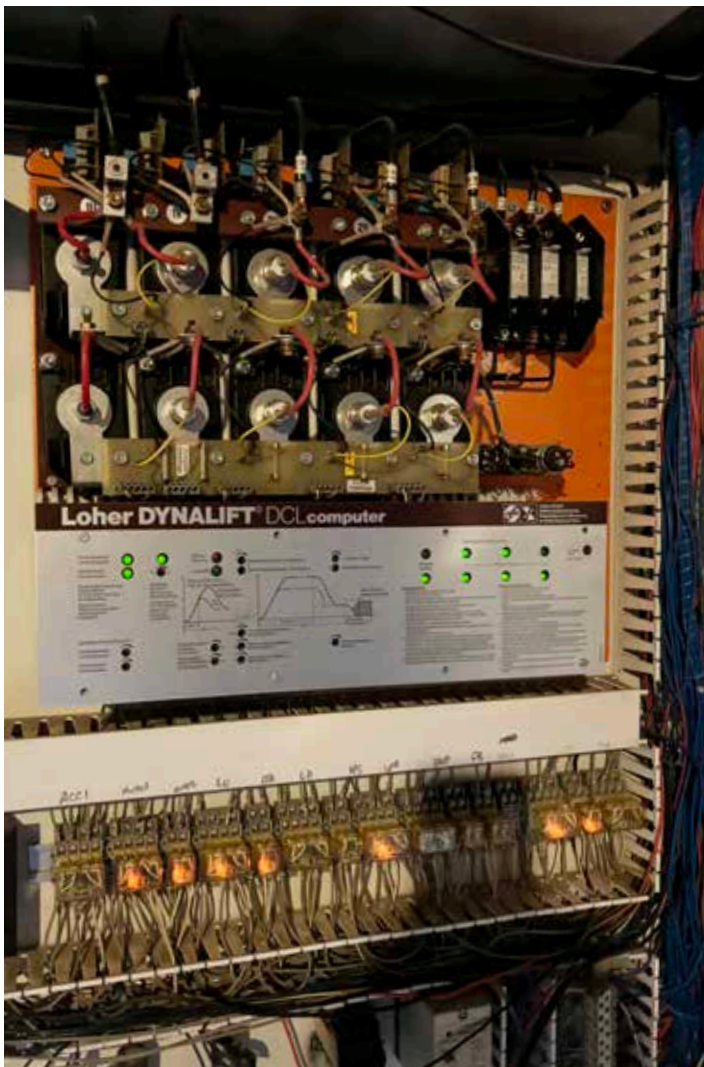
This is the marrow of what Blackstone Elevator Consulting offers to its clientele — the collective experience to assess the building and the project at hand, and the knowledge and wisdom to respond accordingly. "We are managing some of the largest elevator modernization projects in the city, quite frankly," Jackson says. "We designed, specified and bid out Triangle Plaza out by O'Hare. There are 22 elevators in that complex. We're in the process of doing the elevator modernization over at Lake Meadows in Bronzeville. We do work at Water Tower Place. We've got a very diverse group of clients that we work with, and quite frankly, some of the largest players not only in our market, but nationally."

Jackson and his team have secured the work they have by building their reputation on trustworthiness and the willingness to do what's necessary to solve their clients' problems in the most appropriate manner, as Jackson explains. "Our primary objective — and I think what absolutely sets us apart — is that we are trying to build partnerships. That doesn't mean that everything is always going to be rosy, but if we are working with our client and contractor, and we can come together to serve our ultimate client — which is the end users of the building — if we can do that, it allows us to have a lot more fun in what we do, and create that partnership. Ultimately, that's what we're setting up for."

Though the business is only four years old, Jackson views Blackstone Elevator Consulting as a legacy proposition, with children already taking interest in its future. He has every intention of being here for his clients for the long haul, and ensuring that they have the right people on the job for each respective project. "The goal is not about size," he says, insisting instead that it's all about finding the right person for the project at hand. "I have no desire to post a job. But through the course of what we do, and interacting with the various elevator people throughout the country, inevitably the right person is going to show up. That's how our team has grown from where it is now. Our primary objective is to ensure that we don't dilute what we



Hollister Whitney 43-OH geared machine.



30-year-old hydraulic controller.

offer our clients. And that's by bringing on the right people, strategically, and not just trying to grow."

Sometimes, Jackson illustrates, the right people can even be the ones with whom the client is having difficulty, as he encountered in a recent client visit out to Arizona. "It was a client that we work with here that has an asset in Phoenix," he explains. "They absolutely despised their elevator contractor. They brought us in to do an evaluation to determine, is the contractor doing their job? We were able to tell, very easily and confidently, why they weren't, and, working with the contractor, developed a plan to get things back on track. The client then engaged us to put the elevator systems out to bid — and despite the client's desire, we made the recommendation to stay with that contractor. That was a hard sell, but that contractor was the best-suited to maintaining that specific type of equipment. So we had to educate them on that. But through that course, we took them from a contractor's agreement to a professionally written agreement in scope. We made that transition a little over three years ago. And I'm going to tell you right now that that building is receiving the best service they've ever had, and they will never leave that contractor because of the process we've gone through."

Perez boils it down very succinctly: "At the end of the day, it doesn't matter what industry you're in — relationships are everything," he says. "There is no private equity group backing Matt and me. It is simply us and our ingenuity, and our relationships, and the fact that we wake up with a like-minded goal and vision of 'Hey, we want to ultimately do what is best.' It is, simply: Wake up, do what's right for your client, and frankly, for me, be able to sleep at night. I don't have that feeling that, 'Oh, I feel that I did something not right' — ethically or morally, or what have you. For me, that is something very important, and being with a group of people that are like-minded and want to go forward. Just doing the right thing, I think, is the best, and has given me a new sense of purpose. I'm super-excited with what we've done not just this past year, but where we're going." 📺 📺



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The November meeting at Rate Field was a great success — thanks to everyone who made it happen. Big thanks to Tom Phillips for reserving the Stadium Club for this event, and to our Events Committee for their planning, and to the personnel at the Rate Field Stadium Club for their superb service. Most of all, we want to thank BEAR Construction for their sponsorship of this event. We couldn't have these meetings and events every month without their generosity, and we hope that you'll show your appreciation by supporting them when you need outside assistance with your building systems.


Thanks also to everyone who attended to take part in our biennial election. Our congratulations go out to everyone on the new slate of Officers and Directors. We look forward to swearing all of you in at the Inaugural Gala Event at the Local 399 Union Hall on Saturday, January 24, 2026. In the meantime, we hope to see all of you at our December Holiday Event on Wednesday, Dec. 10, from 4:00-7:00pm, at Maggiano's on Clark.

As always, sponsorship opportunities are available for all upcoming events. If your organization would like to elevate its profile by becoming an event sponsor, please reach out to us at events@chiefengineer.org. 

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Smarter Hydronic Systems: How Energy Valves Are Changing the Way Chief Engineers Manage Building Performance

By Michael A. Badame

Energy valves like the Belimo Energy Valves pictured here provide new and increased Delta-T management capabilities and offer data-driven efficiency in our facilities.

On a crisp Chicago morning, sunlight cuts through the mist rising from the rooftops downtown. For the city's building engineers, that skyline isn't just a view — it's a responsibility. Beneath those rooftops lie thousands of tons of chilled water, heating loops, and the complex hydronic networks that keep the city's towers comfortable and efficient.

Among them is a chief engineer who begins his day as most do: with a slow walk through the mechanical room. Pumps hum in rhythm, gauges flicker, and the familiar scent of glycol and steel fills the air. Yet for even the most experienced hands, there's one problem that can quietly erode efficiency and budgets alike — the mysterious loss of Delta-T.

"Hydronic systems are like living, breathing things," said Rich Silver, Sales Engineer at G&O Thermal Supply Co., a trusted Chicago-based supplier that's been supporting building operations professionals for decades. "They evolve with age, retrofits, and seasonal demands. If you're not measuring and managing Delta-T, you're likely leaving efficiency — and money — on the table."

The Hidden Challenge: Delta-T Degradation

Delta-T, the temperature difference between supply and return water, is one of the most critical — yet misunderstood — indicators of hydronic efficiency. When Delta-T collapses, systems lose capacity. Chillers run harder, pumps over-circulate, and the building's overall energy use climbs.

"It's a slow drift that happens over time," Silver explained. "Maybe a coil is fouled, maybe a valve was oversized 15 years ago, or maybe balancing never quite hit the mark. All of that adds up."

Chief engineers often see the symptoms — higher kW per ton, unstable control loops, or rising condenser water temperatures — but diagnosing the root cause can be elusive without the right

data. That's where smart hydronic technologies, like the Belimo Energy Valve, are transforming the game.

What Makes the Energy Valve Different

The Belimo Energy Valve combines a pressure-independent control valve, ultrasonic flow meter and temperature sensors into a single, intelligent device. In essence, it's a self-aware valve that both measures and controls energy flow through a coil.

Traditional valves operate based on a signal — open this much, close that much — without knowing what's truly happening downstream. The Energy Valve, by contrast, measures real-time flow, temperature, and energy transfer, allowing it to make smart adjustments that optimize Delta-T and coil performance.

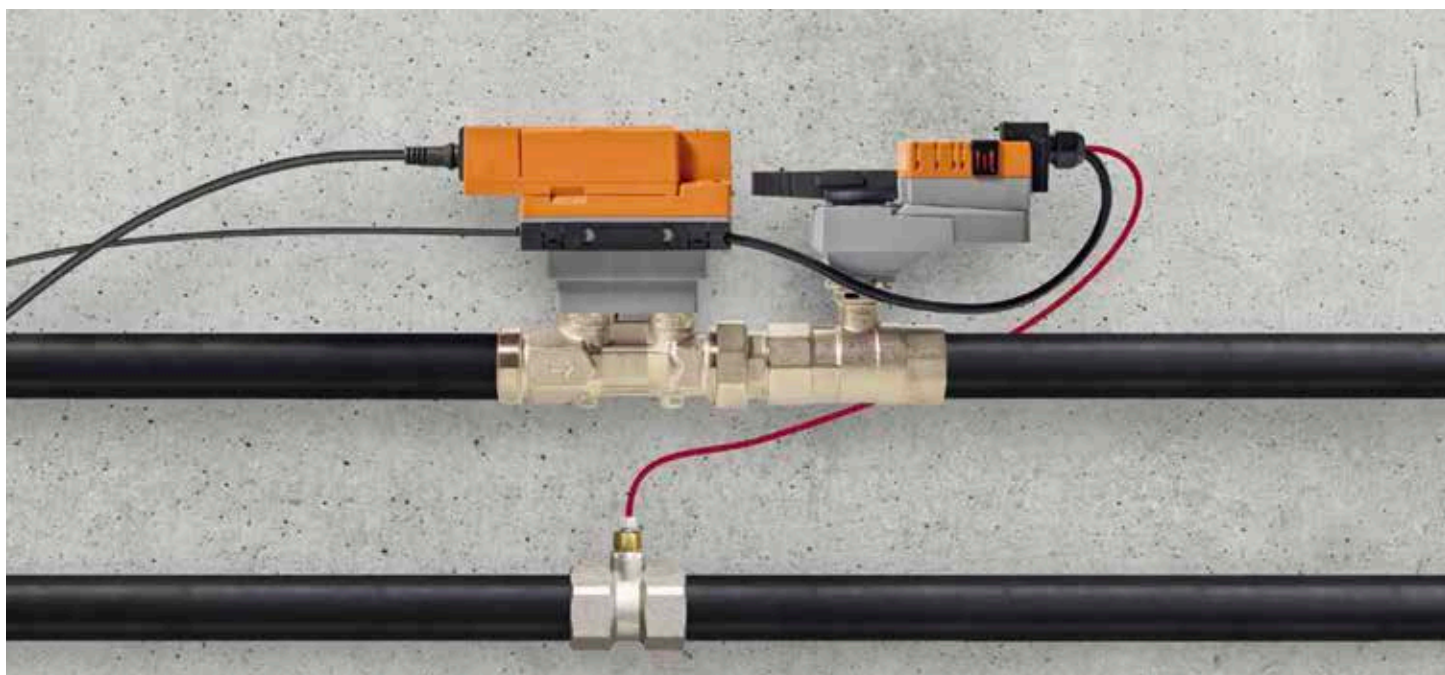
"Think of it as a valve with a brain," Silver said. "It doesn't just follow orders from the BAS — it interprets what's happening and reacts accordingly. If flow is too high for the load, it knows to throttle back. If a coil isn't transferring heat effectively, it flags it. That's the difference between control and intelligence."

The valve's Delta-T Manager ensures that the system maintains proper temperature differentials, preventing the common scenario of over-pumping — where too much water is pushed through a coil that can't use it effectively. This balance translates directly into energy savings and better plant performance.

The Chief Engineer's Perspective

For most chief engineers, hydronic systems are the backbone of building comfort — and the source of many sleepless nights. Between tenant demands, aging infrastructure and the ever-tightening energy budgets of modern properties, efficiency is both a mandate and a moving target.

"Every summer we fight to keep chillers running at design efficiency," said one Chicago chief engineer overseeing a 1.2-million-square-foot mixed-use property. "We've replaced



The Belimo Energy Valve features built-in Power Control and Belimo Delta T Manager™ logic to monitor coil performance and optimize the heat exchange taking place by maintaining Delta-T.



When the EV's first iteration was first introduced in 2010, featuring the capability to securely connect to the Internet, it became the industry's first IoT control valve.

coils, we've cleaned strainers, but it wasn't until we started monitoring flow and Delta-T at the coil level that we really understood where we were losing performance."

By starting small — installing Energy Valves on a handful of air handlers — the team was able to collect baseline data that revealed surprising insights. Some coils were over-pumping by as much as 40 percent. Others were underfed. Once balanced and optimized, the chiller plant saw measurable improvements.

"It's not always about replacing hardware," the engineer said. "Sometimes, it's about seeing what's actually happening in the system and letting that data guide you. The valves gave us visibility we never had before."

Why Data Matters More Than Ever

Buildings are awash with sensors, yet much of that data goes unused. Energy Valves change that dynamic by making the most critical operational data — flow, temperature, and energy — readily accessible and actionable.

"Chiefs today are data managers as much as mechanical experts," Silver noted. "You can't just rely on gut instinct anymore. The good news is, tools like this make the data clear and easy to use."

Each valve logs real-time performance data, which can be integrated into the Building Automation System (BAS) via BACnet, Modbus or Web services. Engineers can view performance trends, set alarms, and identify underperforming coils long before occupants feel discomfort.

Even in older facilities without advanced automation, the valves can operate in standalone mode, allowing engineers to connect directly via a laptop or smartphone. This flexibility has made them a favorite for retrofit projects in Chicago's vintage high-rises, where space and infrastructure limitations often make traditional balancing or metering impractical.

Maintenance by Measurement

One of the most underrated benefits of the Energy Valve is how it turns maintenance into a proactive science. Instead of relying on seasonal checklists or comfort complaints, engineers can use data to pinpoint exactly where attention is needed.

"If you see Delta-T trending down on a specific coil, that's a clue," Silver explained. "It might be a fouled strainer, a clogged filter, or even air in the line. You can target that issue before it escalates."

Over time, this data-driven approach can transform how teams budget and justify maintenance costs. Instead of reactive service calls, they can demonstrate ROI through measured performance improvements.

Facilities can use Energy Valve data to support capital projects, when management asks why new coils or better filtration are needed, the chief engineer can now show the before-and-after data. That's powerful.

From Pilot to Portfolio

Adopting new technology across an entire property can seem daunting, but many successful implementations begin with pilot projects. Chief engineers often start by installing valves on their largest air handlers or on coils serving critical spaces, such as data rooms or executive floors.

Once baseline data is established, it becomes clear how much efficiency is being left untapped. Some teams have reported 10-20-percent reductions in chilled water pumping energy simply by maintaining proper Delta-T levels.

"It's a stepping stone approach," said Silver. "You don't need to retrofit the whole building on day one. Start small, prove the savings, then expand."

For many Chicago buildings, the payback period can be surprisingly short — especially when factoring in utility incentives from ComEd and Peoples Gas, which recognize the role of advanced control technologies in reducing energy waste.

Design Simplicity and Retrofits

Another advantage of the Energy Valve is its ability to simplify system design. Because it integrates multiple sensing and control functions into one compact package, it can replace several discrete components — flow meters, balancing valves, temperature sensors — and reduce installation complexity.

The valve is available in threaded sizes from ½" to 2" and flanged sizes up to 6", covering everything from fan coils to large air handlers. For oversized coils or dual-feed systems, multiple valves can be installed in parallel.

"Retrofits in downtown buildings can be tight — sometimes you're working with only a few inches of clearance," Silver said. "Being able to combine functions into one device saves both time and space."



The Energy Valve 4 offers seamless and direct integration to the BMS or to a third-party building IoT platform, providing valuable data on current operation modes, temperatures, flows or energy consumption that can be directly used for tenant billing.

Commissioning is equally important. Engineers are encouraged to verify flow rates against coil design data and recalibrate as needed. “Don’t treat it like a one-for-one replacement,” Silver cautioned. “Use it as a chance to fine-tune your system. That’s where the real gains are.”

Smart Buildings, Smarter Engineers

As Chicago’s skyline continues to modernize, the role of the chief engineer is evolving. The profession is no longer defined solely by wrench-turning — it’s about interpreting data, managing systems holistically, and leveraging technology to deliver comfort, efficiency and reliability.

“Energy valves fit right into that next-generation approach,” Silver said. “They give you eyes and ears inside your coils. Once you see the data, it changes how you think about system performance.”

For engineers managing large campuses or portfolios, the valves’ cloud connectivity allows performance data to be compared across buildings. This opens the door to benchmarking, predictive maintenance and long-term capital planning — all driven by real operational insight.

Looking Ahead: Data as a Maintenance Tool

As buildings strive to meet sustainability goals and comply with energy benchmarking ordinances, tools like the Energy Valve are becoming part of a broader shift toward measurable efficiency.

Silver believes that trend will only accelerate: “The days of saying, ‘I think the system is running fine,’ are over. Now, you can know for sure. And that knowledge pays for itself.”

For chief engineers, that knowledge means confidence — the ability to walk through the mechanical room on a hot July day and know that every gallon of water and every ton of cooling is working exactly as it should.

The Takeaway for Chief Engineers

The lesson, according to Silver, is straightforward: Start small, measure, and learn. “You don’t need a massive capital project to get started,” he said. “Pick one coil that’s been giving you trouble, install a smart valve, and start tracking the data. You’ll learn more about your system in one season than you might in five years of manual balancing.”

In a city like Chicago, where every building has its quirks and every summer tests the limits of mechanical systems, knowledge truly is power. And as more engineers embrace data-driven hydronic control, the next generation of building performance is being written — one Delta-T at a time. 🏢🔧

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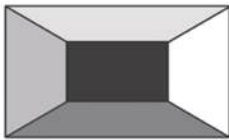
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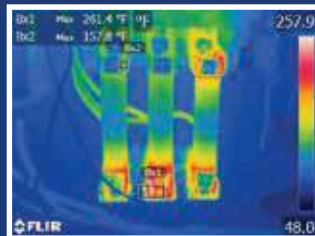
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An innovative skid re-design enables Venturi nozzles to more effectively break up and clear debris that settles along the bottom of large-diameter sewer lines.

Municipalities across America face an ongoing challenge when maintaining large diameter sewer pipes. As time passes, mud, sludge, sand and gravel can accumulate along the bottom of the pipe, restricting the smooth flow of water. If left unresolved, pipe blockages can cause water to overflow into streets, basements, and public areas, while also driving up long-term maintenance expenses.

The economic and social costs of such events are considerable. Emergency response, cleanup, and repairs demand significant resources while residents and businesses often seek compensation for losses. Municipalities also risk reputational harm and legal liability, as repeated failures or inadequate responses can lead to lawsuits or fines.

To avoid these issues, utilities have traditionally relied on Venturi nozzles to effectively clear sediment and debris from the bottom of sewer lines. This specialized attachment operates on the Venturi principle, which states that when fluid passes through a narrowed section — channels in the nozzle — its velocity rises while its pressure drops. By harnessing the flow of water already in the pipe, the nozzle increases pressure and produces a high-velocity stream strong enough to break apart and dislodge accumulated material. This makes the Venturi nozzle more effective for debris removal than a conventional jet nozzle.

Unfortunately, Venturi nozzles are widely acknowledged to perform below expectations. Although the nozzle vigorously churns water within the pipe, the collected debris at the bottom often does not get fully dislodged and vacuumed out.

According to Dan Story, an experienced trainer and Operations Manager at KEG Technologies, a leading manufacturer of Tier 1 to Tier 3 nozzles, chain cutters, floor cleaners and camera nozzle systems based in Spartanburg, S.C., the issue is in the positioning of the Venturi nozzle inside the pipe.

“A traditional Venturi nozzle does not target the debris directly; instead, it channels the water flow toward the center of the pipe,” explains Story. “As a result, you end up just moving a lot of water and only a little bit of the material at the bottom.”

Optimizing Venturi

Recognizing this shortcoming inspired KEG Technologies to design a more effective methodology for cleaning the bottom of large diameter pipes.

Story’s research led him to look beyond the nozzle and evaluate the skid that supports it as it moves through the pipe. To maintain stability during high-volume jetting, the water flow must be pointed directly into the material to break it up.

As a result, the high volume of water flow moves the debris faster down the line. A Venturi nozzle must have a full pipe of water because if air is sucked into it, the nozzle stops working.

“Improving the effectiveness of a nozzle required modifying the skid,” said Story. “By changing the angle of the skid, the churning water can be directed at the collected debris.

“The pressure drop [as a result of the Venturi effect] also creates suction, pulling surrounding water and debris toward the nozzle and then moving it through the pipe back to the vacuum truck. In effect, the nozzle both dislodges and transports debris at the same time,” Story adds.

This innovation builds on earlier advancements in skid design that KEG Technologies has introduced to the industrial pipe cleaning sector.

In recent years, the company has introduced lightweight aluminum skids that can be used with its patented high-efficiency Tier 3 nozzle, rated at 75-98-percent water efficiency. Switching from steel to aluminum construction significantly lowers the overall weight, making the nozzle easier for operators to maneuver inside the pipe.

Additional skid design enhancements from KEG Technologies include the introduction of protruding plastic fins for greater stability, and shaping the skid like a football to reduce the risk of snagging on sewer pipe obstructions and to protect liners in the pipe.

Today, the company offers steel and aluminum skids in a variety of sizes with 12-inch pipe applications being among the most popular.

KEG Technologies, which is a member of NASSCO, the National Association of Sewer Service Companies, recently demonstrated its Venturi nozzle and redesigned skid to wastewater maintenance crews and municipal sewer operations teams in Orange County, Calif. The county was in the process of drafting specifications to define the optimal approach for cleaning out large-diameter pipes before putting the project out for contract.

Not only did the test validate the effectiveness of the new design, it also yielded further insights into how to refine the skid design to make it easier to maneuver within the pipe.

Today, KEG pairs its skid with its Venturi nozzles, which are ideal for industrial sewer pipes of 18” to 36” in diameter. In doing so, the nozzle can increase the flow rate of vacuum trucks from 60-100 gallons per minute (GPM) to approximately 400 GPM to break up and dislodge heavy debris before suctioning it from the pipe.



The pressure drop from the Venturi effect creates suction, pulling surrounding water and debris toward the nozzle and then moving it through the pipe back to the vacuum truck.



By adopting the redesigned skid and Venturi nozzle system, municipalities can significantly reduce the risks associated with sediment buildup in large-diameter sewer lines. This improved cleaning approach not only dislodges but also transports debris efficiently, ensuring a cleaner pipe bottom and preventing the blockages that often lead to costly overflows, emergency responses and reputational harm.

Through the integration of these advanced tools into their maintenance routines, municipalities can proactively safeguard public infrastructure, lower long-term operating expenses, and demonstrate a commitment to reliable, preventive management of sewer systems. ■■

For more information on Venturi nozzle and skid tools, call (866) 595-0515; fax (866) 595-0517; or visit KEG Technologies online at kegnozzles.com.



A redesigned Venturi nozzle can increase the flow rate of vacuum trucks from 60-100 GPM to approximately 400 GPM to break up and dislodge heavy debris before suctioning it from the pipe.



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Taco's new PF Series Plate & Frame Heat Exchangers are built to the highest standards of quality and durability.

Taco PF Series Plate & Frame Heat Exchangers — Built for Performance, Designed for Durability

Taco cites its commitment to delivering innovative solutions that help its customers to achieve the highest levels of efficiency and reliability as the reason for developing its PF Series plate and frame heat exchangers. They're engineered for maximum efficiency, durability, and adaptability in a wide range of heat transfer applications. Designed, constructed, and tested to meet ASME Section VIII, Division 1 requirements, each unit is manufactured to the highest standards of quality and reliability.

The PF Series features 0.5mm thick plates for standard designs and 0.6mm plates for high-pressure applications, providing exceptional strength while maintaining optimal heat transfer efficiency. Taco offers a variety of materials to ensure maximum corrosion resistance, including 304 and 316 stainless steel, and titanium heat transfer plates for even greater protection.

With standard working pressures of 150 psi and 300 psi, and higher-pressure ratings available, the PF Series heat exchangers are designed to handle a wide array of system requirements. For high-temperature applications, Taco provides NBR-HT gaskets rated to 284°F and EPDM-HT gaskets rated to 320°F, ensuring reliability in extreme conditions.

Taco's PF Series isn't just about meeting the needs of today — it's about preparing its customers for tomorrow. Taco's customizable heat exchangers offer a tailored solution for industries that demand superior heat transfer, whether in HVAC, industrial processes, or other applications requiring optimal efficiency and performance. 

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Rockwell Automation recently launched FactoryTalk Design Workbench, a free software tool enabling machine builders and manufacturers working on compact, standalone systems a consistent and efficient way to develop automation solutions.

Rockwell Automation Launches Free Software Tool for Building Micro Control Systems Smarter and Faster



Rockwell Automation, Inc., recently announced the launch of FactoryTalk® Design Workbench™, a free design software built specifically for micro control systems. Version 1 supports Micro800™ controllers and provides a unified workspace for programming, configuration and troubleshooting.

FactoryTalk Design Workbench software gives machine builders and manufacturers working on compact, standalone systems a consistent and efficient way to develop automation solutions. Companies in packaging, water and wastewater, agriculture and material handling often face long development cycles, fragmented tools and limited flexibility. The new software streamlines the process from programming to deployment while supporting multiple devices at once to simplify system management.

Key features in version 1 capabilities include:

- **Modern design environment** with a consistent Logix experience for faster onboarding
- **Improved download speed and online workflows** for greater efficiency
- **Multi-device support** for Micro810® and newer Micro800 LxOE controllers allowing easy access to multiple controllers at the same time to simplify troubleshooting

“FactoryTalk Design Workbench software is our next-generation design environment for micro control systems, delivering a productive, more reliable and familiar experience for users of Rockwell Automation products,” says Wan Shan Loo, product manager at Rockwell Automation. “Customers have asked for something intuitive and easy to use, and FactoryTalk Design Workbench software delivers. With support for Micro800 controllers and a scalable architecture, it simplifies workflows and lays the foundation for broader device integration in the future.”

FactoryTalk Design Workbench software is available now through Rockwell’s Product Compatibility & Downloads Center (PCDC). Future versions are planned to expand support beyond Micro800 controllers, with annual updates expected.  

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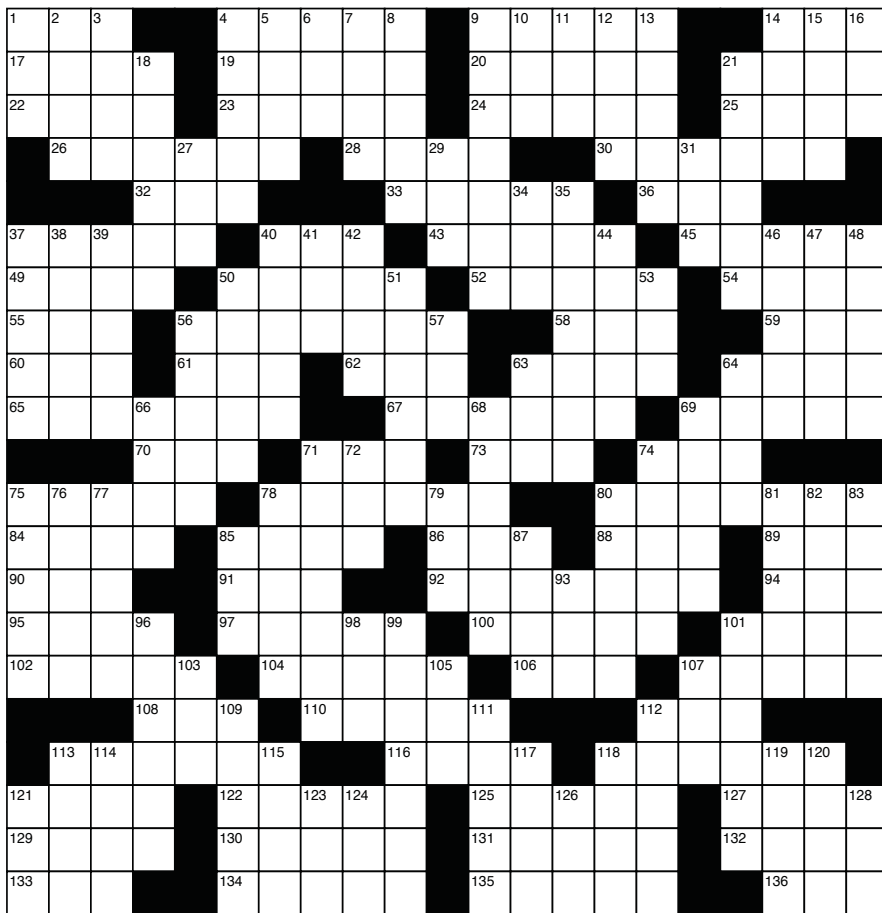
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- 34 Doze
- 35 When night and day are same length
- 37 Large eastern religion
- 38 Constellation
- 39 Whitens
- 40 Grant an extension
- 41 Estimated time of arrival
- 42 Short
- 44 Imbecile
- 46 Point
- 47 Behind
- 48 Under, poetically
- 50 Condemned
- 51 Shina
- 53 Bro. or sis.
- 56 Chisel
- 57 South southeast
- 63 Resort hotel
- 64 Asian starling
- 66 Glob
- 68 Music player
- 69 Fine
- 71 "Magical" city
- 72 Bumbling insect
- 74 Talkative
- 75 Capital of Bangladesh
- 76 Full of activity
- 77 Access (2 wds.)
- 78 Radioactivity unit
- 79 She
- 80 Spring
- 81 Lowest point
- 82 Desire
- 83 Fix firmly
- 85 Affirmative
- 87 Swirl
- 93 Lyric poem
- 96 Peanut butter candy maker
- 98 Former USSR's secret police
- 99 Blew up, anger
- 101 Small drill
- 103 Central processing unit
- 105 South southwest
- 107 Copy
- 109 God of Islam
- 111 Down duck
- 112 Sculpture types
- 113 Not well cooked
- 114 Vivacity
- 115 Color
- 117 Roman cloaks
- 118 Thought-provoking
- 119 Take in
- 120 Trounce
- 121 Brand of dispensable candy
- 123 West northwest
- 124 Pastry
- 126 Married woman
- 128 Downwind

ACROSS

- 1 Friend
- 4 Head
- 9 Fly
- 14 Radon
- 17 Break
- 19 Makers of the Prelude
- 20 "The Jungle" author Sinclair
- 21 Compass point
- 22 Brand of sandwich cookie
- 23 Annoyed
- 24 Set in
- 25 Afresh
- 26 Time of year
- 28 Immediately preceding
- 30 Put more gas in
- 32 Wrath
- 33 Waitress on "Cheers"
- 36 Free of
- 37 Mount (2 wds.)
- 40 Radioactivity unit
- 43 Iranian's neighbor
- 45 Deity
- 49 Asian nation
- 50 Putrid
- 52 Sharp spades
- 54 Protected
- 55 Goose egg
- 56 Monkey companions
- 58 Caesar's three
- 59 School group
- 60 Fawn's mom
- 65 Remove a light bulb
- 67 Tsar
- 69 What one of the magi brought
- 70 Topper
- 71 Kimono sash
- 73 Assess
- 74 Weapon
- 75 Chief ancient Philistine god
- 78 Nativity scene
- 80 Short drapery
- 84 Upon restful furniture
- 85 Christmas
- 86 Bard's before
- 88 Most basic
- 89 Fortify
- 90 Sever
- 91 Time period
- 92 Stronghold
- 94 Swab
- 95 Russian ruler
- 97 Basins
- 100 Strangely
- 101 Offer
- 102 Ancient Indian
- 104 Verges
- 106 Still
- 107 Uttered
- 108 Environmental protection agency (abbr)
- 110 Very fat

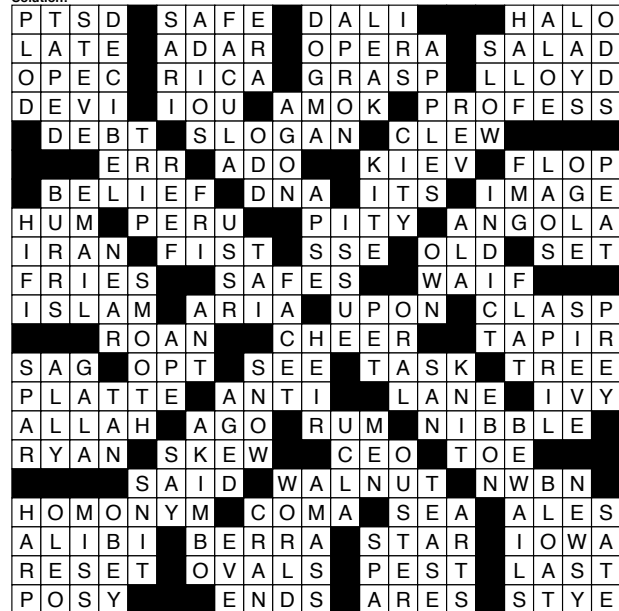
- 121 Little pigment
- 122 Acidic (2 wds.)
- 125 Vaulted ceilings
- 127 Duke
- 129 Epochs
- 130 Red headed orphan
- 131 Heron
- 132 Accurate
- 133 Type of Buddhism
- 134 Chopped
- 135 Files
- 136 North by east

DOWN

- 1 Professional
- 2 Nimbus
- 3 In ___ of (instead of)
- 4 Ding
- 5 French ____, instrument
- 6 Writing liquid
- 7 Eve's garden
- 8 Bleached
- 9 String instruments
- 10 Licensed practical nurse
- 11 Possessive pronoun
- 12 Worker
- 13 Come in the door
- 14 Heredity component
- 15 Cain killed him
- 16 Quilt
- 18 Idea

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WRENCH HEARD A FAINT SOUND, LIKE A LONG-AGO SONG.

HE SEARCHED THROUGH THE BUILDING, FLOOR AFTER FLOOR...

...AND SUDDENLY REALIZED WHERE HE HEARD IT BEFORE.

IT WAS A SONG FROM HIS CHILDHOOD AND IT FILLED HIM WITH JOY.

IT WAS A BIG HIT BACK THEN AND HE PLAYED IT NON-STOP...

THE SONG FOLLOWED HIM THROUGH SCHOOL AND HELPED HIM SURVIVE...

TO REMEMBER THAT TUNE HE FIRST HEARD AS A BOY.

...ON A LITTLE RED TURNTABLE WITH A SCRATCH ON THE TOP.

...THE TEACHERS, THE HOMEWORK, THE BULLIES AND THEIR LIES.

THE SONG WAS AN ANTHEM TO ALL THE NERDS IN THE SCHOOL...

...WHO'D HAVE TO WAIT YEARS, BEFORE THEY'D BECOME COOL.

THE SONG SURVIVED DISCO, AND RAP AND OTHER DISASTERS,

AND EVEN THE BAND... THE WRENCH METAL BLASTERS.

THE SONG WAS THE FIRST ONE THEY LEARNED HOW TO PLAY.

LOCAL GIGS AT DANCE PARTIES, BUT THEY NEVER GOT PAID.

HE WAS ALMOST DONE SEARCHING WHEN FINALLY HE FOUND...

IT WAS PLAYING THE MUSIC THAT HE ALMOST FORGOT.

THEN HE SAW SOMETHING SPARKLE AND WATCHED IT SOAR OUT OF VIEW...

...THE SOURCE OF THAT BEAUTIFUL, MAGICAL SOUND.

THAT LITTLE RED TURNTABLE WITH A SCRATCH ON THE TOP.

...AND A VOICE FILLED THE NIGHT, "IT'S MY FAVORITE SONG TOO."

Happy Holidays from all of us at Chief Engineer!

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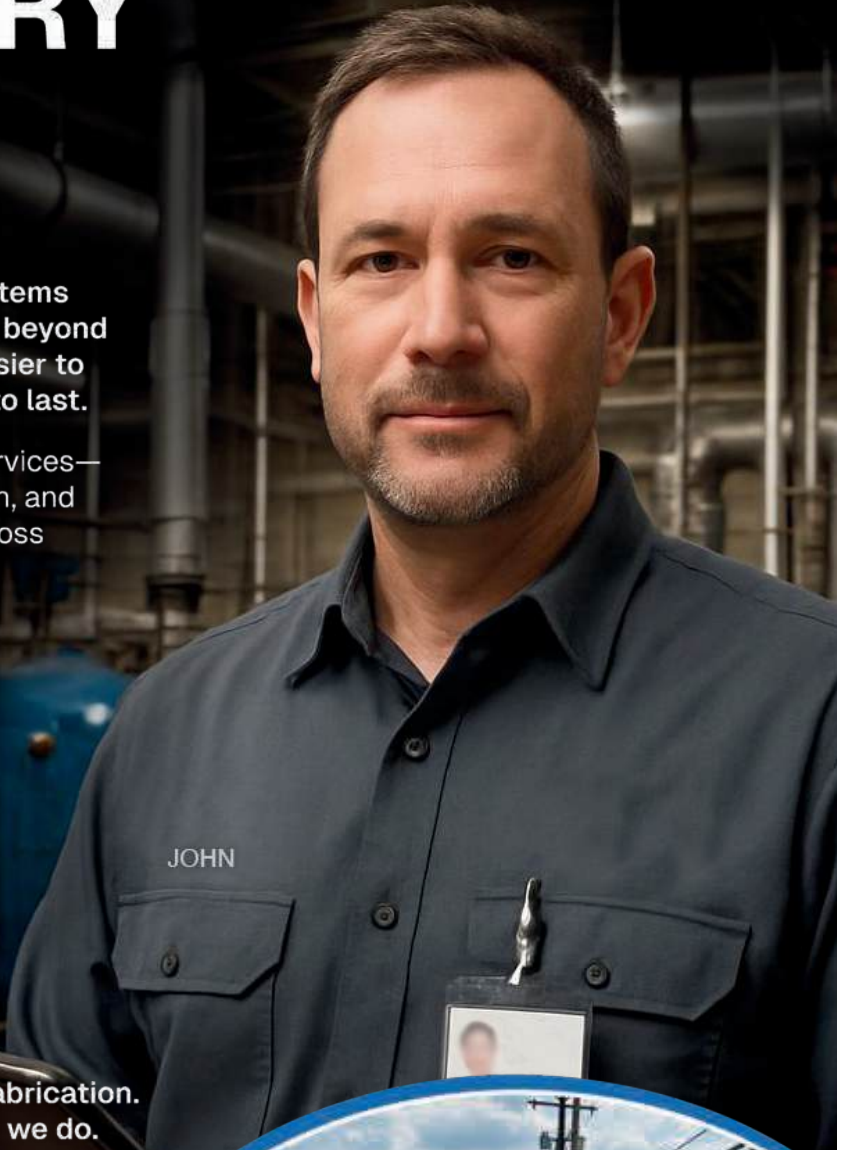
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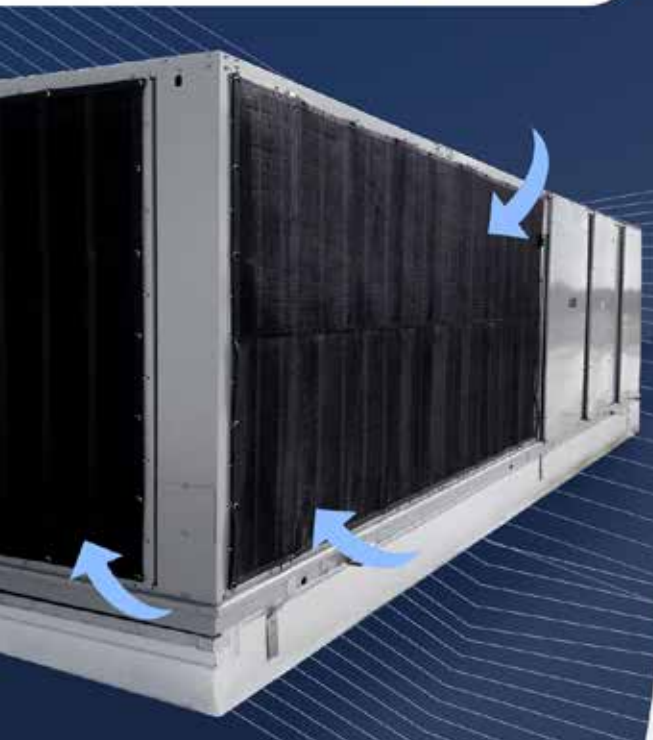


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