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OCTOBER 2025



**Exploring
the Versatility of
Metropolitan
Industries**

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**From Cooling Towers
to Cost Savings: Hospital
Seizes Power-Saving
Opportunity**

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**Rational Hydronic
Retrofit Chosen for
Psychiatric Facility**

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DON'T LET YOUR BUSINESS GO UP IN FLAMES!



**100% TAX DEDUCTIBLE
INSTALL OR RETROFIT FIRE
SPRINKLERS TODAY!**

DEDUCT THE FULL COST OF QUALIFIED PROPERTY IMPROVEMENT!

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.

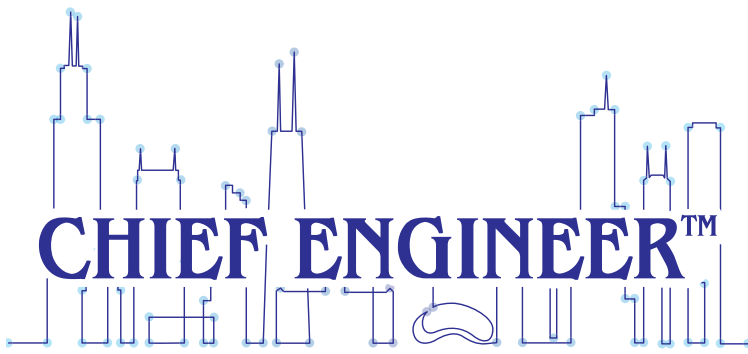
While many believe that the intention of Congress was to make Qualified Improvement Property 15-year property, which would have made this property eligible for bonus depreciation, the TCJA left the life of this property at 39 years. So, a taxpayer who did not elect to use the Section 179 Deduction or 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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CHIEF ENGINEER™

VOLUME 90 • Number 10

Official Magazine of the



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The Chief Engineers Association of Chicagoland magazine is published 12 times per year by the Chief Engineers Association of Chicagoland.

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Subscription rate is \$36.00 per year in the United States and Canada; \$110.00 per year in all other foreign countries. POSTMASTER: Send address changes to 22 W. Washington St., Suite 15112, Chicago, IL 60602

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Metropolitan Industries has grown and made its expert reputation for more than 60 years by doing everything in-house.

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A hospital increases energy efficiency by diagnosing cooling tower issues and treating its entire mechanical system.

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Deteriorating boilers and hydronic systems at an historic psychiatric facility provided an opportunity to bring it in line with its ongoing mission for the comfort care of its patients.

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Dear Members,

With our 85th Annual Golf Outing at Cog Hill in the rearview mirror, our year is officially underway. Big thanks to everyone who participated in this event — always the biggest of the year — from all of the golfers to our Event Sponsors, Hole Sponsors, and all of the people at Cog Hill who help make this event such an incredible success from year to year. Special thanks are due to Kevin Kenzinger and Brendan Winters for all of their hard work in organizing our Golf Outing this year and every year.



This month, we look forward to seeing everyone at our annual Oktoberfest event, which will take place on Wednesday, Oct. 15, at 115 Bourbon St. (3359 W. 115th St., Merrionette Park). There will be plenty of great food, great beer and great company as we ease into fall. This is always a popular event, so please don't hesitate to register. Registration is now open on the Upcoming Events page of the website at chiefengineer.org.

While the Oktoberfest meeting is popular for reasons that are obvious, let me take this opportunity to remind you that we earnestly request your presence at the upcoming November meeting on Wednesday, Nov. 19, when we will be voting on our next slate of incoming officers. We would appreciate your cooperation and attendance.

On that note, I would like to thank everyone, including all of the Board Members and the entire membership, for your support during my tenure as president. I still have a few months before handing over the reins to a successor, but I appreciate having had the opportunity to lead this fine organization over the past couple of years, and I look forward to remaining an active part of the CEAC in the future.

The cold weather isn't far off now, and at this point all of us should be at least in the process of cleaning and prepping our boilers for the winter ahead. Don't forget that if your boilers need any outside maintenance, to remember to consult your QuickShopper for assistance from our Associate Members. They're the best in the business, and they have supported us so well through the years that we owe it to them to return the favor.

I look forward to seeing all of you at our Oktoberfest meeting this month!

Sincerely,

Doug Kruczek
Doug Kruczek



ASHRAE Highlights Resources to Address Legionella Risk and Water Supply Management

ASHRAE recognizes the growing concern surrounding the recent clusters of Legionnaires' disease cases, specifically in New York City and parts of Ohio, reaffirming the Society's commitment to supporting public health and building safety through accessible guidance on Legionellosis risk management.

Legionnaires' disease, a serious form of pneumonia caused by Legionella bacteria, is most commonly associated with water systems where water is not adequately monitored or treated. After periods of heavy rains and flooding, there is an increased risk of Legionnaires' disease due to potential contamination of water sources and disruptions to water systems. Flooding can mobilize Legionella bacteria-rich biofilms in water systems, leading to higher bacterial loads and potential colonization of the built environment. While the disease has been known for decades, recent outbreaks have underscored the importance of consistent, comprehensive water management practices in facilities of all sizes and types.

To assist building professionals, public health officials and facility managers in managing this risk, ASHRAE offers two key resources:

- ANSI/ASHRAE Standard 188-2021, Legionellosis: Risk Management for Building Water Systems establishes minimum risk management requirements for the design, construction, commissioning, operation, maintenance, repair and expansion of building water systems. Written in enforceable language, the standard is designed to facilitate integration into building codes and public health regulations.

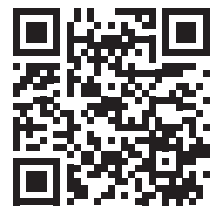
- ASHRAE Guideline 12-2023, Managing the Risk of Legionellosis Associated with Building Water Systems serves as a companion to Standard 188, offering practical, system-specific guidance on reducing the risk of Legionella growth and transmission. The guideline addresses common sources of exposure, including potable water systems, decorative fountains, whirlpool spas, cooling towers and humidifiers. Additional sections cover U.S. water treatment regulations related to incoming water quality, Legionella monitoring, and personal protective equipment (PPE) considerations.

"Healthy buildings depend on comprehensive water management strategies," said 2025-26 ASHRAE President Bill McQuade, P.E., CDP, Fellow ASHRAE, LEED AP. "As concerns about indoor environmental quality and public health continue to grow, it's vital that building owners and operators have access to proven, science-based resources like ASHRAE Standard 188 and Guideline 12. These tools are designed to support safer environments through practical and preventive measures related to water quality and legionella risk mitigation."

Recent outbreaks highlight the ongoing need for vigilance in managing both public water distribution networks and building water systems, especially as many buildings operate under varying occupancy levels and our water utility infrastructure is aging. ASHRAE's guidance offer design teams, building managers and health officials a structured approach to mitigating risk and protecting occupants.

"Our Society remains focused on supporting healthy buildings through better air, better water, and better system design. We encourage the building community to take advantage of the resources we've developed to help prevent future outbreaks," said McQuade.

To access ASHRAE Standard 188 and Guideline 12, or for additional resources on Legionellosis risk management and water safety, visit ashrae.org/Legionella.



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ASHRAE to Showcase Solutions at the 2025 Building Decarbonization Conference

The 2025 ASHRAE Building Decarbonization Conference, set for Oct. 22-24, 2025, in Chicago, will be the gathering place for professionals to determine how to accelerate building decarbonization strategies.

“Decarbonization is not just about technology. It’s about rethinking how we design, operate, and value our buildings,” said 2025-26 ASHRAE President Bill McQuade, P.E., CDP, Fellow ASHRAE, LEED AP. “This conference is about equipping building professionals with the strategies, partnerships and tools needed to make measurable progress. This is the ‘must-attend’ conference for professionals in the business of designing, constructing or operating buildings.”

The two-and-a-half-day program will feature 21 seminars, 14 panels, five technical tours and three keynotes across four tracks: Scaling Decarbonization, Innovator’s Showcase, Blueprints for Change, and Beyond Decarbonization. Sessions will deliver both visionary perspectives and practical solutions that attendees can apply immediately in their own projects.

Some highly anticipated sessions are as follows:

Demystifying Existing Building Decarbonization: New Tools for Strategic Decarbonization Planning (Panel)

This panel introduces the audience to the strategic decarbonization planning process, presents the three tools, and provides examples of strategic decarbonization plans that have been developed and implemented. The panel will describe and highlight projects where the strategic decarbonization planning process has been put into practice in real buildings.

Innovating to Zero: Developer Arriving at Net Positive, Operator Electrifying a Community Including Shared EVs and Designer Outthinking AI in “Human Versus AI”

This seminar features three leading projects in climate action: a fully net-zero campus building at the University of Illinois, an all-electric Canadian development with shared EV mobility, and a bold “human versus AI” competition exploring low-carbon design at scale. Together, they reveal how developers, operators and designers are rethinking what’s possible in the built environment.

Turning Up the Heat: Unlocking the Value of Data Center Waste Heat

This session explores how growing data centers can transform waste heat into a valuable resource for heating buildings and supporting sustainable urban development. Case studies from leading institutions demonstrate integrated design strategies and emerging metrics that are reshaping the future of data center efficiency.

Designing for Resilience: Energy, Water, Ecology and Agriculture in Rural Decarbonization

This session highlights Linkhaw Farms, a sustainable neighborhood development in Lumberton, N.C., that brings housing, economic opportunity and climate resilience to a rural, agriculture-based community. Integrating regenerative agriculture, clean energy and resilient water and thermal systems, the project delivers decarbonization at scale. Experts from multiple disciplines will show how this holistic, community-driven model advances health, sustainability and economic growth while creating a scalable blueprint for rural development.

The Art of Decarbonization

This session highlights the Museum of Modern Art’s multi-phase strategy to meet New York City’s Local Law 97 targets while safeguarding artwork and improving operations. Speakers will share how energy upgrades, carbon reduction measures, and real-time analytics are helping a world-class museum meet sustainability goals and enhance resilience.

Decarbonizing at Scale: Using AI to Move Fast (and Accurately) for Large Real Estate Portfolios

This session presents how one organization is leveraging AI-driven analytics to accelerate the decarbonization of a large real estate portfolio. Presenters will explore legislative and financial drivers, tradeoffs between traditional engineering and AI approaches, and lessons learned on using technology to achieve emissions goals at scale.

ASHRAE’s New Flexible International Building Code Framework: An Interactive Discussion with Audience Participation

This interactive session introduces ASHRAE’s global code framework designed to help countries implement building energy codes by 2030. Participants will preview assessment tools and technical guidance, then take part in a mini stakeholder workshop to experience how this framework can advance decarbonization worldwide.

In-person registration to attend the 2025 ASHRAE Building Decarbonization Conference is \$750 for ASHRAE members (\$800 for non-members). Additional registration options are available.

For the full technical program, registration and additional for the 2025 Building Decarbonization Conference, visit ashrae.org/2025decarb.



Chicago Build 2025 Expo

Oct. 29-30
McCormick Place
Chicago, Ill.

Chicago Build, the largest construction and design show for the Midwest, will be held in Hall D2, Lakeside Center Level 3 of McCormick Place. The event will feature hundreds of exhibitors, 400+ speakers, AIA CES workshops, a Festival of Construction, exclusive free-to-attend networking events and much, much more. Chicago Build is the ultimate platform for networking and connecting with thousands of senior-level decision-makers, buyers and influencers from across the Midwest's entire AEC industry.

Chicago Build offers a totally unique experience over the two days, featuring:

- 30,000+ attendees from contractors, architects, realtors, civil engineers, developers, local councils, house builders and construction professionals
- 400+ incredible speakers across 12 conference tracks
- AIA CES approved workshops
- The Festival of Construction with DJs, musicians, live performances, food and drink tastings, entertainment and more
- Architect's Hub with project displays of upcoming projects from leading architects
- Exclusive networking parties with key decision-makers
- The USA's largest networking event for Women in Construction and Diversity in Construction
- An inclusive Ambassador Program supporting Women in Construction and Diversity in Construction
- 300+ exhibitors showcasing the latest services, products and innovations

This year's conference agenda offers more than a dozen tracks and workshops, including a Facilities Management track that attracts thousands of realtors and FM professionals from across the Midwest to learn of the latest technology, innovation and developments from leading industry experts.

Attendees will gain access to hundreds of high-level speakers across the two days, plus AIA CES accredited training workshops and interactive panel discussions with leading architects, contractors, engineers, government and more.

For more information or to register, visit chicagobuildexpo.com.





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NIFSAB will work with Chicago Metro Area fire departments to provide live burn demonstrations to illustrate the effectiveness of home fire sprinklers.

NIFSAB Working With Area Fire Departments for Fire Prevention Week


As part of national Fire Prevention Week education initiatives, the Northern Illinois Fire Sprinkler Advisory Board (NIFSAB) will be working with greater Chicago area fire departments throughout the season to conduct live fire demonstrations at their open-house events.

Fire Prevention Week is slated for Oct. 5-11 and this year's theme is "Charge Into Fire Safety™: Lithium-Ion Batteries in Your Home." The campaign will work to educate everyone about using these batteries, stressing how important it is to buy, charge and recycle them safely.

"Charge Into Fire Safety" includes expanded resources, guidelines and information in response to the concerns fire officials have about the growing number of fires caused by lithium-ion batteries that power devices such as e-bikes and e-scooters, smaller electronics such as cell phones, laptops and electric vehicles. As the use of these items has increased in recent years, so too has the number of fires associated with them. Combined with fire safety precautions such as working smoke alarms, well-practiced escape plans and lithium-ion battery safety measures, home fire sprinklers can significantly reduce fires, deaths, injuries and property damage. In a more recent example of a fire sprinkler save with a lithium-ion battery, a fire sprinkler system in an off-campus apartment in Champaign controlled a fire caused by a charging e-scooter.

Nothing proves the effectiveness of sprinklers more convincingly than a live side-by-side demonstration of home fires in two similarly furnished rooms — one with a single fire sprinkler and the other without protection. These dramatic public demonstrations vividly and memorably display how fast a fire can become deadly and the crucial, fast response and life-saving benefits of home fire sprinklers as they control or extinguish a fire. "Today's home fires can fully engulf a room and become deadly in just two minutes," said NIFSAB Executive Director Erik Hoffer. "Modern furniture and belongings that are made of plastics and other synthetics contribute to faster growth and emit more toxic smoke, while open-space home designs allow fires to spread more quickly. Lithium-ion battery fires further exacerbate these challenges."

"With these powerful demonstrations we'll be conducting with fire departments, audiences can see fire sprinklers in action. Unlike the Hollywood movie stereotype, fire sprinklers do not all activate at once but instead are individually activated by the heat of a fire, stopping a blaze in its tracks and limiting the spread of smoke."

Today, nearly 120 Illinois communities have adopted national model codes that include fire sprinklers in all new construction homes. Leaders in those communities recognize that fire sprinklers not only help safeguard residents and property, but they also protect the lives of first responders from fire and fire-related, cancer-causing carcinogens. 

Regarding the Slate for November 19, 2025 Election

The Nominating Committee has come together and is proposing the following candidates for the upcoming term 2026-2027. We find the nominees to be in good standing with the organization. Any questions may be directed to Nominating Committee Chairman Barbara Hickey.

Said Nominating Committee submits the regular ticket slate of nominees for your consideration:

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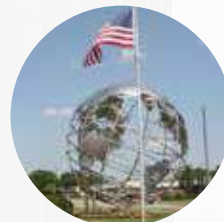
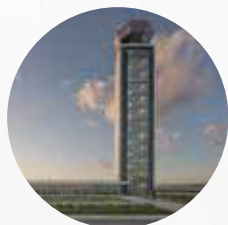
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SEASONAL FLOODING AWARENESS

In both spring and fall, we can expect a fair amount of rain. Changing weather patterns have brought about increased flooding in our region. Many of us will remember the Great Loop Flood of 1992. Of course, floods can be caused by a variety of factors, including a sudden accumulation of rain, rising rivers, tidal surges, ice jams and dam failures, but the lessons the '92 flood gave us are still applicable.

Workers who have to respond to flooded areas face the greatest risks from floods, but all workers can help protect themselves by preparing evacuation plans and learning about the hazards commonly associated with floods.

Having an evacuation plan in place before a flood occurs can help avoid confusion and prevent both injuries and property damage. A thorough evacuation plan should include:

- Conditions that will activate the plan
- A pre-established chain of command
- Emergency functions and who will perform them
- Specific evacuation procedures, including routes and exits
- Procedures for accounting for personnel, tenants and visitors
- Necessary equipment for personnel, including PPE as needed
- A review of the plan with all personnel

Your local county geologist or county planning department should be able to provide you with information about whether your building or worksite is in an area that is prone to flooding. If so, you should monitor NOAA Weather Radio or up-to-the-minute sources for information about flood watches and warnings, such as weather.com. If flash flooding for the area is mentioned, be prepared to move to higher ground immediately. In all cases, you should be prepared to evacuate before water levels rise and potentially cut off evacuation routes. Employers are responsible for the safety and health of their workers and for providing them with a safe and healthful workplace. Workers should be protected from the hazards anticipated in case of flooding and recovery operations that are likely in the event.

A note on transportation and flooding: It's important to be careful when driving during flood conditions. Nearly half of flood fatalities are vehicle-related. Six inches of standing water is enough to stall some cars. A foot of water can float a vehicle, and two feet of moving water is enough to sweep a car away. If the water level is rising



Having an evacuation plan in place prior to any onsite flooding can help you to avoid confusion, prevent injuries and limit property damage.

around your vehicle, you should abandon the vehicle. Also, please be wary of unknown road conditions. Do not try to cross flooded roadways if you do not know the depth of the water.

If Flooding Occurs ...

In the aftermath of a flood, workers may be involved in a variety of response and recovery operations. The following may be applicable to workers involved in assessing and/or cleaning up the damage to their worksite. That said, some tasks, such as utility restoration, cleaning up spills of hazardous materials, and search and rescue, should only be conducted by workers who have proper training, equipment and experience.

Electrical Hazards

Where would I expect to find electrical hazards after a flood?

Workers can expect to find standing water present throughout a flood zone. If water has been present anywhere near electrical circuits and electrical equipment, turn off the power at the main breaker or fuse on the service panel. Never enter flooded areas or touch electrical equipment if the ground is wet.

What hazards exist when repairing downed or damaged power lines and what protective measures should be used?

Workers repairing downed electrical lines must be aware of the hazards associated with maintenance on overhead lines, as well as the potential for emergency conditions to create additional hazards. Such work must be performed by utility company workers or other properly trained workers. Potential hazards include:

- Electrocution by contact with downed energized lines, or objects in contact with fallen lines.
- Falls from heights.
- Being struck or crushed by falling poles, towers and tree limbs.
- Being injured in vehicular accidents when responding to an emergency situation.
- Burns from fires caused by energized line contact or equipment failure.

Stay well clear of any downed or damaged power lines. Establish a safe distance from the lines and report the incident to the responsible authority. Work on damaged power lines must only be performed by properly trained electrical utility workers. Electrical utility workers must first assess the hazards present in order to minimize the chances of exacerbating the situation. Ideally the lines involved should be de-energized, but this may not be possible in all situations. When working on downed or damaged power lines, electrical workers must utilize proper electrical safety work practices and personal protective equipment.

Tree and Debris Removal

When floods occur, debris and downed trees can block public roads and damage power lines. As with the electrical hazards, when removing trees and clearing debris there are potential hazards of electrocution from direct contact with downed power lines or through tree limbs in contact with them, falls from heights, and being struck or crushed by falling tree limbs. Another potential hazard of tree and debris removal is being injured by the equipment, such as chainsaws and chippers.

Proper protective equipment, including gloves, chaps, foot protection, eye protection, fall protection, hearing protection and head protection, must be used when using chainsaws and chippers to clear downed trees. For that matter, only appropriate power equipment that is built to be used outdoors and in wet conditions should be used in case of flooding. All saws, chippers, and other tools should be used properly and according to their intended application. All equipment should be well-maintained and

functioning correctly, and should have proper guarding, working controls, and other safety features as installed by the manufacturer.

Chemical and Biological Hazards


Liquefied Petroleum Gases (LPG) and underground storage tanks, along with other chemical containers, may break away and float downstream, causing hazards from their released contents. Floodwaters may also contain biohazards due to direct contamination by untreated raw sewage, dead animals, rotting food, etc. Good controls include avoiding contact with flood waters as much as possible, maintaining good personal hygiene practices, employing adequate medical surveillance, and discarding all food that comes in contact with flood waters.

Hypothermia

Standing or working in water that is cooler than 75°F will remove body heat more rapidly than it can be replaced, resulting in hypothermia, a condition that sets in when the body temperature drops to 95°F or below. Symptoms of hypothermia include uncontrollable shivering, slow speech, memory lapses, frequent stumbling, drowsiness and exhaustion.

Workers facing potential flood conditions ideally should select proper clothing for cold, wet and windy conditions. This should include dry clothing, underwear that will keep water away from the skin (polypropylene), layers of clothing to adjust to changing environmental temperatures, and a hat and gloves. Frequent short breaks in warm dry shelters should be taken to allow the body to warm up. Whenever possible, work should be performed during the warmest part of the day.

Exhaustion

Workers involved in response operations are often called upon to work extended hours under stressful conditions. This working environment increases the risk of injury due to inattentiveness, and also makes workers more vulnerable to stress-induced illness and disease. Exhaustion or fatigue should be kept at bay as well as possible, because energy is needed to keep muscles warm. Working in pairs ("the buddy system") should be mandatory. Drinking warm, sweet beverages — sugar water, sports-type drinks — should be encouraged. Drinks with caffeine, such as coffee, tea or hot chocolate, should be avoided, as should any alcoholic beverages. Eating warm, high-calorie foods like hot pasta dishes or potatoes are among your best options for such conditions. 

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Exploring the Versatility of Metropolitan Industries

By Karl J. Paloucek

Metropolitan Industries was established more than 60 years ago, but we had the pleasure of sitting down with its founder, John Kochan Sr., and his son, current President John Kochan Jr., to learn about the business and how they have continued to build on who they are, expanding and growing their brand in ever-new and dynamic directions. The phrase “If you want something done right, you have to do it yourself” was never uttered in our discussion, but it certainly points to the company’s ethic and how it defines itself.

As a business, Metropolitan Industries combines depth of subject knowledge with a broad scope of ambition to provide ideal solutions to the challenges brought to them. One of the challenges that’s getting more concerning in recent years is the increase in severe flooding striking municipalities that are prone to it. In the course of our meeting, we discussed a number of solutions that Metropolitan Industries has implemented in various communities to help keep the waters in check.

“You cannot stop Mother Nature,” John Sr. cautions. “The best thing you can do, if you’re in a flood plain, is move, because there’s not big enough pumps to really handle stuff like that.”

Those once-in-500-year floods may be too tall an order, but Metropolitan Industries works with municipalities to help them keep their storm and sewer waters under control. “What usually happens, the consulting engineer will call us up, and we’ll work with them,” John Sr. adds. “We’ll help design the pump station and give him specifications for the equipment, and then they send it out for bids, where the contractors will then call us for our price. “We’ll give them a price on the equipment, they install it and we’ll come out and start it all up and make sure everything is working properly.”

He makes it sound so simple. But that’s the voice of decades of experience and expertise. In exploring the scope of Metropolitan Industries’ work, we thought we would take a look at a few jobs that they undertook on behalf of various

regional municipalities that illustrate their abilities with problem solving where water and flooding are concerned.

Water Under the Bridge

A railroad underpass in Munster, Ind., provided a perfect opportunity. In this case, the Indiana Department of Transportation had developed an enhancement plan to provide an underpass for cars and other vehicles to alleviate traffic gridlock from frequent train crossings. As often is the case, such an underpass would be subject to flooding during periods of significant rainfall. Metropolitan Industries was called out to provide a new pump station that could offset the runoff when needed, to keep the roadway clear.

For this job, Metropolitan Industries created a prefabricated wet-well structure and control building in-house at its Romeoville facility. The pump station had to be able withstand the extreme environmental conditions of a high-traffic area. “We had to consider special things the engineer asked us to look at,” John Sr. says. “One is the road salt. We use special materials on all the piping inside, and everything had to be specific so that it could easily handle the road salt.”

Gasoline and other contaminants in the rainwater were also taken into consideration, meaning that the structure itself had to be fabricated from fiber-reinforced polymer, while the piping and accessories inside the station had to be constructed of stainless steel, to best ensure asset sustainability.

By prefabricating the structure entirely in-house, Metropolitan Industries was able to maintain a controlled environment for the control building as well as for pretesting before installation onsite. It also cut down on costs in the field, as the pump station was able to be installed in days and not weeks. It’s how they do things — creating their products in-house so that they have full knowledge of everything in their systems from the start.

“We’re a solution provider, and we manufacture systems,”



President John Kochan Jr. and Co-founder John Kochan Sr. work together to grow the vision of Metropolitan Industries.



At right, the lift station in Munster, Ind., that manages storm water that otherwise might pool underneath the viaduct.



The storm water station and control building, prefabricated at the Metropolitan Industries facility in Romeoville, ready for delivery and installation in Munster, Ind.

John Jr. explains. “Most of our competition is buying parts and pieces and assembling them. Where here, everything is fabricated and manufactured in-house, so we have total control over the quality and what type of system the customer’s going to get. Single-source responsibility. If there’s a problem, it’s ours, and we’re going to fix it.”

“I think having service to back up what we provide with good people who know what they’re talking about has been another key to our success,” John Sr. adds. “A lot of the people that we compete against are selling water pressure systems made in more remote locations, and then if something breaks, a contractor will say, ‘I know I didn’t buy it from you, but I’ve got this hotel, and it’s out of water. Send your men in and send me a bill.’ We’ll go in and fix the stuff.”

A Tricky Lift Station Replacement

Another recent project tackled by Metropolitan Industries involved the demolition and replacement of an aging lift station

in a residential area in the Village of Evergreen Park, Ill. The station itself was located between two existing homes with narrow lots, making for a pretty tight squeeze. Once again, Metropolitan Industries’ strategy of prefabricating everything in-house paid off in minimal disruptions to the site, as well as reduced construction and operational costs.

The project called for an above-ground station featuring a wet-well structure housing a submersible pump guiderail system and its control building. To achieve the plan’s objectives, Metropolitan Industries built the entire pump station and its workings, both above and below ground, in its Romeoville facility, adding variable frequency drives (VFD) for robust energy efficiency and reduced wear. The modern configuration package also includes bypass contactors, which, in the case of a VFD failure, can accommodate direct motor operation from direct line power, or likewise function to permit emergency service as needed.

As an above-ground structure, the building’s exterior was designed to blend in with the surrounding neighborhood homes, with easy entry points to allow station operators access to the facility’s inner workings without the safety risks and protocols that had been part of the regimen with the previous below-ground station.

“Airys Construction, out of Joliet, installed the pump system,” John Sr. says. “Which happens to be sewage, not storm water, but it is very, very interesting because of the area that we were given [in which to work]. We worked hand in hand with the engineer. He came with the village people and inspected the piece of equipment when we were pretty well done, and we sent men out there when he was installing it. He had a giant crane, lifting our equipment way up in the air, and they had to very slowly put it in the location. It ended up as a really nice job.”



The lift station installed in Evergreen Park, Ill., was designed to blend in with its suburban surroundings.

The objectives of reduced cost and unobtrusive construction and installation having been met, the project also boasts the reliability offered by Metropolitan Industries' service arm, which knows all of its own equipment inside and out. "We have municipalities, as well as in high rises and hospitals in Chicago — they'll request our equipment simply because if they have a problem, boom — we've got a guy there, they'll explain it to them and it is resolved," John Sr. says, elaborating the importance of immediacy in situations where hospitals are involved and lives are on the line. But it's the same service all of their clients receive. "Contractors come and say, 'If you don't mind, we'll use equipment from Metropolitan, because they give us good service and we don't have to worry if something does go wrong when we're installing it, or starting it up — they've got a guy right there who'll work with our men to get it going.'"



The control building inside the Evergreen Park lift station — all components made in-house at Metropolitan Industries, along with the structure itself.

Managing Overflow in Prospect Heights

Sometimes a subdivision or area has chronic flooding issues that require remediation. In recent years, the city of Prospect Heights commissioned a project to manage the flow of storm water out of the flood-prone Arlington Countryside subdivision. Metropolitan Industries worked on the project with Gewalt Hamilton Associates Inc. (GHA), who initially developed a hydraulic and hydrologic model to explore drainage options for the neighborhood. Based on their findings, GHA determined that with the installation of a new lift station capable of handling 2,240 gallons a minute, 5,000 feet of 18-inch storm sewer force main, and the construction of an outfall, along with other enhancements, would be up to the task of managing the area's flooding issues.

While GHA handled construction engineering and its attendant requirements, Metropolitan Industries did what it does best, providing an underground lift station with an above-ground

control system to maintain the pumps' flow of water out of the subdivision. The control system, like everything else done by Metropolitan Industries, is manufactured in-house, down to the software with which it's programmed. It's part of the ongoing vision of both John Kochan Sr. and Jr. to continue reinvesting in the company to grow its capabilities and reach — a strategy that has paid off for decades.

"We have an R&D group, we have a software group, we've got mechanical, electrical software engineers," John Jr. says. "We designed a variety of our own little niche products in-house, and we write all the programs and the designs, and then on the smaller products, we'll actually manufacture them here on a pick-and-place machine. And then we've got a couple of 3D printers so we can do prototypes and different things as we develop a product, so we know what we need to do to get tooling and things like that."



The below-ground storm water pump station in Prospect Heights' Arlington Countryside suburb is sizable enough to accommodate 2,244 gallons per minute, but effectively blends in with its surroundings.



A training room at the facility in Romeoville, where personnel learn all the ins and outs of the equipment manufactured and serviced by Metropolitan Industries.

Flood waters and other work in the Chicago region will continue to keep the folks at Metropolitan Industries busy, but that's not stopping them from expanding their scope and reach while looking ahead to the coming decades. "We've got another facility out in Albany, N.Y., that's a mini-Metro, and then we have a chemical company, which is right down the street (from our main facility), for epoxies and carbon-fiber reinforcement for the waterproofing industry, so it kind of folds right into our residential product offerings," John Jr. offers. "We just keep our eyes open and look for new opportunities as we grow. ... A lot of our competition, they take the money home. We put the money back in and invest it in growth in different areas that we see will be good for us." 🇺🇸



Just some of the patents secured by Metropolitan Industries for the technologies it has developed and manufactured for use in the field.



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CEAC GOLF OUTING





From Cooling Towers to Cost Savings: Hospital Seizes Power-Saving Opportunity

By Greg Rankin

Baptist Health Medical Center chose to implement Delta's TM Series, featuring a modular design of 20 individual cells that provide up to 7,000 tons of cooling capacity.

Healthcare facilities require a substantial amount of energy to operate. In fact, the average hospital consumes approximately 250 percent more energy than a comparably sized commercial building, according to the U.S. Department of Energy. As hospitals face increasing financial pressure to boost revenue while cutting costs, many are turning to energy-reduction initiatives as a strategic remedy. At the heart of those efforts is often the HVAC system, which accounts for roughly one-sixth of a hospital's total energy consumption.

That was the case at Baptist Health Medical Center—Little Rock, Arkansas's largest private, not-for-profit hospital. The century-old facility initially sought to replace its aging wooden cooling tower, which supported the hospital's HVAC system. However, the project soon evolved into something much more ambitious: a comprehensive mechanical system overhaul designed to significantly reduce energy consumption.

While the broader energy initiative successfully delivered both energy savings and operational improvements, it was the new cooling towers — ironically, the original catalyst for the project — that emerged as a surprisingly large contributor to the hospital's ongoing power savings.

Operating With Efficiency

"Originally, the owners wanted to go with an engineered plastic cooling tower because they liked the fact that it was corrosion-proof, required far less upkeep, and came with a 20-year warranty," says David Buie, an account manager in controls sales at Powers, who helped kick off the project.

Based in North Little Rock, Arkansas, Powers is an HVAC, controls and service company that partnered with the hospital to upgrade its cooling towers. However, as the project progressed, hospital leadership decided to broaden its scope to include a comprehensive review and optimization of the entire mechanical system.

To guide the expanded initiative, the hospital brought in an independent energy-efficiency engineering firm, which required competitive bidding for the new cooling towers. The final decision came down to two material options: high-density polyethylene (HDPE) engineered plastic and stainless steel.

"Once the engineering company saw the energy that could be saved by utilizing the HDPE towers, there was really no looking back," adds Buie.



This century-old facility's decision to replace its aging wooden cooling tower gave way to a comprehensive mechanical system overhaul aimed at significantly reducing energy consumption.



HPDE towers not only are designed to eliminate common leakage points like joints and seams, but they remain impervious to corrosion from the chemicals that are required to keep algae blooms, pathogens and sedimentary accumulation in check.

A Healthier Bottom Line

Engineered plastic cooling towers were first pioneered by Delta Cooling Towers in the 1970s, and many of those original units remain in operation today. The energy savings delivered by these towers can be attributed to three key features: a modular design, multiple highly efficient motors and fans, and the use of variable-frequency drives (VFDs).

“Because of the way Delta’s towers are essentially separate cells that work together, the hospital can stage them down when they’re not all needed,” explains Jared Hendrickson, Controls & Equipment Lead at Powers. “This can amount to huge savings on energy.”

Baptist Health Medical Center selected Delta’s TM Series, which consisted of 20 individual cells providing a total cooling capacity of 7,000 tons. The modular design allows for precise load management, and each unit is equipped with smaller 60-inch fans which significantly reduce energy consumption. Each cell contains two fans, all powered by VFDs that automatically reduce motor output when full fan speed isn’t required.

“When you operate the fan motors at 80 percent speed or less, you’re saving about 50 percent on power,” adds Hendrickson. “So, when you’re talking about that much savings spread across 40 motors, the energy reduction is extensive.”

In addition to the superior turndown capabilities of the HDPE cooling towers, these units also feature much smaller motors — 15 horsepower (hp) compared to 150 hp in the stainless-steel alternative — further contributing to long-term savings.

Saving Energy and Improving Operations

In addition to reducing energy consumption, Baptist Health Medical Center has also significantly lowered maintenance costs. One key reason is the construction of the HDPE cooling towers, which feature a one-piece molded casing. The design eliminates joints and seams — common failure points in traditional towers that often lead to leaks and ongoing repair needs. The towers are also equipped with direct-drive fans, eliminating the need for gearboxes that require frequent maintenance and routine oil checks.

Additionally, while all cooling tower systems require chemical treatments to control algae, pathogens, and sediment buildup — all of which can hinder performance — the HDPE towers are immune to the corrosive effects of these chemicals.

“The chemical treatment is going to eat away at a metal tower, even a stainless tower, over time,” notes Hendrickson.

Installation time offers another advantage for contractors. HDPE systems can often be installed in just a day or two, compared to the multiple days, or even weeks, required for towers made from other materials.

“There are only two pieces held together by eight bolts,” explains Hendrickson. “Compare that to a thousand bolts and a thousand metal components on other towers. There’s also no gasketing and caulking of panels before assembly. It’s a very simple installation process.”

A Clean Bill of (Energy) Health

Energy-efficiency measures don’t just reduce consumption, they can improve overall operations through optimized HVAC performance and smarter energy management. At Baptist Health Medical Center, the new cooling towers, installed at ground level, have also contributed to a quieter, more controlled medical environment.

Hospitals face unique challenges when it comes to energy use. Compliance with regulations like ASHRAE Standard 170 — which governs temperature, humidity, and air exchange rates — places constant pressure on facility executives, energy managers, and engineers to find sustainable, high-performance solutions.

Through careful selection of its cooling tower system and strategic mechanical upgrades, Baptist Health’s flagship facility achieved measurable, long-term power savings without compromising compliance or patient care. ■■

Greg Rankin is a Houston-based freelance writer with more than 20 years of experience writing for the HVACR, processing and mechanical engineering industries.

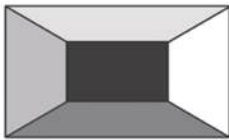
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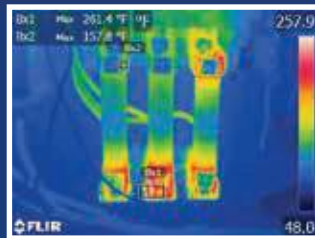
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Rational Hydronic Retrofit Chosen for Psychiatric Facility

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Flow between the surge tank and the deaerator are determined by the DA's feedwater level, ultimately helping to maintain optimal system performance. (Photo: Burnham Photos by Natalie Bee)

Eastern Washington Hospital, located in Medical Lake, Wash., about 15 miles west of downtown Spokane, has served as a beacon of hope since its opening in 1891, providing inpatient care and treatment for adults with mental illness.

Nestled beside a lake believed to possess medicinal properties, this grand facility was constructed with an architectural approach featuring long, meandering wings that extended from a central building. The wings allow each section to bask in sunlight and fresh air — elements well-known for their curative effects on patients.

For more than 125 years, Medical Lake campus staff have helped guide patients through their mental health challenges, combating illnesses and the stigma frequently attached to them.

Eastern Washington Hospital (or ESH, for Eastern State Hospital) supports the most severely affected individuals, operating as a psychiatric facility with 375 beds that carefully separates men, women, elderly patients and individuals facing criminal charges. The commitment to humane care is maintained with a focus on reintegrating patients into society through increased community engagement before their full release.

The grand hospital was constructed in 1891. At that time, hospital practices shifted dramatically with the adoption of the French approach to "moral treatment." This revolutionary paradigm marked a departure from the harsh methods of the past, transitioning from brutal treatments — such as chains and heavy straps used for full-body restraint, and electroconvulsive therapy, frontal lobotomies, and sterilization for sex offenders

— to a more compassionate model focused on patient dignity. Practices such as providing access to a library, facilitating family visits, and promoting outdoor rest and relaxation became the standard, fostering an environment conducive to healing.

Building Improvements Lead to Enhanced Patient Care

As part of the ongoing mission to enhance the comfort of patient care, Eastern Washington Hospital recently embarked on an ambitious project: a well-planned hydronic retrofit of its mechanical systems.

"Our significant upgrades have modernized the facility's infrastructure, ensuring more efficient temperature control and a much more comfortable environment for patients and staff alike. Even our culinary efforts — with an expanded menu and much greater control of hydronic cook pot temperatures — have improved dramatically," said Dean Davis, Director of Facilities.

Davis explained that an old, deteriorating facility served as the campus' central heat plant for more than 100 years. In it, two huge, decades-old steam boilers had also deteriorated, while also losing efficiency. The old hydronic systems also required routine repairs and maintenance. With the assistance of federal and state grants, funding was secured to replace the entire heat plant facility — the building and everything in it — with enhancements to equipment, control and piping.

Davis knows a thing or two about large health facility operations. Though he's already spent more than seven years



Two of the three 6,700 MBH, four-pass firetube Burnham commercial steam boilers. Jutting from the boilers, in front, are large red Weishaupt oil-fired burners. (Photo: Burnham Photos by Natalie Bee)



A technician performs routine maintenance to one of the three large Burnham Commercial steam boilers at Eastern State Hospital. (Photo: Burnham Photos by Natalie Bee)



Insulated steam piping at Eastern State Hospital. (Photo: Burnham Photos by Natalie Bee)

at ESH, he spent considerable time at medical centers during his 20+ years in the U.S. Air Force. He served at Providence Alaska Medical Center in Anchorage, and then at Deaconess Hospital in Spokane prior to his role at ESH.

Davis spent much of his military service in various roles with Civil Engineering Squadrons, including those as a generator technician where he got most of his mechanical experience. He retired from the Air Force as a safety officer.

"We now have a new, 12,000 square-foot, all-brick heat plant facility with pipes in underground tunnels that provide continuous space and domestic water heat to three main facilities on campus — the hospital itself, an admin building, and the kitchen facility where we make about 1,200 meals and 400 snack packets a day for patients. We also prepare 250 to 300 staff meals each day," added Davis.

The crown jewels within the new heat plant facility are three 6,700 MBH, four-pass firetube Burnham commercial steam boilers connected in a lead-lag configuration. Combined, the boilers provide greater capacity than is required, allowing for full redundancy of operation. Jutting from the boilers, in front, are large red Weishaupt oil-fired burners.

According to MSI Engineers Sr. Mechanical Engineer Brad Snow, PE, LEED-AP, ESH facility staff requested use of Weishaupt burners with the new Burnham boilers because

similar Weishaupt burners were used successfully at another state facility.

MSI Engineers was the engineer of record for the ESH facility. Brad Snow was the lead mechanical engineer; Aaron Donnelly was the principal in charge.

"Pre-design studies addressed the design recommendations for all the major mechanical systems," said Snow. "The aging steam plant had reached its time of retirement."

Snow added that the plant steam pressure was selected to operate at 100 psi nominal pressure, with pressure reducing valves provided to allow the campus delivery pressure to be adjusted to a lower pressure for distribution, nominally set at 60 psi.

"Both the surge tank and deaerator storage tanks are designed for approximately 20 minutes of make-up water supply, based on two boilers firing at full capacity, which is rare," Snow continued. "This is good engineering practice and provides a buffer of available feedwater capacity for downstream condensate interruptions, start-up transients or maintenance activities."

Part of the new mechanical system, Snow said, is a 615-gallon Shipco surge tank, and a "DA" (deaerator) tank by the same manufacturer. Both are used for boiler make-up feedwater.



All three of the Burnham Commercial steam boilers are connected in a lead-lag configuration. Combined, the boilers provide greater capacity than is required, allowing for full redundancy of operation. (Photo: Burnham Photos by Natalie Bee)

A deaerator tank plays an important role in boiler feedwater systems. Its key role includes removing dissolved gases — like oxygen or carbon dioxide — from boiler feedwater; otherwise, entrained gases can cause boiler or piping corrosion.

It's an important advantage to heating the feedwater because this minimizes thermal shock to the boiler and improves overall system efficiency. And, by storing heating feedwater, the tanks provide a storage capacity for the treated feedwater, ensuring a consistent supply to the boiler.

Make-up water is added to the surge tank. The flow between the surge and the DA are modulated according to the DA's feedwater level, ensuring that the deaerator always has consistent operating conditions, helping to maintain optimal system performance. An added benefit is that the surge tank can perform as an emergency back-up source of fluid if the DA is offline for any reason.

Davis explained that, in addition to the provision of space and domestic water heat, the boilers send high-temp dry steam to three 25- to 75-gallon, jacketed steam kettles, three large, stacked steamers and a large, commercial steam dishwasher. The steam cookpots — providing ideal, even heat across kettle surfaces when making stew, gumbo, chowder, soup, and vegetable entrees — are used almost round-the-clock for preparation of hospital patient meals.

A network of underground concrete service tunnels provides easy subterranean passage between facilities by maintenance crews while also providing space for the many interconnected



Modernizing the facility's infrastructure was an absolute priority for this retrofit. (Photo: Burnham Photos by Natalie Bee)

pipes to and from the heat plant. A 10x40-foot control room there has a glass wall that looks into the spacious boiler room.

Service and maintenance of the facility's new boilers and connected near-boiler equipment is performed by personnel serving with members of a state agency, the Maintenance Operation Division/Consolidated Support Services. The group has a separate facility located on campus to support the hospital, LakeLand Village, Martin Hall, and the nearby Washington State Veteran's Cemetery. ■■

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Taco played a key role in developing the Building Efficiency System Tool (BEST) 6.2, an advanced HVAC system efficiency comparison software created in collaboration with the Radiant Professional Alliance (RPA). BEST 6.2 offers powerful new capabilities, including the ability to model multiple heating and cooling sources, enabling users to

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BEST 6.2 sets a new standard in HVAC system modeling, providing unmatched flexibility for designing high-efficiency, all-electric solutions that align with modern building performance requirements.

Taco continues to make substantial investments in the content and functionality of the BEST Software, ensuring that ongoing enhancements and updates stay aligned with industry advancements and sustainability objectives. 

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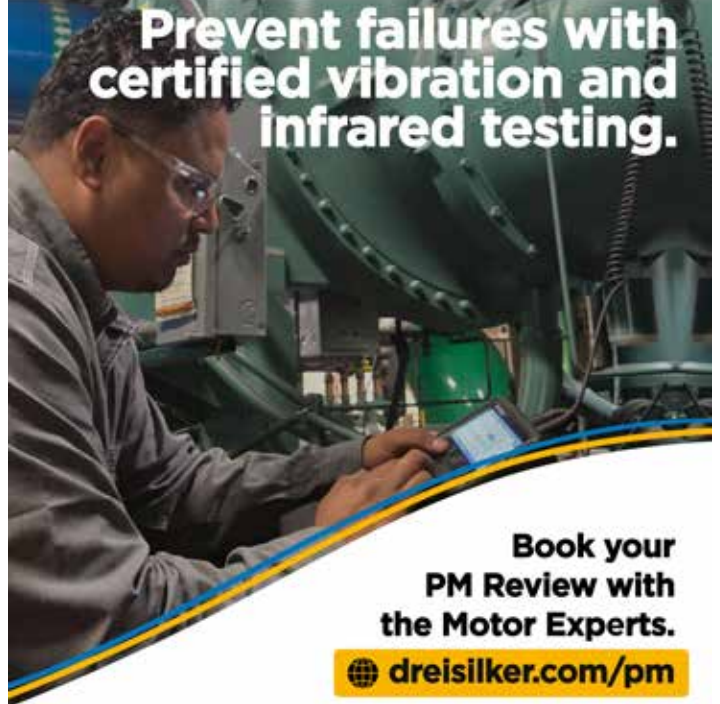
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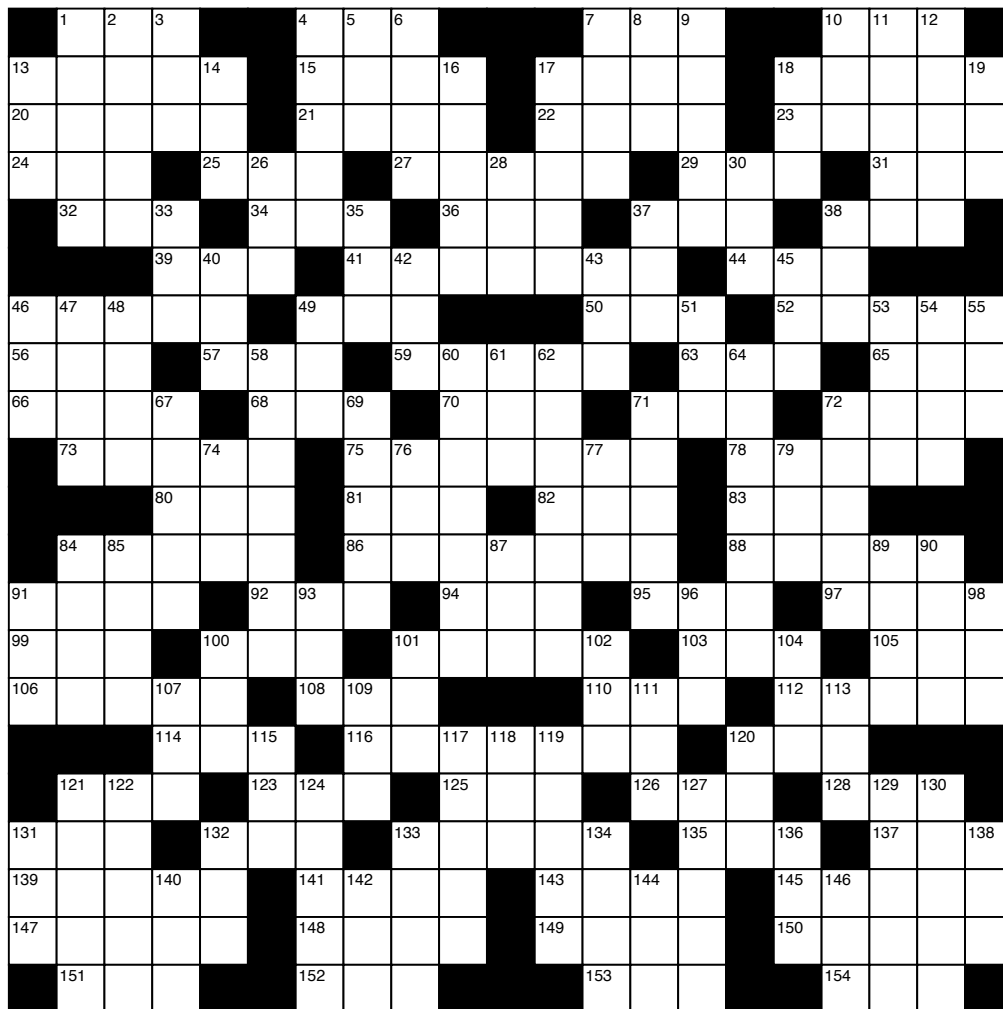
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- 4 Wood tool
- 7 Supersonic transport
- 10 Munch
- 13 Pungent
- 15 Fees
- 17 Load
- 18 Urge on
- 20 Marker
- 21 Father
- 22 "___ and go seek"
- 23 Public transportation vehicles
- 24 Shade tree
- 25 Fall mo.
- 27 Stomache sore
- 29 Male sheep
- 31 Discontinue
- 32 Affirmative
- 34 Kitten's cry
- 36 Environmental protection agency (abbr)
- 37 Watch secretly
- 38 Ship initials
- 39 Lean
- 41 Professional Japanese warrior
- 44 Eastern Time
- 46 Half man, half goat
- 49 Hand tool
- 50 Pounds per square inch
- 52 Sponsorship
- 56 Killed in action
- 57 Kilometers per hour
- 59 Quickly
- 63 Have
- 65 Lyric poem
- 66 S.A. Indian
- 68 Cap
- 70 America
- 71 Card game
- 72 Sold at a discount
- 73 Chest
- 75 Narrow strip of land
- 78 Not glossy
- 80 "To the right!"
- 81 Doctoral degree
- 82 Compass point
- 83 Past
- 84 Moan
- 86 Settler
- 88 Birthmark
- 91 Valley
- 92 Freezing
- 94 Romance
- 95 Sun's name
- 97 Economics abbr.
- 99 Sister
- 100 Cutting tool
- 101 Inches, for example
- 103 Big Apple (abbr.)
- 105 Throw
- 106 Biblical fisherman
- 108 Disconnected
- 110 Respect
- 112 Tier
- 114 Ruby
- 116 Large round room
- 120 Food and Agriculture Organization (abbr.)

- 121 Microgram
- 123 Gladness
- 125 Freudian term
- 126 Take to court
- 128 Thai
- 131 River (Spanish)
- 132 Compass point
- 133 Special case only (2 wds.)
- 135 Part of a min.
- 137 Caviar
- 139 Shade
- 141 Spoke
- 143 "no ___ luck"
- 145 Type of acid
- 147 Boyfriends
- 148 Greasy
- 149 Canal
- 150 Explanation
- 151 Roberto's yes
- 152 Wooden sheet
- 153 Pub
- 154 Christmas month

DOWN

- 1 What a snake skin is
- 2 Paint
- 3 Atmosphere
- 4 Expression
- 5 Give a nickname to
- 6 Asian humped ox
- 7 Move while sleeping
- 8 Turf
- 9 Idiot
- 10 Flightless bird

- 11 Niches
- 12 Adolescents
- 13 Expert
- 14 Genetic code
- 16 Witch hunting city
- 17 Cut off wool
- 18 Large computer co.
- 19 Drug
- 26 Referee
- 28 Central processing unit
- 30 Sailor's yes
- 33 Eye infection
- 35 West southwest
- 37 Sister for short
- 38 Shoshonean
- 40 Gall
- 42 Wing
- 43 Baboon
- 45 ___ Francisco
- 46 Slide on snow
- 47 Am not
- 48 Mexican sandwich
- 49 Expression of surprise
- 51 Charged particle
- 53 Kid's mom (animal)
- 54 Lazy
- 55 Meet
- 58 ____, AZ
- 60 Laid (2 wds.)
- 61 Tree
- 62 Arthur's realm
- 64 Femininely
- 67 Element
- 69 Unstable
- 71 Drug doers
- 72 Range
- 74 Body of water
- 76 That girl
- 77 Manipulate
- 79 Ripen
- 84 Rubber cement, for example
- 85 Let
- 87 Luau dish
- 89 Ca. University
- 90 Anon
- 91 Gross national product (abbr.)
- 93 Chief executive officer
- 96 Single
- 98 North by east
- 100 Be
- 101 Alien's spaceship
- 102 Miserable
- 104 Accountant
- 107 Chicken creation
- 109 Saute
- 111 Used to be
- 113 Oodles
- 115 Coffee brand
- 117 Toy
- 118 Good grief!
- 119 Lasso
- 120 Charge
- 121 ___graph machine
- 122 Programming language
- 124 Upon (2 wds.)
- 127 Lead
- 129 Mutiny
- 130 Opp. of corinthian
- 131 Abrade
- 132 Candle element
- 133 Unite in alliance
- 134 Limit
- 136 Taxi
- 138 Goddess
- 140 Fear
- 142 Grease
- 144 Central Intelligence Agency
- 146 Crazy

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Wrench



by Jim McGreal

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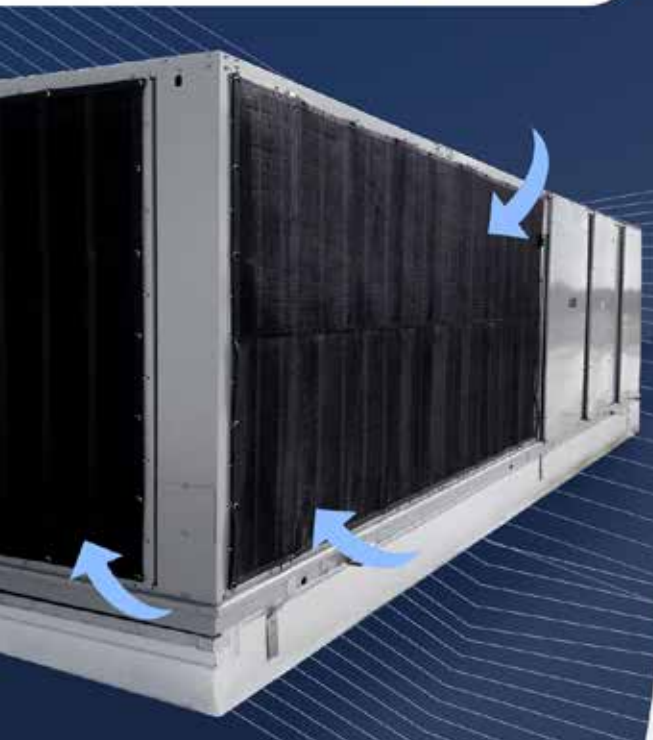


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