

# CHIEF ENGINEER™

JANUARY 2024



**Supporting  
the Trades:  
Chicago Leo  
High School**

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**Neuco at  
the Head of  
the Class**

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and Maintenance  
of Fire Protection  
Systems**

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# DON'T LET YOUR BUSINESS GO UP IN FLAMES!



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## 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.

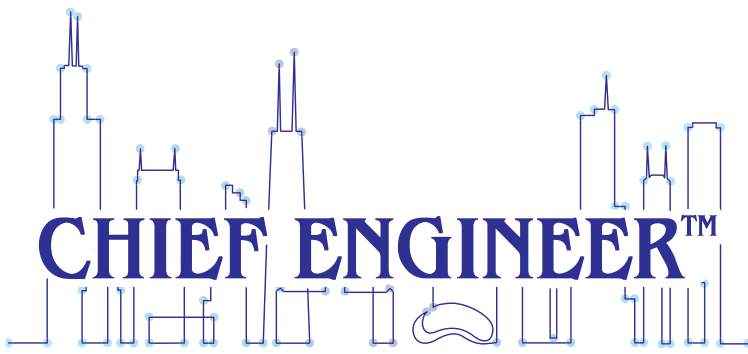
While many believe that the intention of Congress was to make Qualified Improvement Property 15-year property, which would have made this property eligible for bonus depreciation, the TCJA left the life of this property at 39 years. So, a taxpayer who did not elect to use the Section 179 Deduction or 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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**Business and Editorial Office**  
22 W. Washington St., Suite 15112  
Chicago, Illinois 60602  
Phone: (708) 293-1705  
E-mail: [info@chiefengineer.org](mailto:info@chiefengineer.org)  
[www.chiefengineer.org](http://www.chiefengineer.org)

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**Publisher**  
Tom Phillips

**Editor in Chief**  
Karl J. Paloucek

**Graphic Designer**  
Larry Bowman

**Printing**  
Mike Lewis, D & L Printing

**Accounting/Billing**  
Leslie Johnson

**Publishing Committee:**  
Mike Collins – Chair  
Ralph White – Co-Chair  
Pat Biesty  
Dan Carey  
Brock Sharapata  
Patrick Wawrzyniak

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South Side Leo High School provides a focus on the trades that has made a distinctive difference in the lives of many of its students, past and present.

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In addition to providing wholesale parts and supply service to building operators across the metro area, Neuco offers educational seminars and programs that keep chief engineers and building managers ahead of the curve.

## 28 Inspection, Testing and Maintenance of Fire Protection Systems

Michael A. Badame talks with Chicago Fire Protection's John LaGiglia to offer a brief history of the company, and to discuss the importance of proper upkeep, testing and inspection of your building's fire protection systems.

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# PRESIDENT'S MESSAGE

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Dear Members,

As your newly sworn-in president, it is and will be my privilege to serve the Chief Engineers Association of Chicagoland for the next two years. I expect a challenge, even as we continue to implement some of the more recent changes to the administration of our organization. But thanks to Past President Ken Botta and the rest of the Board of Directors and Officers, I'm happy to say that the bumps in the road are starting to smooth out, and I'm confident that we are looking toward a brighter future ahead.



As I and numerous others assume our new positions on the Board, I would like to thank everyone who has been a part of the journey this past two years and helped to rudder us through the occasionally rough waters as we've transitioned ourselves to a more self-sustaining organization. Past Presidents Ken Botta and Tom Phillips in particular have been instrumental in spearheading the effort to refashion the Chief Engineer magazine to focus its interest here locally, and looking after its profitability at the same time. Kevin Kenzinger and Brendan Winters, we owe you a great debt every year for your work on the Golf Outing, our biggest event of the year. Alex Boerner, we're grateful that you agreed to continue supporting the Chief Engineers with your knowledge and event-planning expertise. We're entering a new chapter with a lot of good people overseeing our organization, and I'm excited to be among them as your president.

As I write this, we are still looking forward to our inaugural event Saturday, Jan. 6 at Thalia Hall, and I am hopeful that we'll see as many of you as possible turn out for what should be a night like no other in the history of our organization. With JUMP – America's Van Halen Experience performing at the proceedings, I think it should prove to be a pretty interesting and wild time.

As we enter the new year, I would like to take this opportunity to wish everyone a happy and prosperous 2024, especially those men and women in uniform in the military and who patrol our streets to ensure our safety and our way of life.

Happy New Year!

Sincerely,

*Doug Kruczek*

Doug Kruczek



# CHICAGO

## 2024 WINTER CONFERENCE AND AHR EXPO

In tandem with the 2024 AHR Expo at McCormick Place Jan. 20-24, is the ASHRAE Chicago 2024 Winter Conference, offering an abundance of events, speakers, ASHRAE Learning Institute (ALI) Courses and more. Sponsored by Bell & Gossett, Johnson Controls, Kuul Evaporative Technologies, and Women for Energy Efficiency (WE2), the ASHRAE Chicago 2024 Winter Conference features numerous tracks to enrich your experience.

Here's an overview of the tracks available:

### **Fundamentals and Applications**

Fundamentals are the foundation for understanding applications in engineering. Key components of ASHRAE fundamentals include thermodynamics, psychrometrics, fluid and mass flow. This track provides opportunities for papers and presentations of varying levels across a large topic base. Concepts, design elements and shared experiences for theoretical and applied concepts of HVAC&R design are included.

### **HVAC&R Systems and Equipment**

HVAC&R systems and equipment are constantly evolving to address the changing requirements of the built environment. Papers and programs in this track focus on the development of new systems and equipment, improvements to existing systems and equipment and the proper application and operation of systems and equipment.

### **Refrigeration & Refrigerants**

Refrigeration systems generate and use cold for a range of processes, from food preparation and

conservation to vaccine preservation, to long-term protection of fragile ancient inks of historic documents and others. Differences in technologies and equipment, performances, refrigerants, etc., may hide synergies from which both industrial and commercial systems might benefit, also, but not only, from the points of view of reducing direct and indirect GHG emissions.

### **Decarbonization & Climate Change**

Jurisdictions globally are confronting climate change and recognizing that building decarbonization is an important component in their efforts. The worldwide building sector accounts for about 40 percent of energy-related carbon emissions and buildings remain a major sector that lacks sufficient mitigation policies. As the standards authority for energy usage in buildings, ASHRAE recognizes that our long-standing initiatives in energy efficiency should be expanded to building decarbonization. This track seeks papers and programs that demonstrate the industry's decarbonization efforts.

### **Hydronic Systems**

Many different hydronic systems are used in the built environment. This track looks at heating hot water, domestic water, chilled water, condenser water, etc.

### **Comfort, Indoor Environmental Quality**

ASHRAE Standards 55, 62 and 90 require many things – some of which seem to be in conflict with each other. This track looks at these standards as well as Guideline 10 and their effect on the final project as well as on each other.

**HVAC&R Controls**

Determining the best system for a project only goes as far as the control system design that makes all of the elements function together and properly. This track looks at various control strategies and their application within the built environment.

**Labs, Clean Spaces and Mission Critical Facilities**

This track focuses on the unique challenges in critical environments such as laboratories and incorporating decarbonization goals to these spaces.

**Tall Building Design**

This track focuses on the necessary considerations for tall buildings.

**Artificial Intelligence**

This track focuses on applications for artificial intelligence and machine learning technology in HVAC&R controls and equipment.

In addition to the available in-person sessions, ASHRAE will livestream up to 12 technical sessions, the Plenary and President’s Luncheon during the conference. All other Technical Sessions will be made available for on-demand view the day after the presentation. All paid registrants, both in-person and virtual, have access to the Virtual Conference Environment and can watch and participate in livestream sessions from anywhere: your home, your office or at any location.

For more information or to register for the event, visit [ashrae.org/conferences/2024-winter-conference-chicago](http://ashrae.org/conferences/2024-winter-conference-chicago)



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## Illinois PHCC EXPO North

Friday, March 22, 2024

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The Illinois PHCC has scheduled Friday, March 22, 2024 as the date for its annual trade show. The EXPO will once again be held at the Drury Lane Conference Center in Oakbrook Terrace, Ill.

The March 22 date will be a day for educational opportunities and attending the EXPO. A 4-hour continuing education program will be offered on Friday morning. This will be held in the theater and will allow up to 800 people to obtain their CEU credit. Exhibitors and attendees are both invited to the after-EXPO party where there will be prizes and free food.

For more information or to register, visit [www.ilphcc.com/expo](http://www.ilphcc.com/expo)

### 2023-2024 Illinois PHCC CEU Schedule

Below is the current schedule of continuing education classes for Illinois licensed plumbers. As classes are added, they will be posted on the [ilphcc.com](http://ilphcc.com) and at the Plumbing Heating Cooling Contractors (PHCC) Association Facebook page. Please visit the website often for the latest information and to register for a class. Registration links will be live at least 6 weeks prior to the class date. All Illinois PHCC classes also provide State hours for Certified Plumbing Inspectors.

Visit [www.ilphcc.com](http://www.ilphcc.com) to register for the following classes:

**Saturday, Jan. 13, 2024** - 8:00 am - 12:00 pm - (Online) \$55.00 per person

**Friday, Feb. 16, 2024** - 12:00 pm - 4:00 pm - (Online) \$55.00 per person

**Friday, March 22, 2024** - 9:00 am-1:00 pm - (LIVE Class) \$35.00 per person

**Saturday, April 20, 2024** - 8:00 am – 12:00 pm - (Online) \$55.00 per person



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## 2024 AHR Expo

Jan. 22-24  
McCormick Place  
Chicago, Ill.

The AHR Expo brings together manufacturers and suppliers of all sizes and specialties to share ideas and showcase the future of HVACR technology. The AHR Expo is co-sponsored by ASHRAE and AHRI and is held concurrently with ASHRAE's Winter Conference.

The biggest HVAC expo each year, the AHR Expo is not to be missed, featuring the best and latest in HVAC technology, products and ideas. Robust with panel discussions, product presentations and hands-on demonstrations, it's arguably the premier industry event to attend.

This year's AHR Expo features 100+ free sessions on best practices, industry trends, tips for improved ROI and more, as well as rapid-fire new product presentations and the AHR Panel Series that features industry thought leaders speaking on trending topics and their impacts across industry segments.

The heart of the AHR Expo is its massive show floor featuring 1,600+ exhibits from the world's top HVACR manufacturers. If you're looking to explore and discover the very latest HVACR products and technology, you'll find it all on display at the AHR Expo.

For more information or for event registration, visit [www.ahrexpo.com](http://www.ahrexpo.com).

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At the recent "Hoops in the Sky" charity event, Luol Deng talked about his journey from war-torn Sudan to becoming a star player for the Chicago Bulls.

## Temperature Service Company Participates in "Hoops in the Sky" Fundraiser for Luol Deng Foundation

Temperature Service Company recently participated in the impactful "Hoops in the Sky" basketball fundraiser, hosted at the stunning Sky Court at 167 Green St. in Chicago. This regulation-size court, perched atop a downtown Chicago high-rise, provided a breathtaking backdrop of the city skyline for an evening dedicated to sports, philanthropy and positive change.

More than just a fundraiser, "Hoops in the Sky" was described as "an intimate and memorable evening," with attendees enjoying an NBA-simulated 3-point competition against sweeping views of the Chicago skyline. Culinary delights from Lettuce Entertain You added a touch of gourmet flair to the event.

This year's "Hoops in the Sky" event had a dual impact, benefiting the Luol Deng Foundation's commitment to creating pathways to opportunity through sport and development, as well as supporting a special goal — aiding 100 war-affected families from Ukraine through the Gate to Ukraine Foundation, with 100 percent of donations going directly to the children, women and the needy of Ukraine who have been affected by the war.

A highlight of the evening was hearing Chicago Bulls legend Luol Deng share his remarkable story — from fleeing conflict in Sudan to becoming an

NBA star. Luol spoke passionately about using his platform to give back and transform his home country for the next generation.

Luol Deng's uncommon generosity and boundless passion continue to inspire. His journey, coupled with the impactful initiatives of the Luol Deng Foundation, reinforces Temperature Service Company's dedication to making a difference in the communities it serves. The Luol Deng Foundation's commitment to assisting families who've faced the devastating effects of war such as Ukraine and South Sudan, resonates deeply. The event provided a unique platform to witness firsthand the impact of the foundation's work and the power of collective action.

A special thank-you to everyone who made "Hoops in the Sky" an unforgettable evening. It was moving to see so many come together to contribute to positive change and make a lasting impact on the lives of young people, families, and communities around the world.

Temperature Service Company is excited about the ongoing work of the Luol Deng Foundation, and looks forward to supporting its future endeavors. 📺

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Your cooling tower and system need special care and attention below 45° F.

## Best Practices: Winterizing Your Cooling Towers

Odds are, most of us have already taken pains to deal with winterizing our cooling systems, but anyone who's lived in Chicago in recent years knows that we've had some balmy winter weather, and that the serious cold, if it ever arrives, will be yet to come. It's always a good idea to be mindful of your maintenance year-round, of course, but it's particularly important to be on top of winterization, as the problems arising from failure to do so can be especially problematic and costly, not to mention resulting in unsafe working conditions for you and everyone on your staff.

Even if the bitter cold doesn't arrive, you know that once the ambient dry bulb temperature hits about 45° F, your winter operational plan should be going into effect, making sure that your cooling tower and system remain in good repair and free from the damaging effects of ice formation. Operator inspection and control are at the heart of any proper plan to ensure safe and efficient performance of your cooling system during the winter months, but different types of systems require different maintenance plans. To help you maintain best practices, we've run through a few scenarios below:

## Induced Draft Counterflow Cooling Towers

Below 45° F to 20° F, you'll want to make a visual inspection of your cooling system, especially in the louver and fill areas, about every two to four hours. If the temperature dips below 20° F, that time window should shorten to at least every two hours. To insure against ice formation, you'll want to keep to the following plan:

- Maintain your plant's heat load at the highest possible level.
- Keep circulating water flow, likewise, at the highest possible level. (Cold — return — water temperature from the cooling tower should be monitored and not allowed to drop below 50° F.)
- Airflow should be regulated to guard against ice formation.

## Induced Draft Crossflow Cooling Towers

Recommendations for Induced Draft Crossflow Cooling Towers are similar to those suggested above for Induced Counterflow Cooling Towers, though these cooling towers can feature one or more of the following additional accessories to ensure greater efficiency and safety during the colder months of the year:

- Longitudinal dam (weir) in hot water basins
- Larger-orifice nozzles on outboard row(s)
- An ice retainer bar on the top inboard edge of the louvers
- Variable-speed, reversible fan motors
- Reversible hydraulic or electric-driven speed fans
- Total hot water bypass
- Heavy-duty fill bars and fill hangers

## Natural Draft Counterflow Cooling Towers

When the ambient dry bulb temperature falls below 45° F, it's especially crucial to curtail normal operating procedures for natural draft cooling systems. As air temperatures drop, air velocities pick up, increasing the probability of ice formation in the cooling system. As with Induced Draft Counterflow Cooling Towers, visual inspection every two to four hours from below 45° F to 20° F is key — especially in the louver and fill areas — to prevent ice build-up. Below 20° F, inspections should increase to every two hours, at least. And likewise, cold — return — water temperature from the cooling tower should be monitored and not allowed to drop below 50° F.

## Natural Draft Crossflow Cooling Towers

As might be expected, recommendations for Natural Draft Crossflow Cooling Towers are akin to those for Natural Counterflow Cooling Towers, with additional accessories helping to improve operation during the winter months, including:

- Total hot water bypass
- De-icing ring with large capacity nozzles
- Ice retainer bar on top inboard edge of louvers
- Ice screens behind louvers
- Heavy-duty fill bars and fill hangers

Source: Cooling Technology Institute 



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# Supporting the Trades: Chicago's Leo High School

By Patty Murray

Opened in 1926, Leo High School is located at 7901 S. Sangamon St. in the Auburn-Gresham neighborhood on Chicago's southside.

Expanding the involvement of Chicagoland schools in career track programs and service opportunities can significantly expand the future of the professional trades industry. By nurturing early interest and skill development, these programs cultivate a proficient workforce, ensuring a thriving and adaptable trades sector. This proactive engagement prepares a new generation, guaranteeing the industry's sustainability and continuous innovation. One high school located in Chicago's South Side understands this value and is already implementing it within its curriculum.

Established in 1926, Leo High School is a private, all-male Catholic high school located in the city's Auburn-Gresham neighborhood, specifically 79th and Sangamon. Named in honor of Pope Leo XIII, Leo High School has educated thousands of boys from the Chicagoland area since its inception nearly 100 years ago.

## The Facta Non Verba Difference

What sets Leo High School apart from the surrounding all-male Catholic high schools in the area starts with their motto: "*Facta Non Verba*" — "Deeds not words." It is believed that living this motto will carry the students through what they do in the classroom, on the field, in their communities and in life. A Leo man acts, cares,

supports, works hard and makes a difference. They refer to this Leo way as living *Facta Non Verba*.

Leo High School also prides itself on creating a family dynamic between all students — connecting current and past students with their Leo brotherhood. Students become part of the brotherhood as soon as they walk through those doors, and Leo prides itself on students and alumni being able to count on enduring friendships, support and love of their Leo brothers for the rest of their lives. With under 250 students ranging from grades 9-12, their smaller class sizes ensure each student gets the care and encouragement they deserve.

## Expanding the Curriculum

Leo High School's well-rounded curriculum strives to prepare students for college or to enter the workforce directly after graduation. Principal Shaka Rawls, a 1993 Leo High School graduate, recognizes the importance of providing students with diverse educational opportunities that cater to their individual interests and career goals. He and his staff strive to provide as many opportunities as possible, including an introduction to the trades, and providing hands-on experience with tradesmen to young students. The goal is to expose students early and often to different options for when





Leo students participate in hands on STEM-related class work as part of Leo's career track curriculum.

they graduate. Principal Rawls understands the reality that college fits well for some students, but also knows that seeking a career within the professional trades is of equal value and can be a better fit for some students as well. According to Forbes, the 2023 national average balance of federal student loan borrowers is \$35,210. Illinois student debt comes in slightly higher with an average federal student loan balance of \$37,233. Comparatively, the higher education required to enter the trades industry can have out-of-pocket expenses that are oftentimes significantly lower, all while students simultaneously receive real world experiences. These educational expenses are many times even covered by the unions themselves.

## An Early Introduction to the Trades

For the past 20 years, Leo High School has offered career track programs as part of its well-rounded curriculum. Currently, there are two career track programs available that provide students with the opportunity to learn basic skills and expose them to various trades. One partnership Leo High School has is with IBEW Local 134. IBEW Local 134 members work in a variety of fields, including utilities and construction, just to name a few. Through this partnership, participating students are introduced to the electrical industry as a whole, including IBEW Local 134's solar program.

Leo High School's second career track program is a partnership that was initiated by Big Shoulders Fund, an organization that provides support to Chicago Catholic schools in need. With the fund's assistance, Leo High School has been able to offer its students an incredible career track partnership with ComEd.

This partnership blends classroom learning with practical, hands-on technical experience, enabling a broader range of students to explore opportunities and develop the skills needed to pursue careers in vital skilled trades within the energy/utilities, advanced manufacturing, and technology industries.

Both of these programs offered to Leo High School students provide opportunities for internships upon graduation within these STEM-related fields. It is important to note that none of these programs would be available to Leo High School students if it was not for the hard work and dedication of their alumni. This is an exemplary instance that proves that the Leo brotherhood does not end upon graduation, and that the *Facta Non Verba* motto is aiding in the success of current students.

## An Organization All About Paying It Forward

Similar to Leo High School's motto of "Deeds not words," ChiGivesBack, Inc. believes in paying it forward. Founded in 2018, ChiGivesBack is a social impact organization that curates innovative charitable initiatives and events for public school educators, the unhoused, senior citizens, and low-income families. Through donors and sponsorship, ChiGivesBack is able to offer Random Acts of Kindness and provide the necessities that these groups of people need to sustain themselves. Its mission: to improve the welfare of our global community via innovative charitable experiences. Its vision: to inspire, empower, and influence people in our communities to give back to others.



Leo High School students participated in an event held at UIC in honor of National STEM Day. This event was aimed at introducing high school students in the Chicagoland area to Engineering.



A group of Leo students visit a ComEd facility as part of their career track partnership with ComEd.

## Tapping Into the Trades to Give Back

One of ChiGivesBack's biggest events is its annual Martin Luther King Jr. Day of Service. This is a special day that brings volunteers from all over Chicago and includes everyone from families, groups of friends, corporations, partnership organizations, and sponsored organizations alike to revitalize a school. Students partner up with the local engineers to work alongside them to repair damaged areas of the high school. This includes organizing library and book rooms, repainting the school's main areas, teachers' lounges, and overall improving the physical condition of the building. Past recipients have always been a Chicago Public School; however, this year ChiGivesBack decided to choose the private school route of Leo High School as its 2024 recipient. Since Leo High School has a standing program implemented in its curriculum that introduces its students to the trades, it was a seamless partnership for ChiGivesBack. We had the opportunity to speak with ChiGivesBack Chairwoman Stacey Arrington about this decision to partner up with Leo High School. "Leo is the perfect fit because the school, staff and

principal are truly amazing in their transformation of their student body," Arrington explains. "The students come from all walks of life and are treated with respect, dignity, and are taught manners as part of their school's culture, such as greeting everyone they come in contact with, and shaking hands with eye contact. Our typical choice of school to give back for our MLK Jr. Day of Service initiative is Chicago Public School-related. Leo High School stood out handsomely due to their ability to teach a rigorous curriculum successfully to a largely populated, underserved student body of color, all while nourishing skills to ready the scholars for their soon-to-be adult lives. The legacy of Leo and the endless support of its students by Principal Shaka Rawls and his leadership team made our choice easy. Principal Rawls is not only the faculty leader, but his drive to promote the celebration of his students at all times is so inspiring. It was an easy decision to pick Leo High School as one of our partnering schools."

ChiGivesBack has received incredible feedback from past MLK Jr. Day of Service recipients and how it impacted the students and school community as a whole. "We are not only impacting the students but also the faculty and staff in both tangible and intangible ways,"

says Arrington. "It is often difficult to teach upwards of hundreds of students coming from, at times, challenging circumstances outside of the school. Offering a fresh coat of paint, organization within the school's structure, and revitalizing their 'safe space' for both students and staff, has made a world of difference."

## Leo High School Alumni Lives Within CEAC

With having a nearly 100-year history within the City of Chicago, it is no surprise that many of our Chief Engineer Association of Chicagoland (CEAC) members are Leo High School alumni. CEAC past President Dan Carey is one of these alumni. Carey believes Leo's participation in ChiGivesBack's MLK Jr. Day of Service is a perfect example of capturing the Leo motto: "Deeds not words." He also believes these career track programs offered within Leo's curriculum are an incredible opportunity for the students and for the future of the Chicagoland area's trade industry. In addition, Carey considers these opportunities and partnerships to be great ways to instill what the Leo brotherhood is all about, and he knows firsthand how much this can impact the lives of students upon graduation. Carey states, "Leo's brotherhood, to me, was being accountable, loyal, and the pride of representing the Catholic league — the same feeling I had when I joined the workforce and became a proud member of Local 399 and the Chief Engineers Association of Chicagoland."

Increased involvement in Chicagoland schools in career track programs designed to introduce trades to students such as Leo High School's can significantly impact the future of the trades industry. Familiarizing more young minds with these professions fosters a proficient workforce and ensures skilled expertise, which is vital for the success and growth of the professional trades sector. This forward-thinking involvement readies the next wave, ensuring the industry's lasting sustainability and modernization. 📱📧



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## Neuco at the Head of the Class

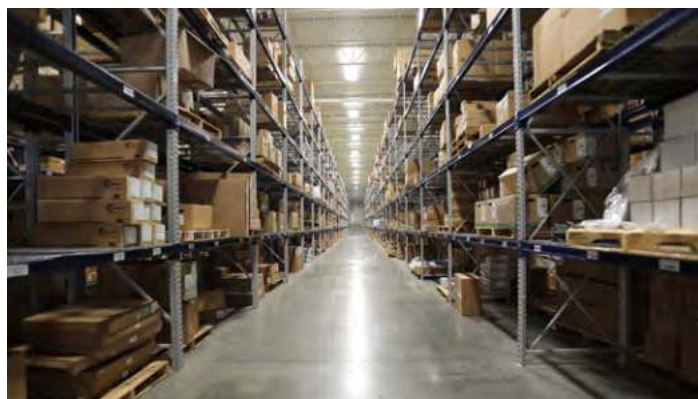
By Karl J. Paloucek

*Neuco's 150,000-sq-ft facility out in Bolingbrook, Ill.*

Sometimes it's tough to be based in Chicago. In winter, when the wind finds its way into your coat and gives you that chill, or in summer, when seemingly everyone in traffic is headed the same direction you are, and the express lanes aren't doing a darn bit of good. But there are times, particularly as a Chief Engineer, when being located in Chicagoland works in your favor. If you're in the metro area and are in need of a replacement valve or pump, or almost anything you can imagine necessary to your trade, odds are you can get it when you need it from master distributors Neuco, based in Bolingbrook, Ill. Outside of the Chicagoland area? No such luck.

While Neuco sells through wholesale distributors throughout North America, Chicagoland is the only market to which Neuco supplies local end users. "This is the only territory that we sell to that segment of the supply chain — those engineers," Neuco Marketing Manager Brian Zwolinski says. "We don't sell to engineers in California, or Texas or New York — it's just in this area."

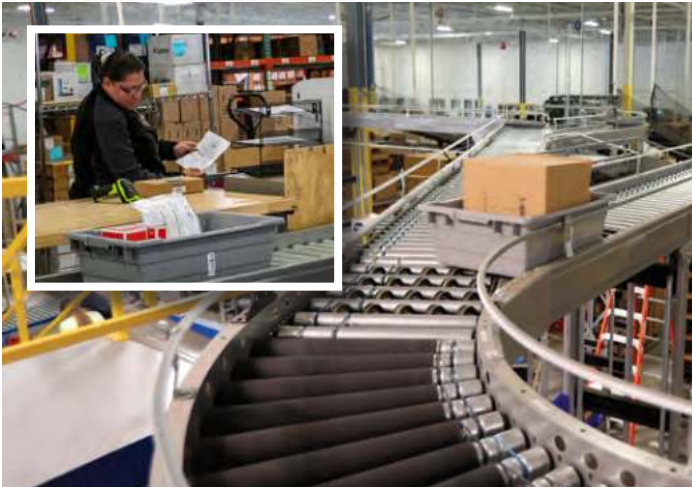
Neuco is a fourth-generation business that got its official start in 1963, carrying only one product line. Today, Neuco features more than 275 different HVACR product lines in its inventory, from brand names as familiar as Honeywell, Johnson Controls, Siemens, Danfoss and more. From the most basic to the most



*The Neuco facility in Bolingbrook boasts a 150,000-sq-ft warehouse and the capability of moving up to 6,000 orders in a day — soon to be more than double that amount.*

specialized parts, they maintain it all, and are experts in what they supply. And it's this expertise that led us to want to talk to the folks at Neuco about their business and their education initiatives that have been in place for decades, offered onsite, at the Neuco offices, or down in the classrooms of Local 399.

"We're not there to do a sales presentation," Brandon Conforti, Sales Group Manager at Neuco, declares. "There might be a peek — 'This is who we are, this is how we can support you' — but it's that information that we can provide for troubleshooting, for installation, tips and tricks, any sort of error code information [that we're there to offer]."



*A combination of hands-on and automation keeps Neuco's parts delivery operation at peak efficiency.*

The goal at Neuco is to provide understanding of the technology that engineers are using, from its application to the science and math behind it, so that they can best serve the properties they manage. Neuco's business may be all about replacement — aftermarket goods — but through its education initiatives, Neuco is able to address fundamentals within the industry.

Mike Emory is Sales Engineer at Neuco, and does the actual seminars at Local 399 and onsite wherever

needed, instructing engineers at any stage of their careers in the technologies that are transforming the industry. The array of topics he covers is as dynamic as it is impressive. "We'll do seminars on belt and sheaves, doing retrofits, energy savings," Emory says. "We explain the differences between the types of belts, what the different uses are, and some of the upgrades between what they have now and what they can do in the future to save energy. Technology on how to align their belts and sheaves. How to tension them the proper way, to get the max benefit out of what they have, or the new versions of what they're going to have.

"When we do a motor class," he continues, "we discuss how the motor's affected by frequency drives, and what are some of the changes — and this goes in general — what are some of the changes in the last 20-30 years in our industry, and how that affects how they operate their buildings and what we should be using in their buildings today."

Emory brings up a recent introductory class on induction units — a good example of updated technology, but one that not everyone necessarily needs. "Induction units have been the same in buildings for the last 50 or 60 years," he explains. "Somebody's come up with



*Flexibility is part of Neuco's educational service — dozens of engineers can learn onsite at Neuco's Bolingbrook facility, at Local 399 or onsite at a building downtown as needed.*

a new version — sleeker, saves space, saves energy, automated controls. But that's a good example: Not every building has induction units. So I'm not going to call and try to go see every building in Chicago, because it's a waste of time and unnecessary." Yet at the same time, such a course is still very helpful for personnel working at those that do.

But engineers are busy people, and often in such demand at their properties that it's hard for them to get away for any length of time, so Emory still spends a fair amount of time providing instruction in the field at buildings downtown. "I get a lot of response when I do [classes] downtown, because even if something happens [at an attendee's building], they're literally five or 10 minutes from their buildings. It just seems like there's less reluctance. If I do it for a certain building or property company, then they may invite 20 other buildings, and they're like, 'Yeah — I could walk to this class.' And the chief or the property manager is OK with that. They're right down the street if something happens. So that's become very popular."

And what's among the most popular topics these days, for Emory's classes in the field? "Retrofitting," he says. "There's a lot of support with retrofitting. Lots. Certain

technologies aren't used anymore in the field — aren't supported by the manufacturers. Neuco and myself, we kind of help the building engineer. 'No, they don't make that kind of V.A.V. box anymore.' 'They don't make that style of pump anymore, with two impellers in it. You can only do this now.' There's a lot of that going on. A lot. ... There's a lot of what I call 'backwards engineering' that needs to be done. ... There's a lot of support needed, you know? It's like if you were retrofitting your car with the current engine that existed today. You're like, 'Uh-oh. How's that going to work?'

But they show how it's going to work, and make solutions viable and available, which is, in so many ways, what Neuco is all about, whether it's providing instruction in the field, at Local 399 or at its own facility in Bolingbrook, of which they're understandably very proud. Zwolinski explains that offering instruction at the Neuco distribution center gives them the opportunity to show off how they go through their paces in getting parts to all of the clients who need them, with incredible dispatch.

"We walk them through our distribution center, and we're able to show them here's how we can move over 6,000 orders in a day," Zwolinski says. "By five



*Hands-on learning and training are integral to the Neuco education initiative.*






Neuco Sales Engineer Mike Emory offers a seminar to a group of engineers this past fall.

o'clock, it ships out. And with all of the advancements we're making in our distribution center, we soon will be able to throughput more than 15,000 packages in a day. So we get to show these people the advantage that we're doing is to help — when they need product

on time, we're here to deliver. There's that extra layer to it, as well."

It's a blowing away of perceptions that elicits a lot of wows and general disbelief, Conforti and Zwolinski affirm. People may show up in Bolingbrook thinking they're going to see a dusty warehouse with a couple of guys up front, and end up seeing a 150,000-sq-ft facility full of employees doing their best, integrating hands-on with automated systems to deliver sterling service that's become rare in our times.

This top-of-the-line support for our engineers doesn't stop with its high-end service and educational initiatives, of course — Neuco has been a longstanding supporter of the CEAC, sponsoring many of our annual events, from the annual Golf Outing at Cog Hill to the May BBQ event and the White Sox event each summer, and consistently participating in and supporting our biennial Vendor Fair. Neuco goes the distance supporting us and our industry, and we couldn't be more grateful.

If your building is in need of anything HVACR-related or you'd like more information about Neuco's training classes, contact Michael Emory at michael@neuco.com or (630) 776-9535. 

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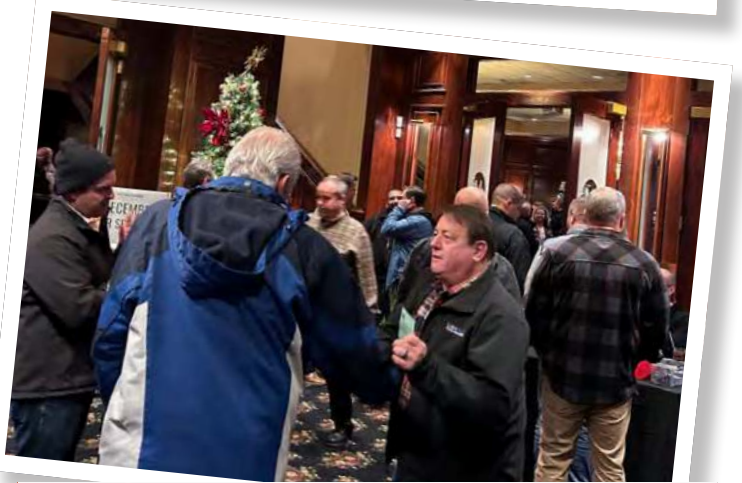
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## DECEMBER EVENT

Before we broke for the year to be with our families and loved ones for the Christmas season, the Chief Engineer Association of Chicagoland met for our December meeting at Maggiano's in Downtown Chicago for some festive camaraderie, charitable giving and to celebrate all that's good about this time of year. As always, we are grateful to so many for making this event so memorable. First, we would like to thank everyone who gave so generously to the Paul Reynolds family with your gift cards and other donations. It's great to know that CEAC members are so willing to come through to support those in need.

We also must single out our event sponsors, including Presenting Sponsor LionHeart and Co-sponsor BEAR Construction, as well as our Bar Sponsors for the night, Air Comfort, BluSky Restoration and Chicago Filter Supply. Without the continued support of our Associate Member organizations who come through for us each meeting, these nights wouldn't be the galvanizing events that they are each month. We're ever grateful, and remind you to support our Associate Members with your business whenever you need help from outside. They deserve our support, and you deserve the best!

We currently are looking for sponsors for future events, including our annual Skatfest on Feb. 17 and our ever-popular St. Patrick's Day meeting on March 20. For information on sponsorship opportunities, please reach out at [events@chiefengineer.org](mailto:events@chiefengineer.org).







# Inspection, Testing and Maintenance of Fire Protection Systems

By Michael A. Badame

*Chicago Fire Protection performing flow testing on Siamese connections.*

As Chief Operating Engineer of your facility, ensuring the safety of all occupants is paramount, and a well-maintained fire protection system plays a crucial role in achieving this goal. Not only does it protect lives, but it also helps to minimize property losses in the event of a fire.

Your role as Chief Engineer involves overseeing the installation and maintenance of these systems so that we can rely on them as part of our daily operations. Whether you are overseeing a new construction project or simply upgrading components of an existing system, it is critical to follow the guidelines set forth by the National Fire Protection Association (NFPA) to ensure the reliability and effectiveness of these systems. By collaborating with specialized resources, you can leverage industry expertise and experience to drive key considerations during the inspection and testing process. Regular inspections, testing and maintenance will ensure that your fire protection systems are fully functional and ready to respond in the event of an emergency.

I had the opportunity to meet with Chicago Fire Protection President John LaGiglia and discuss the many facets involved in meeting NFPA requirements.

LaGiglia was born and raised in the Beverly community on Chicago's South Side. In September of 2000, LaGiglia decided to join the U.S. Army and served multiple tours of combat in both Iraq and Afghanistan. He was awarded the Bronze Star Medal for his actions in Afghanistan while working for Special Operations Command - Task Force North in the Kunduz Province. While serving his time in the military, he heard about an organization called Helmets to Hardhats (H2H) that helps transition military service men and women into successful civilian careers in the building trades. His brother-in-law and business partner, Joe Regan, had already been a member of Local 281 U.A. Sprinkler Fitters since 1998. Joe Regan and his father, Mike Regan, a 30-year retired sprinkler fitter, encouraged LaGiglia to become a member and start his apprenticeship at Local 281 U.A. Sprinkler Fitters in 2007.



Chicago Fire Protection President John LaGiglia

LaGiglia and Regan worked in the industry for many years at large companies, mastering their craft in installation, testing, inspections, emergency repairs, and maintenance for a variety of fire suppression systems.

In 2014, LaGiglia and Regan decided to risk everything and began their family-owned business together, known as Chicago Fire Protection LLC.

LaGiglia describes the start of the company with pride while explaining, "Chicago Fire Protection truly began with humble beginnings. Joe and I started out in a small room of my house, and within a couple years we have grown our business to over 68 employees, with 55-plus technicians in the field. Our growth and success are attributed to our amazing customers and the hard work and dedication of our employees. I can remember when the business expanded into my living/dining room, my wife finally had enough and said 'GET OUT!' At that point, we moved the company HQ to our current location at 10355 S. Kedzie Ave., Chicago, Ill."

I asked LaGiglia what type of challenges they went through as a company during their initial years of growth. "We spent the first 12 months doing a lot of networking and getting our name out there. This led us to become Associate Members of the Chief Engineers Association of Chicagoland (CEAC). Within the next few years, jobs got bigger and our company started growing 150 percent to 200 percent per year. The (CEAC) has always been a huge part of our success!"

After learning about how Chicago Fire Protection got started, I asked LaGiglia to share some technical details on what type of inspections the Chief Engineer should be looking out for in their buildings. LaGiglia shared the following insights on National Fire Protection



Chicago Fire Protection Vice President Joe Regan

Association (NFPA) inspection items that are sometimes overlooked.

#### **NFPA 25 - SECTION 14.2.1 INTERNAL PIPING INSPECTIONS**

The type and frequency of inspections required under NFPA 25 will vary depending on the equipment and systems in your facility. Your application may call for daily, weekly, quarterly, semi-annual, annual and 5-year inspections that also must be documented. NFPA does not require specific forms to be used during the inspection process, but this can take out some of the guesswork and help streamline that part of your operations. In 2014, when Chicago Fire Protection got started as a company, most of its work consisted of sprinkler installation, but also inspections and testing.

Per NFPA 25 – 14.2, an internal inspection of piping shall be conducted every 5 years. The internal examination shall be performed at the following points: System Valve, Riser, Cross Main and Branch Line.

"A big item that is very important is completing a 5-year internal inspection," LaGiglia says. "It is vital that facilities get this done. This is crucial to identify any obstructions in the piping, especially in older systems. If rust, sludge or slime accumulates in the piping, this could cause blockage in the pipe and prevent the sprinkler system from activating in the event of a fire."

#### **NFPA 72 - SECTIONS 14.3 & 14.4 FIRE ALARM TESTING & INSPECTION**

In 2018, Chicago Fire Protection became a signatory contractor with I.B.E.W. Local 134 Electricians and started offering fire alarm services. John and Joe hired Brendan Kyle, a seasoned member of I.B.E.W. Local 134, as Vice President of this new electrical division.



Chicago Fire Protection's earliest beginnings in LaGiglia's home.



LaGiglia's and Regan's operation quickly grew, and the office would move from LaGiglia's home to its current location at 10355 S. Kedzie Ave., Chicago.

Per NFPA 72 – 14.3 & 14.4, fire alarm systems are required to be tested and inspected annually. Table 14.4.5 outlines fire alarm device testing frequency, and Table 14.4.2.2 provides alarm device testing methods.

**NFPA 96  
KITCHEN EXHAUST SYSTEM INSPECTIONS**

In 2020, Chicago Fire Protection added fire extinguishers and kitchen hood suppression systems to its umbrella of services. By adding the installation, testing, and inspections of extinguishers and kitchen hood systems, they created a "one-stop shop" for all life safety systems.

Per NFPA 96, a complete inspection of your Ansul kitchen hood fire suppression system (hood, grease removal devices, fans and ducts) needs to be thoroughly inspected for grease build-up at least every 6 months (semi-annually).

**NFPA 17A  
STANDARD FOR WET CHEMICAL  
EXTINGUISHING SYSTEMS**

Per NFPA 17A, the chemical extinguishing kitchen hood systems shall be tested and inspected semi-annually or directly after any system activation. Maintenance shall be conducted in accordance with the manufacturer's design, installation and maintenance manual. ☐☐

**KNOW THIS!**



**Per Chicago Municipal  
Code 18-28-506.3.8**

**Prevention of grease accumulation.**

Duct systems serving a Type I hood shall be constructed and installed so that grease cannot collect in any portion thereof, and the system shall slope not less than one-fourth unit vertical in 12 units horizontal (2-percent slope) toward the hood or toward an approved grease reservoir. Where horizontal ducts exceed 75 feet (22,860 mm) in length, the slope shall be not less than one unit vertical in 12 units horizontal (8.3-percent slope). Exhaust fans shall be positioned so that the discharge will not impinge on the roof, other equipment or appliances or parts of the structure. A vertical discharge fan shall be manufactured with an approved drain outlet at the bottom of the housing to permit drainage of grease to an approved grease reservoir.

## Watts Celebrates 150 Years with Year-Long Sweepstakes for Customers in U.S. and Canada

North Andover, Mass.-based Watts is excited to announce the launch of the “Learn Today,

Lead Tomorrow” 150th Anniversary sweepstakes, a year-long celebration in honor of a century and a half of water technology excellence and innovation. The sweepstakes is open to customers of any brand in the Watts family of brands across the United States and Canada, offering an opportunity to “learn and earn” prize packages all year long.

### Sweepstakes Period

The sweepstakes is live and will run through Dec. 31, 2024. This program celebrates the customers whose support has allowed Watts to reach this milestone by offering monthly and quarterly prizes, along with a grand prize trip for two to Boston, Mass.

### Participation Details

Eligible participants can “learn and earn” limited time only tickets redeemable for sweepstakes entries. One ticket equals one entry. Customers can earn

tickets through any of Watts’ professional training opportunities, including eLearning through Watts Works

Online, Lunch & Learn sessions, and in-person training at any Watts Learning Center. For specific eligibility requirements, visit [watts.com/150sweepstakesrules](http://watts.com/150sweepstakesrules).

### How to Participate

For more information, those interested are encouraged to visit [watts.com/150sweepstakes](http://watts.com/150sweepstakes). For the official rules, including how to enter, eligibility requirements, prize package details, and how to enter, please visit [watts.com/150sweepstakesrules](http://watts.com/150sweepstakesrules).



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## Watts Introduces Watts ArmorTek™ Advanced Coating System for ACVs

Watts recently introduced its ArmorTek advanced coating system for ACVs. With an 8-year Microbiologically Induced Corrosion (MIC) warranty, this advanced patent-pending technology is now available on Watts Classic and Mustang valves, providing three layers of protection to create an effective barrier, dramatically increasing resistance to corrosion.



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For more information, visit [Watts.com/ArmorTek](http://Watts.com/ArmorTek).

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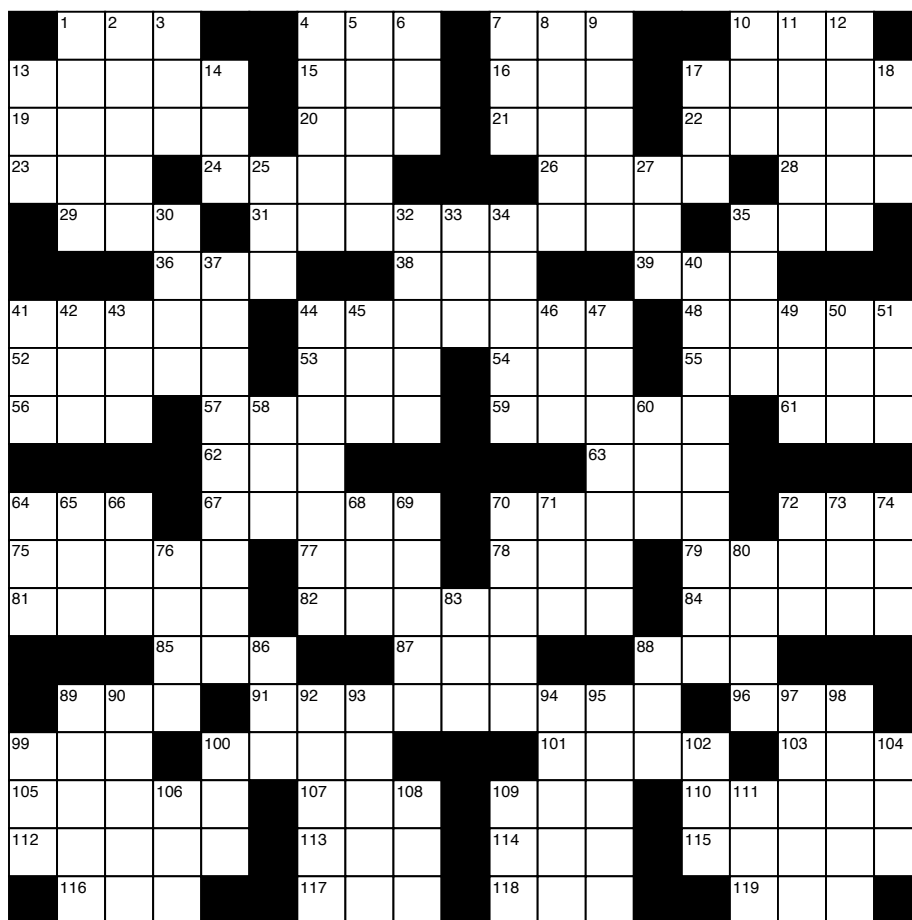
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# Energy Efficiency Terms

**ACROSS**

- 1 Muzzle
- 4 Executive director
- 7 Also known as (abbr.)
- 10 \_\_\_ A Small World...
- 13 Hints
- 15 Electric spark
- 16 Swish
- 17 Screamer's throat dangler
- 19 Dis
- 20 Decompose
- 21 Abridged (abbr.)
- 22 Pancake need
- 23 Pounds per square inch
- 24 Chaotic
- 26 Lubricates
- 28 North northeast
- 29 Pigpen
- 31 Forcible
- 35 Question
- 36 Utilize
- 38 Charged particle
- 39 Lair
- 41 "To \_\_\_ Mockingbird" (2 wds.)
- 44 Oars
- 48 Ridge
- 52 Smarter
- 53 Grain
- 54 Extra-sensory perception
- 55 Depone
- 56 Lurked
- 57 Applaud
- 59 Comb hair
- 61 West by north
- 62 Rescue
- 63 Today
- 64 Bro.'s sibling
- 67 Yet
- 70 Metalworker
- 72 South by east
- 75 Build
- 77 Murmur
- 78 Pop (plr.)
- 79 1997 Madonna movie



www.CrosswordWeaver.com

- 81 Computer code for characters
- 82 Excess (2 wds.)
- 84 Disprove
- 85 Air Cushion Vehicle (abbr.)
- 87 Standard or average
- 88 Marsh
- 89 MGM's Lion
- 91 Community of plants, and animals
- 96 X
- 99 Leer
- 100 Nerve fiber
- 101 Earnings
- 103 August (abbr.)
- 105 Imbecile
- 107 Pacific Time
- 109 Sky
- 110 Smooth tightly twisted thread
- 112 Join

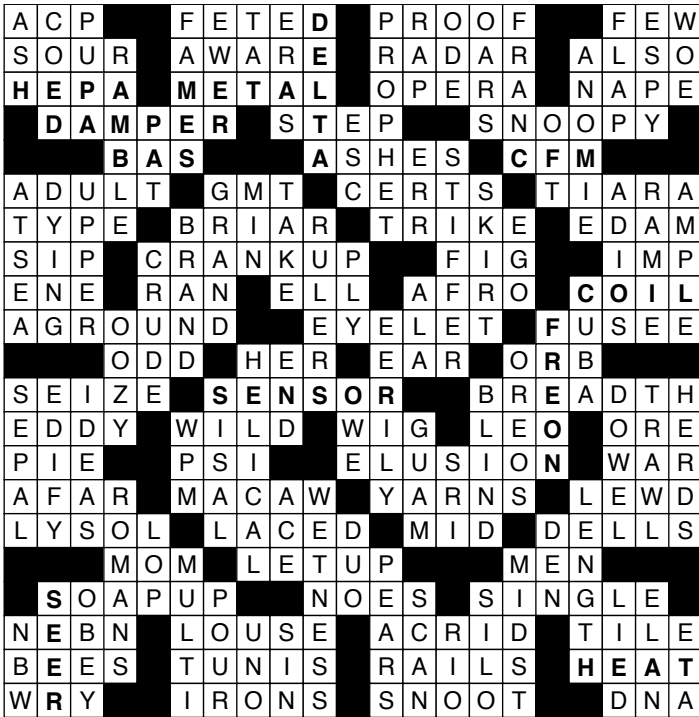
- 113 Find
  - 114 Compass point
  - 115 Bell stroke
  - 116 Focus
  - 117 Terminal abbr.
  - 118 Type of partnership
  - 119 Disks
- DOWN**
- 1 Heat-resistant material
  - 2 Energy assessment
  - 3 "To the right!"
  - 4 Monte \_\_\_
  - 5 Wear away
  - 6 Halloween mo.
  - 7 Wing
  - 8 Barbecued stick
  - 9 Month
  - 10 Wall plant
  - 11 Pivots

- 12 Moved stealthily
- 13 **Generate useful heat and energy**
- 14 Compass point
- 17 Ship initials
- 18 Imitate
- 25 Frost
- 27 **A type of energy-efficient lighting technology**
- 30 Christmas
- 32 Traveler
- 33 Common fish
- 34 Bay
- 35 Afresh
- 37 Wry
- 40 Not here
- 41 **Unit of energy consumption**
- 42 Caesar's three
- 43 Lysergic acid
- 44 State beforehand
- 45 Popeye's yes
- 46 East southeast
- 47 Romance language
- 49 Morning moisture
- 50 Gossip
- 51 White-tailed sea eagle
- 58 Belted
- 60 Drunk
- 64 Ocean
- 65 Internal Revenue Service
- 66 Part of a min.
- 68 Water closet
- 69 Winds around
- 70 Cowboy boot projections
- 71 McDonald's "Big \_\_\_"
- 72 Sibling

- 73 **Energy Measurement Unit**
- 74 Consume
- 76 Hello!
- 80 **Efficient air circulation**
- 83 Summer month
- 86 Irritate
- 88 Madagascar franc (abbr.)
- 89 French city
- 90 Uncanny
- 92 Thicket
- 93 Beginning
- 94 Kink
- 95 Constalk
- 97 Went gently
- 98 Voids
- 99 Flightless bird
- 100 Some
- 102 Deer relative
- 104 Harden
- 106 Often poetically
- 108 Thirst quencher
- 109 American sign language
- 111 Business title ending

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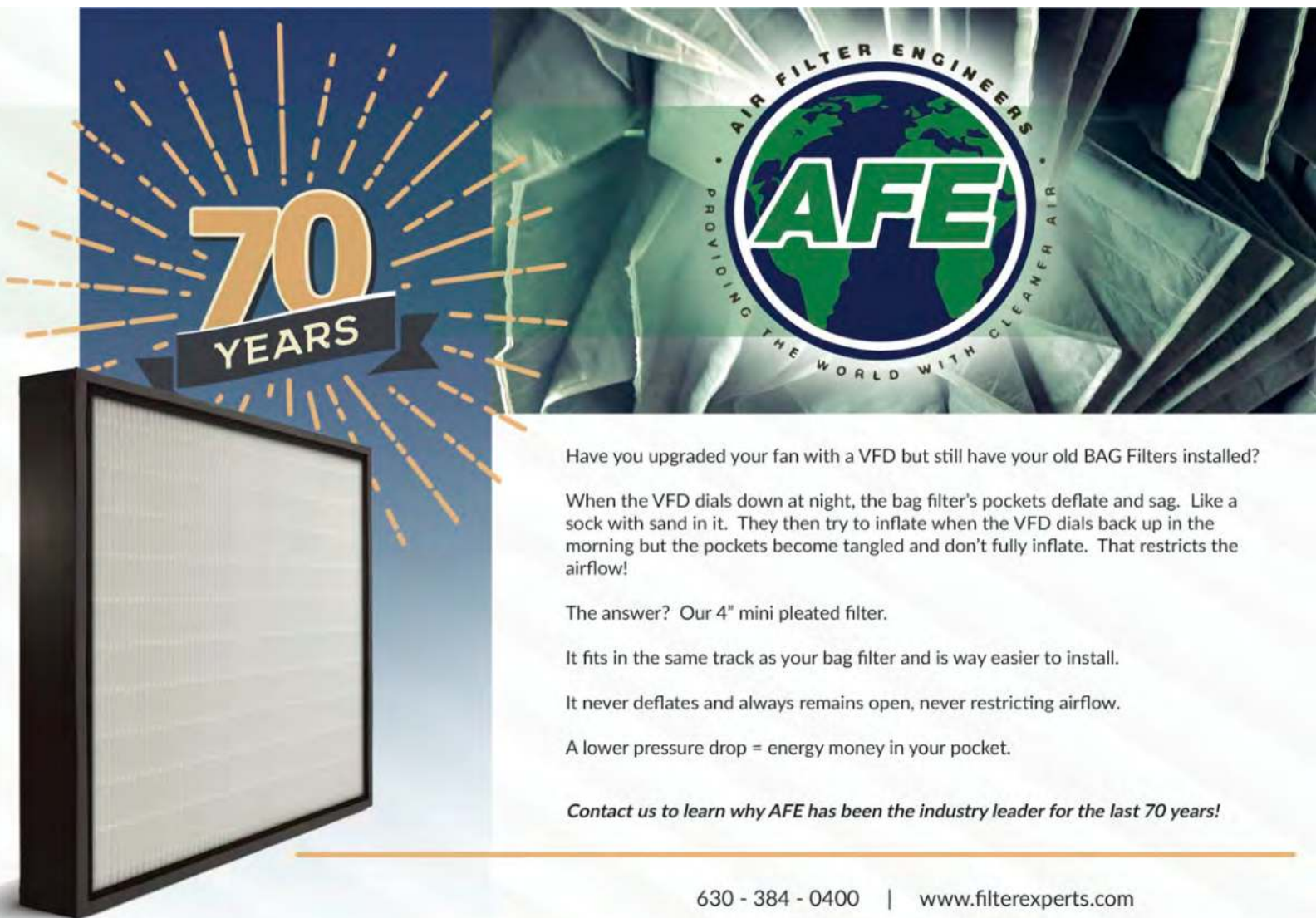
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