

# CHIEF ENGINEER™

MAY 2026



**A Chicago Perspective:  
We Know Water**

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**Designed for  
Deflagration: Architectural  
Solutions to Safeguard  
Industrial Facilities**

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**Growing Up in the Trades:  
Family support led  
Thomas P. Rountree  
to a career in engineering.**

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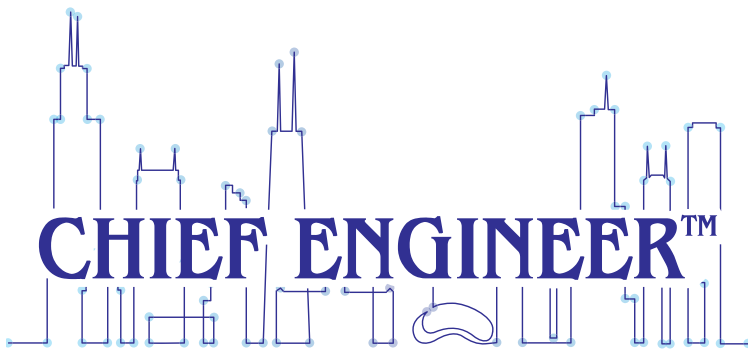
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**16** **A Chicago Perspective: We Know Water**  
With the 6th Annual Chicago Water Week celebration this month, we engage with numerous local authorities on the subject of water in our region to discuss trends and challenges in water industry and infrastructure, and where it's all headed.

**28** **Designed for Deflagration: Architectural Solutions to Safeguard Industrial Facilities**  
Building safety vents integrated into the architectural design of a structure can serve to protect the integrity of that structure in the event of a deflagration event.

**34** **Growing Up in the Trades**  
We look at the family legacy of Thomas P. Rountree and how his lifetime of experience led him to the position of Operations Manager at Cushman & Wakefield for the FBI Chicago Regional Office.

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# THE CHIEF ENGINEERS

ASSOCIATION OF CHICAGOLAND

## 2026 EVENT SCHEDULE

### MAY 20

WEDNESDAY 3:00PM

BBQ

Spring is here and we're taking it outside for our annual BBQ event at Chicago Gaelic Park in Oak Forest.



### JUNE 26

FRIDAY

WHITE SOX GAME

Join CEAC members on the Fan Deck to cheer on the Chicago White Sox against the Kansas City Royals. Concert by Marshmello to follow.



### SEPT 11

FRIDAY 9:00AM

86TH ANNUAL GOLF OUTING

Everyone's favorite event takes over Cog Hill once again for the biggest event of the year! This event is on PAR!



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# PRESIDENT'S MESSAGE

## The CHIEF ENGINEERS Association of Chicagoland

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Dear Members,

The Vendor Fair is one of the biggest events we do all year, and one of the most important. It's also a tremendous undertaking, so we are grateful to everyone who makes it the success that it is, from the vendors themselves to the Events Planning Committee who bring it all together — especially Patrick Wawrzyniak for serving as chair and making sure that all the details were taken care of. This year's Vendor Fair was a great success, and I would like to take this opportunity to thank all of our Associate Member organizations for their participation and efforts to enlighten all of us about their work and developments.



It's this interaction between the Chief Engineers and our supporting Associate Members that is the hallmark and strength of the CEAC, so we appreciate everyone who shared information with us, and all who took time to listen with attention.

The CEAC would like to celebrate our Associate Members, as we do in the wake of the Vendor Fair, with the Vendor Appreciation meeting. The event will take place Wednesday, May 6 (from 3:00-7:00pm at the Morgan Arts Complex (3622 S. Morgan St., Chicago). All of our Vendors are welcome to attend. Those planning to do so, if you could please register at the Upcoming Events page at [chiefengineer.org](http://chiefengineer.org) soon, that would help us have an early and accurate head count for planning purposes. Thank you again, in advance!

At the same time, we are also looking ahead to our annual May BBQ. This year's event will take place at Chicago Gaelic Park, 61119 147th St., Oak Forest, from 4:00-7:00pm. This is always a great event, with excellent food, plentiful cigars and stimulating conversation, so I hope we'll see as many of you there as possible. Sponsorship opportunities are still available, so if your organization is looking to elevate its profile, please reach out to the Events Committee at [events@chiefengineer.org](mailto:events@chiefengineer.org).

I know that we're all gearing up for the summer ahead, but I also know that we'll want to be at least thinking about PM on our heating systems so that we can ensure that they'll be primed and ready to go when we need them in the fall. Always remember to reach out to your Associate Member organizations should you need outside help of any kind — they need our support just as much as we need theirs.

Finally, as we observe Memorial Day on Monday, May 25. Let us take a moment to remember all those who have fallen in service of our country. Their service and ultimate sacrifice will always be remembered.

I look forward to seeing our Associate Members at this month's Vendor Appreciation meeting, and all of you at our May BBQ!

Sincerely,



Larry McMahon

## Abstracts for 2027 Winter Conference in Chicago Due May 27

Abstract submissions are now being accepted for the 2027 ASHRAE Winter Conference to be held in Chicago, Ill., Jan. 23-27, 2027.

“Our technical program explores the full breadth of innovation across the HVAC&R industry, including thermal network modeling, energy storage and AI-supported building operations,” said Technical Conference Chair Li Song. “Additionally, the conference highlights the growing importance of residential HVAC research through real world performance studies, advanced heat pump technologies, smart controls, and strategies that enhance comfort, resilience and energy efficiency across diverse housing types. We anticipate a lively event in Chicago where new ideas and forward-looking research help shape the future of our built environment.”

Conference papers are requested for the following tracks:

The “Residential HVAC Research and Demonstration” track explores technologies and strategies that improve energy efficiency and climate resilience while still prioritizing occupant comfort, indoor environmental quality and cost for diverse residential housing types.

The “Thermal Network Systems and Energy Storage” track focuses on the applications such as networked building energy modeling, district heating and cooling, and advanced control architecture that optimizes energy systems across varying operating conditions.

The “Nexus of Real and Artificial Intelligence” track explores the relationship between human insight and AI-enabled controls to elevate building operations, with a focus on data center environments, building and campus design strategies, and power-

delivery systems.

The “Decarbonization Retrofits” track focuses on reducing emissions from existing buildings through improvements to control modifications, commissioning, system or equipment replacements, and others.


The “Research Summit” track features active research and the exchange of research findings, critical to the development of the HVAC&R industry and the built environment. The track includes a partnership with ASHRAE’s archival journal, *Science and Technology for the Built Environment*.

The “Refrigerants and Refrigeration” track explores refrigeration systems, which 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 historical documents and others.

The “Fundamentals and Applications” track will provide opportunities for papers 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.

Finally, the “HVAC&R Systems and Equipment” track will 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.

Abstracts — 400 or fewer words — are due May 27, 2026. If accepted, final conference papers — 8-page maximum — are due Sept. 2, 2026.

Accepted papers will be considered for publication in *Science and Technology for the Built Environment*, ASHRAE’s research journal. 





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## 2026 Construction Tech Conference July 15-16, 2026 Willis Tower 233 S. Wacker Dr., Chicago

The annual Construction Tech Conference, BuiltWorlds' largest event, explores the trends and trajectories of innovation and emerging technologies involved in the construction of buildings and infrastructure. The event places an emphasis on field operations, providing actionable insights and proven strategies to effectively evaluate, manage and improve jobsite productivity, efficiency, safety and logistics.

Through the information and presentations available at this conference, attendees can expect insight into:

- Harmonizing design and preconstruction (i.e., the new frontier of predictive planning)
- Engineering a bulletproof GC-sub partnership
- Synthesizing AI readiness to optimize data outcomes and deployments
- Optimizing project closeout, handover and commissioning
- Exploring novel or innovative approaches to robotics, equipment and automation

Anyone working in the built environment and overseeing construction in our tech-forward world is encouraged to attend the 2026 Construction Tech Conference — especially those whose responsibilities include:

- Innovation/Strategy/Venture
- Information Technology (IT)/Technology
- Building Information Modeling (BIM)
- Virtual Design & Construction (VDC)
- Data Analysis/Strategy/Management
- Artificial Intelligence (AI)/Machine Learning (ML)
- Project Management/Software/Controls
- Preconstruction/Estimating/Scheduling
- Robotics/Automation
- Field Operations

Last year's Construction Tech Conference by BuiltWorlds attracted more than 300 industry leaders, innovators, and stakeholders from more than 225 different companies spanning the globe and building and infrastructure value chains. While the conference presented an amalgam of experiences — including networking and receptions, closed-door working group sessions, a Demo Day Competition, and the inaugural Contractor's Choice and Tech Excellence Awards — at the heart of the event was rich, focused content, stemming from conference presenter BuiltWorlds' research. For two days, thought leaders from throughout the industry took the stage to present insights and to discuss the finer points of a range of topics central to the year's theme: augmenting individual performance with today's technology. ■■■

For more information or to register for the 2026 Construction Tech Conference, visit [builtworlds.com/event/2026-construction-tech-conference](http://builtworlds.com/event/2026-construction-tech-conference).



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Neuco recently welcomed aboard Jeffrey Hillier as Strategic Account Executive.

## Neuco Adds Hillier as Strategic Account Executive

Neuco recently announced its addition of Jeffrey Hillier as Strategic Account Executive. In this role, Hillier is focusing on driving growth and deepening relationships with Neuco’s wholesale distributor customers.

Hillier brings more than a decade of experience in national account leadership, customer engagement and business development across diverse market segments. Most recently, he served as National Sales Manager at Generac Power Systems, where he led high-performing sales teams across HVAC, electrical and retail accounts. He launched award-winning customer programs and delivered consistent double-digit growth in sectors previously untapped by the power generation industry.

The Strategic Account Executive position was developed to support Neuco’s long-term plans for scalable growth and stronger alignment with their distribution partners. Hillier will play a central role in shaping account strategies, fostering cross-functional collaboration and identifying opportunities to expand Neuco’s value with several key accounts.

Hillier holds a Bachelor of Science in Marketing from DePaul University. He has completed leadership and technical training programs through Generac and Milwaukee Tool and holds a Six Sigma Yellow Belt certification. 📄📄



J.C. Anderson recently announced its new Assistant Project Manager Conor Kovas.

## J.C. Anderson Welcomes New Assistant Project Manager

J.C. Anderson recently announced the joining of its company by Assistant Project Manager Conor Kovas. In his role, Conor supports the Project Management Team in coordinating project activities, managing schedules and budgets, and working closely with subcontractors, clients and internal teams. According to the announcements, Conor will play a key role in ensuring that projects are executed efficiently, maintaining clear communication among stakeholders, and supporting successful project delivery from start to finish.

Congratulations, Conor! 📄📄

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Contact [editor@chiefengineer.org](mailto:editor@chiefengineer.org) and tell us about it!



## National High-Rise Retrofit Summit

# Helping Communities Close the High-Rise Safety Gap

June 9, 2026 | 7:00am-5:00pm

Venue SIX10 (610 S. Michigan Ave.)

Chicago, Illinois



### THE CHALLENGE

Across the U.S., thousands of occupied high-rise buildings, many constructed before modern fire protection standards, still operate without automatic fire sprinkler systems and other essential life-safety features. Even small fires can rapidly escalate into multi-alarm emergencies that place residents at risk and take a toll on fire department resources.

How do we responsibly modernize safety in aging high-rise buildings while also preserving affordable housing?

### A RESULTS-DRIVEN APPROACH

Municipal leaders, fire service professionals, housing officials, building owners, engineers, and safety experts will explore practical solutions for modernizing life safety in existing high-rise buildings.

- Proven retrofit strategies and best practices
- Cost and financing models for fire protection upgrades
- Policy and code considerations
- Lessons from successful retrofit projects

Join the national conversation to move beyond awareness toward real solutions that communities and buildings can implement. Safe housing is stable housing. Strong communities depend on both.

For questions, please contact Erik Hoffer ([erik@nifsab.org](mailto:erik@nifsab.org), 708-403-4468).

### EVENT DETAILS

*The program is free to attend, but registration is required.*

Hosted by the National Fire Sprinkler Association (NFSA) in cooperation with the Chicago Fire Department.

The summit also includes a social reception at the Hilton Chicago on the evening of June 8 and optional high-rise tours on the morning of June 10.

For more details, registration, and room block information at the Hilton Chicago, scan the QR code or visit [www.bit.ly/highrise2026](http://www.bit.ly/highrise2026)



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The success of any health and safety program in the workplace requires the buy-in and participation of workers and their representatives.

## OSHA Recommended Practices: Worker Participation

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

To be effective, any safety and health program needs the meaningful participation of workers and their representatives. Workers have much to gain from a successful program, and the most to lose if the program fails. They also often know the most about potential hazards associated with their jobs. Successful programs tap into this knowledge base.

Worker participation means that workers are involved in establishing, operating, evaluating, and improving the safety and health program. All workers at a worksite should participate, including those employed by contractors, subcontractors and temporary staffing agencies, so that they each understand their roles and responsibilities under the program and what they need to do to effectively carry them out. This means that any potential impediments to any worker's participation — whether it be language, unavailability of information or disincentives — must be removed or addressed.

Furthermore, workers should never experience retaliation for raising health and safety concerns, for reporting injuries or illnesses, or for participating in the safety program, or exercising their rights to health and safety.\*

\*Where workers are represented by a union, it is important that worker representatives also participate in the program, consistent with the rights provided to worker representatives under the Occupational Safety and Health Act of 1970 and the National Labor Relations Act.

\*\*Under OSHA's injury and illness recordkeeping rule (29 CFR 1904), employers are required to establish a "reasonable" procedure for employees to report work-related injuries and illnesses promptly and accurately. A reasonable procedure is defined as one that would not deter or discourage a reasonable employee from accurately reporting a workplace injury or illness.

### Action Item 1: Encourage workers to participate in the program

By encouraging workers to participate in the program, management signals that it values their input into safety and health decisions.

#### How to accomplish it:

- Give workers the necessary time and resources to participate in the program.
- Maintain an open-door policy that invites workers to talk to managers about safety and health, and to make suggestions.
- Acknowledge and provide positive reinforcement to those who participate in the program.

### Action Item 2: Encourage workers to report safety and health concerns

Workers are often best positioned to identify safety and health concerns and program shortcomings, such as emerging workplace hazards, unsafe conditions, close calls/near misses, and actual incidents. By encouraging reporting and following up promptly on all reports, employers can address issues before someone gets hurt or becomes ill.

#### How to accomplish it:

- Establish a process for workers to report injuries, illnesses, close calls/near misses, hazards, and other safety and health concerns, and respond to reports promptly. Include an option for anonymous reporting to reduce fear of reprisal.\*\*

- Report back to workers routinely and frequently about action taken in response to their concerns and suggestions.
- Emphasize that management will use reported information only to improve workplace safety and health, and that no worker will experience retaliation for bringing such information to management's attention (see Action Item 5). Empower all workers to initiate or request a temporary suspension or shutdown of any work activity or operation they believe to be unsafe. Involve workers in finding solutions to reported issues.

### **Action Item 3: Give workers access to safety and health information**

Sharing relevant safety and health information with workers fosters trust and helps organizations make more informed safety and health decisions.

#### **How to accomplish it:**

- Give workers the information they need to understand safety and health hazards and control measures in the workplace. Some OSHA standards require employers to make specific types of information available to workers, such as:
  - o Safety Data Sheets (SDSs)
  - o Injury and illness data (may need to be redacted and aggregated to eliminate personal identifiers)
  - o Results of environmental exposure monitoring conducted in the workplace (prevent disclosure of sensitive and personal information as required)
- Other useful information for workers to review can include:
  - o Workplace job hazard analyses
  - o Chemical and equipment manufacturer safety recommendations
  - o Workplace inspection reports
  - o Incident investigation reports (prevent disclosure of sensitive and personal information as required)

### **Action Item 4: Involve workers in all aspects of the program**

Including worker input at every step of program design and implementation improves your ability to identify the presence and causes of workplace hazards, creates a sense of program ownership among workers, enhances their understanding of how the program works, and helps sustain the program over time.

#### **How to accomplish it:**


- Provide opportunities for workers to participate in all aspects of the program, including, but not limited to helping:
  - o Develop the program and set goals.

- o Report hazards and develop solutions that improve safety and health.
- o Analyze hazards in each step of routine and nonroutine jobs, tasks and processes.
- o Define and document safe work practices.
- o Conduct site inspections.
- o Develop and revise safety procedures.
- o Participate in incident and close-call/near-miss investigations.
- o Train current coworkers and new hires.
- o Develop, implement, and evaluate training programs.
- o Evaluate program performance and identify ways to improve it.
- o Take part in exposure monitoring and medical surveillance associated with health hazards.

### **Action Item 5: Remove barriers to participation**

To participate meaningfully in the program, workers must feel that their input is welcome, their voices will be heard, and they can access reporting mechanisms. Participation will be suppressed if language, education or skill levels in the workplace are not considered, or if workers fear retaliation or discrimination for speaking up (for example, if investigations focus on blaming individuals rather than the underlying conditions that led to the incident, or if reporting an incident or concern could jeopardize the award of incentive-based prizes, rewards or bonuses).\*\*\*

#### **How to accomplish it:**

- Ensure that workers from all levels of the organization can participate regardless of their skill level, education or language.
- Provide frequent and regular feedback to show employees that their safety and health concerns are being heard and addressed.
- Ensure that the program protects workers from being retaliated against for reporting injuries, illnesses and hazards; participating in the program; or exercising their safety and health rights. Ensure that other policies and programs do not discourage worker participation.
- Authorize sufficient time and resources to facilitate worker participation; for example, hold safety and health meetings during regular working hours.
- Post the 11 (c) fact sheet (found at [www.whistleblowers.gov](http://www.whistleblowers.gov)) in the workplace or otherwise make it available for easy access by workers. 

\*\*\* Incentive programs (such as point systems, awards, and prizes) should be designed in a manner that does not discourage injury and illness reporting; otherwise, hazards may remain undetected. Although sometimes required by law or insurance providers, mandatory drug testing following injuries can also suppress reporting. Effective safety and health programs recognize positive safety and health activities, such as reporting hazardous conditions or suggesting safer work procedures. (See OSHA's "Employer Safety Incentive and Disincentive Policies and Practices" memorandum, dated March 12, 2012: [www.whistleblowers.gov/memo/2012-03-12](http://www.whistleblowers.gov/memo/2012-03-12) and "Clarification of OSHA's Position on Workplace Safety Incentive Programs and Post-Incident Drug Testing Under 29 C.F.R. § 1904.35(b)(1)(iv) memo, dated October 11, 2018: [www.whistleblowers.gov/memo/2018-10-11](http://www.whistleblowers.gov/memo/2018-10-11).)

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# A Chicago Perspective: We Know Water

By Kate Gawlik

*Global Water Technology Inc. has a new headquarters for a team dedicated to reducing water consumption, extending system life, improving reliability and giving clients unmatched visibility into system performance.*

It's hard for water not to be on the minds of Chicagoans. Admiring Lake Michigan, the Chicago River, Rowing Lagoon, Buckingham Fountain, and all the waterways throughout the surrounding suburbs and communities is incorporated into the fabric of what we Metro Chicago residents do.

As the 6th Annual Chicago Water Week is celebrated May 3-9, communities can further recognize how water and wastewater management impact the Chicagoland area. Various indoor and outdoor Water Week sessions have been planned to highlight water challenges, build connections among water advocates, and educate communities and professionals about various water-related topics.

Operated by Current, Chicago Water Week pulls in participants with a variety of topics and tours, such as Great Lakes, High Stakes: How we can steward the Great Lakes advantage, a panel led by the Chicago Metropolitan Agency for Planning (CMAP) exploring how northeastern Illinois can turn Great Lakes water abundance into a durable regional advantage, or the MWRD's Virtual Tour of Chicago Area Water Infrastructure and History, Urban Rivers' Wild Mile Nitrogen Tour and much more. Head to [currentwater.org/chicago-water-week](http://currentwater.org/chicago-water-week) for more details.

Alaina Harkness, CEO of Current, says, "Chicago Water Week is a chance for anyone — whether you're decades into a career in water or just someone who cares deeply about clean water and a healthy planet — to connect and learn what's happening in the ecosystem. From technical discussions about the latest

research to community events, there's something for all levels of interest. We love seeing the growth of partners and attendees from all over the region engaging every year.

For the Chief Engineer Association of Chicagoland (CEAC) and Local 399, water filters into daily tasks. Various experts share their take on this, as well as current trends, concerns, challenges and future initiatives.

## **Chief Engineer: What trends are happening in the water industry in Chicago?**

### **Brian R. Burgess, Owner/Operator of Chicago Water Treaters and Associate Professor for Triton College:**

Part of living in Chicago and working with process water is our absolute abundance of water. We're continuously improving the health of our rivers and are able to treat more and more wastewater through the largest wastewater reclamation system in the world at the Stickney Water Reclamation Plant. The Great Lakes continue to be something we need to protect as we have been given all the excellent quality water we could ever ask for and more.

It's our responsibility to make sure that we continue to prevent any illegal dumping, and the U.S. Environmental Protection Association is well funded and can continue their mission. In my sectors, both process and drinking water, we're seeing continued interest in water efficiency. However, it needs to be balanced with making sure we keep reliability and system life maximized.



Michael Byerley is the chairman and CEO of Global Water Technology Inc., a national, MBE-certified water solutions company.

**Michael Byerley, Chairman & CEO of Global Water Technology Inc. (GWT):** In Chicago, we’re seeing a continued shift from reactive water treatment to more proactive, data-driven water management. Building owners and operators are thinking less about “treating water” and more about managing entire systems with a focus on performance, efficiency and risk reduction. Another important trend is the continued professionalization of the industry. Historically, a lot of programs were driven by individual, high-performing reps who built and managed systems based on their own experience and approach. While that expertise is still critical, clients today are looking for something more scalable and consistent. They want infrastructure, systems and guidance that are rooted in the organization, not dependent on a single individual. The expectation is for repeatable, measurable results across an entire portfolio. That does not replace the importance of the individual delivering the service at each site, but it complements it with a stronger foundation behind them.

**Patricia Theresa Flynn, Vice President of Metropolitan Water Reclamation District of Great Chicago (MWRD) Board of Commissioners:** We treat wastewater, manage stormwater, and work to protect public health and the quality of our waterways and the source of drinking water in Lake Michigan, so we know water. In our work, we notice several emerging trends that include:

- **Increased focus on climate resilience:** More intense rain events are driving the need for upgrades in stormwater storage and flood-mitigation planning.
- **Increased use of green infrastructure technologies:** There is improved stormwater management on a neighborhood-by-neighborhood scale. Municipalities, park districts, schools and other government entities are partnering with the MWRD to install permeable surfaces, detention features, bioswales and native landscaping to offset runoff. The more stormwater runoff

we can capture, the more room we have in our pipes and sewers to collect heavy rainfall, keeping it out of our basements and out of our water resources.

- **Nutrient removal and watershed health:** There is a growing emphasis on phosphorus reduction, river water quality improvements and habitat restoration. As one of the biggest discharging sources of water that eventually reaches the Gulf, we have an obligation to reduce the amount of phosphorus and other nutrients that are flowing downstream to the Des Plaines River, Illinois River and eventually the Mississippi River and the Atlantic Ocean. To meet new permit goals, we have invested in new technologies to remove phosphorus and, at our Stickney Water Reclamation Plant, crystallize the phosphorus and nitrogen into small granules that can be sold as an environmentally responsible, low-soluble, high-value fertilizer.
- **Water conservation:** We might live on the shores of 20 percent of the world’s fresh surface water in the Great Lakes, but we still have an obligation to protect that prized resource. One way we strive to protect it is by minimizing our use. We are investigating potential water reuse strategies at our water reclamation plants, distributing discounted rain barrels and promoting water conservation efforts like Overflow Action Day alerts that also work to protect our water environment.

**Harkness:** There’s growing momentum around circular water solutions including industrial water reuse, that make better use of water and wastewater while recovering valuable resources like phosphorus, critical minerals and even energy. The Chicagoland area and broader Great Lakes region are especially well positioned to lead here thanks to our abundant freshwater, strong research institutions and a rapidly expanding ecosystem of innovators advancing these technologies. We’re also seeing more cross-sector collaboration than ever before, with utilities, industry, academia and startups working together to move



Patricia Theresa Flynn shared her knowledge and experience as a speaker at the 6th International Conference on Water & Waste Management in Ahmedabad Gujarat, India.



Jim and Brian Burgess (left to right) are the owners and operators of Chicago Water Treaters, which provides direct water treatment services to the Chicagoland area.

innovation from the lab into the market. One example of this is the Sustainable Water Tech Accelerator that we launched in partnership with the HardTech innovation center mHUB late last year to support seven water tech startups developing a range of solutions around resource recovery, contamination removal, and improvements in water and energy efficiency.

**CE: What are the most pressing water challenges for the city and surrounding area?**

**Burgess:** We're abundantly optimistic about the challenges Chicago faces. Compared to many municipalities dealing with truly insurmountable issues, ours are more refined, detailed and ultimately more solvable. The city continues to add on more municipalities surrounding Chicago as these municipalities have larger water challenges from either drying wells or aqueducts.

Compared to our past, the river used to be a dumping ground. Many of us could never imagine "Bubbly Creek" being a good spot for a park. I often take walks along Chicago River not only in the Loop but in the "Wild Mile" near Goose Island. This area of the river was originally channeled out only for industrial use. The river today supports wildlife, and we're getting more water recreational use every summer.

We have more internal and more nuts-and-bolts problems we can focus on, such as the safety of water in individual homes, as well as making sure equipment that utilizes water is lasting as long as possible. We need to make sure our politicians are not going to make short-term decisions or reduce funding that may risk greatly polluting the lakes or rivers. If history is a lesson, we

were able to pollute our rivers and lake very quickly, and the cleanup has taken over a century. I'm seeing an overall trend in asking for more, and this relates to buildings and individual locations as well. The status quo has been pushed from wanting reliability to more efficiency, greater lifespans of industrial equipment, with more efficiency and performance. We're here to meet that challenge.

**Byerley:** Even with access to a high-quality water source like Lake Michigan, buildings in Chicago still face significant internal challenges. Aging infrastructure, inconsistent maintenance practices, and limited visibility into system performance continue to impact reliability and efficiency. One of the more immediate pressures is the rising cost of water and sewer in the Chicagoland area. As rates continue to increase, water is no longer viewed as a low-cost utility and, inefficiencies that may have gone unnoticed in the past, are now becoming more material from an operating cost standpoint. At the same time, broader increases in fuel and energy costs across the country are compounding the issue. Water and energy are closely linked in building systems, particularly in boilers and cooling operations. Inefficient water management often leads directly to higher energy consumption, so rising utility costs are putting more focus on system optimization as a whole. Another growing concern is system longevity and the rising cost of repair and replacement. We are seeing more instances where inconsistent or ineffective water treatment programs lead to premature wear, scaling, corrosion and ultimately capital-intensive failures. As the cost of materials, labor and equipment



Partnering with a vendor should bring a higher level of confidence in system function and customer service.

continues to increase, extending asset life is becoming a much more important part of the conversation. Water safety also remains a critical concern. Legionella risk and overall domestic water management continue to be areas where many buildings are still developing more structured and consistent approaches, particularly in healthcare, senior living and large commercial facilities. Overall, the challenge is less about water supply and more about how water is managed within the building. There is a growing need for more proactive strategies that address cost, efficiency, asset protection and safety in a coordinated way.

**Flynn:** We serve Chicago and 128 suburban communities across Cook County. It is the second largest county in the country, and with it comes a wide range of issues related to water. Each community is faced with different challenges and is equipped with varying resources to handle them. It is our goal to face these pressing challenges with inclusivity because water does not have borders. Each of our watersheds has flooding challenges, and when we convey water from one community to another, we still must manage that excess water. Our annual stormwater management partnership and conceptual projects programs allow communities to connect with us and apply for funding and engineering expertise to build resilience. It is one of the many pressing water challenges that also includes:

- **Extreme storm events overwhelming the combined sewer system:** Sudden, high-intensity storms continue to push the limits of sewer capacity, increasing risk of basement backups and combined sewer

overflows.

- **Aging infrastructure:** Many sewer lines throughout the county are at or beyond mid-life and need renewal or rehabilitation. Our three largest water reclamation plants are more than 90 years old, with our Calumet Water Reclamation Plant more than 100. With a century of service, there are increased maintenance costs to keep operations flowing, while meeting new innovations and



The clarity of water doesn't tell the whole story about what Chicago Water Treaters does, but it tells a lot.



The 6th Annual Chicago Water Week takes place May 3-9 with various indoor and outdoor sessions, like one at the Shedd Aquarium.

efficiencies that reduce our energy consumption and carbon emissions.

- **Localized urban flooding:** Neighborhoods with limited drainage capacity, minimal green space or historically undersized sewers see disproportionate flooding impacts.
- **Nutrient load management:** Meeting future phosphorus and nitrogen limits will require continuing process optimization and capital upgrades.
- **Adapting to regulatory and public expectations:** Regulations are always changing, and it's important to maintain our permits, so determining which projects to fund can be difficult.
- **Aging workforce:** Years of experience are often replaced by industry newcomers.
- **Addressing emerging contaminants:** There are forever chemicals, drugs, road salts, microplastics and trace organic contaminants in water that utilities like ours have no control over, yet we are challenged to uphold the same clean water standards no matter what flows our way. The best way to keep unwanted pollutants out of the wastewater treatment process and the environment is by reducing them at the source. We urge households and industries to consider what they buy and what flows down their drains and into their sewers. We all play a role.

**Harkness:** Water innovation in the Great Lakes region has suffered from the paradox of abundance: We have the perception that our freshwater is limitless, so we don't value, price, or manage it as if it is the precious and fundamental resource it is. We're already seeing conflicts in our region today in communities facing groundwater shortages, and growing pressures of industrial demand — we're seeing this play out in communities every day as they debate the future location of data centers. Our region has a major opportunity to respond to this growing demand by doing more with the water we have, to move our water systems closer to circular, renewable, and "fit for purpose," putting every drop of water to its highest and best use. Industrial water reuse and using treated "waste" water for energy are two big ideas that are technically feasible, but face some steep barriers to adoption in practice. Keeping harmful contaminants out of our drinking water and recovering the valuable materials that can be found in our wastewater — from nutrients to critical minerals to energy — is the heart of the technical challenge we're tackling with Great Lakes RENEW, our National Science Foundation-backed Regional Innovation Engine. That combination of breakthrough material science, paired with engineering solutions, will help us come up with better and more cost-effective ways to develop circular solutions, but we will also need coordinated, courageous leadership and creative financing to get first-of-a-kind project demonstrations off the ground. That's a call to action for visionaries in this industry who want to make a generational difference.



Nina Dudnik, Ph.D, chief commercial officer of Current, was one of the panel speakers at the Freshwater Forum 2025, a main event during Chicago Water Week.

**CE: What are some programs or future advancements that have you excited?**

**Burgess:** With respect to water usage, we need to lay out there that cooling can be done through water usage or electricity usage, as well as a combination of both. There’s a tradeoff, though, at a local level; you can use less electricity if you use more water, and vice versa. Using water makes a lot of sense in our area for several reasons. Most of the evaporated water ends up back as rain, and our supply is virtually endless, so the only bottleneck is at the municipalities’ ability to supply. I hope to see more companies using water over electricity, as it’s a far more efficient and scalable resource in our area. To pivot back to process water or in-building water specifically, we have a lot of promises about AI, automation, or other new technology that might reduce the amount of labor needed. Here at Chicago Water Treaters, we’re going to continue to rely on these when they become dependable and reliable. Mission-critical equipment like a steam boiler or chiller in a hospital have lives depending on these. AI and automation can’t be viewed as cost-cutting measures and need to be introduced to critical equipment as a performance enhancing tool.

**Byerley:** We’re excited about the continued evolution of remote monitoring, automation and digital platforms that allow for real-time visibility into system performance. This enables faster decision-making and more consistent execution. There’s also meaningful progress in water safety technologies, including better monitoring for biological risk and tools that support

compliance and documentation. At GWT, we’re particularly focused on integrating these technologies into a broader service model, where data is not just collected, but actually drives action in the field. Technology on its own is not the solution, it’s how it’s applied that creates value.

**Flynn:** So much of our work at the MWRD has an eye toward the future while blending the successful use of tried-and-true technologies and transformative innovation. This work is performed with an eye on the complete environmental and social landscape, promoting sustainability wherever possible. Here are a few examples:

- **Taking climate action:** Although the full impact of climate change has not yet been felt, the MWRD decided to plan for climate change to ensure that we can continue to provide reliable, high-quality wastewater treatment and stormwater management services while reducing our carbon footprint. In 2023, we adopted our Climate Action Plan — a major milestone that provides us with a structured path forward. We set internal goals that reflect both what’s achievable today and what we aspire to in the long term and developed an interactive dashboard to track progress toward climate goals. The dashboard highlights energy use and provides a breakdown of greenhouse gas contributors, allowing us to target reduction efforts more effectively. The MWRD has already reduced carbon emissions by 39.7 percent from the baseline year of 2005.

- **Energy reuse:** In addition to water reclamation, we have been reutilizing the biogas from our digesters to help heat and cool our facilities for decades. In addition to advancing cutting-edge research and developing technologies to optimize energy use and right-size treatment operations, such as integrated feedback controls and AI-powered decision support systems, we are also developing clean energy initiatives that include co-firing boilers and combined heat and power (CHP) systems. At our Egan Water Reclamation Plant in Schaumburg, Ill., we are currently building a CHP system that will help us reduce our energy demands.
- **Stormwater partnership programs:** MWRD-supported municipal and community stormwater projects featuring green alleys, detention basins, bioswales, etc., will help reduce flooding at the neighborhood scale.
- **Watershed-based planning:** More collaboration across municipalities for regional stormwater solutions rather than siloed local fixes are becoming more of a norm.
- **Workforce and technology modernization:** Drone use, GIS integration, AI and improved monitoring tools are providing more accurate condition assessments.
- **Diverse workforce.** I am proud to promote the increasing role of diversity in our field, reflecting the communities we serve. Following Women's History Month, we are excited to see more young women enter the STEM fields who are critical to protecting our environment.

**CE: Talk about your relationship with CEAC and the importance of its members' work.**

**Burgess:** I'll be blunt — your average CEAC member or Local 399 engineer has the best training in the world when it comes to managing their facility. When I founded Chicago Water Treaters, becoming an associate member of CEAC was one of my first calls. It's been an absolute privilege to work alongside these engineers. They understand that water quality directly impacts building reliability, occupant health, and in some cases, safety, when it comes to critical equipment.

The challenge today isn't convincing engineers. It's communicating across all levels of an organization how much the right partners, programs and sometimes upgrades can improve system reliability. Ironically, sometimes removing automation can have the impact of increasing reliability.

Too often, water treatment gets reduced to an "oil change" and upper management sees it as something you do because you have to. In reality, it's much closer to having a trusted mechanic. The value isn't in the oil change; it's in the ability to spot problems early, prevent failures and keep the entire system running the way it should.


A building engineer knows their facility better than anyone, and ultimately carries the responsibility for it. They should also have the authority to choose the partners and programs that support it. When that authority is stripped away, accountability usually goes with it. And where accountability disappears, problems tend to follow.

**Byerley:** Chief Engineers are at the center of building performance. They are responsible for complex systems that directly impact safety, efficiency, and occupant experience, and

they ultimately carry the responsibility for how those systems operate day to day. Across the industry, there is a growing recognition that water plays a critical role in overall building performance, even though it has historically been under-emphasized. It touches boilers, cooling systems, domestic water and safety programs, yet it is often managed reactively rather than as part of a broader operating strategy. There is also a continued push toward education and alignment through trade organizations and groups like CEAC, which bring together engineers across multiple unions and facility types. These forums are becoming increasingly important as systems become more advanced and regulatory, and compliance expectations continue to evolve.

Engineers are being asked to manage more complexity, and access to practical, field-based knowledge is essential. At the same time, we are seeing more focus on targeted building upgrades that improve both efficiency and risk management. Many facilities have opportunities to reduce water and energy consumption, extend asset life and improve safety through relatively straightforward improvements. The key is pairing those upgrades with consistent operating practices and ongoing oversight. From a service provider perspective, there is also a shift toward more collaborative partnerships with engineering teams. The most effective outcomes tend to come when providers understand how buildings actually operate, and can support engineers with both technical guidance and execution in the field.

**CE: What would you say to someone who thinks water quality and conservation are not important in the built environment?**

**Harkness:** Water is essential to our lives and livelihoods, whether we know it or not — the health of every single human being, building and industry depends on it. Water and energy are deeply connected, so the ways we power our entire built environment depends on smart water management. Even here in the Great Lakes, where we are fortunate to live next to 20 percent of the world's fresh surface water, continued supply of clean water isn't a guarantee. And in an environment in flux, the risks water creates for the built environment are growing every day. For many of us who aren't experiencing severe water scarcity, it's easy to take reliable water delivery and treatment for granted and not think twice about its role in our daily lives. In reality, the quality, reliability and resilience of our built environment will depend on the forward-looking choices we make today about investments in our water systems and infrastructure. As water risks rise and pressures on our water systems rise, the people and places that are moving towards circularity will be best positioned to succeed. 

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

# Defining the Legacy of Local 399: Meet Patricia Theresa Flynn

By Kate Gawlik

Patricia Theresa Flynn, the vice president of the Board of Commissioners of the Metropolitan Water Reclamation District of Greater Chicago (MWRD), is no stranger to hard work and understanding the mission of the agency of which she serves. She learned these lessons from her dad, William Casey, who retired from MWRD as the main office building's Chief Engineer. William was a Local 399 member for 34 years.

"IUOE 399 was responsible for the food on our table, tuition payments, summer vacations to Ireland, and overall provided a quality standard of life for my brothers and me — a lifestyle that is known to many of those in union households," she says. The legacy of Local 399 continues in the family with Flynn's three brothers — Bill, Sean and Kevin Casey — who proudly have represented Local 399 around the city of Chicago for decades.

Flynn says, "Local 399 has a vast history of people lifting people, to push to educate their members and always advance the safety of employees and the entities that employ them in the most environmentally sound conditions."

Flynn has dedicated her career to advancing others and to advocating for clean water. Prior to running for local office, Flynn was a MWRD employee, working in filed work with




Patricia Theresa Flynn (left) poses with Barbara Hickey, director of operations for Willis Tower and a Local 399 member, at a MWRD Women's History Month event in March called "Leading the Change: Women Shaping a Sustainable Future." Hickey was a presenter and award recipient.

the Pollution Control section and in the Calumet Water Reclamation Plant laboratory. In 2011, she became the first woman elected to the Crestwood Board of Trustees because of her determination and her central belief in clean water. She was motivated to seek this position when residents had unknowingly consumed water contaminated with vinyl chloride. The village at that time was accused of illegally mixing water from a tainted well with Lake Michigan water, resulting in numerous felony charges and litigation.

Community engagement is evident in her life. As a trustee, she spearheaded an Art Council, hosted blood drives, initiated free little libraries, started a veteran banner program and brought the "responsible bidder ordinance" to Crestwood. She is a lifelong member and former director of Chicago Gaelic Park, supporting Irish sport and culture. She also sits on Illinois Comptroller Susana A. Mendoza's Advisory Council. In Flynn's role as commissioner, she is out in the community where the district services. That area includes all 50 Chicago wards and 129 municipalities.

In these neighborhoods, Flynn is committed to supporting education and showing young adults the career opportunities that are available in the trades. She notes this comes by engaging with students at the high school level and working with community colleges to show people that apprentice programs, meaningful careers and continuing education are waiting for them.

Flynn states, "With the nuances of AI on the doorstep, we need skilled trade members to be prepared on every level. Education is key to building a resilient workforce. At the district, the motto is hire 'the best and the brightest.' As a world leader in the wastewater treatment and flood control arena, I am committed to that ideal." 

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



William J. Casey, retired Chief Engineer, stands with his daughter, Patricia Theresa Flynn, recognizing Irish and Irish American contributions in labor resolution.

# St. Patrick's Day Dinner

The March St. Patrick's Day Dinner is always one of the most anticipated and best-attended meetings of the year, and this year was no exception. We would like to thank our many sponsors for this event, from our Event Co-Sponsors Air Comfort, Chicago Backflow and Preservation Services, as well as our Bar Sponsors Abron Filter Supply, Chicago Filter Supply, BEAR Construction and Valley Fire Protection & Plumbing, and to our Band Sponsor, ABM. None of these wonderful events could take place without our ever-supportive Associate Member organizations who volunteer to sponsor them, so please remember to support them in kind by calling on them when you need outside services. Many thanks also to our Event Committee, and to all of the fine folks at the Irish American Heritage Center for serving such an excellent dinner, and to the Boils for adding their touch of traditional Irish music.

Our May BBQ will take place Wednesday, May 20, from 4:00-7:00pm at Chicago Gaelic Park, 6119 147th St, Oak Forest. Sponsorship opportunities are still available, so if you're interested in elevating your company's profile at this or at any other Chief Engineers meeting, please don't hesitate to reach out to [events@chiefengineer.org](mailto:events@chiefengineer.org).



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# Designed for Deflagration: Architectural Solutions to Safeguard Industrial Facilities

*Architecturally integrated building safety vents protect structures from explosions, relieving internal overpressure before walls, roofs, or building structures are damaged.*

In building design, some of the most critical safety features are the ones never meant to draw attention. For industrial facilities at risk of deflagration events, building safety vents serve as clear illustrations of this principle.

Deflagrations can occur in any environment where flammable gases, vapor or combustible dust may collect in enclosed or partially enclosed spaces. Such incidents most commonly occur in mechanical and boiler spaces, laboratories, paint and finishing operations, and enclosed process areas. Similar conditions can arise in battery-charging bays, where open dusty material handling occurs, or in utility rooms without proper ventilation.

Unlike a detonation, which produces a supersonic shock wave of great destructive force, a deflagration is slower moving but still produces unacceptably high pressures in a confined structure that will risk its rupture and arising damage. Both detonations, which can occur with highly reactive gases such as hydrogen — a focus with respect to Battery Energy Storage System or BESS deployment — and deflagrations can generate, in the blink of an eye, pressures that far exceed the strength of buildings whose architectural focus is typically to meet design code requirements for weather impact conditions. A strong building may achieve a “design pressure” of 1 psi whereas the milder deflagration condition will generate typically 50 to 100 psi of pressure in a high strength enclosure.

Deflagration events can be extremely dangerous. When ignition occurs within a confined space, the expanding combustion gases press outward rapidly at high temperature and pressure. If this pressure is not intentionally relieved, the structure can suffer significant damage, and occupants or nearby individuals may be seriously injured. Detonation events have an elevated ability to generate powerful shock waves.

To address this issue, building codes and fire protection standards require deflagration vents to be installed into the roof or exterior walls to provide a relief path for hot gases and flames to escape in a controlled manner. These safety vents are designed to open or rupture at a defined pressure, directing the discharge toward a safe exterior location.

Because these vents are frequently incorporated directly into the building envelope, their design should align with the overall architectural intent, says Geof Brazier, Managing Director of BS&B Safety Systems Explosion Protection Division. The company offers VSB™ vents, which are specialized explosion relief panels designed for vertical installation and engineered to activate at low pressure set points.

“The aesthetics of the vent design are a legitimate concern when incorporated into buildings, particularly on commercial or architecturally prominent projects,” says Brazier.

In many cases, vents are engineered to resemble conventional windows.

“Building safety vents can be manufactured with opaque or aluminum panels for privacy, or translucent panels that let in light,” explains Brazier. “This approach allows the venting system to integrate discreetly into the architectural design without compromising its protective function.”

## **Meeting the Code Requirements**

According to Brazier, code and standards requirements establish how these systems are implemented.

“The criteria used to determine vent construction, size, and quantity are based on the specific hazard involved and the performance objectives defined by applicable codes and standards,” says Brazier.



BS&B Safety Systems' VSB vents are designed so that explosive pressure from deflagration escapes the building rather than causing structural damage.

The National Fire Protection Association 68, Standard on Explosion Protection by Deflagration Venting — including its 2023 edition — establishes the engineering framework for protecting buildings and enclosures through deflagration venting. NFPA 68 addresses issues such as vent sizing, location, activation pressure, discharge direction, and required separation from occupied zones or adjacent structures.

Specification of safety venting products is typically shared between licensed architectural design professionals and the authorities having jurisdiction. Mechanical and fire protection engineers generally determine when venting is warranted based on the International Building Codes.

"During design, these engineers assess the nature of the hazard, whether involving flammable gas, vapor, or combustible dust, along with the credible worst-case pressure that could develop," Brazier explains.

Vent selection is determined through an evaluation of the enclosure's size and structural capacity, the design strength, and the total vent area necessary to maintain internal forces within allowable limits. Placement and orientation are then configured to ensure that any vented discharge is directed away from occupied areas, exit pathways, adjacent buildings, and essential equipment.

The number of safety vents required in a building varies widely and depends on the volume of the enclosed space, the reactivity of the gas, vapor or dust hazard, and the amount of relief area needed to keep internal pressure below the building's damage threshold.

"A small room may only justify a single relief panel, while larger process or manufacturing spaces often call for multiple devices distributed across roof or wall surfaces," says Brazier.

To accommodate the range of building apertures required to achieve the necessary vent area for deflagration venting options, BS&B offers custom sizing of its VSB individual wall panels up to 48" x 72". Multiple VSB vent panels can be supplied as an array in a single frame up to a readily shippable size of 96" x 72" and multiple VSB arrays can be combined to achieve large total vent areas.

### Low Pressure Activation

One of the challenges is that building deflagration venting must occur at relatively low pressures, in the range of 20 to 70 pounds per square foot (0.14 to 0.5 psi). NFPA 68 requires that building vents open at a defined low activation pressure so that pressure relief begins before damaging loads develop. The dynamic



Inside view of BS&B Safety Systems VSB venting system.

conditions of a deflagration cause the pressure to rise significantly higher than the set pressure of the explosion venting device. The larger the vent area, the lower the peak pressure experienced.

"Building vents must respond at very low set pressures comparable to a strong gust of wind," explains Brazier. He adds that safety vent set pressures start at approximately 20 pounds per square foot (10 mBar), and that a "sweet spot" for most buildings is usually about 30 pounds per square foot (15 mBar).

In the event of a deflagration, BS&B Safety Systems' Vent-Saf explosion vents provide rapid and unrestricted opening at a predetermined burst pressure (Pstat).

Each vent has a centrally mounted factory set "burst tab" to control set pressure, which allows the vent to open at incredibly low pressures. To ensure near-instantaneous response, the venting components are constructed with minimal mass. Lightweight materials such as aluminum or composites and translucent polycarbonate enable rapid activation when pressure rises.

BS&B also designs each vent to meet the non-fragmentation criteria established in NFPA 68. This ensures that, upon activation, the device does not break apart into debris that could become hazardous projectiles or create secondary risks within or adjacent to the building.


### Sizing Assistance

According to Brazier, architects — not just engineers — are often involved in the specification of safety vents. When that is the case, companies like BS&B Safety Systems provide technical guidance throughout the specification process.

"Some architectural firms that specify building safety vents frequently are quite familiar with the topic and can do it themselves," says Brazier. "But there are times when someone is choosing low-pressure building protection for the first time in his or her career, and we can assist in vent selection."

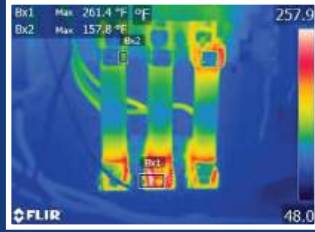
This includes evaluating enclosure volume, expected overpressure characteristics, and applicable code requirements to ensure that the selected product delivers the required level of protection.

"By working methodically through these parameters, the correct sizing can be established with confidence, aligning performance, safety and compliance objectives," says Brazier.

For more information, contact BS&B Safety Systems at 7455 East 46th Street, Tulsa, Okla., 74145-6379, call: (918) 622-5950, e-mail: sales@bsbsystems.com or visit [bsbsystems.com](http://bsbsystems.com). 

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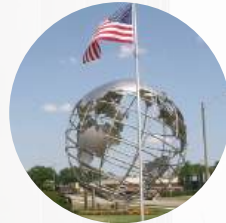
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## **Growing Up in the Trades: Family Support Led Thomas P. Rountree to a Career in Engineering**

*This is the first in a two-part sequence of stories focusing on the FBI Chicago Regional Office.*

*By Marcy Marro*



Cory Lane, Jamie Garcia, Frank Gallina and Tom Rountree atop the FBI Chicago Regional Office.

The trades run deep in Thomas P. Rountree's family, where his family played a significant role in shaping his interest in becoming an engineer. "Their guidance, support and early exposure to facilities inspired me to pursue engineering," he says. "Growing up surrounded by family members in the trade, I was naturally drawn to the profession. Touring buildings with my grandfather, uncles, and brother gave me insight into what it meant to run a facility, and I looked forward to one day managing a building of my own."

Rountree, now the Operations Manager at Cushman & Wakefield for the FBI Chicago Regional Office, was born and raised on the Northwest side of Chicago, where he is the youngest of six children in a large, Irish Catholic family. His father was a Chicago firefighter and his mother a registered nurse. Growing up in the Hiawatha Park neighborhood, he attended St. Francis Borgia for grammar school, and graduated from St. Patrick High School.

Rountree met his wife while they were both working at a local grocery school during high school. They got married in 2006 and settled in Norridge, where they still reside today.

### Hands-On Experience

Rountree began his Local 399 apprenticeship in 1997 at Discover Card in Riverwoods, Ill., with ABM Engineering Services. After earning his City of Chicago Stationary Engineer License in 2001, he went to work as an Operating Engineer with Grubb & Ellis at the 800,000-square-foot Old Orchard

Woods Office Complex with buildings that dated from 1949 to 1973. "I gained invaluable hands-on experience with steam, pneumatics, electrical systems and troubleshooting while completing my associate degree at Triton College," he says.

Rountree became a member of the Chief Engineers Association of Chicago in 2000 when he started his first job at a Journeyman Engineer at Discover Card. "A friend invited me to attend a meeting, and I've been involved ever since," he says.



Frank Gallina and Cory Lane with redundant building equipment — a spare motor and disconnect.

After working at Old Orchard, Rountree went on to become Chief Engineer at a medical office building located next to Illinois Masonic Hospital with Able Engineering, where he oversaw two high-pressure steam absorption units and further developed his construction and project management skills.

In 2013, Rountree joined the FBI Chicago Regional Office as Chief Engineer with ABM Engineering and was promoted to Operations Manager with Cushman & Wakefield in 2020.

Rountree became a Local 399 member and completed his associate degree in applied science at Triton College in 2008 and went on to study at the Illinois Institute of Technology, earning his bachelor's and graduate degrees in Industrial Technology. He is also working on his Real Property Administrator (RPA)/Facilities Management Administrator (FMA) Designations through BOMA Chicago, where he is also an instructor teaching the Design, Operation, and Maintenance of Building Systems I course this spring.

"I recently spoke with a family member considering the trade and told them Local 399 offers exceptional training, job security, education and benefits," he says. "It remains one of the best decisions I've made as I look back to being a 30-year member."

## Engineering Details

As the operations manager for the 800,000-square-foot FBI Building, Rountree oversees engineering, janitorial and management functions as well as tenant communications, project planning, budgeting and forecasting. The engineering team is made up of Frank Gallina, Chief Engineer; Cory Lane, AM Lead Engineer; and Jamie Garcia, the Assistant Property Manager.

Daily tasks for the group include BAS monitoring, interior and exterior rounds, vendor management, escort assignments, safety reviews, work order completion, security coordination and ongoing project oversight.

"Supporting a mission-critical federal agency is highly rewarding," Rountree says. "Despite [the building] being nearly 20 years old, the facility remains in Class A condition, thanks to the dedication and hard work of our engineering and janitorial teams."

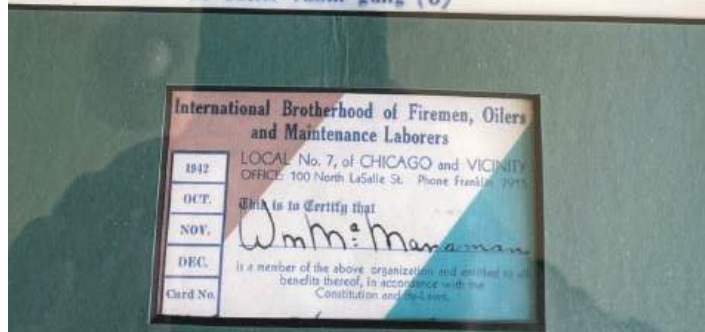
## Security Clearance

The FBI requires significant measures for anyone who needs to work within the building. These requirements include a 10-year "secret clearance" background check and restricted access protocols. The level of security required for the FBI building is a significant change from your average office building and takes quite some time to get used to.

"New employees with engineering, janitorial or the management teams receive daily escorts, and cannot hold an access badge or building keys until they receive their secret clearance provided to them by the federal government,"



Joe Deferville visits boiler room gang (6)



Rountree's grandfather William McManaman, 1944 — Fireman/Oiler - Tribune Tower Boiler Room. (Right of the Soldier, with Train Engineer hat.)

Rountree explains. "While awaiting my clearance, I couldn't hold keys or have access to anything in the building without an escort present."

## Complex Coordination

All planned maintenance at the building is closely coordinated with the FBI to avoid operational impact and the required security clearances and federal access requirements make contractor and vendor coordination complex at the facility.

"Every person entering the building must be cleared, fingerprinted and escorted, which can take significant time," Rountree explains. "Communication and coordination are critical to maintaining seamless operations. Contractors and vendors cleared for site access must be escorted and the escort must be able to always maintain a line of sight with them."

If there are multiple trades in the building at one time, multiple escorts are provided by the tenant agency and must be reserved. "We are responsible for the escorts' daily setup and safety, and one of the engineers' responsibilities would be to set up the trade along with their escort."

They are also responsible for providing PPE to the escort and making sure they maintain a safe distance from where the work is taking place. "This process can take up most of our engineer's day, along with the service calls that come in and the daily to-do lists of maintaining the facility," Rountree adds.



Rountree's father, Thomas F. Rountree, Chicago Fire Fighter, Engine 44, 1971. (Second from left.)

## An Evolving Field

The engineering field, like most industries these days, is facing a variety of challenges, including increased vacancies, staffing shortages, limited capital budgets and rapidly evolving technology.

With AI integration at the forefront of the industry, Rountree says tools like ChatGPT and Copilot are becoming embedded into multiple platforms, helping engineers streamline processes and optimize building performance. "AI and digital tools evolve rapidly," Rountree says, "and if you aren't committed to learning, you will quickly fall behind."

"Automation and new digital platforms continue to evolve, making it possible to integrate smarter systems into daily operations," Rountree adds. For example, at the FBI Building, Rountree says they are focusing heavily on digitizing engineering functions to eliminate paper logs and improve tracking, trending and overall operational efficiency.

"Continuous learning is essential to stay ahead," Rountree says. "One of the big questions we need to ask ourselves daily is how are we providing value to our owners and at the same time, providing a Class A experience for our tenants while keeping our budgets in line and our staff operating effectively as possible." 📱 📊

*Marcy Marro is an experienced communications professional and writer specializing in the architecture and construction industries.*

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Taco's new Thermal Energy Storage tanks are commonly used as backup for data center chilled water cooling systems.

## New Taco Tanks Unlock the Power of Thermal Energy Storage

New Taco Thermal Energy Storage (TES) tanks play a critical role in shifting energy loads, improving hydronic system efficiency, and helping commercial buildings meet decarbonization goals. The tanks are typically used for emergency backup of data center chilled water cooling systems.

Taco stratified TES tanks store water in distinct temperature layers, offering performance advantages for large hydronic systems, whether for hot water or chilled water storage, by supporting load-shifting.

By leveraging TES, data centers can ensure that cooling systems remain operational during power failures, prevent overheating, and reduce the risk of service disruption during emergency situations. TES tanks offer scalable and cost-effective solutions for data center operators seeking to improve cooling resilience, reliability, energy efficiency and long-term operational stability.

As data centers continue to grow in scale and importance, the adoption of TES for emergency backup cooling will play a crucial role in ensuring the continued success and sustainability of modern IT infrastructure. 



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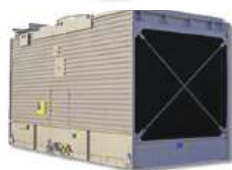
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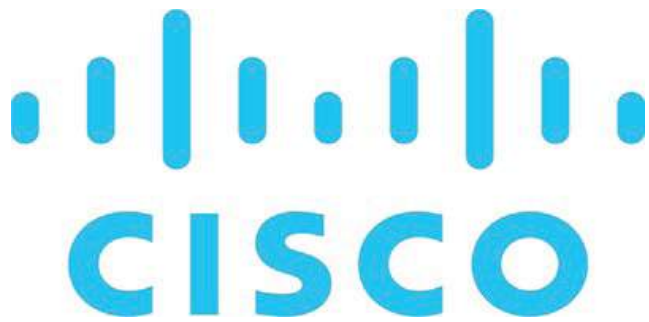
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## Cisco Secure AI Factory With NVIDIA Makes AI Easier to Deploy and Secure, Anywhere Organizations Need It

Cisco recently announced a major expansion of its Secure AI Factory With NVIDIA, giving customers a framework for deploying AI across their entire infrastructure — from central data center to local sites where data is created and decisions are made. Enterprises, neoclouds, sovereign clouds and service providers can now move AI from pilot to full-scale production — without stitching together disconnected systems — compressing deployment timelines from months to weeks, and embedding security from the start.

### AI That Runs Everywhere, Not Just in the Data Center

AI inference happens where data lives and decisions can't wait, whether on the hospital floor or for analyzing video of a factory floor in real-time to keep workers safe. This reality fundamentally reshapes infrastructure by requiring inference workloads to operate locally — closer to the data, the devices, and the moment a decision must be made. Cisco and NVIDIA are enabling organizations to support edge inferencing use cases by:

- **Transforming the Enterprise Edge:** Now supporting NVIDIA RTX PRO™ 4500 Blackwell Server Edition GPUs across the Cisco UCS and Cisco Unified Edge portfolios, Cisco enables enterprises to run mission-critical AI workloads at the edge without the energy cost and footprint of data center-scale hardware.
- **Transforming the Service Provider Edge:** Cisco recently announced the Cisco AI Grid with NVIDIA reference design that combines the power of Cisco's Mobility Services Platform with NVIDIA RTX PRO Blackwell Series GPUs. This enables service providers to leverage their existing networks to offer managed services for edge AI applications with carrier-grade reliability and sovereignty.

### Security Fused into Every Layer

In an era where AI models are high-value assets and agents are more autonomous, taking actions, making decisions and interacting with other agents, security can't be an afterthought. Cisco is embedding protection into the fabric of the Secure AI Factory With NVIDIA to safeguard against both external threats and rogue agent behavior, including:

- **Securing AI infrastructure:** AI is only as safe as the hardware running it — and attackers know it. Cisco Hybrid Mesh Firewall delivers consistent security policies across a diverse set of enforcement points: network switches, workload agents, and more. Greater coverage means fewer gaps for attackers to exploit. Cisco has extended the Cisco Hybrid Mesh Firewall solution to enable policy enforcement on NVIDIA BlueField data processing units (DPUs) embedded in NVIDIA GPU servers connected to Cisco Nexus One fabrics. Threats are blocked at the server level before they ever reach an organization's data. The result: AI workloads that can be protected from the inside out, with zero performance trade-off.
- **Securing AI agents: Cisco AI Defense delivers** model security, automated vulnerability testing, and now purpose-built guardrails for AI agents at the edge through integration with NVIDIA NeMo Guardrails, a part of NVIDIA AI Enterprise software. This helps AI developers and security teams stay ahead of emerging threats and maintain trust in AI. AI deployments are becoming increasingly distributed, with agents at edge locations often interacting with those at the core to accomplish tasks and execute workflows. AI Defense, as a part of the Cisco Secure AI Factory With NVIDIA, now extends to securing those agent-to-agent interactions. 



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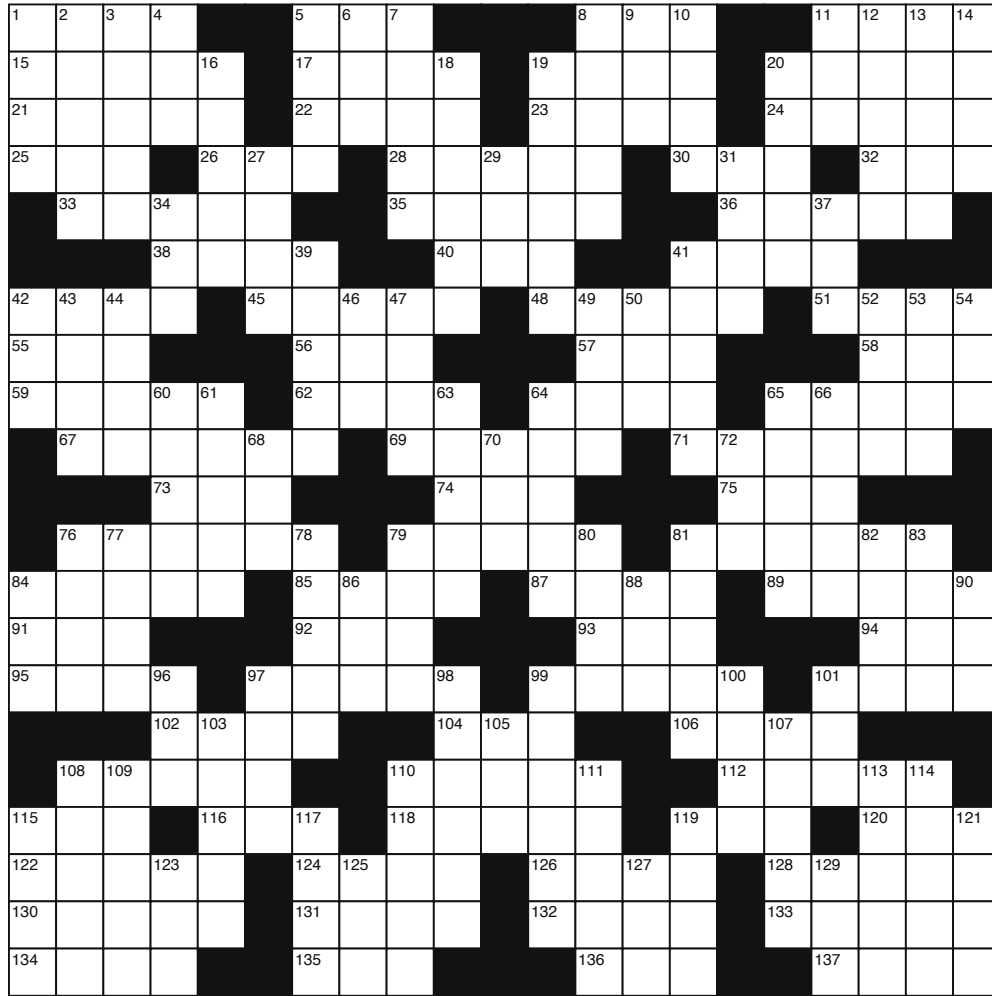
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**ACROSS**

- 1 Peak
- 5 Recede
- 8 Spoiled
- 11 Soft white cheese
- 15 Glob
- 17 Bard
- 19 Herr's wife
- 20 Nudge
- 21 \_\_\_\_\_  
Macinnes, author
- 22 Uncomplicated
- 23 Excited
- 24 Proportion
- 25 Time zone
- 26 Bullfight cheer
- 28 Musical production
- 30 Note of debt
- 32 No
- 33 Jeweled headdress
- 35 Rose pricker
- 36 Plastic
- 38 Removes the water
- 40 Card game
- 41 Wide open
- 42 Lock partners
- 45 Childrens sliding toys
- 48 Coil
- 51 Western Athletic Conferences
- 55 The other half of Jima
- 56 Rainy mo.
- 57 Whiz
- 58 Lick
- 59 Eagle's nest
- 62 Data transmission rate
- 64 Brief autobiographical sketch
- 65 Sarcastically
- 67 Type of races



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- 69 Ethical
- 71 Impost
- 73 Wrath
- 74 Dewy
- 75 Sprocket
- 76 Climber
- 79 Allow
- 81 Martin (2 wds.)
- 84 Intoxicating
- 85 Yucky
- 87 Tyrant
- 89 Pig pens
- 91 Grain
- 92 Seven
- 93 One of these
- 94 Downwind
- 95 Otherwise
- 97 Legumes
- 99 Salaam
- 101 Dick Van \_\_\_\_\_ Show
- 102 Electrical current unit
- 104 Farm animal
- 106 Ripped
- 108 Swelling
- 110 Relating to a Duke
- 112 Strip
- 115 Wing
- 116 Abdominal muscles (abbr.)
- 118 Athletic field
- 119 Precedes an alias
- 120 That woman
- 122 Biblical woman
- 124 Part of speech
- 126 Dull
- 128 Capital of Egypt
- 130 Stone
- 131 Has
- 132 American Civil Liberties

- Union (abbr.)
- 133 Large eastern religion
- 134 Bird's home
- 135 Gamblers placement
- 136 Whack
- 137 Fallen

**DOWN**

- 1 Yearn
- 2 Torso
- 3 Many
- 4 East northeast
- 5 Dueling sword
- 6 Constrictor
- 7 Stupefy
- 8 Piano-like instrument
- 9 Food and Agriculture
- 10 Apple type
- 11 Contagious disease
- 12 Type of wood
- 13 Add up
- 14 Out
- 16 Seasoner makers
- 18 Disease
- 19 Young pig
- 20 Furnish
- 27 "You can't eat just one" brand
- 29 Long time
- 31 Ovate
- 34 Advertisements
- 37 Recent
- 39 Thick slices
- 41 Good
- 42 Killed in action
- 43 Water

- pitcher
- 44 Past times
- 46 Government agency
- 47 Beat
- 49 Salute
- 50 Fall mo.
- 52 First letter of the Arabic alphabet
- 53 Cow's offspring
- 54 Watch secretly
- 60 Book by Homer
- 61 Beginning
- 63 Untidy
- 64 Prophetic
- 65 Waste matter
- 66 Not wrong
- 68 Congressional vote
- 70 Rapid eye movement

- 72 Air Cushion Vehicle (abbr.)
- 76 Close off
- 77 Tigers
- 78 Fasten
- 79 Related
- 80 Russian ruler
- 81 Meeting
- 82 Greasy
- 83 Seven days
- 84 Garden tool
- 86 Central Intelligence Agency
- 88 Picnic pest
- 90 Perceive
- 96 Evening
- 97 Tell
- 98 Scorns
- 99 African nation
- 100 Not whites
- 101 Deoxyribonucleic acid (abbr.)
- 103 City
- 105 Sorbet
- 107 Extend the arm
- 108 Thrill
- 109 Challenges
- 110 Scare
- 111 Pine tree
- 113 Khaki cotton twill
- 114 Groups together
- 115 Association (abbr.)
- 117 Stuck up person
- 119 Connect
- 121 Groove
- 123 Alternative (abbr.)
- 125 IOU part
- 127 Boxer Muhammad
- 129 Cause of sickness

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Solution:

C	A	L	M	S		Y	E	T		R	A	P		D	E	R	B	Y		
A	C	O	C	K		P	I	N	A	F	O	R	E	S		A	G	O	R	A
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			P	E	G		I	C	Y		D	I	E		E	S	P			
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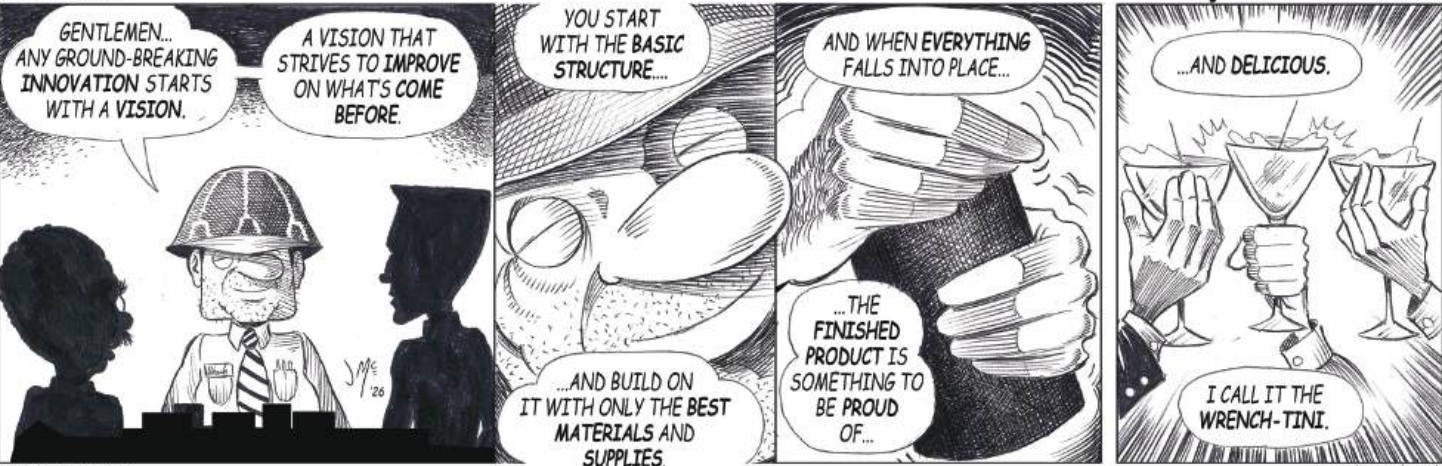
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