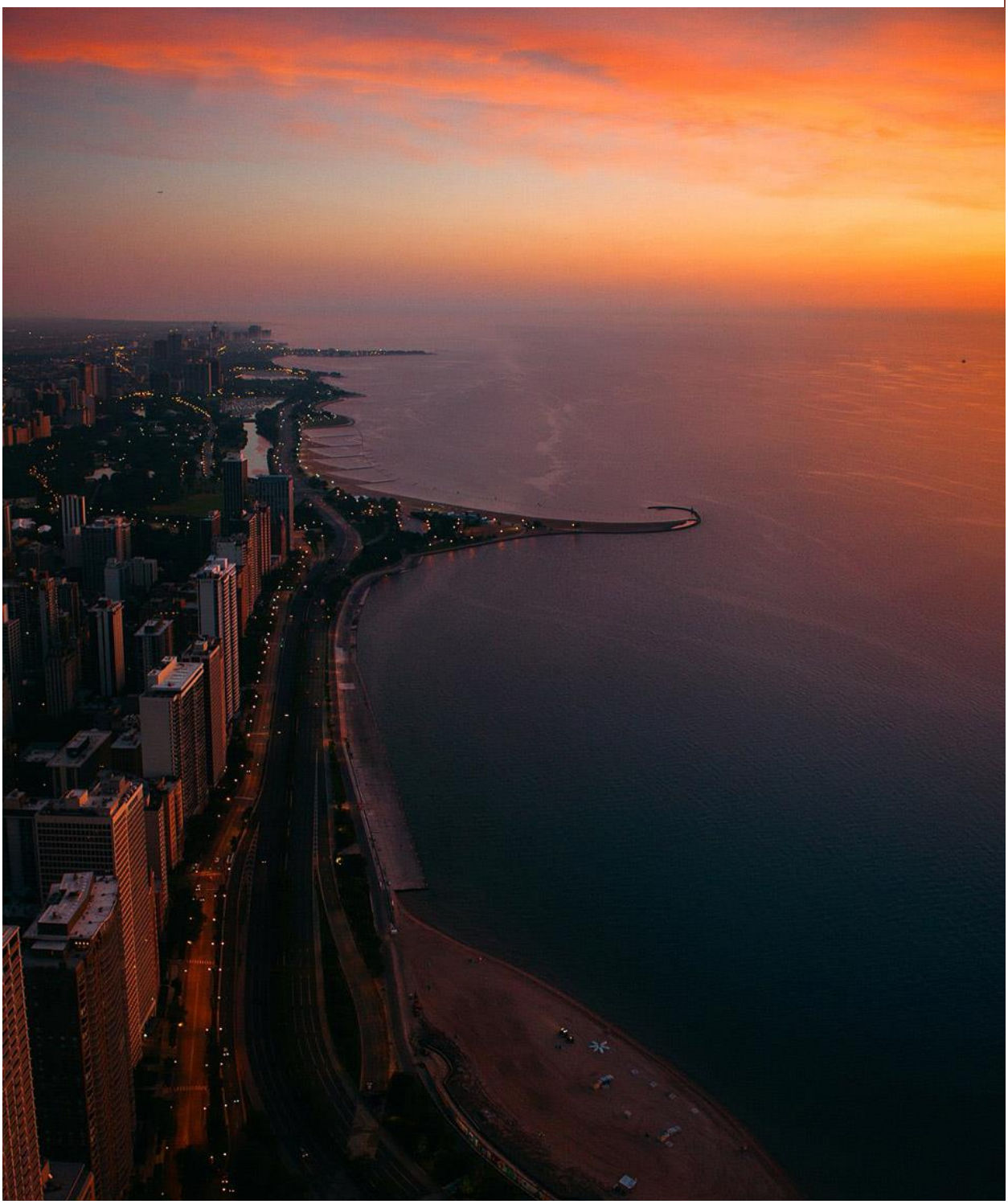
The summer sun has arrived upon the face of the Chicago Skyline. The Pandemic has calmed down so we can enjoy the sun. Soon you will see more tower cranes climbing to the sky. Hopefully we all are safe and healthy to meet the work load.



ASSE ILLINOIS CHAPTER MONTHLY NEWSLETTER

Plumbers and other Professionals in Illinois. Listed below are a few Professions, like the Plumbing Profession that require a License and Continuing Education to keep that license up-to-date.

Architects, Athlete Trainers, Basic Classroom Training Course, Certified Public Accountant
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These and other professionals are why the Plumbing Industry works well with others. We all have the same goal in mind. Protecting the Health and Safety of the Public. All professional do that through a system of laws, codes, regulations, policies, principles and emergency rules given to us by the Illinois General Assembly through the actions of JCAR, (Joint Commission of Administrative Rule).

In November 1954 Albert Einstein had written a letter and was published in a magazine of which he declared that, were he a young man again, he would not try to become a scientist; " I would rather choose to become a plumber or a paddler in the hope to find that modest degree of independence still available under present circumstances." During this time Einstein was offered membership to the Chicago Plumbers Union.

VOTED "BEST NEWSLETTER 2020" BY ASSE/IAPMO INTERNATIONAL

Volume 51 Issue 6 for June 2021 **Published by: Gary W. Howard**

HISTORY OF CAST IRON PIPES

Authors Haestad Methods Thomas M. Walski Donald V. Chase Dragan A. Savic Walter Grayman Stephen Beckwith Edmundo Koelle

. 1455 — First cast iron pipe. Casting of iron for pipe becomes practical, and the first installation of cast iron pipe, manufactured in Siegerland, Germany, occurs at Dillenburg Castle.

1652 — Piped water in Boston. The first water pipes in the U.S. are laid in Boston to bring water from springs to what is now the Quincy Market area.

1664 — Palace of Versailles. King Louis XIV of France orders the construction of a 15-mile cast iron water main from Marly-on-Seine to the Palace of Versailles. This is the longest pipeline of its kind at this time, and portions of it remain in service into the 21st century. A section of the line, after being taken out of service, was shipped in the 1960s from France to the United States (Figure 1.7) where it is still on display. Figure 1.7 King Louis XIV of France and a section of the Palace of Versailles pipeline Courtesy of the Ductile Iron Pipe Research Association 12 Introduction to Water Distribution Modeling Chapter 1

1732 — Pitot invents a velocity-measuring device. Henri Pitot is tasked with measuring the velocity of water in the Seine River. He finds that by placing an L-shaped tube into the flow, water rises in the tube proportionally to the velocity squared, and the Pitot tube is born. 1738 — Bernoulli publishes Hydrodynamica. The Swiss Bernoulli family extends the early mathematics and physics discoveries of Newton and Leibniz to fluid systems. Daniel Bernoulli publishes Hydrodynamica while in St. Petersburg and Strasbourg, but there is a rivalry with his father Johann regarding who actually developed some of the principles presented in the book. These principles will become the key to energy principles used in hydraulic models and the basis for numerous devices such as the Venturi meter and, most notably, the airplane wing. In

1752, however, it will actually be their colleague, Leonard Euler, who develops the forms of the energy equations that will live on in years to come.

1754 — First U.S. water systems built. The earliest water distribution systems in the United States are constructed in Pennsylvania. The Moravian community in Bethlehem, Pennsylvania claims to have the first water system, and it is followed quickly by systems in Schaefferstown and Philadelphia, Pennsylvania. Horses drive the pumps in the

Philadelphia system, and the pipes are made of bored logs. They will later be replaced with wood stave pipes made with iron hoops to withstand higher pressures. The first steam driven pumps will be used in Bethlehem ten years later.

1770 — Chezy develops head loss relationship. While previous investigators realized that energy was lost in moving water, it is Antoine Chezy who realizes that V2 / RS is reasonably constant for certain situations. This relationship will serve as the basis for head loss equations to be used for centuries. 1785 — Bell and spigot joint developed. The Chelsea Water Company in London begins using the first bell and spigot joints. The joint is first packed with yarn or hemp and is then sealed with lead. Sir Thomas Simpson is credited with inventing this joint, which replaced the crude flanged joints used previously.

1839 — Hagen-Poiseuille equation developed. Gotthilf Hagen and Jean Louis Poiseuille independently develop the head loss equations for laminar flow in small tubes. Their work is experimental, and it is not until 1856 that Franz Neuman and Eduard Hagenbach will theoretically derive the Hagen-Poiseuille equation.

1843 — St. Venant develops equations of motion. Several researchers, including Louis Navier, George Stokes, Augustin de Cauchy, and Simeon Poisson, work toward the development of the fundamental differential equations describing the motion of fluids. They become known as the “Navier-Stokes equations.” Jean-Claude Barre de Saint Venant develops the most general form of these equations, but the term St. Venant equations will be used to refer to the vertically and laterally averaged (that is, one-dimensional flow) form of equations.

1845 — Darcy-Weisbach head loss equation developed. Julius Weisbach publishes a three-volume set on engineering mechanics that includes the results of his experiments. The Darcy-Weisbach equation comes from this work, which is essentially an extension of Chezy’s work, as Chezy’s C is related to Darcy-Weisbach’s f by C2 =8g/f. Section 1.5 A Brief History of Water Distribution Technology 13 Darcy’s name is also associated with Darcy’s law for flow through porous media, widely used in groundwater analysis.

1878 — First automatic sprinklers used. The first Parmelee sprinklers are installed. These are the first automatic sprinklers for fire protection. 1879 — Lamb’s Hydrodynamics published. Sir Horace Lamb publishes his Treatise on the Mathematical Theory of the Motion of Fluids. Subsequent editions will be published under the title Hydrodynamics, with the last edition published in 1932.

1881 — AWWA formed. The 22 original members create the American Water Works Association. The first president is Jacob Foster from Illinois.

1883 — Laminar/turbulent flow distinction explained. While earlier engineers such as Hagen observed the differences between laminar and turbulent flow, Osborne Reynolds is the first to conduct the experiments that clearly define the two flow regimes. He identifies the dimensionless number, later referred to as the Reynolds number, for quantifying the conditions under which each type of flow exists. He publishes "An Experimental Investigation of the Circumstances which Determine whether the Motion of Water shall be Direct or Sinuous and the Law of Resistance in Parallel Channels." 1896 — Cole invents Pitot tube for pressure pipe. Although numerous attempts were made to extend Henri Pitot's velocity measuring device to pressure pipes, Edward Cole develops the first practical apparatus using a Pitot tube with two tips connected to a manometer. The Cole Pitometer will be widely used for years to come, and Cole's company, Pitometer Associates, will perform flow measurement studies (among many other services) into the 21st century.

1906 — Hazen-Williams equation developed. A. Hazen and G.S. Williams develop an empirical formula for head loss in water pipes. Although not as general or precise in rough, turbulent flow as the Darcy-Weisbach equation, the Hazen-Williams equation proves easy to use and will be widely applied in North America. 1900 – 1930 — Boundary Layer Theory developed. The interactions between fluids and solids are studied extensively by a series of German scientists lead by Ludwig Prandtl and his students Theodor von Karman, Johan Nikuradse, Heinrich Blasius, and Thomas Stanton. As a result of their research, they are able to theoretically explain and experimentally verify the nature of drag between pipe walls and a fluid. In particular, the experiments of Nikuradse, who glues uniform sand grains inside pipes and measures head loss, lead to a better understanding of the calculation of the f coefficient in the Darcy-Weisbach equation. Stanton develops the first graphical representation of the relationship between f, pipe roughness, and the Reynolds number, which later leads to the Moody diagram. This work is summarized in H. Schichting's book, Boundary Layer Theory.

1914 — First U.S. drinking water standards established. The U.S. Public Health Service publishes the first drinking water standards, which will continually evolve. The U.S. Environmental Protection Agency (U.S. EPA) will eventually assume the role of setting the water quality standards in the United States. 14 Introduction to Water Distribution Modeling Chapter 1

1920s — Cement-mortar lining of water mains. Cement mortar lining of water mains is used to minimize corrosion and tuberculation. Procedures for cleaning and lining existing pipes in place will be developed by the 1930s. 1921 — First Hydraulic Institute Standards published. The first edition of Trade Standards in the Pump Industry is published as a 19-page pamphlet. These standards become the primary reference for pump nomenclature, testing, and rating.

1936 — Hardy Cross method developed. Hardy Cross, a structural engineering professor at the University of Illinois, publishes the Hardy Cross method for solving head loss equations in complex networks. This method is widely used for manual calculations and will serve as the basis for early digital computer programs for pipe network analysis. 1938 — Colebrook-White equation developed. Cyril Colebrook and Cedric White of Imperial College in London build upon the work of Prandtl and his students to develop the Colebrook-White equation for determining the Darcy-Weisbach f in commercial pipes. 1940 — Hunter curves published. During the 1920s and '30s, Roy Hunter of the National Bureau of Standards conducts research on water use in a variety of buildings. His "fixture unit method" will become the basis for estimating building water use, even though plumbing fixtures will change over the years. His probabilistic analysis captured the mathematics of the concept that the more fixtures in a building, the less likely they are to be used simultaneously. 1944 — Moody diagram published. Lewis Moody of Princeton University publishes the Moody diagram, which is essentially a graphical representation of the ColebrookWhite equation in the turbulent flow range and the Hagen-Poisseuille equation in the laminar range. This diagram is especially useful because, at the time, no explicit solution exists for the Colebrook-White equation. Stanton had developed a similar chart 30 years earlier.

1950 — McIlroy network analyzer developed. The McIlroy network analyzer, an electrical analog computer, is developed to simulate the behavior of water distribution systems using electricity instead of water. The analyzer uses special elements called "fluistors" to reproduce head loss in pipes, because in the Hazen-Williams equation, head loss varies with flow raised to the 1.85 power, while normal resistors comply with Ohm's law, in which voltage drop varies linearly with current.

1950s — Earliest digital computers developed. The Electronic Numerical Integrator and Computer (ENIAC) is assembled at the University of Pennsylvania. It contains approximately 18,000 vacuum tubes and fills a 30 x 50 ft (9 x 15 m) room. Digital computers such as the ENIAC and Univac show that computers can carry out numerical calculations quickly, opening the door for programs to solve complex hydraulic problems.

1956 — Push-on joint developed. The push-on pipe joint using a rubber gasket is developed. This type of assembly helps speed the construction of piping. 1960s and '70s — Earliest pipe network digital models created. With the coming of age of digital computers and the establishment of the FORTRAN programming Section 1.5 A Brief History of Water Distribution Technology 15 language, researchers at universities begin to develop pipe network models and make them available to practicing engineers. Don Wood at the University of Kentucky, Al Fowler at the University of British Columbia, Roland Jeppson of Utah State University, Chuck Howard and Uri Shamir at MIT, and Simsek Sarikelle at the University of Akron all write pipe network models. Figure 1.8 A computer punch card 1963 — First U.S. PVC pipe standards. The National Bureau of Standards accepts CS256-63 "Commercial Standard for PVC Plastic Pipes (SDR-PR and Class T)," which is the first U.S. standard for polyvinyl chloride water pipe.

1963 — URISA is founded. The Urban and Regional Information Systems Association is founded by Dr. Edgar Horwood. URISA becomes the premier organization for the use and integration of spatial information technology to improve the quality of life in urban and regional environments.

1960s and ’70s — Water system contamination. Chemicals that can result in health problems when ingested or inhaled are dumped on the ground or stored in leaky ponds because of lack of awareness of their environmental impacts. Over the years, these chemicals will make their way into water distribution systems and lead to alleged contamination of water systems in places like Woburn, Massachusetts; Phoenix/Scottsdale, Arizona; and Dover Township, New Jersey. Water quality models of distribution systems will be used to attempt to recreate the dosages of chemicals received by customers. These situations lead to popular movies like A Civil Action and Erin Brockovich.

1970s — Early attempts to optimize water distribution design. Dennis Lai and John Schaake at MIT develop the first approach to optimize water system design. Numerous papers will follow by researchers such as Arun Deb, Ian Goulter, Uri Shamir, Downey Brill, Larry Mays, and Kevin Lansey. 1970s — Models become more powerful. Although the earliest pipe network models could only solve steady-state equations for simple systems, the ’70s bring modeling features such as pressure regulating valves and extended-period simulations. 16 Introduction to Water Distribution Modeling Chapter 1

1975 — Data files replace input cards. Modelers are able to remotely create data files on time-share terminals instead of using punched cards. 1975 — AWWA C-900 approved. The AWWA approves its first standard for PVC water distribution piping. C900 pipe is made to match old cast iron pipe outer diameters.

1976 — Swamee-Jain equation published. Dozens of approximations to the Colebrook-White equations have been published in an attempt to arrive at an explicit equation that would give the same results without the need for an iterative solution. Indian engineers P. K. Swamee and Akalnank Jain publish the most popular form of these approximations. The use of an explicit equation results in faster numerical solutions of pipe network problems. 1976 — Jeppson publishes Analysis of Flow in Pipe Networks. Roland Jeppson authors the book Analysis of Flow in Pipe Networks, which presents a summary of the numerical techniques used to solve network problems.

1980 — Personal computers introduced. Early personal computers make it possible to move hydraulic analysis to desktop systems. Initially, these desktop models are slow, but their power will grow exponentially over the next two decades. Figure 1.9 Time-share terminal Early 1980s — Water Quality Modeling First Developed. The concept of modeling water quality in distribution systems is first developed, and steady state formulations are proposed by Don Wood at the University of Kentucky and USEPA researchers in Cincinnati, Ohio. Section 1.5 A Brief History of Water Distribution Technology 17 1985 — “Battle of the Network Models.” A series of sessions is held at the

ASCE Water Resources Planning and Management Division Conference in Buffalo, New York, where researchers are given a realistic system called “Anytown” and are asked to optimize the design of that network. Comparison of results shows the strengths and weaknesses of the various models.

1986 — Introduction of Dynamic Water Quality Models. At the AWWA Distribution System Symposium, three groups independently introduce dynamic water quality models of distribution systems.

1988 — Gradient Algorithm. Ezio Todini and S. Pilati publish “A Gradient Algorithm for the Analysis of Pipe Networks,” and R. Salgado, Todini, and P. O’Connell publish “Comparison of the Gradient Method with some Traditional Methods of the Analysis of Water Supply Distribution Networks.” The gradient algorithm serves as the basis for the WaterCAD model. 1989 — AWWA holds specialty conference. AWWA holds the Computers and Automation in the Water Industry conference. This conference will later grow into the popular IMTech event (Information Management and Technology). 1990s — Privatization of water utilities. The privatization of water utilities increases significantly as other utilities experience a greater push toward deregulation.

1991 — Water Quality Modeling in Distribution Systems Conference. The USEPA and the AWWA Research Foundation bring together researchers from around 18 Introduction to Water Distribution Modeling Chapter 1 the world for a two-day meeting in Cincinnati. This meeting is a milestone in the establishment of water quality modeling as a recognized tool for investigators.

1991 — GPS technology becomes affordable. The cost of global positioning systems (GPS) drops to the point where a GPS can be an economical tool for determining coordinates of points in hydraulic models. 1993 — Introduction of water quality modeling tool. Water quality modeling comes of age with the development of EPANET by Lewis Rossman of the USEPA. Intended as a research tool, EPANET provides the basis for several commercial-grade models. 1990 through present. Several commercial software developers release water distribution modeling packages. Each release brings new enhancements for data management and new abilities to interoperate with other existing computer systems.

2001 — Automated calibration. Automated calibration of distribution models moves from being a research tool to a standard modeling feature with the use of Genetic Algorithms.

2001 — Security awareness. Water system security increases in importance and utilities realize the value of water quality modeling as a tool for protecting a water system. 2002 — Integration with GIS. Water modeling and GIS software become highly integrated with the release of WaterGEMS, software that combines the functionality of both tools.

FOR FUTURE APPRENTICES

Some want to take the S/A/T test for admission into College. Some want to work where their father, mother, sister and brother have worked for their whole life. Others wish to venture into a trade such as Plumbing. The over emphasis on attending a College or University to get ahead in the world could actually compromise how an education system moves forward. As a Journeyman Plumbing and Certified Plumbing Inspector I can tell you from experience being a well-educated Union Plumber I have earned a very good living for me and my family. My education as an apprentice and journeyman plumber can be used to measure what I've learned from High School and working as a labor for a plumbing company. Your education will continue as long as you want to be a Journeyman or Inspector through a Continuing Education Program controlled by the Illinois Department of Public Health Water Quality Plumbing Program. The curriculum of a secondary school like a United Association Trained Apprenticeship Program, and Illinois Department of Public Health Water Quality Plumbing Program will open the doors for you to become a high achiever. You will learn how to use math, weights, measures, theory, physics, global positions systems, blue print interpretations, drafting, excavation, the proper way to install a verity of pipes, welding, using proper tools, codes, laws, applications, sanitation systems, water systems, and get paid while doing so. And when you are finished with apprentice school you may consider attending a United Association School to receive a college degrees as part of their training.

In my opinion becoming a Union Plumber will raise the bar on your earning abilities for academic excellence and your approach on becoming the bread winner of your household. The strength of your education through the United Associations Plumbers Union Local 130 is anchored in the pipe trades with over 350,000 members that will make you Brothers and Sisters for Life. There will be many options in the world for you to consider, but measuring your achievements is an important step in a shared effort on achieving your goal of being successful as a tradesman or tradeswoman or as a tradesperson. Your Unity with others will make you accountable for you and your family's future.

Best Regards,
Gary W. Howard

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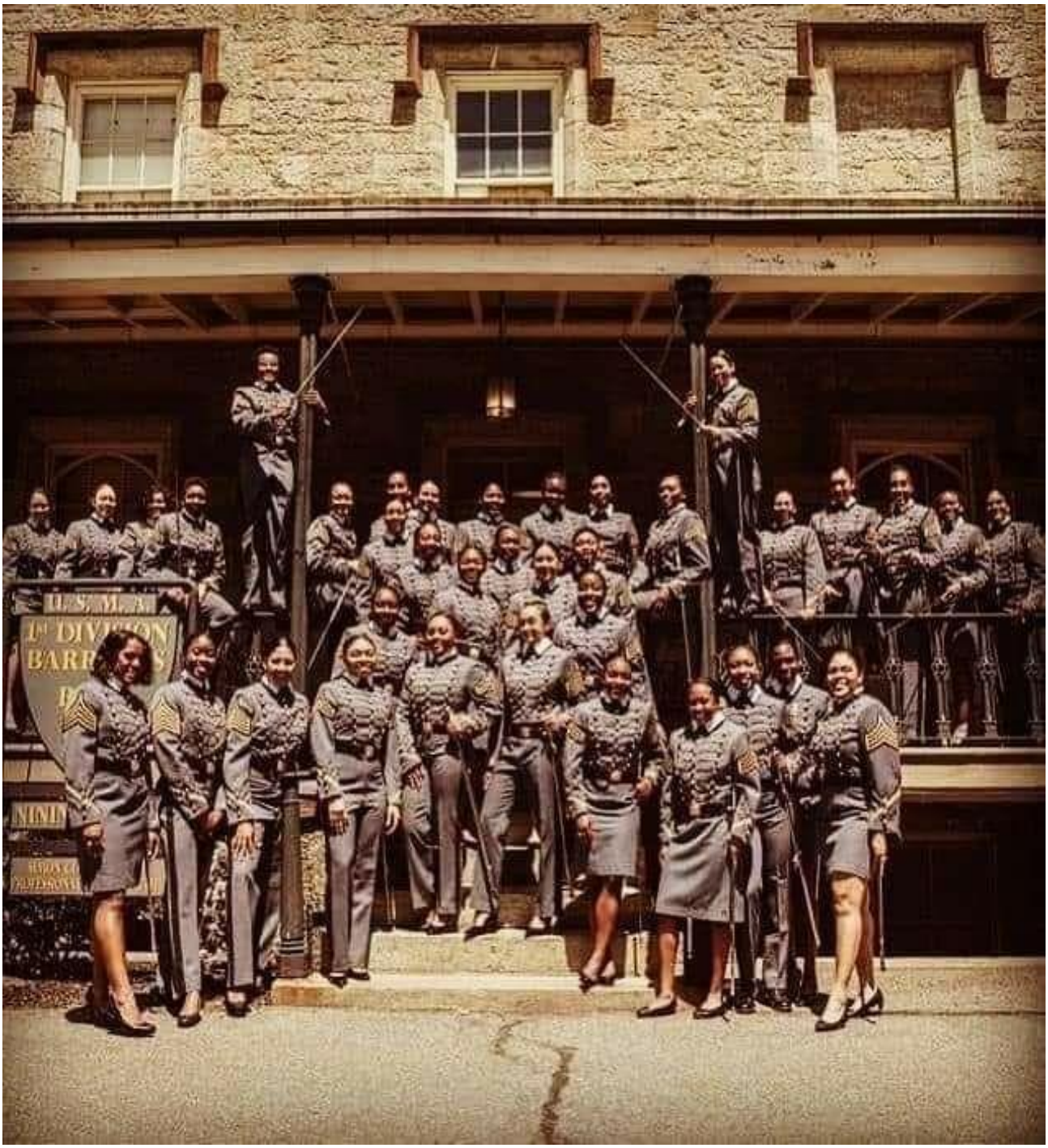
47 African American Women Graduate from West Point



Smart and Brave American Women
Thank you all for protecting our Country

THE RECKONING HAS ARRIVED

Jokes for this month

Why don't Amish people water ski?
The horses would drown.

Hey bartender pour me a cold one. Hey go on kid, you wanna get me in trouble. She said maybe later. Right now I just wanna beer.

A man walks into the bar looking sad. The bartender asked him, what's the matter? The man replied, my wife and I had a fight and she told she wouldn't talk to me for a month. And the month is up today

ASSE ILLINOIS GENERAL MEMBERSHIP MEETING

Location: ***Mid-Continent Sales Link***
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Thank you Vince England for making this possible

Date and Time: June 21, 2021
5:00 PM

Local Union 130 U.A. and American Society of Sanitary Engineering will hold two Product Shows this year. One at the new Campus in Joliet on Sept. 14, 2021. 2114 180, Joliet, IL 60435. And Nov.9, 2021 at the Chicago Campus 1400 W Washington Boulevard, Chicago, IL 60607 Lower Hall

Choreographed by ASSE very own Board Member Brian Mazzocchi.
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One of the Oldest Family owned plumbing companies in the United States

1890
Chas F. Bruckner and
Son Inc., Broadview, Illinois

Let's start the history of Chas. F. Bruckner and Son Inc. at the right now. And by right now, we mean with Cliff Bruckner, a UA Local 130 member and part of the fifth generation of Bruckners working at the Chicago mainstay.

Last October, the Chicago Sun-Times profiled Cliff, 38, as he worked with his crew adding plumbing to an old building being converted into a new kindergarten at Christ the King Elementary School on the city's South Side.

"A few minutes later, he trims a section of carefully measured cast iron pipe with a massive chain cutter and mounts it beneath the ceiling," reporter Ryan Smith wrote. "After stuffing the attached joint full of rope-like material called oakum, he pours a ladle full of molten lead onto it to create a permanent seal. Any mishandling of the soupy 360 degree-plus lead is dangerous to both structure and worker.

""It could definitely hurt," says Bruckner as he adjusts his hard hat."

It was a great piece on Cliff, but also the future of plumbing as well as an introduction to the history of a plumbing company that's built most any name-brand retail, university, entertainment and public works projects in the Windy City for decades. Seriously, take a look at the "past projects" listed on the web site. It's a much shorter answer to wonder what they haven't built.

After graduating from the University of Iowa in 2003 with a degree in civil engineering, Cliff returned to Chicago to start his five-year apprenticeship. He became a full-time journeyman in 2010 for the business that is run by his dad and uncle. He's currently a project superintendent.

And while the newspaper featured Cliff prominently, he's now one of six Bruckners working at the family business, which includes fellow plumber, cousin Marty, who was a part of the crew at the school.

Cliff "teaches me everything I know, and I love working side by side with the family every day," Marty told the Sun-Times.

Cliff's great-great grandfather Charles F. Bruckner, a German immigrant, started the business in 1890. Incredibly, up until a move late last year, the company operated out of the same building on West 26th Street in Chicago.

Bruckner, originally a butcher by trade, opened his doors with partner and brother-in-law Joseph Weber as Weber and Bruckner Plumbing and Heating.

Fourteen years later, Bruckner amicably parted ways with Joseph in order to focus just on plumbing.

“At some point, the Webers moved to Wisconsin,” says Jim Bruckner, great-grandson of Charles who currently owns the business with his brother, Tom. “A few years ago, a Weber family member contacted us and wondered if the business was still in operation. What’s funny was she had a picture of my grandfather being baptized.”

With a new company name and sole ownership, Charles oversaw many large and exciting projects, including a portion of the 1933 Chicago World's Fair. Interestingly enough, the Bruckner business expanded in tandem with another local businessman by the name of Charles R. Walgreen. Walgreen started what would eventually become the second largest pharmacy store chain in the United States with his first store on the corner of Bowen and Cottage Grove Avenues in Chicago in 1901. In fact, almost every Chicago-area Walgreen's drugstore that opened before 1970 had a Bruckner plumber behind it.

In 1936, Charles imparted his business to two of his children: Frank and Anne.

As these types of stories go, Frank got into the business when he was about 4, but had to learn the trade as an apprentice in 1919 from another local contractor because as an old newspaper clipping says, “his dad didn’t really have room for him.”

If truth be told, the “and Son” part ought to be “and Son and Daughter.” Charles took ill in 1924 so that year Frank went to work for his father. By the 1930s, Frank and Anne were running and owning the business. (While the details are sketchy, Jim says Charles remained in the business, until he died in 1948 at age 84.)

However, Anne was an equal partner in the business, too. In fact, go to Bruckner’s web page and if you notice an old black-and-white picture of a somewhat feminine-looking plumber, that’s Anne.

“I don’t know if she actually worked as a plumber,” Jim says. “But she was a jack-of-all-trades and would go out into the field and help, if they needed, or make a delivery. Whatever she could do.”

Jim related a story about an IRS audit in the late-1950s that shows just how far ahead of her time Anne was. Even with Anne and Frank 50-50 partners, the IRS fined both the business and Anne after the audit “because she was overly compensated since she was paid as much as my grandfather.”

Ann remained a part of the business until the early 1960s when she passed away. After Anne's death, Frank continued to expand the company and saw it incorporated in 1955.

Frank put his heart and soul into the family business until he passed the company on in 1976 to his two sons: Cliff F. and Bernard Bruckner.

Cliff started driving a truck for the company while in high school in the 1940s and became an apprentice in 1947. Bernie also worked at the company during the summers before becoming an apprentice in 1964.

Cliff’s life was cut short by a heart attack at age 49. By then, however, his sons, Jim and Tom, had joined the family business as the next generation. (Bernie eventually retired in 2002.)

Jim attended Western Illinois University. Following his graduation with a degree in finance, Jim began his plumbing apprenticeship and joined Local 130 in 1976. He received his journeyman's license in 1981. Jim is a board member of the Plumbing Council, as well as the Joint Apprenticeship Committee

Like his older brother, Tom began working for his father at Bruckner Plumbing as a teenager. And, he never stopped. Tom knew from the age of 6 that he wanted to be a major player in his father's business. Tom attended college with the view in mind that he would return to work for the family. In 1985, after receiving a degree in business from St. Mary's University, Tom began his plumbing apprenticeship in 1985 and joined Local 130. He received his journeyman's license in 1989.

Chas F. Bruckner and Son Plumbing currently employs Local 130 and 501 plumbers, Local 150 operating engineers and union laborers. The company also boasts an experienced and dedicated office staff. Bruckner Plumbing is a member of the Plumbing Contractors Association, the Illinois Association of Plumbing, Heating and Cooling Contractors, the Plumbing and Mechanical Contractors Authority of Illinois and the Plumbing Council of Chicagoland.

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Apricus	Commercial and Residential Evacuated Tube & Flat Plate Solar Collectors, Controls, and Accessories
BARNES	Sump Pumps, Sewage Ejectors, Grinder Pumps, and Packages
Bell & Gossett	Variable Pressure Booster Systems, Hot Water Recirculation, Sump & Sewage Pumps, Double Wall Heat Exchangers, Balancing Valves, Expansion Tanks
BOCK	Commercial and Light Commercial Gas Fired and Electric Tank Type Domestic Water Heaters, Electric Water Heaters
CLA-VAL	Pressure Reducing Valves, Pressure Blending Valves and Float Valves
CEMLINE	Plate & Frame, Brazed Plate, Boiler Water and Steam Indirect Domestic Water Heaters and ASME Storage Tanks, Electric Water Heaters
Danfoss	Variable Speed Drives
GOULDS WATER TECHNOLOGY	Stainless Steel & Multi-Stage Pumps
HOLBY VALVE	Domestic Hot Water Thermostatic Mixing Valves
Metraflex	Flexible Hose Pump Connectors, Expansion Compensators, Wall Penetration Seals
NTI	Wall & Floor Mounted, Condensing Gas Water Heaters
RECO USA	Steam and Boiler Indirect Domestic Water Heaters and ASME Storage Tanks, Electric Water Heaters
SCHOTT	Acid Drainline Systems & Acid Dilution Basins
WEISS INSTRUMENTS	Thermometers & Gauges

ASSE International Services Are Available

ASSE International is committed to providing the highest level of customer service possible during these unprecedented times.

A top priority is to continually assist our customers with efficiency, while following all required safety measures for our dedicated staff. ASSE has implemented telework solutions enabling many of our staff to assist our clients and members remotely. ASSE services, included product certification, personnel certification, and standards development, remain available via phone or email to assist with your various needs. Click for a list of all ASSE staff and contact details

The 2020 ASSE International Business Meeting will be held online October 26-29. For our ASSE Certified Personnel, we want to reassure you that you will be able to recertify, even after the expiration date of the certification. We recognize that some adjustments will need to be made to accommodate certified individuals who are at, or nearing, the expiration dates on their certifications. Many are currently unable to attend classes and take exams. During this difficult time, we are extending the expiration date for all certifications expiring between 1/1/2020 and 8/31/2020. The new expiration date is 9/30/2020. ASSE is also giving a 6-month grace period for you to complete a recertification class and exam. Learn more about the steps we're taking for our Certified Personnel HERE.

Additional dedicated department web links are:

- ASSE Product Certification
- ASSE Personnel Certification
- ASSE Standards Development
- ASSE Membership
- ***Free download*** **https://asse-plumbing.org/media/23442/12000-2018.pdf**

Professional Qualifications Standard for Infection Control Risk Assessment for All Building Sy

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