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ASPE American Society of Plumbing Engineers™
BALTIMORE

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MEETING FORMAT

6:00 - 6:30	Social
6:30 - 6:45	Announcements & Table Tops
6:45	Dinner Served
7:00 - 8:00	Presentation

DATE:	January 24, 2024
TIME:	6:00pm to 8:00pm
PLACE:	Olive Grove Restaurant
TOPIC	Grease Interceptors
SPEAKER:	Schier Products

Register Today

Olive Grove Restaurant & Lounge
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PHONE: 410-636-1385

Local Chapters are not authorized to speak for the Society.
Newsletter questions? Please contact Nikita Patel

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- Ads for the year will begin in the September issue and run through the May issue.
- All ads must be paid in full prior to the advertisement being included in the newsletter.
- Advertiser must provide ads in high resolution PDF format. Logo must be provided in .jpeg format, 200px wide size
- Cost per advertisement is as follows:
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  - Half Page $ 500.00
- Please contact Nikita Patel or Chuck Swope
- Make checks payable to Baltimore Chapter of ASPE. Please contact the Chapter Treasurer with any questions.

ASPE
American Society of Plumbing Engineers™
BALTIMORE

Chuck Swope, PE, CPD, LEED AP BD+C
Chapter President

Happy New Year! I hope that all of your holiday wishes came true. My parents came down from the hinterlands of Pennsylvania for Christmas and it was…not terrible. Hosting always makes me want to put my best foot forward and use all of my resources. This carries forward towards how we board members at the Baltimore Chapter treat every chapter meeting and event. One of the biggest upcoming news this year is that September will be our 50th Anniversary! Way back in 1974 our forefathers decided to form the Baltimore chapter and start it on the great path that it's on today. Did you know that the first 3.5 gallon per flush water closet was first introduced in 1974? Coincidence, maybe, maybe not.

The thing is, ASPE is always at the forefront of upcoming technologies because the engineers that comprise the society are at the forefront. There are many examples of how ASPE and related technical societies are one of the reasons we have such innovative technologies like Rainwater Harvesting, Waste Water Heat Recovery, and low flow fixtures. Though we're beyond the halcyon days of providing 0.5 GPM lavatories and getting full points in a Water Efficiency credit, we can look on the bright side, young (and young at heart) engineers. This is the way it's supposed to work! When new technologies become old hat, we strive for better. I'll give you a personal example: I had the fortune of attending the 2023 ASPE Technical Symposium in Bellevue, WA last year. While the glitz of the show floor was still present, the shine was in the technical sessions where we could take the mystery out of pump curves, or learn about the updates to NFPA 14 regarding Fire Pumps. The session that stood out to me was about using heat pumps to extract heat from waste water. Think about it, domestic hot water is one of the only systems that we have that heats the water once, and then we just dump it down the drain at nearly the same temperature. Interested? Hit us up and we can put you in touch with the presenter, or (hopefully) we will have them down for the 2024-25 season. A good teaser, right?

Also, by taking measured approaches towards new technologies we can also make sure we're not chasing a pipedream (get it?). Let's take solar water heating for example. Sounds like a good idea on first glance. The trouble was when we got to the application stage, the heat source did not coincide with our demands, leaving the majority of the energy developed when we didn't need it. Does anyone take their showers just after lunch? Where does the excess heat go? Back out to the atmosphere and wasting the pump energy to get it there. There are applications that can use that energy to its fullest, but there are better uses for the available real estate like photovoltaic or air source heat pump water heaters. By applying more efficient fixtures or new energy saving strategies on a smaller scale, we can help tip the scales towards a more sustainable future. Call it life through a thousand bandages, if you will.

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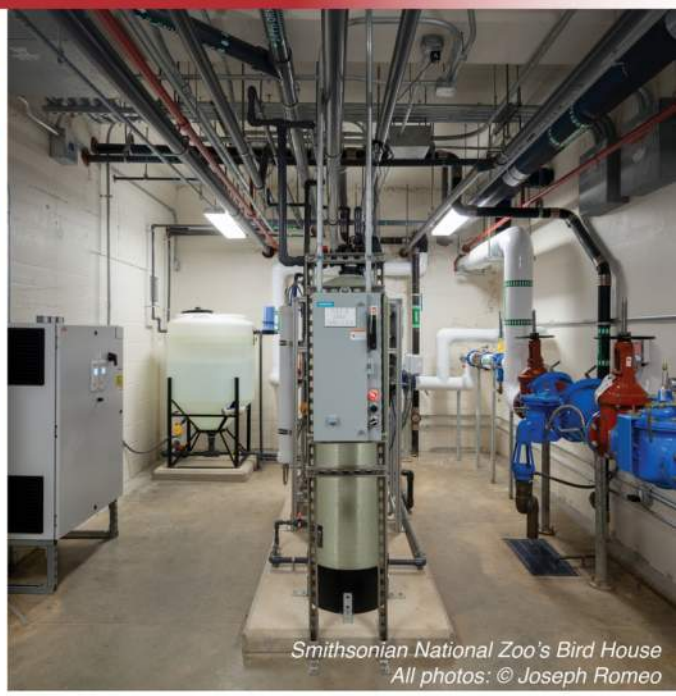
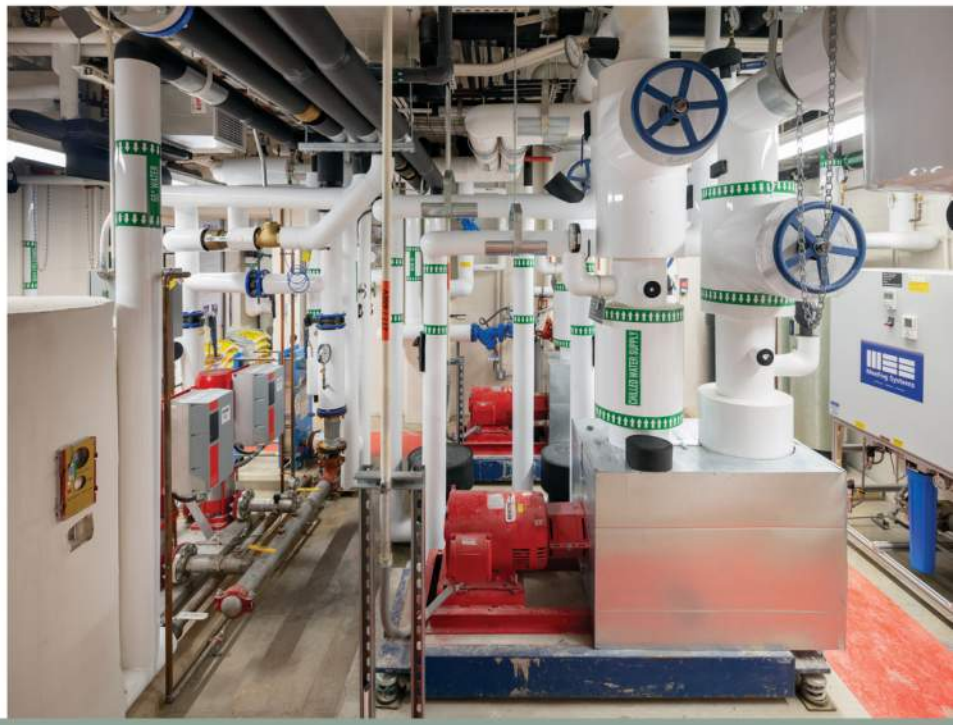


Smithsonian National Zoo's Bird House
All photos: © Joseph Romeo



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ASPE American Society of Plumbing Engineers™ BALTIMORE

Julian Chiveral, LEED AP BD+C
Vice President- Technical

Greetings, ASPE members and plumbing enthusiasts!

As we embark on new adventures in 2024, the chill of winter is thawed by the warmth of camaraderie within ASPE. I hope your New Year's resolutions are holding strong, and if they happen to involve plumbing, CEUs, or grease, you're in for a treat!

Before jumping into all that 2024 has to offer, I must first extend my heartfelt thanks to everyone who joined us for the previous monthly meeting. Special gratitude is due to Will Dargan, the Manager of Engineer Services for Cummins-Wagner Co, Inc., for his insightful presentation on air compressors. I have been told that Will's expertise illuminated the room, leaving attendees with a wealth of knowledge to carry with them through the holiday season.

For the remainder of the ASPE season, we will return to our classic fourth Wednesday of the month schedule, starting with January 24th where our focus will shift to a crucial element in the plumbing landscape: grease interceptors. In February, I'm planning one more fire-protection-related rendezvous with Professor Ken Isman, followed by a presentation in March on pre-action sprinklers. Our April meeting will explore siphonic roof drain technology, and we're all in for a treat in May with guest lecturer Chuck Swope taking us back to the basics with Plumbing Engineering 101.

At our January meeting we will go through the design, installation, and maintenance of grease interceptors, emphasizing their role in ensuring the smooth flow of wastewater. From commercial kitchens to residential spaces, understanding and implementing effective grease management is essential for the longevity of our plumbing infrastructure. We'll be supported by the expertise of Schier Products, with their decades of experience in manufacturing grease interceptors.

Grease interceptors play a pivotal role in preventing fats, oils, and grease (FOG) from wreaking havoc on our plumbing systems. As we indulge in delicious meals, it's easy to overlook the impact our culinary choices can have downstream. Grease build-up poses a serious threat to sewer systems, causing blockages that lead to unpleasant odors, backups, and potential environmental hazards.

So, join us on January 24th at the Olive Grove as we immerse ourselves in grease interceptors – smell not included! Until then, may your pipes stay warm and knowledge flow freely.

Warm Regards,
Julian Chiveral
Vice President- Technical

Refining Health-Care Design with BIM and IPD

Building information modeling tools and their methods of use have changed drastically with the increased use of the integrated project delivery process.

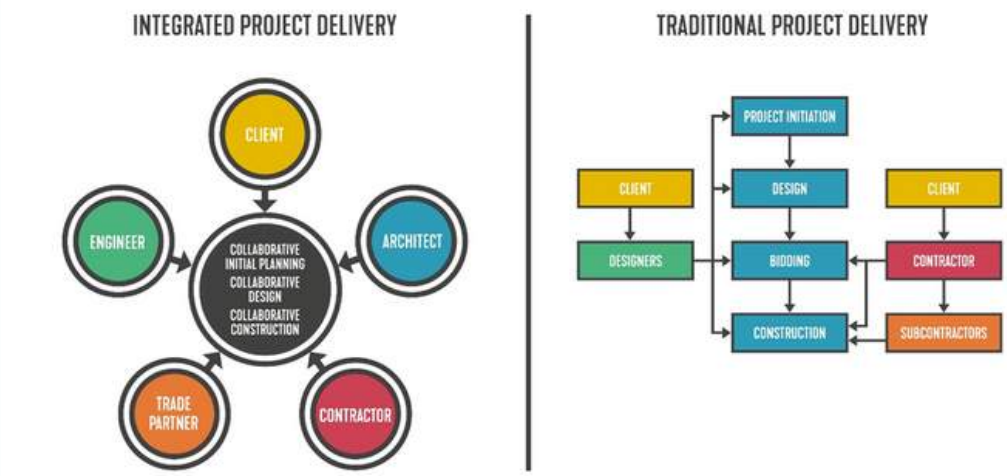
September 4, 2023

The concept of business, technology, the Internet and the network. A young entrepreneur working on a virtual screen of the future and sees the inscription: BIM | Getty Images/iStockphoto

Building information modeling (BIM) is a digital technology to create a detailed virtual representation of a building or infrastructure project. BIM brings together information about the project's design, materials and performance, allowing all stakeholders to collaborate effectively. It helps visualize the project, analyze potential issues and make informed decisions throughout its lifecycle. By using BIM, construction professionals can improve efficiency, save costs and achieve better project results.

Integrated project delivery (IPD) is a lean construction method which aims to improve how different parties work together on a construction project. It focuses on better collaboration and communication among the owner, designer, builder and other trades and suppliers involved. This is different from the traditional project delivery method, where the owner has separate contracts with each party and acts as a middle person between the design and build teams.

This approach aims to get the most value for the owner, reduce unnecessary steps and make everything more efficient from the beginning of the design to the end of construction. By leveraging BIM in conjunction with IPD, the health-care design and construction industry can experience even more significant advancements, leading to more streamlined and successful projects. Figure 1 sheds light on the difference between integrated and traditional project delivery phases.



The BIM process for a traditional or non-IPD project might be described as follows: At project conception, the design team creates a model with three-dimensional content and pulls from that model to create its drawings. Contract documents are delivered with little-to-no trade partner input. The trade partner then takes the drawings and produces — oftentimes from scratch — a working model of its own. From that model, it creates shop drawings, which may be submitted back to the design team for review.

The BIM process for an IPD project might be described as follows (see Figure 2): At project conception, one party (generally the trade but sometimes the design team) creates one model for all parties to work and collaborate in. The design team then creates direction in the form of two-dimensional schematics, detail views, schedules and calculations.

Refining Health-Care Design with BIM and IPD

The trade team populates the model with three-dimensional content, using direction from the design team's content. Contract and permit documents remain separate from shop drawings, but they all pull from the same three-dimensional content.

Design teams comfortable with the non-IPD process may be hesitant to complicate things by agreeing to share a model with trade partners. In many ways, the non-IPD process is simpler, with clear and isolated responsibilities. Design and trade teams work in their silos, exchanging information only when necessary, if at all, and each work with their own tools.

Building information models can be finicky, and when it comes to model integrity, restricting access to limit file corruption, software malfunctions and simple unintended drawing changes is a reasonable strategy.

However, this simplicity can come at the cost of lost efficiency. This inefficiency can be seen in the form of duplicated work and personnel working outside of their core competencies, ultimately costing money, time or both.

Consider this: In the traditional process, two models are ultimately created. It is not efficient for the design team to build and maintain a model, only for the trade team to do the same thing after contract documents are received. If permit or contract drawings and shop drawings can both pull from the same model, why should two models be created and maintained?

Consider also the ability to better assign duties according to core competencies. Engineers tend to be good at things such as system calculations, code compliance and schematics. Generally, they are neither highly skilled nor efficient at drafting. They usually don't have the "boots on the ground" experience that the trade team does, and so they're not as well equipped to accurately convey details regarding pipe fittings, for example.

Regardless, in a traditional project, engineers are frequently forced to perform a task they're not inherently skilled at in order to produce contract documents, only for their work to be redone in a separate model by someone more skilled and knowledgeable in areas such as drafting. In the IPD project BIM process, engineers can focus on engineering.

Less Conflict, Increased Accuracy and Innovation

Besides increased efficiency, other benefits can be found in the BIM process for an IPD project as previously outlined. If contract documents and shop drawings can both pull from the same model, fewer discrepancies will exist between them and less of an opportunity for conflict between the design and trade teams. There will be few, if any, surprises when the design team reviews the final shop drawings.

This article originally appeared in Plumbing Engineer, a PHCPPros publication. For more articles like this, please visit www.phcppros.com

Refining Health-Care Design with BIM and IPD

Additionally, there is an opportunity for increased detail and accuracy in the IPD project BIM process. For example, design teams frequently model piping systems in Revit native piping. It works nicely for plan views and to establish design intent, but it's typically not very accurate for the purposes of clash detection because the pipe and fittings aren't usually spatially accurate.

Because it benefits trade partners to be able to accurately model and price designs, they frequently maintain libraries of proprietary or at least spatially accurate pipe and fittings that they prefer to model with. When a project is modeled with the actual pipe and fittings that end up being installed, clashes are minimized, pricing is more accurate and as-built drawings better reflect reality.

Finally, the increased coordination between design and trade teams can open conversations leading to innovation. During a routine review of a recent health-care IPD project in process, the authors noticed that many water closets were connected to 3-inch waste piping. Although this was not against the applicable code, it was unusual. This sparked a conversation about why 3-inch water closet carriers were desired.

The design team was made aware that in certain circumstances, the difference in length between a 4-inch horizontal water closet carrier when connected to a 4-inch vertical sanitary tee and a 3-inch horizontal water closet carrier when connected to a 3-inch by 4-inch vertical sanitary tee was significant enough to require framing to need to be cut in the case of the 4-inch carrier and tee.

With this information, the design team chose to approve the use of the 3-inch carrier in certain circumstances where it would result in a cleaner design and where the distance to the 4-inch riser was limited. In the best-case scenario without the IPD project BIM process, this conversation would not have occurred this early in the design process.

Shared Model Concerns

The layering of design, layout and fabrication information and modeling provide higher accuracy and richer, more detailed three-dimensional components important for increased coordination, clash detection and other nontypical architectural and engineering purposes such as cost takeoffs and 4D scheduling. However, there is a cost and challenges to be borne by all parties involved.

A reasonable concern is that the extra data/model layer makes for a "heavier" model that may strain the computer resources of the BIM users. It becomes even more important to develop and enforce proper model management and BIM practices for all users working within a single model. These model management techniques can include low-hanging-fruit solutions like removing unused families, keeping view proliferation to a minimum, and performing other periodic model maintenance that will reduce model size and make teams more efficient.

However, other topics need to be addressed with a shared model. Two such topics are the number of users in a model can be a critical limiting factor for users, and ownership of elements in the model (who can change what and where). Understanding how the design team and the fabrication team work differently in Revit is key; just because all parties use the same software doesn't mean we use it the same way.

It should be noted that model elements serve different purposes for different teams. Take, for example, a piece of plumbing or mechanical equipment. A design team might use a placeholder element lacking detailed geometric definition simply to claim space on the floor plan and to hold parameters that populate schedules for the basis-of-design equipment.

Later, as the design progresses, the trade partner might put in a more accurate model of the equipment it plans to submit. This creates a duplicate in the model, but they are vastly different elements serving different purposes. If one party was to delete the other's, the results could be extremely detrimental to the design documents, coordination, or model takeoffs.

Ideally, the entire BIM team discussed these issues in advance and worked on a solution to allow placeholder equipment to evolve or be substituted smoothly to the trade teams' equipment, keeping all the deliverables intact.

When design and trade teams maintained their own models, they were only modified by people within the respective teams. If something went wrong, there was no question as to what organization was at fault. With multiple legal entities working in a single model, opportunities to play the blame game when crashes occur abound.

Users should be well-trained in BIM software and understand how their actions affect other disciplines and users. This needs to be clearly spelled out in the BIM Execution Plan so the entire team knows which modeled content is theirs to modify and when.

The design team does share more control in the design process. In terms of plumbing, this tends to manifest itself in routing decisions. Ideally, design parameters should be given by the design team early in the project. This could be by way of early schematics to be eventually included in the contract documents. In any case, a feedback loop should exist as the design progresses for the design team to provide feedback to the trade team and vice versa.

While growing pains are to be expected, a more accurate model that serves as a single "source of truth" feeding both permit and shop drawings provides a better platform for coordination and, ultimately, a more polished finished product for the client.

Nathan Heitzinger, PE, CPD, is a plumbing engineer at SmithGroup's Phoenix office. He is a member of ASPE and has more than seven years of experience in designing plumbing systems for various building types.

Arandeep Singh is a plumbing engineer at SmithGroup's Dallas office. He is a member of ASPE and has more than one year of experience in designing plumbing systems for various building types.

Galen S. Hoeflinger is a technology strategist in SmithGroup's Washington, D.C., office. He is a member of AIA's Large Firm Roundtable and leads SmithGroup's Technology in Practice - Delivery Solutions group. He has more than 24 years of experience in the architecture and engineering industry, filling various roles ranging from architect to BIM technologist.

This article originally appeared in Plumbing Engineer, a PHCPPros publication. For more articles like this, please visit www.phcppros.com

Hello everyone,

Welcome to 2024! I'm excited to announce that we are starting to plan our WOA event for this year. While I'm note sure we can top last years cooking event, I'm hoping we can tap into our creative side again! Our event will be taking place in May a week or two prior to the monthly meeting. Once we finalize the date with the venue you'll see an announcement in the newsletter.

Best regards,
Karen Schulte, PE, CPD, LEED AP BD+C

Karen Schulte
WOA Liaison

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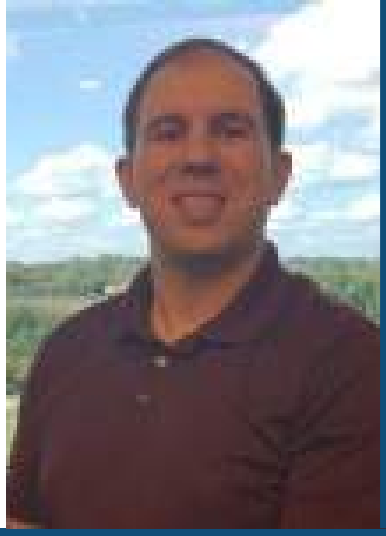

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Chris Imhof, PE, CPD
Vice President- Legislative

2024 Maryland Legislative Session

The 2024 Maryland Legislative session began on January 10th.

The following is a list of proposed legislation relating to plumbing, building construction, climate action, trades, and licensing.

- **SB0096/HB0024** – Environment – Impact of Environmental Permits and State Agency Actions
- **HB0101** – State Highway Projects – Removal, Relocation, and Adjustment of Utility Facilities – Notification, Work Plans, and Compliance
- **SB0258/HB0130** – Department of General Services – State Buildings and Facilities – Energy Conservation and Greenhouse Gas Emissions Reductions
- **HB0210** – Maryland Building Performance Standards – Fossil Fuel Use and Electric – Ready Standards
- **SB0206/HB0216** – Condominiums – Common Elements – Clean Energy Equipment
- **HB0244** – Maryland Occupational Safety and Health Act – Civil Penalties – Alterations
- **HB0245** – Department of the Environment – Fees, Penalties, Funding, and Regulation
- **SB0244/HB0238** – Public Health – Clean Indoor Air Act – Revisions
- **SB0297** – State Board for Professional Engineers – Engineer Members – Qualifications
- **SB0298** – State Board of Electricians – Licensing – Penalties
- **SB0307** – Public Safety – Board of Boiler Rules – Sunset Extension

All proposed legislation can be found here. Read the next newsletter for more information and updates regarding the proposed legislation.

State Plumbing Board – State Code Adoption and Board Members

At their November meeting, the Maryland State Plumbing Board discussed adopting the 2021 editions of the ICC Codes. The process typically takes a few months and would most likely not take effect until late spring at the earliest.

The composition of the Board has also changed in the last year.

The Board members and meeting minutes can be found here.

Chris Imhof, PE, CPD
Vice President – Legislative

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Nikita Patel, PE
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03 **Engaging the Facility AHJ**
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04 **Professional Growth**
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05 **Class + Credential**
Unlike other companies hosting this course, this class hosted by Sherman Engineering will include both the course led by Mark Allen, as well as the course exam, proctored by MGTC.

REGISTER

ASPE YOUNG PROFESSIONALS

ASPE American Society of Plumbing Engineers™ BALTIMORE

Brian Crisp, CPD, GPD
Vice President- Membership

Welcome everyone to 2024! Hopefully everyone got what they wanted for the holidays this year, especially if it was plumbing related 😊. We have an all-time classic topic for January's meeting: Grease Interceptors! During my career I'm either sizing a whole bunch of them or I don't use them for months at a time, so I always appreciate the refresher. The rest of the year is jam-packed with good topics! I want to highlight a very special meeting in May where our very own Chuck Swope will be leading a Plumbing Engineering 101 discussion. I hope to see everyone at our meetings, participation in the meetings help to grow our plumbing community.

Chapter Update: The Baltimore Chapter is currently at 133 members, up from 128 at the start of our ASPE calendar year. We seem to be on a steady incline, so let's make sure all of our members feel welcome and engaged. Speaking of, help me welcome the following new members to our illustrious Chapter!

Justin Saelens – Muller Associates
Andrew Cypher – Marriot International
Gary Eklof – Harry Eklof
Durgesh Sonar – WSP

If you would like to shout out someone in the Chapter who is doing a superb job or has an interesting story to share, let me know! When nominated I will be highlighting a special member from time to time so we can get to know our fellow members better. Please don't nominate any board members, everyone already knows how awesome we are 😉

If you or anyone you know is interested in joining like the cool people above, or at least hearing about the benefits of membership, please don't hesitate to reach out to me. You can also join directly at https://www.aspe.org/join.

Thanks and see you at the meetings!

Brian Crisp, CPD, GPD
Vice President, Membership
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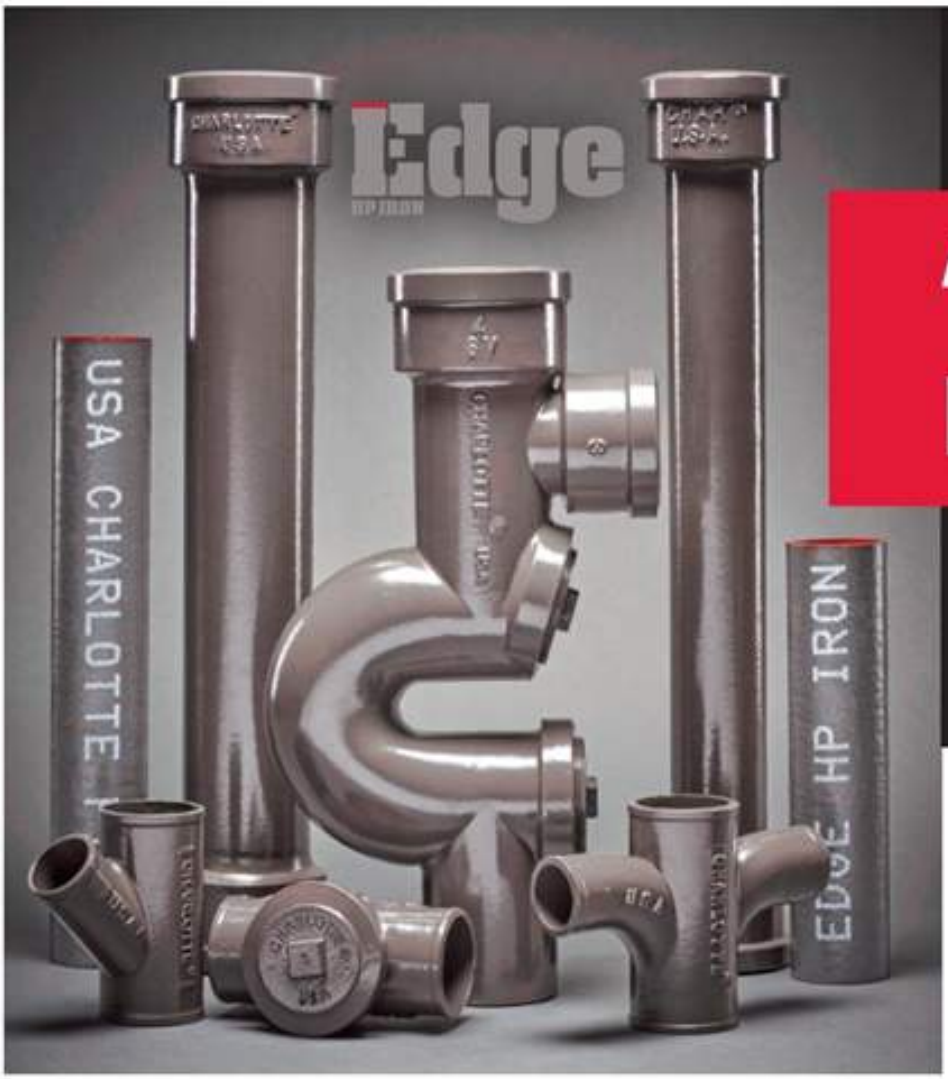

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Public health and safety are a common concern. Targeted for commercial applications, Bemis has a comprehensive offering of seats with DuraGuard® Antimicrobial Built-In Seat Protection™ and STAY·TITE™.

WHAT IS DURAGUARD?

DuraGuard is an antimicrobial property built into the toilet seat to inhibit the growth of bacteria. The active ingredient in DuraGuard is zinc pyrithione, a non-VOC (volatile organic compound), broad-spectrum, highly effective antimicrobial agent used to control mold, mildew, yeasts, fungi, algae, gram positive and negative bacteria. DuraGuard does not protect users or others against bacteria, viruses, germs, or other disease-causing organisms.

WHAT IS STAY·TITE?

STAY·TITE Seat Fastening System™ anchors the toilet seat to the bowl by using a patented bolt design with a finned bushing and glass-filled nylon nut, eliminating the need to retighten the seat to the bowl after installation.

CONTACT YOUR REP FOR ADDITIONAL INFORMATION

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EVERY SYSTEM

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- ASPE Recognized 70% Redundancy for Energy Savings
- No-Flow shut down without the use of Hydropneumatic Tanks
- Standard with surge suppressor and 100k AIC SCCR disconnect

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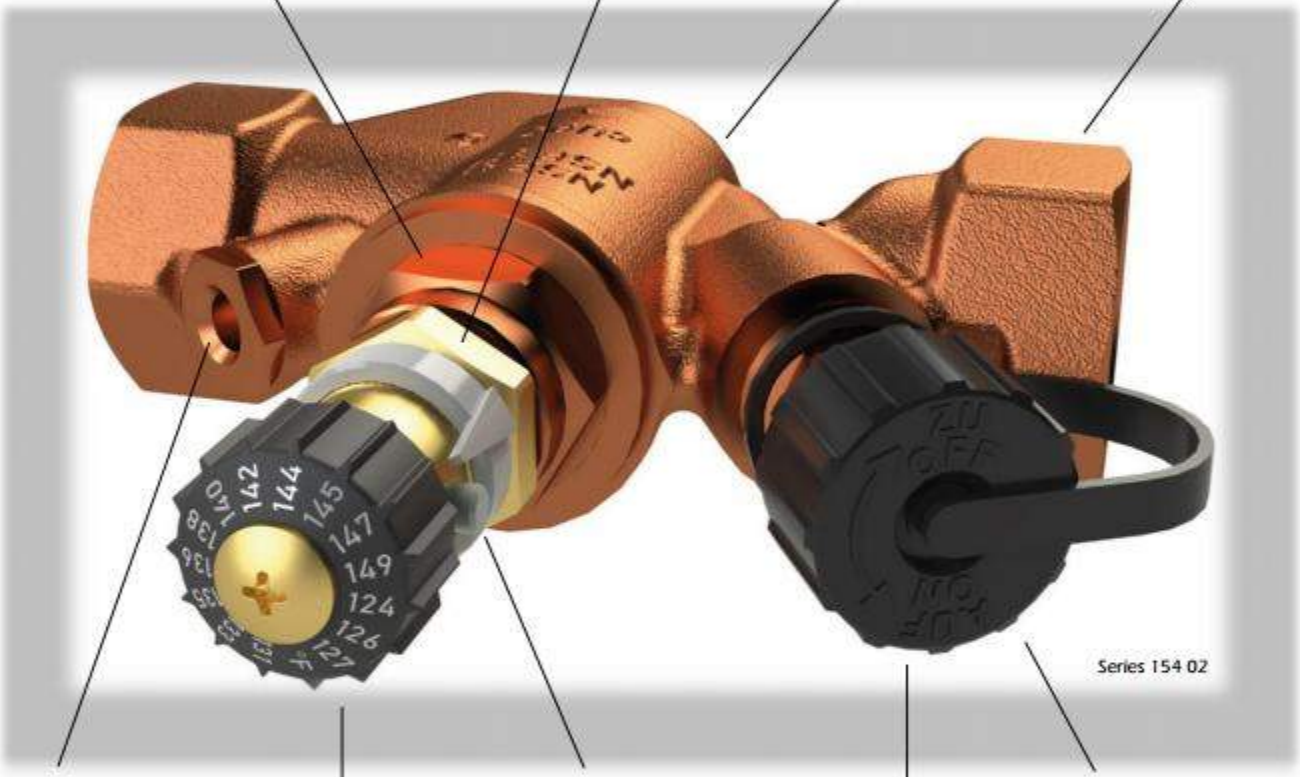
Kemper Multi-Therm® thermostatic balancing valves have been trusted for over 25 years. Packed with unique and innovative features, these compact thermostatic balancing valves offer unparalleled ingenuity, dependability, and trustworthiness.

Thermal Disinfection
Ability to manage high temperature disinfection practice is included.

Thermal balancing cartridge
Replaceable or serviceable while valve body remains connected to piping.

Bronze valve body
Dezincified, lead free

Insulation clam shell
Option for quick & tidy installation.



Available port
This port can be used for a BMS temperature sensor probe.

Locking dial
Set screw locks in the temperature setting hidden under a protective cap.

Built in isolation valve
This feature stops the flow of water through the valve.

Adjustable temperature dial
This feature provides flexibility and allows for real-time adjustments to the HW return temperature setting.

Integrated port
This port allows for the use of an optional temperature gage (display range 0 -176°F).

Contact for more information:
• www.OttoSales.com • (804) 798-2600

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- Programmable temperature setpoint
- Easy setup/easy error coding
- Upon power failure, holds last set temperature to avoid thermal shock

PROTON SERIES: MODEL FEATURES GUIDE

	Proton 1.0	Proton 2.0	Proton 2.5	Proton 3.0
Simple and intuitive user commissioning and setup	•	•	•	•
Alarms for when unit maintenance is required	•	•	•	•
User programmable set point range between 65 °F and 180 °F	•	•	•	•
Automatic hot/cold water shutoff upon cold/hot water inlet supply failure	•	•	•	•
Valve controls at time of no use: 0.0 GPM*	•	•	•	•
Single valves available in 1" to 3" valve outlet sizes	•	•	•	•
Manifold assemblies available in up to 6" valve outlet sizes	•	•	•	•
Enhanced controller with programmable disinfection mode		•	•	•
Three additional temperature probes (inlet hot, inletcold, return temp.)		+	+	•
Five relay contacts that switch on during alarm states		+	+	+
Remote alerts to assist Maintenance and Service Personnel		+	+	+
Loss of power alert		+	+	+
Broken temperature probe alert		+	+	+
"Out of range" temperature alert (± 10 °F)		+	+	+
Motor connectivity and operation alert		+	+	+
Service required @90% full shuttle movement alert		+	+	+
Enhanced controller with BACnet MS/TP connection			•	•
Enhanced controller with Wi-Fi				•

*When properly installed near the hot water source with a continuously operating recirculation pump

• Standard
+ Optional

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INTELLISTATION® JR

IntelliStation® Jr. provides safe hot water consistently and on-demand for smaller applications than IntelliStation. It is also ASSE 1017 compliant, available in 3/4" through 2" sizes, and has a programmable temperature set-back/scheduling program that lowers water temperature when the building is unoccupied. Register the Jr. with the Watts OnSite mobile or web app for remote temperature control, monitoring, and visibility across locations and sublocations.

Scan the QR Code below to access the Selexit Configuration Tool.

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Hello ASPE Baltimore,

We are back at it planning activities for our upcoming event at the Engineers Club of Baltimore where we will introduce young high school students to the world of Plumbing and Plumbing Engineering. Each year, we bring speakers from MEP firms, the UA486 Training Center, sales people, business owners and more to participate as panelists while we explain how they can embark on a career in the plumbing field. If you would like to get involved, please reach out to me for more details. If you would like to make a donation to the chapter to help us provide ASPE Baltimore branded giveaways to them, we would also appreciate it!

Best regards,
Nikita Patel, PE
npatel@shermanengineering.com

Nikita Patel
Education Chair

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to get more information on product and training!

Schedule of Events

SEPT 27	Communication Skills for Construction & Consulting	BJ Allen Warfel Construction
OCT 25	Vacuum System Design	Nikita Patel Sherman Engineering
NOV 16	Generator Basics	Jim Webster Kelly Generator & Equip.
DEC 13	Air Compressors	Will Dargan Cummins Wagner
JAN 24	Grease Interceptors	Schier Products
FEB 28	Fire Protection Specialties	Ken Isman University of Maryland
MAR 27	Fire Protection- Pre-Action Systems and Clean Agents	Josh Shapiro Reliable Sprinkler Co
APR 24	Siphonic Roof Drains	UV Systems
APR 2024	Annual Golf Tournament	Details to Follow
MAY 22	Natural Gas Sizing	Chuck Swope Mueller Associates ASPE Baltimore President
JUN TBD	Annual Summer Party	Details to Follow

MONTHLY SPONSORSHIP OPPORTUNITIES

Tabletop Presentations: $100 to provide a tabletop presentation of equipment or material relative to the plumbing profession. The tabletops will be set up from the beginning to the end of the monthly meeting and provides the opportunity to provide a brief (under 5 minutes) presentation.

Please make checks payable to the Baltimore Chapter of ASPE. Contact Kathy Dwyer or Chuck Swope if interested