SoPHE NEWSLETTER

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INTRODUCTION FROM THE CHAIR

Peter White

Welcome to the spring edition of our SoPHE Newsletter. I hope that you all enjoyed reading the inaugural winter edition, and a big thank you to Amanda Stanley and everyone who made it happen.

The clocks have gone forward, the days are getting longer and SoPHE has had its 2023 Technical Conference. We can all agree it was a very enjoyable and interesting day on fire engineering and sprinkler protection – of which there is more to learn in the following pages.

SoPHE was recently on the receiving end of shout-outs at the recent Worshipful Company of Plumbers annual banquet at Mansion house – a great evening and fantastic to see SoPHE's work getting praise.

In the coming weeks I'll be acting as a judge at the Plumbing Centre of Excellence craft competition on 4th May, quickly followed by our combined AGM with the Industrial Working Group at Arup in London on the 27th. Rolling into May, we have more upcoming events, including our Northern Dinner in Manchester, which if you have never attended before, you really should - it's a great evening.

Last, but not least, I have been doing more and more membership interviews with Chris Northey for not only new joiners, but also for transfers to either Member or Fellow. I know that there are lots of you out there that should be recognised at those grades but currently aren't – so don't be shy and put yourself forward! The 'interview' is simply an interesting chat between like-minded engineers, and if your experience shows that you should be a Fellow or be a Member, I would be honoured to help you achieve that goal.

Enjoy the spring and I look forward to seeing you all at one or another event in the coming weeks.

Best regards,

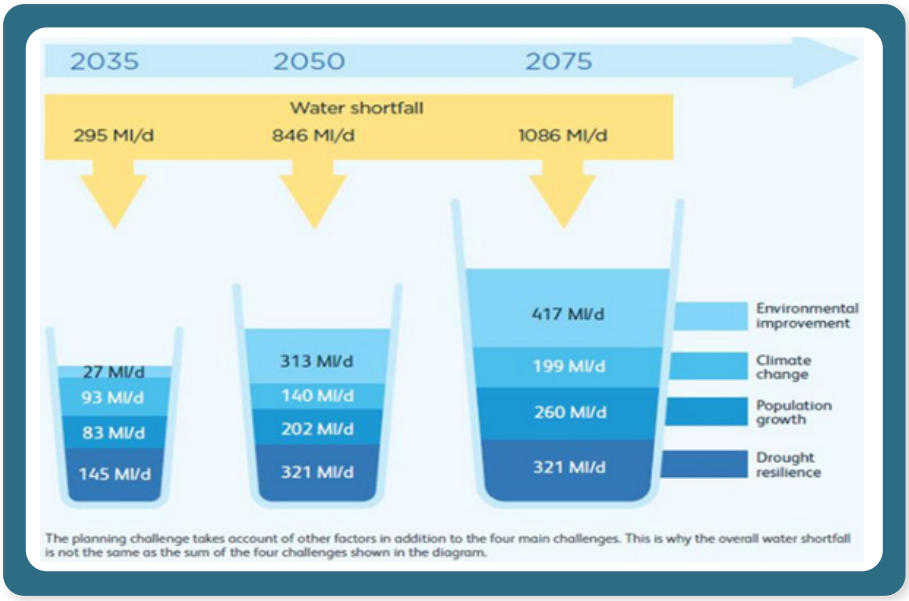
Peter White
CEng MCIBSE FSoPHE,
Director, PHDC

EDITOR'S SECTION
SoPHE Members - get involved!

Amanda Stanley

We hope you were able to attend our Conference in March 2023 which was on Fire Protection. We have had an interesting few months and our Conference back in March 2023, was a summary of these busy times. If you couldn't attend, look at the highlights from the conference in this issue.

We still have a need for your stories and experiences to help us in producing this Newsletter, so please assist us. Also, how can we help you? Please send your articles into sophe@cibse.org.



THAMES WATER

The latest headline from the Thames Water 2023 Water Conference, held on the 28th of February, was the prediction that, 'By 2075 they forecast a deficit of over 1 billion litres of water a day.'. Although not a nice debate, this makes the conservation of water an essential discussion. If change is not designed now, will there be a tomorrow?

Environmental Improvement Plan 2023 Goal 3 Clean and Plentiful Water Environmental Improvement Plan 2023: Executive summary - GOV.UK (www.gov.uk) this document sets out a road map over the next 25 years to partially mitigate water scarcity, but we as design engineers need to assist in the greater design now.

Interesting and Bespoke

Be careful of uninsulated pipes.

The last issues image had a few problems.
1. A new fit-out toit area has been connect to the rainwater.
2. The guttering is just below an openable window.
3. Drain point dose this discharge to the sewer or a soak-way?

SPOT THE MISTAKES

I was scrolling through LinkedIn and came upon this image, pipe bending as an art form, is it quicker to move the clock? Keep it straight, direct and to the point!

If you have any images, please send them to sophe@cibse.org.

IN MEMORIAM

Paul Yunnie
Alex Stevenson

PAUL YUNNIE

SoPHE is saddened to hear of the death of Paul Yunnie, former managing director of Andrews Water Heaters. A longstanding CIBSE member, Paul was instrumental in Andrews becoming involved with SoPHE and the creation of the Industry Working Group. An advocate for the development of young engineers, Paul would be fully behind the work SoPHE is undertaking in this regard. A well respected member of our industry with a passion for hot water Paul retired to Australia in2005 with his partner Margaret. He continued to be involved with our industry, publishing a number of books and articles on hot water. Paul is survived by Margaret, his son Phillip and daughter Anna.

ALEX STEVENSON

"My Dad started in the plumbing world early on right from high school, in his teens learning the trade and getting experience before moving over to design & PH with Hully and Kirkwood, who he was with for 23+ years; then moving on to various other companies and then starting his own company Agiilex Ltd. In August 2020, my Mum - Agnes - sadly passed away, with Dad and I by her side; the very next day, Dad was diagnosed with throat cancer. He began undergoing radiotherapy, a treatment which pretty much floored my Dad near the end of 2020, but he still managed to keep busy working when he could - "I'm just checking my emails and keeping in touch" he would say, all while dealing with the loss of his wife. In 2021, he was given the good news that the radiotherapy worked, and he began taking on more projects and moving on with life. In Mid-November 2022 however, he was given the news that the cancer was back, this time all that could be done was slow it down. He managed about three months of immunotherapy treatment, until 23rd January 2023 when my Dad sadly passed away at home." - *His son Leigh.*

UPCOMING EVENTS

Save these dates

		FACE TO FACE					
	ONLINE CPDS	LONDON AND SOUTH EAST	MIDLANDS	NORTHERN	UAE	CONFERENCE	DINNER
APRIL	**Wednesday 26th April** Mitigating the risk of water leaks in property *Tony Gorman* (Aqualeak Detection ltd)	**Wednesday 20th April** Reliable wastewater removal in commercial buildings Introba office at 5.30 to 6pm Start 150 Holborn, Bloomsbury, Camden Town, London, EC1N 2NS *Sam Ely* (Grundfos)				**Thursday 20th April** Breakfast Networking at the RCN on 'Managing Water when designing residential developments' Amanda Stanley – Introba (Elementa Consulting) John Hernon – Thames Water Rikesh Miyangar – Ramboll Sam Burgess - SDS Limited	
MAY		**Wednesday 17th May** Hyclean- Water Management Introba office at 5.30 to 6pm Start 150 Holborn, Bloomsbury, Camden Town, London, EC1N 2NS *Andrew Aronald* (George Fisher)	**Wednesday 10th May** Water Neutrality - SoPHE Technical Symposium Venue TBC *Amanda Stanley Introba* *Rickesh Miyangar Ramboll*	**Wednesday 17th May** Water Treatment in Commercial Heating Systems *David Webster* (Sentinel Performance Solutions Ltd)	**Friday 26th May** Solar & Heat Pump, Hot water Solutions Venue: Novotel Hotel Al Barsha, Dubai @ 6pm (Ecoval LLC)		**Friday 12th May** 11th SoPHE NORTHERN DINNER VENUE : The Midland Hotel, Manchester
JUNE	**Wednesday 28th June** "Title TBC" *Blucher UK Ltd*	**Wednesday 21st June** SoPHE CPD on Penetration seals Introba office at 5.30 to 6pm Start 150 Holborn, Bloomsbury, Camden Town, London, EC1N 2NS *Paul McSoley* (Mace & SoPHE Technical Committee)			**Thursday 22nd June** Drainage system typology in compliance with local & Internation standards (BS / IPC / UPC / DM) - Part 1 Venue: Geberit Training Centre (Geberit)		
JULY		**Wednesday 19th July** Designing Drainage Without Compromising BS EN 12056 Introba office at 5.30 to 6pm Start 150 Holborn, Bloomsbury, Camden Town, London, EC1N 2NS *Martin Murray* (Geberit)		**Wednesday 19th July** "Flowfit, the future of pressfit" *Geberit UK Ltd*	**Friday 28th July** Water System Hygiene Venue: Media Rotana Hotel Barsha Dubai @ 6pm (Viega)		

SoPHE SUMMER NETWORKING EVENT

Click Here

In response to feedback from its membership, SoPHE is looking to hold a networking event somewhere in central London in June or July.

This event is for SoPHE members only - so if you or someone you know would like to attend, see www.cibse.org/sophe for details of how to join the society. Further information on the event will be provided soon, and can be found in the same place.

We look forward to you being able to join us for what will be an enjoyable summers evening.

TECHNICAL CONFERENCE 2023

Fire Strategy and Fire Suppression

The Society of Public Health Engineers (SoPHE) 2023 one-day in person Technical Conference took place at the Institute of Physics in London on 23rd March. The focus this year was on fire protection to domestic and commercial premises. The subject covered legislative guidance and updates on fire suppression equipment - shedding light on many critical aspects of fire safety.

The day was divided into several sub-sections, with industry experts presenting on a range of topics including regulations, changes to commercial and residential sprinkler legislations, electric vehicles and associated fire risks in car parks, an overview of the impact of building fire strategy on fire protection systems and RIBA stages, updates on fire suppression equipment from manufacturers and case studies of successful fire safety implementations in buildings. The final section of the event focused on the complexity of compartmentation and firestopping for fire and public health systems.

All the sessions included question and answer sessions with discussions about the complexity of legislation and technical options to address those requirements. Overall, the conference was a good learning opportunity, highlighting the critical role of fire suppression systems for the preservation of life and property protection. It also proved that the subject is complex but open for innovation; for example, the mist fire suppression system could be a subject for exploration for future events.

The networking reception that took place after the conference was a great opportunity to continue the discussion and connect with other attendees and exchange ideas, and was the perfect way to end the event. We would like to thank our generous sponsors Rinnai UK, Edincare Pumps and PAM Building UK.

We would like to extend our appreciation to the speakers for providing a comprehensive overview, as well as to all those involved in the preparation, including Alison Franklin (BDP), Amanda Stanley (Introba), Jassim Daureeawo (Vortex), Kris Wojcik (Jets Vacuum), Nigel Green (Higgins Partnerships), Paul McSoley (Mace Group), Stuart Brown (AECOM), and CIBSE staff Roisin Sweeney and Jack Batley.

Kris Wojcik
Jets Vacuum
SoPHE Industry Working Group Membership Representative

USE OF 18MM PIPEWORK IN WATER SUPPLY SYSTEMS

Ana Santos

'Thinking outside the box' is a quote that often, if not always, is interpreted as 'GO' to an engineer, generating questions, research and sometimes an innovation that changes the world. Examples can range from a new power source to a simple idea that transforms our daily routines.

Last year a commercial project in London had 18mm copper pipework specified for much of the water services distribution. A call from a contractor followed by a series of discussions, and the 18mm was upgraded to 22mm. I then heard the words 'You're thinking outside the box'.

So, the question remains: why is 18mm copper and stainless steel pipework not included in the majority of the public health design in UK projects?

AVAILABILITY

18mm sizes for stainless steel and copper are not used in the majority of UK building services water systems, nonetheless, are widely used in the European industry. Currently 18mm pipework and fittings are not available 'off the shelf' but can be ordered in advance allowing manufacturers to produce and deliver on site. Pipework and fittings availability will follow the demand as manufacturers adjust production to orders.

SUSTAINABILITY

Embodied carbon will be lower with smaller pipe sizes, fittings, and insulation. This would beneficially feed into the life cycle assessment produced for BREEAM.

The water volume used in 22mm pipes is lower than that used in 18mm pipes, and the draw-off time for hot water supply is less with benefits on water saving and energy consumption.

RAW MATERIAL

Cost of steel has seen a sharp increase in the last few years, hitting a historic maximum in 2021; copper hit its maximum in March 2022 (Source: Trading Economics), Predictions are that rising costs tendence are here to stay with the current worldwide scenario following the COVID-19 pandemic, the Russia-Ukraine war and fears of a recession. Reduction of pipe sizes in buildings would bring obvious savings in raw material and cost.

DESIGN STANDARDS

BS EN 806 and CIBSE Guide G provide guidance on use of 18mm sizes although it is not stated in CIPHE guidance.

From a water hygiene point of view ensuring domestic water pipework is sized correctly is critical, following HSG 274 Part 2. Considering 18mm (instead of up-sizing to 22mm) reduces the potential for oversizing, which has a positive impact on water hygiene, improving supply velocities as well as reducing heat gains/losses.

COMPLIANCE & ACCREDITATION

Water Supply Regulations 4(1) (a) compliance is compulsory. The WRAS directory shows 18mm stainless steel is available for pipework and fittings but limited for sopper pipework. Again, this is expected to be related to lack of demand that does not justify manufacturer accreditation costs. This requires discussion with the client in the early stages of the design to assess potential implications.

MARKET AVAILABILITY

Currently merchants' availability is nearly non-existent. In the short term there may be a demand without immediate availability, but availability works around demand, so in the medium to long term specifying this pipe size will eventually change market availability.

DESIGNERS' METHODOLOGY

A survey to public health engineers suggests the two greatest obstacles to specification of 18mm pipe sizes in the design are limited availability of pipework and fittings, and the use of CIPHE guidance for the loading units calculations.

CASE STUDY

Private data from projects ranging from residential, commercial, and mixed-use applications in Europe have an average of the following pipework sizes in the total water supply: 15mm pipework - 20.77%, 18mm - 18.39% and 22mm - 22.94%. Although numbers cannot be directly converted to UK projects, this is a good indicator of the pipework percentages that can potentially be downgraded from 22mm to 18mm.

SUMMARY

In an era of raw materials scarcity, embodied carbon assessments, rising energy prices, energy and sustainability assessments and accreditations, climate change concerns, water savings, and so on, engineers are required to 'think outside the box' more than ever.

In the short-term, careful consideration needs to be given to specification of 18mm copper and stainless steel sizes in the UK building services industry but none of the limitations described appear to be a barrier that adequate planning from design to construction cannot overcome, with widespread benefits for all parties involved. As designers, we have a duty to propose the best solutions for client, environment and overall cost of services in a building.

Ultimately, using 18mm sizes for water supply isn't 'thinking outside the box' but instead using all the available tools inside it.

Ana Santos

Since the last edition we have had a continuous professional development (CPD) session run by Kiwa on Water Regulation 4 compliance, explaining to our members the different schemes that can but used to comply with this legislative requirement as an alternative to Water Regulations Approval Scheme. We have also worked on scheduling more site visits and our Technical Symposiums, date and locations to hopefully be published soon.

Our next site visit is scheduled for the 11th April near Bond Street, London and a third is lined up for 5th May at Space House. If you would like to attend this or future visits please contact myself or any of the committee's members to be added to our list of future attendees. If you have a site where there might be an opportunity for YEN members to visit, please reach out and we can discuss details and possible dates.

Next on our list of activities will be a YEN event at the College of North West London plumbing centre of excellence in June, please keep an eye on your emails for how to get involved. We are also coordinating with regional CIBSE YEN committees to promote SoPHE and public health CPDs to the regional YENS.

If you would like to join the committee or offer support to YEN please email joe.russell@wsp.com.

Joe Russelll (WSP)
EngTech LCIBSE
SoPHE YEN Chair

FOR MORE INFORMATION ABOUT THE PLUMBING COMPETITION
Click Here

A DAY IN THE LIFE ...

Sanjay Modasia
JA Brooks

We recently had the pleasure of receiving Ruth Carter, Chief Executive of CIBSE, who spent a day with our business. She met members of staff and visited a number of our projects, alongside myself, Sanjay Modasia.

Ruth wanted to understand what members of CISBE do to help her to get an understanding how CISBE can be beneficial to its members.

The day commenced with informative discussions around the challenges that the industry faces as a collective, which centred on attracting new talent to the industry and making better use of digital engineering and modern methods of construction.

The team at JA Brooks explained how we are facing these challenges with investment in a new DfMA facility, The Pod, which enables us to bring our Digital Engineering Team together with our Manufacturing Team in a new 24000 square foot facility. This approach enables JA Brooks to offer an engineering-led ethos and deliver projects with increased accuracy, efficiency, and sustainability.

As part of this approach, we have taken the innovative step of incorporating a photovoltaic system and rainwater harvesting system to provide renewable power and water services to The Pod which will help us on our sustainability journey to net zero carbon as a group. This will also enable us to support our clients on their own sustainability journey with tangible net carbon benefits in relation to the emissions generated to deliver their projects.

We are keen advocates of the development of our staff and investment in apprentices with Ruth meeting a number of our current cohort during her site visits.

Sanjay Modasia,
Operations Manager,
JA Brooks Mechanical Services

EDUCATION GROUP UPDATE

The Society of Public Health Engineers

The SoPHE Education Committee has recently regrouped and made significant strides in developing e-learning modules. These are to be initially aimed at engineers in the early stages of their careers. The Education Committee has been working tirelessly to develop online training modules to provide their younger members with the latest knowledge and skills in the field. The e-learning modules cover various topics such as water services design, rainwater drainage, fire suppression and below-ground drainage, and build on drainage modules already produced by CIBSE. These modules are designed to be accessible to members at their own pace and convenience, allowing them to up-skill while managing their busy day-to-day schedules.

SoPHE Education Group member Dan Costelloe has also partnered with CIBSE Training, being central to the creation of a public health-focused STEM practical module. In this, students compete in teams to build their own scaled-down drainage system, with the aim of flushing a raisin down a miniature WC, experimenting with falls - and resources - using a minimal amount of water, thus highlighting both water conservation and drainage. This module is intended to be used in schools to promote the importance of public health engineering and encourage more students to pursue a career in this field.

The collaboration between SoPHE and CIBSE is a significant milestone in promoting the importance of public health engineering to the next generation. By providing practical, hands-on experience to school students, the module aims to foster a deeper understanding of public health engineering's role in society.

Overall, SoPHE's Education Committee has made great progress in developing e-learning modules and collaborating with others to promote public health engineering. These efforts demonstrate the society's commitment to providing their members with the latest knowledge and skills and promoting the importance of public health engineering to a wider audience.

Ben Goodfellow,
SoPHE Education Committee Chair

ARROW VALVES

Founded in April 1999, Arrow Valves first started out specialising in the supply of Reduced Pressure Zone (RPZ) anti-pollution valves to protect the drinking water supply from backflow. Arrow Valves Ltd has hugely expanded its selection over the last 23 years and now provides a range of water regulations solutions crafted to assist compliance with the Water Regulations.

The Water Regulations were introduced on 1 July 1999. All products and materials used in the UK on drinking water installations need to legally demonstrate compliance with the Water supply (Water Fittings) Regulations. The regulations apply in all premises where water is supplied by a water company, from the point that the water enters the property to the water being used through a plumbing system or water appliance. It is important to note that it is not the fittings that dictate the fluid category, but where they are installed. An example of this is as follows: A washing machine in a house classifies as Fluid Category 3, in a commercial premises becomes Fluid Category 4 and then in a Healthcare Facility jumps up to Fluid Category 5. We offer seminars on the Water Regulations and have a series of Water Regulation tutorials on various subjects for instance Bath & Showers as follows:

BATHS

Bathrooms contain many types of water fitting which can be a source of contamination. The level of backflow protection required is dependent on the fitting and type of property. A bath without a shower hose and separate hot and cold taps requires no protection on the supply pipes. This is only the case providing the taps discharge the correct height above the spill over level (rim) of the bath. A ¾" tap requires 25 mm air gap to meet the requirement for an AUK2 tap gap. This is suitable for Fluid Category 3. Shower hoses for Fluid Category 3 should be protected by a Double Check Valve or an approved manufacturer's integral "Divert with automatic return". This is known as a type of HC device and returns the bath outlet open to atmosphere if a vacuum occurs at the inlet to the device. A "Domestic situation" would include hotels and the bath shower hoses. It is important to note that these should always have a Double Check Valve fitted if a HC is not present.

SHOWERS

An electric shower with a fixed head or shower hose that cannot become submerged requires no protection. Backflow only becomes an issue when the shower hose can be submerged. For example, a shower with a mixer tap requires Single Check Valve protection, (type EB) on the hot and cold supplies if the pressures are unbalanced. This prevents hot water (Fluid Category 2) mixing with the cold (Fluid Category 1). Where the shower hose outlet can become submerged, an approved HC or ED (Double Check Valve) is required for domestic situations.

BATHS/SHOWERS — FLUID CAT 5

A bath or shower hose that can become submerged in a non-domestic situation must be supplied through a Fluid Category 5 protection device or arrangement. Our solution to Fluid Category 5 protection is the Care shower, model CSABATLF. This is a Healthcare thermostatic electric shower (meeting BEAB Care Mark requirements as being safe for use by elderly, young and sick) and Booster Pump package. The assembly has Fluid Category 5 backflow protection via the integral AB air gap preventing contamination should the hose become submerged in bath or toilet water.

For more information and to read our full tutorials please visit our website: www.arrowvalves.co.uk or give the office a call on 01442 823 123.