Plumbing for Health
World Plumbing Day
Wednesday 11th March 2015  Venue: 28 Portland Place, London W1B 1LY

Safe, sustainable and efficient water supplies are fundamental for good public health.
High quality plumbing is necessary for the delivery of potable water to the consumer – poor plumbing is a health hazard and problems such as legionnaires disease, scalding and hospital infections are still found and associated with water supplies today. This conference, which falls on World Plumbing Day 2015, will bring together international experts in health, plumbing design and plumbing manufacturing to explore these issues facing public health, and discuss initiatives and ways forward to ensure good plumbing for health.

Speakers include:
Plumbing and water borne illnesses that can be associated with plumbing.
Professor Rodney Cartwright, Medical Microbiologist
Hot or Cold – finding the balance between the control of Legionnaires Disease and the prevention of scalding.
American Society of Plumbing engineers (speaker tbc), John Lee, Director Leegionella Ltd
Building design, plumbing and health.
Ant Wilson, Director of Sustainability & Advanced Design, AECOM
Plumbing for Health – bringing sanitation to Diepsloot, Johannesburg. Shane Trevitt, WCP Gold Medal Winner
Water Safety Plans – from source to tap.
Laura Moss, Drinking Water Inspectorate
Advances in Plumbing Technology.
Neil McCarrol, MD Pegler Yorkshire
The day will begin with an introduction from Lord Hunt of Kings Heath, and will conclude with a round table discussion of ways forward, including Professor Jamie Bartram, Director The Water Institute, University of North Carolina at Chapel Hill USA, Kevin Wellman, Executive Board Member, World Plumbing Council and CEO, CIPHE, Robert Burgon, Past Chairman, World Plumbing Council and CEO, SNIFE, and Dr Fiona Sim, Chair RSPH.
Supported by an educational grant from PALL Medical

Who should attend?
This conference is essential for public and environmental health officers, designers, hospital engineers, plumbers and water officials, and will provide a unique insight into the cross disciplinary work being undertaken to ensure the safety of our water systems.

The event is organised by the Royal Society for Public Health and the Worshipful Company of Plumbers, in partnership with the Chartered Institute of Plumbing and Heating Engineering, the Scottish and Northern Ireland Plumbing Employers’ Federation and the Society of Public Health Engineers.

For more information and to book please visit www.rsph.org.uk or contact Kim Butler on 020 7265 7314, kbutler@rsph.org.uk

The Worshipful Company of Plumbers Annual Lecture and Dinner
Wednesday 11th March 2015 from 5pm • Royal College of Physicians
The RSPH conference will be followed by the Worshipful Company of Plumbers Annual Lecture, this year to be given by Professor Jamie Bartram Director of The Water Institute, University of North Carolina at Chapel Hill, USA. This will then be followed by the annual Company dinner.

Please note this is a separate event. For more information and to book please visit http://www.plumberscompany.org.uk/events/2015/03/ or contact Paul Nash, paulnash@plumberscompany.org.uk
This action packed bumper edition provides an array of articles, written for public health engineers for public health engineers.

The cover story needs no explanation, we all take for granted to turn on a tap and receive wholesome water or with one press of a button to flush our toilets. The plumbing industry faces many challenges & Public Health Engineers world wide stand together on the 11th March for World Plumbing Day 2015. An international event, SoPHE are participating in a joint event with the Royal Society for Public Health to bring you an all day seminar on the subject of Plumbing for Health, refer to opposite page for further details.

Amongst the regular articles, within this edition, we welcome a new feature Flow Patrol on page 4, which brings you closer to our industry colleagues involving an interview with Carl Harrop, Technical Editor at WSP.

The highly successful Drainage Conference held at the start of the year in London was a sell out. Steve Vaughan from the SoPHE Technical committee discusses the highlights of the day in our bumper 2 page spread on page 5.

The quality of the SoPHE Young Engineers Award is being raised year after year. Ian Fellingham, SoPHE Education committee member’s article on the winning submission for 2014, as well as SoPHE contribution to Water Aid can be read on page 8.

Since the last newsletter, SoPHE membership has risen once again. Thanks to our education sub-committee our campaign of enticing young engineers in the industry is bearing fruition with a healthy injection of student members, refer to page 10 for an analysis.

Our industry working group has always been a key to our continued and sustained success. This important group has now 58 individual members in total and we are indebted to each and every industry member for their continued support that they continue to offer the Society.

Our CPD technical seminars, which are at the heart of our activities have continued to take place during the year which offer a range of technical subjects to our members. Across the regions, we held a total of 20 technical presentations in 2014, which have taken place on behalf of the Society. Once again a very special thanks to all of those who have contributed to these successful events. Further details of regional events can be read on page 10, as well as key dates for your diary in the coming months of 2015.

Chris Northey has recently been elected as the President of IHEEM, as part of taking on this exciting and prestigious role he will continue to ‘Champion the Public Health Industry and the vital role of Public Health Engineering.’

Urine luck with this latest news from a UK university campus that has recently launched a prototype toilet cubicle that generates electricity by using urine! The project was borne between the University of the West England, Bristol to light up toilet cubicles for international refugee camps in disaster zones in partnership with Oxfam.

The technology involves microbes, feeding on the urine and sprouts microbial growth that is effectively converted into electricity, or it is urine-tricity…..even better still pee-power! The cubicle costs around £600 to set up and could be a major breakthrough in innovation assisting those in third world countries in time of disaster.
The Water Regulations Advisory Scheme has recently launched a revised website full of information about the Water Supply (Water Fittings) Regulations and Byelaws which affect plumbing systems in all parts of the UK (www.wras.co.uk). The updated website aims to be more welcoming, cleaner and easier for users to navigate.

The Home page highlights information for three groups of ‘stakeholders’ – owners and occupiers of premises (Consumers), Plumbers and Manufacturers of water fittings. In any of these groups, relevant information sections can be accessed by clicking on the appropriate tab. For Consumers and Plumbers, one of these sections is Resources. Under this main section is a sub-section devoted to technical interpretations made since the WRAS Water Regulations Guide was published.

Questions raised by builders, installers, manufacturers and sometimes Water Suppliers’ Regulations inspectors, about the meaning of parts of the Regulations have been discussed by Water Suppliers’ representatives, sometimes with relevant trade associations or manufacturers, and the WRAS Technical Committee has agreed interpretations on behalf of all the UK Water Suppliers. Interpretations and advice are indexed and available freely on the website.

Another sub-section deals with the backflow prevention risk ‘fluid categories’. A database is published giving the fluid category of over 3000 chemical substances and of a small number of proprietary products whose manufacturers have asked WRAS for an assessment.

For the more technically-minded, details are given on specific topics including water softener installation, use of solders and fluxes, storage cisterns, protection against backflow from high-risk zones and whole sites and installation requirements for RPZ valves. If you’ve struggled to understand the requirements for accessibility of water fittings and what constitutes a ‘concealed fitting’, there’s an explanation with lots of diagrams (See ‘Schedule 2: Paragraph 7 explained’). Useful design tools include a calculator for sizing type AB air gaps and their spill-over slots for backflow prevention and how to safely screen the slot against light entering the cistern.

There’s a spreadsheet calculator for checking whether pipe insulation is adequate for preventing freezing under the environmental conditions where it is to be used.

Booklets are available which may help your clients to understand the Water Fittings Regulations and their obligations to maintain water fittings. The Publications section includes guidance on the Regulations in general, on notification of proposed work and guides on how the regulations apply to some specific types of premises.

WRAS Approved fittings and the Water Fittings Directory
Designers, specifiers and installers need to comply with Regulation 4 to ensure suitable water fittings are selected; this can be assured by using WRAS Approved Products (fittings). Accessed from the ‘Manufacturers’ button on the website, the freely available Approved Products Directory (www.wras.co.uk/search/products) gives up-to-date lists of approved products, and each listing has relevant installation requirements given alongside the product details.

For those who need to understand the Government’s water fittings performance requirements, information about the Regulators’ Performance Specifications and the ways of obtaining WRAS Approval are set out in ‘Resources for Applicants’ under ‘Manufacturers’.

And if amongst your clients you have ‘doubters’ who don’t see why they need to comply with the Regulations, there are some case histories which may help you to win them over. Mostly, these highlight problems which arise from non-compliance such as contamination of drinking water by backflow and cross-connection with unwholesome water or by the illegal use of lead solder. There is one good-news study explaining achievements of suppliers and installers with fittings compliance at UK venues used for the 2012 Olympic Games – the biggest temporary event ever held in the UK.

If you still have unanswered questions about the Water Fittings Regulations despite the information on the WRAS website, WRAS offers a free Technical Advice Service. You can telephone, email (info@wras.co.uk) or write to ask for advice or an interpretation of the Regulations.
Carl Harrop is a Technical Director at WSP who has over 25 years’ experience working on projects within the UK and Middle East. A prominent leader in Public Health Engineering, we managed to track Carl down from of his busy schedule to talk to SoPHE News Editor - Paul Angus for this new regular feature over a chilled glass of water!

SoPHE News: So Carl, what lead you to enter the field of public health engineering?

Carl: Beer! When I first started in building services as an Apprentice, I was assigned to Mechanical engineering. However, the Public Heath Engineers at the practice seemed to be enjoying their job much more, so I asked for a transfer!

SoPHE News: You began your career with GW Ltd, who was your mentor, what was that like?

Carl: My mentor was Mike Ewens (although Dougie Vaughan was often there to add his wisdom...). Mike was an excellent mentor, especially in the way he put me at ease about asking questions and the selfless way in which he shared his knowledge. This willingness to share your experience and knowledge unconditionally is key to helping someone advance.

SoPHE News: Are there any particular moments of being mentored that you recall as particularly great moments?

Carl: I certainly had some memorable moments working for and learning from Mike, although one of my first site surveys definitely sticks in my mind. I am not sure how the modern day risk assessment would look, but I know I looked a ‘right plonker’ in oversized waterproofs as he sent me underground to survey the inside of a corrugated steel cess pit! Fortunately it was disused but it certainly stuck in my mind.

SoPHE News: Having worked with you for a number of years and experiencing the mentor process with you first hand, I always think of you as someone who’s an incubator of talent, I certainly benefitted from that experience. Mentoring and bringing the best out of people is obviously an excellent means for younger engineers to learn in a forum of healthy debate. These events, across the UK, are both great learning opportunities and also regular opportunities to network and meet friends. I also encourage all the SoPHE members to attend, SoPHE seminars. How important is SoPHE to you and how has it helped your team?

SoPHE News: Carl, you have significantly contributed to CIBSE Guide G, BSRIA Public Health Engineering Design Checks and penned an intriguing and innovative article on Blue Roofs for the CIBSE Journal. You also regularly attend and encourage fellow colleagues to attend, SoPHE seminars. How important is SoPHE to you and how has it helped your team?

Carl: SoPHE benefits from strong regional support in the North, with Malcolm Atherton successfully organising a full calendar of technical evenings and trips. This provides an easy way of keeping up to date and an excellent means for younger engineers to learn in a forum of healthy debate. These events, across the UK, are both great learning opportunities and also a chance to network and meet friends. I also encourage all the UK and Fire Suppression Team to attend technical evenings to further enhance their skills and understanding, as well as become member–s of SoPHE.

SoPHE News: Carl, I really enjoyed talking to you tonight. It’s been really wonderful chatting to you and understanding what makes you tick. I’ve known you for a really long time, and you’ve given me great opportunities, and it’s really awesome to hear more about your experiences. So thank you for joining us on “Flow Patrol”.

Carl: When you reflect on all the different roles that you’ve played, and all the diverse projects that you’ve contributed to, which one for you was the most satisfying?

Carl: I can still recall the pride I took in striving for the perfect stenciled notes on my first drawings and this feeling of pride in what I do has been consistent throughout my career. My current role is probably most satisfying as WSP now has the scope to develop my career and continue to build the UK PH and Fire Suppression team. My favourite project is probably the Sage Music Centre in Gateshead on which there was really good collaboration with the architects in achieving an invisible yet highly efficient rainwater collection and disposal system.

SoPHE News: When you reflect on all the different roles that you’ve played, and all the diverse projects that you’ve contributed to, which one for you was the most satisfying?

Carl: I can still recall the pride I took in striving for the perfect stenciled notes on my first drawings and this feeling of pride in what I do has been consistent throughout my career. My current role is probably most satisfying as WSP now has the scope to develop my career and continue to build the UK PH and Fire Suppression team. My favourite project is probably the Sage Music Centre in Gateshead on which there was really good collaboration with the architects in achieving an invisible yet highly efficient rainwater collection and disposal system.
The conference was the first of its kind to be held in London by SoPHE, having been successfully presented in Manchester during January last year. An impressive demand for tickets resulted in the event being sold out with the venue reaching its full capacity of 90 people.

The conference opened with Steve Vaughan (SoPHE Technical) introducing the format and topics to be covered during the day. Noise, Fire break-out, Pathogens and Hygeine drainage design together with Airflow in drainage systems particularly relating to high rise buildings were all covered by specialist in these areas.

The first session opened with drainage pipework manufactures of cast iron, stainless steel and plastics presenting on the pipework characteristics for each material and the acoustic control methods that can be adopted. Mr Rawlings, Mr Netherwood and Mr Lanchbury representing the respective material manufactures to discuss noise breakout in above ground drainage systems.

For all materials, airborne and structure born noise require careful consideration. Quite often manufactures claims are based on selective information such as differing flow rates and so comparisons may be difficult to evaluate. BS EN 14366:2004 aims to provide comparable data to allow an informed choice to be made between pipework materials but specifiers often demand more comprehensive tests which relate to drainage offsets and horizontal runs as well as relating to more applicable installation scenarios such as concealed pipework, turbulent flow (standard tests with laminar flow), water fill and systems with appliance branch connections which are more appropriate to specific site constraints as BS EN 14366:2004 does not consider these issues.

Comparisons between the Building Regulations Approved Document E (Resistance to the passage of sound), BS 8233:1999 (Guidance on sound insulation and noise reduction for buildings) and European DIN 4109 (Sound Insulation in Buildings) were made with manufacturers explained how they carried out independent testing to evaluate their systems against these standards.

Whichever drainage pipework material is chosen, it is evident that the fixing and support methods together with the installation quality, room layouts and riser or ceiling void construction play an important part in limiting the acoustic impact of the building drainage system on the internal environment.

The final presentation for the first session was by Mr Walter van der Schee who represents the TVVL, an association for building service technology in Holland. He explained how there are many factors that influence the level of noise production and noise reduction in drainage systems and together with illustrations described how TVVL carry out independent testing using purpose made test rigs and apparatus that mimic real life installations. Mr Schee went on to discuss how ceiling construction, light fittings and other ceiling penetrations can all influence the acoustic performance with pipework bends and offsets also having a considerable influence on the noise generated by waste water flow. Each session concluded with a Q and A session to allow delegates to engage with the speakers and discuss the subject matter further.

Session two, air flow in above ground drainage, commenced with Professor Lynne Jack, Deputy Head of School and Director of Heriot-Watt’s Centre of Excellence in Sustainable Building Design, who discussed the research that the university has carried out relating to the simulation of air pressure transient propagation in building drainage ventilation systems. Professor Jack explained how many codes and guidelines are based on the ‘steady state’ model. However, all systems are inherently dynamic as a result of changes in system conditions introduced following natural variations in water or entained airflow. This means that propagated pressure waves are subsequently communicated to the rest of the drainage network, until they reach an appropriate point of pressure relief. Although the amplitude of the transient is small, these can affect water-based trap seals of up to around 50mm.

For all materials, airborne and structure born noise require careful consideration. Quite often manufactures claims are based on selective information such as differing flow rates and so comparisons may be difficult to evaluate. BS EN 14366:2004 aims to provide comparable data to allow an informed choice to be made between pipework materials but specifiers often demand more comprehensive tests which relate to drainage offsets and horizontal runs as well as relating to more applicable installation scenarios such as concealed pipework, turbulent flow (standard tests with laminar flow), water fill and systems with appliance branch connections which are more appropriate to specific site constraints as BS EN 14366:2004 does not consider these issues.

Comparisons between the Building Regulations Approved Document E (Resistance to the passage of sound), BS 8233:1999 (Guidance on sound insulation and noise reduction for buildings) and European DIN 4109 (Sound Insulation in Buildings) were made with manufacturers explained how they carried out independent testing to evaluate their systems against these standards.
Entained airflow has been found to be 8 – 15 times the annular applied water flow in a vertical stack, with drainage stack water flows above 2 l/s having the potential to generate transients in excess of 50mm water gauge, thus introducing the potential to deplete the water trap seal within a sanitary appliance.

The work of Nikolai Jegorowitsch Schukowski relating to pressure transient propagation as well as the various stack base flow conditions and criticality of venting were also discussed. AIRNET computer simulation software has been developed and is used by Heriot-Watt University to design, predict response, undertake forensic analysis and test active devices such as AAV’s and PAPA for drainage ventilation systems. Professor Jack concluded the presentation by explaining how reflected wave technique can be used for identification of defective trap seals.

Mr Peter White of Hoare Lea then continued with a presentation on tall building drainage, how this drainage differs and dispelled some common drainage misconceptions.

One of the key issues highlighted is the importance of controlling air pressure and not controlling water velocity within a drainage system and how foul air is kept within the system via water seal traps, which are very sensitive to pressure changes. The taller the building, the further the fresh air has to travel and the resistances generated result in increasing negative pressure.

Mr White also explained that for large buildings the traditional method of controlling pressure fluctuation is by using a secondary ventilation stack but within the current British Standards there is no reference to building height or maximum length of vent pipework and although American guidance such as ASPE addresses vent length it is very conservative. Mr White finalised his presentation by explaining how the AIRNET software was used to verify the drainage venting design for a 48 storey building which was based on a hybrid design using BS12056 and ASPE guidance. The talk highlighted the need for a UK design guidance document specifically relating to high rise drainage design.

He firstly introduced the history of automatic air admittance valves and how the trap seal, which commonly provides a barrier between the drainage system and the living space can be depleted by many events such as induced siphonage, self siphonage, thermal depletion and wind effect. Several of these actions were demonstrated by video footage of test rigs simulating these events. Various details showing applications of AAV’s were followed provided by explanations of how these valves can reduce the need for roof penetrations, reduces the extent of vent piping and can balance the pressures in the drainage system. Mr White then proceeded to explain their method of active air pressure transient control using the P.A.P.A. (positive air pressure attenuator) in conjunction with AAV’s and presented case studies of various drainage system arrangements.

For the third session of the day the pipeline manufacturers returned to discuss prevention of fire breakout with details on the characteristics and construction requirements for each material.

Part B of the Building Regulations (2007) B1 dwellings, B2 other than dwellings was referenced as well as HTM 05-02 (2013) and BB100 (2007) with examples of providing compliance noted by each presenter and how the fire compartments of the building should be considered.

The closing discussion of the day was by Mr Peter Jennings of ACO Drainage who provided a detailed insight into Hygienic Drainage Design and Pathogen Avoidance. A brief overview of Regulations, terminology and drainage functions for commercial kitchens and food preparation areas was provided together with a detailed explanation of the principal bacteria & pathogens found in food production areas which can pose significant health risks if not carefully considered. Good drainage design plays an important part in minimising bacteria & pathogen traps and Mr Jennings provided several examples of both good and bad manufacture and design. Statistical data of foodborne disease was also reviewed which indicated that Campylobacter (3μm long, or 33 times smaller than the width of a human hair) and is by far the most common pathogen source of food contamination in the UK which can contaminate undercooked meat (especially poultry) and unpasteurised milk. Considering the pathogen size, it is obvious to see how poor drainage design and installation can have a significant impact on the ability to maintain a hygienic environment within commercial kitchens and food manufacturing areas.

Bringing the conference to a close, Mr Chris Northey, CIBSE SoPHE Chairman provided one last opportunity for questions before recapping on the day’s events, thanking the event manager, James Ziebarth and the speakers and delegates for their support, as well as the sponsors, namely ACO Drainage, Blucher, Geberit, Studor, Saint Gobain, Polypipe.
Royal Flush!

One the 6th November, 2014, industry colleagues, manufactures and kindred organisations came together for the CIBSE Society of Public Health Engineers 11th Annual Dinner. The evening was held at The Royal Garden Hotel, London, Chris Northey, SoPHE Chair provides an insight on the evenings proceeding.

The evening was attended by some 323 industry colleagues and VIP guests, which was a great credit to the Society. Chris welcomed all attending the dinner and in particular the distinguished VIP guests who kindly accepted to join him for the evening.

During his speech Chris paid tribute to the Steering Committee of the society whose continued hard work and dedication goes on behind the scenes on a daily basis in developing the Societies’ aims, activities & image. Chris also stated that, “It is particularly important to acknowledge the commitment and dedication that the SoPHE Regions, namely the North-West & Scottish Regions of the Society.” Chris also acknowledged that he was again very privileged to attend the 4th SoPHE Northern Dinner in Manchester on 9th May 2014, which was again a huge success and achievement, with an increased attendance on last year, with a total of 122 guests in attendance.

A huge vote of thanks to the Industrial Associates, who are a key part of the societies structure and success, who offer invaluable support and knowledge transfer to our members. The Industrial Associate Membership now stands at 58; and is still growing! Over the last 10 years the Society has seen a steady and continued increase in membership year upon year, which is a credit to our specialised part of the building services industry. “Another success is our continued growth in membership, which now stands at 257 individual members, an increase of 23% on last year.”

The first award of the evening was to award 2 No. SoPHE Honorary Fellowships. A SoPHE Honorary Fellowship is the highest accolade that the Society can grant to an individual of the highest standing within industry. Chris then announced, “On behalf of the Executive of SoPHE I would like to formally announce that this year we wish to present an Honorary Fellowship to: - David Harper & Steve Tuckwell.

Before Chris presented David with his Honorary Fellowship, he read out a short citation of David’s industry achievements within the Plumbing Industry, a summary of some of his achievements follows:

David is the leading engineering authority on legionnaires disease in the UK and abroad, with expert knowledge in the field of legionella, water borne contamination prevention and emergency response. Having previously been an HSE inspector, he is regularly called upon to assist with investigations and to give advice to those carrying out investigations in all parts of the world. David has written and published significant papers in many well-known and respected journals, both in the medical and legal field. He has also appeared on television and radio on numerous occasions. David is registered as an expert witness for the legal profession and provides training on the subject up to PHD level, and has delivered many talks, lectures, and workshops to all disciplines throughout the UK and all over the world.

IHEEM recently presented David with the institute’s lifetime achievement award in recognition of his long service to the healthcare industry and his significant contribution to his specialist field.

Chris then went on to present Steve Tuckwell with his Honorary Fellowship, he read out a short citation of Steve’s industry achievements within the Plumbing Industry, a summary of some of his achievements follows:

- In 1970 he gained a BSC honours degree in chemistry and in 1973 he gaining a PHD awarded for study of the effects of nutrient enrichment in freshwater lakes.
- From 1973 – 75: he worked at Rothamsted experimental station, Harpenden: as a scientific officer studying methods to improve the fertility of tropical soils, involving field work in Nigeria.
- From 1975 – 78: he worked for Anglian Water as a water supply chemist, responsible for chemical and microbiological laboratory, sampling and monitoring the quality of water sources, treatment works and drinking water supplies.
- From 1978 – 2000: he worked for Wessex water, Bristol as a water supply and sewage treatment scientist, his responsibilities’ included policy setting in catchment land use, water supply hygiene code, and liaison with the drinking water inspectorate, local authorities and health authorities. His duties also included acting as the regional water supply byelaws coordinator.
- From 2000 – 2009: he became the manager for WRAS and from 2009 – 2012: he became; managing director of WRAS.
- From 2012 he became technical advisor at WRAS providing advice and guidance to WRAS and its subscribers and customers on technical matters relating to the water fittings regulations. Steve has also been a regular contributor to the SoPHE newsletter over a number of years.

This years’ SoPHE guest speaker was Jamie Sutherland, who entertained the audience after the main events were concluded. Having our guest speaker who is not related o our industry has now become part of the celebration activities during our Annual Dinner, which was very well received by our members.

The final duty that Chris performed was to present a cheque on behalf of SoPHE to Wateraid. WaterAid is the nominated Charity of the Society and each year a donation is made to this worthy organisation. This year a cheque for the sum of £1,000 was presented to WaterAid during the evenings events.

The official newsletter of The Society of Public Health Engineers  Volume 14, issue 1
Plumbing the depths!

The challenge was set for entrants to find ways to make a typical wastewater treatment system more resilient against floods for a small town in Bangladesh, where such events are frequent and prevent the installation of such treatment systems. Ian Fellingham, (SoPHE Education Committee) provides an overview of the award winning team of the SoPHE Young Engineers Award 2014

This year’s competition again held in conjunction with was concerned with the peri-urban areas of developing cities, in countries such as Bangladesh.

Where the use of decentralised wastewater treatment systems, such as baffled reactors, septic tanks and small-bore sewers, located in low-lying coastal or flood prone areas can be threatened by flooding. A situation which is occurring increasingly frequently, due primarily to climate change.

In large cities of the developing world in Africa and Asia, sewerage can often only be found in the centre, leaving large urban and peri-urban areas unserved, including slums / informal settlements. When sewerage exists, it is often non-functioning or leading to poor treatment facilities. As a result, sanitation coverage in developing cities is often low, with widespread health and dignity issues.

In the absence of service provision, residents usually come up with their own solutions, such as pit latrines. In peri-urban areas, there can be the possibility to install decentralised wastewater treatment facilities, especially for new housing developments, or as part of slum upgrading projects. Such facilities allow the use of improved toilets and can be managed at community level.

An example decentralised wastewater treatment facility for 5,000 residents would include:

- Flush or pour-flush toilets (needing 1-2 litres of water per flush) in or near houses.
- Septic tanks or related systems (anaerobic baffled reactors – ABRs) for primary treatment (separating sludge and liquid effluent). These can be shared between houses but then need transport through simplified sewers.
- Solids-free small sewers to transport the effluent.
- Secondary treatment e.g. in the form of constructed wetlands.

However, many developing cities are susceptible to the effects of climate change, and especially flooding due to increased rain in low-lying, coastal and/or flood-prone areas. Many cities have seen an increase in rain and flash floods. During such floods, one of the most significant disruptions residents have to face is access to water and sanitation, when toilets are inaccessible, or when treatment facilities cannot work anymore.

The SoPHE challenge we set in conjunction with WaterAid was to adapt the existing system technologies and find ways that these can still function in flood conditions, be accessible to residents and prevent contamination. Whilst taking due note of the capital and recurring costs, and currently available technologies.

The SoPHE judging panel were particularly impressed with the standard of entries, a number of which were from overseas. Of the entries submitted, four teams were selected, to go forward to the final judging process. All had interesting concepts, presented their ideas extremely well and were very strong contenders.

The winning team comprising of Catherine Minor of URS, Jonathan Piatka and Emma Hughes from Yorkshire Water; demonstrated a potential ability to apply their expertise of flooding planning together with detailed research of previous lessons of disaster risk reduction work in developing countries and what has worked or not previously in Bangladesh. Their proposal highlighted a number of technical, social and institutional solutions, which together will bring much value to WaterAid Bangladesh and our partners there, including municipalities keen to implement such wastewater treatment systems. Their approach remains adaptable, which will be crucial during their visit to Bangladesh when they will confront the reality of such issues.

Their proposal accounted for variation in each site being different and had enough flexibility to allow it to be applied to a variety of different site scenarios.

The winning team will be travelling to Bangladesh with WaterAid. Where, they will have the opportunity, to experience firsthand, the issues, with which this challenge is associated, and have the opportunity, to research, and discuss, with WaterAid, the potential for implementing, their proposals, into the current Urban Programmes of that area.

The other three teams were all Highly Commended and won Red Letter day vouchers. They are as follows in no particular order: (Anna Hunter, Joseph Miller and Calum Lawrence): (Stuart Brown, James Day and Ruth Howlett): (Julie Anne Walker, Tom Bunn and Isabelle Smith).

The SoPHE Young Engineer Award for 2015 will be launched very soon.
SoPHE News Volume 14, issue 1

Regional round up

Thank you to all Members, Technical, Industry and Contractors Group members for their continued support and dedication throughout 2014 and look forward to a successful 2015 for the Technical working groups throughout CIBSE SoPHE.

SoPHE North West

Since the last SoPHE NW update, on Wednesday 19th November 2014, Sentinel Solutions & Rinnai UK (Dr. Graham Hancock & Chris Goggin respectively) presented on the topic of “Scale Control in Commercial Secondary Hot Water Systems”. A total of 21 people attended the evening which, once again, was found by all to be a very interesting and informative one.

The first technical evening of 2015 was held on Wednesday 21st January 2015, in which Zip UK Ltd (Andy Colley, Training Manager) provided an insight into “Utility Efficient Hot Water in the workplace.”

Subsequent to that, Wednesday 18th March 2015 in which ACO Drainage (Peter Jennings, Technical Director) will do a presentation entitled “Thin Walled Stainless Steel Pipe Systems”.

As always, these evenings are held at The Rain Bar on Great Bridgewater Street in Manchester where everyone & anyone is warmly welcome (members & non-members alike). Please also note that the next technical evening after that – Wednesday 20th May 2015 – will be a joint event between ourselves & IHEEM NW.

On Thursday 30th October, Malcolm represented SoPHE NW at a Dinner organised by CIPHE NW in recognition of Dr. Steve Ingle, Immediate Past President for the previous 12 months (SoPHE NW was also one of the sponsors of the Dinner). It was a “small” event in which close friends & former colleagues were present; Steve provided some interesting and amusing stories of some of the locations he’s had to go visit, both in the UK & overseas, as part of his Presidency!

As previously mentioned in these updates, Steve Ingle & Malcolm Atherton are members of the committee for CIBSE NW, where the primary topic of discussion at the moment is centred on the education of young students with regards to Building Services. This education topic is aimed not just at University level, but also at college & secondary school students; if anyone has any contributions as to how to portray the whole subject of Building Services as an interesting but exciting one to these students, please get in touch - your ideas / suggestions are gratefully received. In addition, if there are any other issues to which you would like to raise n your behalf, specifically for CIBSE, which perhaps may also be applicable for the SoPHE North West, please let Malcolm know either via email or the telephone.

SoPHE London

Following the summer break the London Region started off with the first of a series of events arranged by the SoPHE Contractors Group. Sanjay Modasia chaired the forum on 11th November, discussing & reviewing the application and installation constraints of crimped pressure pipework fittings. These type of fittings are now seen to be an important part of our industry & are more widely used and specified in domestic & public health installations than ever.

As part of the emerging contractors working group, in collaboration with the technical working group we were able to bring together Contractors, Consultants & manufacturers to discuss and debate industry best practices, plus review of the various systems currently in use. The opening presentation covered application, training, fittings, verification passports, tagging, marking of joints, policing of joints made, what to do when defective joints are found, use of proprietary tools, heavily serviced areas, plus pressure testing.

The presentation was very interactive, with members of the audience providing insights into their experiences with crimped jointing systems & manufacturers highlighting the importance of ensuring they are involved at an early stage to ensure adequate installation quality control measure are put in place.

Sanjay continued to explain how DG Robson Mechanical have developed their own testing regime, which provides a method of system integrity testing that simulates a level of stress testing which is not ordinarily provided as part of a British Standard pressure test. Historically, one of the fundamental concerns with using crimped fittings is the potential for full bore failure due to stress/movement where a joint has not been crimped correctly & unlike a poorly soldered or brazed joint will often result in catastrophic full bore failure.

SoPHE technical will partner with Industry and Contractor group members to develop a guidance note for the testing of crimped pipework systems, based on manufactures recommendations, but specifically addressing the need to include a method of system stress testing, as part of the testing regime.

On the 2nd December, Andrews Water Heating presented the final London technical CPD of 2014, exploring Heat Interface Units and centralised system demand diversity. Gary Stoddart explained, to more than 30 attending delegates, how the huge increase in residential developments over recent years has seen the engineering solution move away from centralised plant rooms, how this trend looks set to continue, plus how centralised plant can provide a number of benefits including a significant reduction in energy consumption, emissions and cost/

He went on to explain the principles of HIU design, Central plant requirements & system design, diversity factors for instantaneous, storage & combined storage/instantaneous systems, plus the options available for monitoring and metering. The Q & A session allowed feedback and experiences of those attending to be discussed. A very worthwhile presentation, bringing the London Technical events in 2014 nicely to a close!

We will also run another Contractors working group forum to discuss the use of HDPE drainage systems, including a joint CIBSE SoPHE and CIBSE HCNW event on the work of the physician John Snow, who was instrumental in identifying the link between water quality and public health. John Snow identified the source of a cholera outbreak in 1854 to the water pump in Broad (now Broadway) Street, London which proved in dramatic circumstances, his theory from 1849 “On the Mode of Communication of Cholera”.

The official newsletter of The Society of Public Health Engineers    Volume 14, issue 1
Membership News
We’re pleased to report that membership has risen quite significantly with an influx of Student members, which is great to see. The current membership levels are 357, due to the student membership. The graph below illustrates a breakdown of the SoPHE membership by region at time of editing March 2015).

Membership by CIBSE Region

Its interesting to review membership levels within each region, with a significant presence overseas. The breakdown of our membership categories, also makes interesting reading, with a large proportion of both Affiliate and Student membership, which is encouraging.

Membership by CIBSE member grade

Welcome to our latest new members:

Honorary Fellow
David Harper
Steve Tuckwell

Member
Baris Coskun

Associate Member
Joseph Kershaw

Affiliate
Raymond Appleton
John Atkinson
George Malcolm Bell
Mike Booth
Anna Cesenni
Haresh Vishnu Chandiekar
Wai Lun Chau
Colm Cullagh
Mark Anthony Cox
Damien Gatt
Michael Philip Hailstones
Mouhib Hochemtani
Adam Handley
Mark Andrew Jennings

Affiliate (cont)
Young KI Kim
John Laming
Ting Kin Leung
Nigel Peter Maquire
Sahab Mohammed
MD AZREEOTHUMAN MYDIN
Lloyd Weldon Ndau
Adrian John Orchard
Daniel Steven Peham
John Rhodes
Alan Sharkey
Ian Hugh Smith
Brian Talbot
Darren Colli
George Vine
Kevin Michael Walsh
Matthew Waters
Andrew Webb
Thomas William Wise
Ping Cheong Wong
Phillip James Wright
Steven Yeh
Tat Chi Yuen

TECHNICAL PUBLICATIONS


14/30310792 DC BS EN 13598-2. Plastics piping systems for non-pressure underground drainage and sewerage. Unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE). Part 2. Specifications for manholes and inspection chambers in traffic areas and deep underground installations. Published 08 December 2014. Status is current and draft for public comment.


14/30318406 DC BS EN 61770 AMD1. Electric appliances connected to the water mains. Avoidance of backsiphonage and failure of hose-sets. Published 19 December 2014. Status is current and draft for public comment.

DATES FOR YOUR DIARY
North West region
18th March 2015 6.00 - 7.30 Thin Walled Stainless Steel Pipe Systems - ACO Drainage - Rain Bar, Manchester
20th May 2015 6.00 - 7.30 Engineering v.s legionella - Angus Horne (Home)Rain Bar, Manchester

London region
10th March 2015 6.00 - 7.30 Drainage System Grease Control ACO Drainage - AECOM London (MCP)
11th March - World Plumbing Day
7th April 2015 6.00 - 7.30 Installation best Practice Forum with Contractors Group: HDPE drainage pipework systems - AECOM London (MCP)
5th May 2015 6.00 - 7.30 Subject TBC AECOM London (MCP)
THE STEERING COMMITTEE

Chair: Chris Northey
Christopher.Northey@chapmanbdsp.com

Vice Chair: Ian Fellingham
ianfellingham@googlemail.com

Honorary Secretary: Linda Dulieu
Lindy100@live.co.uk

Honorary Treasurer: Martin Shouler
martin.shouler@arup.com

Steering committee
Steve Vaughan
Jassim Daureeawo
Alan Flight
Sanjay Modasia
Jonathan Gaunt
Paul Angus
Les Wilson

Regional Committee Contacts
North West:
Malcolm Atherton
malcolmatherton@hoarelea.com

Scotland:
Lynne Jack
l.b.jack@hw.ac.uk

Australia, NSW
Paul Angus
paul.angus@erbas.com.au

SoPHE LinkedIn Technical Discussions
The SoPHE LinkedIn group has 560 members and an ideal platform to reach out to your SoPHE colleagues to discuss new technologies, raise technical queries and keep up to date with what’s going on with SoPHE in your region

South West:
Situation vacant

London
Steve Vaughan
steve.vaughan@aecom.com

Western Australia
Les Wilson
les.wilson@ghd.com

We would welcome any comments on this newsletter or contributions to future editions, in particular with regards to:

- Future events for consideration
- What should SoPHE be providing to our members
- Items or comments you think may be worth raising or informing your fellow members
- Technical articles from members, giving situations encountered and how they were overcome

Please email any comments, feedback or suggestions to Paul Angus who can be contacted by emailing: Paul.angus@erbas.com.au