

Pump Centre Conference 2018 – Provisional Breakout Session List*

TITLE & SYNOPSIS

BREAKOUT ROOM 1 – Pumping

A	<p>Modern fish friendly pumps have improved land drainage pumping station's resilience Martin van Nieuwenhuyzen – Aquatic Controls Engineering</p> <p>Land drainage pumps have over time sped up but the requirement for pumps to be fish friendly is now slowing them back down. This reduced speed is increasing asset life, reducing maintenance and improving the overall resilience of land drainage pumping stations. Designs to improve fish friendliness due to the reduced speed also results in efficiency gains over asset life. Whilst CAPEX costs are higher for fish friendly pumps (which is mainly due to them being larger than pumps supplied from the 1970's onwards) OPEX savings mean they do provide the best TOTEX solution due to decreased maintenance and increased asset life.</p>
B	<p>How 3D Printed Sand Cores can reduce post processing and improve pump efficiencies? David Stevenson - ExOne</p> <p>In this presentation I will demonstrate how our sand printing technology works (2min video) and continue with examples on how a 3D printed core can reduce/eliminate hard tooling, balancing, fettling, machining times. I will also show that there are no restrictions in impellor/product geometries, since the parts can be printed directly from the CAD data files.</p>
C	<p>Pump Centre Project of the Year 2018 Bournemouth Coastal Interceptor Sewer Repairs Andrew John - Pump Supplies</p> <p>The Bournemouth Coastal Interceptor Sewer (CIS) runs between central Bournemouth and Holdenhurst Sewage Treatment Works and is the main trunk sewer serving a population of up 180,000. In September 2016 settlement was observed above the CIS due to structural issues and that urgent repairs were required to maintain the integrity of the tunnel and prevent further deterioration and settlement occurring. This presentation discusses the issues involved during the repair work because of the potential catastrophic impact of complete failure of the CIS and the necessary installation of the temporary pump system.</p>
D	<p>Restoration Project - Some Design Aspects of the Murgatroyd Brine Pumps Steve Broadfoot - Middlewich Heritage Trust (MHT)</p> <p>The two deep well brine pumps at the former Murgatroyd Salt Works in Middlewich are the last of their type in the country. The pump site is now leased to MHT who intend to restore the pumps and pump house as a heritage exhibition. A recent restoration project, overseen by the Heritage Development Officer has seen the building made watertight, and temporary supports put in place to prevent the collapse of the timber lifting gantry. The next phase will be to complete the restoration of the building and gantry, so that it is safe for public to visit. A preparatory survey of the building, machinery and archives has revealed unexpected technical features. This presentation will discuss the findings, some of which may still be applicable to today's engineers.</p>

BREAKOUT ROOM 2 – Wastewater

E	<p>The WLC benefits of vaneless impeller design in Wastewater Ryan Pearson - Grundos</p> <p>New innovative hydraulic designs now utilise hydraulics with no vanes. What are the technical differences versus conventional hydraulic designs and what benefits can be seen from implementation.</p>
F	<p>Pump blockages – real time electronic detection and alleviation Simon Crompton - Clearwater Controls</p> <p>Over the past 12 months there has been a significant interest and take-up of a new technology that uses wave-form analysis to detect blockages and alleviate them in real-time. We would like to present the results and illustrate the substantial benefits that can be achieved.</p>
G	<p>Self-Cleaning Pumping Station Sumps Yves Givron - Hydromarque/Gorman-Rupp Pumps</p> <p>The Self-Cleaning Pumping Station Sump System is a unique innovative concept. Clogging in pumping stations and sump cleaning operations are additional exploitation costs for Water Companies. The integrated technology of the SCS SYSTEM® means the solution can not only adapt to the site and the type of effluent, but also to end user needs, constraints and specific preferences. Capital outlay and operating costs are significantly reduced.</p>
H	<p>Inlet Screen and Screenings Handling Plant Selection Conundrums Dale Foster – Huber Technology</p> <p>As inlet works are the real workhorse of the wastewater treatment process it is vital that the most appropriate equipment is selected. We will highlight the challenges posed relative to compliance with asset standards and specifications whilst passing on some observations we have made through dealing with the protocols involved.</p>

BREAKOUT ROOM 3 – Motors, Drives & Control

I	Variable Speed Drives – Managing Reliability Martin Richardson - ABB A presentation into how the reliability of VSD's is affected by different maintenance strategies. The risk profile of not completing maintenance tasks versus completing preventative maintenance will be explored, along with some hints and tips about what adversely affects the resilience of VSD's and how the life of these important assets can be extended.
J	Starting, Stopping and Running Pumps in the Waste Water Sector and how resilience can be improved. David Taper - Fairford Electronics Ltd The advantages and disadvantages of using Variable Speed Drives and Fixed Speed Drives (Soft Starters) on variable speed and fixed speed applications concentrating with discussions within the Waste Water Sector. Concentrating upon reliability of assets through the selection of the correct product, not over complicating system design, reliability and delivering resilience through ease of set up, TOTEX costs, panel costs and predictive maintenance strategies.
K	Rising Main Performance Health Checks Glyn Addicott - Hydraulic Analysis In order to identify the root cause of CSO spills, Hydraulic Analysis Limited have combined real-time Pipeline Condition Monitoring with Event Duration Monitoring (EDM). This presentation will demonstrate how combining these two activities gives a clear picture of the health and performance of the pumps and rising main to allow proactive measures to be implemented to reduce CSO spills.

BREAKOUT ROOM 4 – Water Industry Applications

L	Adaptive mixing – A new operating philosophy to adapt mixing functions in line with process demands therefore slashing energy and Asset Management spending. David Kirkham - Xylem Water Solutions Industrial We show, by example how the new High Efficiency (IE4 level) integrated Adaptive Drive Technology of the Flygt submersible mixer reduces OPEX. Substantial energy savings, combined with reduced service costs and asset inventory complexity are made possible by this Adaptive technology.
M	Raking In Resilience Mick Burton - Jacopa Achieving operational resilience is a top water industry priority from government (through the Water Act 2014) and Ofwat for PR19. Jacopa will present the case for strategic risk-resistance, protecting pumps and pumping systems at inlet works through the deployment of smart up-front trashrake technology to build-in asset resilience from the outset.
N	Using hydraulic software to model electrical energy within the waste water networks and identify optimisation techniques through improved utilization of process control and automation Alex Gray – Thames Water / Bilfinger Thames Water has identified that improvements in their demand side energy management are required and are currently researching various methods in reducing consumption. One initiative includes improving the quality of the performance data captured for analysis by the existing telemetry infrastructure, thus giving rise to an understanding where energy inefficiencies exist. Ongoing capital investment will eventually see the replacement of all sewage pumping station telemetry outstations. This enhanced telemetry infrastructure will enable researchers to develop an intelligent integrated system that tackles pump scheduling and process control with the emphasis on energy management.
O	Case Studies on Reducing Water Loss Through Use of Partially Corrugated Stainless Steel Service Pipe Most leaks from water systems occur in service pipes. To reduce water loss, pipes should have the fewest connections possible and be made of a strong, durable and corrosion-resistant material. This paper will describe the large-scale replacement of service pipes in Tokyo and Taipei using partially corrugated stainless steel pipe. Nigel Ward - Nickel Institute

PUMP CENTRE - TRAINING SESSIONS

1	Condition Monitoring - keeping your pumps healthy. Kevin Gaunt - Pump Centre Condition Monitoring has been around for decades but with the advances in technology the options available have increased significantly. This session will examine the various techniques and discuss how they can be applied to provide long term and sustainable health checks for your pumps.
2	Understanding Net Positive Suction Head (NPSH) - Demo & Explanation. Steve Moore – Pump Centre NPSH can often be misunderstood. This session provides a simple visual demonstration and explanation of the concept and why it is important to be aware of it.
3	Variable speed drives - a brief revision course. Geof Brown – Pump Centre The presentation covers the best practice use of drives in pumping applications to achieve the most cost-effective use of the technology in both capex and opex.
4	Multiple Pump Operation. Dennis Goodlad – Pump Centre A look at how centrifugal pumps interact when multiple pumps are operated in parallel in the same system. Design considerations and a methodology for estimating power costs when changing the number of pumps to meet varying flow demands on the system.

* Provisional programme subject to change.