

2021 WET10 CONFERENCE

WHICH WAY WATER - 2050?

Date: World Water Day, Monday 22nd March 2021

Venue: Virtual Meeting by Zoom

Speakers:

“Resilient Cities” - Chris Gray,
Head of Water - Europe, Middle East & Africa, AECOM

“Digital Water from 2021 to 2050 – A Brief History of the Future” - Joanna Kelsey,
Head of UK Water Digital Services, Stantec

“Water 2050 - Developing the Skills for Tomorrow’s Challenges” - Phil Beach CBE,
Chief Executive, Energy & Utility Skills

Introduction

Rob Casey, Master of the Water Conservators opened the event by welcoming everyone present to the WET10 conference and explained the housekeeping rules for the virtual event. He then handed over to Deputy Master Mark Lane, host for the evening, who gave a short introduction to each topic and introduced the first speaker.

“Resilient Cities” - Chris Gray, Head of Water - Europe, Middle East & Africa, AECOM

Chris began his presentation by explaining the need for more resilient cities in the future, as for the first time in history over 50% of the world’s population would be living in cities, over 6.4 billion people by 2050, with the demand for water increasing by 55%. Water is one of the top ten risks over the next 10 years with a water crisis named as the risk with the fourth largest impact in the Economic Forum’s Risks Report. He then highlighted some of the key challenges we face, in terms of space, with cities projected to grow by 80% by 2030, water shortages that could affect 5 billion people by 2050, coastal flooding to over 300 million people due to sea level rise, and the carbon reduction challenge with over 17 countries already setting future net zero targets.

Chris then gave examples of how these future challenges could be met both for new cities such as Neom, KSA and existing cities such as London. In Neom, water shortages could be prevented by using desalination utilising the vast supply from the Red Sea, and utilising a combination of solar power and energy from sewage waste to power the city. The sewage could also provide fertilizer and water for irrigation. For London future population growth would encourage a more efficient use of water coupled with greater recycling for toilet flushing and irrigation. There would be a greater need to invest in sustainable urban drainage (SUDs) schemes and be more creative how we store water. Finally, to reduce carbon emissions rainwater harvesting and grey water recycling should be a priority for new developments.

Water crisis and natural disasters

Number of disasters by continent and top 10 countries



Occurrence by disaster type: 2018 Compared to 2008-2017



AECOM

AECOM

In conclusion Chris said that in order to build resilience for future cities we needed to radically change the way we think about water, driving innovation to ensure we have the capacity or resources to meet demand increases in a sustainable way.

“Digital Water from 2021 to 2050 – A Brief History of the Future” - Joanna Kelsey, Head of UK Water Digital Services, Stantec.

Joanna began her presentation by explaining how digital water will be critical for the future, but humans will still play a vital part in delivering the outcomes in unison with digital technology. Sometimes technology hasn't always delivered for us where the human input hasn't been properly aligned with the new technology. In the future new technology needs to be designed utilising and building on the skills of the human water experts.

In the future digital water will protect the environment by the holistic management of the catchment enabling a higher level of collaborative management to minimise the environmental impact. It will give full visibility of how assets are performing and the potential impacts on the quality or availability of water. Analytics will choose the action that provides the least detriment to the community and the environment.

Digital water will create improved resilience as local knowledge is embedded in the control philosophy and automated operational decisions. The increased monitoring will increase pre-emptive maintenance by a system that knows how much deterioration can be tolerated leading to less service failures.

Digital water will also enable better engagement with the customer by providing transparency of system performance, whilst providing dynamic carbon accounting to ensure the best investment and operational decisions. The future importance of data analytics will lead to a more diverse workforce in the future and people are key to the success of digital water. In conclusion Joanna presented 3 key factors for future success,

there were less piloting more doing, ensuing data availability, and building upon people skills.



“Water 2050 - Developing the Skills for Tomorrow’s Challenges” - Phil Beach CBE - Chief Executive, Energy & Utility Skills.

Phil began his presentation by examining the current water sector workforce, illustrating that the over 20% are aged 55 and over, and the water sector employs a lower percentage of young people compared to the UK average. Skill shortages are predicted in the 2 key areas of professional skills and technical skills. He then explained that in the future we are likely to see a substantial change in the skills required and while some of the future skills required are predictable, many are not. Recent history has shown us that new technologies can emerge and then become commonplace very quickly.

Hence Phil suggested that it was not about developing the skills for 2050 but more about ensuring we have the ability to adjust the skill set quickly to adapt to rapidly changing requirements. To meet these changing requirements, we will need to focus on retraining and upskilling the existing the workforce as well as the next generation. So, in order to meet the skill set required for 2050 we should be focusing on an architecture that can adapt to rapidly changing technology rather than focusing on specific skills that may or may not be needed.

Identifying Future Skills Needs



Quantitative

- The sector has an aging workforce:
 - Over 20% are aged 55+
 - Relatively few 16-24 year olds are employed (7% - UK average 12%)
- It is predicted that there will be 63 000 vacancies in the next decade
- The workforce lacks diversity:
 - 81% of the workforce is male
 - Only 4% are from a BAME background

Conclusion

The presentations were then followed by a fascinating question and answer session led by Deputy Master Mark Lane. 151 participants attended the conference, a record for our virtual events so far. On behalf of everyone I would again like to thank our speakers, Deputy Master Mark Lane for organising and hosting the event, Past Master Simon Catford for managing the zoom technology, and also give my thanks to everyone who attended making the conference a great success.

Rob Casey
Master