

WATER INDUSTRY INSIGHTS



Ed Turner
Strategic Commercial Director
ed.turner@rpsgroup.com
+44 (0)1332 387 650

NATURAL
RESOURCES



Radical, disruptive innovation:
fast-paced in development and
courageous in adoption



RADICAL, DISRUPTIVE INNOVATION:

Fast-paced in development and courageous in adoption

Innovation and collaboration: where quality data, accelerated delivery, and peer to peer interaction with the best minds from across the water industry and academia converge. Combined with a clear plan to generate novel solutions – this is how RPS has honed our approach to the successful delivery of AMP7.

AMP7 – a challenge like no other

The UK-wide water investment programme of some £50 billion over the next five years, signals a seismic shift in focus. After 30 years of concrete-centric capital enhancements, the industry must now deliver a set of goals based on a leaner, more sustainable, customer-driven benefit programme. We are about to enter a new era of more efficient, more resilient assets that won't cost the earth, literally, but will continue to provide a world-class water and wastewater service at the right time, right place, and right cost – not just 'more for less'.

Innovation and collaboration – working hand in hand with the best minds and the most forward-thinking companies will be vital to unlocking success in this sector. Recent months has forced service providers to be agile, collaborative and responsive. It has opened up new ideas, thinking more creatively – UK water companies can be a significant beneficiary of this improved mindset with the challenging agenda to be achieved over the next coming years.

Working with extremes

Hot on the heels of the wettest UK winter for a generation has come the sunniest, driest spring on record. On the surface of it, the warm weather brought relief to a country in lock-down but dig a little deeper and the reality is more complex.

New issues have arisen to test a sector working hard to meet challenges around sewerage and water resource assets head on. Currently, with limited allowance for investment in new assets, there needs to be industry-wide focus on operational and predictive analytical solutions to serviceability commitments, if we are to address our industry challenges holistically and in good enough time.

Making complex easy

At RPS we have been readying ourselves for AMP7 and the new investment programmes in Scotland and Northern Ireland over the past two years, aligning our business to meet the evolving needs of our clients in this sector. Converging regulations, technologies and crisis management policies threaten to over-complicate the fundamentals of an infrastructure asset management plan. Yet we are crystal clear on the skills, expertise and ways of working needed to help our clients meet their objectives – solving problems that matter in a complex, urbanising and resource-scarce world.

Innovation across the asset lifecycle

Owat made it clear in the run-up to AMP7 that innovation would be an important part of delivering efficiency and value. Not change for the sake of it, but innovative solutions that deliver value within a meaningful timescale, i.e. within 5 years, and with ongoing benefits. Tangible shifts in culture are required, and at RPS we are clear that for innovative solutions to flourish we must provide an environment that fosters fresh thinking, and one that challenges our own people, our partners, associates and clients to bring new and creative ideas to deliver value.

Iterative innovation that seeks out faster, cheaper ways of delivering traditional engineering solutions will no doubt save money in the short term but will fail to get to the issue – that the engineering solutions themselves are often the problem. The impacts from climate change and COVID-19 present new challenges that require novel solutions to resolve – this means radical, disruptive innovation: fast-paced in development and courageous in adoption.

Copy and share, don't reinvent

Copying and improving ideas from other sectors is often the most effective way to innovate. However, being able to identify the real problem, then knowing 'who', 'when' and 'what' to copy will be key to fast-tracking novel solutions. [\[see article\]](#)

Peer to peer interaction, bringing together the brightest minds from industry and academia as well as our own specialist expertise is a powerful combination that can deliver great results. At RPS, we opt to work closely with external organisations and individuals who add to the debate and stretch our thinking – a different kind of conversation, in a different kind of way. Most recently we collaborated with [Isle Utilities](#) to implement a new innovation strategy; and we've worked alongside the inspirational Matt Ballantine and Simon White to bring greater focus to our digital and systems-thinking. And we also have an active relationship with Sheffield University ([Twenty65](#)), connecting with those in academia. Working together, these brilliant people and institutions are key to leveraging the radical thinking that will guide our five-year plan.

Dynamic not sluggish

Sustainability is also a focus of this AMP cycle and we are resolute that innovation is focused as much on what we deliver for the 'now' but also has one eye firmly fixed on future developments and environmental change. Our industry has decades of experience enhancing water and wastewater treatment, pollution prevention, environmental improvements and network engineering. Much of this has centred on capital construction, and whilst gains have been made over the last 30 years, this approach to sustainability has never been more than a sluggish, iterative, risk-averse evolution of 'what we've always done'. We are now being blind-sided by the rapid and extreme onset of climate related change and global events like COVID-19.

Predicting future events through learning

For RPS, innovation in the water sector is rooted in predictive analytics, AI and machine learning systems, combined with deep expertise in cleanwater and wastewater assets. Productive, disruptive innovation in this area requires three things:

1. Possessing an ability to see things through a 10–20-year lens.
2. Adopting a rigorous, shared approach to commercial risk management which provides the confidence to drive out solutions in an accelerated timescale.
3. The accuracy and reliability of automated monitoring systems to lower operating costs, manage processes and extend asset life, is highly dependent on access to high-quality, trusted data.

RPS' WaterNet Pro™ is one example. A cloud-based, situational awareness tool, it draws data from monitored wastewater network assets and collates it into a single, accessible web platform to enable informed decision making - on alerts, trends and reports, and importantly to prevent serviceability incidents BEFORE they occur.

WaterNet Pro has been developed in-house utilising engineering expertise and has been rapidly deployed through trusted data-sharing and is already providing clients with robust solutions to long-term network problems. It is one of several [excellent examples](#) of bringing innovative solutions to life at RPS.

Breaking down barriers

Data led solutions, digital transformation, machine learning and robotics in the water industry are a natural progression in the way things get done. Across industries, it's a logical conclusion that many conventional jobs held by humans will be ultimately replaced by data-driven machines. So, does this mean that collaboration will be less important?

We don't believe so, and in fact, as an industry we believe it will be more important, and therefore we need to find better, faster, cheaper ways to consult with the people that matter. The ability to connect with larger target audiences using [virtual consultations](#) will be a more engaging and cost-efficient way to find solutions to problems that matter to them, and drive value.

A pioneering water community

Digital transformation can be overwhelming. At RPS, minimising traditional, hierarchical complexity to form cross functional teams which are focused on the solution has helped. Having our wastewater and IT experts working within integrated teams in an agile delivery environment has already shown results in the production of FlowBot and PondSim – two of our other predictive analysis tools being used by water clients. [\[see article\]](#)

Working side-by-side with clients to determine proof of concept, as we are doing with WaterNet Pro for Anglian Water, can shorten the time to deliver value. We achieve this by sharing investment in time, money and data to mobilise solutions faster. AMP7 will not afford the time for extensive research and perfectly tested solutions, and so the market becomes the most effective testing environment as part of continuous deployment approach. Sprint data-sharing, delivering new products in a continuous flow, and seeking regular feedback on success and demand, quickly delivers results in a fast-changing industry. Collaboration is based on a community of participants across the supply chain, rather than the linear flow of handover in more conventional capital delivery programmes. At RPS, this type of collaboration is not new, but as an industry we must renew our focus on working with the wider supply chain to deliver the best solutions.

Stronger together

In the simplest of terms, some of the services we deliver can be viewed in binary terms: a burst in a customer's street, or the flooding of a property are undesirable in any form. But the wastage of valuable drinking water through unseen leakage, the low-level contamination of watercourses from trace elements, the speed of response, or the level of mains pressure, for example, provide a balance or blend of impacts that affect not just one 'end user' but an entire community. Solutions are firmly rooted in the digital transformation of the industry and the use of robust data to analyse and predict problems before they occur.

In a water resource-scarce world where global and local challenges are so remarkably different to those even five years ago, we have sharpened our strategy, supporting our clients to deliver value for their customers. At RPS, we are energised not intimidated by the breadth, scale and complexity of this community challenge. We recognise its societal importance and look forward to being part of the solution.

"Innovation and collaboration – working hand in hand with the best minds and the most forward-thinking companies will be vital to unlocking success in this sector."