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Solving the business case for tomorrow's water issues will require tomorrow's engineers today

Amid incredible technological development, some of the biggest challenges that face our generation and our planet today are rather basic and the solutions are comprised of several smaller fundamental changes rather through a few grand gestures. Enshrined in the United Nation's Sustainable Development Goals, SDG 6, Clean Water and Sanitation, underpins a simple yet life sustaining resource that is often overlooked and significantly undervalued.

The challenges are wide and varied:

- Poor and marginalised communities.
- Women who are disproportionately impacted by a lack of access to water.
- Water stress.
- Vulnerable communities dealing with the extremities of flood and drought events.

- the planning of infrastructure.
- Creating resilient designs.
- Implementation of water resources.
- Water infrastructure projects developed in an unintegrated manner.
- Underpinning projects with the principles of sustainability.

It is fair to say, there is not a singular problem so no silver bullet solution can solve this.

This report on *Establishing the value of water - the business case for change* is a sobering reality on the complexities of the issues surrounding water as a limited and threatened resource. The challenges, however, also create opportunities. In this 'decade of action', access to water, development of sustainable water infrastructure, circularity and the integration of technology and nature-based solutions are the armour with which consulting engineers and the engineering profession can tackle these challenges head on. Whilst the picture may look grim, what are the roles and where are the opportunities for engineers? Everywhere.

What sets today's engineers apart from tomorrow's truly sustainability-led engineering? Today, too often there is the willingness and ability to deliver to their client exactly what they were paid to do, within the agreed time and to the planned budget. Tomorrow's sustainability-led engineers would do all of this, but with the environment and the end users' long-term use of the system and affordability at the heart of the solution. We can envision a future where we lead the integration and synergy of grey infrastructure into green infrastructure for optimum balanced benefit.

We need adequate commitment for the requisite skills and enhancement of existing skillsets to realise these ambitions - skills that are scaled appropriately with a balance of expertise that looks inward, a depth of technical specialisation, complemented by the 'big picture' professionals, visionary connectors who are able to match problems to solutions for poorly defined problems and break down silo mentality.

Future Leaders play a critical role in this space. I'm certain that when Albert Einstein said that we cannot solve our problems with the same thinking we used when we created them, he had climate change, its impacts and the creativity and innovation that each new generation brings to the world in mind. The greatest opportunity for consulting engineers is to lead the charge of a multi-faceted renaissance of our sector and to reaffirm the commitments to achieving these complex goals pertaining to water as a start. By enhancing the body of knowledge of integrating technology, nature-based solutions and infrastructure development, a blueprint will emerge for truly sustainable development.

The advent of Day Zero, the day in which there is zero water available, is a reality that faces several catchments across many countries. In his bestselling book *The Third Industrial Revolution*, Jeremy Rifkin advocated for rebranding "climate change" as "water change" so that people may understand firstly, how a changing climate affects our water and secondly to connect how changing water affects our lives, health and environment. Water advocacy is an incremental process and the first step starts with each of us in our homes, our communities, businesses and through our projects.

We explored in *Time to $Tn-vest!* that the need for the Time To Take The Trillion Task seriously is immediate. In this report, the business case for change and to address the world's water challenges more aggressively is undeniable and undoubtedly the best way to improve the state of the world.