

## /Executive summary and recommendations

# /SOW 2023



## So, what does this mean?

The development of digital systems is necessary to achieve net zero emissions. The industry must choose the right technology for the job, incorporate technology into both new and existing infrastructure, collaborate effectively, challenge perceptions and take advantage of the opportunities presented by technology. The Covid-19 pandemic has highlighted the need for agility and resilience in adapting to rapid technology change. With the right approach, it is possible to achieve a sustainable infrastructure system.

Digitalisation in itself is a race into new frontiers. Given the two drivers of change that have emerged in the last few years, the race in the digital space has taken on a completely new face. The first of these is the pandemic, which has accentuated the value of automation, remote monitoring, data-driven forecasting and digital collaboration. The second is the growing urgency of climate action and the energy transition, for which new energy systems of increasing complexity, decentralisation, and diversification are being created ever faster around the world. Organisations that lead with data and new technologies gain profitability and market share while also advancing towards shared social and environmental goals.

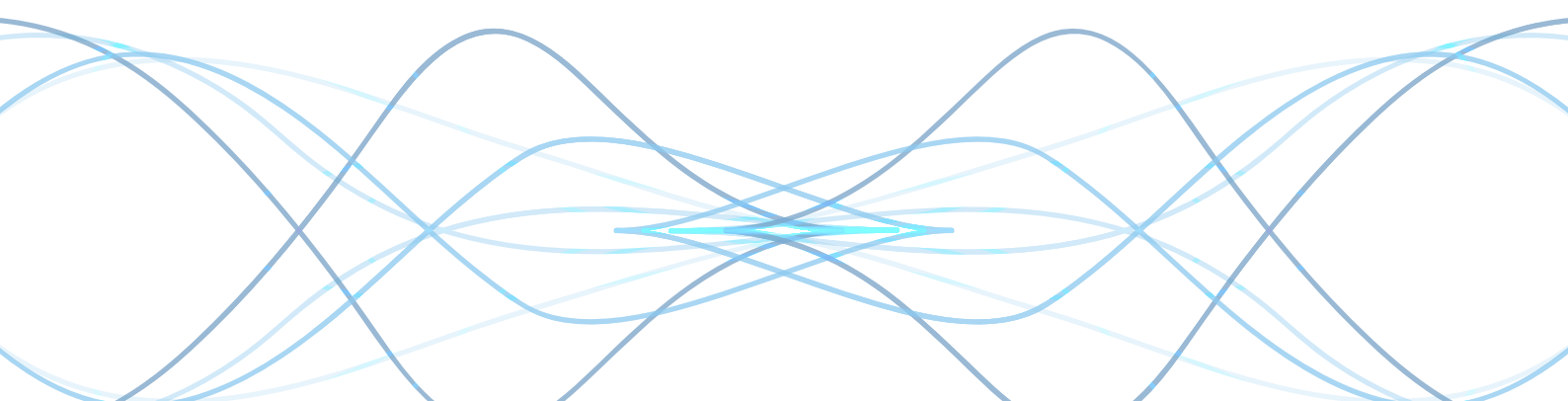
*Digital Technology on a Path to Net Zero* delves into the profound and transformative impact of digitalisation on the infrastructure sector's mission to achieve carbon reduction goals. Building upon FIDIC's 2022 report on digital disruption, this paper uncovers the relentless pace of change and the pivotal role of technology as both a disruptor and an innovator across industries. By embracing the inevitability of this seismic shift, stakeholders can unleash the true potential of digital transformation to confront pressing challenges and pave the way towards a sustainable future.



### Recommendation 1

**Embrace the transformative power of digital systems** to achieve ambitious net zero targets in the infrastructure sector. Capitalise on technology's potential to facilitate data-driven decision making, optimise resource utilisation and seamlessly integrate renewable energy sources, electrified transportation and other sustainable practices.

At the heart of our collective endeavour to achieve net zero targets, lies the indispensable role of technology within the infrastructure sector. This paper unveils the critical importance of digital systems in optimising resource utilisation, empowering decision-makers with data-driven insights and revolutionising how we approach sustainability. With technology as our ally, we can seamlessly integrate renewable energy sources, spearhead electrification in transportation and champion a myriad of sustainable practices necessary to chart a course towards carbon reduction. An essential concept explored in this report is technology agnosticism, a philosophy that champions adaptable digital solutions, untethered by the constraints of specific technologies. By embracing this mindset, infrastructure projects can safeguard their agility, sidestepping the peril of technological obsolescence. Moreover, the paramount significance of standardisation and interoperability reverberates throughout this study, ensuring the seamless integration of digital solutions and fortifying our ability to future-proof our endeavours. This paper also unveils the transformative potential of technology in procurement and contract management, propelling efficiency, transparency and accountability to unprecedented heights.





## Recommendation 2

**Prioritise adaptability and interoperability and the implementation of machine-based technologies** in digital systems, liberating infrastructure from the shackles of specific technologies. Champion the need for standardised and interoperable digital solutions, ensuring future-proofing, scalability and the avoidance of technological dependencies.

As we embark on a journey of sustainable infrastructure development, this report traverses both the realm of pioneering projects and the realm of retrofitting existing infrastructure. With inspiring case studies as our guide, we witness how technology is reshaping the landscape of smart cities, engendering green buildings and rejuvenating sustainable transportation systems. Furthermore, it explores how digital solutions can be deployed to retrofit existing infrastructure, enhancing energy efficiency, reducing carbon emissions and prolonging lifespan.



## Recommendation 3

**Drive innovation through technology:** Unleash the potential of technology in both new infrastructure projects and the retrofitting of existing infrastructure. Seamlessly integrate digital technologies to revolutionise the development of smart cities, green buildings and sustainable transportation. Maximise the efficiency, longevity and environmental impact of existing infrastructure through intelligent retrofitting.

The Covid-19 pandemic has served as a catalyst for the rapid adoption of digital technologies in the infrastructure sector. Lessons learned from this experience, including the pace of technology change, the rise of remote work and the importance of digital resilience, inform future strategies for leveraging technology in infrastructure development.



## Recommendation 4

**Seize the momentum of change:** Capitalise on the lessons learned from the Covid-19 pandemic's profound impact on the infrastructure sector. Embrace the rapid pace of technological change, leverage the power of remote work and fortify digital resilience. Empower these valuable insights to shape future strategies, propelling infrastructure development toward new horizons of technological advancement.

Collaboration and technology emerge as inseparable components in sustainable infrastructure development. By embracing data sharing, interoperability and stakeholder engagement, we unlock the full potential of technology in driving sustainable infrastructure development. Through compelling examples, the report demonstrates the power of collaboration between governments, the private sector, academia and local communities in harnessing technology to drive sustainable infrastructure development.





## Recommendation 5

**Cultivate collaborative ecosystems:** Foster dynamic collaborations that unite stakeholders across the infrastructure sector. Encourage open data sharing, interoperability and inclusive stakeholder engagement to drive the effective development and implementation of digital solutions. Highlight successful partnerships among governments, private enterprises, academia and local communities, unlocking the transformative power of technology for sustainable infrastructure development.

Yet, this transformative journey is not without its challenges. Challenging traditional perceptions is a critical aspect of the digital journey. This report addresses the barriers and challenges that hinder the adoption of digital technologies in the infrastructure sector, such as cybersecurity concerns, data privacy and upfront costs. It advocates for a shift in mindsets to embrace innovation and cultivate a culture of digital transformation. Insights and strategies for overcoming these challenges are presented, empowering stakeholders to embrace change and drive sustainable infrastructure development.



## Recommendation 6

**Overcome barriers and embrace innovation.** Confront the barriers impeding the widespread adoption of digital technologies in the infrastructure sector. Address concerns regarding cybersecurity, data privacy and upfront costs head-on. Champion a cultural shift that challenges conventional mindsets, nurturing an environment that embraces innovation and digital transformation. Implement strategies and best practices that transcend barriers, fostering an ecosystem primed for technological advancement.

*Digital Technology on a Path to Net Zero* is a resounding call to action, resonating with unwavering conviction. It underscores the indomitable role of technology in realising our shared vision of sustainable infrastructure and carbon reduction. This report implores stakeholders to unite in a spirit of collaboration and harness the potential of digital disruption. By embracing the digital journey, we can transcend boundaries, reshape industries and forge a sustainable future where our infrastructure thrives in harmony with the environment.

