# Engineering, construction industry needs to urgently embrace digitalisation

Speaking at the virtual #futurenow conference held by construction software company RIB CCS, John Sanei, futures strategist, human behaviour specialist and author, said, "When nothing is certain, anything is possible. The complex world we are moving into requires economies of learning and robustness." The conference explored the urgent need for the engineering and construction industry to embrace digitalisation to remain relevant and future-proof their businesses.

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Sanei stressed the need for organisations to move beyond economies of scale and mass efficiency and recalibrate themselves for what's coming: uncertainty. "To prepare for uncertain times, we need to develop robust business models and structures that allow for experimentation and to see what grabs and what doesn't grab."

RIB CCS CEO Andrew Skudder says the engineering and construction sector has been operating in the same way for decades, is one of the least digitised industries in the world (21 out of 22 industries) and has not enjoyed significant productivity growth in recent years.

## Move with tide of innovation

"With the world shifting towards the next great technological transformation, the ability to move with the tide of innovation is essential for industry players to gain a competitive advantage and set the pace in the built environment," he said.

He noted that conference speaker Marc Nezet of Schneider Electric highlighted three major challenges the world is currently facing - a global pandemic, recession and, most notably, climate change.

"World Economic Forum statistics indicate that construction accounts for 13% of the global GDP, 6% of world employment and a staggering 40% to 50% of worldwide emissions, meaning climate change cannot be solved without transforming the building and construction industry," said Skudder.

According to Nezet, net-zero carbon cities and buildings can only emerge after being thoughtfully designed and built. And thanks to digital software technologies, users are empowered across the lifecycle of any construction project to make

decisions for a more efficient and lower carbon future.

## Factors driving need for change

McKinsey & Company partner Gerhard Nel reiterated the need for change in the industry: “This need is driven by an industry that is currently characterised by increasing complexity, changing customer preferences, sustainability considerations, a move to modular, a shortage of skilled labour and a stricter and more complex regulatory environment.”

He suggested new industry dynamics are at play with emerging disruptions, such as industrialisation in the form of modularisation and product standardisation, as well as industrialising workflows from engineering to planning and procurement. “In addition," he says, "new entrants with new business models or unicorns will lead to disruption of the market.”

According to Nel, McKinsey & Company conducted a survey of all the digital solutions in the market, surveying 2,400 companies. “Clear trends have emerged around firstly, digital twinning; secondly, 3D printing, modularisation and robotics; thirdly, AI and analytics (using big data); and fourthly, supply chain optimisation and marketplaces.”

## Digitalisation as a key disrupter

Andrew Skudder, CEO, RIB CCS

Skudder said that from RIB CCS’s perspective, the most interesting aspect was the digitalisation of the industry as a key disrupter. “With a plethora of digital solutions out there, we have witnessed two ‘plays’ in digitalisation.

“One is the platform play where software companies like RIB look to creating a common or single database with applications on top that give clients a holistic view and the ability to access to their data, but where each participant in a project has their own applications to suit their work, be it estimation, planning or quantity surveying, amongst many others. This allows for enhanced collaboration and the harnessing of structured data for better decision-making around projects.

“The second play is the tool-set play whereby software companies build specific applications to solve specific problems, such as estimating or planning. The problem with this is that data is then situated in silos and becomes difficult to consolidate.

“That’s why we believe that when it comes to digitalisation, it’s about embracing a single platform that connects the organisation’s data, business processes and people in one environment, which leads to greater efficiency, increased access to information and better run projects,” added Skudder.

## Meaningful transformation

Referring to the topic of disruption raised by John Sanei, Skudder agreed that sometimes meaningful transformation requires creating ‘future teams’ in the business to experiment on new ways of doing things.

“Innovative organisations do this as a matter of course, but I don’t think construction companies do it enough. I think it’s a great suggestion for them to consider, especially with the way the sector is evolving.”

Importantly, said Skudder, significant change management and digital transformation need to be leadership-driven: “Clients also need to establish a digital roadmap of the journey they intend to take and deliver good quality training to employees. Our philosophy at RIB CCS is that organisations need to be empowered to train themselves, thereby allowing them to own

their projects.”

Summing up the other conference speakers’ sentiments, Rukesh Raghubir, CEO of M&D Construction Group, said: “We need to understand that as an industry, if we do not disrupt ourselves, someone else will do it for us.”