**NEWS ARTICLE**

The role of AI in consulting engineering

**27 March 2023:** Artificial Intelligence (AI) is becoming quite predominant and is going to be a major player within the next few years, reflects **Sergio Castanheira**, newly appointed Digital Lead – Enterprise Capabilities at globally trusted infrastructure firm [AECOM](http://www.aecom.com).

Tools like Chat Generative Pre-Trained Transformer, or ChatGPT, can assist with routine tasks like report writing, translation or even coding, to a certain degree. “AI is definitely going to augment our current skill set.” Castanheira says AECOM already has an Australian team focusing exclusively on workflows and automation routines.

He points out that BIM software package Revit has included generative design components for a while now. “That is the general trend going forward, with AI becoming more prevalent. We will have to work with AI at some point for sure. I do not think it is only going to be construction, but across the board.”

A lot has happened in the digital space since 2018 when AECOM hosted ‘The Digital Future’. The event showcased the potential of Virtual Reality (VR), Augmented Reality (AR) and Building Information Modelling (BIM) in the construction and consulting engineering space as the future of a fully integrated approach to project delivery.

“It was quite successful. Allowing clients to interact with the digital tools brought a whole new dynamic to the process,” reflects Castanheira. While Covid-19 did put the development of VR and AR on hold within the business, these tools are emerging again for use in design reviewing, construction planning and management.

Despite Covid-19, AECOM nevertheless remained a leader and successfully transitioned to remote working and global collaboration. Teams were forced to work from home and digital tools enabled them to continue delivering projects with minimal restructuring and training, as they adapted fairly quickly.

AECOM’s Enterprise Capabilities’ Digital Hub consists of an applications team, an automation team and a BIM and information management team headed up by Castanheira, one of four global centres offering digital skills and services to the broader business. He joined AECOM in 2016 as a Discipline BIM Lead for the mechanical engineering team, prior to which he worked in London for 14 years for various consultants and contractors.

“I have been privileged to have seen the evolution of BIM within the UK construction sector,” says Castanheira. He sees his current role “as an exciting change,” driving value and excellence in the company’s core offering. Digital technology has enabled AECOM to share specialist skills globally, giving it a distinct advantage.

It can leverage technical skills from other regions for specialist infrastructure projects, using digital technology to augment these skills. The South African office has adapted quickly to this change, with teams well positioned to support AECOM teams in other geographies.

Looking at the latest trends, Castanheira points to significant advances in cloud computing over the past couple of years enabling building information to be shared across the various stages of the design and construction lifecycle. Data analytics is providing valuable insight metrics as to how the digital assets are performing over the lifecycle of the project. Examples include BIM model health, data validation and progress metrics.

Another area where BIM is making a major impact is sustainability. AECOM’s goal is to be operationally net zero by 2030. At present, 80% of the energy consumption of buildings is over their operational phase. Digitalisation allows carbon data to be embedded into BIM models from industry sourced databases.

This allows designers to select sustainable materials and equipment to drive down the expected carbon output. These databases also facilitate better building simulations like energy analysis to reduce energy consumption, while at the same time making buildings more comfortable for occupants. Smart buildings using this embedded data can also operate these buildings more efficiently.

**Pull quote**

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AECOM’s Enterprise Capabilities’ Digital Hub consists of an applications team, an automation team and a BIM and information management team, one of four global centres offering digital skills and services to the broader business. #SustainableLegacies

***Ends***

**Notes to the editor**

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