AI in civil engineering: practice, risk and industry transformation

Additional answers from panellists

How will engineers ensure they have satisfied their due diligence and duties under both CDM2015 and HASWA1974 while using AI in their work?

"My view is that the introduction of AI does not change an engineer's legal or professional responsibilities. AI can help us work more efficiently and explore options faster, but it does not replace engineering judgement, competence, or accountability.

"Engineers remain responsible for making sure that designs are safe, risks are identified and managed, and outputs comply with applicable standards, regulations, and client requirements.

"To demonstrate due diligence, any AI-generated content should be subject to appropriate human review, validation, and documentation, with clear evidence that a suitably qualified professional has verified the output before it is relied upon in a project or decision. AI is an assistive technology and accountability for final outputs remains the responsibility of the engineer."

Dave Roberts, Chief Digital Officer Stantec

If a task is so complex we need AI to do it, how do we verify results? How does the design engineer or sign-off engineer know it has been done correctly?

"Accountability cannot be delegated. As chartered professionals, if you cannot explain the output without saying "the tool said so," it can't be signed off. AI doesn't replace professional judgement, but it does allow for greater validation: sampling data, probing anomalies, and providing space for greater critical thinking."

Jan Tribble, design and innovation manager, Stantec

How do we ensure young engineers gain the building blocks of engineering judgement if AI automates early career work?

"Graduate engineers build judgement through thousands of small tasks and calculations; that's how they develop the mental scaffolding required to take on bigger challenges. If AI automates that process, we risk developing teams who prompt beautifully but haven't developed the critical skills to verify the outputs. We must deliberately add friction into the process, making sure junior team members learn the skills to sense an error from their own professional experience, not just spot one."

Jan Tribble, design and innovation manager, Stantec

What governance frameworks are required when sharing project data with commercial, cloud-based AI vendors in projects involving sensitive data?

"The governance framework for AI should first and foremost be driven by client requirements and contractual obligations. Some clients will be comfortable with the use of AI on project data, while others may require that sensitive project information is not used with AI at all.

"In those cases, appropriate controls can and should be implemented to restrict or prohibit AI use in line with the project's contractual and regulatory requirements.

"Regardless of data sensitivity, all project data should only be used with approved AI tools that have undergone the necessary cybersecurity, privacy, legal, and risk assessments. It is also essential to understand where data is stored, processed, and transferred when using AI services, making sure that data residency, data sovereignty, confidentiality, and client-specific requirements are fully met.

"Ultimately, organisations must be able to demonstrate that AI is being used transparently, securely, and in accordance with both client expectations and established governance standards. "

Dave Roberts, Chief Digital Officer Stantec

ENDS