

The role of AI in construction for safety and sustainability

From optimising energy efficiency to enhancing safety, AI will soon take over the construction industry, Ayad Chammas tells *Technical Review Middle East*.

AYAD CHAMMAS, A partner at Nirman Ventures, has led and executed construction projects in multiple countries.

According to Chammas, Artificial Intelligence (AI) will be at the forefront of digital transformation when it comes to construction, along with collaborating with cutting-edge startups to drive advancements in the industry.

Promising applications of AI in construction

In this interview, the Abu Dhabi-based digital construction expert explains the potential of AI to revolutionise construction, with the most obvious use-case being the enhancement of safety.

“AI can monitor construction sites for hazards and predict accident-prone areas, ensuring worker well-being,” says Chammas.

At the same time, it can also optimise costs. “AI optimises energy efficiency, water usage, and waste disposal, leading to eco-friendly and sustainable structures. By identifying efficient materials and construction methods, AI significantly reduces costs without compromising quality.”

Challenges and adoption advice

While AI's potential is vast, challenges to adoption include data availability and quality, scarcity of skilled AI experts, and initial implementation costs. Ayad says that companies should start with small, focused pilot projects to address specific pain points. Building an AI-savvy team is crucial for success, and patience is essential during the solution development process.

Long-term implications of AI

“AI's transformative impact on construction includes safer sites with wearable AI-powered devices, increased productivity through automation, and



Ayad Chammas, partner at Nirman Ventures.

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sustainable buildings with innovative materials and methods,” explains Chammas. This means that the widespread adoption of AI could create new job roles and specialised AI-focused businesses in construction.

Current state and future impact

Citing recent industry reports, Chammas says that only a fraction of construction companies have integrated AI solutions into their processes. However, that number is rapidly increasing, as the benefits become more apparent.

“It is predicted that by 2030, AI could contribute to over 30% of cost savings in the construction sector, and productivity could see an impressive boost of up to 60%

through AI-powered automation,” says Chammas.

Innovative technologies in construction

He also highlights the role of autonomous construction equipment like self-driving trucks, and other equipment, which are still far from being deployed on large scale. “But drones and other robotics used for site surveying and inspections are already being used globally, improving worker safety and enabling cost effective operations.”

According to him, AI and automation are likely to augment human capabilities rather than replace workers. For this, he says, upskilling the workforce is crucial for fully embracing AI's potential, and organised data integration will be useful when it comes to enhancing decision-making and innovation. “Construction companies that prioritise data integration into their processes and dedicate time and effort to building artificial intelligence models for their most critical operations, will reap the benefits soon.”

Chammas is also positive that his advocacy for AI in construction demonstrates its potential to change the industry. “From enhancing safety and optimising costs to promoting sustainability, AI paves the path to a safer and more sustainable construction landscape.” He says that despite all the challenges, AI's transformative power makes the journey worthwhile, ensuring construction remains at the forefront of technological progress.

“As construction CEOs contemplate the future of the industry, a profound truth emerges. The journey toward AI in construction is more than just embracing technology; it's embracing an extraordinary metamorphosis. With AI, the once familiar landscape of construction transforms into a dynamic tapestry of safety, sustainability, and awe-inspiring innovation,” Chammas concludes. ■