

2025 BENTLEY INFRASTRUCTURE AI FORUM CHALLENGES OF AI

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INTRODUCTION

Harnessing the potential of AI and integrating it effectively into Architecture, Engineering, and Construction (AEC) workplaces is not just a technological challenge.

It is an organizational challenge.

And like all good organizational challenges, it involves a series of smaller, complex, and interlinked challenges for leadership and Human Resource teams, workflows and processes, and data and security.

The complexity of integrating AI was demonstrated in our survey of global infrastructure leaders.

The current top challenge cited by our sector leaders was the risk associated with data sharing, such as intellectual property, privacy, cybersecurity, and commercial information, which was a concern for 19% of leaders.

Almost **one in six (16%)** cited the complexity of integrating AI solutions into existing systems and processes within design and construction.

And **15% of leaders noted** that their organization had a lack of internal skills and/or capability to apply existing AI solutions or to develop proprietary ones.

However, no challenge or opportunity is static.

As our organizations and technology itself evolves, so do our challenges.

We asked leaders in our survey what future challenges they think lie ahead when it comes to scaling the use of AI in the next few years.



Technical capabilities and people and workforce skills were cited as the largest future challenge (62 responses), followed by data processes (51), and then leadership and management (39).

The impact of AI on workforces is a primary concern for all.

One of the biggest concerns for employees is the risk of job loss and instability due to AI adoption.

However, [a new US study based on analysis of official data from the labor market and figures from the tech industry on usage and exposure to AI](#), has so far shown little evidence that AI tools are putting people out of work.

Workforce adaptation is another significant issue cited as a challenge.

The integration of AI tools requires a skilled workforce who feel safe and comfortable using advanced digital technologies.

The introduction of new technology almost always leads to a skills gap, which needs to be addressed through comprehensive training programs.

Ensuring employees are capable and technically trained to use AI tools will be vital if organizations want to maximize its benefits.

Technical and technological capabilities and the infrastructure for same is another chief concern.

Construction sites often lack the connectivity needed to support AI solutions effectively, and this is particularly acute in remote locations.

AEC companies will be required to think through whether infrastructure upgrades are needed if they want to fully leverage AI capabilities across sites.

Construction companies also face another large strategic barrier: the industry's inherent resistance to change.

Experience has shown that construction has often been slow to adapt to new technologies.

As an example, [McKinsey research from 2015](#) showed the construction industry to be the second slowest adopter of digital solutions when compared with other major industry sectors.

Construction lagged behind hospitality, retail, and government when it came to digitization and ranked only narrowly ahead of agriculture and hunting.

Construction firms will need to counteract this cultural challenge if they want to take advantage of the efficiencies offered by AI solutions.

Finally, the cost of implementing AI is another significant strategic challenge.

AI often requires a substantial upfront investment in software, hardware, and training.

While tech investment often realizes efficiency gains and monetary savings over the long-term, the initial financial commitment can be a high hurdle to overcome, particularly for small and medium-sized businesses.

Launching AI pilot projects or adopting a phased approach to AI integration can help organizations to road-test AI to see if it delivers a significant return on investment before committing further.

With the challenge and opportunity of integrating AI into businesses continuously evolving, we'd like to use the Infrastructure AI Forum as a safe space for leaders to share where you are on your journey with AI.

What barriers have you identified so far? Have you managed to overcome any hurdles successfully?

If so, how?

At an organizational level, who have been your biggest allies on the path to AI integration?

And what challenges can you see coming up further down the road?

Are there any challenges you think you'll need a hand with in the coming months and years?
We look forward to having this conversation with you in Amsterdam.

