

The State of AI in AEC

This study of AEC professionals examines AI perception and usage, identifies barriers to adoption, and highlights new opportunities for application in the design-to-construction workflow.



A seismic shift in AI adoption

The transformation in AI implementation across architecture, engineering, and construction is staggering. Just one year ago, a [2024 AIA report](#) found that only 6% of architects regularly use AI in their jobs. Today's findings reveal an extraordinary acceleration in usage, signaling a fundamental shift in the industry.

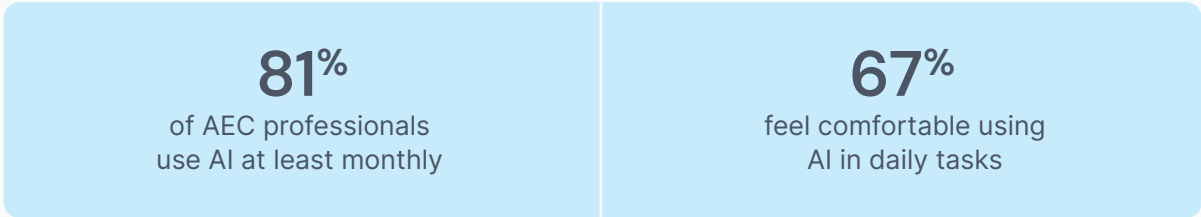
The numbers speak for themselves: **81% of AEC professionals utilize AI at least once a month**, and over a quarter integrate it into their daily workflows.

Professionals haven't been slow to adopt AI; they've been waiting for tools that fit their workflows. Now that practical applications have emerged, adoption is accelerating at an unprecedented pace.

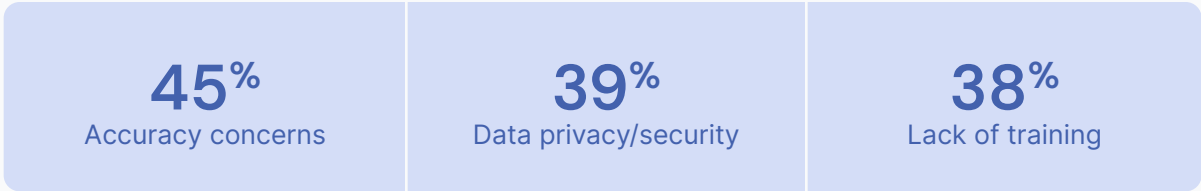


Key Insights Summary

Current State



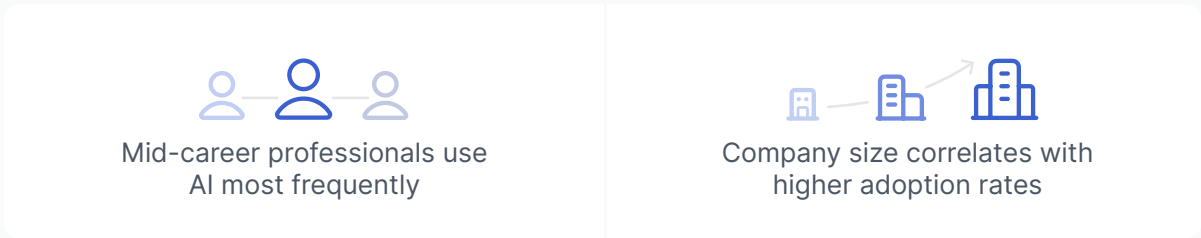
Primary Barriers



Future Opportunities



Demographic Differences



How AEC Professionals Are Using AI

Mid-career professionals drive the most frequent usage.

Mid-career professionals have higher weekly AI usage rates than early- and late-career professionals. They also report higher comfort levels with AI compared to late-career professionals.

Weekly AI usage by experience



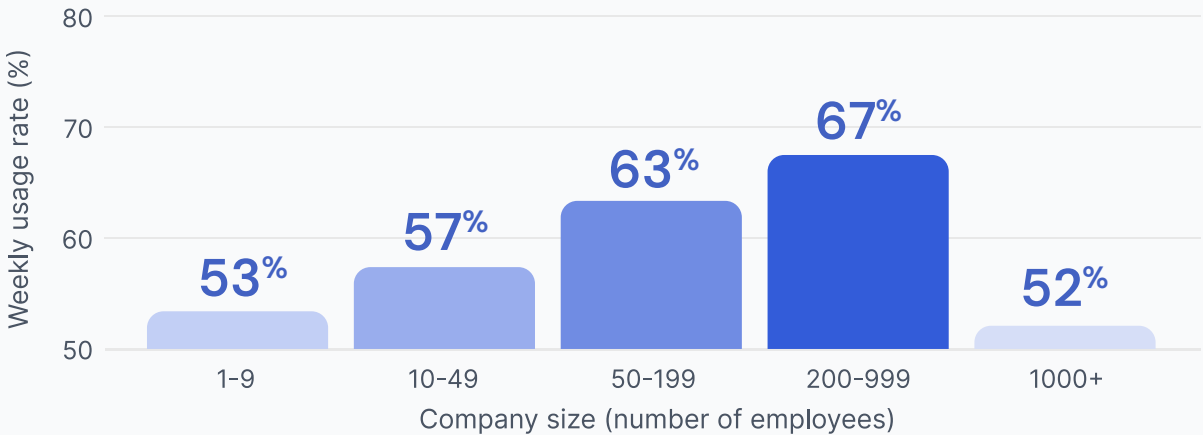
Comfort with AI tasks



Company size creates adoption advantages.

Company size is associated with AI usage, but the relationship is not linear. Mid-sized companies report the highest weekly AI use rates, while the smallest and largest companies report lower rates.

Weekly AI usage by company size



That’s not to say that smaller firms aren’t reaping big benefits from AI. Obelisk Architects, a five-person architecture firm, reduced its corrections by 66% by leveraging UpCodes AI code research assistant to anticipate the city’s comments and address them proactively. [Read their story](#)



Challenges and Opportunities

Accuracy is a top barrier to AI adoption.

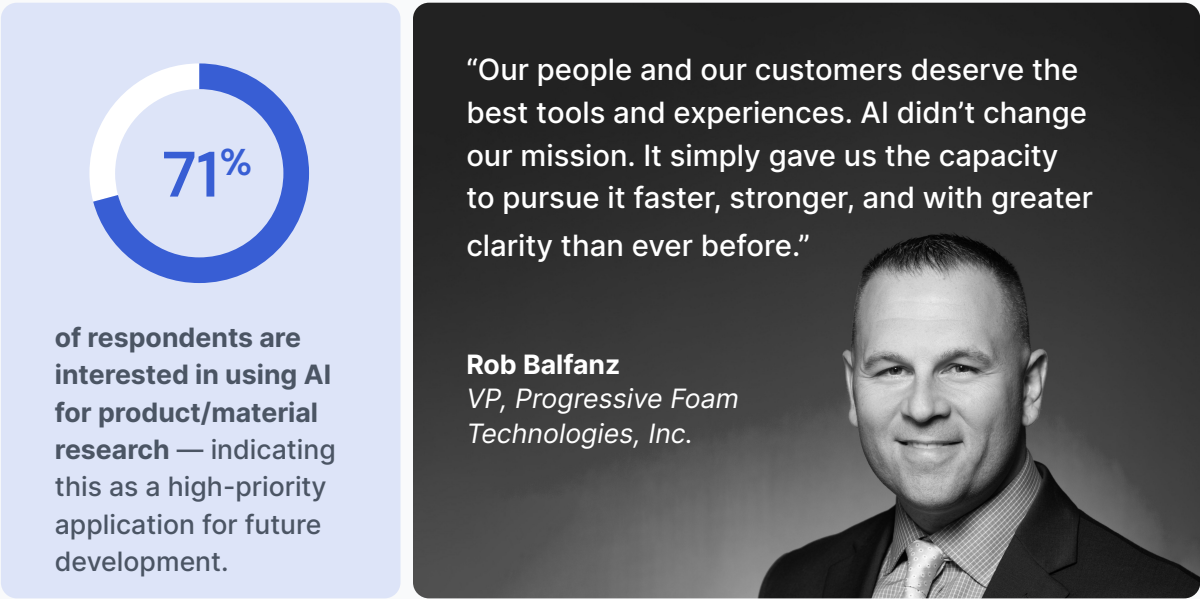
Despite growing comfort with AI tools, professionals remain cautious about reliability.

Top three challenges to AI adoption:



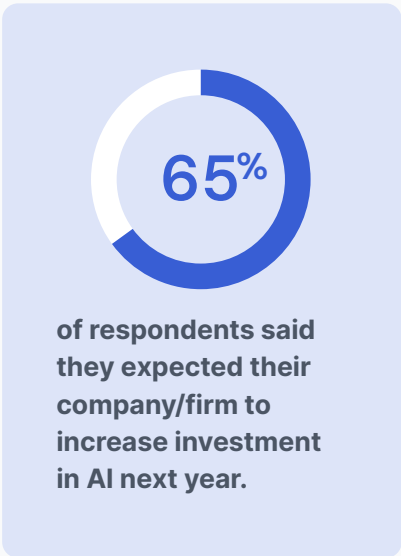
These concerns reflect the high-stakes nature of AEC work, where errors can have significant safety, financial, and legal implications.

Professionals see clear opportunities for AI applications.



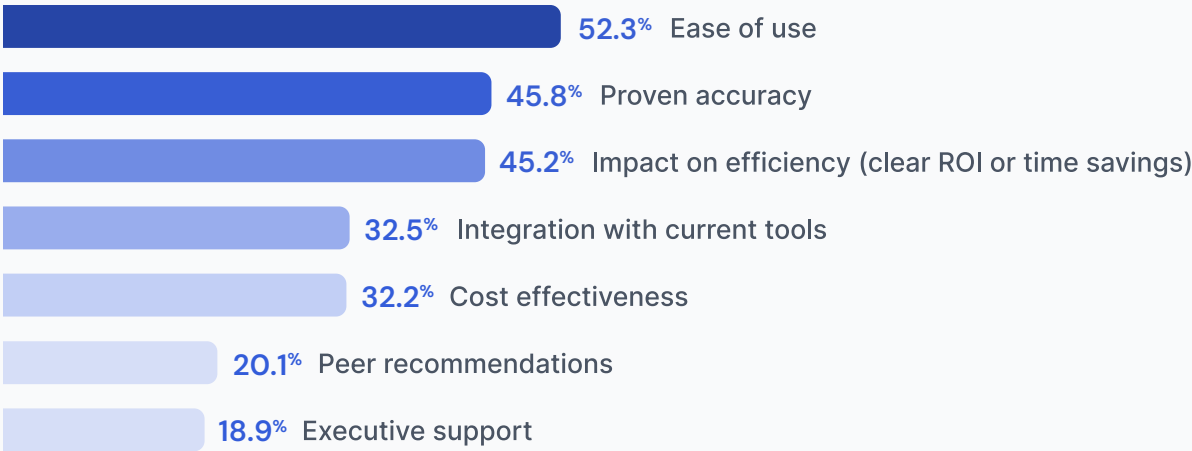
UpCodes AI helps Progressive Foam scale expertise, convert more high-intent conversations, and uncover real customer insights. See how manufacturers are elevating their customer experiences with AI purpose-built for their workflows.

Investment is building.



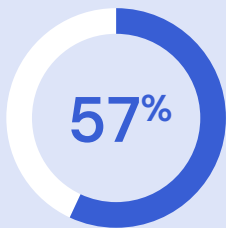
This forward-looking optimism suggests that current adoption levels are just the beginning, with significant growth expected as tools improve and training becomes more widespread.

Factors influencing AI investment.



Ease of use, proven accuracy, and clear time savings are the three primary drivers of AI adoption, while executive sponsorship is a relatively minor factor. This suggests that practitioners are driving adoption for their firms from the bottom up.

AI is perceived as a tool that boosts throughput.

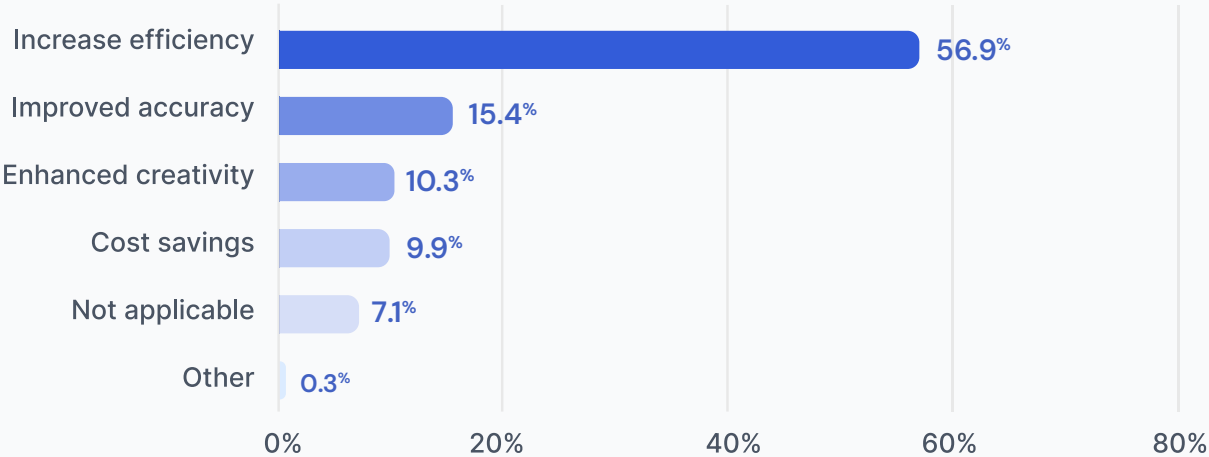


noted the primary benefit of AI was to increase efficiency.



Professionals view AI as a means to speed up their tasks, not enhance their creative process or immediately save money.

What is the primary benefit (or potential benefit) you see from using AI in your work?



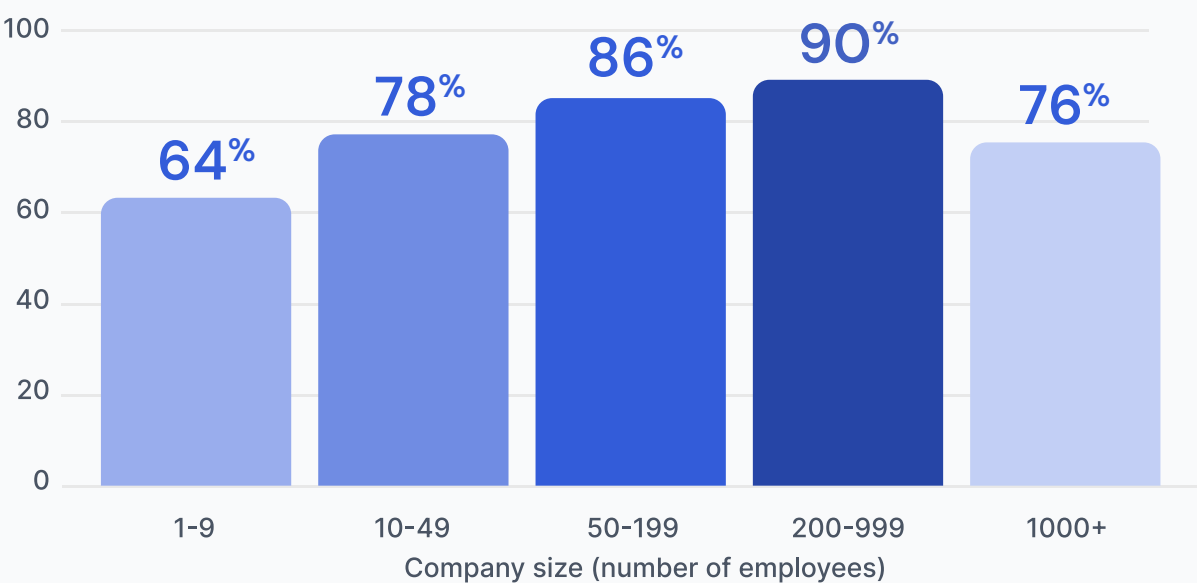
Who Are the AI Adopters?

Respondents who use AI at least once per month.

Experience Level Distribution



Company Size Distribution



Role Distribution



AEC AI Forecast for 2025

2026 is shaping up to be a pivotal year for AI adoption in AEC, with professionals moving beyond experimentation toward strategic implementation. The focus is shifting from “Will AI be useful?” to “How can we implement AI safely and effectively?”

1. Training and education will become critical differentiators.

With 38% of professionals citing lack of knowledge and training as a key barrier, companies that invest in AI education will gain significant competitive advantages. This is particularly important as accuracy concerns (45%) could stem from an inadequate understanding of AI capabilities and limitations.

2. Product research represents a big optimization opportunity.

With 71% interested in AI for product/material research, this workflow is ripe for transformation. This signals an opportunity for manufacturers who adapt to meet this demand, potentially gaining a competitive advantage among AI-adopting professionals

3. Accuracy and reliability standards will mature.

As 45% of professionals cite accuracy concerns as their top barrier, 2025 will likely see the development of industry-specific AI validation standards and workflows designed to verify AI-generated outputs in AEC contexts.

4. Data privacy frameworks will evolve for AEC applications.

With 39% of respondents concerned about data privacy and security, the industry will need to develop clear guidelines for the use of AI with sensitive project information, client data, and proprietary design details.



Leading the AI Transformation in AEC

AEC professionals moved from AI speculation to regular implementation. The most successful firms will be those that thoughtfully integrate AI tools while maintaining the expertise, creativity, and judgment that define excellent work.

The key is to view AI not as a replacement for professional expertise, but as an augmentation tool that can accelerate time-intensive tasks throughout the project lifecycle.

Ready to join the 81% of AEC professionals already using AI?

Start a [free two-week trial of UpCodes](#) or [get a tailored demo](#) and explore how you can accelerate code and product research with AI.

Methodology

We surveyed 889 professionals across the AEC industry, including architects, engineers, contractors, and owners. Survey participants were recruited from the UpCodes user base and through external channels in partnership with Centiment. All responses were collected anonymously, and results are reported in aggregate to protect individual privacy.

About UpCodes

UpCodes is transforming how building professionals engage with code — creating a faster, smarter path from regulation to documentation. Our AI-powered platform brings codes, assemblies, and building products together in one place, so teams can reduce risk and turn compliance from a liability into a decisive competitive advantage.