



AI in Construction: Measurable Results, Unclear Benchmarks

AI Industry Spotlight Series

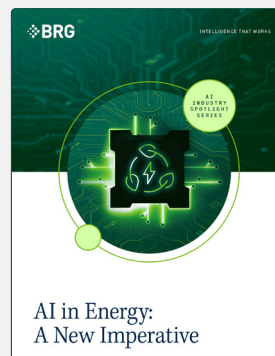
This report—the fourth installment in BRG’s AI Industry Spotlight Series—examines how construction companies and developers are adopting artificial intelligence (AI) amid persistent labor shortages, margin pressures, operational complexity, and evolving regulatory expectations.

The series has previously examined AI’s influence on the retail, energy, and financial sectors. It is part of a broader BRG research initiative exploring AI implementation, impact, and risk across key industries.

Read the first three reports in the series:



[AI in Retail:
In Pursuit of
Meaningful
AI Adoption](#)



[AI in Energy:
A New Imperative](#)



[AI in Financial
Institutions:
Staying Ahead
in the AI “Arms
Race”](#)



Artificial intelligence (AI) is producing measurable value across the construction industry while organizations learn how to integrate it and assess its broader impact.

Executive Summary

At the World Economic Forum in Davos, 2026 was dubbed the “[Year of AI ROI](#)” for good reason: as AI adoption moves from experimental to foundational, organizations are under increasing pressure to show results.

The construction sector offers a revealing test case as much of the industry’s cost base remains tied to physical materials, equipment, and labor. You can’t put AI in a hard hat—yet. So where can it create meaningful value?

To understand how the industry is implementing AI—and associated obstacles, impacts, and risks—BRG surveyed more than 100 construction and development executives who are involved in their organizations’ AI efforts. Respondents fell into two segments: “builders” who deliver construction projects, and “owners” who develop, commission, and own them. Most respondents are from North America, with a subset from Europe and Asia-Pacific. Survey findings in this report refer to North American respondents unless otherwise specified. Regional comparisons are identified separately.

Construction organizations are already putting substantial money behind the technology, suggesting they anticipate a commensurate return. Nearly seven in ten North American respondents invested at least \$250,000 in AI over the past twenty-four months, including 37% that invested \$1 million or more. Yet only 15% say AI is fully integrated across projects and operations.

The stakes are high. The industry needs to attract an estimated 349,000 net new workers in 2026 to meet demand, according to [Associated Builders and Contractors](#), while approximately 41% of the current workforce is projected to retire by 2031. These pressures are driving [a push for AI agents](#) to support project managers and preserve the knowledge of experienced workers.

Our findings suggest that AI is not yet functioning primarily as a substitute for labor, however. More respondents report **adding** headcount in certain areas than reducing it, and impacts are largely appearing in team structure.

That complicates the discussion about return on investment (ROI). Headcount reductions and immediate labor savings may be easy to quantify but do not capture better decisions, deeper analysis, avoided rework, or proactive risk mitigation. No one single yardstick has emerged to judge the value of AI, and too narrow a definition of value may limit opportunity.

“An organization can measure the cost savings in cases where AI replaced specific processes traditionally performed by its trained staff,” says [Travis Olson](#), a director at BRG. “A more valuable result would be when implementation of AI improved on traditional processes by adding new capabilities, such as expanding up or down the supply chain.”

Key Findings

1. AI touches every phase of construction projects. Most organizations have invested at least \$250,000, but only 15% report full integration.
2. AI is delivering better outcomes, not just efficiency gains. More respondents cited improvements in effectiveness—quality, performance, and outcomes—than in efficiency.
3. AI is reshaping how teams work—and more organizations have increased headcount than reduced it.
4. Cost savings above 10% are common, but measuring AI’s full value remains difficult.

AI Function Examples

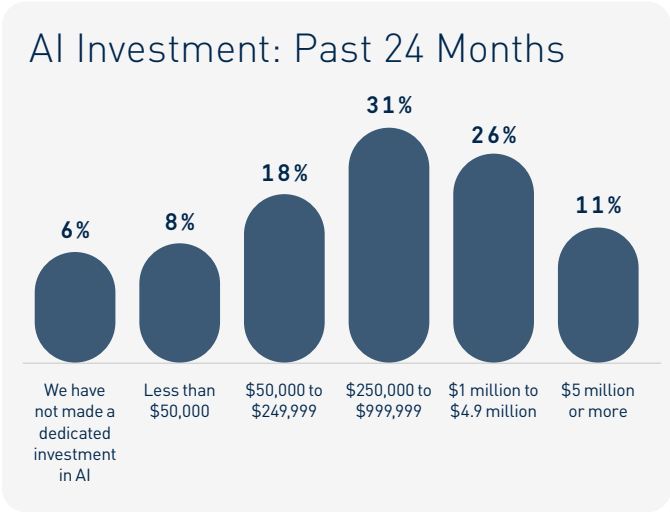
PHASE	FUNCTION	BUILDERS (Construction and Project Delivery)	OWNERS (Development and Ownership)
PRE- CONSTRUCTION	Planning and feasibility	Feasibility analysis, cost estimating, schedule modeling, permitting support	Site selection, feasibility analysis, pro forma and financial modeling, permitting and entitlements
	Design and engineering	Design optimization, constructability review, value engineering, building information modeling (BIM) coordination	Design review and oversight, design development quality control, value engineering
	Bidding and contract formation	Bid preparation, guaranteed maximum price (GMP) development, subcontractor pricing, contract review	Contractor prequalification and selection, bid evaluation, GMP and contract negotiation, contract drafting and review
	Procurement and supply chain	Materials forecasting, vendor and subcontractor selection, buyout optimization	Long-lead materials planning, owner-furnished equipment procurement, vendor selection
CONSTRUCTION	Project management and scheduling	Timeline forecasting, resource and labor allocation, progress tracking, closeout documentation	Schedule and budget oversight, progress monitoring, contractor performance tracking, closeout
	Field operations and site execution	Safety monitoring, site inspections, equipment tracking, quality control, robotics and prefabrication	Site monitoring and progress verification, quality assurance, safety oversight
POST- CONSTRUCTION	Warranty and post-completion services [builders]	Warranty claims management, defect tracking, as-built documentation	—
	Asset and portfolio management [owners]	—	Valuation modeling, lease abstraction, warranty management, portfolio performance analytics
BUSINESS OPERATIONS	Risk, claims, and dispute management	Regulatory compliance, safety risk detection, claims and dispute analysis, insurance and risk transfer, sustainability and climate risk reporting [identical for both segments]	
	Corporate and administrative functions	Contract management, finance automation, human resources/workforce analytics, legal operations [identical for both segments]	
	Cybersecurity and data protection	Threat detection and monitoring, access control, vulnerability assessments [identical for both segments]	

1. AI touches every phase of construction projects. Most organizations have invested at least \$250,000, but only 15% report full integration.

AI adoption now spans the entire construction lifecycle: respondents report implementation across pre-construction (46%), construction (49%), post-construction (40%), and operations (43%). Planning and feasibility is the most widely adopted (58%) individual function—a figure that rises to 80% among builders specifically.

“Planning and feasibility is a natural starting point for builders because that is where much of the project risk sits,” says [Dara Hendrix](#), a managing director at BRG. “It also involves some of the most time-consuming work—developing conceptual estimates and other early analysis—while often generating little or no direct revenue. AI can help teams make better-informed decisions earlier.”

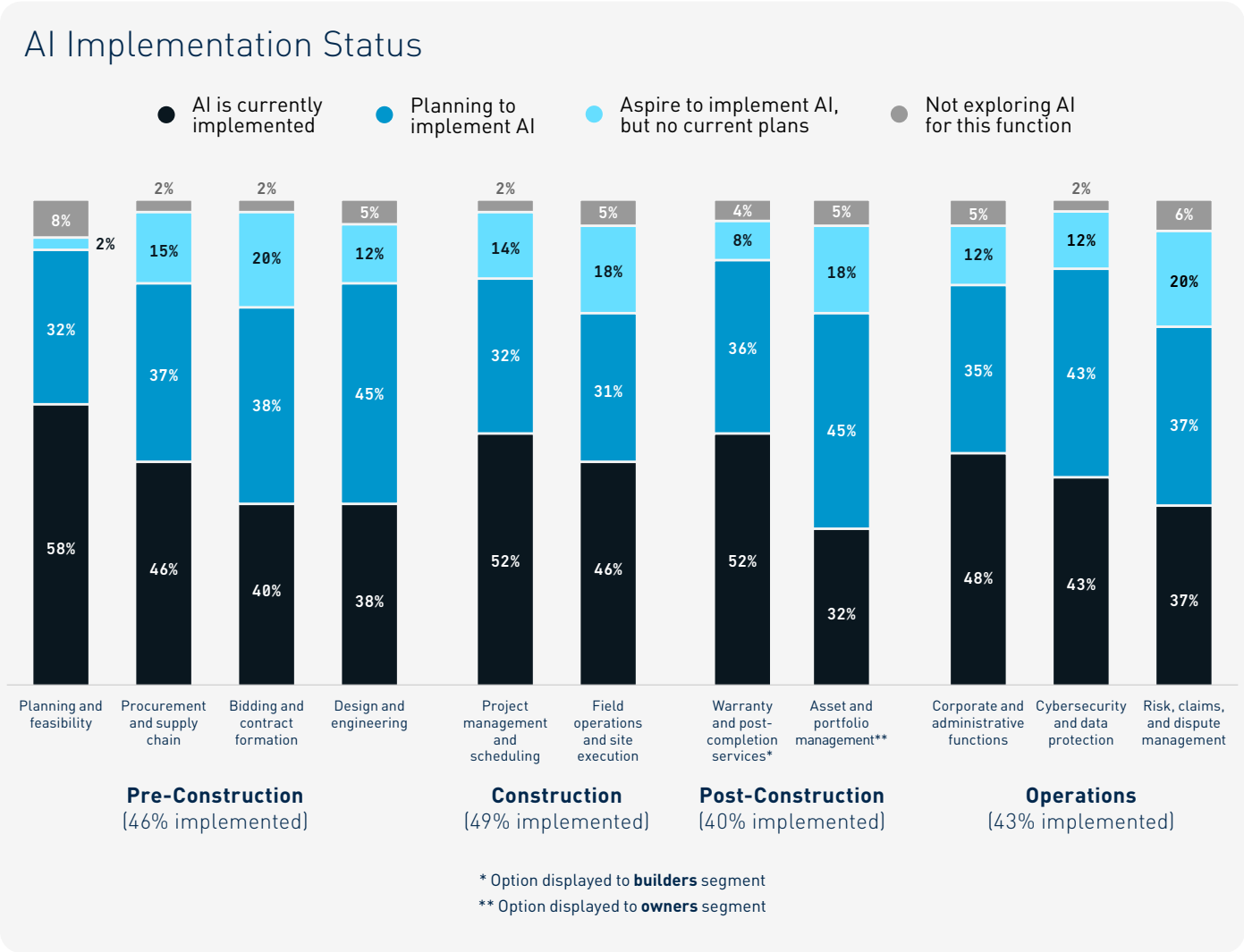
The scale of investment suggests that the industry is serious about finding those applications. Over the past twenty-four months, 68% of respondents have spent at least \$250,000 on AI, including 37% that invested \$1 million or more. Builders report broader adoption across functions, while owners are more likely to have invested at least \$250,000.



How Construction Organizations Are Using AI
Pre-construction: supporting contract drafting; assisting design (e.g., simulating structural and power loads); evaluating land entitlements and code compliance; enhanced design peer review; identifying value-engineering opportunities and alternative methods, equipment, or materials; generating estimates from historical project data; forecasting unique procurement issues and solutions; detecting drawing conflicts and omissions
Construction: monitoring site-safety practices; predicting delays based on project history, resource management and productivity tracking, weather, and delivery schedules; developing workable recovery schedules
Post-construction: monitoring asset performance; aggregating data from connected and remote sensors (e.g., enhanced supervisory control and data acquisition); enhanced security systems; research to support asset valuations
Business operations: automating client service; updating contracts based on improved cost savings; streamlining compliance requirements

Despite these expenditures, only 15% of respondents report that AI is fully integrated, while 5% do not expect AI ever to become fully integrated. About 29% anticipate full integration within the next twelve months (from July 2026) and another 31% within one to two years.

Several barriers help explain the gap. Respondents most often cite a lack of skilled talent or expertise (40%), limited relevance to their work (38%), and data and integration challenges (37% each) as factors likely to limit AI’s benefits. Separate questions reveal risk-related concerns restricting use, led by liability for errors in AI-generated work (43%) and unclear treatment of AI in contracts (40%). Fewer than half say their policies currently address human oversight and accountability (42%), and just 34% address accuracy and reliability.



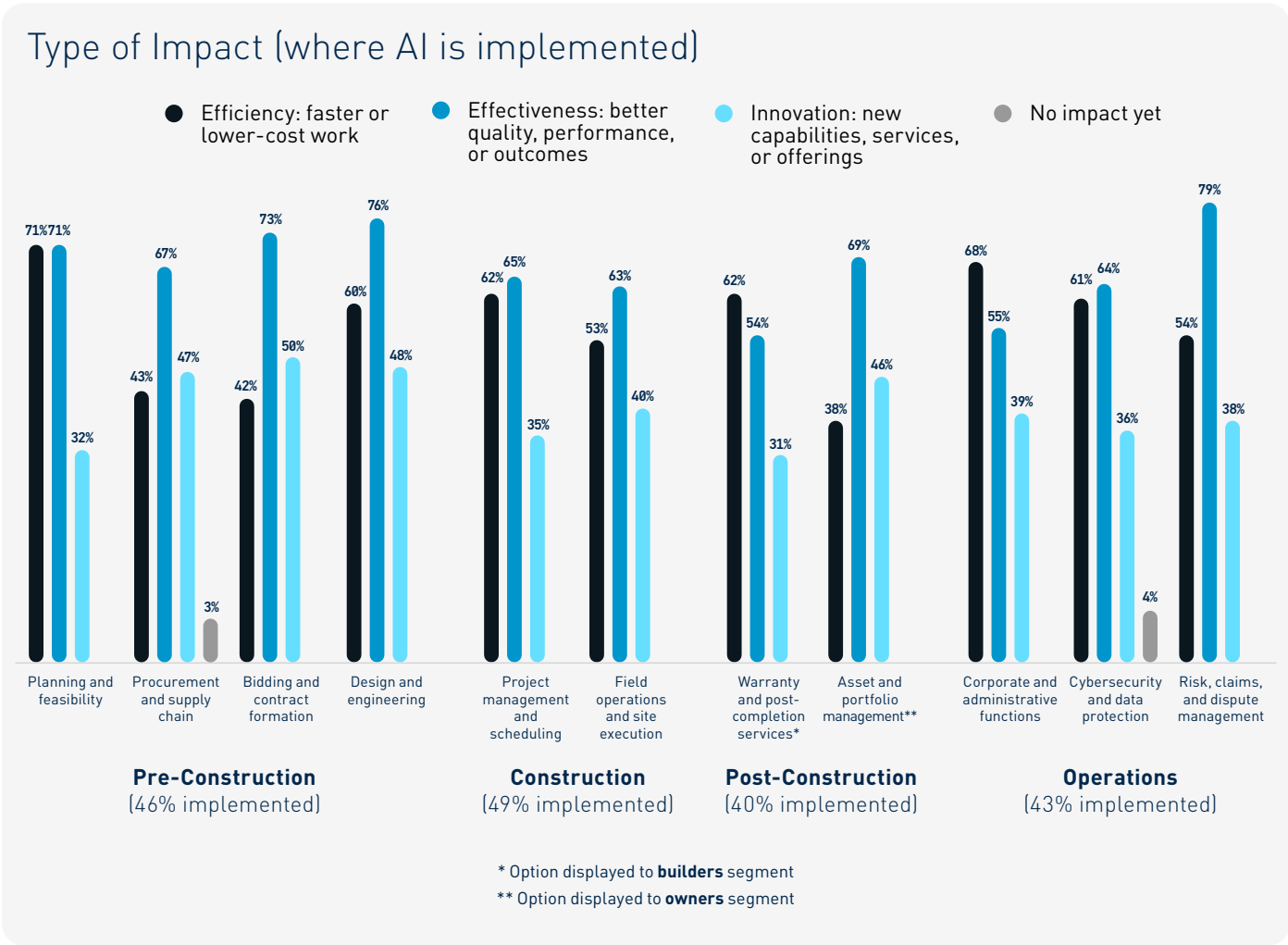
2. AI is delivering better outcomes, not just efficiency gains.

While discussions of ROI tend to focus on whether AI adoption helps organizations work faster, at a lower cost, or both, our findings point to a broader brand of value creation. Across most functions, respondents were more likely to report improvements in effectiveness—better quality, performance, and outcomes—than efficiency.

“AI’s value is not limited to completing the same review faster,” says Ms. Hendrix. “It can make it practical to perform analyses that teams previously might have skipped because they were too time and detail intensive. The tradeoff is that the results still require independent verification.”

Respondents also reported efficiency gains across every function measured, and efficiency exceeded effectiveness in areas such as warranty and post-completion services and corporate and administrative work.

Innovation—defined as new capabilities, services, or offerings—trailed efficiency and effectiveness, but approximately half of respondents still reported it in pre-construction functions: bidding and contract formation (50%), design and engineering (48%), and [procurement and supply chain](#) (47%). This suggests that new construction and development capabilities are emerging, even if they remain less common than other impacts of AI implementation.



3. AI is reshaping how teams work—and more organizations have increased headcount than reduced it.

The narrative that AI adoption would lead to job loss [seems to be shifting](#). In construction, the early workforce impact appears to be more about changing how teams and work are organized rather than eliminating positions. Only 11% of respondents report reducing headcount in certain areas because of AI, while 18% report adding it.

Both remain minority responses, however.

“AI is not replacing the materials, equipment, and people that physically build a project. Its most immediate impact is on the information-intensive work around construction: design, drawings, scheduling, and project management,” says [John Fletcher](#), a BRG managing director based in Dubai. “That helps explain why organizations are changing team structures, skills, and outside support before making broad headcount reductions.”

Over half of respondents have changed their reliance on outside vendors, consultants, or contractors. Forty-six percent have changed how teams are structured, and the same share has changed how teams collaborate. Nearly four in ten (38%) have reskilled or retrained existing employees, 31% have redeployed staff, 29% have created new types of roles, and 20% have changed the skills they seek when hiring. Just 2% report no significant change in how they operate.

These findings suggest that AI adoption is prompting organizations to reconsider how work is divided. The most frequently cited barrier to capturing AI’s benefits—a lack of skilled talent or expertise (40%)—underscores how unsettled that process remains.



4. Cost savings above 10% are common, but measuring AI’s full value remains difficult.

Double-digit cost savings are common across every phase of a given project, including the construction itself (67%), in business operations (62%), and during pre- (58%) and post-construction (58%). Post-construction was particularly notable, with almost 20% of respondents reporting cost savings of more than 30%.

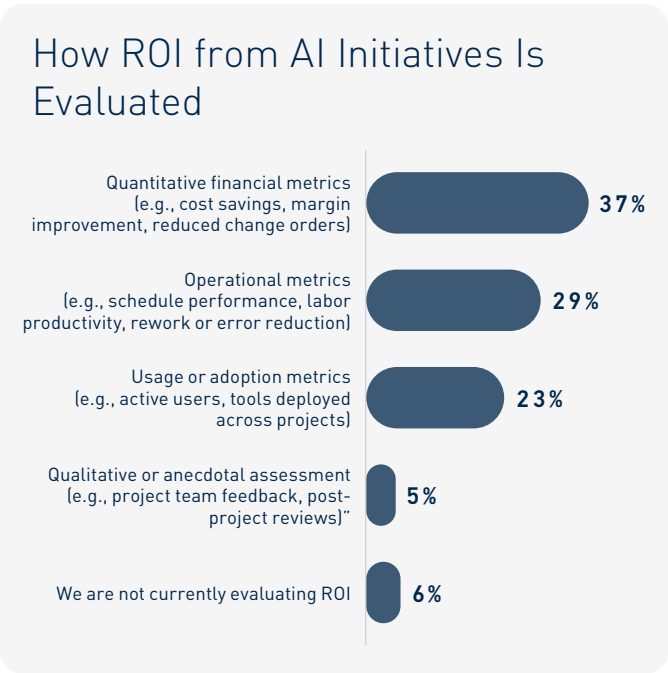
While savings are measurable, organizations use different metrics to assess AI’s value. Thirty-seven percent primarily rely on financial metrics like cost savings, margin improvement, and reduced change orders. Another 29% use operational measures such as schedule performance, labor productivity, and reductions in rework or errors. About one-quarter primarily track usage or adoption, 5% rely on qualitative assessment, and 6% do not currently evaluate ROI at all.

An important nuance? Some of AI’s value may appear as costs *avoided* rather than savings directly recorded.

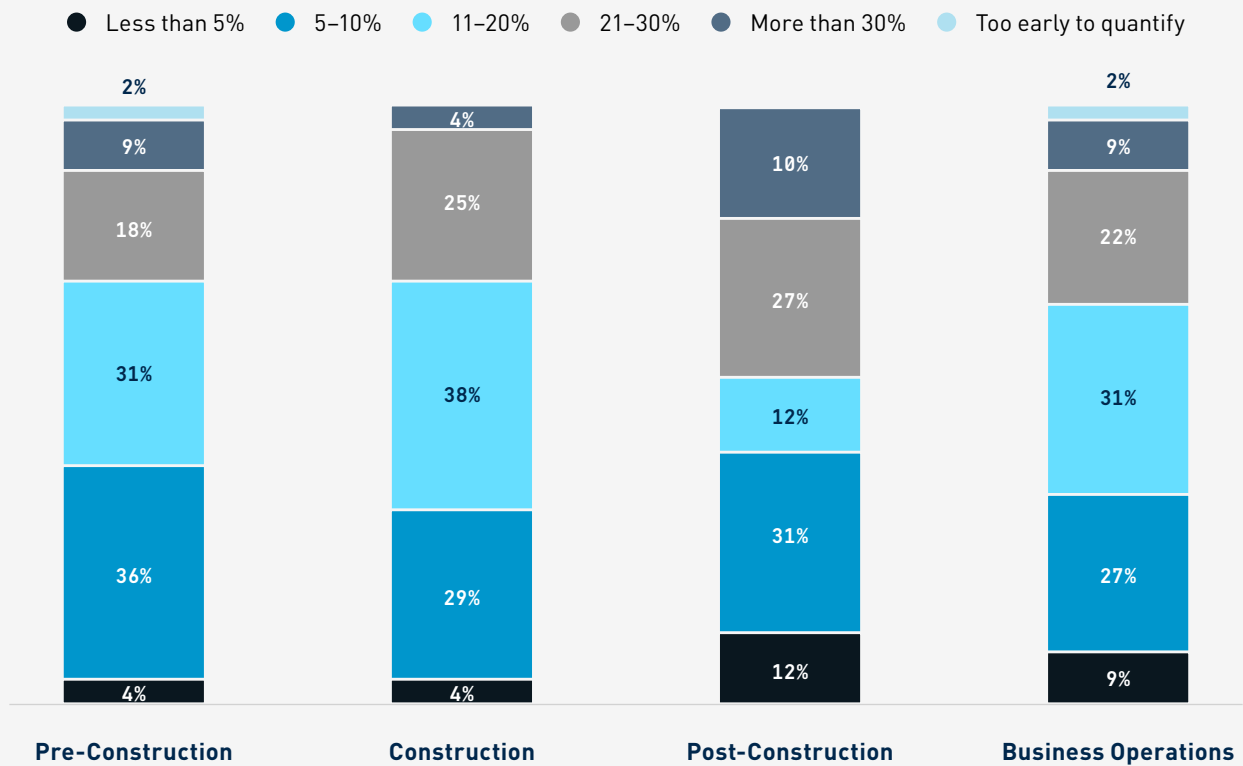
“Contingency is a useful construction-specific measure,” says [Ben Nolan](#), a managing director at BRG. “When AI helps identify risks earlier, those risks can be deliberately managed with the goal of reducing untimely, unnecessarily expensive, and unanticipated change orders and delays. Its return can be measured in terms of the uncommitted contingency at various stages across the project lifecycle.”

Each approach captures something different. Financial and operational metrics measure results, whereas usage metrics show whether tools are taking hold—not whether they are improving outcomes. No single measure necessarily captures AI’s full value, particularly when the technology makes viable work that would not otherwise have been undertaken.

“The hardest ROI questions arise when AI makes something possible that was not realistically on the table before,” says Mr. Olson. “If the technology can review two million emails, the alternative may not be a slower review; it may be no review at all. If you focus too narrowly on ROI, you risk missing out on broader changes. Blockbuster could have made DVD distribution more efficient and still missed out on the streaming revolution.”



AI-Delivered Cost Savings: By Phase



Regional Paths to AI Adoption

Survey results suggest regions are taking different paths to AI adoption and applying it in different places: the jobsite in North America, the back office in Asia-Pacific (APAC), and to manage completed projects in Europe.

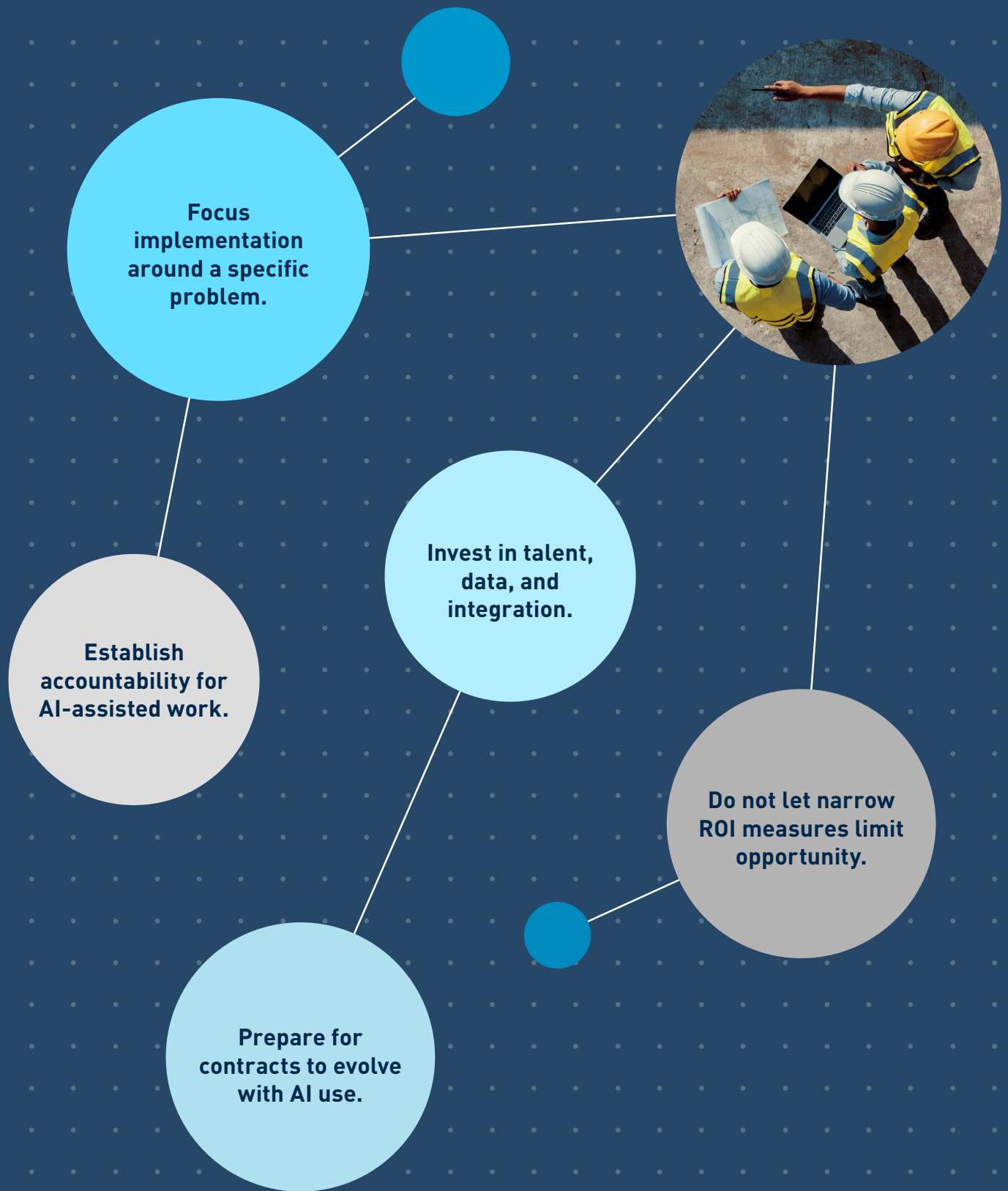
In which phases are regions prioritizing AI efforts?

North America: on the jobsite. Adoption leads in the delivery phases: pre-construction (46%) and construction (49%).

APAC: in the back office. Business operations adoption leads all regions (50%), driven by procurement and risk management.

Europe: after the build. Adoption is highest in post-construction (41%) to manage and monitor assets.

	North America	APAC	Europe
AI already fully integrated	15%	18%	9%
AI active in most core functions	42%	41%	18%
Investing \$250,000 or more	68%	41%	18%



Best Practices for Builders and Owners Adopting AI

Best Practices for Builders and Owners Adopting AI

As AI moves deeper into project delivery, the challenge shifts to how to use it effectively and responsibly. Our findings point to five best practices for builders and owners looking to scale AI while managing its risks.

1. Focus implementation around a specific problem.

AI's application in construction is strongest in the information-intensive work that surrounds a project, such as estimating costs, reviewing drawings, scheduling, document analysis, and managing claims. Organizations should begin with a specific decision or outcome they want to improve, determine whether the necessary information is available, and establish how the output will be reviewed.

2. Invest in talent, data, and integration.

Organizations will struggle to scale AI without skilled employees who have access to reliable project data and tools that work with existing systems. Training alone will not solve poor data or disconnected systems, just as better infrastructure will not fully capture its potential value without people who can navigate it.

3. Establish accountability for AI-assisted work.

Liability for errors is the most frequently cited concern restricting AI use, yet fewer than half of respondents say their policies address human oversight and accountability, and only about one-third address accuracy and reliability. Organizations should define who is responsible for validating

AI-assisted work, when to require independent verification, and how to document the underlying inputs and outputs. This becomes particularly important as AI generates more detailed project records: this may help parties substantiate delays, disruptions, or other claims that were previously difficult to prove, but it raises new questions about preservation, disclosure, and discoverability.

4. Do not let narrow ROI measures limit opportunity.

Define success before deployment, but do not reduce every AI initiative to hours saved or immediate cost reductions. Leaders should ask if implementing AI allows the organization to perform better work, manage risk differently, or do something new.

5. Prepare for contracts to evolve with AI use.

Contracts may increasingly need to address how AI can be used, who is responsible for validating its outputs, which records must be retained or disclosed, and how liability is allocated.

"As AI becomes part of project delivery, the industry needs to ask whether existing contracts still create the right incentives," says Mr. Olson. "If owners and contractors use AI to reduce risk and preserve contingency, how can the agreement allow both to share in the benefit? The concept of shared savings can extend to the measured benefits of implementing AI across the entire project."

Methodology

The research for this report was conducted in July 2026 via a quantitative survey of 109 executives and leaders across two segments: construction and project delivery (58 respondents) and development and ownership (51 respondents).

Respondents hold senior leadership positions and are involved in their organization's AI implementation efforts. The respondent base spans North America (65), Europe (22), and APAC (22). This report prioritizes the North American data and refers to the North American perspective unless otherwise specified.

This is the fourth report in BRG's AI Industry Spotlight Series that tracks AI's influence across key industries. The first three editions explored [AI in retail](#), [AI in energy](#), and [AI in financial institutions](#).

Responses are anonymous and analyzed in the aggregate. Percentages may not sum to 100% due to rounding.

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