KPMG

Canadian Construction Association

Canadian construction: Doing more with less

Responding with purpose to boost productivity amid the pressure to build more faster

Foreword

Canadian construction companies have made significant progress in their digital transformation journey in the five years since KPMG in Canada first assessed their digital maturity as low and lagging far behind other sectors.

The backbone of the Canadian economy, construction accounts for 7.5 per cent of gross domestic product (GDP) and employs 1.6 million people. Yet, despite its vital role, the sector has faced persistent productivity challenges due to regulatory hurdles, outdated procurement, and unpredictability limiting a company's confidence to invest in scaling up.[i]

Canada needs every industry – but particularly the construction sector – to fire on all cylinders right now, especially if nation-building megaprojects are to be fast tracked, ones that will reinvigorate the economy and reduce the country's reliance on the U.S. by opening up alternate trade routes and new markets.

The pressure will only intensify, as the sector tries to meet the exponential growth in demand for residential, commercial, industrial and infrastructure construction projects, ranging from homes to hospitals, power plants and AI-ready data centres to roads, pipelines, railways, utilities, airports and Arctic defence needs. In housing alone, Canada will need to build about 3.5 million additional housing units by 2030 to restore affordability.[ii]

The findings from our latest survey reveal a growing sense of urgency – and recognition – among construction leaders to boost the industry's productivity and efficiency.

They also reveal a growing optimism among construction industry professionals that technology will be a game changer, and we fully expect that in the coming decade it will fundamentally transform the construction industry as we know it today.

---

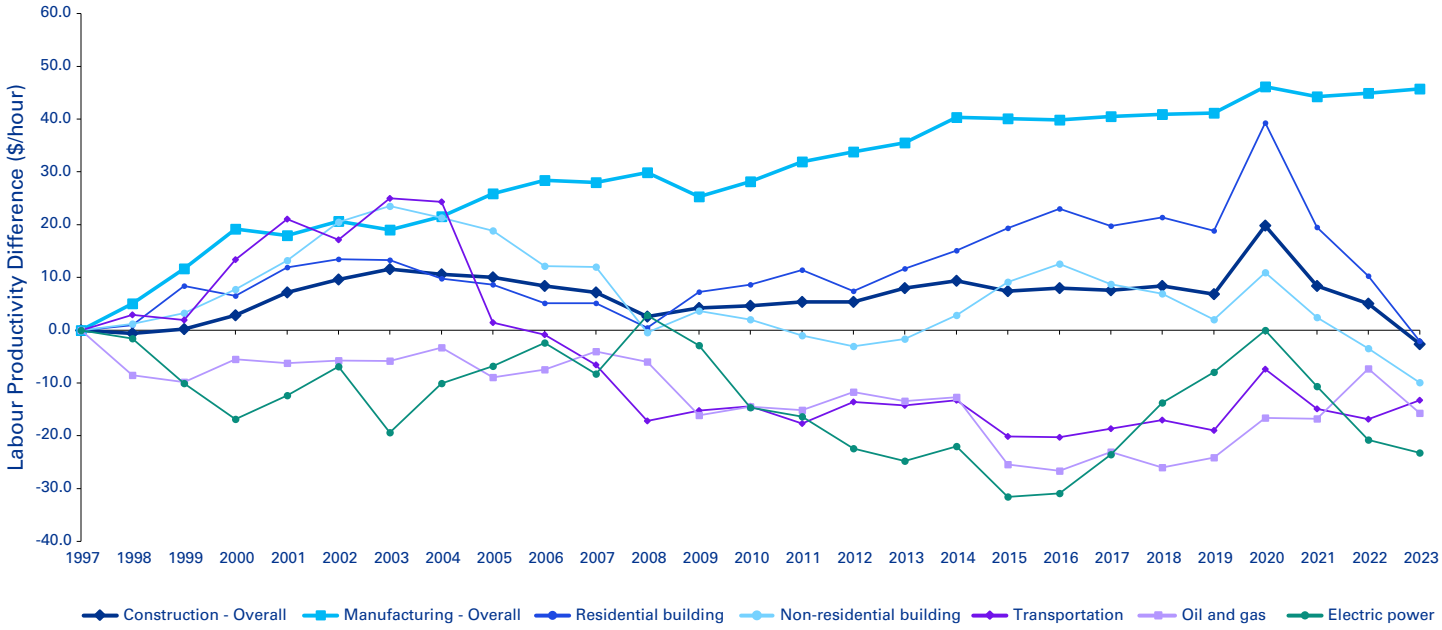
i Carmichael, Michael. "Canada can't fix its productivity crisis without fixing housing first," The Logic, April 21, 2025

ii Laberge, Mathieu. "Solving the housing crisis is a marathon not a sprint," CMHC, Feb. 27, 2025

Labour productivity

The construction sector's labour productivity – output per hour worked – is at a near 30-year low. Compared to the manufacturing industry – which averaged productivity increases of approximately two per cent per year since 1997, construction only achieved 0.4 per cent per annum until 2023 when it fell off a cliff and is now well below 1997 levels.

Over the last 26 years, labour productivity in the manufacturing sector has shown a consistent upward trend. In contrast, the construction industry has experienced a stagnation followed by a significant decline in productivity post the pandemic. Notably, the residential building sub-sector demonstrated relatively better performance compared to the overall construction industry average.



Source: StatsCan - Labour productivity

Table of contents

05 About the KPMG 2025 Construction industry digital maturity survey

06 The challenges

07 Innovative technologies and approaches

10 Where to begin?

12 Adoption drivers

13 Solving the labour conundrum

14 Laying it on the line

15 How we can help

About the KPMG 2025 Construction industry digital maturity survey

In our third biennial survey since 2020, KPMG in Canada surveyed 265 construction companies across Canada in collaboration with the Canadian Construction Association (CCA) to measure the sector's digital maturity. The 2025 survey included general contractors (63 per cent), engineering firms (15 per cent), subcontractors (12 per cent), suppliers (8 per cent), and institutional owners (3 per cent). The 2025 survey was conducted among KPMG clients and network respondents on the data research agency's online Methodify platform from March 18 through April 4.

Survey respondents

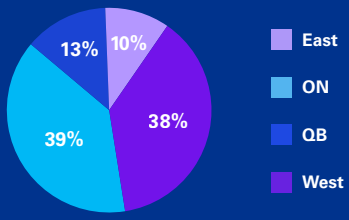
This year, we've continued broader engagement with the wider base of industry stakeholders to get a better understanding of digital maturity across the construction value chain.

265
Respondents

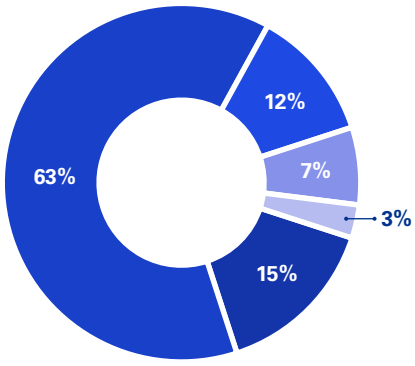
Categories

General contractors
Institutional owners
Engineering firms
Suppliers
Subcontractors

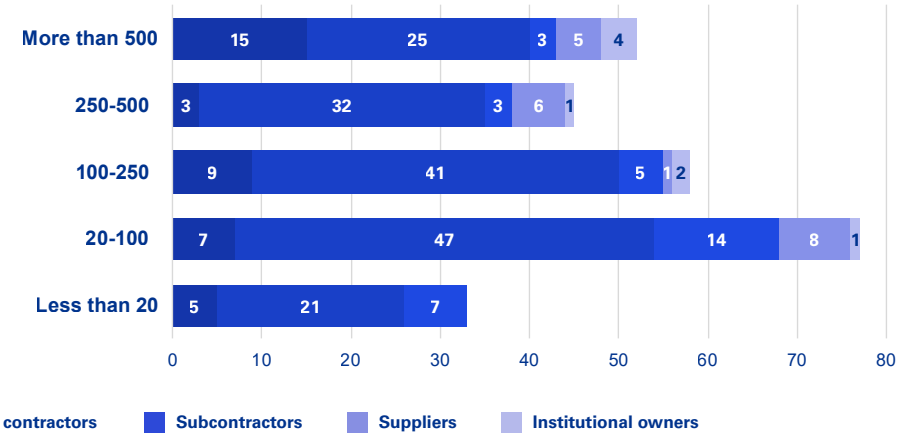
Regions



Respondent Categories



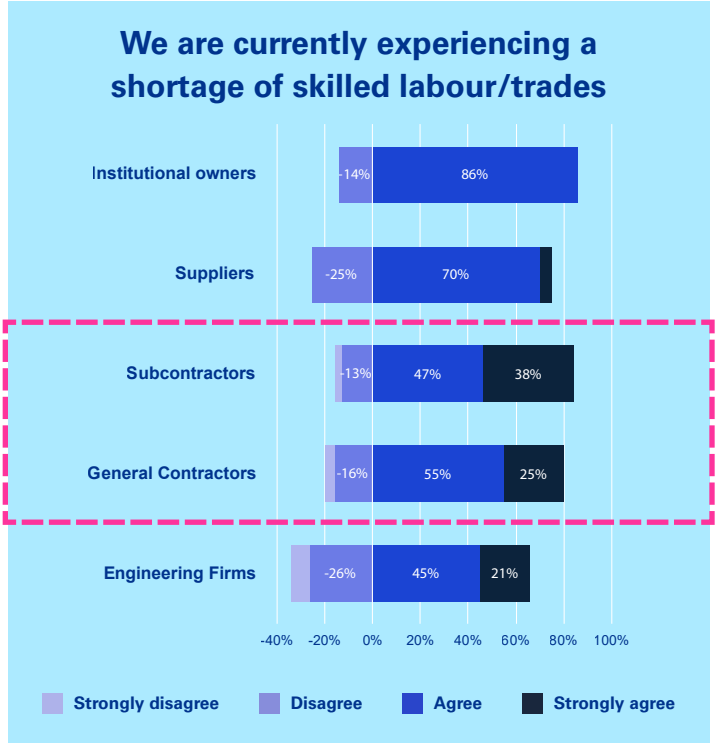
Respondent Size – Number of employees



The challenges

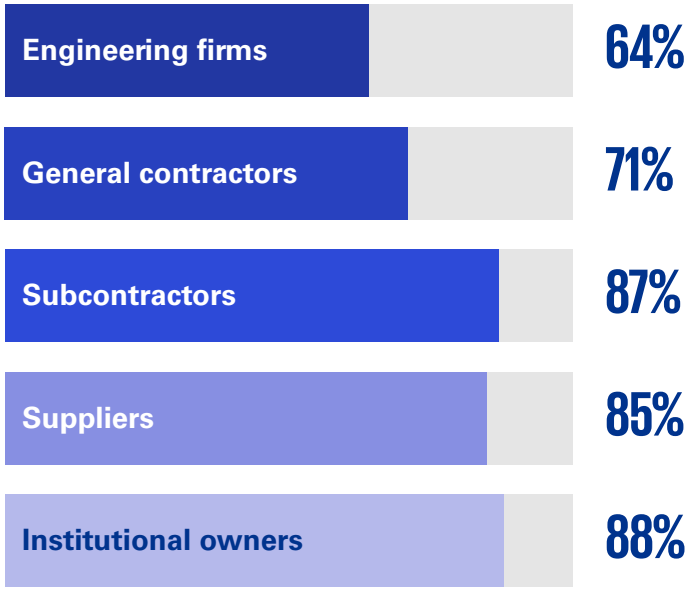
Many reasons account for the industry's productivity challenges, some of which are beyond their control like municipal red tape and regulations. But industry players can control how their company operates and how strategic investments are prioritized. They can boost their own productivity by leveraging technology and digital solutions to create an organization that runs more efficiently and effectively.

One of the industry's most-pressing challenges remains the shortage of skilled labour and trades. According to our research, **78 per cent** of respondents are currently experiencing a shortage of skilled workers, compared to 90 per cent in 2023. The labour crunch is not a minor inconvenience; it has directly impacted their operations, with **70 per cent** acknowledging that it is impacting their ability to bid on new projects and/or meet project deadlines. While still high, this percentage is down from 86 per cent in our 2023 survey.



Even so, as many as 73 per cent of industry professionals fully expect it will become "increasingly difficult" to meet demand for construction projects over the next five-to-ten years, particularly as retirements outpace recruitment.

Firms foresee increasing difficulty to meet demand for construction projects over the next 5-10 years:



The other notable challenge – currently exacerbated by tariffs and a shift in U.S. trade policies – is the cost and availability of materials. The industry relies on the U.S. market for certain types and grades of steel and aluminum products, and on U.S. original equipment manufacturers (OEMs) for major electrical and mechanical equipment. As noted by the Canadian Construction Association, steel and aluminum are critical for industrial and infrastructure projects and disruptions in trade can result in shortages and price increases, calling into question the feasibility of certain projects and potentially slowing their development.[iii]

iii "Construction Quarterly Economic Insights," Winter 2025, Canadian Construction Association, p. 5

© 2025 KPMG LLP, an Ontario limited liability partnership and a member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee. All rights reserved.

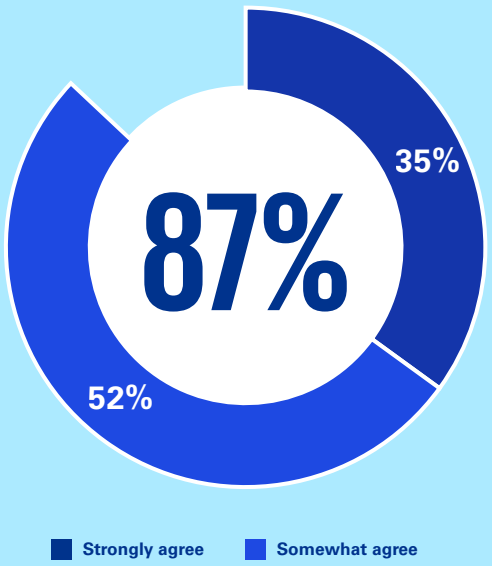
Innovative technologies and approaches

Despite these challenges, there are significant opportunities for construction companies to mitigate the fallout from tariffs and enhance their operations and outcomes through technological adoption.

Digital technology tools – in the front, middle and back offices – can help companies optimize their costs and cashflow, better manage project flow, and redistribute labour resources, helping to deal with gaps in labour.

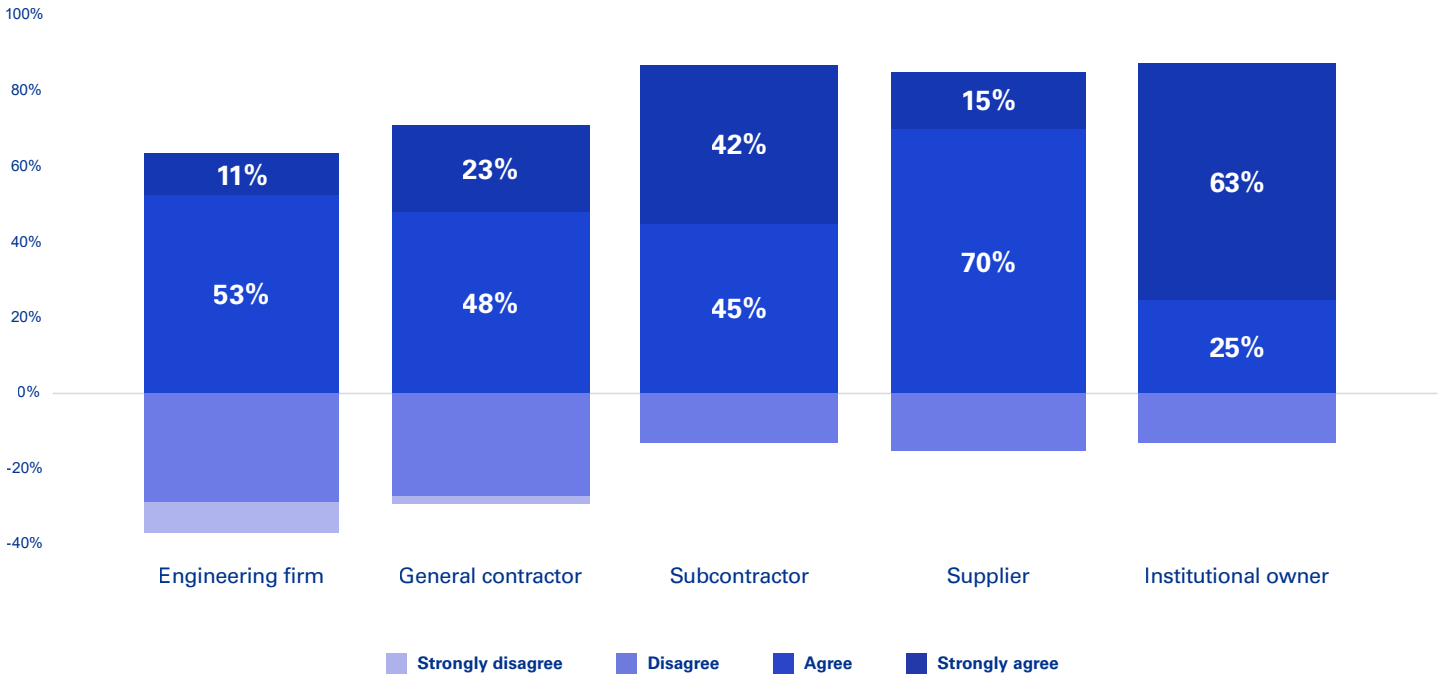
In housing, an overwhelming majority (87 per cent) agree the construction industry will need to implement new and advanced technologies to address the crisis effectively.

Of respondents said that new and advanced technologies are required to mitigate the challenges



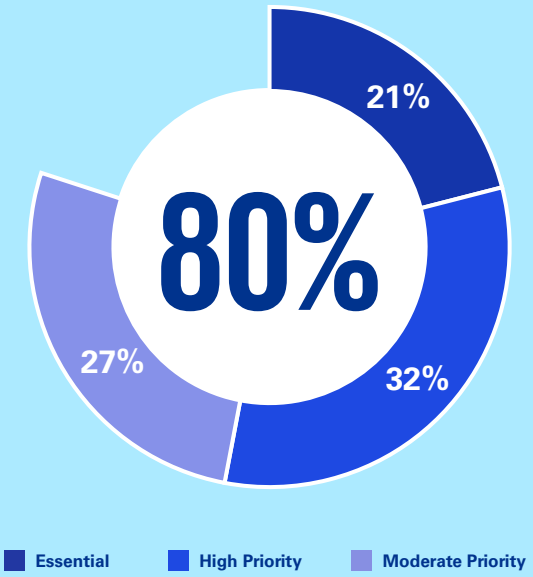
Almost 70% of C-suite executives anticipate challenges in meeting demand over the next 5-10 years. However, there is optimism that technological interventions will help mitigate these challenges.

Will it become increasingly difficult to meet demand for construction projects over the next 5-10 years?

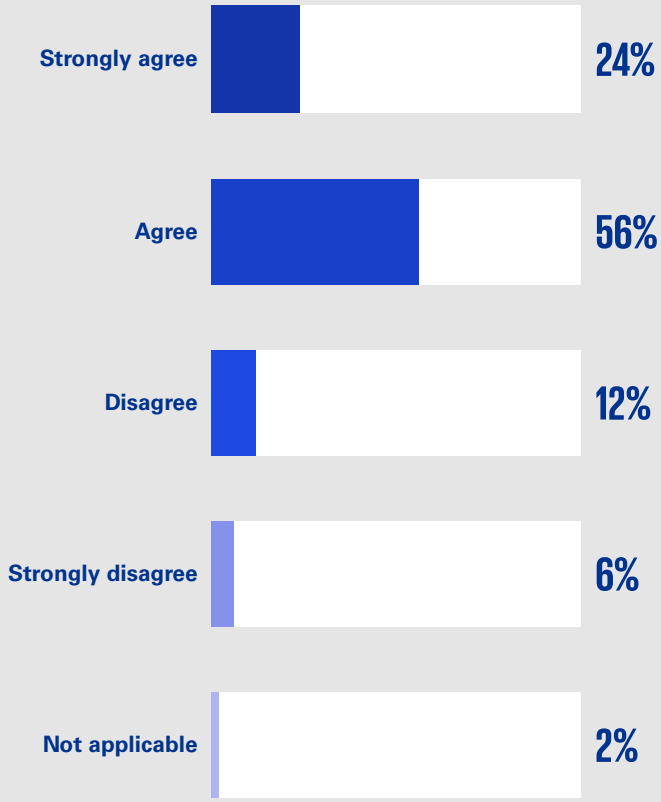


Innovative approaches to construction like prefabrication and modularization can help address labour scarcity and cost overruns, reduce material wastage, and speed time to build. For example, more than half **(53 per cent)** of the companies that KPMG surveyed are prioritizing prefabricated and modular building methods, which are estimated to reduce construction times by 25-to-50 per cent, costs by up to 20 per cent, and emissions by up to 22 per cent, compared to traditional construction methods.[iv] Still, adoption continues to be hampered by disparate building code requirements and standards between provinces, as well as owner preferences for highly tailored buildings that require traditional building practices.

At what levels are respondents prioritizing prefabrication and modularization?



Digital technologies are also advancing sustainability in construction



A notable **90 per cent** of respondents – up from 86 per cent in 2023 – agree that better tools – such as artificial intelligence (AI), analytics, Building Information Modelling (BIM), and digital twins – can boost efficiency and labour effectiveness. This sentiment is supported by the fact that **81 per cent** have already seen improvements in productivity or efficiency due to recent investments in technology. There are side benefits: **83 per cent** say that digital technologies are also advancing sustainability in construction.

iv Dragicevic, Nevena and Riaz, Kinza. "Seizing the Modular Construction Opportunity", CSA Public Policy Centre, January 2024

The global buzz around generative AI has caught the industry's attention. Nearly seven in 10 professionals (68 per cent) have either implemented or plan to use gen AI in their operations. Gen AI has the potential to enhance decision making, optimize design, improve safety on construction sites, and drive operational efficiency by examining past construction data, including project timelines, safety outcomes, prices and material utilization.[v] They are mainly using gen AI for research and information gathering, document drafting and review, training and tutorials, data analysis and planning, and automating workflows or tasks.

How does your company use generative AI?

Technology can also help mitigate the impacts of the tariff war. Construction companies can more easily review contracts, diversify supply chains, adjust bids, and track tariff-related material costs and availability through software tools that provide real-time insights, predictive modelling, and data analysis. For example, advanced procurement software tools have many benefits including enabling informed decisions about pricing, selecting suppliers and allocating resources, ensuring accurate ordering and inventory management, and improving risk management.

v "Buildots launches first generative AI assistant for construction management", Digital Construction Today, Nov. 1, 2024

Where to begin?

The industry is looking to expedite project delivery primarily through modular construction and supply chain innovation. Compared to 2022, our new research shows particular interest in robotics, automation, and BIM.

When asked to rank their priority investments in technology, the differentiation is quite tight, ranging from 56 per cent (demand-driven supply chain) to 40 per cent (robotics, drones, exoskeletons).

The priorities will vary by organization type. For example, general contractors, subcontractors, engineering firms and suppliers all have cybersecurity in their top two priorities.

Engineering firms and suppliers are prioritizing intelligent automation as their top priority, and institutional owners have AI as number one.

The wide range of technology investments by construction sector participants illustrates a sector poised for transformation. It emphasizes risk management, competitive efficiency, openness to new technologies, strategic resource allocation, and adaptation to workforce challenges. The investments suggest that while there is a strong focus on immediate concerns like demand-driven supply chain, just-in-time inventories, and cybersecurity, there is also a recognition of the potential long-term benefits that other technologies can bring to the industry.

Top 5 technologies prioritized by organization types

Contractors
General and Subcontractors

1. Cybersecurity
2. Prefabrication & modularization
3. Demand driven supply chain/ just-in-time inventory
4. BIM & Digital twin
5. Artificial Intelligence (AI) / Machine Learning / Large Language Models (LLMs)

Engineering firms

1. Intelligent automation
2. Cybersecurity
3. Artificial Intelligence (AI) / Machine Learning / Large Language Models (LLMs)
4. BIM & Digital twin
5. Additive Manufacturing & 3D printing

Suppliers

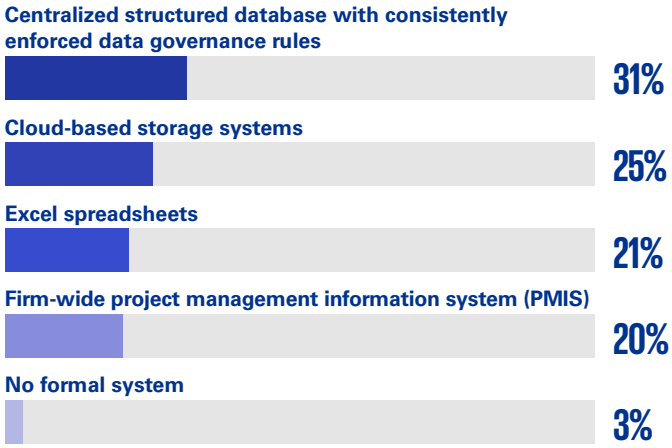
1. Intelligent automation
2. Cybersecurity
3. Artificial Intelligence (AI) / Machine Learning / LargeLanguage Models (LLMs)
4. Big data & predictive analytics
5. Additive Manufacturing & 3D printing

Institutional owners

1. Artificial Intelligence (AI) / Machine Learning / Large Language Models (LLMs)
2. BIM & Digital twin
3. Augmented reality & visualization
4. Cybersecurity
5. Big data & predictive analytics

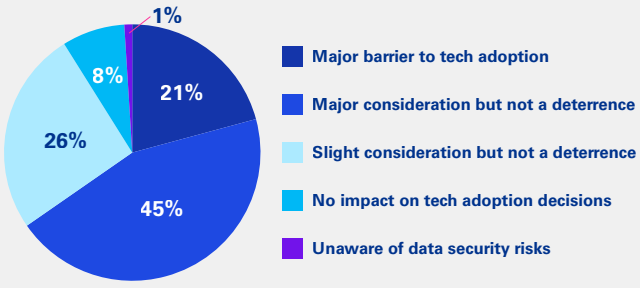
Many survey respondents still collect data manually, limiting opportunities for broader applications and insights. Six in 10 (62 per cent) now utilize digital and online forms or mobile apps. But nearly as many (58 per cent) continue to rely on manual data entry via paper forms or spreadsheets. These paper-based systems are inefficient, increase the risk of errors, make it difficult to share and manage data across teams and projects, contributing to higher operational costs. The obstacles cited by industry professionals to automate data collection include a lack of staff expertise or training, the cost of automation tools, resistance to change from field teams, and incompatibility with current systems. The industry will need to rapidly invest in training and tools and ensure that systems are intuitive and user-centric to remove these operational barriers.

How does your company primarily store and manage project or operational data?



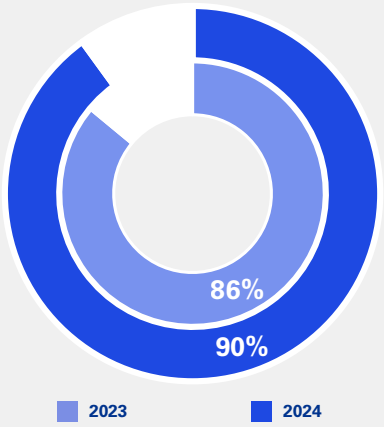
As with any technology, implementation carries several risks, requiring guardrails, compliance, well defined practices and processes, and robust data protection strategies. The KPMG survey found the risks range from cybersecurity threats and data privacy concerns to reliability and maintenance, cost overruns, organization disruption, and adoption hesitancy.

Is data security a consideration when adopting technology?



Adoption drivers

More than 90% of the respondents told us that better tools boost efficiency, up from 86% in 2022



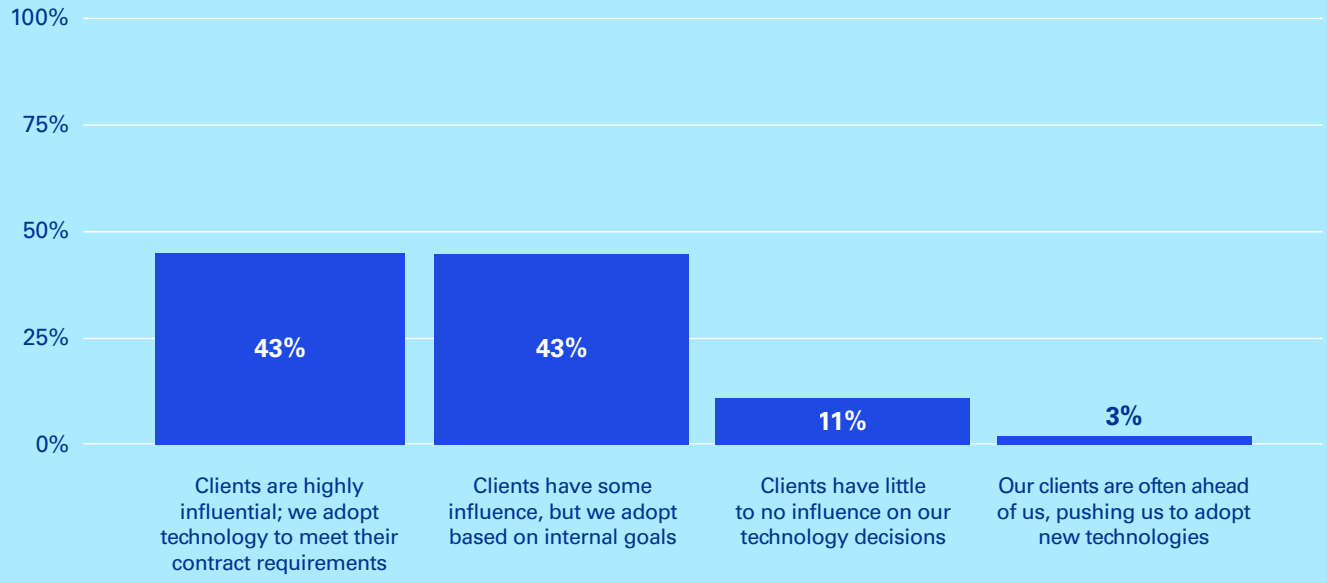
While there is an increasing recognition that technology drives efficiency and better project outcomes, construction owners must be a driving force for adoption. Owners are the clients who commission a project and are responsible for setting the project's goals, providing funding and making key decisions throughout the project lifecycle.

They need to be engaged in the discussion around new technologies and be shown how investing in technology will improve their own return on investment (ROI).

Our research shows that 43 per cent of construction sector stakeholders adopt technology to meet contractual requirements, noting that their clients are "highly influential" in the decision-making process. Another 43 per cent said their clients have "some influence" but their decision to deploy technology rests in-house based on their own internal goals. The remaining 11 per cent say their clients have little-to-no influence over their technology decisions and 2 per cent concede their clients are often ahead of them, pushing them to adopt new technologies.

Procurement processes are also evolving, with 78 per cent of industry professionals saying contracts now encourage innovation and digital adoption.

Construction clients help drive tech adoption



Solving the labour conundrum

The integration of technology in construction helps companies attract new talent to the industry. By automating tasks, enhancing productivity, and facilitating improved collaboration, technology can make construction roles more appealing to potential workers, particularly digital natives. BIM, AI, drones, and augmented reality (AR) help streamline operations, reducing the need for extensive manual labour and enabling a safer and more efficient work environment.

These innovations not only allow companies to manage projects more effectively but also create opportunities for workers to engage with cutting-edge tools and techniques. This modernized approach can attract younger generations, who often seek jobs that involve technology and innovation. They also have the technological proficiency that will help accelerate the adoption of digital tools and mobile applications, in turn, improving the sector's efficiency and productivity.

To recruit and retain digital natives, the onus will be on companies to stay current with technological trends and train their workforce. For example, the deployment of digital assistants through gen AI could help train new hires or junior project managers more quickly.[vi]

Indeed, many industry professionals (70 per cent) admit the age of their workforce – skewing older – has impeded their ability to implement new technologies, and they expect adoption to accelerate as their workforce turns over and becomes younger. Two-thirds (66 per cent) say that immigration "greatly or moderately" helped their company gain access to innovative technologies and processes that improve project efficiency and outcomes. Anecdotally some respondents expressed concern that their company could be "in a very bad situation" if the U.S.-initiated tariff war prevents the cross-border flow of trades.[vii]

vi Morgan, Michele, "GenAI: Spurring a new era of construction tech", SAP Oct. 31, 2023

vii KPMG in Canada Tariffs Survey. KPMG interviewed 56 construction CEOs on tariffs and how to build a stronger, more resilient Canada in late February 2025 as part of a broader research initiative of 602 Canadian executives across all industries.

Laying it on the line

While inroads in technology adoption are being made, much more investment is required. Two-thirds of construction leaders readily admitted in the KPMG survey their industry trails the world in technology and innovation adoption.

They will need rethink and reshape the way their companies operate from the front, middle and back, right across the organization. Lifting the sector's productivity will take a concerted effort and a willingness to invest in new methods, ways of working, new tools and training.

Beyond that, TD Economics specifically points to breaking down jurisdictional barriers and smarter regulations, adding that harmonizing building codes and licensing requirements across provinces could help increase competition while allowing for greater returns to scale across the industry.[viii] As many as 84 per cent of construction respondents want to see interprovincial trade barriers eliminated as quickly as possible and nine in 10 called their removal extremely or very important to the survival of their business in a tariff war.[ix]

While tariffs will weigh heavily on the industry, it's important to control what you can, such as supply chain resiliency, cost management and operational efficiencies and labour productivity.

Technology is the foundation of modern construction.

The key to unlocking productivity will lie in the industry's ability to harness the potential of technology, enabling them to do more with less because the pressure will only intensify to finish construction projects faster while simultaneously meeting high quality and rigorous safety standards.

If we want the economy to fire on all cylinders, the construction industry will need to pull up its bootstraps. Decisions can no longer be put off. Canada needs the industry to become efficient now if the country has any hopes of delivering on ambitious nation-building plans and solving the housing crisis. It's time to reverse the decades of crippling productivity losses. The need to change is now. The industry must commit to change and make the necessary policy adjustments and investments to leapfrog to the ninth inning. It's too important to Canada's future not to.

viii Ibid.

ix KPMG in Canada Tariffs Survey, conducted in February 2025.

How we can help

KPMG understands the industry at a global, national, and local level. With our cross-functional capabilities and breadth of services, KPMG can help you maximize value, master new technologies, drive digital innovation, gain insights from your operational data and stay on top of regulatory changes. We combine this advice with our long-standing knowledge in structuring transactions, addressing regulatory and financial reporting requirements, assessing real estate and construction strategies and providing general business advice, all supported by our robust legal capability to help balance your growth objectives with proper risk management and corporate governance.

CCA has been a vocal advocate for accelerating the adoption of innovation in the industry and modernizing procurement strategies to encourage innovation, promote long-term value and sustainability, and support shared risk. From analytics to drones, robotics, 3D printing, BIM, and IoT, digital technology leads to improved productivity, safety, and decision-making on projects.

KPMG

Canadian Construction Association
Association canadienne de la construction

Contact us

Tom Rothfischer

National Industry Leader, Building, Construction & Real Estate, KPMG in Canada

416-777-8569
trothfischer@kpmg.ca

Jordan Thomson

National Sector Leader, Building & Construction, KPMG in Canada

416-228-4320
jordanthomson@kpmg.ca

Rodrigue Gilbert

President, Canadian Construction Association

613-236-9455
rgilbert@cca-acc.com

© 2025 KPMG LLP, an Ontario limited liability partnership and a member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee. All rights reserved. The KPMG name and logo are trademarks used under license by the independent member firms of the KPMG global organization. 30154