— BENCHMARK REPORT

How We Build Now

Technology and Industry Trends Shaping

UK and Irish Construction in 2023





CENSUSWIDE

THE RESEARCH CONSULTANTS



How we build now

Turbulent times are driving technology investment.

Construction is traditionally a resilient industry. So it was no surprise to find positive sentiment expressed throughout our recent survey of UK and Irish contractors, even though the current business outlook is undoubtedly mixed. Evidently, despite the macroeconomic headwinds, driven by inflationary pressures in materials, labour and energy plus high interest rates, construction's leaders detect an abundance of opportunities in the year ahead.

Looking at the confidence levels across the industry, nearly four in ten (39%) of our respondents said they were "very confident" about the coming year, and over half (56%) said they were "somewhat confident".

39%

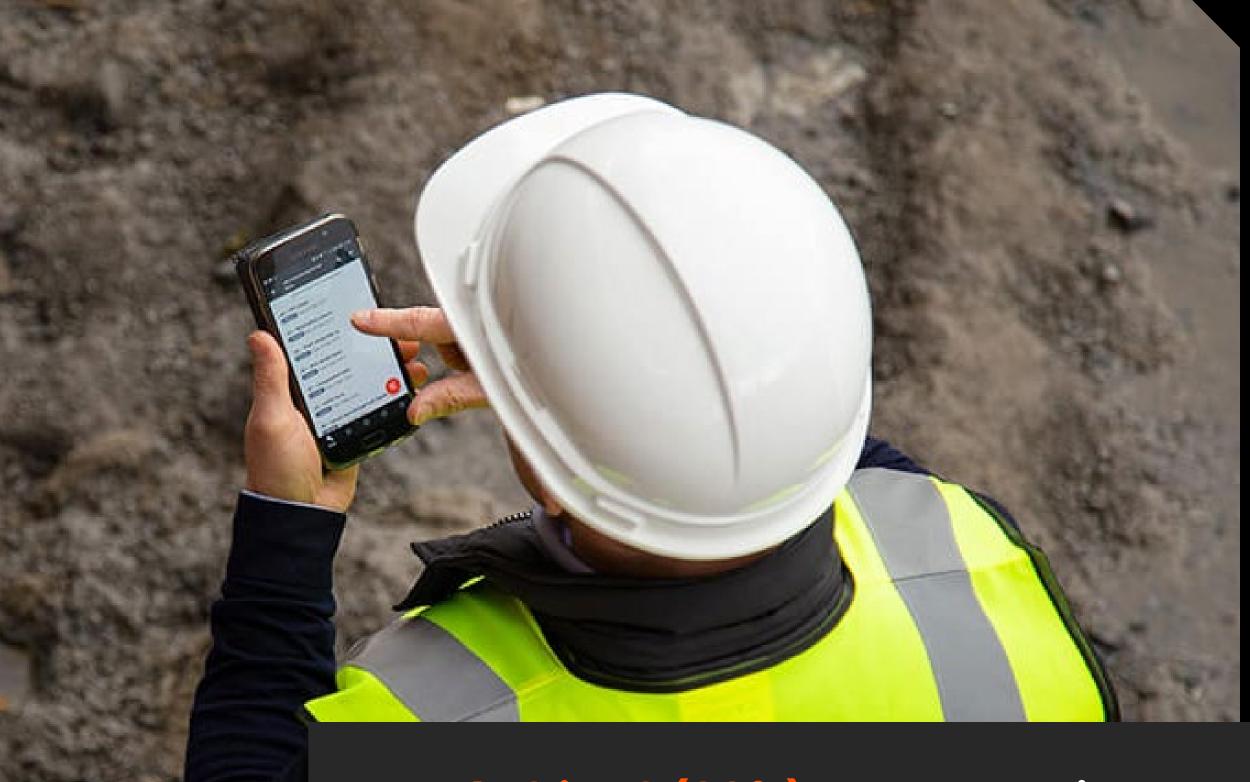
Nearly four in ten (39%) of our respondents said they were "very confident" about the coming year.

In a combined near-£130 billion market that continues to grow in both territories, there is clearly construction work out there to be won, but turnover is just one part of the success equation. How to convert that work into a reasonable profit is the biggest question facing construction companies today.

Becoming more efficient in the office and on site, and ultimately making fewer building errors in the construction phase, is the key to delivering work profitably. Project efficiencies and productivity can also be maximised by leveraging technology at the pre-construction stage to bring together key stakeholders including the supply chain as early as possible. The good news is that there are digital processes and platforms with workflows supporting the entire project lifecycle that can deliver these results and help turn the profitability key.

Construction's leaders have grasped this insight, and are increasingly looking to technology to drive the industry forward. Nearly 3 in 10 (28%) say economic/industry volatility – for example, inflation and supply chain challenges – has caused them to significantly increase their investment in digital transformation over the past three to six months. Over 2 in 5 (44%) firms plan on introducing construction management platforms into their businesses in the next 12 months.





Nearly 3 in 10 (28%) say economic volatility has caused them to significantly increase their investment in digital transformation

This isn't just good news for now, but for the future too. Digitalisation isn't simply about overcoming current challenges, but becoming more resilient and more productive in the years ahead. Embracing technology's potential for better visibility, efficiency, and collaboration means business leaders can deliver better, faster, greener solutions for their clients.

The Government's Construction Playbook, and the private sector's companion playbook, Trust and Productivity, both stress the vital role technology can play, to quote the latter, in "encouraging clients, their construction teams and suppliers to work in a more collaborative way to help boost productivity, quality and value".

Today the construction sector is heeding that advice and is making real progress on its digital transformation journey. Our survey shows that 44% are well on their way with their digital transformation journey. A further 44% are just starting out and 12% already consider themselves digital-first businesses.

One of the biggest benefits of this transformation will be that UK and Irish construction can unlock and unite disparate data. Doing so will give business leaders increased visibility and help them better understand the ongoing health of their projects, and if necessary, identify where issues have arisen or may arise. It will also enable the project supply chain to collaborate on a single set of information from pre-construction through project execution to completion.

are well on the way with their digital transformation journey

By uniting data, project managers can ensure the right person is in the right place at the right time with the right information, materials and equipment to do the job right first time

Taking these proactive steps to correct potential errors and avoid rework means buildings can be delivered more cost-effectively. Our survey demonstrates that the industry sees data as integral to improved decision making, visibility, security and improved client satisfaction. Data also promotes sustainability through carbon reduction and waste reduction. This is why data analytics is one of the most sought-after skills in construction today, and will become even more so going forward. Technology is now embedded as a pivotal part of successful construction, but with new and ambitious advances come new challenges and expectations.

So join us as we dive into **how we build now** and how we can build better in the future.



Brandon Olivieri-O'Connor Head of Region, EMEA, Procore, London





KEY HIGHLIGHTS

39%

of construction firms say they are very confident in the construction industry market conditions over the next 12 months

62%

of construction firms are planning to actively manage and track carbon emissions in the next 24 months

28%

say economic and industry volatility has caused them to significantly increase investment in digital transformation over the past 3-6 months 44%

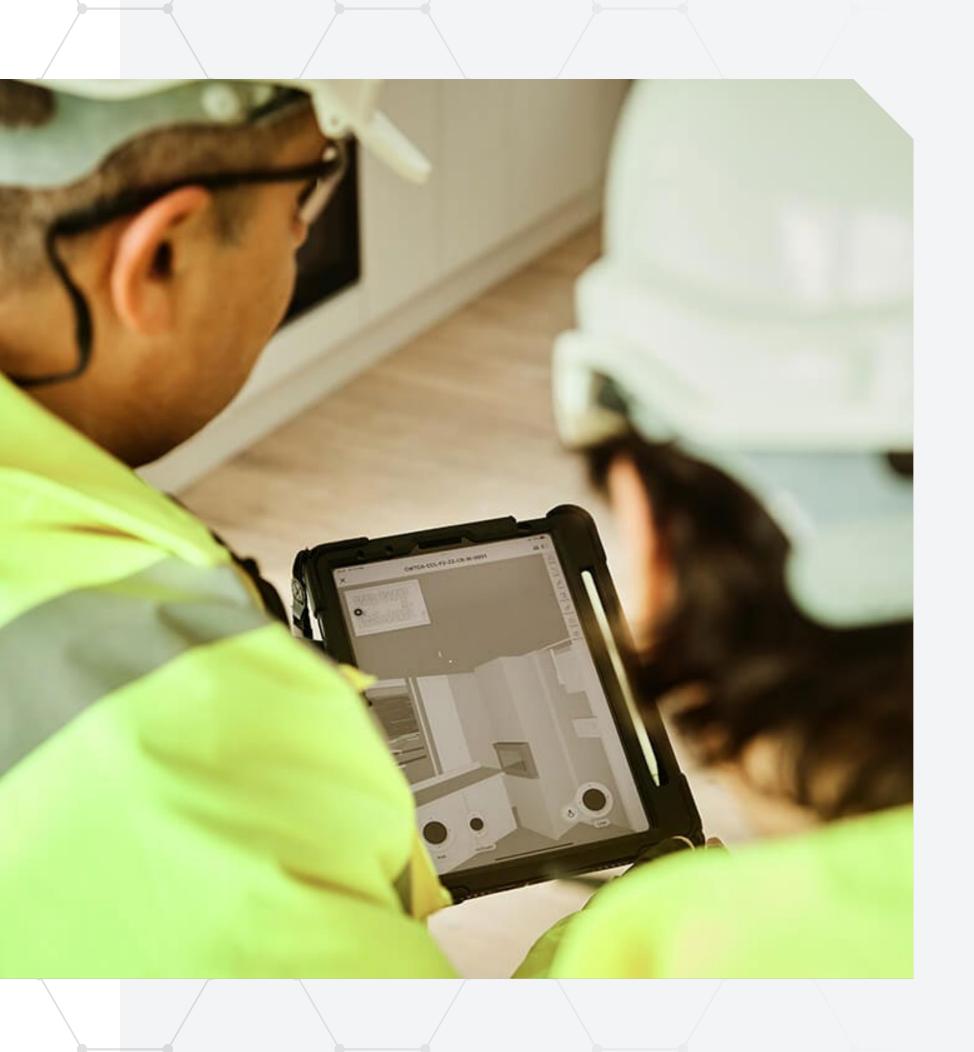
of construction firms are planning to introduce construction management platforms in the next 12 months

44%

of construction firms describe their current pace of digital transformation (i.e. adopting digital solutions and formats) as 'well on its way'

Construction firms say that business productivity would be most improved by:

- Implementing best practice process and protocol in pre-construction
- Building employee engagement
- Staff having the ability to work remotely from site



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— CHAPTER ONE

How confident is UK and Irish construction?



When it comes to confidence, there are positive signs – but concerns too

The economic outlook for the year ahead in the UK and Ireland may differ but there's a shared confidence in finding work. What's more concerning for business leaders is inflationary cost pressures and how to reduce high levels of re-work.

Procore's survey of the construction industry last December was conducted at a time of contrasting economic fortunes for the UK and Ireland. In the UK, inflationary pressures and high interest rates were seemingly pushing the country towards a period of recession. The Construction Product Association's January 2023 forecast was for UK construction output to fall by 4.7% in 2023. In Ireland, the economy was performing more strongly and the outlook for 2023 was good, with one authoritative forecast suggesting construction output would rise by 7.2%*.

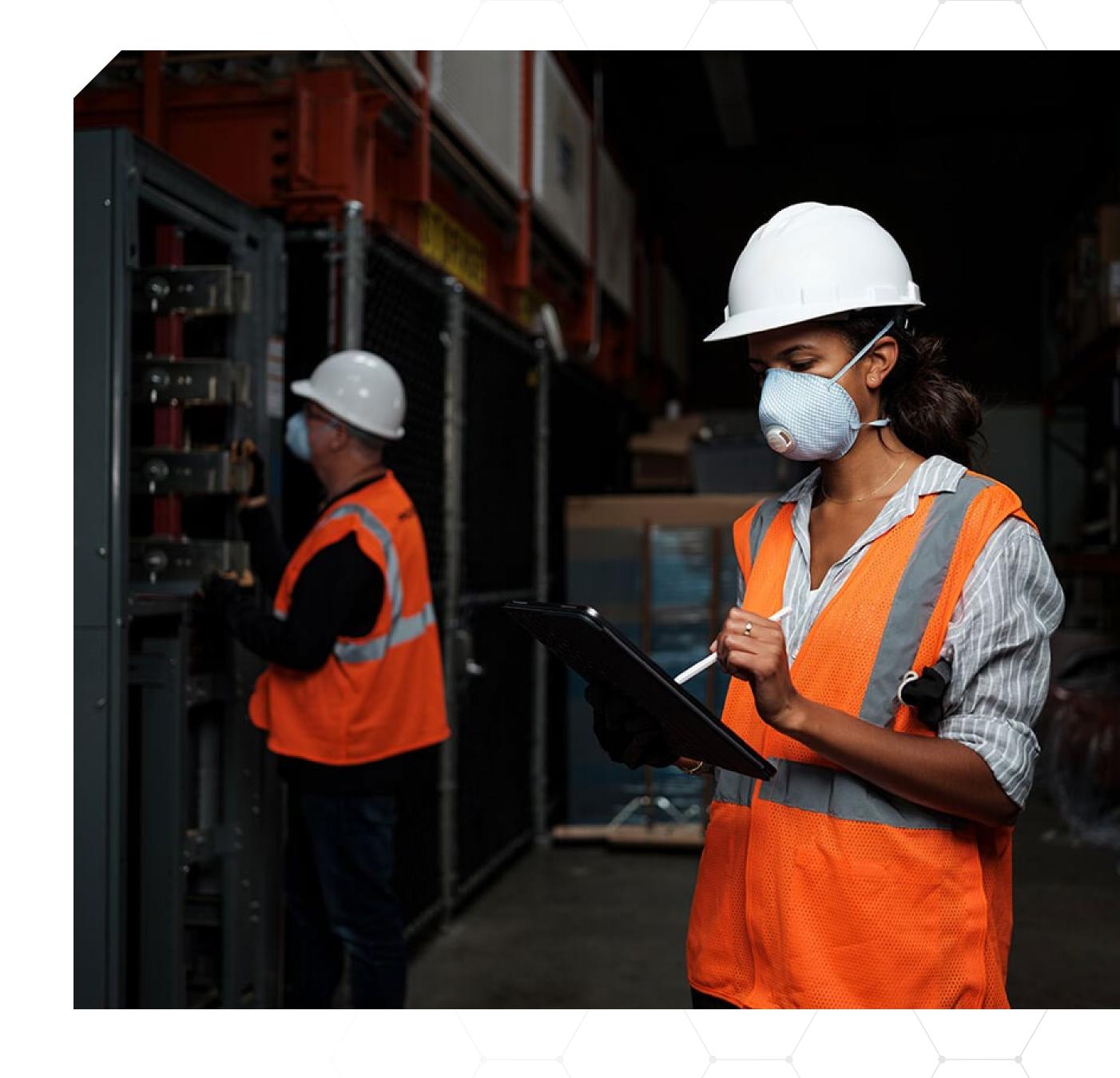
The Construction Products Association's January 2023 construction output forecast.



4.7%



7.2%



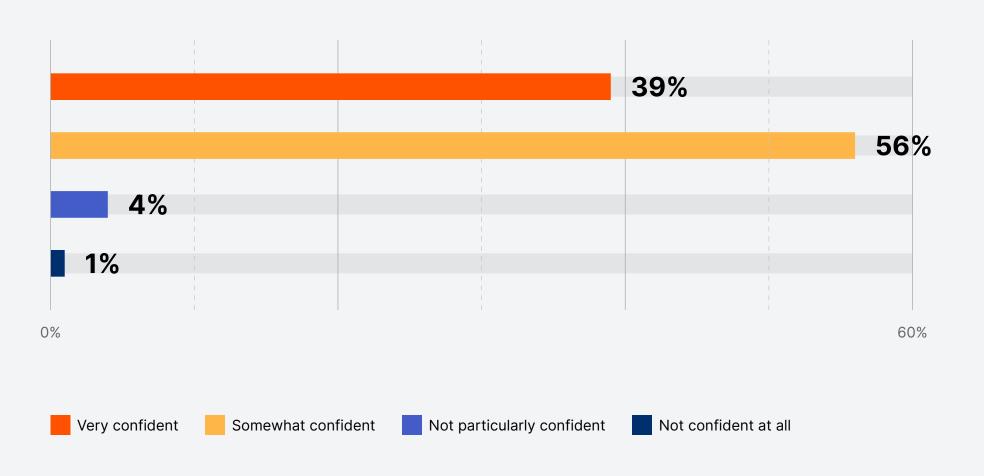


Nearly four in 10 (39%) of decision makers stated they were very confident about the construction sector.

Nevertheless, despite contrasting economic forecasts, there was a strong overall sense of confidence across the construction sector in both the UK and Ireland markets. Nearly four in 10 (39%) of decision makers stated they were very cofident about the construction sector and 56% said they were somewhat confident.

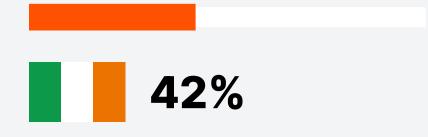


How confident are you about building and construction industry market conditions over the next 12 months?



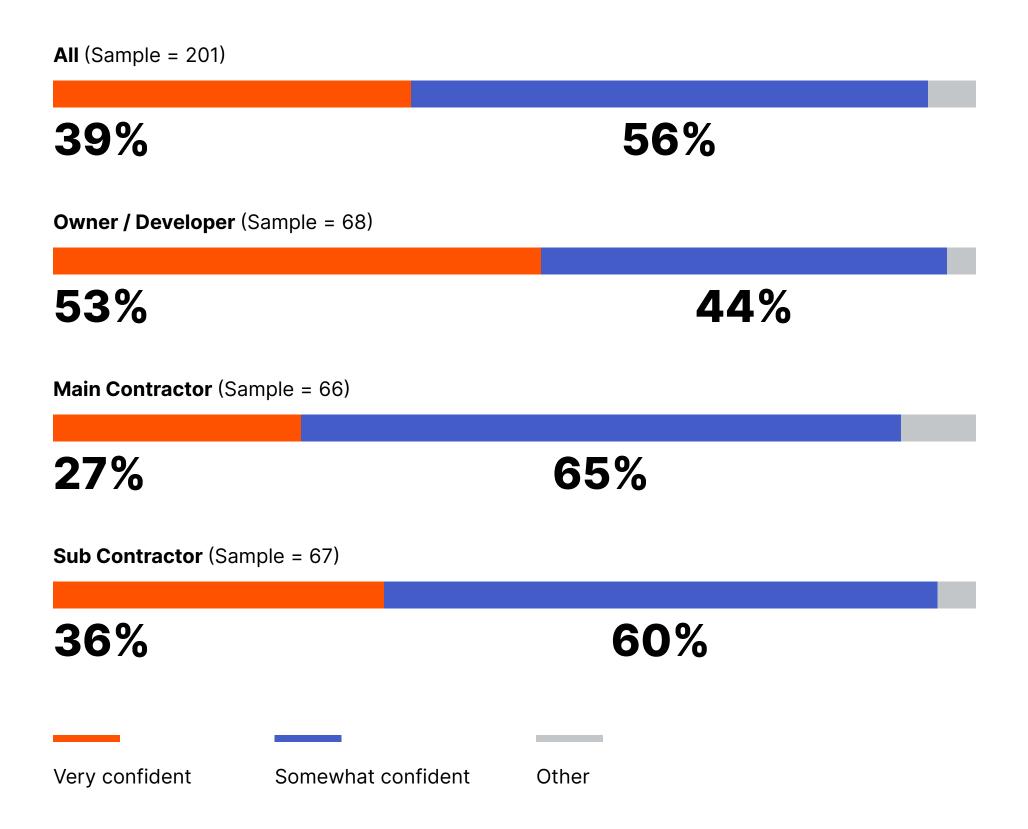
Reflecting the differing states of their respective economies, more than four in ten (42%) of those based in Ireland were very confident, compared with just over a third 36% in the UK.

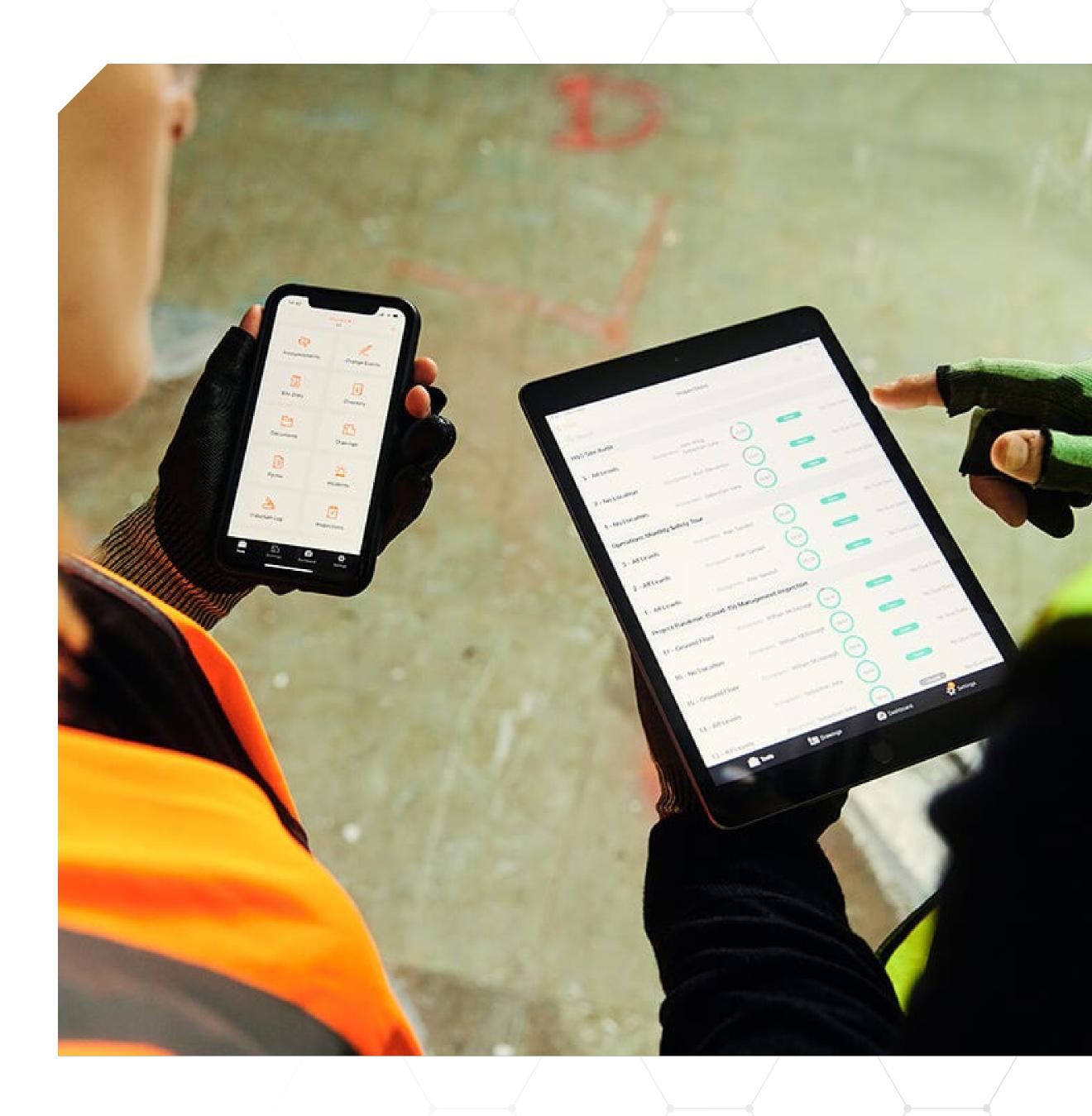




Differences were also evident across types of business activity.

Confidence for the year ahead was felt more strongly by owner/developers than contractors. Whereas just over half (53%) of owners/developers were very confident – and 44% somewhat confident – only slightly over a quarter (27%) of main contractors were very confident, with nearly two-thirds (65%) somewhat confident. Subcontractors were more optimistic than main contractors, with just over one-third (36%) very confident and nearly two-thirds (60%) somewhat confident.





Business effectiveness hampered by persistent problems

Tempering the general market positivity was an awareness of considerable challenges facing the sector. Asked to identify the three biggest problems facing them over the next 12 months, the below were the most popular² answers for business leaders:



Dealing with the increasing cost of raw materials and equipment



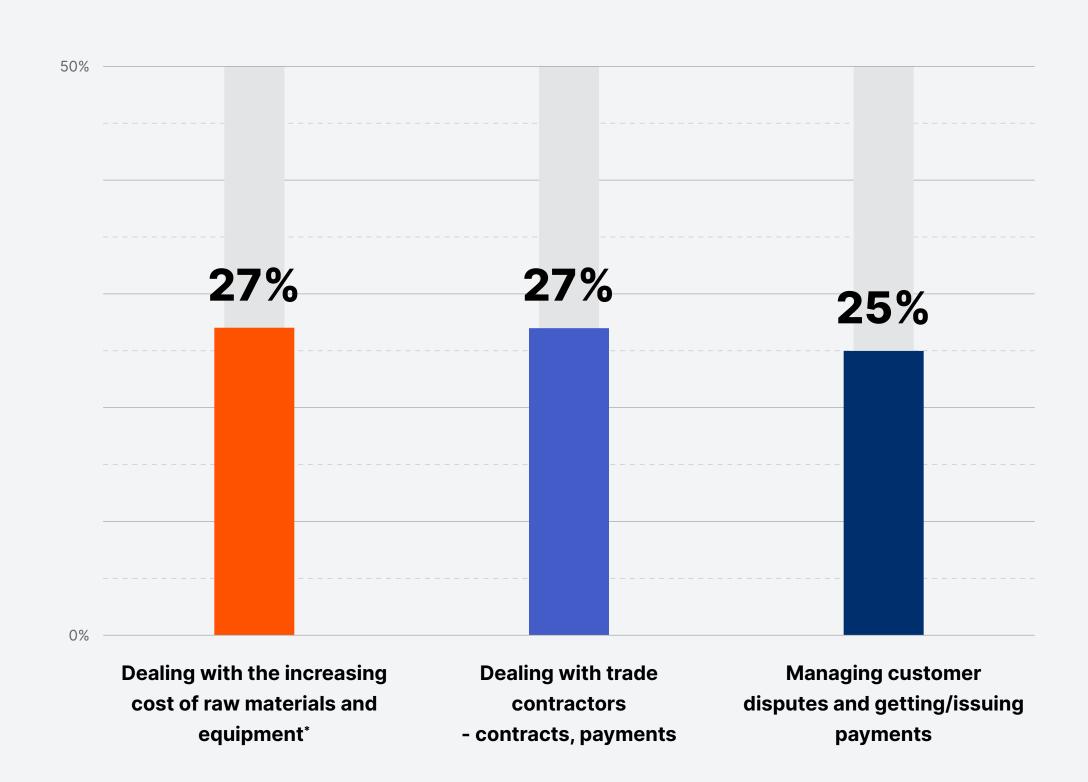
Dealing with trade contractors - contracts and payments



Managing customer disputes and getting/issuing payments

What, if any, do you consider to be the greatest challenges facing your business over the next 12 months?

(Only top three of 14 total options shown)



Additionally identified in the survey was a perennial industry concern of work performed poorly that requires rectifying. Inadequate build quality spans the industry – from failures of high-rise buildings through to schools collapsing and shoddily constructed housing. Reflecting this proliferation of defects, one quarter of decision makers said 25% of a typical project's time was spent on re-work or rectifying issues³.

In the UK, almost three in ten decision makers (28%) put the figure even higher: they estimated 26% to 50% of a typical project's time is spent in re-work or rectifying mistakes. In Ireland, 22% of decision makers offered a similar estimate of additional time required.

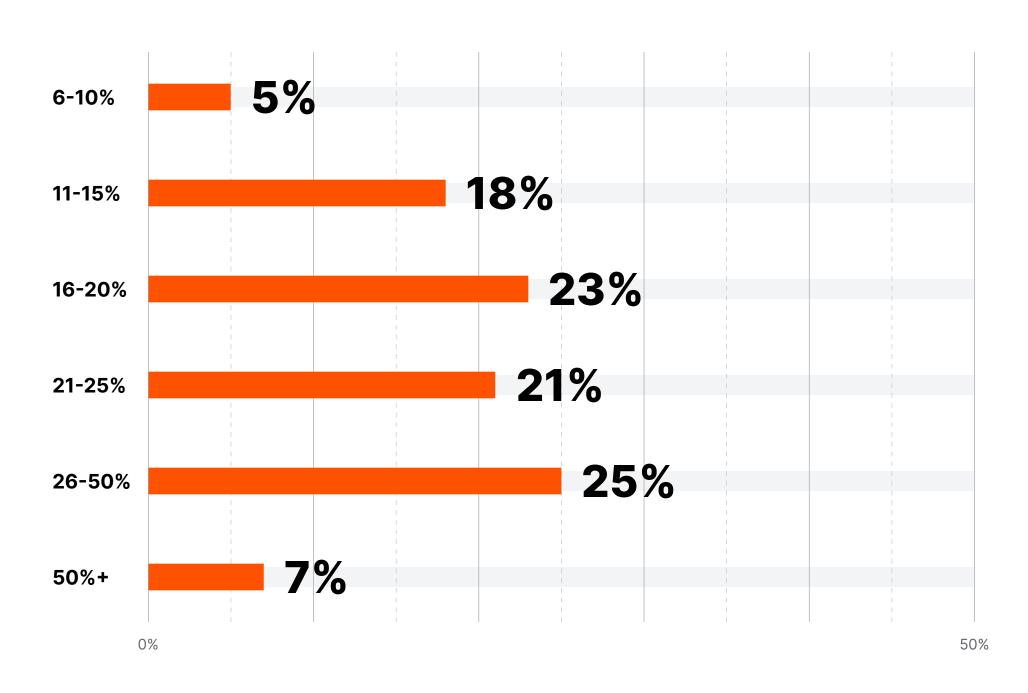
Failure to get things right first time impairs the sector's ability to deliver on schedule and budget, and depresses margins. Firms and individuals wishing to raise their all-round performance in the coming year must address these issues urgently.



of a typical project's time was spent on re-work or rectifying issues according to one quarter of decision makers.

Thinking about a typical project, what proportion of the total time would be spent on re-work or rectifying issues?

201 18+ decision makers working in the UK and Irish construction industry were surveyed, specifically in main and subcontractors and owner led developers (101 in UK & 100 in Ireland).



CHAPTER TWO

Boosting productivity and profitability in a challenging economy



Productivity and profitability are under threat

Productivity levels in construction are falling further behind other business sectors. More collaboration at the pre-construction stage and greater use of platforms would help address the problem.

Construction productivity in both the UK and Ireland has failed to keep pace with that of other business sectors. In the UK, productivity growth fell by an average of 0.6% each year between 1997 and 2019, according to Oxford Economics. Labour shortages, rising materials costs and build-quality are also hurting the bottom line – as are increasingly frequent extreme weather events and ongoing geopolitical instability. So how can industry leaders find new ways to boost productivity and profitability?



0.6%

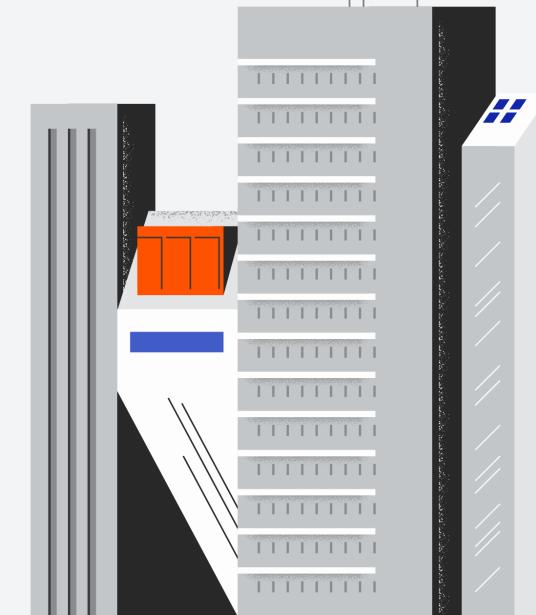
Fall in UK productivity growth (on average) each year between 1997 and 2019.

UK construction's path to increased productivity

Asked what they see as the best path to improved productivity within their business, UK respondents said 'implementing best practice process and protocol in pre-construction' would lead to the greatest improvement⁴ in their business productivity. Essentially, this entails an early start for the pre-construction process, investing in dedicated pre-construction resources, bringing onboard all project stakeholders and leveraging technology to streamline the pre-construction stages.

In fact, the values of pre-construction – **visibility** and **collaboration** - featured strongly when it came to the most popular answers overall. Following pre-construction, leaders said the greatest improvements⁵ in their business productivity would be achieved by:

- + Building employee engagement
- + Staff having the ability to work remotely from site (e.g. using technologies such as mobile devices and construction management technology to still be able to collaborate and communicate)
- + Improving access to project information

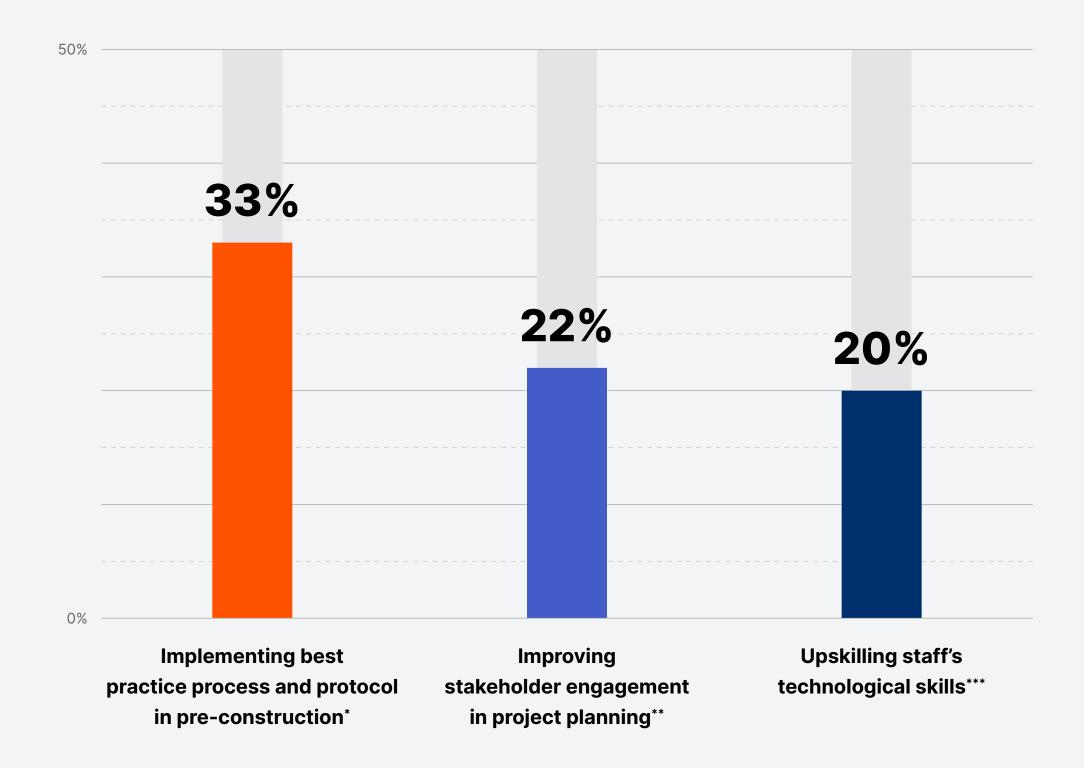


⁴ Based on the highest percentage of respondents to choose this answer as one of their top three choices

⁵ Based on the highest percentage of respondents to choose this answer as one of their top three choices

Which of the following would improve profitability within your business?

(Only top three of 16 total options shown)



Leveraging data through technology

Questioned further on the path to profitability, UK business leaders selected the following as the most effective⁶ operational strategies for boosting their bottom line:

- + Implementing best practice process and protocol in pre-construction
- + Improving stakeholder engagement in project planning
- + Upskilling staff's technological skills

From the survey, a clear picture emerges of construction businesses looking to focus on pre-construction, heightened engagement from employees and stakeholders alike, and upskilling staff in order to boost productivity and profitability.

^{*}e.g. starting the preconstruction process early, investing in dedicated pre-construction resources, involving all project stakeholders and leveraging technology to streamline the pre-construction process **e.g. involving subcontractors in planning prior to project commissioning ***e.g. data/analytics and other construction technologies

CHAPTER THREE

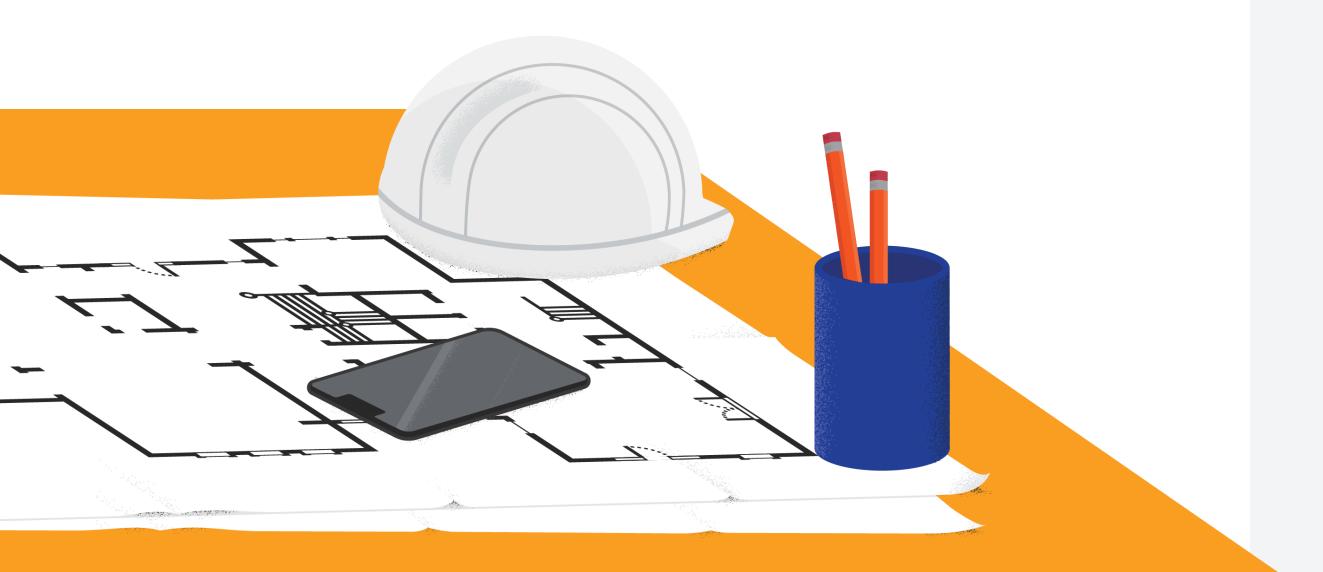
The growing appetite for technology



Macroeconomic environment has been a catalyst for digital transformation

Construction's business leaders recognise greater use of technology can drive transformative change within the sector.

The UK has one of the most ambitious digital pathways for construction in the world. Since BIM (building information management) was mandated for public sector construction in 2011, the sector has been using it to increase efficiencies, improve productivity and promote collaboration.



Recent market volatility caused by inflation and supply chain issues has accelerated industry investment in digital transformation. Over the past three to six months, industry leaders have built on the additional digital advances made during the COVID years to invest further in digital systems and processes – to the extent that:



of decision makers say the economic pressures of the past three to six months have caused them to **significantly** increase their investment in digital transformation.

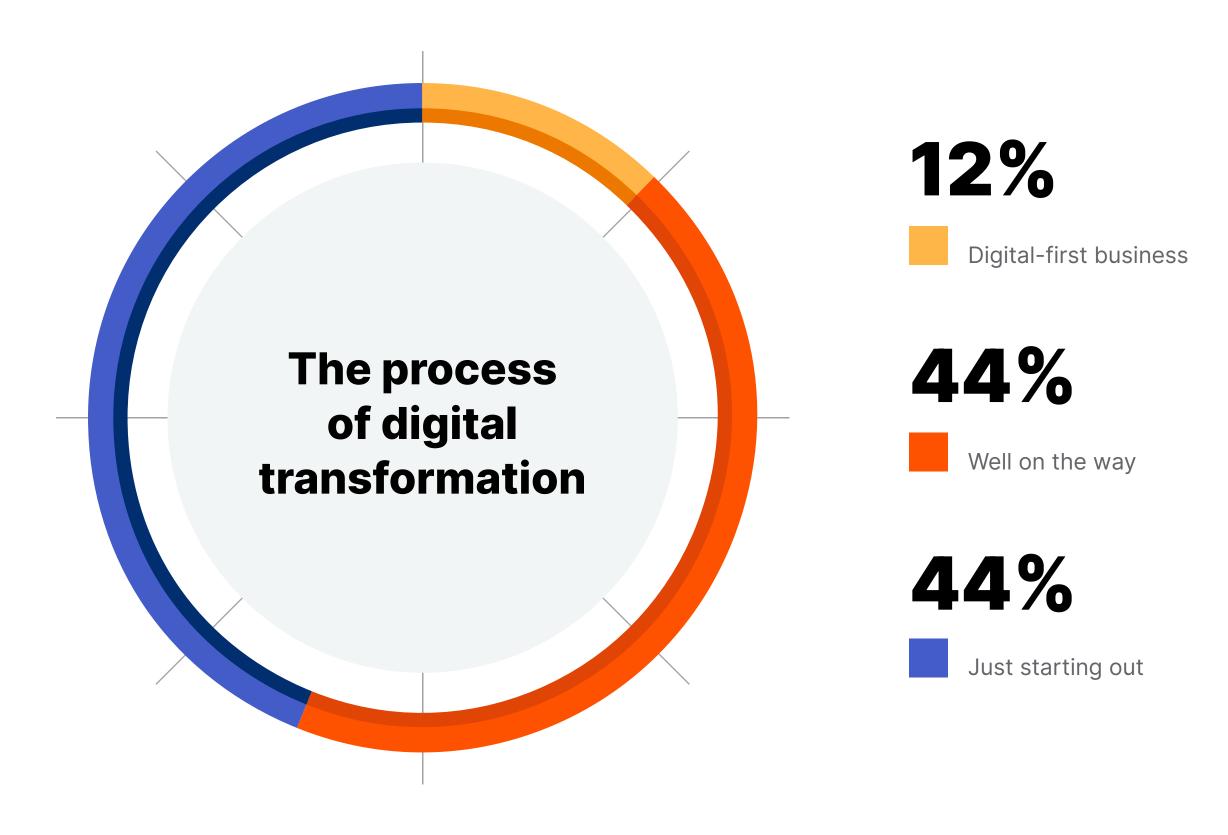


now consider themselves to be a digital first business.



over 2 in 5 say they are well on the way towards digital transformation.





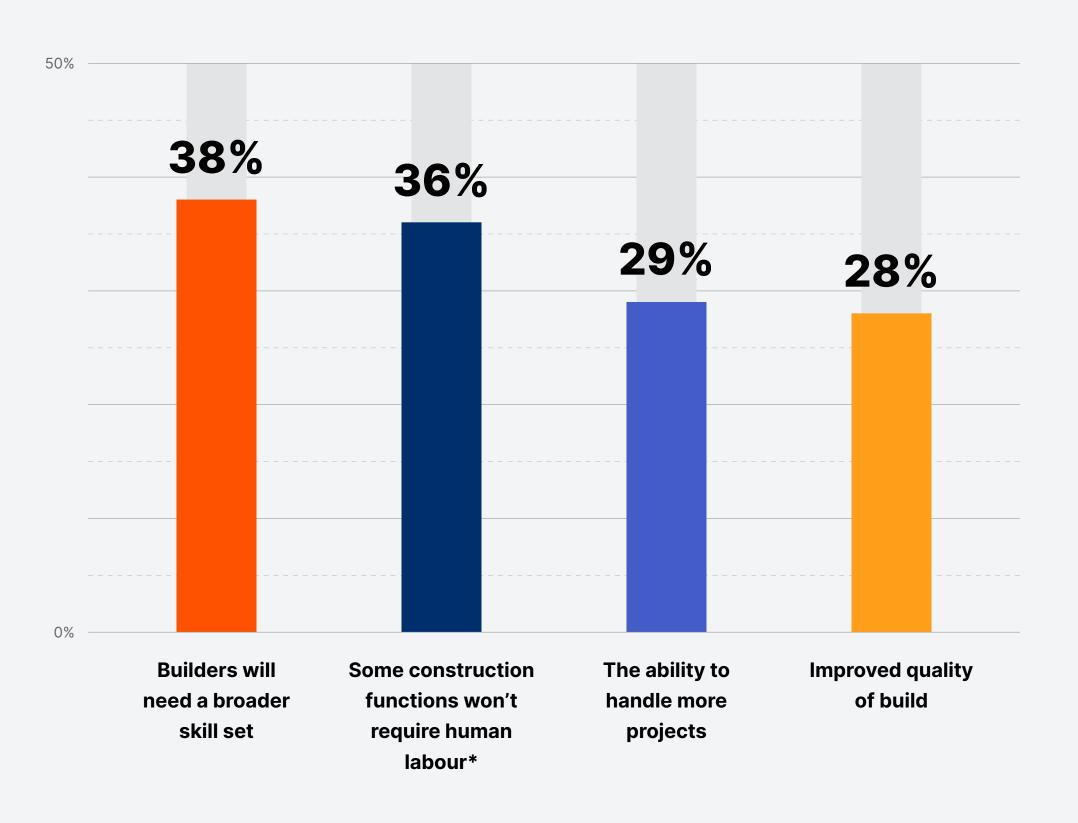
Thinking about the process of digital transformation (i.e. shifting from paper-based records into digital formats, adopting digital construction solutions, automating construction management processes), which of the following best describes your business?

Business leaders recognise technology's impact on the industry will be transformative. Asked to quantify the major impacts, they said:

- + Builders will need a broader skill set
- + Some construction functions, for example bricklaying, will not require human labour and there will be fewer administrative roles
- + More projects will be managed at any one time
- + Build quality will improve, meaning fewer errors and less re-work



How do you think key construction technologies will impact the construction industry as a whole?



The new horizon for construction technologies: high-impact outpacing futuristic high-tech

Technologies will drive transformative change in the construction industry in the next few years, but some are being employed in advance of others.

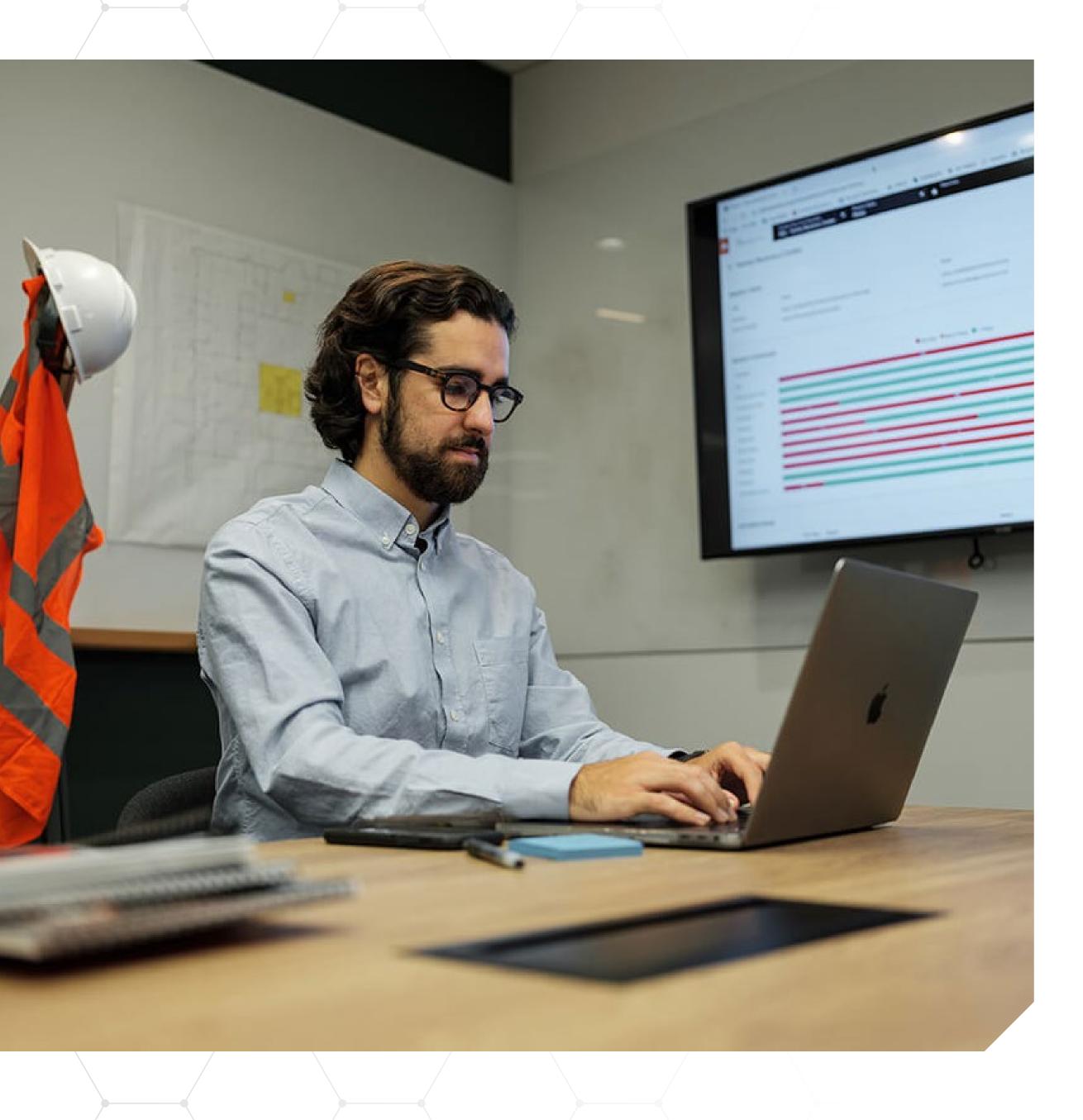
Despite clear recognition of the potential for next-generation technologies like robotics and 3D printing, existing technology that can transform day-to-day operations now and better utilise data immediately is outpacing more futuristic tools.

Tried and tested technologies came out on top as being likely to drive positive change and digital transformation in the sector over the next three years.

According to business leaders, the most popular⁷ choices were:

- + Construction management platforms (covering pre-construction, project execution, financials, workforce management)
- + Prefabrication/DFMA (design for manufacture and assembly)
- + Extended reality (XR including AR, VR, MR)





Digital transformation picks up pace, but there are still some hurdles to overcome

We've seen that good progress has been made on digital transformation, with over two in five (44%) respondents well on the way to that goal, and 12% of businesses already digital-first. Another four in ten (44%) business leaders say they have set out on their digital journey too.

These are positive signs that the construction sector is recognising the transformative power of technology.

Asked to select from a list of the greatest challenges their business needs to overcome on its digital transformation journey, the most popular⁸ choice for business leaders was 'overcoming concerns around data security' followed by:



Securing budget to invest in new technology



Lack of support from technology providers/vendors



Getting buy-in from the broader employee base

The industry recognises the benefits of technology as an alternative to paper-based processes—but much work needs to be done

Despite the broad shift towards digitalisation, construction firms are still plugging gaps in their business with paperbased processes and non-construction-specific software. Approximately one-third of businesses use standard office software (for example, Word and Excel) and paper for their estimating and pricing, quality, design management, safety, cost controls, and much more.

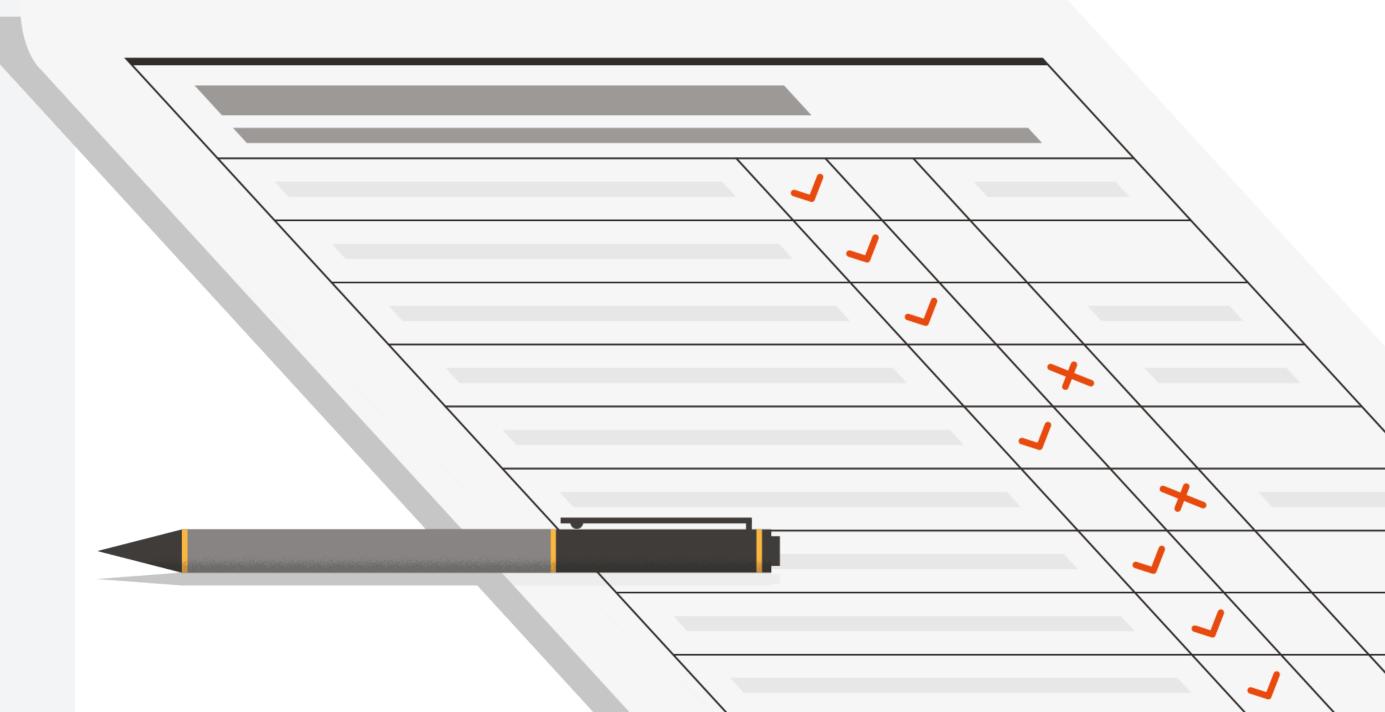
In many ways, this is a reflection of the industry being historically underserved with technology built for construction.

Nevertheless, it's clear the industry is recognising technology can offer purpose-built solutions to support construction-specific workflows and data utilisation - and that this is the ultimate key to raising productivity.

How quickly technology's full benefits are captured by businesses will determine just how much construction's productivity levels can rise in the coming years.

44%

Over four in ten (44%) business leaders are planning to introduce construction management platforms in the next 12 months.



- CHAPTER FOUR

The transformative benefits of data



Data continues to drive change

By helping capture and standardise data from across the business, digitalisation can help business leaders make better decisions and improve productivity. Project costs could fall by 25% as a result9.

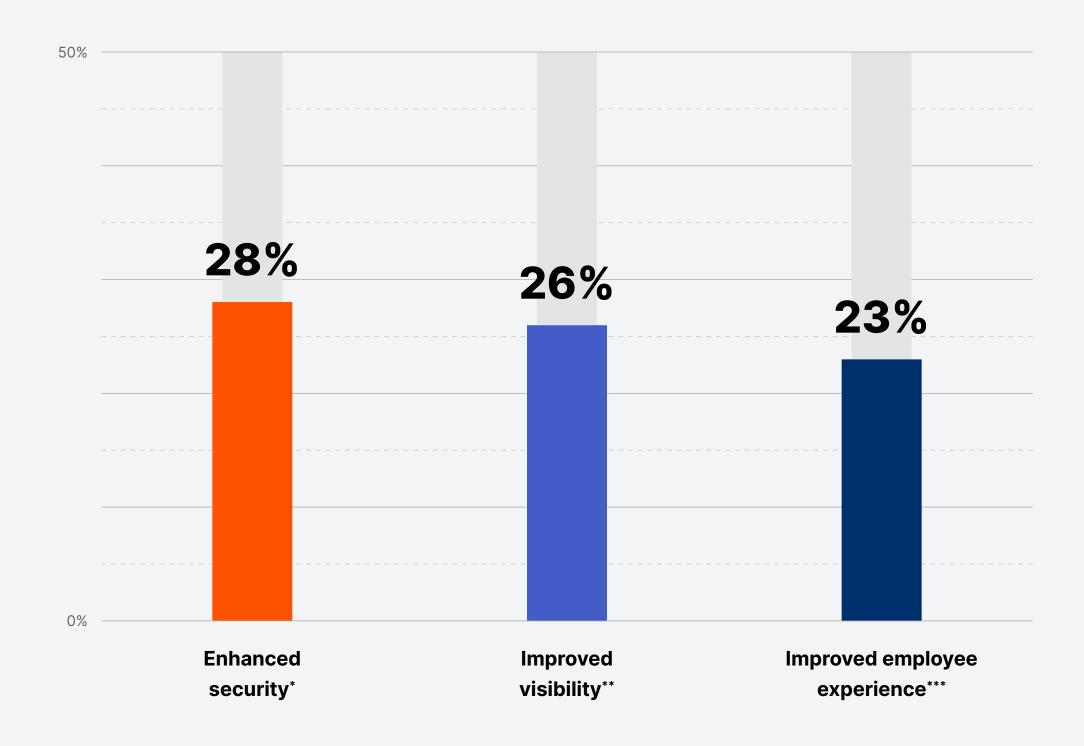
Many firms are implementing construction technology not only to improve productivity through their use in the field - but also to standardise the capture and integration of data from across their operations. The resulting information can then be put in the hands of business leaders to facilitate better decision making and a pro-active data-driven approach to business improvement. Moreover, from this data, those platforms with machine learning and artificial intelligence capabilities will be able to provide recommendations on how to reduce risk and take the best course of action, quickly and efficiently.

Additionally, and equally importantly, digitalisation can facilitate earlier involvement of the supply chain – a key factor in improving the efficiency of the design and construction processes. When asked about capturing, integrating and standardising data, business leaders said the most popular¹⁰ benefits were:

- + Enhanced security
- + Improved employee experience
- + Improved visibility
- + Safer working environment

Many construction firms are investing in capturing, integrating, and standardising data from different parts of their business. Thinking about your business, which of the following benefits do you think implementing this approach would deliver?

(Only top three of 14 total options shown)



^{*}e.g. documents can be restricted so they are only available to certain users or project teams

^{**}e.g. employees and subcontractors having access to project information anywhere or anytime

^{***}e.g. easier to complete regular or repetitive activities

⁹ Mean: Percentage of potential savings

¹⁰ Based on the highest percentage of respondents to choose this answer as one of their top three choices

While almost two in five (38%) business leaders felt digital platforms would allow them to make better decisions, internally and throughout the supply chain, by giving them better access to real-time and historic project performance information.

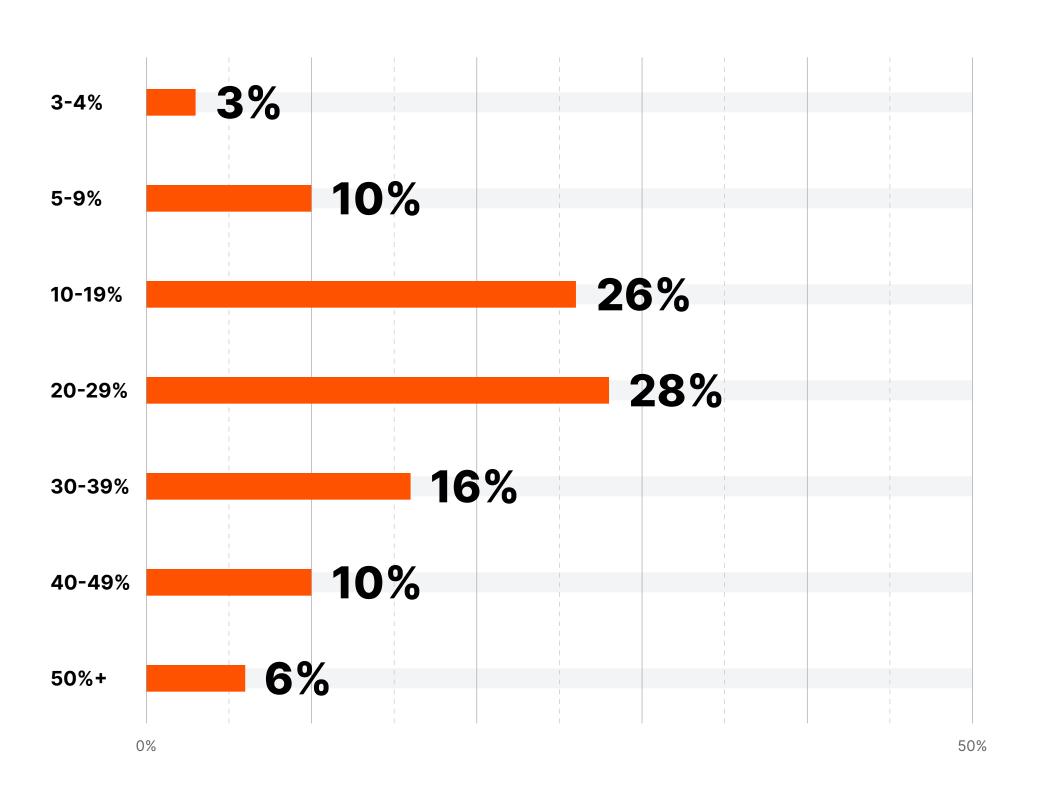
More than half (56%) of respondents agree that increased productivity can come as a result from staff being able to work effectively when remote from site – e.g. using technologies such as mobile devices and construction management technology to still be able to collaborate and communicate.

Significantly, productivity improvements drop through quickly to the bottom line, with business leaders believing they could cut project costs by an average of 25% if data could be more efficiently captured and integrated¹¹.



reduced project costs if data could be more efficiently captured and integrated according to business leaders.

Thinking about your total spend on projects, what proportion could your business potentially save if it more efficiently captured, integrated, and standardised data?



CHAPTER FIVE

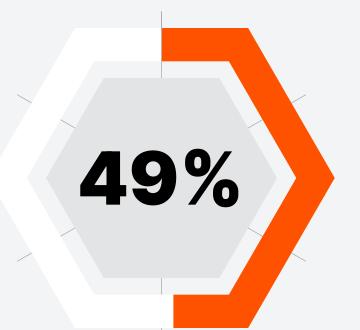
Recruiting the skills for today's construction needs



When it comes to confidence in the skillsets of construction's workforce, there are positive signs, but threats remain

Skills shortages have always dogged the construction sector, with the current time no exception. The right skill sets are in great demand, particularly project management abilities. And data analysis will be a key skill in the very near future.

In November 2022, the Office of National Statistics reported that 13% of UK businesses were experiencing a shortage of workers but in the construction sector itself, the figure was 21%. This was no big surprise. Recruiting workers with the right skills has been an historical problem for the sector, and as numerous reports have highlighted the post-Brexit exodus of many labourers and skilled workers has exacerbated matters. Looking ahead, a recent Construction Skills Network report estimated that the construction industry needs over a quarter of a million extra workers by 2026. As well as building and engineering knowledge, workers now and increasingly in the future will need to be competent in dealing with new technologies.

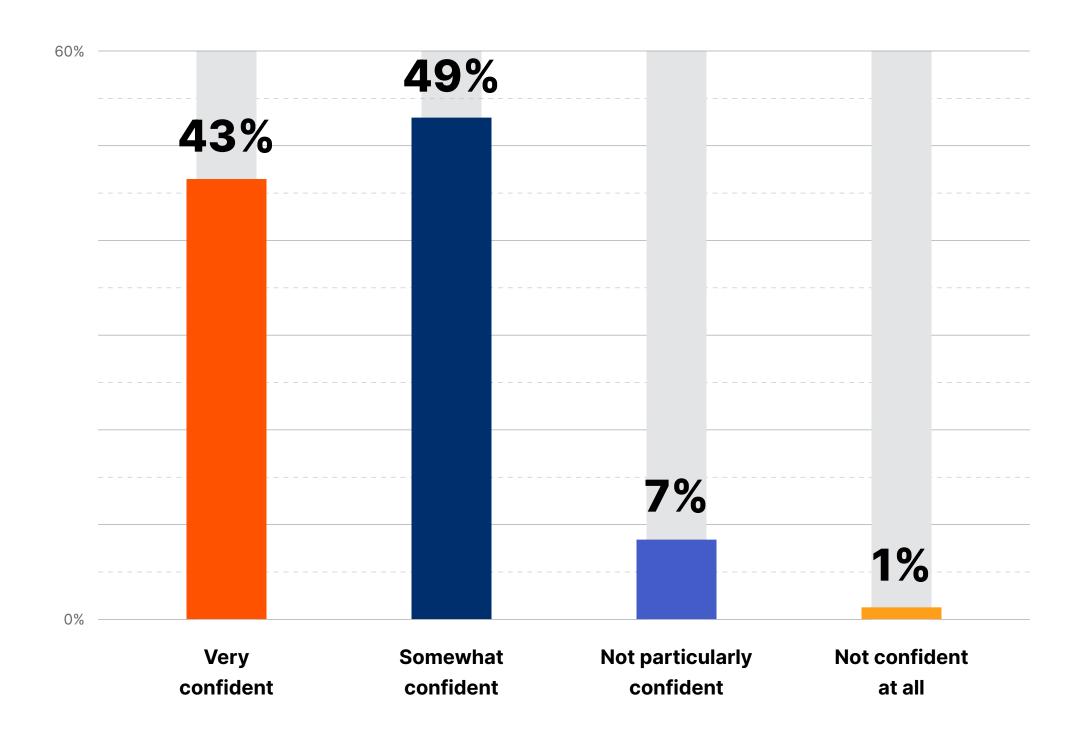


Almost half of leaders are somewhat confident their staff have the necessary skills.

When asked if they are confident staff have the necessary skills to meet the needs of their business in the next 12 months, almost half (49%) of leaders are somewhat confident their staff have the necessary skills. Irish business leaders expressed slightly more confidence than their UK counterparts.



How confident are you that your business will have the necessary skills (including current staff and new staff) to meet the needs of your business in the next 12 months?



Skills suited to construction's evolution

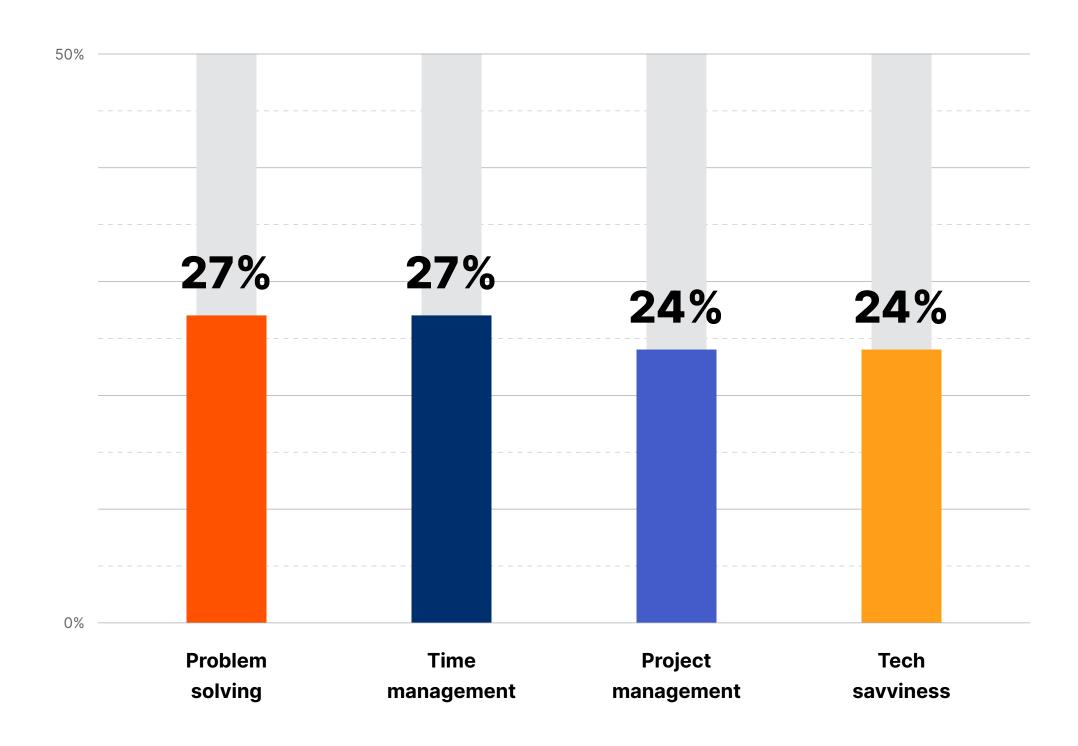
As technology's impact on construction continues to increase, and work roles and processes alter accordingly, staff skill sets must change and adapt. To be successful in the next phases of construction's rapid evolution, business leaders believe a range of skills will be critical.

According to respondents in the UK, the skills they think will be most in demand¹² in the construction industry in the next 12 months are:

- + Problem solving
- + Project management
- + Time management
- + Tech savviness



Thinking about the construction industry in the next 12 months what skills do you think will be more in demand?



— CHAPTER SIX

Focused on the future



The power of positive culture

Wellbeing initiatives are now firmly established in many construction companies, a welcome development given the often-stressful nature of bringing projects to fruition on time and budget.

As in all business sectors these days, mental health and wellbeing is a prime concern for construction's business leaders. Serious and sustained efforts are being made to address what has been until recently a neglected area, with many site and office workers historically suffering serious stress and burnout, sometimes to intolerable levels.

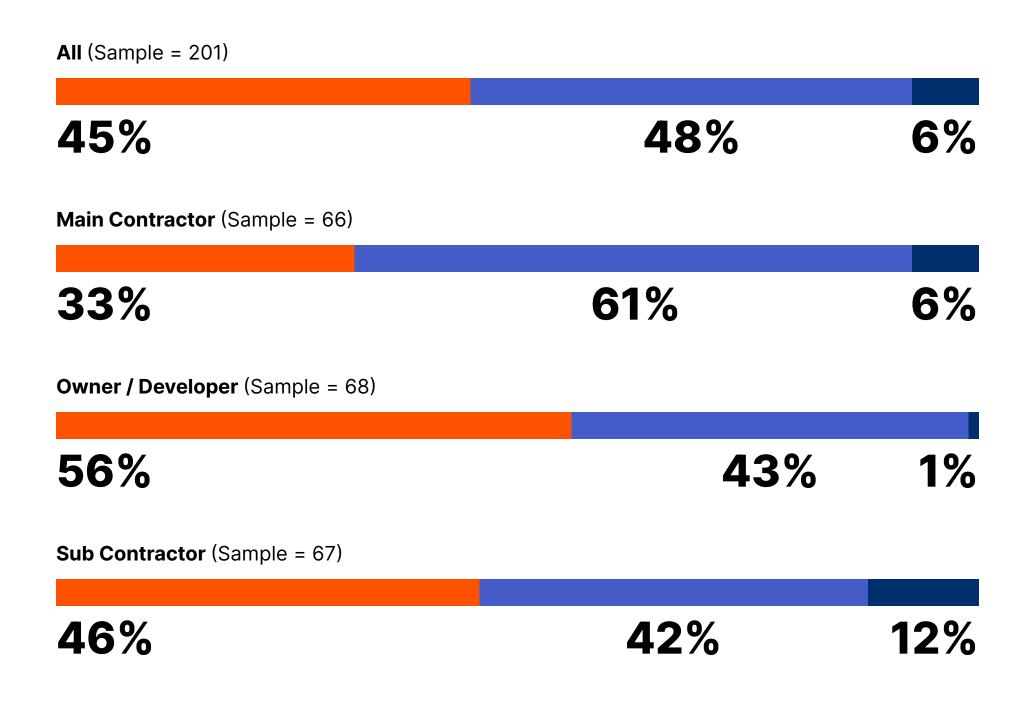
Now, with mental wellbeing seen as equally important to physical safety on site, construction's working culture is changing and support schemes are being put in place to help workers cope better with the pressures of project work. Over the next 12 months, business leaders say these plans will be stepped up. Nearly half of respondents (48%) have wellness and mental health practices in place, and 45% plan to introduce wellbeing policies over the course of the year.

48%

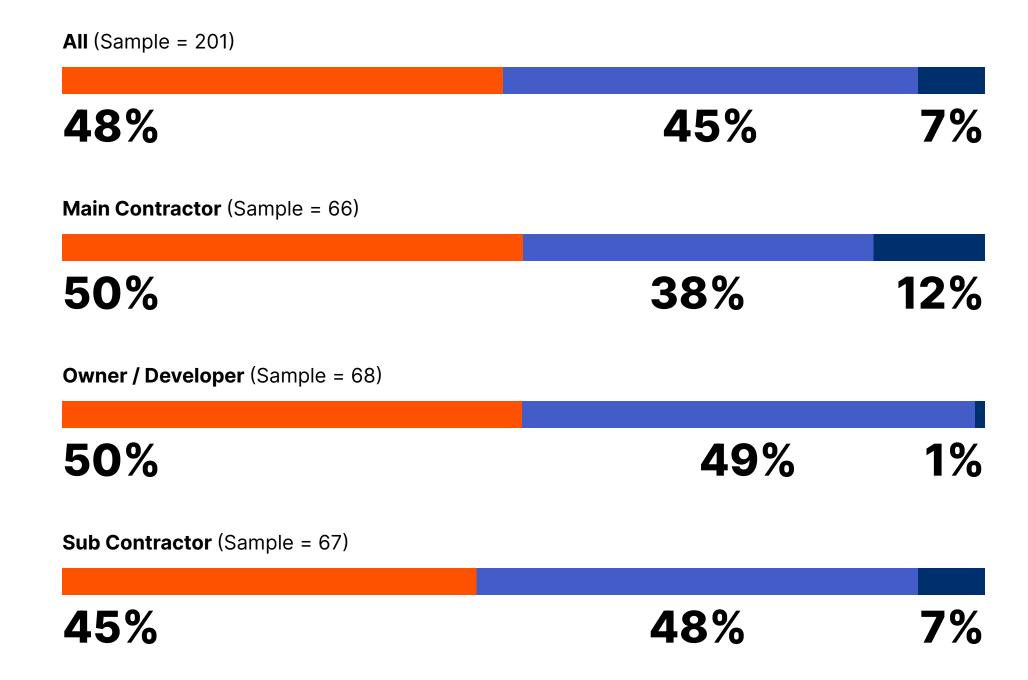
Nearly half of respondents have wellness and mental health practices in place, and 45% plan to introduce wellbeing policies over the course of the year.



Working time reduction policy to encourage improved work-life balance



Wellness and mental health practices / policies to improve staff wellbeing and reduce the likelihood of burnout



Currently have in place

Planning to implement in the next 12 months

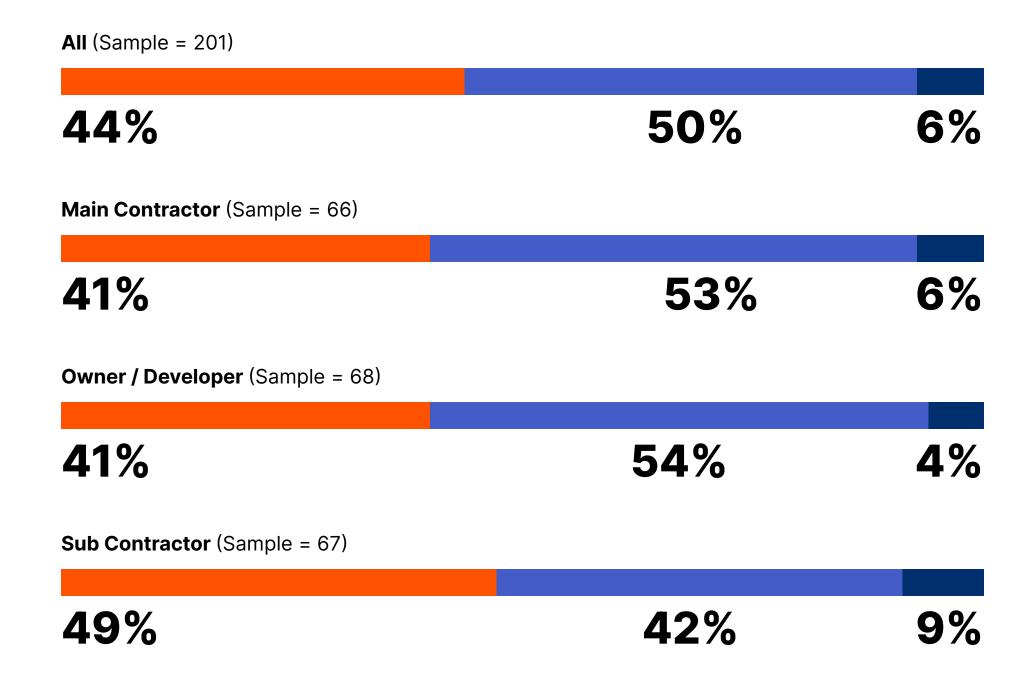
Not planning to implement in the next 12 months

Currently have in place

Planning to implement in the next 12 months

Not planning to implement in the next 12 months

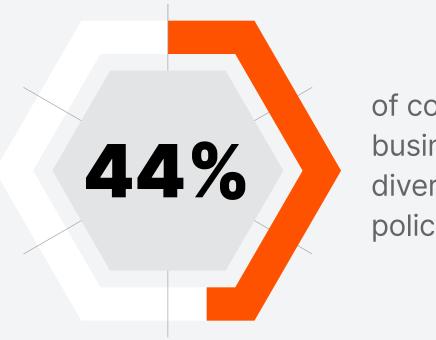
Diversity and inclusion policy



Currently have in place

Planning to implement in the next 12 months

Not planning to implement in the next 12 months



of construction businesses have diversity and inclusion policies are in place.

In addition, over half of owners/developers (56%) have a workingtime reduction policy to encourage an improved work-life balance. Amongst contractors, 33% follow the same approach.

Efforts are also being made to widen construction's demographic make-up in order to truly reflect modern society. Diversity and inclusion policies are in place at 44% of construction businesses, and 50% say they will be introducing such policies during the next 12 months.

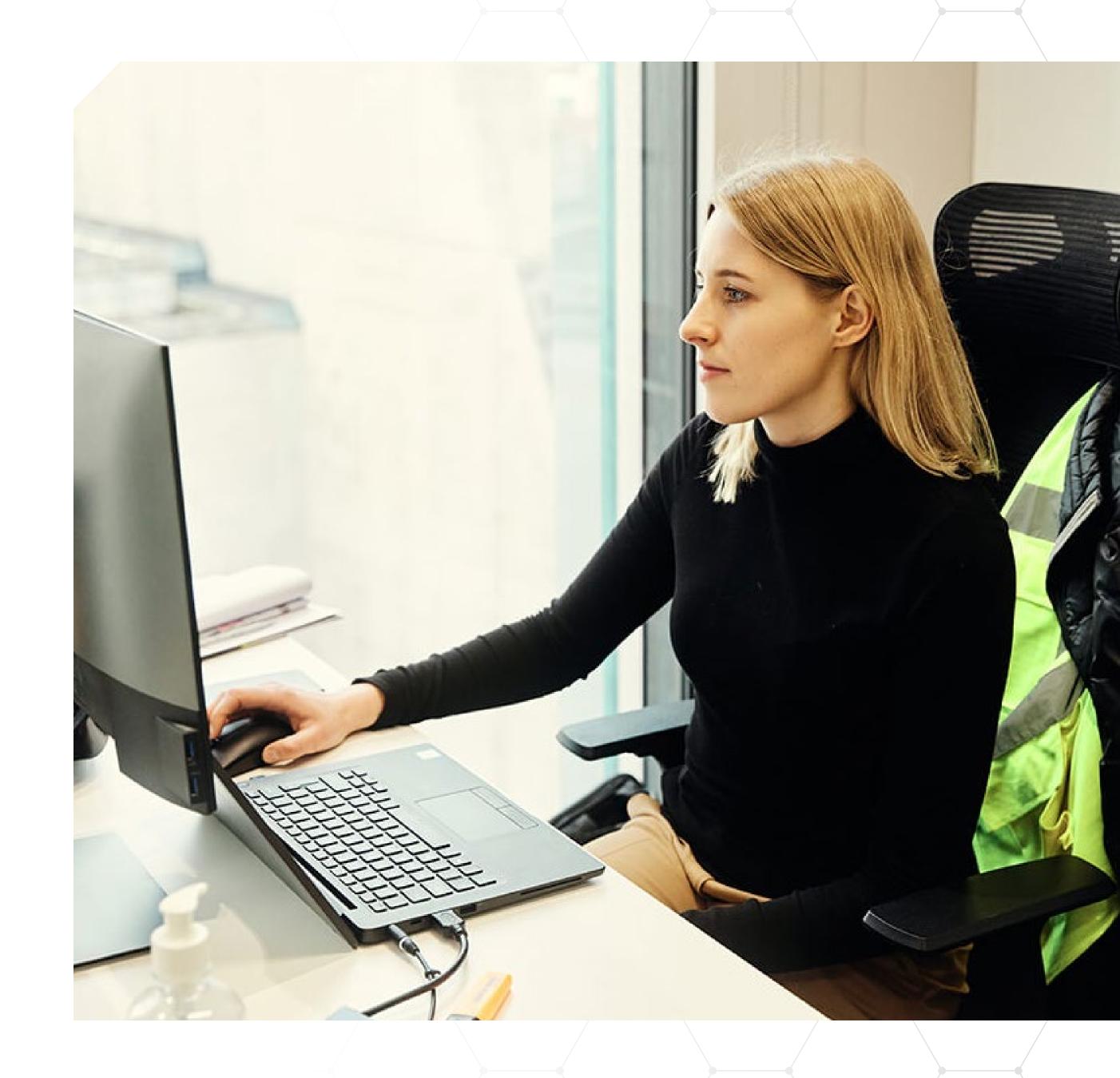
Driving sustainability

Corporate Social Responsibility (CSR) and Environmental, Social and Governance (ESG) issues are altering the business culture and sensitising firms to social purpose, and, in particular, sustainability. Business leaders increasingly feel a responsibility to lighten their footprint on the planet – and investors are keen to support companies that demonstrate real environmental leadership.

Equally, the new generation of workers, especially Gen Z, are influenced heavily by purpose and societal responsibility, particularly with regard to protecting the environment. As numerous studies have highlighted, the choice of prospective employer is often decided by a firm's overt commitment to these issues. For example, the health insurance company Bupa found that 64% of 18-to-22-year-olds it surveyed in 2021 consider it important for employers to act on environmental issues, and 59% would remain longer with responsible employers.

64%

18-to-22-year-olds* consider it important for employers to act on environmental issues, and 59% would remain longer with responsible employers.



Currently, the UK built environment is responsible for approximately 25% of total UK greenhouse gas emissions, according to the UKGBC (Green Building Council) with an additional 7% of carbon emissions **embodied** into buildings during the manufacturing and construction stages, says a report from The Royal Institution of Chartered Surveyors (RICS) in November 2022.

Both Ireland and the UK have stretching carbon-reduction targets. Each administration committed to heavily reducing greenhouse gas emissions by 2030 and achieving net zero by 2050 and there are a number of new regulations designed to bring the built environment into line with that. To that end, over half of decision makers (51%) now comply with ISO 14001, the environmental management system, and over one-third (34%) plan to follow suit in the next 12 months. External stakeholders will draw assurance from seeing construction's firm commitment to measuring and improving its environmental impact.



Indeed, one of the main reasons they are looking to technology to improve capturing, integrating, and standardising data from different parts of their business is to drive their sustainability goals. Construction firms are moving at differing speeds towards these goals, but there is a clear determination to achieve the governmental targets.

Asked about their sustainability programmes:



86% say decarbonisation will be an important challenge for them in the next three years¹³

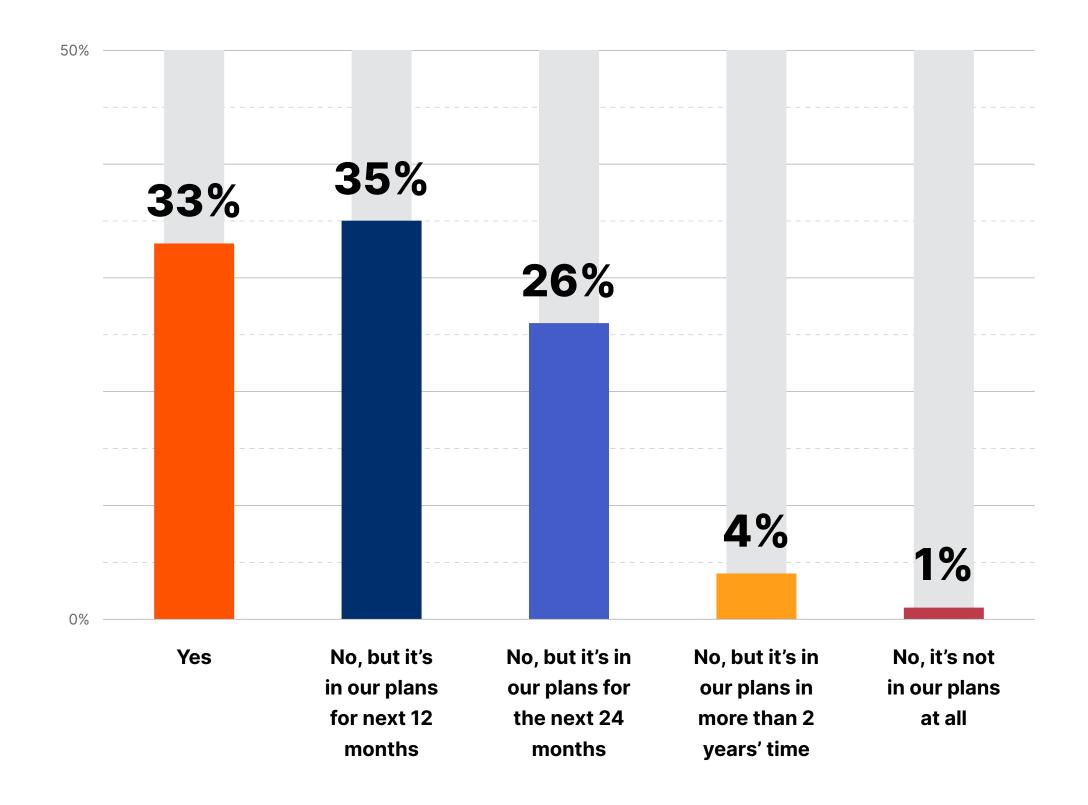


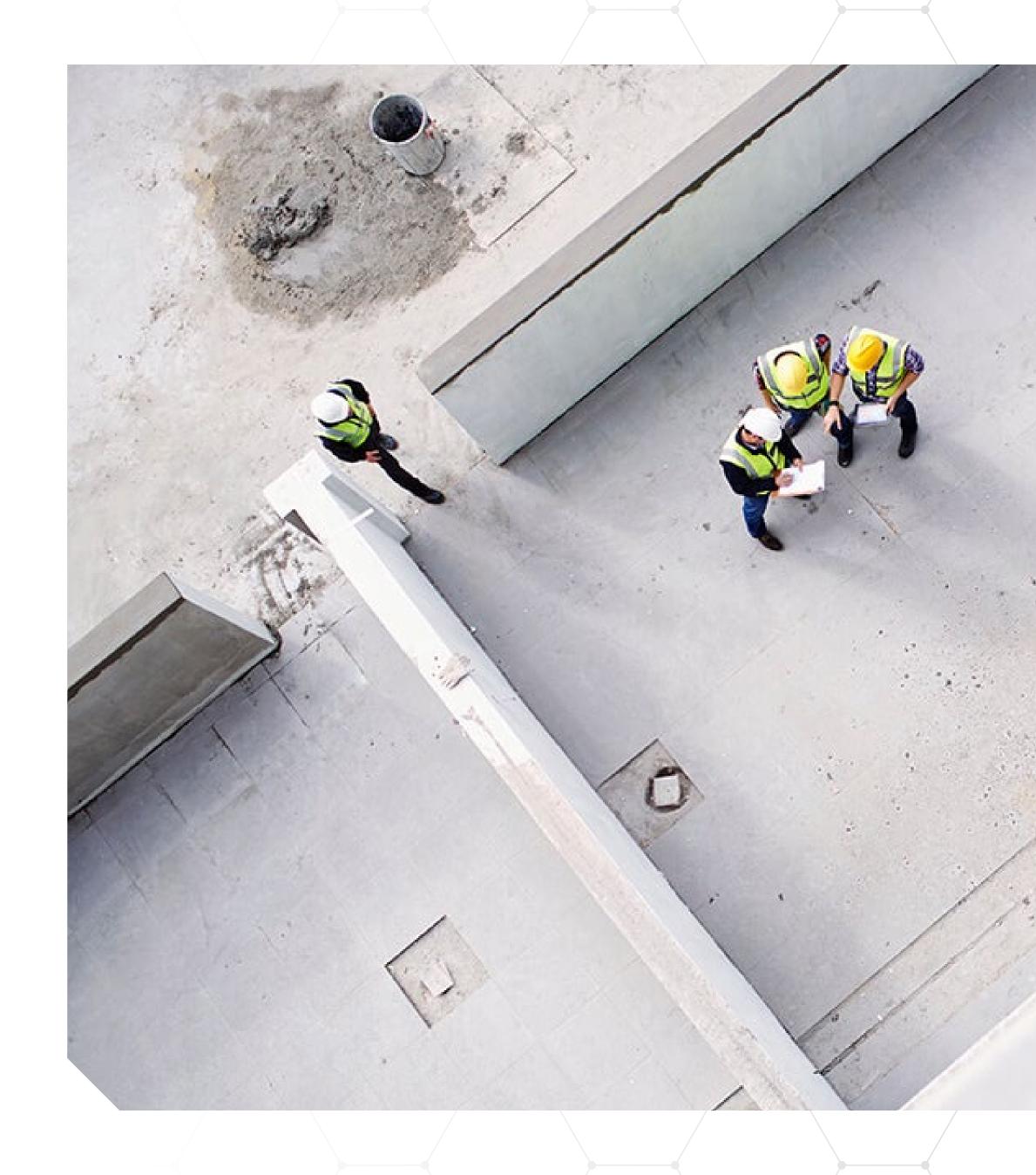
33% of construction firms are actively tracking carbon emissions on projects, and 35% say it is in their plan for the next 12 months, while 26% say it is in their two-years plan



Over half (51%) comply with ISO 14001 (Environmental Management System), and only 13% say they are not planning to follow it in the next 12 months

Are you actively managing and tracking carbon emissions on your construction projects today?





Wrap-up

So what do construction leaders do now?

Here are five takeaways to accelerate digital transformation and improve the industry's efficiency and bottom line.

01 Technology to drive the bottom line

In the face of current economic pressures, use technology to drive productivity and profitability improvements today. Capturing and standardising data will help drive future business improvements that materialise as machine learning and Al impact increasingly on the sector.

02 Capturing data today improves your business tomorrow

Platforms can eliminate laborious processes, sharpen up decision-making and raise productivity. More than half of main contractors believe productivity would benefit if staff could use construction platforms to access project information remotely. Business leaders estimate project costs could fall by 25% if they did¹⁴.

03 Collaborate from the start

Use technology to facilitate collaboration from pre-construction stage onwards. Early supply chain engagement and data-sharing will drive efficiencies throughout the life of the project and feed directly to the bottom line.

04 Invest in new skill sets

Business leaders need to enhance and develop their teams' technological skills in order to take fullest advantage of digitalisation's potential. In an industry too often beset by skill shortages, concerted efforts must be made to incubate hard and soft skills across the construction ecosystem.

05 Get it right first time

One in four business leaders say 25% of a typical project's time is spent on re-working¹⁵. Platforms allow greater data collaboration across a project, leading to less admin and better quality work on site. Rectification rates can fall dramatically.

Methodology & Sources

The research was conducted by Censuswide. Surveyed 803 18+ decision makers working in the construction industry, specifically in main and sub contractors and owner led developers across the UK, Ireland, France, Germany, UAE and Saudi Arabia between 29.12.2022 - 12.01.2023. 201 business decision makers were surveyed in the UK & Ireland.

Censuswide abides by and employs members of the Market Research Society and follows the MRS code of conduct which is based on the ESOMAR principles.



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Procore is a leading global provider of construction management software. Over one million projects and more than \$1 trillion USD in construction volume have run on Procore's platform. Procore's platform connects key project stakeholders to solutions Procore has built specifically for the construction industry—for the owner, the general contractor, and the specialty contractor. Procore's App Marketplace has a multitude of partner solutions that integrate seamlessly with Procore's platform, giving construction professionals the freedom to connect with what works best for them. Headquartered in Carpinteria, California, Procore has offices around the globe. Learn more at Procore.com.

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