MARSH JLT SPECIALTY

WHITE PAPER | SEPTEMBER 2020

Contractor Risk Review 2020

Top 10 Risks Analysed

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Contents

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Introduction

Welcome to Marsh JLT Specialty's *Contractor Risk Review 2020* (CRR), which analyses the risks most commonly identified by the UK's largest contractors.

The construction industry is facing some of its biggest challenges in decades, with opportunities and risks emerging for contractors. COVID-19 has seen site closures and workers furloughed and laid off. It has also ignited debate about the nature of safe working practices, and how the government should support the construction industry.

Increased digitisation, along with innovations such as 3D printing, advances in unmanned aircraft systems, and offsite manufacturing are slashing build times and reducing labour requirements dramatically – crucial in an industry hindered by chronic skills shortages.

However, innovative processes, and materials, can introduce construction risks that are sometimes poorly understood. Additionally, risks related to other changes, such as Brexit or UK government plans to tighten building regulations, could be under- (or over-) estimated, resulting in increased costs and reduced efficiency.

Brexit, Carillion, and the "Beast From the East"

How did the construction industry fare during our survey periods? Economic uncertainty clouded 2017, with contractors unnerved by the prospect of Brexit. The industry entered recession for the first time in five years, and the Grenfell Tower tragedy raised important safety questions.

Extreme weather and big business casualties were two of the major stories of early 2018. The collapse of Carillion, in mid-January, affected its 20,000 UK employees, and many smaller contractors and suppliers. Meanwhile, the "Beast From the East" cold weather front, in late February and early March, stalled projects and disrupted supply chains.

Despite continuing Brexit jitters, the second half of 2018 saw improved output. The industry was buoyed by news during the spring that the IHS Markit/CIPS UK Construction PMI (the purchasing managers' index) had improved. It remained above the 52 mark, pointing to a recovery from the tough start to the year.

Safety in the Spotlight

In 2019, construction output suffered under the weight of Brexit uncertainty. Investment plans were reined in and projects reduced in December. The post-Grenfell debate about building safety continued with the publication of the Hackitt report and the announcement of tightened building regulations.

The election of a majority government in December 2019 helped to bolster confidence, but, despite UK government approval, uncertainty continued to cloud the progress of HS2, the Northern Powerhouse, and the Heathrow expansion.

A £36 million Innovate UK grant was offered to boost the trend for increased use of new technologies, including modular construction, digitisation, artificial intelligence (AI), and building information modelling (BIM). In tandem, cybercrime was perceived increasingly as a pressing construction risk.

Although outside our survey period, the COVID-19 outbreak has greatly affected the industry. The pandemic's full implications are still to become clear, but it is reasonable to expect companies' spending will be curtailed in areas such as commercial property development. There had been fears that the recently welcomed government boost to infrastructure might be delayed and trimmed; however, in June 2020, the UK government asked local authorities to submit infrastructure ideas that could help boost the economy following the COVID-19 lockdown. Funding would come from the £100 billion that was to have been spent on infrastructure projects during the five-year parliament, but could now be spent earlier than planned.

Methodology

This report explores how the UK's top main contractors quantify and manage their business risks. We focused on the UK's largest contractors, by revenue, which are involved in civil engineering and/or construction works, and have publicly available information.

The company reporting periods analysed for this document were 2017–18 and 2018–19. Our experts analysed the companies' 2018 annual reports to measure the frequency with which they cited different risks. We scrutinised the weight given to each hazard by company risk specialists, then pinpointed the measures companies took to reduce their exposure.

We then analysed the same companies' 2019 reports to compare the year-over-year change of construction risk perception, and our analysts researched how companies' mitigation strategies evolved between the two years.

The following risks are ordered according to how commonly they were cited by contractors in 2019. Where the frequency was the same for two or more risks, they are ordered by "risk development", that is, by how much more often the risk was cited in 2019 compared with 2018.

Risks that compare equally have been granted the same ranking number, with a gap left in the subsequent ranking numbers. Thus, through this approach, an additional 11th risk has been included – Business Conduct, Ethics, and Reputation, which has an equal frequency to the Environment and Sustainability risk.

Executive Summary

Three hazards were cited by all contractors surveyed: Political, Economic, and Market; Health and Safety; and Financial Practice.

Political, Economic, and Market Exposure arises out of changes in political and economic climates in the UK, and globally, along with changes in competitors' behaviour. The effect of Brexit uncertainty on many aspects of the construction industry makes it no surprise this risk features so highly, and also has one of the largest year-over-year increases (11%).

The high ranking of **Health and Safety** (joint-second place, with a year-over-year increase of 5%) relates to the physical dangers inherent in onsite construction work, and the likelihood of contracting industrial diseases. Other contributing factors could be the increasing cost of Health and Safety Executive investigations, and the threat of prison for directors if a company is found to have been negligent.

With its 100% frequency and 5% increase, **Financial Practice** (poor financial discipline that restricts a company's ability to achieve market growth or take investment decisions) shares joint-second place. Its high ranking could be due to construction's traditionally thin margins, coupled with memories of the Carillion liquidation.

In fourth place is **Project Delivery and Contract Disputes** (cited by 95% of contractors), which consists of the failure to manage the delivery of projects to required specifications within the planned time and cost. Its high ranking could relate to low margins in construction, exacerbated by the ongoing shortage of skilled workers.

At fifth, with a survey frequency of 89%, **Attracting and Retaining Employees** again reflects the skills shortage affecting the construction industry.

Data Governance and Cyber Security is placed sixth (with a frequency of 58% in both years), perhaps a surprise given that cross-industry surveys covering the same period have put this peril at or near the top of companies' risks. However, recent ransomware attacks suffered by main contractors could see this hazard move up the CRR list in the future.

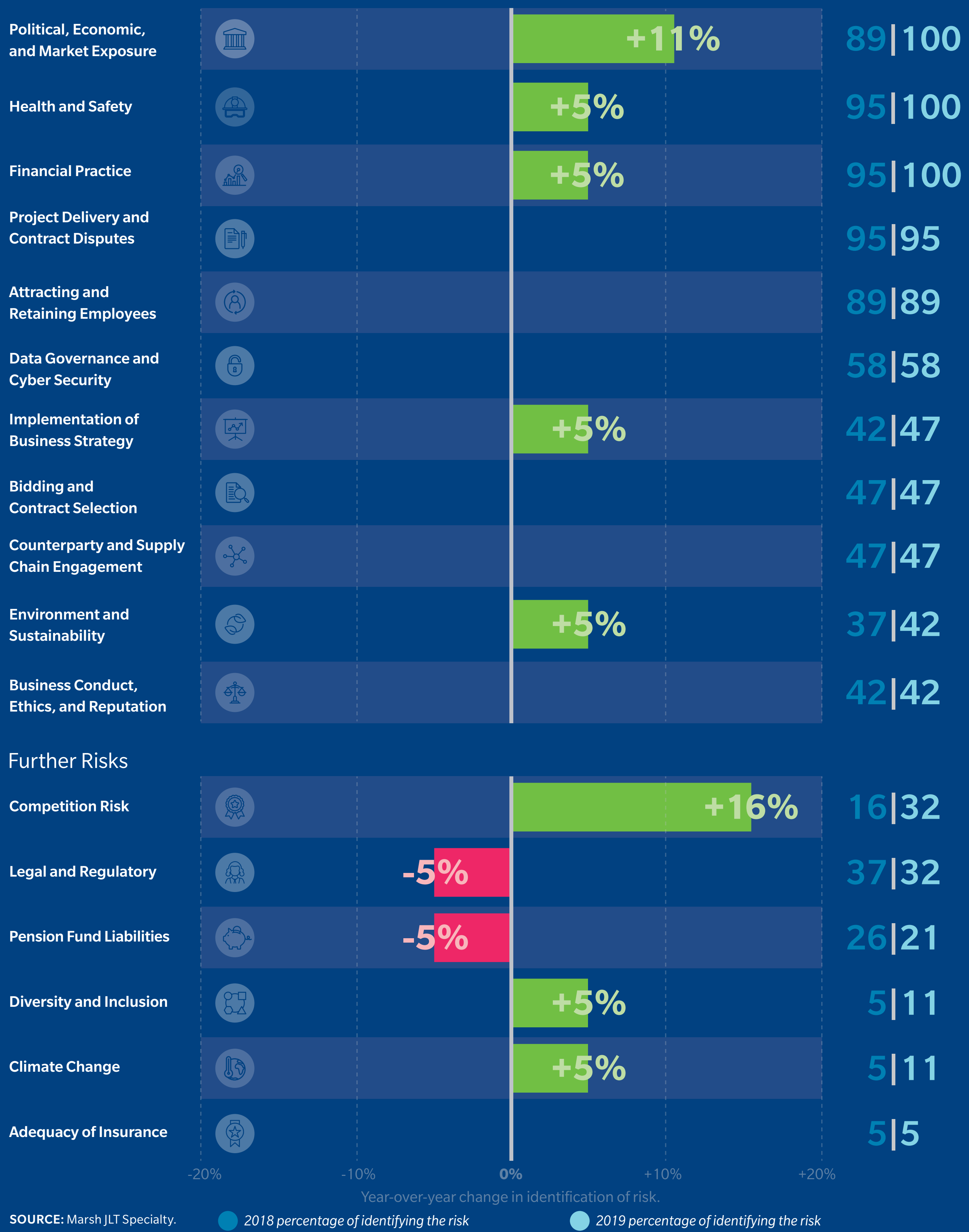
At seventh (47% survey frequency, with a year-over-year development of 5%) is **Implementation of Business Strategy**, which encompasses a failure in implementing business strategies and transformation programmes.

Joint eighth is **Bidding and Contract Selection**, covering risks arising out of a company failing to identify and undertake work within its core competencies. It sits beside **Counterparty and Supply Chain Engagement**, which emerges from the failure of a supplier or subcontractor to deliver their scope of work, and possibly, is also related to skills shortages. Both have a survey frequency of 47% and a 0% risk development year-over-year.

In tenth place is **Environment and Sustainability** (42% frequency with a year-over-year development of 5%), which arises out of construction activity's adverse impact on surrounding areas, leading to environmental harm, reputational damage, and possibly fines. **Business Conduct, Ethics, and Reputation** – involving default on compliance requirements; fraud; deception; false claims; human rights abuses; and compromise on ethics and values – also has a frequency of 42%, but an unchanged year-over-year risk development.

Contractors' Top Risks

Many of contractors' main risks were cited more often in 2018–19 than 2017–18.

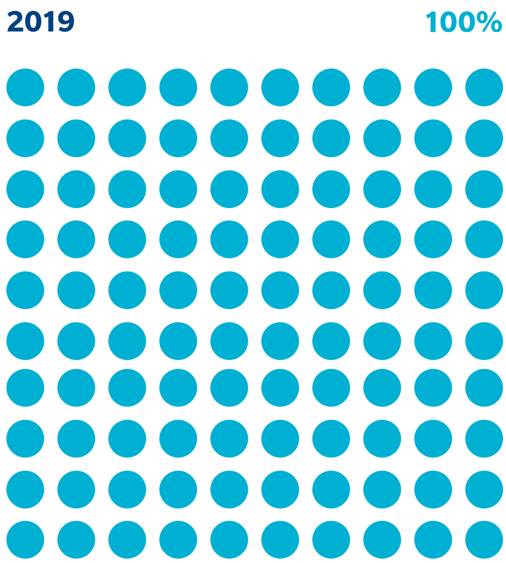


SOURCE: Marsh JLT Specialty.

01 Political, Economic, and Market Exposure

Many UK contractors fear Brexit will cause price rises and labour shortages. Political and economic changes could reduce opportunities in the UK and abroad, while remaining opportunities could also become less profitable.

Percentage of Firms Citing Risk



Year-Over-Year Risk Change:

+11%

> *Brexit's impact is one of the principal risks in this category.*

Defining the Risk

Political, economic and market risks cover a range of scenarios and outcomes both at home and abroad, including economic downturns; changes in land or house prices; reductions in government/private sector spending, and civil or political unrest.

Brexit's impact on labour availability, supply chain costs, and exchange rates is a principal risk in this category. Regulatory changes following the Grenfell tragedy are cited too, along with shifting attitudes to the sector following the Carillion liquidation.

A volatile UK construction market could amplify the impact of all three. Fears remain that the UK's current property cycle is ending, with COVID-19 repercussions amplifying concerns.

Top contractors believe this risk could affect consumer demand, and trigger declining appetite for exposure to the construction sector from the banking, and insurance markets. This could affect the delivery of large, complex projects in an industry characterised by low margins.

Risk Mitigation Measures

Leading contractors are keeping an eye on a possible Brexit fallout and potential government market stimulation. Brexit forums have been organised that publish regular external papers.

Companies are monitoring economic changes consistently, reviewing the countries in which they operate; exploring economic prospects, including forward order book and general market data; weighing opportunities against market risk appetite; and committing only to viable schemes. Staff are tasked with reviewing overall political/market risk, and there is regular analysis of pipeline opportunities.

Forward foreign currency contracts are used, when appropriate, to reduce exposure to the variability of foreign exchange rates.

Contractors are focusing on resilient and stable markets and geographies, maintaining a broad exposure against a backdrop of cyclical individual market effects. They seek a balance of public and private sector work, and increase or reduce the pipeline of new contracts in line with local authority, government, and utilities regulators' spending plans.

A high profile is maintained in sectors identified for investment, with construction and regeneration divisions working together to offer improved client service and economies of scale. Tactical and strategic benchmarking exercises are conducted against key competitors in order to remain competitive.

Engagement is important, with discussions undertaken with regulatory authorities, and cooperation and knowledge-sharing taking place with industry partners, clients, financial institutions, and supply chain.

Industry leaders monitor the credit-worthiness of key counterparties. Before contract signing and during the project lifecycle, they regularly assess the tests used to measure counterparties' solvency and strength.

Effective supply chain management is encouraged. Companies seek a balance of procurement routes and maintain a flexible cost base. Contracting with multiple subcontractors within each trade is encouraged, with strict approval procedures in place. Where available, subcontractor default insurance is sometimes purchased.

How the Risk Developed

One contractor surveyed said Brexit was "not of significant concern". But many regard it as an increasing risk that could create significant macro-economic uncertainty.

Some believe that political uncertainties might negatively impact investment appetite in key markets. Changes in the UK's macro-economic conditions could also affect customer demand and supply chain costs.

Additional risks include cost, availability, and timely delivery of materials sourced from outside the UK; delay to the delivery of goods across borders; cost escalation through trade tariffs; additional regulations; fall in the value of the pound; and issues related to the mobility of skilled labour.

Apart from Brexit, companies reported that costs in foreign currencies could be incurred, resulting in exposure to risk arising from exchange rates. Having a regional presence in the UK could result in being affected by varying conditions in regional markets and increasing price competition.

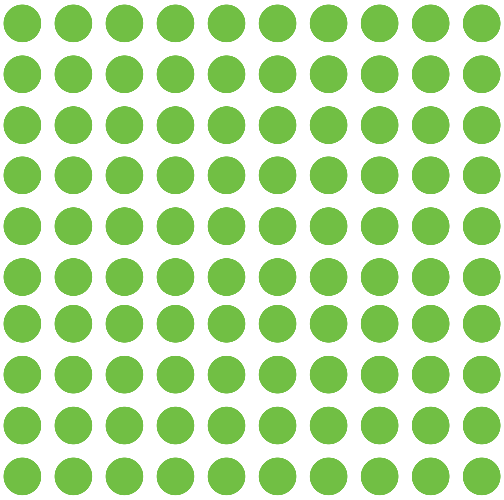
02 Joint

Health and Safety

Incidents that harm workers, third parties, or the environment could trigger project delays and insurance claims, and cause reputational damage. This has sharpened focus on accident prevention and employee mental health, as have harsher fines and increased sentencing, introduced in 2016 for health and safety breaches.

Percentage of Firms Citing Risk

2019 **100%**



Year-Over-Year Risk Change:

+5%

Defining the Risk

Top contractors are working to promote a culture where all stakeholders feel comfortable speaking up and challenging unsafe practices. But construction is still one of the most dangerous occupations.

Common causes of lost-time accidents include slips, trips, and falls, along with issues related to lifting and manually handling materials and equipment. Failure to meet safety standards, or ineffective management of safety requirements, could result in chronic health complaints for workers, and the injury or death of employees, members of the public, or third parties.

Issues could arise in many areas of the construction industry. The processes designed to identify, mitigate, and reduce risk could be flawed or followed poorly. There could be a failure in safety leadership or the management of subcontractors. Incomplete briefing of workers could result in accidents, as could ongoing change programmes and performance pressures.

> *Harsh fines and increased sentencing for health and safety breaches have sharpened focus on accident prevention and employee mental health.*

Risk Mitigation Measures

Industry leading companies engage staff at all levels to elevate health and safety practices.

Accountability starts at board level, and structured safety leadership training is used to improve personal accountability. In one instance, executive director annual incentive plans are linked to health and safety targets.

Health and safety directors use management systems defined by industry standards (the International Organization for Standardization [ISO] and the Occupational Health and Safety Assessment Series [OHSAS]). Visible leadership is encouraged, with training focusing on leadership engagement behaviour, and housekeeping on site. Site visits are undertaken by executives to review in situ health and safety methods. Onsite, specialised training is introduced, with Build UK standards adopted for minimum training requirements.

Procedures and initiatives are monitored by management and external verification bodies. Major incident plans are reviewed and tested, and, to reduce the risk of incidents, reported metrics are standardised across all areas of businesses.

Targets for accident-free workplaces are supported by no-tolerance approaches to unsafe practices and in-house zero harm campaigns.

Construction's digital revolution has extended to safety training simulations that use AI. For one company, hazard reporting is augmented by technologies such as the Stop/Go observation app, which allows users to record good working practices and areas for improvement. Companies also target fatigue with tech, via management programmes such as the Readiband app.

Firms' procurement requirements include subcontractor compliance with a relevant safety scheme in procurement (SSIP). Companies are improving supply chain practices by raising global safety standards, and are extending staff drug and alcohol policies and assistance programmes to supply chain partners.

Beyond accident prevention, companies are promoting physical health. Wearable technology that monitors heart rates and oxygen and activity levels has been trialled, while methods used to reduce health hazards such as noise and dust have been improved.

Mental health awareness training is delivered, and staff are trained as mental health first aiders and ambassadors. Campaigns are used to challenge the stigma associated with mental illness, as are "wellbeing weeks", with events including organised walks and mindfulness sessions.

How the Risk Developed

Contractors say that while lagging performance indicators continue to improve, the upper limits for fines and scope for prosecution have increased. This is backed up by 2019 figures from the Health and Safety Executive, reporting that fines for health and safety offences increased by almost 450% following the introduction of new sentencing guidelines in early 2016.

Penalties for health and safety offences amounted to £15.7 million in 2018/19, averaging £107,000 per conviction.

Onsite, tower lifts are replacing ladders, and work is redesigned to reduce ladder use. In some cases, their use is banned for workers without a relevant permit. Projects are trialling cable-free environments to reduce slips, trips, and falls, and using tool tethering to reduce the danger of falling objects.

Falls remain a major contributor to on-site injuries. The increase in modular build offsite, which offers a safer working environment, can also reduce claims and the need for work at height.

Wellbeing remains in focus, with companies signing the Time to Change employer pledge, conducting internal surveys, and organising mental health campaigns and activities.

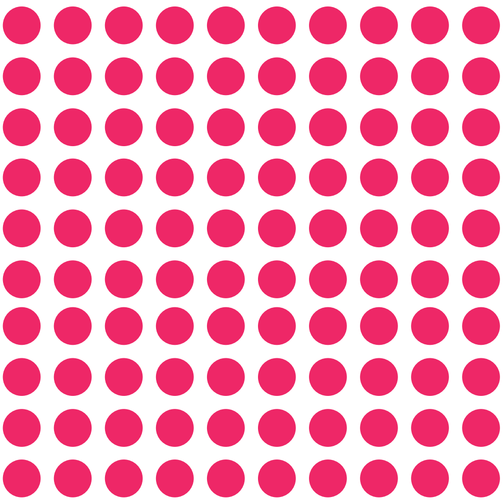
02 Joint

Financial Practice

A lack of financial robustness could result in defaults, failures to demonstrate the financial resources needed to compete for long-term contracts and win work, and an inability to adopt the "going concern" basis when preparing financial statements.

Percentage of Firms Citing Risk

2019 **100%**



Year-Over-Year Risk Change:

+5%

Defining the Risk

Financial risks could be in-house, caused by poor risk management, or result from external factors, including third-party behaviour or market changes (or, as we write this report, a pandemic).

Internal risks include the inability to estimate or control project costs, or recover costs. A revenue risk exists when companies rely on too few clients. Poor management of working capital could lead to insufficient liquidity, along with funding problems. Credit ratings might also dip.

Externally, clients, subcontractors, and suppliers could fail to discharge their financial obligations. Failure of counterparties could also affect cashflow.

Variable rate loans could form a cashflow interest rate risk, while currency market fluctuations could affect profit and asset values.

Commodity and materials price risks exist where contracts require the provision of materials years before the date of supply.

> *Financial risks could be in house, or result from external factors, including pandemic.*

Risk Mitigation Measures

Leading contractors establish guidelines and limits for financial management and risk. Internal financial units have responsibility for securing financing, and managing liquidity, financial assets, and financial liabilities.

Risk management models identify and manage financial and business perils, and committees assess new opportunities relative to financial constraints. Multi-staged processes are used that need group-level approval for development and investment-related schemes. Key opportunities are cash-profiled to ensure they meet expectations.

Centralised treasury functions are used to manage cash resources, the availability of liquidity, and credit capacity. Treasury functions also reduce financial risk by using hedging instruments, and oversee the management of investment risks. Investment funds are diversified among financial institutions.

Cash levels are monitored daily, with focus on overdue work in progress, debtors, or retentions.

Forecasting is used to manage fluctuations in short-term liquidity. Both funding and liquidity risk are managed via: monitoring business units' cashflow forecasts; budget and forecast cashflows; actual trading result, debt, and balance sheet positions, and capital expenditure requests.

Budgets and medium-term plans are analysed to maintain sufficient facilities to ensure access to funding. Medium-term committed banking facilities are secured, and liquidity is underpinned using undrawn term-committed bank facilities.

Liquidity positions are monitored and stress tested regularly, as are long-term cash forecasts. Facility headroom is forecast periodically.

Industry leaders have credit facilities to ensure available cash, and credit is insured. Credit checks are run on new clients, and payments monitored against contractual agreements. Premium finance is sometimes utilised.

Trade finance requirements are delivered via bank and surety bonding facilities. Interest rate risk is managed by interest rate swaps or fixed-rate borrowing.

Cash resources are placed in short-term fixed deposits to take advantage of preferential rates. Positive cash balances are used as a natural hedge.

Credit reviews of clients, supply chain partners, and other stakeholders take place, with tenders that exceed set amounts submitted to risk committees. Internal and external audits of contracts and balance sheets are undertaken.

Commodity and price risk is mitigated via purchasing policies and contract arrangements with suppliers. Currency transactional risks are managed by using forward foreign exchange contracts.

How the Risk Developed

Both public and non-public sector work was perceived to be affected by this risk. One company reported that it faces a credit risk primarily due to its non-public sector trade receivables. It added that it has significant trade receivables due from public sector clients.

Capital and liquidity were also discussed. Poor working capital management was reported as potentially leading to insufficient liquidity and funding problems. Inadequate liquidity was also regarded as potentially impacting the ability to trade, market growth, and investment.

High debt levels, compared to earnings and cashflow, have led to refinancing of existing debt structure and additional debt funding.

Financial instability is a worry, with companies facing a risk due to macro-financial instability. They also perceive lenders' potentially declining appetite for exposure in the construction sector to increase financial risk.

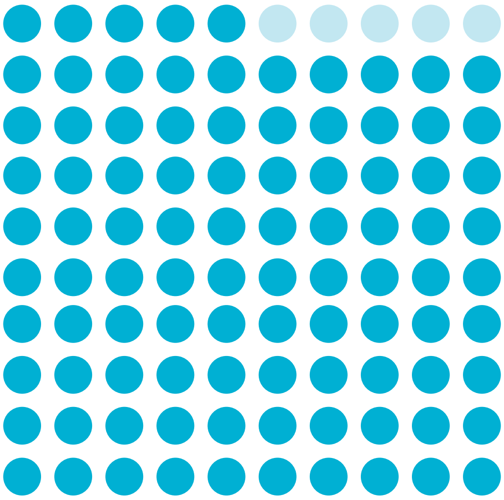
04

Project Delivery and Contract Disputes

If client expectations are not met, interim cash payments could be delayed and unrecoverable costs incurred, destroying profitability. Damaged relationships could affect repeat business and client referrals. And if legal action ensues, its high costs could be compounded by adverse publicity and reputational damage.

Percentage of Firms Citing Risk

2019 **95%**



Year-Over-Year Risk Change:

+0%

Defining the Risk

Project delivery risk comprises failure to manage or deliver a key project in line with the contract terms, to an appropriate standard, and within agreed timescales.

Failure to deliver in any of these areas could result in many challenges, including contract disputes; rejected claims: design issues; liquidated damages; cost overruns; failure to achieve customer savings, and costs to rectify defective work.

Working capital could be affected due to withheld interim cash payments, and business relationships could be harmed.

Contract management is a key element of project delivery. It entails a range of risks, from mispricing and inaccurate specification to non-delivery of promised cost or efficiency improvements. Further risks include poor control of costs or service delivery, or just simply winning bids outside of a company's core skill set.

> *High legal costs could be compounded by adverse publicity and reputational damage.*

Poor performance from subcontractors and other third parties could also affect project delivery, as could counterparty insolvency.

Inadequate performance might be exacerbated if a supplier is in financial difficulty due to the tendency in such times to cut corners.

Risk Mitigation Measures

Project delivery teams practise targeted recruitment, with experts hired to manage specific project risks. They also employ focused training. Project pipelines are monitored to ensure a balance of investment in bids. Selective bidding focuses on complementary competencies, contract sizes, and risk profiles. Industry leaders seek realistic programmes and margins; design control; agreeable commercial terms, and contract (and supply chain) management.

Structures are in place for large bids, with delegated authorities and executive investment panel sign-off for opportunities. Many companies use the stage-gate approval system to identify risks and opportunities within the tender process; registers of group and key contractual risks are also kept.

Leading contractors are increasing their focus on reporting risks, including accuracy of cost and cash forecasting. Early warning systems are put in place for all construction projects, subject to approval by company tender boards.

Contractual counterparties are monitored to avoid over-dependency on any one customer or subcontractor, and supply chain partner selection is based upon shared standards of quality and sustainability. Risk is identified and priced by using two-stage work and negotiated procurement. Professional indemnity insurance is procured, as are other appropriate types of insurance.

Before site activities begin, operating frameworks are established that mandate rigorous policies and procedures throughout the project lifecycle. Enhanced digital capabilities, from BIM to AI, are increasing project delivery certainty, and companies work with customers and key partners to jointly practise the construction process using digital models.

Hubs are established to facilitate early and effective start up on site, and electronic dashboards are used for project management. Periodic benchmarking and market testing are included in long-term contracts, with joint venture partners, subcontractors, and suppliers monitored throughout project lifecycles. Project and resources reviews track delivery progress; monitored elements include forecast revenues, cashflows, and cost to complete. Client and subcontractor variations are challenged regularly to ensure recognised amounts are appropriate.

Regular project meetings take place at multiple business levels, with reviews of programme, design, and commercial and financial risks and opportunities. Independent internal and external audits take place, as do peer audit programmes and weekly leading indicator reporting.

How the Risk Developed

Robust monitoring of the performance of sub-contractors, suppliers, and other third parties enables companies to reduce a risk described by one contractor as "difficult to manage" throughout the project lifecycle.

However, while increased digitisation helps with project delivery certainty, companies must remain alert to the fact that digital processes bring their own risks that need managing.

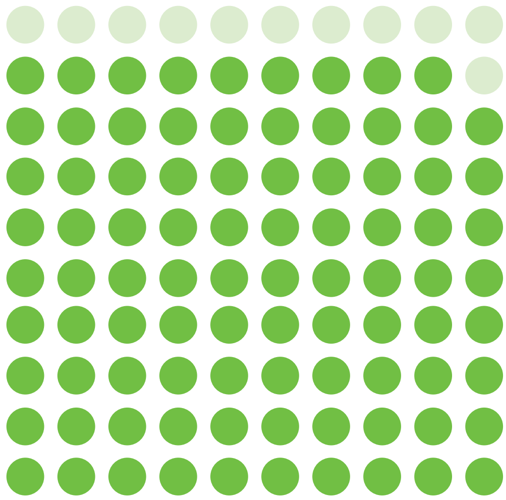
05

Attracting and Retaining Employees

Failure to attract high-quality employees could affect the ability to win or perform contracts, grow a business, and meet objectives. High staff turnover could also undermine market confidence. Moreover, a non-inclusive environment could result in cases of discrimination and harassment, resulting in reduced employee engagement and productivity, and reputational damage.

Percentage of Firms Citing Risk

2019 **89%**



Year-Over-Year Risk Change:

0%

“High staff turnover could undermine market confidence.

Defining the Risk

The success of any business is contingent on recruiting, developing, and retaining people of integrity. This is especially so in the construction industry, which is enduring a chronic skills shortage, and where competition for high-quality people is intense.

The failure to attract and retain required levels of staff has many causes. According to the main contractors whose information we analysed, they include: perceived limitations to internal career development; lack of recognition and reward; failure of businesses to promote good news stories; lack of a diverse workplace; and restrictions in available skilled labour.

The government's inability to maintain EU labour mobility was also cited as a concern.

Risk Mitigation Measures

Staff attraction is a priority before vacancies even emerge. Companies assess future requirements, using resource planning to build talent pipelines. Succession planning is in place for key employees, and debriefs are undertaken with joiners and leavers to review their decisions.

Graduate trainee schemes, industrial placements, internships, and apprenticeships are used to identify emerging talent and promote firms to young people, some via The 5% Club, whose charter signees pledge to place 5% of their workforce in "earn and learn" positions within five years of joining. Some firms participate in school and university career events.

Diversity targets are set to widen the talent pool; opportunities programmes promote openings to disadvantaged groups, and some companies work with supply chain partners to improve diversity and employee opportunities.

Soft marketing is employed, with organisations promoting themselves via industry awards for good employment practices. Remuneration is reviewed and benchmarked to react to market changes.

Staff retention initiatives start in the first weeks of employment with the use of onboarding programmes.

Training courses are available for workers at all stages of their careers. Technology infrastructure gives staff ownership of their training, and learning management systems are used to identify areas for development. Existing talent is reviewed by "people boards", and staff are supported through company programmes and academies. Leadership frameworks, courses, and training are used to nurture employees progressing to advanced roles.

Companies also work with industry educators (for example, the Construction Industry Training Board) to help staff achieve professional accreditation; one firm seeks to supplement internal skills with those of selected partners.

Retraining is given to employees who become disabled in the course of their employment and are no longer able to carry out their original function.

Affinity networks are used to support diverse working environments; inclusion strategies are supported by action plans and local groups. Supplier diversity programmes are used; companies also apply lessons learned from their gender pay gap reports.

Industry leaders encourage cultures of collaboration to keep staff engaged and encourage communication. Informal networks are promoted to connect people across organisations.

Incentive schemes are used, as are annual employee surveys to help understand job satisfaction, morale, and professional development.

How the Risk Developed

The ability to attract, recruit, and retain skilled workers remains a concern for employers, who admit that shortages in the construction industry will remain an issue for the near future. One firm reported that recruitment of qualified staff is of "particular relevance during periods of financial instability and change when improvement to profitability and competitiveness is required". Companies believe this will increasingly be the case as uncertainty continues during the UK's withdrawal from the EU.

Most firms did not specify whether they regarded the risk as increasing or decreasing. However, the continued uptake of internal and external programmes to improve staff recruitment and retention – from unconscious bias training to increase diversity, to membership of The 5% Club – indicates that the contractors we considered take this risk seriously.

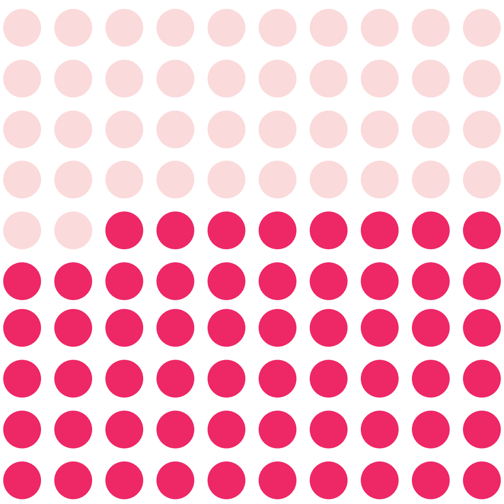
06

Data Governance and Cyber Security

In recent months, a number of UK contractors have suffered ransomware attacks. Some areas of construction have been slow to quantify digital risks, but they must act promptly to avoid catastrophic General Data Protection Regulation (GDPR) breaches, legal action, and fines of up to €20 million or 4% of annual global turnover, whichever is greater.

Percentage of Firms Citing Risk

2019 **58%**



Year-Over-Year Risk Change:

+0%

Defining the Risk

Construction's increased collaboration and engagement with customers, staff, and supply chain partners emphasises the critical importance of IT systems and the data they carry. Failure to invest in IT could prevent companies from meeting future business needs, including growth, security, and innovation.

Cyber and data protection risks are notoriously multi-faceted and subject to rapid change, making them difficult to quantify and mitigate. Hazards include, but are not restricted to: GDPR risks and cybercrime; and breakdown of security software or management systems. Along with legal issues and fines, they can cause business interruption, loss of competitive advantage, and reputational damage. Loss of client confidence and new opportunities could also follow.

Customer, supplier, and employee data must be appropriately classified, processed securely, and compliant with legal and contractual requirements. Companies must also be able to withstand cyber-attack, prevent service failures, and recover critical systems promptly.

> *Cyber and data protection risks are multi-faceted and subject to rapid change.*

Risk Mitigation Measures

While some sectors of the construction industry have been slow to digitise and recognise the dangers related to cyber and data protection issues, blue-chip main contractors have been more proactive.

IT investment committees have been set up to manage the security of hard and soft copy data. Data protection officers have been employed to enable the reporting of breaches and other issues, deploy escalation procedures, and manage risks.

Working groups drive policy, procedure, training, and the sharing of best practice. Staff receive management and end-user training on data protection, cyber security, and GDPR compliance.

Engagement with suppliers can prove a data risk, as supply chain companies with weak IT networks could have their technology loopholes exploited to gain access to the systems and data held by main contractors. Some of the top-tier companies we analysed have reduced exposure by cutting significantly the number of approved suppliers.

Updating technology and software systems in line with regulatory changes is prioritised, as is continued investment in systems to ensure they keep pace with business requirements and growth.

Companies employ tools such as endpoint encryption, active monitoring, and undertake analysis of external, web-based threats. Multi-factor authentication has been adopted for passwords, and secure centres are used for data storage.

Monitoring and preventative maintenance are key strategies. Firms keep up to date with cyber security developments through regular reviews. They also monitor and review IT infrastructure, processes, and performance. Contingency plans have been established to manage potential data breaches and cyber issues.

Testing of data security controls has been adopted, and external security companies are used to conduct annual penetration tests and 24-hour threat monitoring. Internal and external audit are used to regularly, and independently, assess controls and procedures.

How the Risk Developed

Companies are strengthening endpoint protection and data centre backup procedures. Training is key, with staff at all levels given the skills and tools to engage with IT systems and GDPR requirements. Companies are enhancing and centralising their monitoring, reviewing, and reporting processes, and engage with key technology partners and suppliers to ensure vulnerable systems are identified. ISO 27001 and CES certifications are obtained for key contracts, and government-accredited security installations and certification are used. Some companies also continuously develop and enhance data protection procedures in line with regulations.

However, while cybercrime has featured at the top or very near the top of other risk surveys, it only takes sixth place in this review, indicating that despite efforts made to increase online security, main contractors don't regard cyber risks as quite as critical as their peers in some other industries. Recent ransomeware attacks on construction companies may influence the position of this risk in the future.

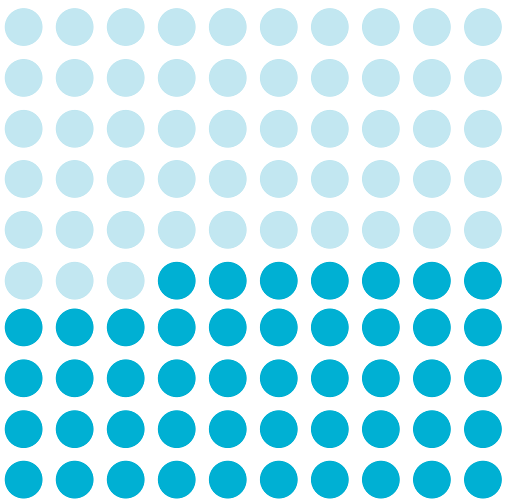
07

Implementation of Business Strategy

Reduced competitive advantage is just one consequence of a failure to execute business strategy effectively. It could also affect a company's delivery to clients, and ability to attract and retain employees, and sustain a profit.

Percentage of Firms Citing Risk

2019 **47%**



Year-Over-Year Risk Change:

+5%

Defining the Risk

Failures in the implementation of business strategy include lack of:

- Control of business unit performance or poor management decisions.
- Clarity of strategy and overall direction of business.
- Predictability with business unit financial performance, and poor implementation of corrective actions.

It could affect competitiveness, slow momentum created by transformation programmes, and result in lost opportunities.

Strategy implementation failures are triggered by various risks. These include failure to produce or embrace new technologies, which reduces a company's competitive advantage. Staff skills and training; effective accounts management, and compliance breaches are other potential risks.

> *Lack of understanding and alignment with external stakeholders is regarded as a potential risk to profits.*

Working through joint ventures and associated companies means that main contractors perceive success as partly dependant on partners over which they have no control. A lack of understanding and alignment with these external stakeholders is regarded as a potential risk to profits.

Risk Mitigation Measures

Work-winning spend is allocated to priority strategy areas, and leadership teams are strengthened to deliver in key areas.

Proactive business development is important, and firms seek new customer opportunities rather than relying solely on their existing customer base. Diversification into new sectors also mitigates this risk, with rapid integration plans in place for acquired businesses.

Involvement in major infrastructure projects puts companies at the forefront of new innovation in construction, management, and project control techniques.

Leading construction firms embed transformation programmes into their business unit culture. These programmes help companies to make fundamental changes in how they operate in order to weather shifts in the market environment.

Strong long-term relationships are a mitigating factor; measures taken to maintain relationships include board representation; shareholders' agreements, and management secondments.

Senior leadership appointees have to be experienced in delivering business transformation successfully. Leaders are strengthened to deliver in key growth areas, and employees are developed to ensure compliance and accountability.

New systems and processes are deployed, with training plans, and in agreed phases. Leaders throughout businesses are required to monitor programmes' delivery and impacts. Clear and frequent communication is encouraged, with detailed feedback sought through employee surveys.

Business improvement and IT forums review, sponsor, and promote innovation, and audit committees challenge principal risks and uncertainties.

How the Risk Developed

During the follow-up survey period, one firm announced a proposed deleveraging plan. The plan, a consensual restructuring, was drawn up to avoid a default in the existing financing arrangements and provide enough liquidity, cash, and bonding facilities to allow the firm to stabilise and service short-term obligations. The plan was voted down and the firm went into administration.

Although new systems are used to improve business strategy execution, companies have also become concerned that new processes could also hinder their plans. Mitigation includes frequent engagement by senior leadership figures, plus the use of training plans. Frequent monitoring is used to measure the delivery and impact of new plans and processes.

Clarity and accountability are still regarded as important elements of risk mitigation, with one firm establishing a group accountability framework. It also engaged in "sweet spot" analysis of all business units.

08

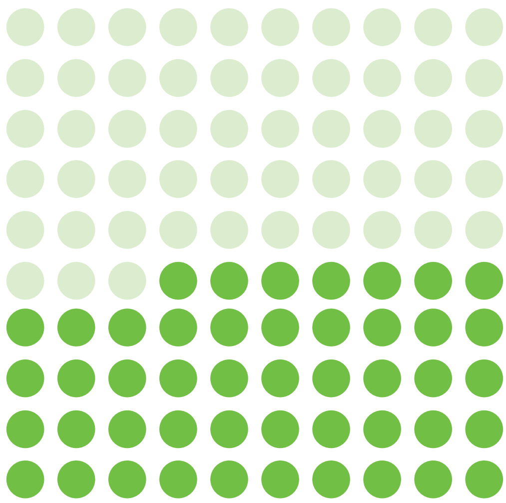
Joint

Bidding and Contract Selection

A profitable and sustainable order book is under threat when a company fails to identify, price, and execute the correct volume of bids and investment opportunities. Failure to identify and secure new work could affect a firm's ability to diversify, leading to missed profit targets.

Percentage of Firms Citing Risk

2019 **47%**



Year-Over-Year Risk Change:

0%

Mispriced contracts could dent profitability and damage relationships.

Defining the Risk

Firms said the failure to identify and secure new work could affect their ability to grow diverse portfolios. Taking on the wrong type of work could present different risks, namely, that if a company has insufficient resources, the selection of a contract outside its core competencies could lead to increased costs and reduced efficiency. Furthermore, poor delivery, inaccurate cost and task duration estimates, along with poor negotiation of terms and conditions, could cause reputational damage and diminish future opportunities.

Mispriced contracts could wipe out profitability and lead to damaged relationships with clients and supply chains. Dealings with third parties create risks related to customers' financial positions, and the viability of joint venture and supply chain partners.

Participating in public projects raises risks related to the lengthy selection process, such as the level of unrecoverable cost that could be incurred should a bid prove unsuccessful.

Risk Mitigation Measures

Main contractors use various measures to mitigate bid and contract risks. In the long term, firms are broadening their capabilities and value proposition organically and by acquisition. Pipelines are monitored to prioritise bid selectivity over volume. Opportunities are streamlined to those within, or complementary to, existing competencies, and pursuit plans are tailored to each opportunity.

Counterparties are reviewed to avoid dependency on any one customer or subcontractor. Prospective joint venture partners are scrutinised to ensure shared cultures exist, and that partners have the expertise to fulfil the project.

Some firms target blue-chip clients and aim to secure larger contracts with repeat customers. Others weight order books towards public sector and framework clients with healthy risk profiles. Framework and partnership agreements might also be sought with key clients. Firms involved in public sector works are notably keen to diversify their market sectors, and consider alternative procurement approaches. Bid approval stages are subject to defined authority levels.

During bid and contract development, risks are managed with the help of project finance and legal departments. Careful consideration is made of the risk/reward profile of significant bids and potential joint ventures. Due diligence and investment appraisal reviews are employed prior to bid submission.

Some firms allocate a greater share of work-winning expenditure into technology and consultancy opportunities. Others restrict expenditure in the early stage of a bid when success is less certain.

Provision is made for increased bids where appropriate, in order to hedge against supply chain costs exposed to exchange rate or inflation fluctuations.

Pipelines are reviewed at all stages, and tender reviews conducted at three stages: pre-qualification, pre-tender, and final tender. Following the bidding process, performance and other reviews are undertaken to improve process and learn appropriate lessons. Commercial and contractual reviews are undertaken by legal and commercial staff.

Some main contractors are encouraging cultures of commercial awareness through training and staff communications; policies are shared that detail minimum commercial expectations, for example, acceptable margins.

How the Risk Developed

Some contractors believe that a market they regard as volatile and competitive could lead to a company accepting a contract outside its core competencies or beyond its existing resource base. There has been concern that the UK government's investment strategy could impact the pipeline of contracts available to the firms that bid for them.

Firms mitigate the risks in a number of ways. Authority matrices have been set up to provide guidelines for tender approvals. Risk and investment committees are convened to review and approve opportunities. Programmes have been introduced in which all new tenders requiring bonding or other security instruments are referred to contract and investment committees, which consider approval based on assessment of commercial terms, profitability, and risk. Group governance frameworks have been established to ensure increased clarity of decision-making and accountability.

08

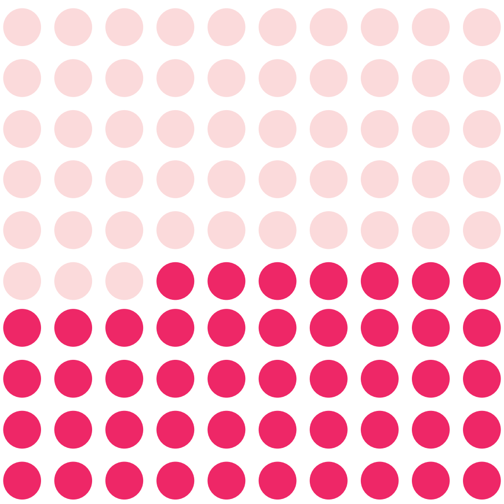
Joint

Counterparty and Supply Chain Engagement

Companies face many consequences if they fail to manage relationships with clients, suppliers, and other counterparties. These include disputes, expensive legal proceedings, fines, and even debarment. Meanwhile, third-party failures (or insolvency) could result in delays and quality reductions, leading to additional costs and reputational damage.

Percentage of Firms Citing Risk

2019 **47%**



Year-Over-Year Risk Change:

+5%

Defining the Risk

Counterparty and supply chain engagement risks have many facets. Supply chain parties might not be able to meet operational expectations, or could fall short of the main contractor's code of conduct in several areas, including availability; financial stability; technical ability; quality; safety, and environmental, social, and ethical standards.

Insolvency of a key supplier or client – and the time taken to source a replacement – could disrupt project works, and lead to bad debts and considerable financial losses. Meanwhile, clients that fail to meet their payment obligations create a credit risk.

Failure to respond to changes in client circumstances resulting from market, regulatory, or political conditions could result in a loss of market share as clients move to competitors. Clients might implement new contract conditions that adversely impact both business and financial results. There could be a reduction in work won, a loss of repeat clients, an inability to win work in diversified markets, and/or reduced profitability and cashflow.

Risk Mitigation Measures

Finding the right clients to partner with is a key concern. Some companies focus on public sector and commercial clients in sound markets. Others conduct credit risk assessments on employers before contracts are signed. For additional financial security, credit risk insurance is purchased on clients. Other forms of financial security include project retentions; bonds; guarantees; specific preferential payment terms, and escrow accounts. Subcontracts contain "pay when paid" clauses in the event of client insolvency, that is, if an employer becomes insolvent, the main contractor is only liable to pay the subcontractor to the extent that the main contractor has been paid.

> *Insolvency of a key supplier or client could lead to considerable financial losses.*

Joint venture agreements contain protection relating to bank accounts and resource employed by a defaulting party. The use of escrow accounts, reduced credit terms, and retentions is also considered. Security is required from subcontractors in the form of company guarantees and third-party bonds.

Tender review boards observe due diligence, using approval processes before entering into new contracts. Pre-qualification questionnaires and credit checks are used before entering into arrangements with clients, partners, and suppliers. Board members engage with regulatory authorities and monitor policy developments via industry groups.

Procurement departments work to ensure companies are not overly reliant on one particular supplier or subcontractor. Bonds and letters of credit are required from subcontractors to protect against the risk of insolvency. Group-wide codes of conduct and supplier codes of conduct remind all parties of their responsibilities and obligations.

Leading firms work closely with partners in order to understand their processes. Developing long-term relationships with key subcontractors is preferred, as is working with preferred or approved suppliers, in order to ensure better visibility of workload and financials. Work programmes are put in place to generate ideas for more effective procurement. Resourcing and contingency plans are in place, including lists of replacement suppliers.

Supply chain performance is monitored so as not to overstress either financial or operational resources. And counterparties' financial status, credit history, and integrity are analysed regularly.

Supply chain partners are supported in their training and development and have access to company e-learning resources.

Work in progress (un-invoiced income) is evaluated, as are debts and retentions, to ensure optimal cash conversion and identify potentially stressed businesses. Regular meetings and communications are undertaken with key supply chain members.

How the Risk Developed

One company, in its 2018 reporting, said the risk was diminishing due to increased rigour in the pre-qualification processes, supply chain consolidation, and improved monitoring of supplier performance. However, in its 2019 report, it observed that, "Scheduling, capacity, and capability tensions in the market have increased the potential for risk realisation."

The robustness of supply chains was on the agenda, with companies operating supply chain academies in order to optimise their suppliers. The importance of employing fair treatment to get the best out of suppliers was exemplified by companies signing up to the Prompt Payment Code, which is sponsored by the Department of Business, Energy and Industrial Strategy.

Broadly, companies' perception of this hazard has changed little. They are still mitigating the risk with a mix of monitoring, due diligence, financial measures, and ensuring supplier and client diversity.

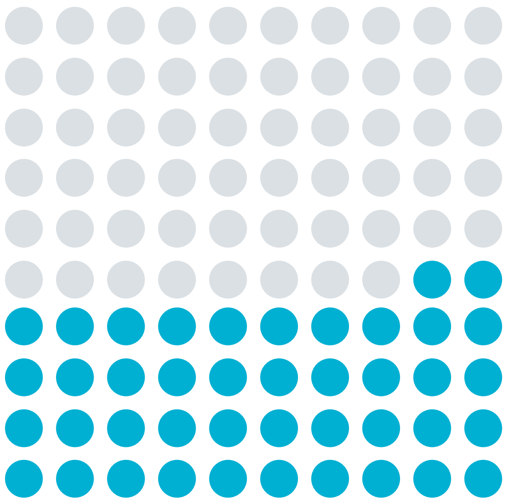
10 Joint

Environment and Sustainability

Construction is one of the UK's most resource-intensive industries, with more than 400 million tonnes of material delivered to site each year. Failure to reduce their environmental impact could result in strong penalties for contractors, including fines, reputational damage, increased costs, and loss of operating licences.

Percentage of Firms Citing Risk

2019 **42%**



Defining the Risk

Around one-third of all waste in the UK is construction-related. Immediate risks include the creation of hazards and nuisances ranging from pollution threats to noise, vibration, and contamination. For the duration of a build, energy, water, and materials could be used inefficiently. Environmentally hazardous incidents could take place during construction or in connection with the supply chain. And physical risks could be caused by extreme weather.

Year-Over-Year Risk Change:

+5%

> *UK construction uses more than 400 million tonnes of material delivered to site each year.*

Risk Mitigation Measures

Top contractors are encouraging top-down company cultures that promote sustainable behaviour.

Management systems are registered to ISO standards, including ISO 14001 certification, the highest global environmental management standard. Actions relating to risks, to secure legal compliance, are guided by codes of conduct and company environmental management guides.

Senior management are required to focus on health, safety, environment, and quality (HSEQ) matters, and companies train their directors and employees in best practices relating to environmental management.

Responsible business directors are hired to ensure projects meet requirements, and to set the standards for sustainable development and construction. Environmental specialists at group and business unit levels support line management to secure compliance and achieve company expectations.

Employees are trained in appropriate practices and participate in activities that promote their employers' sustainability values. Interfaces and responsibilities are established that are understood and accepted by all, and regular inspections and audits are conducted.

Top-tier firms engage with the communities in which they operate, and work with suppliers to reduce the risk of supply chain breaches.

Environmental hazards are addressed as part of regular risk assessments undertaken on each project, and works are future-proofed regarding resource efficiency. Elements that are taken into consideration include energy, carbon, materials and water.

How the Risk Developed

In their 2019 reporting, main contractors reiterated many of the concerns outlined in their previous years' reports. Pollution incidents and adverse effects on biodiversity were named as risks, and firms added that management of incidents would mean becoming responsible for the time and costs associated with investigation and remediation.

Mitigation has expanded to include top management monitoring environmental KPIs such as carbon footprint, energy consumption, and waste. More robust incident reporting and investigation procedures were introduced, with trend analysis informing updates and changes to management systems. Blue-chip companies also submitted to audit by third-party certification bodies.

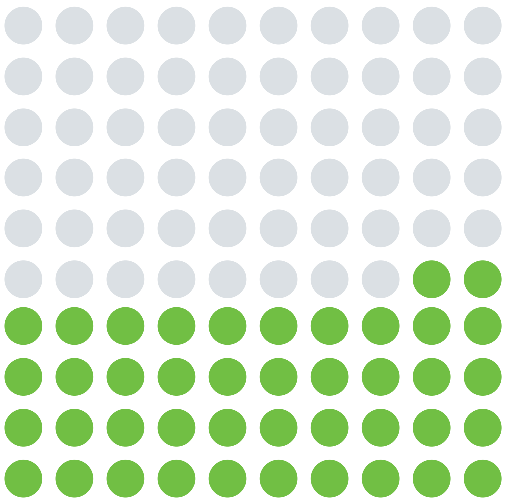
10 Joint

Business Conduct, Ethics, and Reputation

The consequences are grave for companies whose workers and related third parties (such as agents, partners, or subcontractors) fail to observe the highest standards of integrity. Fraud, bribery, or corruption could lead to investigations, disputes, and legal proceedings – ultimately resulting in business disruption, losses, fines and penalties, reputational damage, and debarment.

Percentage of Firms Citing Risk

2019 **42%**



Year-Over-Year Risk Change:

+0%

Defining the Risk

Top contractors identify multiple risks related to company conduct and ethics. Maintaining standards is regarded as an obligation for all stakeholders, including agents, partners, and subcontractors.

Companies report that acts of fraud, bribery, corruption, or anticompetitive behaviour could have short- and long-term repercussions, as could investigations and court proceedings for tax avoidance.

The immediate fallout could include contractual issues, disputes, business disruption, and financial losses. In the medium term, clients and suppliers could tighten credit terms, and cancel or defer projects. Contractors could fail to qualify or not be invited to bid.

Severe breaches could trigger investigations and legal proceedings, including prosecution under the 2010 UK Bribery Act. Fines and penalties could result, along with restrictions on a company's licence to operate, or even debarment.

Risk Mitigation Measures

Our analysts discovered a variety of mitigation measures related to business conduct, ethics, and reputational risks. Broadly, contractors' risk management fell into two categories: procedures and communications.

One contractor implemented a business integrity function, which has four elements: it monitors the company's code of conduct; provides training on the code; promotes the training to staff; and assesses their awareness of it.

Contractors reported that an obligation to be mindful of business conduct, ethics, and reputational risks had been extended to all stakeholders, including staff, agents, partners, and subcontractors. Risks related to third parties were identified and managed by implementing due diligence measures and procurement controls.

Business continuity plans were put in place to govern the operation of contracts, and control procedures and checks were deployed for the duration of each contract. Contract procedures were used to monitor performance, escalate issues, and keep note of responses.

Clear communication between all parties involved in a project was crucial to mitigating risk. Construction companies endeavoured to promote clear understanding and brand awareness among stakeholders. They raised awareness of relevant issues through consistent communications, and independent third-party whistleblowing hotlines, and email services were introduced for individuals who wanted to report issues anonymously.

Transparent communication with government authorities was regarded as important. To mitigate tax avoidance risk, open and cooperative relationships were maintained with the HM Revenue and Customs, supported by strong internal controls.

> *Acts of fraud, bribery, corruption, or anticompetitive behaviour can have short- and long-term repercussions.*

How the Risk Developed

While there has been no overall change in the reporting of this hazard, one contractor mentioned that the risk has increased as the firm expanded its range of services.

To prevent companies becoming victims of their own success, anti-corruption policies have been implemented, as have supplier codes of conduct, which set the same expectations on external parties as the company code of conduct does on company employees. Group governance frameworks have been implemented to review existing policies connected to ethical breaches. Regular employee training is also given.

Companies engage regularly with key clients and partners in relation to delivery of services and the status of transformation programmes; control procedures and checks have been put in place, governing the operation of contracts and businesses, supported by business continuity plans.

Emerging Risks

Outside the top 10, three other risks were cited far more frequently in 2019 than 2018.

Competition Risk, arising out of the company's failure to compete effectively in a low-margin sector, had the highest frequency increase of all risks – up from 16% in 2018, to 32% in 2019.

Diversity and Inclusion (failure to recruit from a diverse talent pool, and build an inclusive culture) increased 6% year-over-year, from 5% to 11%. As did **Climate Change**, which can lead to delays and operational cost increases.

Two risks were cited less commonly in 2019 than 2018. **Legal and Regulatory** – emerging from a failure to comply with legal, tax, and regulatory requirements – reduced from 37% to 32%.

Pension Fund Liabilities – arising from the impact of changes in interest rates, inflation trends, and investment performance of the funds' assets – declined in frequency from 26% to 21%.

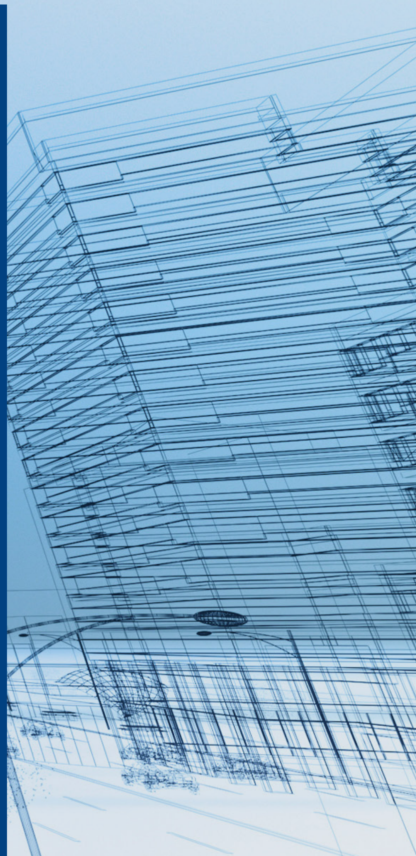
Finally, **Adequacy of Insurance**, which comprises a failure to maintain adequate insurance programmes, remained at 5% during oth survey periods. Unprecedented premium increases, influenced by the current market conditions, may add pressure to this risk going forward.

Conclusion

The construction industry was dealt several blows during our survey period. Ongoing concerns related to Brexit combined with the Grenfell Tower tragedy, the Carillion liquidation, and the "Beast From the East" storms challenged the industry on four fronts.

Despite this, the perception of risks impacting UK contractors remained broadly the same. How will the risk landscape change for the next edition of the CRR? The industry showed signs of recovery in early 2020, with the PMI for January and February recording two consecutive months of increased activity. But output plummeted during the global shutdown triggered by COVID-19.

Discussion of the pandemic’s effects is beyond the scope of this paper, but it is likely to combine with Brexit developments to create many new considerations for construction companies.



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