

A WHITE PAPER PRESENTED BY



Identifying and controlling risk in contractor supply chains



INTRODUCTION

It is widely known that construction is one of the UK's most dangerous sectors to work in. Data from the Health and Safety Executive shows the industry accounts for 5 per cent of the UK workforce and 31 per cent of workplace injuries.

Forty-two workers were killed in the industry last year, and construction lost 2.3m working days due to workplace-related injuries or ill health. These grim safety statistics push home the stark reality that managing safety in construction remains a challenge for even the largest and highest-profile projects; the recent inquest into the death of a Crossrail worker in 2014 criticised the "unclear" definitions in the project method statement.

Safety is not the only risk presenting itself to construction firms – risks relating to delivery and cost control are all too apparent and have a knock on-effect that ripples throughout the supply chain. One third of all projects assessed by Constructing Excellence ran late last year – the over-running rail engineering works last Christmas were the latest high-profile reminder of construction's poor record in this area.

All of this feeds into frequently poor business performance. There were some 2,437 construction company liquidations in the year to June 2014 – more than in any other industry sector.

So how can the industry improve its risk management?

Risk is generally defined as the threat or possibility that an action or event will affect an organisation's ability to achieve its objectives. In construction, there are many such possibilities. Every project is different, the risks change throughout the project lifecycle, and there are always numerous suppliers whose risks must also be managed.

However, the fundamentals of any risk strategy are the same in any industry: defining, understanding, evaluating and managing those risks.

Businesses can mitigate those risks through achieving compliance to various prequalification schemes and

adopting standards-based best practice frameworks – for example, in health and safety. Where a business falls short of achieving a required standard, there is the option of risk profiling and even on-site second-party auditing for suppliers identified as either borderline conformance or particularly high risk, either because of the nature of their services or criticality to supply. Recommended actions following an audit might include providing training for workers, or the implementation of additional risk control measures resulting from workplace risk assessments.

Stitching all of this together is technology, again an area where construction typically falls short; over a third of companies surveyed by software firm Sage had no dedicated IT manager. But technology is key to risk management, from collating the data to analysing it, benchmarking performance and robust reporting mechanisms – particularly as effective risk management strategies must be agile enough to adapt over time and respond to real-time risk-related incidents and trends.

In a nutshell, contractor risk management approaches are those that consider three main aspects, illustrated in Figure 1 below. Construction firms with complex supply chains should consider the maturity of their strategies against all three. Finally, risk can offer opportunities as well as challenges. Companies that use offsite manufacturing have reduced their exposure to safety, weather, supply chain and ultimately delivery risks – while delivering projects faster and more cost-effectively.

IN NUMBERS



THE THREE-STAGE RISK PROCESS

Contractor verification

- Can be a third-party accredited system, for example CHAS, ContractorPlus or SafeContractor, or tailored and managed via a bespoke software system.
- Questions set can vary depending on supplier type.



Grading

- Categorising suppliers by risk rating/quality score; criteria is designed around an organisation's specific risk areas.
- Creation of a risk-profiling report with a recommended second party sampling plan.



Second party auditing

- Sampling percentages dependent on risk category.
- Standard on which audit is based depends on risk profiling; in some cases pre-existing standards may be relevant, in others commissioning of a client-specific standard may be required.



DEFINING RISK

Safety

Safety is construction's worst risk management failing.

During the 2013/14 reporting year, HSE figures showed that 42 construction workers were killed, making it by far the worst performing business sector.

The death of a Slovakian worker on Crossrail in 2014 showed that even major projects, with apparently strong health and safety management processes, are not immune from risk management failings that result in injury and loss of life.

The inquest into how René Tkacik died in a tunnel near Holborn found that "unclear" processes and an "unclear" definition of the exclusion zone he was in contributed to his death. His family told the court that he struggled on the project because he did not have a strong understanding of English.

Aside from the personal tragedy involved in any loss of life, in cold business terms, accidents do real damage to productivity. According to the HSE, an estimated 2.3m working days were lost during 2013/14 - 1.7m due to ill health and 592,000 due to workplace injury. This means a total of 1.1 days lost per worker.

"Awareness of how to alter working practices is vital to ensure you comply with regulations"

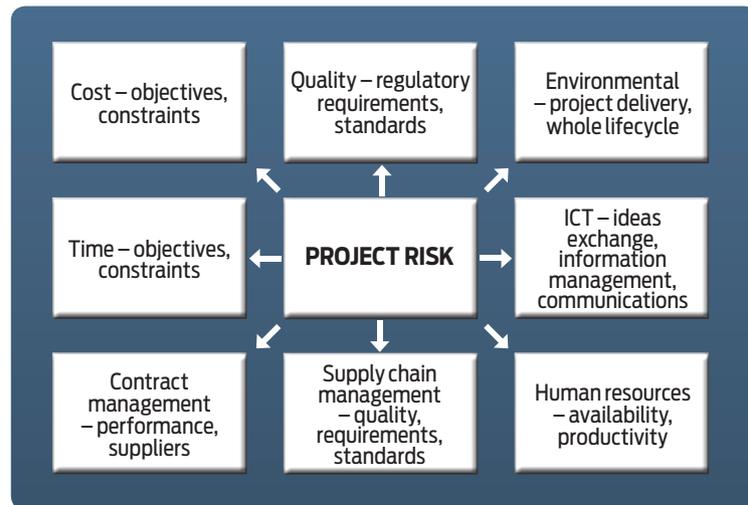
IAN DOIG, DLA PIPER

penalties handed out to companies who breach regulation. Costain, for example, received a fine of more than £500,000 after a worker was killed when a telehandler overturned on a project last year in Newbury, Berkshire.

Legal and regulatory

Safety risk management is closely linked to the risks associated with changes in the construction legal and regulatory framework.

This year sees major changes to the Construction (Design & Management) Regulations (CDM). The revised regulations are aimed at capturing more small projects



involving 15 workers or fewer, which are responsible for two-thirds of fatalities.

The role of the CDM co-ordinator has disappeared to be replaced by a 'principal designer'. There will also be a requirement for written construction phase plans on all jobs instead of just larger projects. This will mean additional work on small projects where such detail had not been previously required.

"All of these changes will have some lasting implications for contractors, so awareness of how to alter working practices is vital to ensure you comply with the regulations," says Ian Doig, a partner and construction specialist with law firm DLA Piper.

Another significant change this year concerns the labelling of chemicals and potentially hazardous products. New EU rules on classification, labelling and packaging (CLP) of substances come into force this June across all EU states. The UK has introduced its own national regulations to ensure the rules become legally binding.

"It is a high-risk area because of the rigid requirements it imposes on suppliers regarding classification, labelling and packaging," explains Martin Smith, CEO at risk management specialist Alcumus. "COSHH (Control of Substances Hazardous to Health) management and compliance becomes even more important."

Environment

The raft of environmental legislation introduced over the past two decades has made this another key area of risk management for construction. There are now big penalties for failure to follow correct practices regarding management of toxic substances or disposal of waste.



Glasgow firm CMI Demolition was fined £16,000 in December for allowing an unlicensed contractor to dispose of waste at a site in North Lanarkshire in 2011. And those penalties are likely to get bigger, with new guidelines from the Sentencing Council coming into force from 1 July.

Instead of an ad hoc approach, the council has introduced a structured process for deciding fines. These will vary from £100 to £700 for a near-miss caused by a small company, through to between £450,000 and £3m for a deliberate act causing a major pollution incident by a large company.

Human resources

Contractors rely on their people to deliver projects effectively – yet the amount they invest in staff development is low.

According to research carried out last year by EC Harris for the Department for Business, Innovation and Skills (BIS), only 27 per cent of construction companies said they had a training plan, and just 19 per cent had a training budget. This compares to an average of 38 per cent and 29 per cent respectively for businesses across all UK sectors.

EC Harris noted that “management skills are vital to the performance of the construction sector” and that “the structure and performance of construction supply chains has demonstrated the central role of a capable and effective managed workforce on the outcome of projects”.

Staff training is also vital for keeping up with changes in the legal and regulatory framework, according to Mr Smith: “It is the only way firms can ensure they are compliant with new legislation such as, for instance,



the new CDM regulations.”

Construction continues to suffer from a skills shortage, according to more than half of employers (53 per cent) who responded to the EC Harris research. This partly explains the influx of workers from

“Achieving supplier verification accreditations does not necessarily address specific project risks”

MARTIN SMITH, ALCUMUS

abroad, which can bring its own management problems – such as language – as last year’s Crossrail death demonstrated.

Competency and behaviour

A contractor may appear to have the necessary verification badges to deliver a project safely and effectively – but some are still failing to do so, as the latest HSE statistics highlight.

So how is it possible to ensure that an apparently experienced contractor has the right competencies and behaviours? The answer, Mr

Smith says, is to ensure that workers are well-trained. “The problem is, while a CHAS (Contractors Health and Safety Assessment Scheme) sticker will tell you that a contractor has met the criteria laid out in the verification question set, it doesn’t tell you if they are engaged with what they learnt in achieving that certification,” he says.

“That will only come with the right training.”

Contract management

Delivering on time remains a challenge for the industry, with a third of projects benchmarked by Constructing Excellence last year coming in late. Sometimes there are mitigating circumstances, such as extreme weather – even so, a risk that can be planned for – but too often it is poor execution. The high-profile over-runs to Network Rail’s Christmas upgrade work caused huge delays to passengers and will likely mean hefty six-figure fines for the contractors involved.

Delivery of the signal replacement work at Old Oak Common in west London was criticised by Network Rail chief executive Mark Carne, who said “there were clear failings in the way the work was executed”.

Supply chain management

The EC Harris report for BIS in 2013 noted the importance of the supply chain in terms of effective delivery of projects. But this area of risk is not always effectively managed by main contractors.

The economic recovery has put extreme pressure on capacity in the supply chain – notably among brick suppliers. Some 19 brick plants closed during the recession, and manufacturers have been unable to cope with the rebound. Last August, Wienerberger had to close its order book for 2014.



“Your quality management process should be independently certified”

MARTIN SMITH, ALCUMUS

further price rises in the next six months.

There is also the regulatory aspect to supply chain management. A new regulation for structural steel – BS EN 1090 – came in to effect last July. It made CE marking (compliance with the EU manufacturing standards) mandatory for fabricated structural steelwork.

“Your products will not achieve a CE mark unless you can prove that they have been manufactured under a robust factory production control system which meets the requirements of ISO 9001 or a similar quality management system,” Mr Smith explains.

“Furthermore, you must also demonstrate that this quality management process has been independently assessed and certified by an accredited body.”

The low capacity in the UK supply chain and the consequent increase in the importing of construction products, has made compliance with CE marking an even more pressing concern.

The UK Certification Authority for Reinforcing Steels has recently sounded warnings about imported Chinese rebar.

UK Steel director Ian Rodgers warned that Chinese rebar containing more than 5 ppm of boron “should not be used in structures requiring welding until staff have been trained in the specific welding techniques required”.

Finally, there is the ethical dimension to supply chain management.

The UK construction materials trade deficit has widened by 42 per cent to £7bn in the last four years, as more products come in from abroad. In the concrete sector, the BES 6001 standard was introduced so that manufacturers can prove

This has had an inevitable impact on price. For the year to March 2014, brick prices rose 7.2 per cent, and a recent Federation of Master Builders survey found that 79 per cent of respondents expected

their products have been made with constituent materials that were responsibly sourced. But 10 per cent of all concrete products used in the UK do not carry BES 6001, according to The Concrete Centre.

Information and communications technology

ICT underpins all construction risk management procedures. Yet a survey in 2014 by software firm Sage found construction companies are still “operating with limited IT resources”. The research showed that 35 per cent of contractors do not have an employee on staff dedicated to IT.

“Technology is crucial for capturing data about a whole range of risks and acting on what you find,” Mr Smith says.

Construction companies are also poor at understanding the risks associated with the software itself.

While 82 per cent of those surveyed by Sage recognise the importance of mobile technology – crucial given the site-based nature of the industry – almost half do not have adequate mobile security in place.

“The majority of profit warnings relate to contract issues including cost overruns, adjustments or delays”

ERNST & YOUNG

Business performance

All of the risk management issues identified ultimately feed in to the overall performance of the business and its ability to trade. Here too, construction companies perform badly. For the year ending June 2014, construction had the highest number of total liquidations (2,437) of any sector, according to the Office for National Statistics.

Many of its business failures are high-profile. In March this year, national contractor GB Building Solutions went into administration, with 350 job losses. Steel fabricator Eiffel Steelworks, which worked on jobs such as the 2012 Olympics, went into administration in mid-November.

At the top of the market, the big names are affected too. Last October, research from consultant Ernst & Young showed that 21 per cent of FTSE construction companies had posted profit warnings in the previous 12 months, ahead of the market average of 14 per cent.

The report said “the majority of profit warnings in 2014 relate to contract issues including cost overruns, adjustments or delays”.

Clearly, there are problems in the risk management approach of many construction companies. The question is, what can be done?





UNDERSTANDING, EVALUATING AND MANAGING RISK

Controlling risk

Taking precautionary measures mitigates the likelihood of risk. One way to address this is through PQQ processes, which may include the adoption of construction-specific prequalification systems such as CHAS, ContractorPlus and SafeContractor.

Mr Smith argues that although this is an essential element of supply chain risk management, it serves only to address a base level of compliance.

“Contractors with convoluted supply chains and multiple facets of risk should look to establish specific areas of risk within individual or pockets of suppliers and get under the skin of their business for assurance on the risk controls they have in place,” he says.

“This can only be achieved by grading suppliers via a risk profiling exercise using technology to generate risk ratings according to the information gathered from suppliers, and then going on to implement second-party audits on supplier sites where ratings are higher than what is

deemed as the acceptable norm.”

“Over the next 12 months, workers will die because basic lessons have not been learned”

HEATHER BRYANT

example, falls from height have consistently accounted for a high proportion of construction fatalities – 45 per cent last year (19 deaths). This indicates repeated failings in the risk management for work at height operations.

“Over the next 12 months, construction workers will die in falls from height because basic safety lessons have not been learned,” the then HSE chief inspector of construction Heather Bryant told *Construction News* in 2014. “There are no new risks in work at height – and no excuse for not learning lessons.”

Safety risk can also be reduced through better communication. The inquest into the death of Crossrail worker René Tkacik illustrated the problems that can arise when workers have limited English.

There is now multi-language software available which allows contractors to run toolbox talks in foreign languages and overcome any communication difficulties with non-English speakers.

An obvious example of the importance of understanding individual supplier risks is in the area of workplace safety, with persistent problem areas recurring time and again. For



Risk profiling of suppliers

Risk profiling of the supply chain is a key way for main contractors to reduce their risk. “Construction supply chains are large and complex, and so are the risks associated with them,” Mr Smith says.

“This means main contractors should be auditing and evaluating suppliers against multiple facets, including safety, environment, quality, social accountability, security and business continuity – essentially, any aspect that can threaten your ability to continue to operate or cause reputational damage.”

However, continually assessing thousands of suppliers against internal criteria or international standards is a challenging task. To manage this information, many contractors use web-based IT systems. Morgan Sindall uses Info Exchange, supplied by Alcumus (see page 9).

Such software provides: third-party access, allowing suppliers to complete assessments and questionnaires, and upload associated documents; automating of purchasing processes; and risk analysis and audit, giving the main contractor complete visibility of its supply chain’s risk ratings and profiles.

Besides using IT to manage supply chains more effectively, there is also the option of carrying ‘second-party auditing’ of individual suppliers where there are particular issues of concern.

“If a major contractor was worried about a specific area – which could relate to safety or quality of delivery – then it would ask us to carry out an audit of a subcontractor against an agreed checklist,” Mr Smith explains. “The audit



“Construction suffers from low productivity, which is why KPIs remain relevant today”

LEE BRYER CITB

main contractor has to decide how critical the company is to its operations. “If you can use another firm, you could take them off your preferred supplier list,” Mr Smith says.

“However, you may want to work with them to improve their standards. This could include a monthly audit, bringing them into your own in-house training, or asking them to go through a certification process.”

Prequalification accreditation

For many main contractors, using a verification system is the most common way of assessing a potential supplier’s competence – and minimising their own risk.

A system such as ContractorPlus, for instance, is effectively a health and safety prequalification system. The web-based system will assess a firm’s health and safety documentation, including risk assessments, policies, method statements and insurance levels.

“Certification systems save time and money and minimise risk, allowing a main contractor to check whether a supplier is approved and has all certification and insurances up to date,” Mr Smith says.

Benchmarking

Use of KPIs and benchmarking became more widespread in construction after the 2001 *Rethinking Construction* report, and are now central to the government’s 2025 vision to reduce project delivery costs by 33 per cent and delivery times by 50 per cent.

“The construction sector suffers from skills deficiencies and low levels of productivity growth, which is why understanding performance is so important; it is for this reason that the KPIs were developed and why they remain relevant today,” says Lee Bryer, research and

might follow an ISO standard if the main contractor requested, but more often we would tailor it according to our clients requirements.”

If a subcontractor persistently fails to measure up, then the

development operations manager at the CITB and co-author of 2014’s *Constructing Excellence KPIs* report.

The statistics from the study show a mixed picture. Client satisfaction has consistently achieved scores of more than 80 per cent in the past decade. However, a third of projects were still delivered late last year, which is the industry’s best ever performance.

“The majority of projects continue to fail to be completed on time; clearly there remains much scope for improvement,” said BIS minister Nick Boles in the KPIs report.

“Those contractors, subcontractors and consultants who assess and improve their performance against industry KPIs will be those who are best able to raise their game and grow over the coming years.”

Better use of ICT

ICT is an essential part of the risk management process – from collating project data through to managing thousands of suppliers.

However, it is one thing to have the right software, another to use it effectively.

“Training is crucial,” Mr Smith says.

“In the case of collecting safety data, it is important that those responsible for collating the data are properly trained; you don’t want to create a

blame culture. There should be a clear structure as to what they report, with mandatory fields to be completed.”

“Those who improve their performance against industry KPIs will be those best able to grow in coming years”

NICK BOLES MP

There are also risks around the technology itself. “The best way to capture data on site is using mobile technology,” Mr Smith says. “However, not all sites have wifi, so the software used must be able to work without internet access.”

Then there is the security issue. “The environment for filing the data needs to be secure, but allow different people in the organisation to report the data and have access to reports,” Mr Smith adds.





Prioritising risk

With so many areas of risk management, the question must be asked: what should take priority? “It is important to have a holistic risk management strategy and to understand different risk profiles,” Mr Smith says.

“Different suppliers have different risks. The subcontractor delivering the structural frame is on the critical path of the project and so there is a high risk. If it’s a steelwork contractor, does their steel have CE marking, in line with the new regulations? If a supplier is providing a unique product, that’s also high risk. If you can buy the product anywhere, that’s low risk.

“If a company is supplying a chemical, that is also high risk because of the consequences of what can go wrong. Are their COSHH management processes up to scratch?”

“We have worked with Network Rail to improve their COSHH management, and as a result, they have recorded just five incidents involving hazardous substances since 2007,” (see below).

Risk as an opportunity

Risk management should not be seen as an extra layer of bureaucracy; rather, it is a process that leads to more effective business management and, indeed, opportunities.

“If a business has more rigorous systems for managing health and safety, for instance, it becomes easier to identify

“It is important to have a holistic risk management strategy. Different suppliers have different risks”

MARTIN SMITH, ALCUMUS

trends, spot problems earlier, make forecasts, and ultimately work more effectively,” Mr Smith says.

This can lead to more innovative approaches. Offsite manufacturing has long been regarded as a panacea to many industry problems; by

taking construction processes away from the site and into a factory, the risks associated with safety, weather and managing multiple trades are greatly reduced.

In the context of the recent brick shortages, offsite manufacturing can offer greater certainty of delivery through use of precast concrete cladding.

Willmott Dixon has developed its Sunesis standardised designs, which include a high proportion of offsite manufactured components, in partnership with public sector procurement body Scape. Compared with a traditional design-and-build approach, Sunesis schools can be delivered up to 30 per cent quicker and cheaper. Willmott Dixon built Oakfield Primary School in Rugby, a new 1,172 sq m building, for £2.2m and in just 32 weeks.

NETWORK RAIL'S SYSTEM FOR COSHH MANAGEMENT

In 2007, Network Rail picked the Sypol CMS management system, an Alcumus product, to improve its COSHH (Control of Substances Hazardous to Health) management.

Pete Worrall, stores co-ordinator for Network Rail, says this was driven by a desire to eradicate duplicate and unnecessary paperwork, and collate all salient information, in particular its COSHH assessments, into one place.

He says: “Before employing Sypol CMS, we used to have piles of COSHH risk assessment forms lying in a dusty corner, so it was very difficult to find exactly what we needed at times. We work with a number of potentially hazardous materials and substances and have a duty of care to ensure our people are protected at all times.

“Since implementing Alcumus’s Sypol CMS system, it has been much easier to keep hazardous substances checked and under control. We are now confident that our existing COSHH assessments are up to date.

“It plays a critical part in our daily health and safety management, and all the crucial information we need on



hazardous substances is available on a tablet or an iPhone.”

Network Rail is proud of its COSHH safety record. The number of incidents involving hazardous substances since 2007 is just five – less than one incident a year.

With changes to chemical labelling regulations coming into force this June, the use of the Sypol CMS system for COSHH management will be even more critical.

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MORGAN SINDALL USES INFO EXCHANGE TO IMPROVE SAFETY MANAGEMENT

Morgan Sindall has been using Alcumus product Info Exchange to manage its health and safety reporting since 2004.

Martyn Warner, performance analyst at Morgan Sindall, explains: “We wanted a company-wide way to record health and safety information, with a centralised database that kept people informed of incidents, regardless of where in the business the information had originated from, and that could be used to pull off reports quickly and easily.”

The firm’s use of the system has evolved over time, to include information on health and safety, quality, environmental issues and supply chain documentation. It is also used to collect data for benchmarking, improving efficiency and sharing best practice across the company.

This includes information on everything from failure of materials or machinery – plus the associated costs in re-ordering – to the findings of internal and external audits and training experiences and outcomes.

“It has cut administration time considerably,” Mr Warner says. “Everything is held centrally, so it is easy to produce



meaningful reports for potential or existing customers. The system also allows us to adjust levels of access.

“For example, we can make some of the documents available electronically to our customers and supply chain, which can be more convenient than having photocopies of all the paper files.”

ALCUMUS ACTION POINTS



- Most construction firms use a PQQ process for onboarding new contractors/suppliers and reviewing incumbents. These PQQs ascertain competence, credibility and compliance against a variety of areas including insurance cover, financial security, health and safety, CSR, environment, social accountability, quality and accreditations/qualifications to name but a few. Consider whether you have identified high-risk suppliers through this process. What proactive measures do you have in place to continually monitor these high-risk contractors? What vendor governance controls do you have in place? Are they tailored and relevant for managing specific risks?

- Consider how you evaluate contractors across multiple

projects. Do you use common audit question sets? How do you ensure real-time visibility of risks across all projects and contractors? Tracking these metrics and trends will allow you to adjust your risk management strategies accordingly.

- Using external auditors to carry out contractor visits can bring both consistency and objectivity to audit findings. Think about how relevant your supplier audit specification is in relation to your current risk trends. How often do you update these to reflect changing risk landscapes?

- Consider the value in using third-party supplier verification systems such as ContractorPlus. What percentage of your current contractor base are accredited to one or more of these?

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ABOUT ALCUMUS

Alcumus is a market-leading provider of technology-enabled compliance risk management and certification services, supporting both UK and international clients with their Testing, Inspection & Certification (TIC) and Governance, Risk & Compliance (GRC) strategies.

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