Crossrail – delivering best value procurement

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The challenges facing the QS profession and how we can all prosper, by
David Bucknall

The challenges and opportunities for QSSs have never been greater. The economic downturn and the UK government’s demand for early deficit reduction has led every budget holder to demand a lower cost for the whole life of future built assets – in both the public and private sectors.

Add to the perception that the UK is the most expensive place in which to build and the challenges become even more exciting.

The government’s Comprehensive Spending Review states “It is clear that construction property and facilities management all cost too much in the Public Sector.” Furthermore, Chief Construction Advisor Paul Morrell is demanding up to 30% whole-life cost reduction under the broad banner of ‘more for less’ (see page 6 – where he also gives his opinion on the QS’s role and its focus on cost or price).

Our industry must quickly demonstrate that it can deliver on this cost reduction agenda and, although significant improvements have occurred following Latham, Egan, etc, there is still much to do.

The boom period between 1993 and 2008 made our industry complacent and allowed ‘slip’ to creep into our processes, e.g. competitive procurement and multi-level supply chains still contain too much inefficiency, waste and rework. This old business model is broken and must be replaced by an integrated model that delivers better whole-life value.

QS role
Surely optimum whole-life cost and value of built assets is the QS’s specialist subject and must be our focus – but are we up to the challenge? Having played a small part in shifting the QS from back-room technician to front-line construction consultant, I am convinced we can.

However we must respond quickly. The QS can play a leading role in targeting soft spots in current processes and must lead the provision of the new model of a more integrated project delivery and operation. Project management professionals also have a role to play in this. Anyone wishing to see some of the tangible benefits of integrated project delivery should visit the Constructing Excellence website (www.constructingexcellence.org.uk) where a study of 13 exemplary projects can be seen.

Those QSSs who take this challenge will drive their business to the leading edge of integrated project delivery teams. They will ‘get the first phone call’ from budget holders and improve the quality of their earnings.

Those who fail to meet the challenge are likely to revert to being technically based, back-room service providers, bought on price only, which harks back to the profession I joined in 1957.

Board actions
So how is the QS & Construction Board responding? Our simple objective is: “To provide outcomes which are useful and beneficial to the whole range of RICS QS members.” The Board can plant the seeds of change with best practice guidance but this can only be delivered by QSSs on the frontline.

QSSs make up approximately 25% of RICS membership with the majority employed in small local practices. We try to be as relevant to them as the large national and international practices and our aim is to provide a common best practice platform of guidelines, standards and protocols facilitating the delivery of efficient construction projects.

At the start of my chairmanship I have been encouraged by two particular factors:

• the balance and commitment of the new Board.
  It truly represents a cross-section of membership and has individual ‘agendas’ covering membership services, education, best service practice, etc
• the impressive agenda of initiatives set by the previous Board, which creates a strong platform for taking the profession forward.

The flagship programmes include:

• the NRM (see pages 8 and 10)
• Black Book guidance notes (see page 7)
• AssocRICS and APC standards
• the Construction Journal.

Further initiatives include the development of guidance on:

• a future sustainable procurement strategy
• integrated cost control of infrastructure projects.

Our profession will never have a better chance to make a positive impact on our industry. But these changes involve you and we need your input; what do you want from us and how can we help meet these frontline challenges? I look forward to hearing your feedback as we can only meet these exciting challenges by working together.

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Leader

Place your bets

Paul Morrell asks: do QSs carry out cost planning or price predicting?

I sometimes worry, in the small watches of the night, that QSs may be inflationary. Not in and of themselves, of course, but rather in their processes – and most particularly in cost planning.

Here’s how it goes: you sit down with some early drawings, measure some approximate quantities, and then price them. Then, if you’re really good, you add just the right amount for all those things not yet drawn; if you’re no good, you add nothing; and if you’re good, but not that good (which is most of us), fear makes you add too much. Then your boss spots a few things that are missing or underpriced (and nothing that is superfluous or overpriced) and adds a bit more; and then the client’s in-house representative, recognising the career-limiting potential of being put in charge of a construction project, adds … well, you get the idea.

What this reveals, of course, is that cost planning is not really about cost, and it’s not really about planning. Instead, it is about price predicting – a forecast of how work will be priced in the marketplace, and that is not the same thing at all. Certainly, QSs who have their data in order will know far more about price than anybody else in the construction firmament, because they are getting in prices all the time – but it’s not as if those prices are based on ‘real’ costs.

Feeling lucky?

The reality is that each tender is basically a spreadsheet exercise, with the tenderer adding together the prices submitted by suppliers and sub-contractors, plus his own costs and margin. There is no real analysis of the prices: just a risk-based judgement as to where to pitch the tender. Every tender is therefore a bet. The contractor is betting that, overall, he can go out and buy the work for less than his bid.

So far, not so good. It is not, however, necessary to look far to find a better way: to get back to planning, and to get back to cost.

Planning means looking at how something could be, rather than just how it is. For the QS this means working out how to get the client what he wants: the right job, at an affordable price. As a blinding glimpse of the obvious, though, that price is just the sum total of all of the resources that are expected to be required to get the job done – and because databases are, by their very nature, retrospective, they will reflect the way that the job has always been done. In the absence of a highly competitive market, where the incumbents are threatened by new entrants with better ideas (and that is largely our position, as construction remains an essentially domestic market), there is little drive for contractors to work with their supply chains to eliminate cost.

Inefficiencies and waste

But when supply chains are analysed, it is frequently found that there are intermediaries in the process who add no value; and even more detailed analysis of the costs of just the productive players in the chain will almost always find inefficiencies and waste, and opportunities for reducing cost through process or product innovation.

To quote an example, one American contractor has found that the incidence of variations occurring on his engineering services sub-contractor’s accounts, measured in cash, has reduced from 18.5% for a project run on 2D drawings, to 11% on a project run on ‘lonely 3D’ (meaning that most of the parties were working digitally, but not on a collaborative basis), and finally to about 5% on fully collaborative Building Information Modelling. Clearly, you need a plan to get rid of this kind of waste; but equally clearly you need to know it’s there in the first place. This is where cost planning needs to get to if it is to continue to be a value-adding service in a digital age: deep in the supply chain, eliminating cost.

This is not to decry our recent history. We’ve come a long way since standardising the method of measuring brick flues for the reconstruction after the Great Fire of London; but it is to say that the role could be so much more valuable. To know how things might be priced is good. To know how much they should cost is better.
RICs EU Policy and Public Affairs has published its latest EU issue monitoring documents to inform members on what is currently on the EU’s agenda – the documents on Construction, Energy and Environment are now available.

**In brief…**

**Date for your diary…**

4 March 2011, Infrastructure Conference, RICS HQ, London

**For more information, visit** www.rics.org/events

RICs EU Policy and Public Affairs has published its latest EU issue monitoring documents to inform members on what is currently on the EU’s agenda – the documents on Construction, Energy and Environment are now available.

**Construction market surveys**

RICs undertakes regular surveys which have proven to be good, leading indicators for the property industry. These short email surveys ask members to answer (up, down or the same) questions about market demand, prices, etc, compared to previous periods. All participants receive full accreditation where their comments are published.

In addition to market surveys on UK and global commercial property, another main survey is on the UK construction market.

**The Black Book**

The Black Book is the practice standards suite of guidance being produced by the QS & Construction Professional Group. It consists of approximately 50 guidance notes structured to match APC competencies.

The guidance covers subjects such as lifecycle costing, forecasting and cashflow, and retention. For a summary of the recently published Valuing change guidance note, see page 20.

**Rics standards consultations**

All Rics practice standards are now subject to a public consultation before publication. These play a vital role in ensuring their technical accuracy and quality is maintained.

The consultations are hosted on the iConsult online platform, where members can comment on the whole draft document or on individual sections. A typical consultation will last one month, after which all comments are presented to the relevant working group for consideration before an update is produced.

**Ecobuild your future**

Rics is a lead supporter at Ecobuild 2011 taking place at London’s Excel from 1-3 March. As the world’s biggest event for sustainable design and construction, its conference programme comprises over 600 world-class commentators, including Rics members. Visit us at stand N500.

**How would you like to receive your journal?**

More than 4,000 members have now signed up to receive their journals as downloadable pdfs instead of paper publications.

By updating your preferences you will receive regular email alerts when the latest pdfs of your chosen journals are available electronically. While helping us reduce our carbon footprint, you will receive the same technical information, but in a format you can access at your convenience and read online or download.

**Free International Legal Helpline**

Pinsent Masons and RICS are planning to launch a free international legal helpline service that covers all international forms of contract. It will be available in Europe, Asia and Africa and will be serviced via the law firm’s own international offices or through its alliance with Salans.

Experts will be available for a free 30-minute telephone consultation to RICS members who have any construction-related legal query, when they can either supply advice to assist members reach an early cost-effective resolution, or support them in deciding on an appropriate strategy.

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New rules, new opportunities

The Measurement Initiative has been driven by the supply/client side of our industry, says Stuart Earl, and the New Rules of Measurement (NRM) will provide a set of rules that complete the cost management lifecycle.

We are now into the fourth year of what has arguably been the most ambitious project ever to provide updated RICS guidance to all those involved in measuring building work.

This task has always been at the heart of what QSs do, but in recent years its status as a service has been allowed to diminish – even among its own practitioners.

The aim of the RICS Measurement Initiative is to invigorate this discipline and to modernise the existing standards that many have been used to working with. In addition, it has sought to close the disjointed way that we have measured for Cost Planning and for Bills of Quantities, and also begin addressing a common standard for the cost planning and procurement of replacement and maintenance work.

At the heart of the Measurement Initiative has been a simple message: “If you want to be able to compare costs (at any level) then you have got to have measured to a common standard.”

This sounds like a blindingly obvious statement, but a complete lack of industry understanding as to how construction cost data has been derived has often led to misunderstanding and misinterpretation of those costs. It must also be remembered that the Measurement Initiative has been very much driven by the supply/client side of our industry – it is they who are looking for the consistency, accuracy and detail in the way that we produce cost data for them.

At the heart of the Measurement Initiative are three volumes:
- NRM1 – Rules for order of cost estimating and elemental cost planning (see page 10)
- NRM2 – Rules for works procurement
- NRM3 – Rules for maintenance and operation cost planning and procurement

When the suite of documents is completed, we will have a set of rules that complete the cost management lifecycle, i.e. at any point in a building’s life we will have a set of rules for measuring and capturing cost data (see Figure 1).

NRM1 provides us with the rules as we budget and design our buildings. NRM3 will provide us with the rules for maintaining and operating our buildings. Finally, NRM2 will be a supporting set of detailed measurement rules that will enable us to buy work either through Bills of Quantities or Schedules of Rates (if that is what is required) for either capital or maintenance projects.

Figure 1 – The suite of NRM documents
Another way to look at these rules is that NRM1 is for capital expenditure (CAPEX) and NRM3 is for operational expenditure (OPEX). Ultimately, all the rules will align with the BCIS Standard Form of Cost Analysis (SFCA) because, in creating a set of rules for measurement, we are also creating a new set of rules for cost analysis.

Innovations we brought to the development of early drafts were the use of Lead Technical Authors and the extensive use of consultation meetings. In addition, the creation of the online Measurement Community has allowed other surveyors to read and provide comments on draft documents as they have been developed. The intention, ultimately, is to produce rules that have been extensively peer reviewed long before they are formally published as guidance.

Timed to perfection
While NRM2 and 3 are planned to be formally launched by mid-2011, NRM1 has been in formal existence as guidance since March 2009. The timing of the launch of NRM1 could not have been better planned – as we continue in these difficult economic times, the creation of the NRM provides us all with the tools for cost management that are so eagerly sought after by clients both in the public and private sector. In fact, clients and other professionals are increasingly paying more attention to the possibilities that the NRM can now bring to them.

However, as a profession we cannot afford to relax and the uptake of NRM1 has at best been rather varied. Unfortunately, there remains a huge degree of misinterpretation as to what the NRM are all about, which has led to an underselling of their benefits to our clients.

Too many Qs see measurement as a one-off activity at the end of a design period. This may be true for the production of a Bill of Quantities, but this is not how the NRM are intended to be applied to the activities of estimating and cost planning. Cost planning, in particular, is an iterative process and the rules should be at the heart of controlling costs as the design is developed and as the clients develop a clear set of rules for doing this work. This is exactly what the profession needs if we are to maintain our status as independent cost advisors in the face of increasing competition from other professions.

We do not want to find ourselves ultimately as a profession who are sub-consultants to accountants or management consultants.

Looking ahead then, it is important for all surveyors to embrace the opportunities that the NRM suite provides to us. It is an opportunity to place ourselves at the heart of our client’s teams and not be some sort of bystander or passenger. From a client’s perspective, the NRM provides an opportunity to deliver a more consistent service by the whole team and ultimately to deliver more cost certainty in budgeting projects before they are tendered.

What we should all be doing is encouraging our clients to use the tools within the NRM and to embed them into their own delivery systems. For example, clearly defining the design deliverables at each RIBA Stage/OGC Gateway is a simple way for clients to ensure they get the design that they are paying for. It also helps the surveyor as they should be getting the best design information made available at any point in order for them to give more accurate cost advice.

Another misconception is that the quantification of building work, and therefore NRM1, is entirely the domain of the QS. This is simply not the case. Anyone who is involved in the delivery of building works (particularly costs) should be looking at how they can use these rules. Certainly there is an opportunity to educate the designers as to what we are all trying to achieve during the estimating and cost planning stages and how we can use these rules to all work together as a team.

Reinvigorated education
On a more positive note, we have seen more universities reinvigorating their cost planning and measurement courses as a result of the publication of NRM1. As a profession, we have now, finally, clearly set down exactly what we are trying to do in producing an Order of Cost estimate or Cost Plan. In fact, when you see the marked differences in some historic Cost Plans and the frustrations shared by some clients, you do wonder whether we surveyors actually fully understood what they were all trying to collectively achieve.

We are also seeing a greater understanding by graduates/trainees as to how estimating and cost planning is carried out as the NRM now gives them a clear set of rules for doing this work. This is exactly what the profession needs if we are to maintain our status as independent cost advisors in the face of increasing competition from other professions. We do not want to find ourselves ultimately as a profession who are sub-consultants to accountants or management consultants.

Looking ahead then, it is important for all surveyors to embrace the opportunities that the NRM suite provides to us. It is an opportunity to place ourselves at the heart of our client’s teams and not be some sort of bystander or passenger. From a client’s perspective, the NRM provides an opportunity to deliver a more consistent service by the whole team and ultimately to deliver more cost certainty in budgeting projects before they are tendered.

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Related competencies include: T010, T017, T062, T074

Too many Qs see measurement as a one-off activity at the end of a design period. This may be true for the production of BoQs, but this is not how the NRM are intended to be applied.
Exemplary best practice

David Benge revisits the RICS New Rules of Measurement and explains why their use demonstrates a responsible approach to the cost management of construction projects

The RICS New Rules of Measurement: Order of cost estimating and elemental cost planning (NRM1) represents the essentials of good practice, forming the ‘cornerstone’ of good cost management of construction projects. They enable effective and accurate cost advice to be given and facilitate better pre- and post-contract cost control. Consequently, the use of the rules demonstrates a responsible approach to the cost management of construction projects. They form part of a suite of measurement rules to support the cost management and procurement of construction projects from cradle to grave (see page 8).

The strategic objectives of NRM1 are to:

1. Present a clear structured framework for the co-ordination and development of cost estimates and cost plans.
2. Provide a standardised approach to measurement at the estimating and cost planning stages of a project.
3. Introduce formal estimating stages aligned to both the RIBA Plan of Work and the OGC Gateway Process.
4. Define the information required by cost managers to produce cost estimates and cost plans at each formal estimating stage.
5. Define the main contractor’s preliminaries, which can be used for any procurement or contract strategy.
6. Highlight the importance of the cost manager’s responsibility in the risk management process, particularly when determining and setting risk allowances.
7. Give guidance on dealing with non-construction-related costs.
8. Prompt consideration of VAT, taxation and incentives.
9. Foster clear and effective communication between cost managers, the employer and other team members.
10. Support learning of measurement and construction – used as a framework to foster a learning culture, the rules will help those new to the quantity surveying/cost management profession, promote common sense and facilitate continuous improvement.

Benefits

First and foremost, NRM1 exemplifies best practice. They provide the basis for improved accuracy of estimating and better cost advice that will help establish more effective cost control systems and procedures to instil greater employer and project team confidence.

The rules are not restrictive, but provide a simple yet powerful toolkit for managing costs. They provide:

• a uniform cost estimate and cost plan structure
• a uniform approach to measurement and quantification
• risk allowances based on a properly considered assessment of the cost of dealing with risks should they materialise – dispensing with the use of the widely mis-managed concept of contingency
• greater transparency of cost estimates and cost plans
• a framework for effective cost control
• a framework for codifying cost plans so they can be converted to works packages for procurement, and cost management during construction
• a learning system.

In addition, the rules consider the total costs of construction (see Figure 1) providing guidance on identifying and managing non-construction-related costs such as consultants’ fees and other development and project costs (e.g. the cost of acquiring land and property, fees and charges, planning contributions, decanting and relocation costs, marketing costs and the cost of finance).

In times of austerity, use of the rules to frame estimates and cost plans will give greater confidence to banks and other lenders that requests for funds have been properly considered.

Perceptive practitioners will also observe the opportunities that the rules provide to promote additional services to those traditionally provided by QoSs.

Industry response

On the whole, receipt of the rules by all interested parties has been extremely positive. Moreover, while based on UK practice, the rules have been adopted by some QoSs/cost managers internationally.

Most QoSs/cost managers have welcomed the structured and co-ordinated approach, while some practices have even taken the initiative and developed computerised cost planning and reporting systems that correspond with the rules. More importantly, however, the benefits are beginning to be understood by those organisations wishing to build, which has resulted in a number of customer organisations instructing their consultants to prepare cost estimates and cost plans in accordance with the rules. This uptake appears to be steadily increasing.

Risk management and NRM1

In addition, many QoSs have welcomed the departure from the non-specific use of contingencies to the more meaningful application of risk allowances. However, it is still evident that many other QoSs remain reluctant to consider the consequences of potential risks on construction projects. Common excuses, and my responses, include:

1. The process takes time and costs money: Proper application saves time (allows early action and planning) and saves money (reduces unexpected costs).
2. Responses cost money: Responses (e.g. on exploratory investigations) are an investment in the future, i.e. spending to save or spending to gain.
3. Risk management doesn’t work: Do it properly and it will be effective.
4. Risk management is just scaremongering: Finding the real risks (uncertainties that matter) should always include the positives (opportunities).
5. Managing issues is more fun: You should develop KPIs that measure the effectiveness of risk management and reward those who do it properly (e.g. through the contract conditions).
6. It’s too late: It is never too late; failing to identify risks doesn’t make them go away.
7. **Too busy dealing with issues**: Risk management will "prevent" issues, so starting the process will make for a better future.

8. **It’s just common sense**: It isn’t to everyone. The NRM1 framework of risk management will help those with less common sense.

9. **Can’t prove it works**: The benefits are demonstrable and can be shown by emphasising the management opportunities.

NRM1 advocates a considered approach to the setting of risk allowances through the use of risk management, which has both soft and hard benefits. The soft benefits of risk management include:

- it demonstrates a responsible approach to our clients
- improved communication
- leads to common understanding and improved team spirit
- helps distinguish between good luck/management and bad luck/management
- helps develop the ability of those involved in the project to assess risks
- focuses attention on the most important issues.

The hard benefits of risk management include:

- enables better-informed and more believable budgets
- increases the likelihood of a project adhering to its budget
- leads to the use of the most suitable procurement and contract strategy
- allows for a meaningful assessment of risk allowances
- discourages the acceptance of financially unsound projects
- enables a more objective comparison of alternatives
- identifies and allocates responsibility to the best risk owner.

Risk management is not a passive activity and there is a cost associated with the ‘up-front’ risk process, i.e. the cost of assessing and quantifying risk. Moreover, risk responses inevitably cost money but failing to respond to risk through planned response activities will mean that risks go unmanaged, the risk exposure will not change and the risk management process will be ineffective.

However, when applied properly, risk management will save time and money, and will help provide greater cost certainty. It is the responsibility of the QS/cost manager to advise their customers of the benefits of effective risk management – not doing so is remiss and does not demonstrate a responsible approach to cost management.

NRM1 was published in March 2009, and became effective as RICS best practice on 1 May 2009. Edition 2 is due for publication in spring 2011 and amendments have been made to align the NRM1 and the BCIS Standard Form of Cost Analysis. New editions of both documents are to be published, with the latter likely to be renamed the BCIS New Standard Form of Cost Analysis, and incorporated into the NRM suite.

**The challenge**

The QS/cost manager is tasked with controlling construction cost by accurate measurement of the works. This needs changes in working practices and culture and, in particular, a significant change in emphasis towards:

- being more professional in the preparation of early stage estimates and cost plans – unsystematic and unplanned estimates and cost plans are becoming less acceptable to customers
- effective communication of cost targets (and what they comprise)
- proper risk management, with risk allowances based on a properly considered assessment
- providing transparency of cost estimates and cost plans.

NRM1 contends with these challenges. Now it is for QSs/cost managers to put into operation the best practice guidance afforded by the rules, and demonstrate a responsible approach to the cost management of construction projects.

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For regular updates on the New Rules of Measurement, visit www.rics.org/nrm

The RICS New Rules of Measurement: Order of cost estimating and elemental cost planning can be downloaded from www.rics.org/guidance

Related competencies include: T010, T017, T022, T074, T062, T066, T077
Health and safety

Accidents waiting to happen

Improving workplace safety is not just about better policies and systems, says Richard Pound, it’s about getting people to speak up – especially when it’s uncomfortable to do so

Construction is one of the UK’s most dangerous industries, despite a fall in the number of workplace injuries in the last few years. There were 42 fatal injuries to construction workers in 2009/10, down from 52 the year before. The rate of fatal injury per 100,000 construction workers decreased from 2.5 in 2008/09 to 2.2 in 2009/10 (HSE October 2010).

As we endeavour to improve workplace safety, most of the focus in organisations today is on improvements in areas such as equipment, policies, systems and training. While this has led to what seems to be a positive trend, most of us would agree that this number of injuries is still unacceptable. The question is therefore, how can we continue to drive improvements in our aim for the holy grail of ‘zero harm’?

The premise of some recent research, Silent Danger: The Five Crucial Conversations that Drive Workplace Safety, was that these improvements in formal tools and methodologies were unable to address the behavioural issues that were the root cause of workplace injuries and accidents.

Interviews and surveys were conducted among more than 1,600 employees from more than 30 firms across the globe, including those in construction. The research revealed that the ugly secret behind most workplace injuries is that someone is aware of the threat well in advance, but is either unwilling or unable to speak up. These are the ‘accidents waiting to happen’.

Teams at risk

We discovered five ‘crucial conversations’ that exist in most organisations that are either politically incorrect to discuss or very uncomfortable for people to speak up about. Some 93% of employees say their team is currently at risk from one or more of these five ‘accidents waiting to happen’. In fact, nearly half are aware of an injury or death caused by these workplace dangers.

The five conversations that drive workplace safety are:

1. Get it done. Unsafe practices that are justified by tight timelines.
2. Undiscussable incompetence. Unsafe practices that stem from skills deficits that can’t be discussed.
3. Just this once. Unsafe practices that are justified as exceptions to the rule.
4. This is overboard. Unsafe practices that bypass precautions considered excessive.
5. Are you a team player? Unsafe practices that are justified for the good of the team, company, or customer.

The ugly secret behind most workplace injuries is that someone is aware of the threat well in advance, but is either unwilling or unable to speak up.
1. Get it done
According to the study, 78% of respondents see their colleagues take unsafe shortcuts and 19% can cite an injury or death caused by one of these unsafe shortcuts. One respondent illustrates what can happen when jobs are rushed and rules avoided:

“When a welder tripped on a bleach hose, broke the nozzle, and was burned, the Emergency Response Team quickly shut off the valve. The crate tipped over and the supervisor came down hard, ripping his protective suit and getting an even bigger burn than the welder had received.”

Despite grave consequences, when it comes to speaking up, 75% of the workforce believe these common and risky shortcuts are undiscussable.

2. Undiscussable incompetence
65% of respondents see their colleagues create unsafe conditions due to incompetence and 18% can cite an injury or death caused by this. One respondent describes the risks of incompetence:

“Some people just don’t get it. For example, when blocking a line, they’ll just kink it rather than putting on a squeeze. The problem is that kinking the line could cause a static ignition. It caused a fire out on the coast. One guy told me he thought static electricity works different here because we’re inland. One of these days, someone is going to get themselves burned.”

When it comes to incompetence, only 26% say they can speak up and share their concerns with the person who is putting the team at risk.

3. Just this once
More than half of the survey respondents (55%) see their colleagues make unsafe exceptions in an attempt to correct mistakes or salvage opportunities. For example:

“We had to change out one of the catalysts. When we swapped it out, we put the wrong catalyst in and had to redo the job. This required moving a 150kg cover. This is a job for a crane, but since we were trying to correct our mistake, we decided to remove it with a forklift. This was obviously against the safety protocol. We ended up dropping the cover, nearly crushing our maintenance guy.”

When it comes to making exceptions to rules and policies, only 25% of people are willing to speak up and share their real concerns with the person who is putting the team at risk.

4. This is overboard
When new safety rules are introduced to deal with new risks, the old ways of working are unfortunately difficult to change. According to the study, 66% of respondents see their colleagues violating safety precautions they’ve discounted as being ‘over the top’ or unnecessary, while 22% can cite an injury or death caused by these violations. For example:

“One guy fell off his ladder and now we have a new ladder policy. You are always supposed to have someone hold the ladder and once you reach the top, you’re supposed to always tie the ladder off. Well, even though policy has changed, not many of us follow it. I’d say 75% of us still do it the old way. There’s not much danger in it. We’re trained professionals. We know what we’re doing.”

When people dismiss new rules and procedures, close to three out of four either say nothing or fall short of speaking up candidly to share their real concerns.

5. Are you a team player?
According to the survey, 63% of respondents see their colleagues violating safety precautions “for the good of the team, company, or customer.” And as a result, 17% can cite an injury or death caused by these violations. One respondent shares his experience:

“Sometimes we’re expected to go into manholes with energised cables. This is not a safe practice and it’s not in line with our policy, but our only alternative is to turn the power off, which would make our customers angry and wouldn’t fly with management. So I go in and do the work anyway. It’s my job to get the power on and that’s what I’ll do. I’m not going to wimp out.”

To save face, keep customers happy or meet expectations, only 28% say they speak up and share their concerns with the person who is putting the team at risk.

People who feel able to confront and resolve potential problems they see take action and make the environment safer for everyone

These five undiscussables account for a vast number of accidents waiting to happen. It’s not that the people who remain silent don’t care, but the research confirms that while employees saw and recognised threats, they found it very difficult to address these threats with the person concerned to prevent injury or death. In fact, when employees saw one of these five threats, the research finds that only 25% spoke up and said or did anything to prevent the accident from occurring.

And yet, what was observed wasn’t bystander apathy, it was more like bystander agony – employees describe themselves as “holding their breath,” “feeling tortured as they watched” and “not able to watch” as their colleagues put themselves and others in danger.

Notice, however, that none of these conversations are actually undiscussable. There is always a minority, ranging from 25-28%, who speak up effectively and address the unsafe situation. These few individuals have a big impact: 63% of the time they create a safer situation.

This correlation makes sense. People who feel able to confront and resolve potential problems they see take action and make the environment safer for everyone. One of the key ways they did this successfully was by raising the issue in a way that essentially motivated the other person to behave differently based on the natural consequences of their behaviour – for example, putting others on site at risk. Those who use this tentative approach, and other ‘crucial conversations’ skills, find that their colleagues are more willing to listen and solve the problem. So the problem is not that speaking up doesn’t work, it’s that speaking up doesn’t happen.

What can you do to change this?
So what will it take to move your organisation from risky silence to a culture of candour and accountability? Overleaf are best practices that safety directors and managers can follow to both address these issues when they face them, as well as build system-wide organisational competence at resolving them.
A – Bang the drum
These crucial issues are so common that most safety managers have stopped seeing them. Managers should not expect to improve their organisation’s competence at speaking up about the safety risks without first making them visible. Sharing the data in this article is a great way to draw attention to the crucial nature of these issues and start a dialogue around how to build a culture of accountability.

B – Baseline and measure regularly
Organisations who are serious about building accountability regularly survey how well people are doing at addressing these kinds of crucial issues.
A survey can be requested at www.vitalsmarts.com/safety for this purpose. These surveys draw attention to a) the existence of the five issues in your organisation; and b) whether they are being adequately discussed and addressed.

C – Invest in skills
Most safety managers and front-line construction workers lack the confidence to address these politically sensitive issues because they don’t know how to lead or hold such risky discussions. The research shows that organisations with strong cultural norms of candour invest substantial resources in training their employees to speak up skilfully during these crucial moments. Real progress in creating a culture of accountability begins by addressing this ability gap. Individuals need to be trained in how to speak up about these emotionally and politically risky issues in a way that will work.
The research shows that there are a handful of people in your organisation who are already speaking up and preventing accidents from occurring around them. Training the silent majority in this same skill set is a powerful way to ensure the culture changes to one where everyone speaks up.

D – Target the six sources of influence
Once you’ve taught your staff the key skills, increase the success of this training by ensuring that the skills and behaviours are adopted by targeting six sources of influence that both motivate and enable your employees to change (see Under the influence, page 22, Construction Journal, April/May 2009 for an article on soft skills and influencing behaviours). When used appropriately, this influence process will increase your chances of a successful culture change tenfold. See Figure 1 for a summary of the six different sources of influence which identify the many causes behind people’s behaviours.

E – Reward
Finally, directors should highlight and reward people who take a risk and raise these five conversations in their role. Often, people do not speak up because they have experienced negative consequences from doing so in the past. The key to getting 100 people to speak up is to publicly reward the first one who does.

Those organisations with strong cultural norms of candour invest substantial resources in training employees to speak up skilfully during these crucial moments.

Nobel laureate Elie Wiesel once said “All that is needed for evil to triumph is for good people to say nothing.” It turns out that a culture of silence has created an unintentional collusion that contributes to death and injury every year on construction sites. The future of safety – not to mention the futures of all the workers who will otherwise be injured – cannot be secured without a deep change in people’s ability to step up to and hold the necessary crucial conversations. It is a change in behaviour that can leave your organisation twice blessed – with a safer and more productive workplace.

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Related competencies include: M008, SP002, T064
Continuing his series of articles arising out of common queries submitted to the free RICS Legal Helpline Service, Kevin Joyce looks at a QS’s role and the extent of his duties in relation to defective works

Q
I am preparing an interim valuation for a commercial office project procured under a JCT05 contract. I’m concerned, however, that works carried out by the main contractor may contain defects which have not yet been identified by the architect. If I value the works without identifying and accounting for any potential defects, will I be liable to the employer for over-certification? Do I owe the employer a duty of care to identify defects and only value works properly executed in accordance with the contract?

A
A QS is responsible for valuing quantities, but it is easy to see how this role might, in some cases, overlap with issues concerning quality.

As a general principle, the QS should not include defective works in his valuation. The difficulty is how to determine which works are defective. Is he entitled to rely upon being informed by the architect, or must he carry out his own inspections and investigations before being able to properly value the works?

In Hudson’s Building & Engineering Contracts the authors suggest that there is no reason why a QS should not be liable to an employer where he has valued the works but not accounted for defects that are so glaring that they should have been seen in the course of valuation inspections, as well as by the architect.

However, the recent case of Dhamija and another v Sunningdale Joineries [2010] EWHC 2396 (TCC) has clarified the QS’s role and the limits of the duty of care he owes to the employer.

Dhamija should serve as a reminder that the duty of QSs is to assess quantity only and that issues of quality should be left to the architect.

Mr and Mrs Dhamija commissioned a contractor, architect and QS to build a residential property in Virginia Water, Surrey. As often happens, the QS didn’t enter into a written contract with the Dhamijas, but was appointed through an exchange of correspondence and by his conduct in carrying out periodic valuations. Following completion of the building works, a dispute arose regarding over-valuation and defective works.

The Dhamijas claimed that the QS owed them a duty to “only value work that had been properly executed by the contractor and was not obviously defective”. The QS denied such a positive duty existed. The court had to consider the extent of the QS’s role and whether such a term, in the absence of a written contract, was to be implied.

The court decided:
- the QS had an implied duty to act with reasonable skill and care*, and to check quantities of work when valuing the contractor’s works for the purpose of issuing interim certificates
- the QS was not under a positive duty to not value work that was obviously defective.

The court explained that the implication of such a positive duty would have “turned the usual position on its head” by requiring the QS to inform the architect about defective works, so making the QS responsible for quality as well as quantity.

The court confirmed that the architect is solely responsible for assessing the quality of the works and must either confirm to the QS that the works have been properly completed and are free of defects or notify them of the defects affecting the valuation. This confirmed the position first established 40 years ago in the case of Sutcliffe v Chippendale (1971) 18 BLR 149.

Practical tips
This is welcome news for QSs and confirms the widely-held views on the segregation of professional roles on a project. But what can the profession learn from this decision?

- Dhamija should serve as a reminder that the duty of QSs is to assess quantity only and that issues of quality should be left to the architect
- QSs can continue to raise any quality concerns that they have with the architect on the basis of good practice, but are under no legal obligation to do so.
- members of the professional team should, however, still talk to each other about defects and nothing in the Dhamija decision suggests otherwise.

It is important to note that Dhamija concerned implied duties where there was no written contract. Parties are free to negotiate a higher duty of care in a contract and QSs should bear in mind that written forms may impose a higher obligation than the common law standard.

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To use the free Legal Helpline Service, email your query to beg@rics.org

* See the article on reasonable skill and care, page 15, Construction Journal, Nov/Dec 2010, www.rics.org/journals

Related competencies include: M006, T016, T017, T067, T074
Crossrail is the new high frequency railway for London and the South East. It will deliver substantial economic benefits in London, the South-East and across the UK. The estimated benefit of Crossrail to the UK economy is at least £42bn (Transport for London (TfL) figures, Aug 2010).

Government support for Crossrail was reiterated in October 2010’s Comprehensive Spending Review (CSR) and the project will now deliver around £1bn of savings over the pre-CSR budget of £15.9bn. When the 118km route opens in 2018 it will include 37 stations and will link Heathrow Airport, the West End, the City of London and Canary Wharf. The Crossrail service will travel from Maidenhead and Heathrow in the west to Shenfield and Abbey Wood in the east, via 21km of new twin tunnels under central London.

When Crossrail opens it will increase London’s rail-based transport network capacity by 10%, supporting regeneration across the capital, helping to secure London’s position as a world leading financial centre, and cutting journey times across the city. It will bring an additional 1.5 million people within 45 minutes commuting distance of London’s key business districts.

**Progress so far**
Crossrail Ltd (CRL) was established in 2001 to manage and implement the Crossrail project and has grown from 400 people in the planning stages to an organisation of over 2,000 employees today. CRL is a fully owned subsidiary of TfL and its obligations are described in the Crossrail Project Development Agreement.

Royal Assent was granted to the Crossrail Act in July 2008, which gives authority to build the railway. Design is the most advanced part of the project, with all contracts awarded and well progressed including bored tunnels, shafts, stations, and communication and control system design.

The Crossrail project works began in May 2009 at the Canary Wharf Station site – inaugurated by London Mayor Boris Johnson and former Prime Minister Gordon Brown. There are a significant number of sites across London that have preparatory works underway including Pudding Mill Lane near the Olympic Park in Stratford, Royal Oak Portal and Paddington Station.

The concept of achieving ‘best value’ for money from major projects is relatively simple to define… but has often proved difficult for clients to achieve.

Canary Wharf Station, and its retail and park areas, will be six storeys high – roughly the size of One Canada Square, Britain’s tallest building, laid on its side.
The best value challenge
The concept of achieving “best value” for money from major projects is relatively simple to define at business case level but has often proved difficult for clients to achieve in practice. CRL has committed to the delivery of “best affordable value”, which means delivering all of the high level Crossrail objectives within budget. CRL’s reference to affordability within its definition of best value recognises that delivery within budget is an absolute prerequisite to value.

For large and complex projects there are many factors that will combine to influence the delivery of best value, including: leadership; clarity of objectives and priorities; the delivery strategy; the organisation and people; governance and technical processes; and corporate values.

Regarding procurement, CRL is concentrating on removing anything that contributes to poor value and has identified policies that will support the delivery of best affordable value. These have been formed into 35 Key Policy Principles that form the basis of the CRL Procurement Policy (published on the Business Opportunities, Policies & Procedures page of www.crossrail.co.uk), some of which are worth further discussion.

Optimised Contractor Involvement (OCI)
This has been developed specifically for Crossrail and builds on lessons learned from Early Contractor Involvement approaches developed by other major clients, including the Highways Agency and BAA. OCI aims to encourage good ideas to reduce cost and deliver best affordable value by involving contractors and suppliers as early as possible prior to construction or manufacture phases. For example, we will be involving contractors in the finalisation of the CRL designs in the major works packages, such as the running tunnels and six central section stations.

Use of NEC3 contracts
CRL is using NEC3 as the standard for delivering Crossrail. Most CRL contracts will be Option C Target Price contracts, although some will be Option A Lump Sum contracts. The choice will depend on the scope of work, the maturity of the design and the nature of the risks.

Optimised Contractor Involvement aims to encourage good ideas to reduce cost and deliver best affordable value by involving contractors and suppliers as early as possible.
The NEC3 suite of contracts is endorsed by the OGC (now the Efficiency and Reform Group) for use by public sector construction clients and it is TfL’s contract of choice. The NEC3 suite of contracts also supports CRL’s approach to delivering contracts based on collaborative working supported by a fair allocation of risk.

The NEC3 contract is often modified to change the risk balance in favour of the client. CRL will aim to keep any necessary additional Z clauses to a minimum to operate in the manner envisaged by the NEC contract. We will use the contract to deal with matters promptly as they arise. For example, we will not be deleting ‘deemed acceptance’ provisions where the parties fail to meet the various deadlines for their respective actions.

Award on the basis of most economically advantageous offers
CRL will award contracts on the basis of the most economically advantageous offers and not lowest price. Government policy is not to use lowest price tendering although some clients are now reconsidering this route, risking repeating the mistakes of the past by confusing tender price with outturn cost. It has been well established that awarding contracts on the basis of lowest price tenders often results in unrealistically low tenders and encourages adversarial behaviours as the contractor seeks to recover costs through claims and disputes.

Fair payment
It is taking too long for fair payment to take hold across the industry and major clients must take the lead to help drive the changes that are needed. Certainty over payment in the supply chain builds trust within teams and underpins collaborative working that helps to deliver best value. CRL will implement fair payment practices across the supply chain. The Crossrail Fair Payment Charter forms part of the Works Information in CRL contracts and requires contractors to establish processes and systems to meet a set of “Fair Payment” commitments. This includes committing to all contracts providing for payment periods not exceeding 30 days, which is further supported by project bank accounts on the larger work packages.

Supply chain management
Using the NEC3 Option C cost-based contracting form for major Crossrail works means the performance of the supply chain is

Good quality supply chain intelligence… will develop CRL’s understanding of the supply chain and help us manage risks and develop plans that support efficient working.

Much of Whitechapel Station is above ground to make use of natural daylight and ventilation
Certainty over payment in the supply chain builds trust within teams and underpins collaborative working that helps to deliver best value.

paramount. Our aim is to deliver Crossrail using an informed, visible and efficient supply chain.

An informed supply chain will understand our policies, the opportunities available and how to get involved in the Crossrail programme. Being informed will enable the supply chain to efficiently plan for, and respond to, Crossrail opportunities. Good quality supply chain intelligence from various sources (including direct feedback) will develop CRL’s visibility and understanding of the supply chain and help us to manage risks and develop plans that support efficient working.

Regarding supplier engagement, we are working closely with industry trade associations – such as the Specialist Engineering Contractors’ Group, Civil Engineering Contractors Association, Construction Products Association, Rail Industry Association and prospective suppliers – to understand the market appetite for, and gain feedback on, our proposals before they are finalised. This process of engagement helps to ensure that our procurement plans lead to healthy and efficient competitions.

Towards our aim of an informed supply chain, we have published a Supplier Guide to help interested suppliers find out more about the Crossrail programme and how to become part of the CRL supply chain. In conjunction with the Supplier Guide, we also publish a schedule of current opportunities, this includes tender list and contract award information to assist SMEs with planning and marketing.

The ability of all tiers of the supply chain to perform well is crucial to us and CRL takes a keen interest in how contractors engage with their supply base. CRL requires Tier 1 contractors to advertise all appropriate opportunities on www.competefor.com, which allows businesses, particularly SMEs, to access the wide range of opportunities generated by Crossrail. We are acutely aware of the fact that our project relies on a competitive and successful supply chain and share a proportion of the risk of their failure.

**Best affordable value**

Delivering best affordable value is important to any client but on a project the scale of Crossrail it is crucial. CRL has set out to be an informed and realistic client, building on the lessons of the past and developing new practices, particularly around supply chain engagement.

I am aware that some clients are choosing to ignore past mistakes and are reconsidering ill-conceived approaches, such as lowest price tendering for complex projects. These are not sustainable and in our approach to delivering best affordable value we have concentrated as much on avoiding the common causes of failure as developing new approaches to procurement.

Martin Rowark is Head of Procurement at Crossrail Ltd
Follow the leader

Andrew Smith outlines the *Valuing change* guidance note and discusses some of the problems that occur when QSs don’t follow contractual valuation rules

Change is a part of modern life and construction contracts are no exception. Standard forms of contract have procedures for dealing with change and it is surprising that some contract administrators and QSs, both from the supply and purchase sides of the industry, do not operate these procedures as they are intended. The result can often be that there are unacceptable levels of unagreed changes which can lead to disputes or unnecessary negotiated settlements.

The *Valuing change* guidance note summarises what is meant by ‘change’ and how it is valued under JCT, NEC and FIDIC forms of contract.

It is written with both the APC candidate and the experienced practitioner in mind. It is structured to map to the APC competencies, but it aims to be a useful aide-mémoire and day-to-day reference source for the experienced Chartered Surveyor. It comes with the status of RICS guidance, and therefore members should ensure that when they depart from the good practice recommended they should do so only for good reason.

### What is change?

Change is given specific definition within standard forms of contract; for example, a Variation, Change of Employer’s Requirements or a Compensation Event. Each of these terms is defined in the relevant contract conditions. However, they will all have a common theme and be associated with valuing either:

- the carrying out of a different scope of work (addition, alteration or omission)
- the effect of carrying out the same scope of work in a different manner (timing, conditions, etc).

Figure 1 summarises the standard forms reviewed in the guidance note.

### How is change valued?

There are many consistent principles of valuing change across the range of contracts. Most forms of lump sum contract, i.e. a contract which is neither measured as the works proceed nor based on a cost-reimbursable arrangement, have some common basic principles:

- additions to, and omissions from, contracted works are valued by quantifying the change of scope and using rates and/or prices for identical or similar work as the basis of valuation
- effects on preliminaries, risk allowances, design fees, overheads and profit, etc, should be considered as appropriate for the circumstances
- when work is not identical or similar, rates and/or prices for other work in the contract are used as

<table>
<thead>
<tr>
<th>Contract title</th>
<th>Generic type</th>
<th>Basis of quantification</th>
<th>Description of change</th>
</tr>
</thead>
<tbody>
<tr>
<td>JCT Standard Building Contract without Quantities</td>
<td>Traditional</td>
<td>Lump Sum</td>
<td>Variation</td>
</tr>
<tr>
<td>JCT Standard Building Contract with Quantities</td>
<td>Traditional</td>
<td>Adjustable</td>
<td>Variation</td>
</tr>
<tr>
<td>JCT Standard Building Contract with Approximate Quantities</td>
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<td>JCT Intermediate Building Contract</td>
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</tr>
<tr>
<td>JCT Minor Works Building Contract</td>
<td>Traditional</td>
<td>Adjustable</td>
<td>Variation</td>
</tr>
<tr>
<td>JCT Design &amp; Build Contract</td>
<td>Design &amp; Build</td>
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<td>Change</td>
</tr>
<tr>
<td>JCT Major Project Construction Contract</td>
<td>Design &amp; Build</td>
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<tr>
<td>JCT Intermediate Building Contract with Contractor’s Design</td>
<td>Design &amp; Build</td>
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<td>Variation</td>
</tr>
<tr>
<td>JCT Minor Works Building Contract with Contractor’s Design</td>
<td>Design &amp; Build</td>
<td>Lump Sum</td>
<td>Variation</td>
</tr>
<tr>
<td>NEC Option A – Priced Contract with Activity Schedule</td>
<td>Traditional/ Design &amp; Build</td>
<td>Lump Sum</td>
<td>Compensation Event</td>
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<tr>
<td>NEC Option B – Priced Contract with Bill of Quantities</td>
<td>Traditional/ Design &amp; Build</td>
<td>Adjustable</td>
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<tr>
<td>NEC Option C – Target Contract with Activity Schedule</td>
<td>Traditional/ Design &amp; Build</td>
<td>Target Cost</td>
<td>Compensation Event</td>
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<tr>
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<td>Target Cost</td>
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<td>Cost-reimbursable</td>
<td>Compensation Event</td>
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<tr>
<td>NEC Option F – Management Contract</td>
<td>Traditional/ Design &amp; Build</td>
<td>Cost-reimbursable</td>
<td>Compensation Event</td>
</tr>
<tr>
<td>FIDIC Conditions of Contract for Construction</td>
<td>Traditional</td>
<td>Lump Sum</td>
<td>Variation</td>
</tr>
<tr>
<td>FIDIC Conditions of Contract for Plant and Design-Build</td>
<td>Design &amp; Build</td>
<td>Lump Sum</td>
<td>Variation</td>
</tr>
</tbody>
</table>

Figure 1 – The standard forms reviewed in the guidance note
It is necessary to review preliminaries to assess the contract, unless set up on a cost-reimbursable basis as a last resort, when a ‘fair’ rate or price cannot be identified due to special circumstances, work is valued on the basis of the time taken and resources used to complete it. This may be a ‘daywork’ valuation.

NEC contracts generally value change on the basis of Defined Cost, based on the Schedule (or Shorter Schedule) of Cost Components. Under some options, the contractor and the PM can agree to value change on the basis of rates and lump sums, in lieu of Defined Cost. The NEC generally provides a more objective set of valuation tools.

So, what’s the problem?
Sometimes QSs do not follow the valuation rules that exist within the forms of contract they are operating. There is a tendency to rely on quotations from the supply chain (as opposed to the submission of advanced quotations) as evidence of value or resources used, effectively operating a cost-based approach. This can give rise to a series of problems:

- the contract, unless set up on a cost-reimbursable arrangement, will set out a series of steps that allow change to be valued either based on the original lump sum breakdown or from first principles. Even cost-reimbursable arrangements are likely to have a structured basis for assessing cost, as opposed to being purely based on quotations
- quotations will rarely be all encompassing and there are often other factors that the contractor/sub-contractor needs to consider, such as the effect of the change on other work. For example, a change in floor finish may require a different standard of substrate preparation. The floor finish supply cost will be easily identifiable from supplier price data, but other factors such as screed tolerances, movement joints, drying times, etc, will need closer scrutiny
- it is necessary to review preliminaries to assess if allowances are due to be made (in addition or omission) to cater for the impacts of the change. This is not on the basis of the cost of additional preliminaries, but value-based adjustments to contract rates. There should however be evidence provided of additional resources being used, such as prolonged use of staff, additional staff, additional or prolonged attendant labour, plant, access equipment, etc. Adjustment should also be made for risk, design fees, overhead and profit, and any appropriate lump sum items
- even if a quotation does reflect all of the scope of work and conditions of the change, it is unlikely to be the intention of the contract that the contracting parties’ costs are the sum to be paid. It is quite normal that some changes will take place at a loss and others at a profit. The commercial outcome will be dependent on the robustness of the original pricing, together with the manner in which the contracting party organises themselves for efficient delivery
- it is far too common that the basic elements of change valuation are dealt with as Loss & Expense. This becomes payable to the contractor/sub-contractor, on satisfactory demonstration of entitlement in accordance with the Conditions, that direct loss and/or expense has been incurred for which no reimbursement would be made by a payment under any other provision of the Conditions. There are many tools on the QS’s workbench for valuing all sorts of changes to work, the introduction of new work, and effects on other work caused by change. If these tools are used properly, and to their full extent, there are likely to be limited occasions where the contractor needs to seek ascertainment of Loss & Expense.

Use the QS toolkit
The skilled QS has a range of tools to use for valuing change under most forms of main contract and sub-contract. These tools, when used skilfully, ensure that change is fairly and appropriately valued. Proper valuation of change, including a review of potential impacts on preliminaries and other works, will greatly reduce the potential for large Loss & Expense claims and thus the potential for disputes.

The valuation of change requires a set of traditional skills that the QS should be proud to possess. As a profession, we must defend the longevity of these skills by ensuring they are frequently practised and that we provide appropriate technical training to our trainees and graduates. The alternative is that we become a profession reliant on what we are presented by others.

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Sometimes QSs do not follow the valuation rules that exist within the forms of contract they are operating... this can give rise to a series of problems

The Valuing change guidance note can be downloaded from www.rics.org/guidance

Related competencies include: T010, T016, T017, T064, T065, T067, T074
The art of tendering

In his final article on procurement disputes, James Golden looks at how contractors are best placed to win work in the public sector and how they can object to improper or inappropriate procedural issues

In my previous articles*, I summarised the law of procurement and how to handle disputes generally, and then more specifically from a client’s perspective. However, public sector procurement issues have a different complexion from a tenderer’s viewpoint and two issues predominate, i.e. how to:

• place themselves in the best position to win work
• deal with issues whenever they arise.

Winning the work
The Regulations’ touch on the art of tendering in a few ways. They oblige contracting authorities (CAs) to issue contract notices for any work over the latest OGC thresholds and, where possible, to issue pre-information notices. These must contain information related to the value and extent of the work and are essentially requests for interest. Tenderers should have systems to capture these notices, e.g. using internal or external resources to monitor adverts.

The other increasingly popular method is to award it to the most economically advantageous tender (MEAT), which requires some form of marking criteria, i.e. ‘quality’ questions

Complex procurement
The simplest form of procurement is lowest price open tenders, where anyone can apply for the work and the only criteria to succeed is to provide the lowest price (in construction-related procurement this is now relatively unusual). The Regulations allow for more complex procurement systems, including the Negotiated Procedure (Regulation 17) and the Restricted Procedure (Regulation 16). The former is the most popular route to obtain construction work or services. I will assume a Restricted Procedure throughout this article (with a question in the process to establish technical capacity).

Awarding tenders
There are two methods for this. The first is on the lowest price for the specified requirement. The other increasingly popular method is to award it to the most economically advantageous tender (MEAT), which requires some form of marking criteria, i.e. ‘quality’ questions which take into account circumstances other than merely the lowest price.

Fairness, proportionality and transparency
These are general principles enshrined in EU Law. They are not easy to describe in a few words but encompass:
• equal treatment and non-discrimination (fairness)
• common-sense allocation of resources and effort (proportionality)
• open-handedness and clear processes (transparency).

The present law is unclear but encourages the use of these principles in “below threshold” or lower value contracts so tenderers will be faced with the same requirements as for other forms of procurement.

Good procurement practice
There are activities that tenderers can follow which should deliver successful results, especially for proving technical capacity and quality for MEAT scenarios. Best practice means:

1. Clearly analysing the requirements to identify the time/cost implications and also exactly what is required for a response to the tender documentation and questions asked. Failure to strictly follow even the simplest requirements can mean exclusion. Tenderers must always check exactly what is required of them, especially timelines and return documents.

2. Considering all the risks and providing accurate, considered responses.

3. For technical capacity questions in two-stage tendering, looking at the questions from the CA’s viewpoint and dealing with their concerns. Tenderers should make the most of their technical capacity and the advantages this would bring. CAs are severely limited in the information they can request on technical capacity. They must follow the requirements of Regulation 25, including details of experience of works completed in the last three or five years, technical qualifications (Regulation 25(g)), etc. If they seek information beyond this they may well fall foul of the Regulations. It is therefore relatively easy for tenderers to create information that can be sent quickly and efficiently for restricted lists. Many public sector bodies have standard forms of pre-selection, technical capacity questionnaires which allow tenderers to efficiently answer questions (but tenderers should not be complacent and repeat previous answers).

4. For the quality requirements in MEAT, answering the questions from the CA’s viewpoint and clearly expressing any economic advantage.

5. Explaining abnormalities in tender prices upfront adds significantly to the tenderer’s ability to persuade. The CA is obliged to confirm and seek explanation for any abnormalities – especially abnormally low prices from tenderers which they may exclude (Regulation 30(8) et seq).
6. Have a system for recording the process, especially timelines and the extent of debriefs provided. These are essential elements within the procurement process – if they are not followed, the process can be stopped.

There is also the necessity for the tenderer to keep the price properly adjusted and to monitor the success or otherwise of other tenderers. The use of Freedom of Information legislation and the requirement for CAs to provide proper debriefs means it has never been easier to obtain the information required to keep up to date.

Dealing with issues
Amendments to the Regulations provide an opportunity to call a halt to a procurement process. Regulation 47 allows tenderers to seek an injunction and obliges a court to provide it unless the CA can show that it is inappropriate. This puts the balance of power with the tenderer. Previously, someone seeking an injunction must have shown there was a triable issue. This was not a very high hurdle but at least the burden of proof was with the claimant. The new regulations mean this is now for the CA to show otherwise.

The first thing for any tenderer to do is monitor the performance of the CA to identify lapses. The Regulations provide short timescales, i.e. promptly and in any event within three months to raise an objection. In Veola, the timescales were interpreted in a restrictive way so that where a tenderer could have raised an objection before they actually did, their entitlement to object could be affected.

Although the European Court of Justice in Uniplex took a slightly more pragmatic view (that the period runs from the date a tenderer ought to have known there was a problem, with (usually) three months to raise an objection) the clear message is to start the objection process quickly. The likely response from a CA to a genuine problem is to restart the process, as to delay and allow the issues to become more entrenched is unlikely to resolve the problems.

Dissatisfied tenderers should be alive to:
1. Technical breaches of the Regulations: this will include improper notifications, improper clarifications, not following a set procedure, a lack of criteria disclosure and failure to debrief and publish award notifications. All of these criteria will result in the tender process being suspended by the Court without any real unfairness being identified
2. Procedural unfairness: if the CA fails in one of the treaty principles then the procurement will be stopped. The most obvious failure will be through a lack of transparency or fairness. A lack of fairness means a disadvantage to an individual, which can often arise where there has been some unforeseen prejudice, such as being marked down for something unexpected (a euphemism for this is “hidden sub-criteria”). If this should arise, the obvious remedy is to object. However, fairness is always much more subjective than procedural problems and so it is less certain how a court will treat it.

There are various complaints procedures available to tenderers short of going to court (such as mediation or use of ombudsman schemes). However, these are voluntary procedures and often only amount to the proper receipt of complaints rather than an appeals process. To appeal through a complaints process and avoid the courts is very difficult for a CA and if a tenderer embarks on a complaints process it is usually at the cost of achieving a resolution on an individual procurement.

For contractors, procurement disputes will often fall into one of two categories:
1. Where there are technical but obvious infringements of procedure – these will be easy to both identify and resolve; or
2. Where there have been infringements of the fairness and transparency principles – these will often be deeply frustrating but very difficult to resolve.

The likely response from a contracting authority to a genuine problem is to restart the process, as to delay and allow the issues to become more entrenched is unlikely to resolve the problems.

Further information
1. Primarily the Public Contracts Regulations 2006 including amendments, which specifically includes the Public Contracts (Amendment) Regulations 2009. However, many of the concepts equally apply to the Utilities Contracts Regulations 2006
2. Regulation 30(i)(a) for MEAT and 30(i)(b) for lowest price
3. Depending on whether the contract is for goods and services (three years, per Regulation 25(2)(c)) or works (five years, per Regulation 25(2)(b))
5. Veola Water (UK) PLC v Fingal County Council [2006] IEHC137, an Irish case persuasive in the UK

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Related competencies include: T062, T064, T068
he pain/gain mechanism forms the key driver in aligning the objectives of the contractor and employer to work together as a team to reduce cost and make savings. There is no right or wrong pain/gain mechanism and there are a myriad different approaches available.

Most are based on a percentage split of overspend or savings between the contractor and employer, and are often “banded” based on the percentage of overspend or savings made compared to the target cost.

The simplest allocation is a straight 50:50 split of all over/underspend. This is often seen as the most equitable because both parties share the risk equally which helps develop partnering behaviours. It is also less likely to encourage the contractor to drive up the target cost value or chase compensation events.

However, there is no cap on the pain share to the employer and therefore they cannot accurately predict what the final payment will be. It may also be argued that there is less incentive for the contractor to mitigate cost, but in reality the potential of paying half the cost of overspend should provide this.

The simple 50:50 model is often altered to include a sliding scale of percentages whereby the employer allocates increasing amounts of pain/gain share between the parties. There can be a number of different versions of this model.

The most common option is for the employer to split the first 10% of any over/underspend equally but then to alter the allocation above and below this percentage. Normally, the employer will increase the pain share percentage in the bands above 110% to give the contractor a greater share of the overspend. Similarly, the employer will decrease the percentage gain share to the contractor below 90% of the target cost (commonly a 75:25 split).

Changing the split

However, some employers have reversed this approach and have increased their exposure to pain share in the increasing overspend brackets (i.e. over 110%) and decreased their percentage of any underspend (i.e. below 90%). The rationale here is that larger employers may be better able to carry the financial risk of overspend against the target cost and so would rather carry this risk than allocate it to the contractor who will seek to make provisions for it somewhere in their target cost. Similarly, increasing the percentage gain share to the contractor will motivate them to mitigate cost and create gain share as they will receive increasing benefit as greater savings are made.

The sliding scale is often extended to provide a cap on the employer’s potential pain/gain share payments. The employer will, at a certain level (normally above 120% and below 80%), allocate 100% percent of overspend and 0% of underspend to the contractor. This reduces the financial exposure to the employer and increases the financial risk to the contractor.

This model allows the employer to introduce a limit to their exposure in terms of overspend and is commonly selected. There is less potential for the contractor to over-recover gain share under such a mechanism and there is a greater incentive for them to mitigate costs due to the pain share cap. The employer will also be better able to predict what the final payment will be, subject to any changes.

On the downside, the contractor may seek to increase their target cost or maximise changes to avoid hitting the pain share cap.

Another issue is that the contractor may not be motivated to make savings below the 90% level as they get a reduced return, and certainly not below the 80% level where they get no return. In fact, the contractor may actually try to increase costs to ensure that no savings occur below the gain share threshold.

The choice of model clearly has to take into account the potential behaviours it will drive in the parties. The employer needs to review a number of factors before choosing a model:

- experience of the parties
- method of setting the target cost – negotiated, competitively tendered, etc
- accuracy of the scope of works and therefore the target cost
- potential for variations.

As different models alter the financial risk allocation between the parties, some employers leave the model blank at tender stage and ask for the contractors to propose differing models and associated Fees as part of their commercial offer.

Out-turn cost forecasting

The forecasting of the final out-turn cost of a project can prove to be an issue under target cost and cost-reimbursable contracts. The reality of such arrangements (and perhaps true of all contracts, at least from the contractor’s perspective) is that the actual cost of the project will not be known.
until it is completed, and often not until several months later when all accounts in the supply chain have been settled.

Unlike fixed price contracts (where the employer has a running final account based on the original contract value, plus or minus agreed variations), under a target cost/cost-reimbursable contract the contractor is paid on actual cost which can vary greatly during construction.

Difficulties can arise when forecasting costs still to be settled such as accruals and liabilities for materials received or work undertaken, but not yet invoiced. Tougher still is forecasting the cost of work not yet ordered or agreed, or the final value of disputed variations or claims. This is further complicated by the need to reconcile the costs expended to date compared to the value of work done, e.g. a project is 50% complete in terms of physical progress but 75% of the costs have been incurred.

Does this mean that the project will overspend or is it simply that the more expensive elements have been completed, and in fact the project should have expended 85% of the costs by this stage and so a gain share should be predicted?

To deal with these issues it is recommended that some form of earned value analysis is undertaken, overlaying progress of the physical works with the costs incurred. This will allow the value of work done to be compared to the cost to determine current, and forecast future, financial performance.

A failure to accurately forecast the out-turn cost of a project can often cause major difficulties to an employer – they can suddenly find that a project they thought they were going to make savings on suddenly turns to a loss simply because the contractor has spent more than they had envisaged. I have been party to difficult meetings where an employer has had to go back to their board for more funding and, when questioned as to what has changed or what the additional scope or risk event was that has occurred to create the need for the additional monies, the response was “Nothing, it’s just cost more than we thought.”

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Aligning objectives
In my experience, target cost contracts are increasing in use globally as they create a greater alignment of parties’ objectives to reduce costs and create savings.

They can provide a better mechanism than traditional fixed-price or remeasureable contracts for dealing with risk and provide greater flexibility to the employer. They also help create partnering behaviours due to the need for openness and transparency of costs, which also helps in reducing the potential for claims and disputes.

However, it is essential that employers understand that they will carry a much greater financial risk, post-contract, than they would under a fixed-price or remeasurement arrangement. If the contractor is efficient, works well and makes savings the employer will share in this. However, if the contractor is inefficient and performs badly then (subject to the limited grounds for disallowed costs) the employer will have to share in any resulting overspend.

Employers also need to ensure that the target cost is set at a competitive level so as to provide the incentive for the contractor to be efficient or to seek value for money in the supply chain. The incentivisation mechanism must be designed to drive the right behaviours in the contractor and not to drive them to create claims or to inflate costs to increase overhead and profit recovery.

Overall, I believe that target cost contracts can be a valuable addition to the more traditional fixed price and remeasurable approaches. If used correctly they can often offer a better method for procuring complex or high risk construction works or projects where the parties want to encourage collaborative working; however, users need to understand the issues in order to secure the benefits they offer.

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Related competencies include: T062, T077
Duress is defined as ‘undue pressure exerted on a person to make them act in a certain way’. Where a person makes a contract under duress, that contract will usually be voidable (i.e. capable of being set aside). It is a common misconception, however, that the threat or pressure being exerted on the person must be physical in nature in order to be duress.

In recent times, economic duress, i.e. a threat of an economic or financial nature, has also been recognised as a ground for challenging the validity of a contract. There have been several instances in the construction industry of companies making such threats in order to gain a financial advantage and the possibility of economic duress is something which construction businesses should be alive to, especially in the current economic climate.

What is economic duress?
The two essential elements for proving economic duress are:
- that the threat or pressure is illegitimate; and
- that without such pressure, the person being subjected to it would not have entered the contract.

Illegitimate economic pressure
Although the courts have not laid down a specific test for establishing what is meant by ‘illegitimate’, they have set out the various factors which will be taken into account, including:
- whether the victim had a ‘real choice’ or realistic alternative. Consider, for example, a supplier who refuses to continue supplying materials unless additional payment is made to them by the customer. If the materials, or a suitable equivalent, are available elsewhere at an acceptable price, the customer may have a realistic alternative. The less of a real choice the customer has, the more likely it is to be an illegitimate threat
- whether there has been actual or threatened breach of contract
- how serious the threat is
- whether the innocent party protested at the time. While protests will make it more likely that the threat was illegitimate, the opposite is not true: the absence of any protest does not mean the innocent party’s act was necessarily voluntary.

The difficulty, as a Judge in the Technology and Construction Court has identified, is that “illegitimate pressure must be distinguished from the rough and tumble of the pressures of normal commercial bargaining”.

The innocent party would not have agreed if they were not under duress
Whether or not this can be proved depends on the individual facts of each case.

For example, consider Carillion Construction Limited v Felix (UK) Limited [2001] B.L.R. 1. In this case, Felix, the cladding sub-contractor, threatened not to complete its work for Carillion, the contractor, unless Carillion agreed to Felix’s proposed final account sum. Felix had submitted its final account without completing the work and when Carillion assessed Felix’s entitlement at less than the sum applied for, Felix advised Carillion that “without this figure being agreed, [we] cannot predict when the project will be complete”.

Felix’s refusal to complete its work left parts of the building exposed and caused delay at a critical stage of the project. Carillion felt it had no choice but to agree to pay Felix the entirety of their claim, following which Felix recommenced work. The court held that Felix’s threat constituted economic duress as it was illegitimate and Carillion had only agreed to pay because of the threat. The court could not see any legitimate commercial reason why Carillion would otherwise have agreed. Accordingly, the agreement between the parties (by which Carillion had agreed to pay Felix) was set aside.

Economic duress, i.e. a threat of an economic or financial nature, has also been recognised as a ground for challenging the validity of a contract

What is the effect of economic duress on a contract?
A contract made under duress is voidable rather than void. This means that the innocent party usually has the option to rescind it (i.e. to set it aside) or to affirm it (i.e. to carry on). If a party decides to rescind, it must do so as soon as possible once it is free from the economic threat.

For example, in the Carillion case, Carillion challenged the validity of the contract as soon as Felix had completed the relevant work. If the innocent party carries on even though it is able to rescind, this will be treated as evidence of affirmation. Therefore, any challenge on the grounds of economic duress must be made as soon as possible.

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Related competencies include: M006, T017, T064