

ICES

Narrative

Applicant's name

CM Core 1 QS

Financial and commercial processes in civil engineering

Management of the budget is a key element of a successful project; increasingly the employer has a fixed budget to complete the project. In my experience, not informing the employer of a cost increase or potential cost increase will limit their capability of obtaining further funding. The NEC Form of Contract requires both parties to do this through the issue of early warnings [clause 16] and with forecasts of the total defined cost in the case of options C & E [clause 20.4].

Generally with other forms of contract, if the costs go up or down, this will be a detriment or benefit to the contractor accordingly and not affect the employer.

On the transformation works, managing the budget was demanding because the costs more than doubled. The employer's project manager constantly challenged my forecasts of the total defined cost [clause 20.4] that I submitted on a monthly basis. To counter these challenges I produced detailed cost to complete forecasts broken down by resources. By working with the project manager in a collaborative way and providing as much information as possible, it gave the employer assurance that the money would be spent. This enabled the additional budget to be secured as early as possible.

To monitor costs I prepare profitability forecasts on a quarterly basis, detailing costs and value to date and the cost to completion of the project versus forecast value. Actual spend is then compared to this on a weekly basis together with a 'drawdown' from the programme of progress achieved to date.

On [project name] and [project name] there was significant change; this change needed to be factored in to the cost to complete as well as the value side to maintain accurate forecasting. This was an onerous task, especially on the [project name] transformation works where over £74 million of change was implemented. I was responsible for the evaluation and agreement of £24 million of that amount.

Value engineering can be a huge benefit to us and our employers. During my time on the [project name] I saved thousands of pounds by carrying out several cost benefit analyses, including using rotary coring rigs versus shell and auger for site investigation works, use of Landpac® technology versus conventional compaction plant and temporary event matting versus permanent block paving.

I take an active role in auditing the commercial processes and procedures on our projects, typically carrying out 3 to 4 audits per annum on projects taking place in the south of the country. My audit reports are issued to the sites and to Head Office, detailing any non-compliance. I give the sites a deadline to rectify any issues identified - timescales depend on the scale and importance of the task. Any Best Practice identified is shared with the wider business to support continual improvement and 'doing things better'.

CM Core 2 QS

Commercial management and contract administration on civil engineering projects

I have had a large amount of experience in supply chain procurement and management. This involved negotiating terms and conditions with subcontractors, preparing tender analysis with levelling where necessary, preparing recommendation reports for the employer, account administration including compliance with the Housing Grants, Construction and Regeneration Act 1996 (now called the old Act) and recently to the Local Democracy, Economic Development and Construction Act 2009 (now called the new Act), agreement of change and final account agreement, including resolution of contentious issues.

I have notified and run insurance claims for [employer] and I am currently an active member of an insurance 'working group'. This has given me a better understanding of the principles of insurance and has helped raise awareness of insurance across the business.

One claim I dealt with on [project name] was from a member of the public. He alleged that we had blocked the access to his warehouse and trespassed on his forecourt. This had prevented the refurbishment of the empty property and therefore it was un-rentable. This led to a loss of earnings claim. I notified the event to the insurers on receipt of the first correspondence from the claimant's lawyers - we also instructed our lawyers to respond. This claim went on for over six months, with both parties incurring substantial legal bills. Initially we offered a settlement but the amount was rejected by the claimant. The dispute was settled in court and the claimant ended up paying a proportion of our legal fees - and their own. All other costs incurred by [employer's name] were settled through insurance with the exception of the excess charge.

During the transformation project I dealt with the identification, recording, notification and negotiation of change in accordance with the contract and a lot of this change involved a design element. Our designers were procured on a lump sum basis and had been providing change quotations on that basis. Approximately 20 months in to the 24-month programme they referred for adjudication a dispute that they considered had arisen with respect to the appropriate basis for the valuation of services provided pursuant to the Design Agreement. The designers proposed that valuation is undertaken by reference to time spent, multiplied by the agreed rates in the Design Agreement and with disbursement expenses to be reimbursed at net cost. I considered that there had been prior agreement between the parties that the appropriate methodology for the valuation of variations was through adjustment of the lump sum prices. The adjudicator ruled in [employer's name] favour. If the result had been different we would not have had the opportunity to recover any of the additional money because all our compensation events had been implemented.

As part of the industrial relations, we audit our labour suppliers on an annual basis to ensure they are paying their workforce in line with employment legislation and the working rule agreement. Part of my role is to collate a random section of labour for the auditor to target. I interpret the findings of these reports and calculate any errors before reporting back to the suppliers.

CM Core 5 QS

Planning and programme in the management of civil engineering works

There are various types of programmes used in civil engineering; in my experience the type most widely used is the Gantt chart. Other types of programmes are listed below:

- time chainage
- Daily task sheets
- Network diagrams
- Elemental trend analysis

On the screening project, one of my first tasks was to produce a procurement plan to establish when orders had to be in place - taking into account any long lead in items. Primavera P6 software was used for planning and programming the main works and I ensured that the programme was suitably maintained and monitored, using earned value analysis to establish if cost, schedule and the work accomplished were progressing in accordance with the plan [clause 32].

Programmes are an essential element in the planning and pricing of the works. On [project name], although there was a Bill of Quantities I produced a programme of work based on outputs, then I priced the labour, plant, material and subcontract elements required to undertake the works. This minimises the risk of gaps in the resources and it makes monitoring a lot simpler.

When looking at the time impact of an event I will consult the planner who will run an 'impacted programme' that will either demonstrate a delay to the critical path of the project - leading to a claim for additional preliminary costs in addition to direct costs - or a thickening of resource to undertake the additional work. On the transformation work we had over 60 sectional completion dates - one compensation event could impact several of these dates. It was critical that extension of time claims were included in these CE's to avoid liquidated delay damages being levied.

To assist in the management of risk, our programmes contain time risk allowances (TRA) within the bars; the amount of TRA depends on the nature of the activity and the associated risk.

In terms of free float it represents the delay allowed for an activity without holding up the early start date of its successor. The total float or terminal float for a project is the difference between the maximum time available to carry out the activities and their duration. Float is not owned by the contractor or the employer - the project owns the float, which means that whoever is the first to get there owns it. The ECC assesses the impact of delay by reference to the contractor's planned completion date, not the contractual completion date [clause 63.3]. This means that the contractor's terminal float remains untouched when assessing an extension of time - in other words the contractor owns the terminal float.

QS2

Project/commercial management reporting, internal accounts and company accounts

As part of our internal reporting I undertake cost and value reconciliation reporting. At the end of each monthly period a site measure is carried out by the commercial team and this is compared by cost code to the cost to date. This exercise does sometimes produce some odd findings; however this reinforces the fact that resources need to be correctly cost coded. These exercises are very useful in identifying problem areas on a project; they give the team a chance to rectify any problems as early as possible.

All of [employer]'s projects are required to complete quarterly forecasts detailing projected profit/loss to date, overhead recovery and outturn forecasts. I was responsible for collating the information and producing these reports and presenting them to the directors on the transformation project. This task was made particularly difficult due to the huge amount of change that we were dealing with. These reports are collated by region and fed in to Head Office to inform the Board of the overall company results.

On the [project name] transformation works, I had numerous unimplemented compensation events - these values had to be factored in to the earned value to give a true CPI value. Also the SPI was below one because we were delayed for reasons outside our control. I kept the project manager updated of our delay and disruption through early warning notifications.

QS4

Bills of Quantities, Schedule of Rates and Activity Schedules

I have mainly used Bills of Quantities prepared in accordance with Standard Methods of Measurement such as CESMM 3 & 4. Having said that, on the recent [project name] contract, which was a JCT Design & Build Contract, the Bills of quantities were produced in accordance with the new rules of measurement 2 Detailed Measurement for Building Works (1st edition). When procuring ground investigation subcontractors on the [project name] we used the Thomas Telford Specification for ground investigation as a template to produce the schedules of rates structure for the subcontractor to populate with their rates. Activity schedules tend to be a bit more high level - with these I typically break down the activities to ensure that we maintain a positive cash flow and do not have to wait until activities are 100% complete before payment is certified.

There are different risks associated with measurement and pricing (listed below) depending on the type of contract I am operating under.

- **Re-measurement contract** – when analysing the tender returns for the [project name] site investigation works I prepared Bills of Quantities based on the known scope of work and I made various assumptions on standing time, advancing through hard stratum or obstructions. Then I inserted rates from the various tenderers - this helped me to identify any rogue rates which had a substantial financial impact and query these with the tenderers.
- **Lump sum contract** – when I priced the various NEC 3 Option A works instructions on [project name] I ensured that every resource likely to be needed and any risks were considered and the appropriate sums allowed for. We had little opportunity for recovery if we exceeded our allowances.
- **Target cost/cost reimbursable** – in the early stages of the [project name] transformation contract, following completion of the first quarterly forecast, I established that our costs were going to exceed the agreed target price. Under the NEC 3 Option C contract - amended with Z clauses - if the prices exceeded the target by up to 110% we were to share this with the employer [clause 53.1]. This was clearly an undesirable position and this differential was reduced during the implementation of subsequent compensation events.
- **Design & construct contracts** – on the [project name] transformation contract [NEC 3 Option C Design & Construct Contract] we accepted the entire responsibility for the employer's design. This gave us no mechanism for a target adjustment in the event of quantities increasing through design development. It is therefore important to review the initial design and allow for this risk occurring.

When completing Bill of Quantities it is sometimes difficult to enter all the costs for the work activities in the 'quantity' rates. Method-related charges (MRC) are allowed when bills have been produced in accordance with CESMM. MRC can be used for one-off costs such as site establishment, mobilisation of a large piece of plant for instance. Time related charges are usually shown in the preliminaries section.

With the evaluation of change under NEC Option A contracts I have added the implemented CE amounts to the Activity Schedules, suitably broken down into manageable chunks to maintain a positive cash flow.

QS5

Management of interim and financial accounts

To maintain a cash-positive position I endeavour to get paid from our employers as soon as possible by submitting applications of payment in accordance with the agreed dates and submitting invoices as soon as the payment certificate is received. To ensure I comply with contractual provisions I pay our supply chain on and not before the final date for payment to maximise the amount of time money is in our account. This is done to comply with the statutory provisions of the Housing Grants, Construction and Regeneration Act 1996 and recently the Local Democracy, Economic Development and Construction Act 2009. This includes issuing payment notices and payless notices in the event that my assessment is reduced. I have previously agreed early payment terms with subcontractors when the discounts offered have been advantageous.

As part of my duties on the [project name] I looked after the accounts for the subcontractors constructing the tunnels and for supplying and commissioning the tunnel boring machine (TBM). The procurement for this element of work caused major interface problems. The contract for the TBM stipulated that it had to meet certain cycle times but when it did not, the tunnelling subcontractor blamed the performance of the machine and we had no categorical evidence to disprove their claims. With hindsight it may have been more cost effective to procure the tunnelling as a 'supply and drive'

package. I eventually agreed both final accounts, having dealt with numerous claims and counter-claims.

On early ICE 5th contracts and JCT contracts, I was responsible for the preparation, presentation, negotiation and agreement of interim and final accounts. In the mid-nineties I was looking after several small sites and one in particular, a ground work's package for a [name] restaurant in [region] caused me a few problems. There was little site information relating to the existing levels around the building and no joint dip surveys were carried out with the employer to establish the amount of engineering fill we had imported or placed. This caused me a lot of heartache as I had to try and recover our entitlement and it taught me a valuable lesson about records. At the time I had little experience of working under the JCT form of contract and using the standard method of measurement (Standard Method of Measurement version 7). This was particularly trying - making our drainage rates pay when they were deemed to include earthwork support. I did eventually draw the project to a satisfactory financial outcome.

The [project name] transformation works that I looked after was finalised with a settlement agreement. There was a significant amount of CE quotations that had been assessed by the Project Manager without my agreement. The main impasse was the delay and disruption element that I was claiming in our quotations. The employer's cost verification team was also auditing our account and the level of disallowed costs were the subject of some long discussions – 'what constitutes a hand tool' etc. In the end we agreed a settlement amount and drafted an agreement.

As part of the transformation project the employer provided project insurance policies for contractors' all risk, public liability and third party property damage. I managed several of those claims – a couple of them were of particular interest.

The first was for a severe storm which occurred in the early part of 2014 and caused extensive damage to our works. Initially we tried to get the cost of the damage reimbursed by a compensation event under Clause 60.1 (13). This proved difficult due to the subjective nature of how weather events are administered. We then went down the insurance route. The loss adjuster confirmed that the contractors all risk policy would respond to a storm event. He subsequently visited the site and was issued with detailed records of the incident, including photographs and site diaries that preceded his visit as the repair works were still in progress. We then discussed what other records he would need to process the claim - labour and plant allocation sheets, estimates of the damage, impacted programmes etc. This led to a successful settlement.

The second claim came from a member of the public who said that we had blocked the access to his warehouse and trespassed on his forecourt. He alleged that this had prevented the refurbishment of his empty property and made it un-rentable. This led to a loss of earnings claim. We notified the event to the insurers on receipt of the first correspondence from the claimant's lawyers. We also instructed our lawyers to respond. This claim went on for over six months with both parties incurring substantial legal bills. The initial settlement we offered was rejected by the claimant. The dispute was settled in court and the claimant ended up having to pay a proportion of our legal fees in addition to their own. All other costs incurred by [employer's name] were settled through insurance with the exception of the excess charge.

General – People development

In order to form successful commercial teams I consider it essential to provide opportunities for all members of my team to develop and progress. I am always available to offer advice and support to help people maximise their potential.

I undertake bi-annual professional development reviews with my team where we discuss their development, any areas where they may need help, either by mentoring or formal training. This also provides an open forum where any concerns or different career paths can be discussed.

I encourage all team members to gain professional recognition and I have provided mentorship and support for a number of ICES membership applications. I encourage all team members to target ICES accreditation and I provide support to facilitate this aim.