

# Expecting the unexpected

8 August 2016

**Andrew Byrne and Emma-Kate Ryan advise quantity surveyors and project managers on how to implement an effective change management system**

---

The construction and operation of infrastructure is affected by many things ? from the volatile global economy and multi-jurisdictional operations to joint venture projects and the size and scope of contracts. Managing change in a structured and controlled manner is therefore essential.

Change is mentioned regularly in boardroom discussions and is an everyday concern for quantity surveyors. They are increasingly challenged to ensure their contractual change management practices mitigate project risks and avoid extra complexity. Diligent practices can improve collaboration and help achieve the increasingly rigorous targets that are set in programme business cases.

The number of interfaces between parties that are required to manage large-scale infrastructure projects can run into many thousands, so every error may potentially cause a financial or logistical nightmare. Enhanced cooperation is therefore crucial.

Poor management of change can lead to decreased productivity from contractors, sub-contractors and the client, which inevitably leads to programme delays. It may also cause contractual relationships to fail, and affect related parties.

One symptom of poor change management can be an overly optimistic culture, where the key players cannot foresee the future impact of changes. If an overly optimistic culture is allowed to prevail in the project team, warning signs that things are not going to plan may be ignored.

## Managing change

The industry recognised the need for a comprehensive contract that managed change effectively; the result was contracts such as PPC 2000 and the NEC3/ECC suite of contracts, which advocate more formal collaborative working. The Institution of Civil Engineers publication *Managing Change* suggests that the steps to manage change are to identify, to assess and to manage. The NEC3/ECC contractual mechanism for change is the ?compensation event?, and this article will refer to change in that context.

## Identifying the change

Changes can stem from anything, such as an error or omission in the contract documents to abnormal weather conditions ? but determining the validity of the compensation event is crucial. A helpful way to do this is by using the four-point test from *Managing Change*, as follows.

The compensation event is valid if:

1. the event does not arise from a fault of the contractor;
2. the event has happened, or is expected to happen;
3. the event affects defined cost, key dates or completion; and
4. the event is one of the compensation events that is stated in the contract.

If these four criteria are satisfied, the change can be identified as valid. The contractor can then submit quotations for this event.

### **Assessing the change**

*A collaborative approach requires organisations to report changes early and work together to reduce any negative impact on a project.*

The change owner should check the contract to determine how changes should be processed. A collaborative approach requires organisations to report changes early and work together to reduce any negative impact on a project. This includes providing all evidence to support the change, enabling its fair and proper assessment.

Most changes in infrastructure stem from the use of lump-sum price contracts, and will affect time and materials. While the change is being assessed, the contractor should, if possible, be given permission by the change owner to proceed with the works. A fixed price for change-related works can be agreed once sufficient information on its scope and impact is available. A standard process is then generally followed to check material quotes and invoices so as to ensure they align with the quantities claim. These should adhere to any agreed rates in the contract: either day rates or pro-rata rates forming the original contract sum.

A change control register should categorise and manage incoming changes, and record open or closed events. Changes should always be assigned to an owner and classified according to the potential impact on the project. This allows the change owner to review and escalate issues early, and avoid creating a culture where such issues are allowed to develop.

### **Implementing the change**

In the case of NEC contracts, a compensation event is implemented when one of the following occurs:

- the project manager notifies their acceptance of a quotation;
- the project manager notifies the contractor of their own assessment; or
- a contractor's quotation is treated as having been accepted by the project manager (if after two weeks the project manager has not responded to the compensation event notification from the contractor).

Implementing the change includes considering the effect on the programme. Submission of a new programme incorporating the change is required to demonstrate any of the concurrent and consequential effects that it will have on other elements.

## Going further

Change management is intrinsically linked to project governance, which ensures that additional instructions contributing to change are made with the proper project authority, usually reserved solely for the project manager. If senior management realises that changes being processed indicate problems, they can put those changes on pause. A change will always have a change owner, but it should be associated with or escalated to a senior manager who can review its potential impact. Where the escalation contact has been agreed by the sponsor, it should be included as a key decision point in the governance of a project.

## Practical advice

### Using an incident-based system

Rather than managing specific changes, quantity surveyors on complex infrastructure projects should use an incident-based system for managing change. This is where the initial change is split into several elements, with each element affecting several components of a works package. For example, a change to a railway station specification may affect several stations along the line.

Once the core change is logged, the varying impacts of the sub-changes should be assessed. For example, a change may be given one overall title, but pricing the costs for each station will be affected by different designs. Works driven by larger changes may also be contracted to different suppliers under different terms.

Separating sub-changes allows the quantity surveyor to monitor their impact, such as delays to the project, while ensuring that all costs are assessed. It also allows the client to gain a better understanding of the time, cost or quality impact of proposed changes before instructing a contractor to proceed with any changes to the scope of their work.

*A change will always incur cost, so assessing, monitoring and managing it effectively is vital*

### Timescales for agreeing change

The project manager has a short time frame of two weeks to respond to a compensation event. Maintaining a register of incident-based change allows the quantity surveyor to adhere to timescales on agreeing a change, just as they would with contractor payments; it is another tool to ensure good cash flow and productivity among sub-contractors.

### Record-keeping

Keeping detailed records up to date is crucial to ensure the quantity surveyor receives a full breakdown of the change and that any associated outstanding documents are promptly received. A full record of change assessments should also be kept, which is particularly important when managing complex changes because the quantity surveyor may make multiple assessments as more information is provided.

## Public sector account audits

Record-keeping will include final accounts. Most public sector contracts contain clauses that mean the accounts of clients, contractors and sub-contractors are subject to audit. This is especially prudent with infrastructure projects because of the large amounts of public funding and the high risk of change driven by inherent project complexity. A change will inevitably incur a cost ? if not directly related to the change, such as through fees ? so assessing, monitoring and managing a change effectively is essential.

## Conclusion

The impact of poor change management can be vast. There is clearly still scope for major public-sector contracts to fail, so we must implement the basics diligently and consistently; although contracts may define practices, these may not be implemented as thoroughly as required. Key players should impose a control structure and be aware of any warning signs. A simple method of managing and escalating change, linked with configuration management, is crucial to ensure contract management practices avoid the pitfalls that lead to failures on public-sector contracts. They will also allow clients to trust quantity surveyors to deliver projects under budgetary and time constraints.

While the above commentary covers the fundamentals of change management, the key message is that the parameters through which change is monitored, managed and valued should not vary ? regardless of the size of the project. The most important aspect of change management is sticking to the basic principles, as these apply no matter what the value of the change or project.

**Andrew Byrne is an associate with [Gardiner and Theobald](#) and Emma-Kate Ryan is a director of Ursus Commercial**

## Further information

- Related competencies include [Contract practice](#) , [Project financial control and reporting](#)
- This feature is taken from the RICS *Construction journal* (June/July 2016)