
NEC4: A User's Guide

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Chapter 1

Introducing the NEC4 family of contracts and how they fit together

The aim of this chapter is to provide a succinct overview of the NEC4 family of contracts, with a focus on the Engineering and Construction Contract (ECC). The 'how they fit together' in the chapter title applies both to the family of contracts and to the contents of each individual contract. As with all that is written in this book, much of what is said about the operation of the ECC will be relevant to the operation of the other members of the NEC4 family.

This chapter will be especially valuable to new users of NEC4 contracts, or those who just want to know what all the fuss is about. However, it will also be useful to those who

- have had some experience of NEC4 contracts, but have concentrated their efforts in a few limited areas and want to know how the whole fits together to be greater than the sum of its parts (a quality that gives the NEC4 a distinct advantage over other families of contracts, which have copied some of the features of NEC – while often denigrating it – but in piecemeal, stand-alone way)
- have not had an explanation of what NEC4 is trying to achieve (as well as explaining the 'what' and the 'how' at a high level, this chapter explains the 'why', which most adults, in order to change, need to understand)
- want an update on the key changes from NEC3 to NEC4 (I have highlighted these changes – be they new contracts, secondary options or definitions, or changes to a procedure – by underlining words, like this, so readers who feel that the previous bullets are not relevant to them easily identify the information they are looking for).

1.1. An overview of the NEC4 family of contracts

1.1.1 History and development

The history of the NEC ECC can be summarised as follows.

September 1985 The newly formed Legal Affairs Committee of the Institution of Civil Engineers (ICE) led 'a fundamental review of alternative contract strategies for civil engineering design and construction with the objective of identifying the needs for good practice'. From this review came a strong recommendation that it was time to look afresh at conditions of contract. While there were ten reasons to support this view, the most pertinent were

- the proliferation of standard forms of construction contract across the industry (the majority of projects are now multi-disciplinary, yet most contract forms are single discipline in concept, e.g. the JCT (Joint Contracts Tribunal) family for building, the ICC (Infrastructure Conditions of Contract, formerly ICE) suite for civil engineering and the Institution of Engineering and Technology's MF series for manufacturing)
- the fact that the origins of most existing forms of contract dated back to the 1870s, when modern principles of project management were unknown

ECC terminology, but the words and effect will predominantly be the same whichever member of the family is chosen.

Table 1.4 gives a summary of all the secondary options and which members of the NEC4 family have them.

Table 1.4 The secondary options within the NEC4 family

| Secondary option | ECC | ECS | TSC/ TSS | PSC/ PSSC | DBO Contract | Supply Contract | Alliance Contract |
|--|-----|-----|-------------|--------------|-----------------|--------------------|----------------------|
| W1: Adjudication (if not in UK construction industry) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| W2: Adjudication (if in UK construction industry) | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| W3: Dispute Avoidance Board | ✓ | | | | | | |
| X1: Price adjustment for inflation | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| X2: Changes in the law | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| X3: Multiple currencies | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| X4: Ultimate holding company guarantee | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| X5: Sectional Completion | ✓ | ✓ | ✓ | ✓ | | | |
| X6: Bonus for early Completion | ✓ | ✓ | ✓ | ✓ | | | |
| X7: Delay damages | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| X8: Undertakings to <i>Client</i> or Others | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| X9: Transfer of rights | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| X10: Information modelling | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| X11: Termination by the <i>Client</i> | ✓ | ✓ | ✓ | ✓ | | | |
| X12: Multiparty collaboration | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| X13: Performance bond | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| X14: Advanced payment to the <i>Contractor</i> | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| X15: The <i>Contractor's</i> design | ✓ | ✓ | ✓ | ✓ | | | |
| X16: Retention | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| X17: Low performance damages | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| X18: Limitation of liability | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ |
| X19: Termination by either Party | ✓ | ✓ | ✓ | ✓ | | | |
| X20: Key Performance Indicators | ✓ | ✓ | ✓ | ✓ | | | |
| X21: Whole life cost | ✓ | ✓ | ✓ | ✓ | | | |
| X22: Early <i>Contractor</i> involvement | ✓ | | | | | | |
| X23: Extending the Service Period | | | ✓ | | ✓ | | |
| X24: The <i>accounting periods</i> | | | ✓ | | | | |
| X25: Supplier warranties | | | | | | ✓ | |
| X26: Programme of work | | | | | | | ✓ |
| Y(UK)1: Project Bank Account | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Y(UK)2: HGCR Act (payment) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Y(UK)3: Rights of third parties | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Z: <i>Additional conditions of contract</i> | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Note: The Engineering and Construction Short Contract, the Engineering and Construction Short Subcontract, the Professional Service Short Contract and the Supply Short Contract effectively have the delay damages embedded in the core clauses of the contracts.

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Chapter 2

Good practice prior to entering the contract

2.1. Introduction

Effective and efficient implementation of any project starts with the identification of a need or desire, justifying the need or desire with a proper business case, defining the function/purpose that the project has to fulfil, and examining options to fulfil that need. Once the 'buy' option has been justified, the 'best-fit' procurement strategy needs to be developed, which includes breaking the project down into work packages, some of which may include work to be done internally, while those with work to be done externally will ultimately become contract packages. For each of these potential contracts, you need to choose the best way to select a provider, be they a contractor, consultant or supplier of goods, and choose the contract strategy that provides the best fit for each contract or category of contracts. The contract strategy includes

- selection of NEC4 as the preferred contracting vehicle (or not)
- selection of the right member of the NEC4 family to use (e.g. a long form or a short form)
- selection of the main and secondary options (in the case of a long form)
- completion of the entries in Contract Data part one – some of which adjust the level of risk and reward for the options (e.g. share of pain/gain, levels of damages and liabilities) – and preparation of option Z (*additional conditions of contract*) clauses
- selection of content for the other contract documents (e.g. the extent of the *works* that the *Contractor* is to design needs to be stated in the Scope, the results of any site investigation you do need to be included in the Site Information).

This should all result in a coherent set of contracts documents, which fit together in a logical structure.

All this is linked in with how you select the provider. For instance

- Can an individual provider carry the risk you are proposing to allocate to them?
- What is the balance between the quality and financial aspects of the assessment?
- For the quality aspects, what questions do you ask as part of the quality assessment? What weighting do you put on each question and how, if at all, do you incorporate the chosen provider's answers into the contract so they become contractual commitments (e.g. the Scope provided by the *Contractor*)?
- For the financials aspects, how do you take account of factors other than the headline Prices (e.g. the *fee percentage* and other tendered percentages and rates)?

It is only then that the clarity and stimulus to good management provisions within an NEC4 contract can aid the effective and efficient implementation of a project. Consequently, if any of the former stages are severely flawed, it is unlikely that using an NEC4 contract will save a contract from failing to meet its objectives or providing its expected benefits.

One of my original contractor clients, in my view, had great foresight when the ECC started to become commonplace in the civil engineering sector. In the same way that they traditionally had quantity surveyors supporting their site agents, they increased their number of programmers to an almost equivalent amount. On larger sites, the programmes might be based on site full time, in the same way a quantity surveyor might be. Likewise, on smaller sites they would visit regularly. The planners would update the programme more often and do the detailed planning in consultation with the site agent, engineers, foremen and Subcontractors, as well as the *Project Manager*. The *Contractor's* senior management view was that they should be doing this regardless of whether it is an NEC contract or not, as it means the site runs much more efficiently and profitably. Contractually, because they brought the *Project Manager* or their planning assistant with them, they could justify the time, resource and hence cost effects of compensation events much more easily. A secondary benefit was that it introduced a more technical promotion stream for their engineers outside of pure management.

In a similar vein, 15% of interviewees noted that increased estimating skills were needed on site, as opposed to reactive claims-type quantity surveying skills. A number of interviewees stated that estimating required a change from just using a bill of quantities and or calculating dayworks using time records, to a greater use of operational/resource-based estimating, where costs are assembled more from first principles. Consequently, quantity surveyors involved in estimating need a greater appreciation of programming, even though they may not be doing it themselves. A quote from a *Contractor's* agent illustrates the point:

most surveyors do not do estimating. They are used to . . . doing it retrospectively, when they know what all the costs are and can compile everything . . . The danger for them, under the ECC when they are compiling it in advance, is that they have forgotten something. . . . The fact that you have to build into that quote any potential extension of time and other knock on effects . . . means that, at times, you have to be quite cute to pick it all up.

Another *Contractor's* chief quantity surveyor made similar comments. On his large site, not only were there more quantity surveyors and planners on site than there would have been for a non-ECC contract, but personnel were moved on and off the site depending on whether they could adapt their attitude and skills to those required of the ECC. He found that planners and estimators who were used to working from a full specification tended to require information that was not always available, and were too methodical and therefore too slow. He also found that staff who had the site experience and were willing to, in his words, 'take a view on a matter and then move on' were most appropriate. A frustration on site was that the *Client's* quantity surveyors (who happened to be paid on a time-charge basis) also did not have these skills and outlook. For example, they tended to insist that construction costs arising from compensation events had to be justified in full and in detail from first principles. While this is not wrong contractually, it does not help practical delivery. To quote Warren Buffett, the world's most famous investor, when evaluating a company's worth and what he will pay for it, he would 'rather be approximately right, than precisely wrong'. In a similar vein, when taking a view on the future effect of a compensation event, you will never be *precisely* right, so why waste time trying to be. As one *Contractor's* contract director said to me on a contract with 2700 compensation events, 'some you lose, some you gain, but if neither Party is looking to screw the other, statistically it is going to work out about right'.

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Chapter 3

Good practice following award and the crucial first month(s)

3.1. Introduction

This chapter describes the principal steps necessary after the award of the contract (i.e. the Contract Date), but prior to starting work, whether on design or on Site (i.e. the first *access date*). The principal issues that need to be addressed are

- training – or, more precisely, common understanding – for those involved in the running of the contract
- putting in place a system and protocols for the efficient administration and management of the contract (i.e. how you are going to communicate, both informally and formally) – this includes project organisation, which I have gained a better appreciation of since the previous edition of this book
- payment, especially where the *Contractor* is reimbursed its costs (e.g. options C to F) and how the pain/gain share operates under options C and D
- making the best use of the programme, so that there is always an up-to-date, understood, agreed and accepted programme
- operating the early warning and risk-reduction process
- quickly and amicably agreeing quotations for compensation events.

It was suggested by a number of interviewees that a week or two extra should be programmed into the project programme to allow for these issues to be addressed, especially for those new to the ECC.

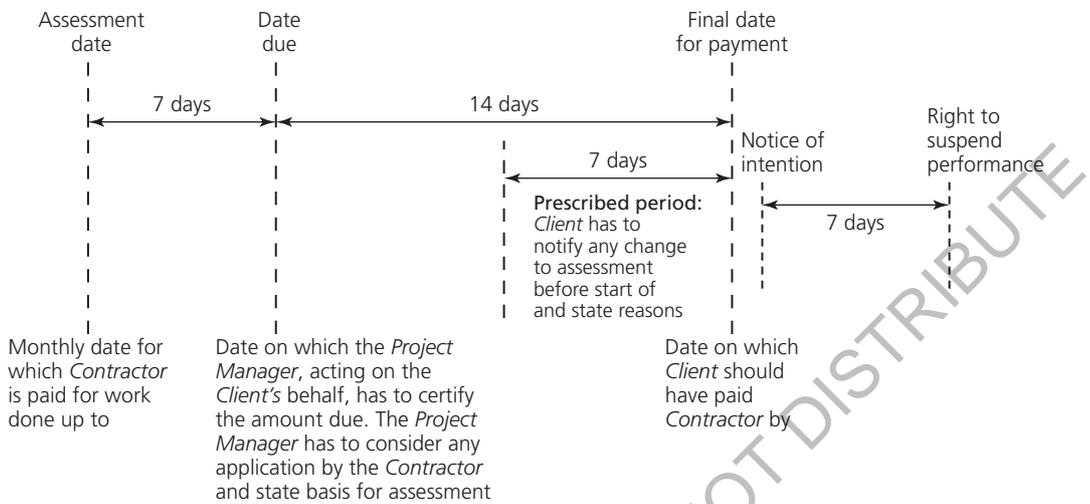
Why does the title of this chapter contain the words ‘and the crucial first month(s)’? Because a finding of the research, years ago, was that on successfully run contracts the necessary changes in procedures, systems, skills and attitudes had started to be addressed in the pre-contract phases, and were substantially in place within the first month of being on site. This finding fits with much research on project management in general. In my consultancy experience, I have found that contract teams have recovered from a poor start, but it is almost always done by going back and doing what they should have done in the first months, while at the same time managing a contract in full flow. For some teams, this has only been partially successful.

3.2. Training and common understanding

3.2.1 General

The importance of skills and attitude has been stressed in Section 2.2.2.3, with the most important attitude highlighted as a willingness to change. However, people have to know what to change to. They also have to know what they have to do and, preferably, why. Indeed, the ‘why’ is possibly the most important factor, because it gives people the motivation to change. Hence the need for training. As one project participant, who had not had training on the then NEC, admitted ‘If you

Figure 3.1 Timescales for payment if option Y(UK)2 applies



mean speeding up the administrative procedures relating to payment, otherwise the Contractor will be entitled to interest on the late payment.

IF THE CONTRACT IS SUBJECT TO THE CONSTRUCTION ACTS

If the Construction Acts apply, then the clauses of option Y(UK)2 will apply. The clauses in this option effectively overlay or add to the core clauses – so read the preceding paragraphs if you have not done so already. Figure 3.1 and the following text illustrate how the payment terms work.

Under the alternative clauses designed to satisfy the requirements of the Construction Acts, the Contractor still has to submit to the Project Manager an application for payment before the assessment date and the Project Manager still has to certify the amount due by the 'due date' – 1 week after the assessment date. The Client has to pay the Contractor by the 'final date for payment', which is 14 days after the due date. If paid late, interest is paid on the late payment. If the Client intends to withhold payment, it has to inform the Contractor, with reasons (in what is generally known as a 'pay less notice'), by the start of the 'prescribed period' – 7 days in the ECC – which runs back from the 'final date for payment'. If the Client does not follow this procedure and withholds payment without informing the Contractor, including the reasons why, or the Contractor successfully overturns the Client's decision through adjudication and payment is still not made, the Contractor can give 7 days notice of its intention to suspend performance. This right ceases as soon as payment is made. In the ECC, the Contractor is entitled to the additional time and cost of suspending performance (which is assessed as a compensation event) – I believe this right is enshrined in the Construction Acts. The financial assessment would therefore include any demobilisation and remobilisation costs, as well as the length of time for which work was suspended; and the time assessment would adjust the Completion Date, as well as Key Dates and sectional Completion Dates.

In order to outlaw certain unethical practices, the original Construction Act was amended by the Local Democracy, Economic Development and Construction Act 2009, which came into force in October 2011. The amendments are as follows.