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nec users' group NEWSLETTER

NEC3 and NEC4 ECC Option D are being used to construct Hong Kong International airport's new third runway and taxiways as well as associated passenger and baggage tunnels

NEWS

HK Airport Authority lets over £1bn NEC contracts

SIMON FULLALOVE EDITOR

The Airport Authority Hong Kong is now procuring over HK$10 billion (£1 billion) of construction works using NEC contracts. Three of the contracts are part of its HK$141 billion (£14 billion) new third runway project at Hong Kong International airport, while the fourth is for an office building on the existing airport site.

Following an initial trial of the NEC3 Engineering and Construction Contract Option D (target contract with bill of quantities) starting in 2017, the Airport Authority let two more projects 2019 using NEC4 ECC Option D and C (target contract with activity schedule). It is about to award another large contract this year using NEC4 ECC Option D.

The Airport Authority is following a similar NEC journey to that begun by the Development Bureau in 2009. However, the trial contracts are much larger and it is understood they are being used with fewer amendments to provide a more accurate reflection of their effectiveness.

Passenger and baggage tunnels

The first NEC contract, 3RS contract 3801, is for around 400 m of new automated people mover and baggage handling tunnels on the existing airport island and forms part of the three-runway-system (3RS) project. The 3RS project involves reclaiming 650 ha of land on the north side of the existing Chek Lap Kok island site and building a new 3.8 km runway and associated taxiways parallel to the existing runways.

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NEWS

Over 280 attend NEC Asia Pacific conference

IVAN CHEUNG NEC ASIA PACIFIC USERS' GROUP SECRETARY

More than 280 delegates attended the NEC Asia Pacific Users' Group Conference held at the Cordis Hotel in Mong Kok, Hong Kong on 29 November 2019. The one-day event marked 10 years of NEC procurement in Hong Kong, where over HK$70 billion (£7 billion) of projects have been successfully delivered using NEC contracts since 2009.

The conference was opened by Lam Sai-hung, NEC Asia Pacific Users' Group chair and permanent secretary (works) at the Hong Kong Development Bureau. Dr David Hancock, NEC Users' Group chair and constuction director for the UK government's Infrastructure and Projects Authority, gave the keynote presentation.

Other speakers included Highways Department director Jimmy Chan, University of Hong assistant professor Dr Isabelle Chan, Airport Authority deputy construction director Darrel Kingan, China State Construction deputy general manager Victor Wu, Mace operations director Frank Randles, China Road and Bridge Corporation–Build King joint venture managing director Kan Jun, Holman Fenwick and Willan partner Ben Mellors and NEC4 Contract Board member Ian Heaphy.

Afternoon practical workshops were followed by a 'meet the drafters' panel session. Sponsors included Cemar, the Hong Kong Institute of Construction Adjudicators, Build.IT, Projection Group, The Contracts Group, Pinsent Masons, Turner & Townsend and Mace.

ECI and subcontracting workshop

Two months earlier the NEC Asia Pacific Users' Group also held a one-day workshop on early contractor involvement (ECI) and subcontracting when using NEC4 ECC. The well-attended event at Pinsent Masons' offices was led by NEC Users' Group secretary Robert Gerrard.

He described the practical application of ECI clause X22 and subcontrating clause 26. I then led a discussion on NEC Z clauses used by government departments and Pinsent Mason partner Peter Clayton gave a legal perspective on current issues.

Over 280 delegates attended the NEC Asia Pacific Users' Group Conference at the Cordis Hotel in Hong Kong on 29 November

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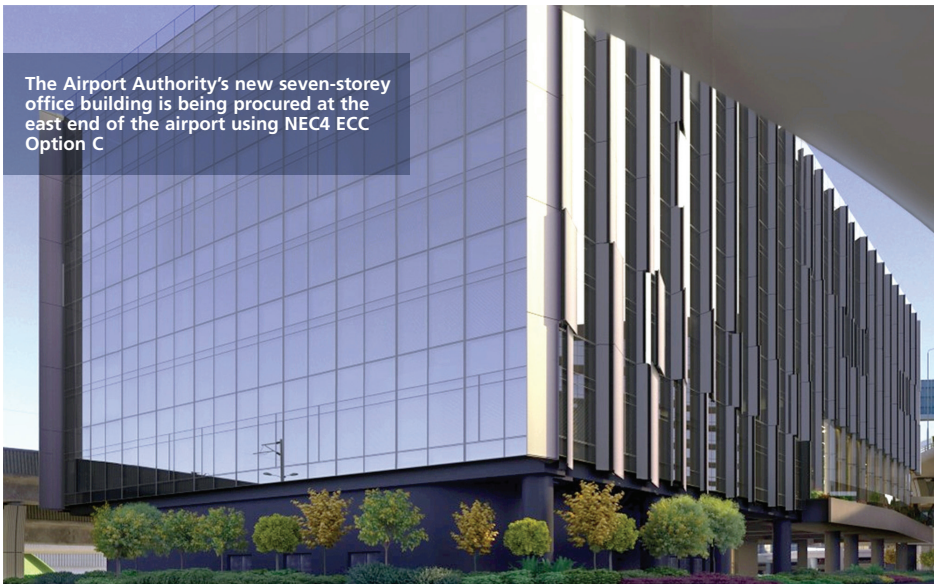
Additional 3RS works include building a new passenger building connected to the expanded Terminal 2 via a 2.6 km multiple-cell, cut-and-cover tunnel containing an 80 km/h automated people mover and a new 36 km/h baggage handling system. On completion in 2024, the 3RS project will enable the airport to handle an additional 30 million passengers each year.

The HK$2.37 billion (£235 million) NEC3 ECC Option D contract for the first section of passenger and baggage tunnels was let in June 2017 to China State Construction Engineering (Hong Kong) Limited, and construction is expected to take four years. The project team is using Cemar software to help with NEC contract administration.

The Airport Authority's deputy construction director Darrel Kingan and China State Construction deputy general manager Victor Wu discussed their use of NEC on contract 3801 in more detail in a Q&A session at the NEC Asia Pacific Users' Group Conference in November (see report above).

Third runway and associated works

The second NEC contract, 3RS contract 3303, is for constructing the third runway on the newly reclaimed land together with associated taxiways, infrastructure works and ancillary buildings and facilities. The HK$6.27 billion (£621 million) NEC4 ECC Option 4 contract was let in April 2019 to a joint venture of Sinohydro Corporation Limited, Powerchina Airport Construction Company Limited, Paul Y Construction Company Limited and Rock-One Engineering Company Limited.



The Airport Authority's new seven-storey office building is being procured at the east end of the airport using NEC4 ECC Option C

It is the largest NEC target contract to be let in Hong Kong so far, just beating the HK$6.23 billion (£617 million) NEC3 ECC Option C contract awarded by the Highways Department in July 2019 for the main tunnel section of the Central Kowloon Route (see Issue 102).

It is understood the project team will also be using Cemar software for contract administration.

New Airport Authority office

The third NEC contract, CWD contract C18W07, is for the design and construction of a new seven-storey office building on the north side of the existing Terminals 1 and 2. The HK$794 million (£79 million) NEC4 ECC Option C contract was let in July 2019 to Dragages Hong Kong.

Located on the current taxi staging area between car park 4 and the MTR Airport Express line, the 23,000 m² building will provide office accommodation for the Airport Authority and Aviation Security Company. According to Dragages, the use of NEC will, 'reinforce and open and collaborative working relationship with our client'.

The office building is scheduled for completion in 2022.

Reclaimed land tunnels

The fourth NEC contract, 3RS contract 3802, will be for the remaining 2.2 km of the automated people mover and baggage handling system tunnels in the new reclaimed land area. Currently out for tender, this will again be let using NEC4 ECC Option D and the value is likely to be of a similar order to contract 3801.

Turner & Townsend has been contracted to provide the Airport Authority with advice on all aspects of NEC procurement, tendering, training and post-contract administration, including cost assurance on target cost contracts.

EDITORIAL

Get contract data right, especially the scope

"If the scope does not deal with such matters, it will become exceedingly difficult to operate the contract as intended"

RUDI KLEIN NEC USERS' GROUP PRESIDENT

Some years ago at an NEC Users' Group conference, I overheard someone observing that the weakest part of the NEC documentation was the contract data. The rationale for this was that, unlike the rest of the NEC, it was left to the parties to fill in the relevant parts.

While this was not quite right – because parties can add Z clauses (or even, dare I say it, amend clauses) – I had some sympathy with the sentiment. I recently recalled the comment when I came upon an example of NEC3 contract data with lots of blanks and an attached works information (scope in NEC4) that contained minimal information.

Many of the core clauses in NEC contracts assume the parties have dealt with the relevant matters in the contract data. This is frequently the case when referring to the scope; but if the scope does not deal with such matters, it will become exceedingly difficult to operate the contract as intended.

Examples of matters missing

Perhaps I should provide a few examples of contractual matters which can easily be overlooked when writing the scope of NEC works contracts (this is not intended to be an exhaustive list).

- Does the scope state whether the working areas are to be shared with others (clause 25.1)?
- Does the scope state who is to provide services and things such as water and power (clause 25.2)?
- Does the scope state the health and safety requirements that are to apply to the contractor (clause 27.4)?
- Does the scope state the form in which the programme is to be provided (clause 31.2)?
- Have the requirements relating to any quality management system been included in the scope (clause 40.1)?
- Has the contractor been informed in the scope about the materials, facilities and samples to be made available for testing (clause 41.2)?
- Is the form of payment application stated in the scope (clause 50.2)?
- Does the scope contain requirements for the marking of plant and materials (to be used under the contract) outside the working areas (clause 70.1)?

Avoiding misunderstandings

It is essential to pay very careful attention when filling in the contract data and to take the greatest care when writing the scope of any NEC contract. Failure to adhere to this advice could lead to misunderstandings from the outset, a possible deluge of early warnings and even serious disputes.

NEW PRODUCTS AND SERVICES

NEC4 FM contract suite due later this year

LUCY O'CONNOR NEC MARKETING

NEC is planning to launch a new set NEC4 contracts for facilities management (FM) later this year.

As well as the main NEC4 Facilities Management Contract (FMC) there will be an NEC4 Facilities Management Short Contract (FMSC), NEC4 Facilities Management Subcontract (FMS) and NEC4 Facilities Management Short Subcontract (FMSS).

The new contracts, together with their associated user guides and flow charts, have been developed in close collaboration with the Institute of Workplace and Facilities Management (IWFM, formerly the British Institute of Facilities Management) over the past two years (see Issue 91).

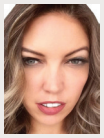
The have been drafted to embody the best-practice procurement approaches of NEC4 but tailored specifically for use in the FM sector. There will be three main pricing options: Option A (priced contract with price list), Option C (target contract with price list) and Option E (cost-reimbursable contract).

There will also be detailed FM-specific provisions to deal with service failures, recognising the variety of reasons, consequences and corrective measures required to handle these. Full details will be announced in due course.

The new NEC4 facilities management contracts have been developed with the IWFM

For more information *see neccontract.com/nec4fm*

Half-day workshops with NEC4 drafting team



SHERAZADE KAPPOS NEC USERS' GROUP CO-ORDINATOR

The NEC Users' Group is launching a new series of half-day workshops to enable NEC users to meet and question the NEC4 drafting team face-to-face.

The first two workshops will be held on 7 February and 26 March in Reading and Bristol respectively (see Diary on page 12). Adopting a successful model developed in Hong Kong, the workshops are being hosted by NEC users: the Reading event will be held at the University College of Estate Management and the Bristol event will hosted by law firm Foot Anstey LLP.

NEC4 drafters attending

NEC4 drafters attending one or both events will include Barry Trebes, John Hughes-D'Aeth, Richard Patterson, Tim Knee-Robinson, Ben Walker and Ross Hayes. The aim of the interactive sessions is to enable users to ask questions and receive answers from people directly involved in the contract drafting process.

NEC would also be keen hear from users interested in hosting future workshops, particularly if they are based in London.

For more information *see neccontract.com/events*

NEWS

Highways England adopts NEC4 for £1 billion trans-Pennine upgrade

SIMON FULLALOVE EDITOR

NEC Users' Group platinum member Highways England has adopted NEC4 contracts for the design and construction of a £1 billion upgrade to the A66 northern trans-Pennine route. It brings the government company's NEC4 works pipeline to over £18 billion.

The latest project involves dualling the remaining 29 km of single-carriageway sections on the strategically important 80 km east–west route between the A1(M) motorway at Scotch Corner in North Yorkshire and the M6 motorway at Penrith in Cumbria.

PSC and ECC Option C

Following an official notice last October, a £45 million contract for preliminary design, construction technical advice and supervision will be let early in 2020 under an NEC4 Professional Service Contract (PSC).

A preferred route announcement will be made early in Spring and, following final development consent, construction packages will be let using the NEC4 Engineering and Construction Contract (ECC) Option C (target contract with activity schedule) by 2025.

Senior project manager Matt Townsend said, 'The A66 northern trans-Pennine project will be one of the biggest infrastructure investments ever delivered in the north of England and we want to attract and work with the best suppliers to help deliver and realise the benefits that dualling the remaining single sections of the A66 will bring.'

£18bn of NEC4 contracts

The A66 upgrade will bring Highways England's NEC4-based workload to around £18 billion. In 2018 it announced it was using NEC4 ECC for its new £9 billion, five-year framework for delivery of major motorway and A-road projects (Issue 90), and later that year it chose the NEC4 Alliance Contract (ALC) for £7 billion of smart motorways over the next 10 years (Issue 98).

In July last year the government company issued a construction contract notice for the £1.25 million upgrade of the A303 upgrade near Stonehenge (Issue 101). A spokesman said, 'The majority of our contracts are based on NEC and, as a major user, the evolution of NEC3 to NEC4 makes the transition straightforward – a model contract document that can be adapted to reflect our needs.'

Kirkby Thore in Cumbria is one of a number of communities along the A66 that will benefit from a new NEC-procured dual carriageway bypass

CASE STUDY: *Water*

Award-winning new tidal walls will protect Shoreham from 50 years of rising sea levels

SIMON FULLALOVE EDITOR

NEC-procured flood defences in Shoreham-on-Sea won the BCIA 2019 Climate Resilience Project of the Year

Over 2,300 properties in southern England are now at a substantially reduced risk of tidal flooding for over 50 years following successful completion of an award-winning NEC-procured flood-defence project. The work involved construction of 7.2 km of new and improved flood defences along the tidal banks of the River Adur in Shoreham-on-Sea, West Sussex.

Prior to the scheme, over 2,300 residential and 150 commercial properties in Shoreham and nearby east Lancing – including Brighton City Airport – were at significant risk of flooding from overtopping or failure of the existing tidal walls. The new defences, which won the Climate Resilience Project of the Year in the 2019 British Construction Industry Awards, will provide better protection against surge tides with a 1-in-300 probability of occurring in any one year, with crest heights based on predicted sea level rise over the next 50 years.

The Environment Agency, working in partnership with Adur District Council, West Sussex County Council and the Coastal to Capital Local Enterprise Partnership, let the construction contract for the £46 million project to framework contractor Team van Oord (incorporating local contractor Mackleys) under an NEC3 Engineering and Construction Contract (ECC) Option C (target contract with activity schedule). Work started on site in September 2016 and was completed on time and within the approved budget in February 2019. The designer was Mott MacDonald and Arcadis was the ECC project manager.

The new defences are immediately downstream of the A27 road bridge and run for 1.8 km along the east bank and 5.4 km along the west bank. Consisting

The £46 million ECC Option C project included 7.2 km of new and improved flood defences along the tidal banks of the River Adur

BENEFITS OF USING NEC

- NEC ECC Option C shares commercial risk by setting a target cost and providing a pain/gain share mechanism.
- NEC incentivises both parties to work together effectively, stimulating collaboration and encouraging a progressive working relationship.
- NEC early warning and risk reduction mechanisms facilitate early communications about risk throughout a project, helping to ensure it remains on track for a successful outcome.

of a mixture of embankments, sheet-pile walls, rock revetments and flood glass, they are designed to last for 100 years with the option for the level to be raised after 50 years. The project also involved improving adjacent public footpaths and creating 1.4 ha of compensatory saltmarsh habitat.

Ensuring collaboration

The project was procured through the Environment Agency's NEC-based £1 billion Water and Environment Management Framework, which ran from 2013 to 2019. The framework specified that projects were to be let under either the NEC3 ECC Option A (priced contract with activity schedule), NEC3 ECC Option C or NEC3 ECC Option E (cost reimbursable contract).

According to Environment Agency project manager Tony Haffenden, the complexity and challenge of the works at Shoreham needed a collaborative approach and 'thinking outside of the box' to find solutions to the various challenges that were likely to arise during delivery. 'We therefore decided upon NEC3 ECC Option C as it shares the commercial risk: it sets a target and provides a pain/gain share mechanism, so if the works can be delivered more efficiently, both parties gain a share of the cost savings. Similarly, if the value of work exceeds the target, both parties share the pain.'

He says Option C incentivised both parties to work together effectively, stimulated collaboration and encouraged a progressive working relationship between the parties. 'It also incentivised the team to look for efficiencies and opportunities to reduce project costs, providing savings to both ourselves (and tax payers) as well as the contractor.'

Incentivising cost savings

Haffenden says a prime example of NEC incentivsation was at the W5 houseboat reach, where the contractor proposed a significant design change, shifting the flood-defence line to the landward side of a footpath. 'As well as this change enabling the houseboat access to remain open during construction, it also presented the contractor with more working room so that the risk of obstructions that would delay construction progress was also reduced. Overall this change significantly reduced the defined costs associated with the work, providing a saving to both the contractor and ourselves.'

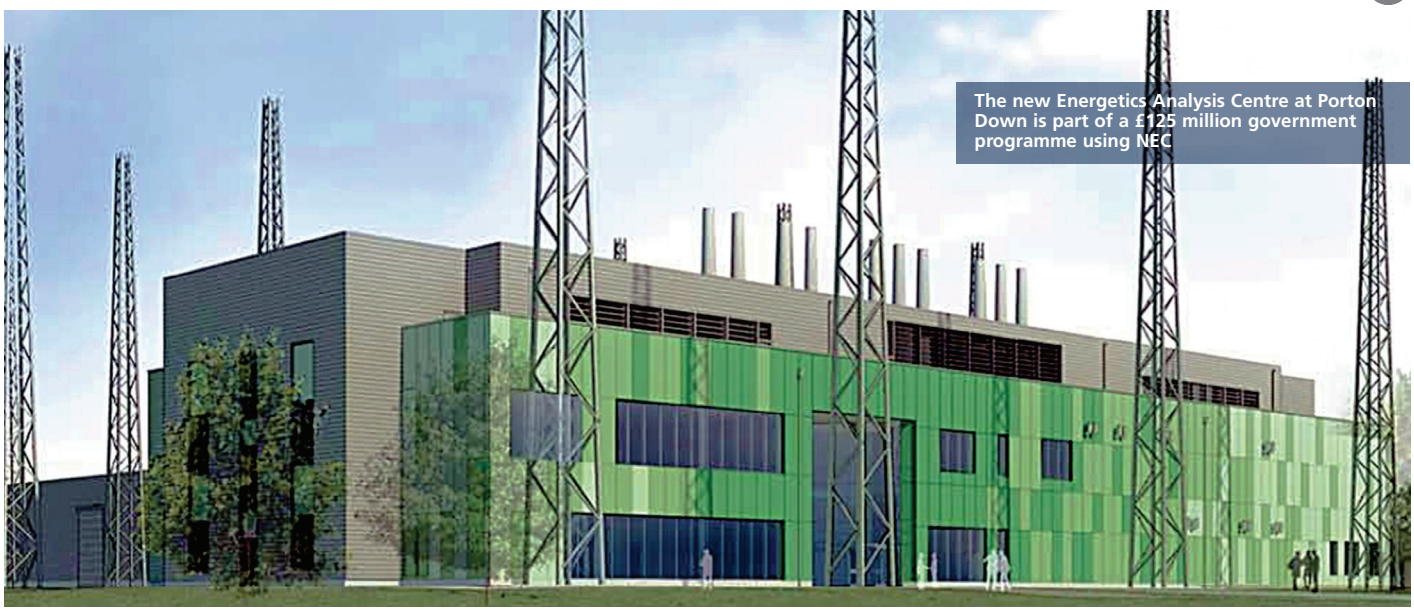
He says the contractual communication mechanism provided by the NEC3 ECC contract also enabled the project team to work collaboratively to identify, assess and mitigate risks as early as possible. 'For example, prior to construction commencing at the W5 reach, an NEC early warning was notified outlining the risk of piling refusals causing high construction delay costs. This early warning prompted a risk reduction meeting, where the risk was explored and a solution to mitigate against these delay costs was developed.'

A piling protocol was implemented following the meeting, where the designer specified minimum piling depths for the stability of the flood defence. If pile refusal occurred prior to the design piling depth, the contractor could check that the stability depth was met and move on to the next pile while the designer analysed the seepage risk, without delaying the construction programme.

Haffenden concludes, 'The NEC contractual communication mechanisms were vital in facilitating these early communications throughout the project and enabling planning towards successful outcomes.'

'The complexity and challenge of the works at Shoreham needed a collaborative approach and 'thinking outside of the box' to find solutions to the various challenges that were likely to arise during delivery'

CASE STUDY: *Building*



The new Energetics Analysis Centre at Porton Down is part of a £125 million government programme using NEC

UK government uses NEC to procure world-class explosives centre at Porton Down

SIMON FULLALOVE EDITOR

The UK government's Defence Science and Technology Laboratory (Dstl) has successfully procured a new explosive materials research centre using NEC. In recognition of its exemplary approach to procurement, Dstl was shortlisted for the 2019 NEC Client of the Year Award.

Completed on time and within 8% of budget in June 2019, the new £35 million Energetics Analysis Centre at Porton Down near Salisbury in Wiltshire provides the UK with a world-class science and engineering facility to defend the nation from explosive materials. The 7,283 m² T-shaped building is arranged over three levels, with two floors of state-of-the-art chemical laboratories, workshops, offices, meeting rooms, welfare facilities and storage, and a roof-level plant floor. The steel-framed, flat-roof structure is finished with coloured metal cladding and curtain-wall glazing.

Dstl let the project to contractor Willmott Dixon in March 2017 under an NEC3 Engineering and Construction Contract (ECC) Option A (priced contract with activity schedule). It was part of the NEC-procured £125 million Helios programme to relocate Dstl facilities from Sevenoaks in Kent to Porton Down. The NEC project manager for all three projects was Pick Everard.

Inclusive approach

Pick Everard programme director, Lance Hodges, said, 'The complex nature of the Energetics Analysis Centre project required an inclusive approach from the outset. This included early contractor involvement, during which value management, building information modelling (BIM) and contract management software helped to improve design efficiency. NEC's open-book approach also provided full transparency over contract pricing and risk allocation.'

In line with the NEC obligation to work in a 'spirit of mutual trust and co-operation', the working ethos was one of a single team. 'Team members respected and trusted the contribution of others and worked fairly, collaboratively and cooperatively to drive the project forward to deliver the client's requirements. A facilitated workshop at the outset enabled us to explore and discuss how best to bring to life a collaborative and cooperative working environment, and to start establishing the necessary respect and trust in each other's contributions.'

Hodges added, 'The single-team approach extended to an inclusive governance system. The team worked collaboratively to manage, oversee and deliver the contract and, in doing so, adopted a fair and respectful attitude to resolving issues and dealing with the materialisation of risk. Open and inclusive communications and information sharing were at the heart of the project's day-to-day business.'

Change management

An example of the benefit of the single-team approach was experienced when issues were identified with the many specialist gas supplies, and no material supplier could be found to meet the client's specification. Following an early warning and risk reduction meeting, the team developed an alternative approach of installing specialist filters prior to the point of use, thereby saving extensive rework.

Complex and late changes in the client's requirements during construction also presented the team with significant challenges. Using NEC's change-management mechanisms, the contractor was able to cooperatively and openly develop priced proposals and solutions that minimised the impact to overall time and cost. The role of the NEC supervisor proved beneficial to both the client and contractor in that the supply-chain delivery issues and design anomalies discovered during construction were resolved speedily to maintain the overall programme.

In total there were 132 early warnings, 324 project manager instructions and 166 implemented compensation events worth a total of £2.5 million. Hodges concluded, 'The cooperative and collaborative approach engendered by NEC to deliver this vitally important UK strategic asset ensured it was delivered on time, within 8% of budget and in accordance with the client's requirements. These successes were a direct result of avoiding adversarial conflicts, sharing information openly, and striving collaboratively to achieve a common goal. The client considers this to have been an exemplar procurement.'

BENEFITS OF USING NEC

- NEC flexibility enabled early contractor involvement, during which value management and innovative use of BIM helped to improve design efficiency.
- NEC open-book approach provided full transparency over contract pricing and risk allocation.
- NEC requirement to work in a 'spirit of mutual trust and co-operation' ensured the project team worked collaboratively to drive the scheme forward and deliver the client's requirements.
- NEC early warning and risk management processes helped ensure that client changes and other issues were resolved speedily with minimal impact on programme and budget.

CASE STUDY: *Transport*

The £700 million project included installing nine new escalators and eight new lifts, providing step-free access to tube trains

Transport for London doubles the size of Victoria tube station using ECC Option C

SIMON FULLALOVE EDITOR

BENEFITS OF USING NEC

- NEC promotes collaborative working in a multi-disciplinary team environment and provides the flexibility required to deliver complex high-profile schemes.
- NEC promotes active project management through submission of early warnings and risk-reduction meetings to address issues contemporaneously.
- NEC target-cost option has a combination of mechanisms to incentivise cost and programme savings to help achieve cost certainty and protect clients against cost and programme overruns.
- The construction industry's familiarity with NEC contracts means all parties understand their obligations and risks, helping to ensure that projects are delivered successfully.

NEC Users' Group platinum member Transport for London (TfL) has used NEC contracts to deliver a complex and challenging upgrade to the city's third busiest underground railway station. Completed in August 2019, the £700 million Victoria Station upgrade project involved doubling the size of the subterranean station and providing step-free access to the Circle, District and Victoria 'tube' lines.

TfL subsidiary London Underground let the main construction works in May 2010 to a joint venture of contractors Taylor Woodrow and Bam Nuttall under an NEC3 Engineering and Construction Contract (ECC) Option C (target contract with activity schedule). The contractors used the back-to-back NEC3 Engineering and Construction Subcontract, again with option C, for all major subcontracts, while lead designer Mott MacDonald and other consultants were engaged under the NEC3 Professional Services Contract (PSC).

The works involved construction of a new north underground ticket hall, expansion of the existing south underground ticket hall, excavation of 300 m of passenger tunnels and provision of nine new escalators and eight new lifts. There were also general improvements to all parts of the station, including improved access to the adjacent Victoria mainline station. The main underground structures were built using reinforced concrete and all public areas were clad with high quality robust materials such as granite, laminated glass, stainless steel, and vitreous-enamelled and polyester-powder-coated steel.

Collaborative working

London Underground senior project manager Helen Wright says the nine-year project was a major logistical and technical challenge. 'In addition to keeping the station operational for up to 300,000 daily users, we had to carry out the works in a highly congested urban environment with difficult ground conditions. For example, the new access tunnels were in fast-moving gravels and sands less than 30 cm away from the Victoria line and within 60 cm of the District and Circle lines. As such a total of 3,000 m^3 of ground had to be excavated by hand to ensure stability and protection of nearby assets.'

Wright says London Underground chose NEC because it promotes collaborative working in a multi-disciplinary team environment and provides the flexibility required to deliver complex high-profile schemes such as this. 'The ethos of the contracts is to promote active project management through early warnings and risk-reduction meetings to address issues as soon as they arise. All parties act need to act and reply within defined timescales, ensuring issues are resolved and agreed effectively.'

She cites examples of early warnings that led to compensation events as unexpected ground obstructions found during excavation of the north ticket hall, and the discovery of redundant services and asbestos during modernisation of the existing station. 'Through NEC's collaborative approach and robust project management procedures, we were able to reduce the impact of these compensation events on the programme and budget to an absolute minimum.'

Cost and programme certainty

According to Wright the ECC Option C target-cost contract contained a combination of mechanisms to incentivise cost and programme savings to help achieve cost certainty and to protect London Underground against cost and programme overruns. 'It incentivised the contractor to keep the actual cost below the target and therefore earn a higher fee.

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PRACTICE

How to ensure that bid-winning supply chains actually get used

RICHARD PATTERSON MOTT MACDONALD AND **BARRY TREBES** TREBES CONSULTING

KEY POINTS

- Winning bidders do not always use the subcontractors proposed in their tenders
- Clients can ensure this by getting subcontractors named in the supplier's part of the scope
- Alternatively they can add a simple clause for key subcontractors, similar to key people

As construction projects get more complex, specialist subcontractors are increasingly critical to successful outcomes. As such clients often consider the proposed supply chain when evaluating tenders, but how do they make sure those subcontractors will actually be used by the winning bidder?

In the NEC4 Engineering and Construction Contract (ECC) and NEC4 Professional Service Contract (PSC), the contractor's or consultant's fundamental obligation in clause 20.1 is to provide the works or service 'in accordance with the Scope' (or works information in NEC3 ECC).

If the client wishes to impose constraints, such as minimum levels of experience, on subcontractors (or subconsultants in NEC3 PSC) to be used, those constraints need to be included in the scope. In NEC4 ECC there is an optional second part of the scope called the 'Scope provided by the *Contractor* for its design'. This can be requested by the client at tender stage and can be incorporated in the contract by a one-line reference in contract data part two. There is a similar option in NEC4 PSC called 'Scope provided by the *Consultant*' (similarly in NEC3 ECC but not in NEC3 PSC).

In each contract, the winning supplier (contractor or consultant) must comply with the requirements and constraints in both scope documents. In both cases however, the scope from the client takes precedence over the scope provided by the supplier. This is due to the second bullet of clause 60.1(1), which says it will not be a compensation event if the project or service manager changes the supplier's scope 'to comply with the Scope provided by the *Client*.'

So how does a client make sure the supplier actually uses the subcontractors they have offered at tender stage? We set out two options: using the scope provided by the supplier, or using a simple option Z clause.

Using supplier part of scope

One option for making the winning bidder use its proposed supply chain is to include this requirement in the scope. However, it would not be appropriate in the client's scope as this could be seen as forcing the supplier to use specific subcontractors – effectively nominating them, with the client taking the risk of having done so. Rather, clients can require suppliers to name their supply chain in their own part of the scope.

For NEC4 ECC, it is suggested clients use a Z clause to change the title of the supplier's scope, deleting the words, 'for its design'. The phrase is superfluous and unnecessarily limiting, although it does hint at its normal purpose. For a design and build contract, the client may require some outline design from the contractor, but there is no reason to limit the contractor's scope to design – it could include any other promise.

Once the subcontractors are named in the supplier's scope, the winning supplier will be required to use them during the contract. There is no specific clause in either NEC4 ECC or NEC4 PSC for the supplier to request a change to their part of the scope. However, the option to do so is implicit in the second bullet point in clause 60.1(1), which also states it will not be a compensation event if the project or service manager changes the supplier's scope at the supplier's request (see authors' article on this topic in Issue 69).

So, the supplier could request – verbally or in a general communication as there is no clause – the project or service manager to change its subcontractors. But the project or service manager is in control here and would not have to agree to a change. However, if using the named subcontractor became impossible, for example due to bankruptcy, then the supplier could notify this in clause 17.2 (clause 18.1 in NEC3 ECC and PSC), discuss an alternative and persuade the project or service manager to change the supplier's scope to suit. This would not be a compensation event.

Using a 'key subcontractor' Z clause

An alternative approach is to use a simple Z clause for key subcontractors, based on the language used in clause 24.1 for key people named in contract data part two. For NEC4 ECC, the wording of this additional clause could be along the following lines.

> 'The *Contractor* either uses each key Subcontractor named to do the work stated in the Contract Data or provides a replacement Subcontractor that has been accepted by the *Project Manager*.
>
> The *Contractor* submits the name, relevant qualifications and experience of a proposed replacement Subcontractor to the *Project Manager* for acceptance. Reasons for not accepting the Subcontractor are that its relevant qualifications and experience are not as good as those of the Subcontractor that is to be replaced, or the proposed Subcontractor will not allow the *Contractor* to Provide the Works.'

Note that the last part of this suggested Z clause aligns with clause 26.2 on subcontracting. Adding such a clause would require a space in the contract data where the supplier would identify its proposed '*key subcontractors*' for types of work entered by either the client or the supplier. Also, instructions to bidders should explain this and, normally, give the opportunity for the suppliers to state that some work would be performed directly rather than by a subcontractor.

While Z clauses should be avoided as far as possible, it is suggested that the proposed additional clause here is neater and clearer that the option of having subcontractors named in the supplier's scope.

>> Continued from page 7

There was also a gain-share, pain-share mechanism that varied with proximity of the final actual cost to the final target cost. This further incentivised the contractor to produce savings against the target cost.'

For example, for the underpass below the District and Circle lines that links the two ticket halls, she says a series of design workshops and collaborative interactions enabled the project team to cut the time required for the enabling works from 17 weekend closures to a single six-day blockade. 'The remainder of the underpass construction was carried out from outside the existing track structure. A unique system of needles were installed during the enabling works, underpinning the existing District and Circle lines. Careful monitoring of the track alignments enabled excavation to be undertaken safely while trains continued to run.'

Wright says another key to the project's success was the co-location of all members of the project team in the same offices from the very beginning. 'This enhanced relationships and created a "best for project" ethos, which in turn led to successful delivery of what was a very complex project.

'Overall, the use of innovative design and construction techniques and the high quality of the finished works makes this an outstanding example of how to deliver a major multi-disciplinary project in a densely populated urban environment while minimising impact on local stakeholders.'

The NEC-procured upgrade doubled the size of Victoria Underground Station in central London, including a new north ticket hall

PRACTICE

Termination in an NEC4 Engineering and Construction Contract

DAVID HUNTER DANIEL CONTRACT MANAGEMENT SERVICES

KEY POINTS

- Essential for parties to follow correct termination procedures correctly to minimise liabilities.
- Project manager must receive a valid notification to terminate from either party.
- There are 22 reasons for termination, but client can terminate for any reason if X11 used.

In times of political and economic uncertainty, even the largest contracts can be cancelled and the biggest contractors fail. According to the UK Statistics Authority, construction now has more new insolvencies than any other industry, with 3013 insolvencies in the 12 month period to March 2019.

Furthermore, even the best-planned projects can run into irretrievable difficulty. In all cases it is vital for parties engaged under an NEC4 Engineering and Construction Contract (ECC) to follow the correct procedures for termination to keep their liabilities and costs to a minimum.

Notification

If either party wishes to terminate the contractor's obligation to provide the works in an NEC4 ECC they must first notify the project manager and the other party giving the reason. The notification should be given separately from other communications (clause 13.7). NEC4 allows the use of a 'communication system' (clause 13.2), such as cloud software, and using the means of communication specified in the contract is essential to avoid the notification being invalid. Z clauses may exclude the use of electronic communication for termination so may render a notice made in that way invalid (see *Ticket2Final OU* v. *Wigan Athletic* [2015] EWHC 61b).

The project manager has to agree that the reason given complies with the contract before issuing a termination certificate promptly (clause 90.1). This process should provide some protection to the parties from repudiation resulting from invalid termination (see *ICI* v. *Merit Merrell* [2017] EWHC 17630).

The project manager is not required to undertake an 'assessment', as is necessary for payment and compensation events. This, in theory, should allow the project manager to carry out their duty with little or no delay, ensuring the position of the parties are not held in abeyance

However, the contract is silent on the course of action when the project manager thinks the reason given by the terminating party does not comply with the contract. A project manager in this position might wish to remind both parties of their continued obligations until a termination certificate is issued. If a party did not agree with the project manger's decision, it could challenge their action or inaction through adjudication (option W1/W2).

There are five reasons for termination (R11 to R15, see following section) that require the project manager to first notify the contractor of its default. If not put right within four weeks, the client is then entitled to terminate. This condition precedent must be strictly observed otherwise the attempted termination would constitute repudiation of the contract (see Interserve *Construction* v. *Hitachi* [2017] EWHC 2633).

A defaulting subcontractor could constitute a default by the contractor by virtue of clause 26.1. The NEC4 Engineering and Construction Subcontract (ECSC) requires the subcontractor to put right a default within three weeks of the contractor's notification, allowing the project manager's notification to the contractor to be managed along the supply chain.

Reasons for termination

A party may terminate for a reason identified in the termination table (clause 90.2). The client's right to terminate for any reason at will applies only if secondary option X11 has been chosen. This is different to NEC3 ECC, where the client's contractual right to terminate for any reason is stated in core clause 90.2.

Clause 91 describes 22 reasons for termination. Reasons R1 to R10 are types of insolvency applying to both parties. Before exercising its right to terminate, a party should be encouraged to establish the full facts of the other party's financial position. Reasons R1 to R10 include arrangements made with creditors and administration, both of which allow a company to remain operating. In these circumstances novation of the contract, which requires the consent of both parties, may be a better solution.

Included within the five contractor defaults (R11 to R15) are the words 'Substantially failed to comply with its obligations' (R11). In legal proceedings a court would need to decide if the failure constituted a 'material breach' of the contract. Contemplating the right to terminate, the project manager and client should consider the seriousness of the contractor's failure and its financial impact if not put right (see *National Power* v. *United Gas Co* [1998] All ER (D) 321).

The contractor is entitled to terminate if it has not received payment within 13 weeks (R16). If the Housing Grants, Construction and Regeneration Act 1996 applies and non payment is the subject of a pay less notice (clause Y2.3), the project manager will need to decide if non payment was justified and the notice properly served before issuing a termination certificate.

If work is suspended for more than 13 weeks following a project manager's instruction (clause 34.1), either party may terminate (R18 to R20). The project manager would need to agree that it was 'substantial work' that had been stopped. An instruction to stop work is a compensation event (clause 60.1(4)) so, unless the project manager decides the event was due to the contractor's fault (clause 61.2), assessment of the event should have been progressed within 13 weeks.

Prevention events only allow the client to terminate (R21). A prevention event (clause 19.1) may be a compensation event (clause 60.1(19)) but not a reason for termination if it delays completion by less than 13 weeks. The project manager would therefore need to have made a full assessment of the delay against the accepted programme when deciding to certify termination or assess as a compensation event.

An act of corruption by the contractor (11.2(5)) entitles the client to terminate unless the act was by a subcontractor, and the contractor was not aware or had taken steps to prevent it (R22).

'A party may terminate for a reason identified in the termination table (clause 90.2). The client's right to terminate for any reason at will applies only if secondary option X11 has been chosen'

Procedures and payment

The procedures and amounts due (clause 92 and 93) depend on the reason for termination. Once the project manager has issued the termination certificate, procedures must commence immediately (clause 90.3).

The client is entitled to complete the works regardless of the reason for termination (procedure P1). If the client has terminated at will (option X11) or for a reason caused by the contractor (R1 to R15, R18 or R22) procedures P2 and P3 apply. Subcontracts may be assigned (P2) but the client is only permitted to assign the benefit of a subcontract so, if a new contract is required to allow completion of work, negotiation on payment will also be required. P3 allows the client to use equipment owned by the contractor but only to complete the works. The client cannot use equipment hired by the contractor. Under the NEC4 January 2019 amendments, P3 no longer applies to R17 and R20 and is replaced with P4, which requires the contractor to remove equipment.

The project manager assesses the amount due within 13 weeks of issuing the termination certificate (clause 53.1). If the Housing Grants, Construction and Regeneration Act applies, payment becomes due 1 week later (clause Y2.2). The final date for payment will depend on the period stated in the contract data. An interim payment certified before termination may be deferred if its final date for payment is after the date of termination (clause 90.3), subject to the provisions of clause Y2.4.

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LEGAL

How NEC4 ECC deals with delay and disruption

CHRIS DICKSON AND **LAURA WEST** CMS

KEY POINTS

- Notify compensation events within 8 weeks
- Include estimate for disruption cost in quotation
- Ensure accepted programme is kept up to date
- Contractor's quotation is deemed accepted if project manager responds late

Even the best planned and managed construction projects will experience delay from time to time. Depending on the cause of the delay, there may be time and cost implications for both the client and the contractor. It is therefore vital that the parties understand the contractual processes for dealing with delay.

In the NEC4 Engineering and Construction Contract (ECC), if a delay occurs as a result of a compensation event occurring, the contractor may be entitled to a change to the prices, key dates and the completion date. Compensation events are effectively defined circumstances over which the contractor normally has little control and which are substantially listed in clause 60 of the ECC.

NEC4 provides comprehensive provisions as to how to deal with compensation events. These provisions allow the parties to navigate their way through from notification of the compensation event to the compensation event being implemented. They include mechanisms which deal with quotations from the contractor, and how the project manager assesses a compensation event.

The provisions are there to provide clear guidance to the parties if the worst happens and delay or disruption arises. As with the NEC3 version, the NEC4 ECC is meant to be an active tool to manage risks and deal with them as they arise. It works best if used as intended rather than being left in a desk drawer.

In this article, which is based on a seminar we gave to the Chartered Institution of Civil Engineering Surveyors and RICS Matrics on 31 October 2019 in Glasgow, we list some of our top tips for those making and dealing with compensation events in relation to delay and disruption under the NEC4 ECC.

Notifying a compensation event

Firstly, as with NEC3, NEC4 sets a time bar for contractors wishing to notify a compensation event. The contractor is required to notify a compensation event within 8 weeks, 'of becoming aware that the event has happened'. Failure to do so means the contractor loses its right to additional time or money. This is in-keeping with NEC's ethos of dealing with issues as they arise. It is worth bearing in mind that this time-bar provision may not be as restrictive as it first seems as there is an exception where the compensation event arises from the project manager or supervisor giving, 'an instruction or notification, issuing a certificate or changing an earlier decision.' There are several compensation events that fall within this category.

The issue was raised in the case of *Northern Ireland Housing Executive* v. *Healthy Buildings* (see Issues 74, 88, 91 and 96), where there was a dispute as to whether discussions at a pre-start meeting changed the contractor's tendered scope. The contractor did not notify within 8 weeks of the meeting and, when the contractor eventually raised the compensation event, the client said the contractor's claim was time-barred. On the facts, the court found that the discussion at the pre-start meeting had constituted a client instruction and so the time bar did not apply. However, it took an adjudication and a court ruling to decide that. If in doubt, the best advice is to notify.

Secondly, in line with the emphasis on dealing with compensation events as they arise, the impact of compensation events is assessed prospectively. The disruptive effects of an event are unlikely to be properly known until afterwards. Contractors should therefore remember to include an estimate for disruption costs with their quotation, where possible backed by evidence of thickening costs from earlier in the project.

Assessing a compensation event

Given that the assessment of delay due to a compensation event is based on the dates given in the accepted programme, it is important for both parties to ensure the accepted programme is up to date. If it is not, the January 2019 amendment to the standard form allows project managers to take into account events between the accepted programme and the dividing date, so that project managers are not stuck with assessing on the basis of an outdated accepted programme.

'Given the focus of dealing with compensation events at the time they arise, there is a risk of several quotations landing on the project manager's desk at one time. Failure to respond to such quotations within set timescales risks deemed acceptance of the quotations'

The only word of warning for project managers is that clause 31 now provides that a contractor's programme will be deemed accepted if it fails to respond within a prescribed time. Under NEC4 ECC, project managers therefore need to stay on top of programme submissions.

Project managers also need to be wary of overload in relation to contractor's quotations. Given the focus of dealing with compensation events at the time they arise, there is a risk of several quotations landing on the project manager's desk at one time. Failure to respond to such quotations within set timescales risks deemed acceptance of the quotations. To avoid running out of time to consider the quotations properly, project managers need to make sure they have sufficient resources and where, they know a response timescale cannot be met, they should try to seek agreement for their own extension to this timescale as soon as possible.

Conclusions

As with NEC3, the key to handling delays and disruption under NEC4 is understanding and applying the contract at the time, working with the other party to discuss and deal with compensation events as they arise rather than saving them until the end of the project.

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The amount due on termination is assessed in line with amount A1 and one or more of the amounts A2, A3 and A4. A1 includes an assessment of 'normal payments' and depend on which main and secondary options apply. Any sums retained under option X16 and clause 50.5 are repaid. If termination is by the client due to contractor insolvency or default, the amount due includes deduction of a forecast of additional cost to complete the works (A3).

A project manager's forecast, which has to be concluded in 13 weeks, carries a different risk to both parties compared to an assessment based on actual costs. If the client has terminated at will, or the contractor has terminated due to client insolvency, non payment or default, the contractor is entitled to be paid its fee percentage applied to the value of the remaining work (A4). This has the effect of reimbursing the contractor its overheads and loss of profit.

Rights and liabilities after termination

Termination is of the contractor's obligation to provide the works (clause 90.1). This approach is consistent with the common law doctrine 'the contract survives termination', meaning any rights and liabilities accrued under the contract remain. For example, the contractor will be liable for its defects. In *Liberty Mercian* v. *Cuddy Civil Engineering* [2013] EWHC 2688, the court held the right to a bond or guarantee was an ancillary right that survived termination and was not part of the contractor's obligation to provide the works.

Conclusion

The process for termination as described in NEC4 ECC may seem straightforward, but in practice it is complex and potentially contentious. Faced with the prospect of termination, clients, project managers and contractors should all seek competent legal advice. They should always follow the contract and in particular any amendments.

PRACTICE

FAQs

ROBERT GERRARD
NEC USERS' GROUP SECRETARY

This is a selection of recent questions to the NEC Users' Group helpline and answers given. In all cases it is assumed there are no amendments that materially affect the standard NEC4 or NEC3 contract referred to.

Rates and quantities on an activity schedule

Question

We a contractor using the NEC3 Engineering and Construction Subcontract (ECS) with main option A (priced contract with activity schedule). If we instruct our subcontractor not to supply and install various new water services (i.e. it removes work scope which changes the subcontract works information), how does this manifest itself into a quotation from the subcontractor or an assessment from us? Our activity schedule shows rates and quantities. We would also like to know how the resulting residual sums become price for work done to date.

Answer

There should be no rates or quantities in an activity schedule. Instead it is, as the names implies, a series of activities with a lump-sum price for each, see clause 11.2(30). Your subcontractor gets paid for each activity once it is completed, see clause 11.2(27). There is no method of measuring the works or accommodating what is effectively a bill of quantities in ECS option A. If you wanted to use a bill of quantities, you should have chosen ECS option B (priced contract with bill of quantities).

As with any instruction to change the subcontract works information, this will be a compensation event and will be assessed in accordance with the rules set out in clause 63.1. The change of the prices will be assessed as the effect the compensation event has upon the forecast defined cost of the work not yet done, plus the fee. Unless you and your subcontractor agree otherwise, the prices in the activity schedule are not used to assess the compensation event.

So, the assessment uses the forecast defined cost of the omitted work, including any cost savings for being on site for a shorted period if applicable, but taking into account any costs which have already been expended, such as costs of plant and materials already ordered. To this is added the fee. The prices of the activities that have been omitted, and will never be paid for, are then deducted from this figure.

If the difference is negative, then a minus figure is included in the activity schedule for the compensation event. If it is positive, a plus figure is included in the activity schedule for this compensation event. At the same time, the activities that have been omitted are removed from the activity schedule.

Ambiguities in the scope

Question

We are the project manager on an NEC4 Engineering and Construction Contract (ECC). One of the changes between the NEC3 ECC and the NEC4 ECC is the wording at clause 17.1 for dealing with ambiguity in or between the contract documents. NEC3 ECC obliged us to give an instruction to resolve the ambiguity, however NEC4 ECC clause 17.1 changes the word from 'instruct' to 'state'. Volume 4 of the NEC4 users guides suggests this change reflects that project managers only have the power to change certain aspects of the contract (e.g. we cannot alter the terms and conditions). If there is no obligation on us to give an instruction to resolve an ambiguity in the scope when using NEC4 ECC, then how does this turn into a compensation event as envisaged under clause 63.10, so that it can be dealt with at the time rather than becoming an issue at completion?

Answer

As the NEC user guides suggest, there are certain ambiguities and inconsistencies which cannot be resolved by an instruction form you as the project manager, because your powers to instruct a change to the contract are limited. The most common of these is if there are ambiguities or inconsistencies between the contract and the client's Z clauses.

Some Z clauses introduce such uncertainties and in that case only the parties can agree how to deal with those because you have no powers to change the terms of the contract or Z clauses. If the parties cannot agree on any changes, then they are only left with the law to sort the problems out. That is why constraint should be exercised in the use of Z clauses, and any that are used must be carefully considered to ensure they are consistent with the standard clauses in the contract

However, in the case of inconsistencies or ambiguities within the scope, the matter is different. Here, you have the power to issue an instruction to change the scope. In that case, when you become aware of an ambiguity or inconsistency within the scope, you must state that an instruction to change the scope will be given. Subsequently you must then issue that instruction and notify a compensation event.

Detailing acceleration costs

Question

We are a contracted under an NEC3 ECC to complete a project in 6 months. The client has requested that we complete the project 2 weeks earlier, so we provided a quotation for acceleration costs. The acceleration costs were based on working one additional day per week (Sundays) and increasing skilled manpower both during day and night shifts as well as supervision and equipment. The calculation was based on agreed daily rates submitted with the quotation. However, the client now wants us to reveal the acceleration costs in detail. Should we provide this and what happens if there is a problem with it?

Answer

It is important to understand that the acceleration process in clause 36 is a consensual one between the parties. The client or project manager cannot 'instruct' or 'require' you to accelerate your works so as complete them before the completion date. All the project manager can do is instruct you to provide a quotation, see the first sentence of 36.1. You are not obliged to do so, as long as you explain why (see 36.2).

But if you do decide to provide a quotation, it has to provide details of the assessment, see the final sentence of 36.1, and that includes a revised programme for the works showing the earlier completion date. This means that you should show how you have calculated your figures, but you do not need to go into fine details.

With or without the details, the project manager cannot reject your quote and still require you to accelerate. The project manager simply does not have the powers to do so. All the project manager can do is accept the quotation and that then changes the prices, completion date, key dates and accepted programme, see clause 36.3.

Recovery of cost of cleaner

Question

We a contractor engaged under an NEC3 ECC Option C (target contract with activity schedule). Is our directly employed cleaner recoverable under item 1 of the schedule of cost components?

Answer

Yes, the cost of your cleaner is recoverable under the cost for directly employed or indirectly employed people, that is under schedule items 11, 12 and 13, or 14. They are helping to provide the works, as defined by the very wide definition in clause 11.2(13) and they meet the requirement of one or other of the two bullets at the beginning of item 1. Further, they are not included within the definition of working area overheads.

"There should be no rates or quantities in an activity schedule. Instead it is, as the names implies, a series of activities with a lump-sum price for each"

ICE Register for Accredited NEC professionals

Below are new entrants on the Institution of Civil Engineers (ICE) Register for Accredited NEC Professionals at necprofessionals.ice.org.uk. The register recognises the technical and practical skills required of project managers and supervisors using the NEC4 or NEC3 Engineering and Construction Contract (ECC) and service managers using the NEC4 or NEC3 Term Service Contract (TSC). All individuals on the register have completed the relevant accreditation programme and successfully passed the stage 1 and stage 2 assessments.

Accredited NEC4 ECC Project Managers

John Booth
Simon Cardwell
Bob Chan
Hillson Cheung
Winnie Choi
Ray Chow
So-Wing Chuen
Wyn Daniels
Magdalena Maskell
Paul Jones
Kai-Hon Kwan
Graham Lamont
George Lee
Justin Masterson
Shradha Mishra
Chi-Hung Mok
Christopher Nichols
Alex Pong
Allen Poon
Marcus Saxton
Christopher Seymour
Jeremy Sparrow
Mark Windrow

Accredited NEC3 ECC Project Managers

Tom Aston
Andries Bentley
Leigh Carter
Sam Davy
Lucy Ford
Julie-Ann Janko
Magdalena Maskell
Wai-On Lam
Steven McArevey
Nicholas Petty
Ken Shotton
Aman Wong

Accredited NEC3 ECC Supervisors

Jonathan Jackson
Robert McCullough
Stephen Moss
Marcus Saxton

nec DIARY

14 January	NEC4: TSC Service Manager Accreditation	Birmingham
21 January	NEC3: Introduction to the ECC	London
03 February	NEC3: ECC Project Manager Accreditation	Hong Kong
03 February	NEC4: ECC Project Manager Accreditation	Birmingham
05 February	NEC3: ECC Supervisor Accreditation	London
07 February	**NEC Half-Day Meet the Drafters Workshop**	**Reading**
12 February	NEC4: Introduction to the ECC	London
13 February	NEC3: Introduction to the ECSC	Birmingham
13 February	NEC3: Commercial Management using the NEC3 ECC	London
18 February	NEC3: TSC Service Manager Accreditation	Manchester
24 February	NEC4: ECC Project Manager Accreditation	Hong Kong
28 February	NEC3 to NEC4: ECC Project Manager Accreditation extension	Hong Kong
02 March	NEC3: ECC Project Manager Accreditation	London
03 March	NEC3: ECC Supervisor Accreditation	Hong Kong
04 March	NEC3: Preparing and Managing the ECC	Bristol
11 March	NEC3: Introduction to the TSC	Birmingham
12 March	NEC3 to NEC4 ECC Project Manager Accreditation extension	Manchester
12 March	NEC4: Introduction to the PSC	Manchester
17 March	NEC4: ECC Supervisor Accreditation	London
19 March	NEC3: Introduction to the ECC	Birmingham

Key: **Bold** – NEC Users' Group event, ECC – Engineering and Construction Contract, ECSC – Engineering and Construction Short Contract, PSC – Professional Service Contract, TSC – Term Service Contract

NEC Users' Group members

A warm welcome is extended to all new members, highlighted in **bold** in the membership category lists below.

PLATINUM

AAWE
Birmingham Airport Limited
Dounreay Site Restoration Ltd
Geoffrey Osborne Ltd
Highways England Co Ltd
Innogy Renewables UK Limited
INOVYN ChlorVinyls Ltd
Pinsent Masons LLP
Sellafield Ltd
Southend Borough Council
Southern Water
Strategic Estates, House of Commons
Surrey County Council
Tarmac
Transport for London
Yorkshire Highway Alliance

GOLD

AECOM Professional Services LLP
Arcadis
Atkins UK
Balfour Beatty
BAM Construct UK Ltd
BAM Nuttall
Bird & Bird LLP
CampbellReith
Canal & River Trust
Capita Property & Infrastructure Ltd
Central Procurement Directorate
City of Edinburgh Council
Cleshar Contract Services Ltd
CNS Planning Ltd
CPMS
Currie & Brown UK Ltd
Defence Infrastructure Organisation (DIO)
Dover Harbour Board
Driver & Vehicle Standards Agency
East Sussex County Council
EDF Energy
Ervia
Eurovia Group Ltd
Farrans Ltd
FCO Services
Framatome
Galliford Try
Gigaclear Ltd
Imperial College London
Instalcom Ltd
Interserve Construction Ltd
Jackson Civil Engineering Group Ltd
Kone PLC
Laing O'Rourke
Lendlease Consulting Limited
LLW Repository Limited
Mace Group
Morgan Sindall Construction & Infrastructure Ltd
National Grid Plc
NG Bailey
NHS National Services Scotland
Northern Ireland Water
Northumbrian Water Limited
Ove Arup & Partners Ltd
Oxfordshire County Council
Perth and Kinross Council
Pick Everard
Rider Levett Bucknall
RPS Group Plc
Scottish Water
Simec Uskmouth Power Limited
Sisk Lagan Joint Venture
SKA Organisation
Skanska Construction UK Ltd
Springfields Fuels Ltd
SSE Plc
Telford & Wrekin Council
The British Museum
The Coal Authority
The Orange Partnership
The Spencer Group
UK Power Networks Ltd
Vinci Construction UK Ltd
Volker Services Ltd
Warwickshire County Council
Wood
WSP UK Ltd
WYG Management Services
YGC
Yorkshire Water Services Ltd

SILVER

Aberdeenshire Council
Aquila Nuclear Engineering Ltd
Ashfords LLP
Barhale Plc
BCP Council
BEP Delivery Team
Boskalis Westminster Ltd
BURNESS PAULL
Cambridgeshire County Council
Cavendish Nuclear Limited
City of York Council
Colas Ltd
Connect Plus Ltd
Cornwall Council
Defence Science & Technology Laboratory
Dyer & Butler Ltd
East Ayrshire Council
East Ayrshire Council
Eastern Solent Coastal Partnership
Environment Agency
Faithful+Gould
Foot Anstey LLP
George Leslie Ltd
Gleeds UK
GVE Commercial Solutions
Heathrow Airport Limited
HKA Global Ltd
Holman Fenwick Willan LLP
Jacobs UK Ltd
Jersey Electricity Co Ltd
Lagoni Engineering Limited
Lantis
Leicestershire County Council
MacKenzie Construction Limited
Management Process Systems Ltd
Mott MacDonald Limited
NBS Services
Nexus Rail
Norfolk County Council
North Ayrshire Council
Northumberland County Council
Norton Rose Fullbright LLP
Osborne Clarke
Pagabo
Playle & Partners LLP
R J McLeod Ltd
South East Water Ltd
South Lanarkshire Council
South West Water Ltd
Stantec UK Ltd
States of Jersey
Sutton & East Surrey Water Plc
Thomas Bow Ltd
TLT LLP
Topbond
Turner & Townsend
University of Glasgow
West Berkshire Council
West London NHS Trust
Wilsons of Cambridge
Worcestershire County Council
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BRONZE

Ansaldo Nuclear
Anthony Collins Solicitors LLP
AstraZeneca
Bal Hothi
Bennetts Associates
BIMUK
Black & Veatch Ltd
Breheny Civil Engineering Ltd
Caledonian Maritime Assets Limited
Castle Hayes Pursey LLP
CCJ Group Limited
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Construction Dispute Resolution
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Corrie Consulting Ltd
Costain Limited
Ctori Construction Consultants Limited
Daniel Commercial Management Services
Deane Public Works Ltd
Department of Health
Diamond Light Source Ltd
Doig & Smith Ltd
Dunstan-Consulting Ltd
Dynniq UK Ltd
East Lothian Council
ECS Associates (Pty) Ltd
Fife Council
FTI Consulting
Fulkers
GHD (Manchester)
Glanville Projects Ltd
Goodman Derrick LLP
Hanscomb Intercontinental
Haskoning DHV UK Ltd
Hydro International Limited
Ironside Farrar Ltd
JJL Consultancy Ltd
John Papworth Limited
K&L Gates
Lilleker Bros Ltd
LM Services
Loughran Associates Limited
Mangotree Kent Limited
McAdam Design
MissionCX Limited
MM Miller Ltd
MY Cheng & Co Ltd
NE Consult
NMCN PLC
Orkney Islands Council
Palbro Consulting Limited
Pat Munro Ltd
PD Group Management
Procom-IM Ltd
Pyments Ltd
RG Carter Technical Services Ltd
Ronez
Royds Withy King
RSK
RW Hayes
Severn Trent Services Operations UK Ltd
Solomons Europe Ltd
Steve Brown & Associates Ltd
Summers-Inman LLP
Supacat Ltd
Synergie Training
Tanner Project Management Ltd
TC Consult
The Clarkson Alliance
The Highland Council
Timothy Willis
TKR Consultancy Ltd
Trebes Consulting Limited
Trebes Consulting Limited
Veale Wasbrough Vizards LLP (London)
VVB Engineering UK Ltd
VX FIBER
Wallace Stone LLP
Wrekin Consulting Ltd

ASIA PACIFIC

Airport Authority Hong Kong
Architectural Services Department, HKSAR
Arup
Atkins China Ltd
Beria Consultants Ltd
BK Surco Ltd
Building & Construction Authority
China State Construction Engineering
Chun Wo Construction & Engineering Co Ltd
Civil Engineering & Development Department, HKSAR
CLP Power Hong Kong Ltd
Currie & Brown (China) Ltd
Deacons
Development Bureau, HKSAR
Dragages Hong Kong Ltd
Drainage Services Department
Driver Trett Ltd
Electrical and Mechanical Services Department, HKSAR
Gammon Construction Ltd
Highways Department, HKSAR
Hogan Lovells
Hong Kong Construction Industry Council
Kum Shing (KF) Construction Co Ltd
Mannings (Asia) Consultants Ltd
Meinhardt Infrastructure & Environment Ltd
Mott MacDonald Hong Kong Ltd
MTRCL
MTRCL – Hong Kong
Pinsent Masons
Projection Group
Shui On Construction Company Ltd
Sum Kee Construction Ltd
The Contracts Group Ltd
The Hong Kong Institute of Surveyors
thinkproject Hong Kong Ltd
Thomas Telford Ltd
Turner & Townsend
Vasteam Construction Ltd
VSL Intrafor
WSP Limited

REST OF WORLD

Egis Road & Tunnel Operation Ireland
Fulton Hogan Limited
Hawkins 2017 Ltd