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nec users' group NEWSLETTER

Over 350 delegates attend annual seminar in London

SIMON FULLALOVE EDITOR

Over 350 NEC users from the UK and around the world attended the NEC Users' Group annual seminar and awards ceremony in London last month.

The event on 17 June at the Institution of Civil Engineers headquarters in Westminster showcased major NEC-procured building and infrastructure projects in Australia, Hong Kong, Peru and the UK, as well as NEC's growing role in digital transformation, facilities management and asset operations.

International speakers included Lam Sai-Hung of the Hong Kong Development Bureau, Albert Cheng of the Hong Kong Construction Industry Council and Dafydd Wyn Owen of consultancy HKA's Sydney office. NEC is the default public-sector construction procurement route in Hong Kong and it is now finding favour in Australia (see page 3).

NEC case studies

Nisha Desai and Frank Randles from Mace and Andrew Wilkinson from Arup explained how the NEC3 Engineering and Construction Contract (ECC) had ensured venues and infrastructure were delivered on time for this month's Lima 2019 Panamerican and Parapan American Games, the world's fourth biggest sporting event. The Peruvian government is now looking at using NEC to deliver major infrastructure projects.

Phillip Bennett, commercial director of Network Rail, discussed how the NEC4 Design Build and Operate Contract (DBO) is helping achieve a £1.8 billion digitalisation of the East Coast mainline, while Thames Tideway Tunnel deputy programme director Jackie Roe updated users on London's NEC-procured £4.2 billion 'super sewer'.

Ian Cowling of BAM Nuttall discussed NEC's role in collaboration, Mark Enzer of Mott MacDonald covered digital transformation and Anne Kinder of Nodus and Ross Hayes introduced the new set of NEC facilities management contracts, now in development and being released soon.

The afternoon session included interactive workshops on the NEC4 Term Service Contract (TSC), NEC subcontracts and NEC's proposed new digital platform. There was also an opportunity to meet and question some of the drafters of the NEC4 contract suite.

NEC Awards 2019

David Hancock, NEC Users' Group chair and construction director at the UK's Infrastructure Project Authority, then presented the 2019 NEC Awards.

The NEC Contract of the Year was a £38 million highways project for Perth & Kinross Council in Scotland. Following a 9 month early contractor involvement stage and full use of NEC risk-management processes, Balfour Beatty successfully delivered the Perth Transport Futures Project phase 1 – A9/A85 to Bertha Park scheme in February this year under an NEC3 ECC Option A (priced contract with activity schedule).

NEC Client of the Year was the Hong Kong Drainage Services Department, which has awarded 66 NEC3 contracts over the past 10 years using a wide range of forms and options. It is now piloting the NEC4 Professional Services Contract (Issue 96).

NEC Contractor of the Year was a joint venture of China Road and Bridge Corporation and Build King, also in Hong Kong, for their exemplary collaboration during construction of the HK$2.4 billion (£240 million) Road P2 in Tseung Kwan O (Issue 99).

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Finally the NEC Contract Innovation of the Year Award went to HS2 and Arup+ for good use of key performance indicators and incentives to encourage innovative civil engineering design on lot 3 of phase 2.

Fairer payments

The seminar concluded with a presentation from UK member of parliament Debbie Abrahams, who explained how NEC and project bank accounts can help to ensure prompt and fair payments to smaller members of the supply chain (see page 2).

The event was sponsored by Cemar, Build. IT, Built Environment Communications Group (BECG), Turner & Townsend and Sypro.

NEC Users' Group chair David Hancock delivered the opening address at the annual seminar in London ▶

Fair payment is vital to innovative delivery

DAVID HANCOCK NEC USER'S GROUP CHAIR

In my last editorial (Issue 97), I focused on issues central to changing the way the construction sector operates. This included greater collaboration and moving towards greater use of modern methods of construction, underpinned by digital design and advanced manufacturing techniques.

However, for innovative approaches to be developed, we need to have the right basic conditions in place. Businesses cannot focus on innovation if they are struggling to keep their heads above water and pay bills.

As member of parliament Debbie Abrahams reminded all of us at the NEC Users' Group's annual seminar last month, the UK construction industry continues to be characterised by poor payment practices, with suppliers not being paid fairly or on time. We continue to see the use of lengthy payment terms or delays in paying invoices throughout the supply chain.

Improving payment practices

The UK government is determined to eliminate poor payment practices and ensure fair payment and timely cash flow, particularly for smaller businesses. Speaking at the Royal Institution of Chartered Surveyors' annual construction conference in May 2019, implementation minister Oliver Dowden said, 'Small businesses are the backbone of the UK's economy, so it's vital that we support them – and one of the key elements of that is making sure they are paid on time.'

The government is encouraging actions to reduce risks to small businesses and ensure promptness and certainty around payment. These include the following.

- Using project bank accounts on all government construction projects unless there are compelling reasons not to.
- From September 2019, preventing companies from winning government contracts if they fail to demonstrate prompt payment to their suppliers. It is already a statutory requirement for companies to report on their payment practices, policies and performance on a half-yearly basis, and publish these through an online service provided by the Department for Business, Energy and Industrial Strategy.
- Supporting industry-led payment performance league tables, such as that published six-monthly by Build UK.

NEC users will be familiar with the fair-payment principles provided within NEC3 and NEC4 contracts. These include monitoring and reporting on payment periods and payment mode, a 10-day payment pledge and an obligation in main contracts to include fair payment periods in subcontracts and sub-subcontracts. NEC also supports the adoption of project bank accounts unless there are specific reasons not to do so.

By embedding fair-payment principles in our contracts we can start to change the current culture and approaches to payment. We can then really start to effect a transformation in infrastructure performance, from traditional to more modern methods of construction enabled by digital and manufacturing technologies.

Driving innovation

Already five of the government's major construction-spending departments (transport, education, health, justice and defence) have committed to a presumption in favour of offsite manufacturing across suitable capital programmes where this represents best value for money.

The government is also about to publish further details of its proposed 'platform approach to design for manufacture and assembly' (P-DfMA). This seeks to use the collective buying power of government departments to aggregate demand for platforms of components that can be used across different assets. It would drive a new market for manufacturing in construction, which in turn would boost productivity, innovation, efficiency and quality within the sector.

A call for evidence that closed in February 2019 resulted in 62 industry responses, most of which were overwhelmingly supportive.

It remains a challenging time for many in the UK construction sector given the country's imminent exit from the European Union. But by improving the way we work, we can progress the way our projects are delivered and achieve better outcomes for all organisations in the supply chain.

CCS publishes standard 'boilerplate' Z clauses

STEFAN PHILLIPS CROWN COMMERCIAL SERVICE

NEC Z clauses and other amendments to standard contracts remain a contentious topic within the construction industry. Their use to incorporate project-specific conditions is often required yet they can detract from the smooth adoption and interpretation of contracts.

UK government departments are obliged to include various legal and policy clauses within every contract as amendments. However, these are generally drafted as separate operations and with differing approaches.

Crown Commercial Service (CCS), the UK's largest public procurement body, has recently completed a suite of standard 'boilerplate' amendments for use on its construction frameworks. The aim is to save time and money for customer departments and ultimately the taxpayer.

Most widely used amendments

Working with the Infrastructure and Projects Authority, CCS analysed how departments drafted and applied similar provisions amended differently. This identified 18 of the most widely used amendments across government, which were as follows

- definitions
- admittance to site
- prevention of fraud and bribery
- legislation and official secrets
- freedom of information
- confidentiality and information sharing
- security requirements
- tax compliance
- Contracts (Rights of Third Parties) Act 1999
- fair payment
- building information modelling
- Housing Grants, Construction and Regeneration Act 1996
- intellectual property rights
- Ministry of Defence conditions (DEFCONs)
- small and medium enterprises
- apprenticeships
- General Data Protection Regulation
- cyber essentials.

The new boilerplate amendments are all based on Z clauses used on a previously well-received CCS procurement. These were amended and perfected to remove any ambiguity and enhance their effect while retaining a simple-to-understand nature.

NEC3 and NEC4 documents

The end result is a suite of five standard boilerplate documents, one each for NEC3 and NEC4 and three for other standard contract forms. Each document includes a detailed introduction and guidance process for both customer and supplier ease of use. They describe how the clauses can be incorporated as a schedule of amendments, with the applicable clauses drafted, reviewed and ready for use.

CCS collaborated with NEC at two different stages of the project. Input from industry experts ensured NEC versions of the document were in line with the language and aims of the parent contracts. This resulted in documents that flow smoothly as extensions to the original contract, so that those familiar with the NEC3 and NEC4 suites will find the amendments similarly useful.

The new documents have been published with the CCS Modular Building Solutions framework and Construction Works and Associated Services framework (e.g. see www.crowncommercial.gov.uk/agreements/RM6088). The wide reach of these frameworks will ensure the documents are strengthened through use by multiple customers, standardising and simplifying public-sector construction contracts.

Customer and supplier benefits

Customer departments no longer need to

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NEC used to deliver UK's first proton beam centre

SIMON FULLALOVE EDITOR

The NEC-procured Proton Beam Therapy Centre at The Christie cancer hospital in Manchester, UK is the first of its kind in the country. Completed in October 2018, the £125 million state-of-the-art centre provides proton beam radiotherapy that can target certain cancers very precisely and without side-effects.

Working through the UK government's NEC-based Procure 21+ construction procurement framework (now Procure 22), The Christie NHS Foundation Trust engaged Interserve as its principal supply chain partner on an early-contractor-involvement basis under an NEC3 Engineering and Construction Contract Option C (target contract with activity schedule) in March 2014.

Interserve's supply chain partners were architect HKS, engineer Arup and project manager Mace, each of which was contracted under an NEC3 Professional Services Contract (PSC). Preferred supplier for the £40 million of proton beam equipment – including a 90 t super-conducting cyclotron and three 360° treatment units – was Varian in Germany, which was engaged under an NEC3 Supply Contract.

The project involved building a 15,000 m², five-storey, highly serviced building on a constrained site in a live hospital environment.

The £125 million Christie Proton Beam Therapy Centre in Manchester, the first in the UK, was delivered using NEC3 ECC Option A

Proton beam equipment included three 360° treatment units and a 90 t super-conducting cyclotron shielded with 6 m thick walls

Reinforced concrete walls up to 6 m thick were needed to contain radiation around the proton beam equipment, requiring a total of 48,000 t of concrete, while the total length of conduits for supporting electrical, mechanical and plumbing services was over 9 km.

The building also includes a magnetic resonance imaging (MRI) and computerised tomography (CT) facilities, a large reception area, consultation rooms, planning and support accommodation, space for a fourth treatment unit, an electricity sub-station and a heat reclamation plant. Despite the building's high energy demand, it achieved a Breeam 'excellent' environmental rating.

Following a year of design development and optimisation, work started on site in July 2015 and the project was delivered on time and £2 million under budget in October 2018. It won the Constructing Excellence Building Project of the Year Award in November and the first of up to 750 patients a year was treated in December.

Collaborative approach

Jason Dawson, director of capital, estates and facilities of The Christie NHS Foundation Trust said on completion of the contract, 'We are delighted to be able to offer this life-changing treatment to patients. The delivery of this facility using NEC contracts has been one of the most complex and precise projects within the NHS.

'We identified very early in the project that we needed a construction partner that could work alongside our team. The NEC contractual obligation for parties to collaborate "in a spirit of mutual trust and co-operation" integrated with Interserve's technical expertise and energy to solve problems is one of the key reasons we completed on time.'

Dawson said he is a firm advocate of the NEC-based Procure 21+ framework. 'Its benefits – clearly seen on this project – included early engagement and speed to site, effective risk management and cost control, plus access to a select band of contractors with specific expertise.

'The NEC early warning process ensured that all issues which might have impacted on the project outcome, such as late design information from equipment suppliers, were identified and mitigated at the outset. The open-book approach of ECC Option C also meant we had complete transparency of costs and programme throughout the project.'

Dawson adds that building information modelling (BIM) played a crucial role in the design of the centre. 'Working under NEC PSC contracts, the design team produced an integrated, federated design model to give a four-dimensional representation of the project. This was used to coordinate equipment designs and for clash detection, creating savings of around £1.95 million. It was also the used to validate radiation protection, the first time this has been done in the UK.'

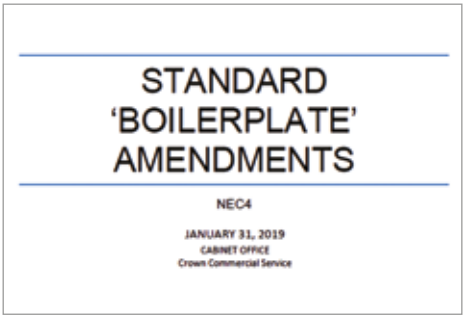
>> Continued from page 2

draft their own clauses and can be reassured that policy requirements are being correctly implemented in their contracts. Suppliers will benefit from clearer obligations and a unified approach between customers, improving their contract management duties.

The aim is now for feedback to be gathered from customers and suppliers. An ongoing review mechanism will be created so that each document is regularly updated in line with legislative and regulatory changes, as well as to reflect industry best practice. There is also scope for expansion to different areas, including the NEC4 Professional Service Contract.

For further information, *please email construction@crowncommercial.gov.uk.*

NEC4 boilerplate amendments for the CCS Modular Building Solutions framework ▶



Antarctic stations upgrade

SIMON FULLALOVE EDITOR

NEC Users' Group gold member BAM Nuttall won an £8.15 million NEC3 Term Service Contract (TSC) last month to upgrade port facilities at British Antarctic Survey's (BAS) King Edward Point environmental research station on the remote unpopulated island of South Georgia.

Scheduled for January to May next year, the challenging project was let by BAS parent Natural Environmental Research Council as part of a seven-year NEC-procured £100 million Antarctic infrastructure modernisation programme announced in 2017.

The work involves extending an existing wharf and building a new 11 m by 11 m dolphin structure to enable BAS's new 129 m long polar research vessel *Sir David Attenborough* to call from next year. Site supervision, engineering and project management support is being provided by Ramboll under a separate NEC3 TSC.

According to David Seaton, senior infrastructure programme manager at BAS, 'Our prime objective is to have a true collaborative partnership, fully open and transparent, to help us deal effectively with the unique challenges of Antarctica. NEC and its obligation to work "in a spirit of mutual trust and co-operation" is the obvious contract choice to meet this objective.'

Last year BAM Nuttall and Ramboll completed a 17-week, £3 million upgrade of Bird Island research station on South Georgia. A £30 million project is also ongoing at Rothera research station on Adelaide Island, west of the Antarctic Peninsula, where the first phase of a new 74 m long wharf was completed in May this year.

BAS is a long-standing user of NEC contracts, having procured the innovative £22 million Halley VI research station on the Brunt Ice Shelf in Antarctica in 2012 using an NEC3 Engineering and Construction Contract (ECC) Option C (target contract with activity schedule). This was successfully moved 23 km to avoid an advancing ice chasm in 2017 (see Issue 85).

▲ NEC3 TSC is being used to extend the existing wharf at King Edward Point environmental research station in South Georgia

Best-project power tunnel

SIMON FULLALOVE EDITOR

A strategic 330 m long high-voltage electricity cable tunnel in central London is due to be commissioned early next year following successful design and construction using NEC contracts. The 2.44 m internal diameter tunnel project included a complex underground connection to an existing power tunnel containing 132 kV cables, which had to remain live throughout the works. The project won the Best Infrastructure Project at the 2018 Institution of Civil Engineers London Civil Engineering Awards.

The spur tunnel was part of a £42 million project by UK Power Networks to provide a major new 11 kV substation to supply the Battersea and Nine Elms development area on the south bank of the River Thames. This includes the £9 billion Battersea Power Station redevelopment, home to Apple's new London campus from 2021, plus the £1.2 billion Northern line underground railway extension and over 20,000 new homes.

The substation project was carried out under UK Power Networks' £1 billion, seven-year Ed1son Alliance launched in 2015. Delivery member Clancy Docwra let the cable tunnel design to COWI under an NEC3 Professional Services Contract (PSC) and the tunnelling work to Joseph Gallagher Ltd under a £6.7 million NEC3 Engineering and Construction Contract (ECC) Option A (priced contract with activity schedule) in 2016. Gallagher subsequently engaged COWI under a separate PSC to provide permanent and temporary works design and monitoring.

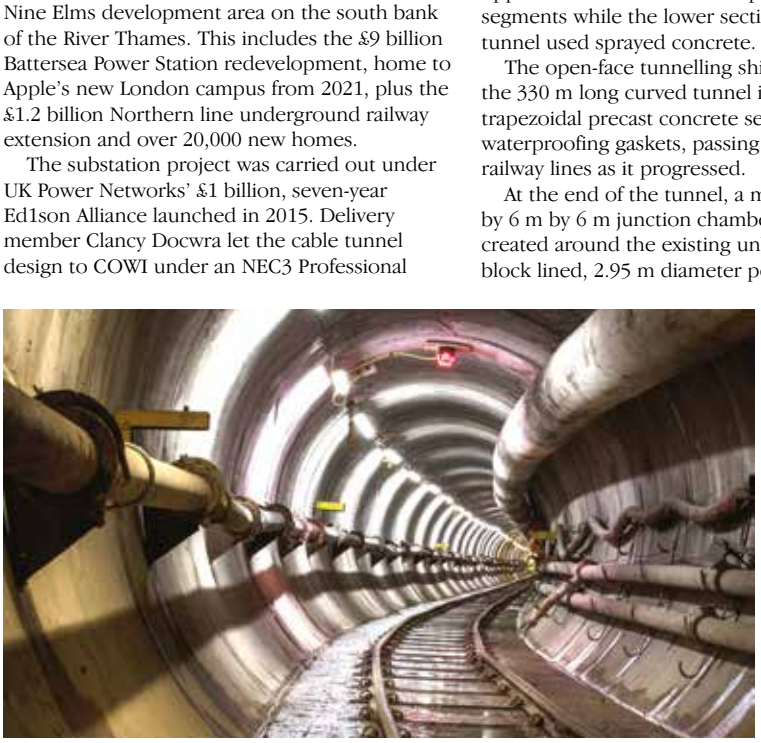
Challenging project

The cable tunnel works involved sinking a 7.5 m diameter, 30 m deep shaft from within a converted warehouse at the substation site. The upper section was lined with pre-cast concrete segments while the lower section and launch tunnel used sprayed concrete.

The open-face tunnelling shield then excavated the 330 m long curved tunnel in clay using trapezoidal precast concrete segments fitted with waterproofing gaskets, passing under several live railway lines as it progressed.

At the end of the tunnel, a mass concrete 9 m by 6 m by 6 m junction chamber was carefully created around the existing unbolted, wedge-block lined, 2.95 m diameter power tunnel using hand-mined timber-lined headings. The chamber was directly beneath a 1.6 m diameter brick sewer and various other sewers and water mains.

Through reinforcing existing assets and careful sequencing and monitoring, the junction was safely and successfully completed in 2017 on programme and within budget – and without disruption to any existing services. The cable tunnel fit-out and substation works are scheduled for completion in the first quarter of 2020.



◀ The NEC-procured cable tunnel will supply the Battersea Power Station development, the Northern line extension and over 20,000 new homes

Track record

According to James Belcher, senior project manager at the Ed1son Alliance, 'We chose to use NEC contracts for the challenging cable tunnel project because they have already been successfully used by UK Power Networks to deliver a large number of capital projects. NEC's best-practice approach aligns with the company's vision and values to be a respected corporate citizen, sustainably cost-effective and an employer of choice.'

He says NEC3 is a proven suite of contracts which is used throughout the utility, oil and gas sectors. 'Our supply chain is familiar with the NEC3 suite and its ethos of improving ways of working, reducing duration through improved planning and methods of working, and reducing cost while improving safety. The contracts promote best practice and encourage people to work in a collaborative, open environment. They are also in plain English, logical and programme-based.'

Belcher says the NEC early warning process was used frequently on the cable tunnel project to mitigate risks and delays, particularly in relation to mining the junction chamber around the existing power tunnel and under existing assets.

'For example, to allow the miners more space to work and reduce the number of concrete pours, COWI and Joseph Gallagher agreed at an NEC risk mitigation meeting to use sacrificial steel supports under the existing tunnel as an alternative to small headings. Comprehensive settlement monitoring within the existing tunnel, existing sewer and above ground provided the necessary assurance for this change of method.'

Welsh waterfront campus

SIMON FULLALOVE EDITOR

The University of Wales Trinity Saint David used NEC contracts to deliver the first phase of its £350 million SA1 Swansea Waterfront Development on time and within budget last summer. The £32 million first phase, which opened to students in the 2018/19 academic year, includes a new four-storey academic building called IQ and a new three-storey library known as Y Fforwm.

The 10,109 m² academic building provides a new home to the university's Faculty of Architecture, Computing & Engineering and Yr Athrofa – The Institute of Education, which relocated from campuses at Mount Pleasant and Townhill respectively. It also includes a new Construction Wales Innovation Centre funded by the Construction Industry Training Board.

The 2,705 m² pitched-roof library block houses the collections from the libraries of the Mount Pleasant and Townhill campuses. It features a range of flexible learning spaces for students and an exhibition space on the ground floor.

University of Wales Trinity Saint David's new £32 million SA1 Swansea Waterfront campus was delivered using NEC3 PSC and ECC Option A ▼

Building on the former dockland site involved removing, cleaning and replacing the top 1.8 m of contaminated filled ground prior to installing concrete piles. Both buildings have reinforced concrete frames at low level, steel frames for the upper levels, brick-clad walls and profiled-metal roofing.

Environmental features include 600 m² of photovoltaic roof panels, natural ventilation, low-transmittance glazing, low-energy lighting and provision for brise soleil sun-shading. Both buildings achieved a Breeam 'excellent' environmental performance rating.

Early contractor involvement

The university initially engaged architect Stride Treglown under an NEC3 Professional Services Contract (PSC) in 2015 to produce a masterplan for the whole 18 ha development. Following planning approval in May 2016, contractor Kier Construction, engineer Jubb and cost consultant Lee Wakemans were each engaged under NEC3 PSC to complete the design of the first phase using level 2 building information modelling.

According to the university's project manager Geraint Flowers, 'Kier was appointed through the Sewscap2 south-east Wales schools and public buildings construction framework on a two-stage design-and-build basis. The pre-construction stage enabled early specialist input of Kier and its subcontractors into the design, cost, programme and maintenance of phase one, thus de-risking the whole project.'

Following a satisfactory bid for the construction stage, the university then appointed Kier under an NEC3 Engineering and Construction Contract (ECC) Option A (priced contract with activity schedule) in October 2016. 'We had successfully used NEC3 ECC before and felt that, with a well-developed building design thanks to the early contractor involvement stage, the lump-sum Option A with a "not to exceed" offer would provide the greatest certainty and value for us,' says Flowers.

He says the lump-sum contract retained a shared-risk allowance for unexpected ground conditions and contamination, section 106 planning obligations, remedial works and additional measures such as Breeam accreditation, though in the event none of these risks arose.

Change management

Flowers says the NEC performed well during the 20-month construction period, with the co-located project team fully collaborating with each other in the contract's required 'spirit of mutual trust and co-operation'.

'Both the client and contractor made full use of NEC change-management processes during construction, helping ensure we remained on budget and programme. A total of 43 early warnings were notified, all of which were promptly discussed at risk mitigation meetings.'

He says there were a total of 41 compensation events, mostly relating to minor adjustments to meet end-user requirements. 'For example, on one occasion we had to design and install additional internal drainage for specialist research equipment. All compensation events were agreed by the completion date.'

The construction works were completed on schedule in May 2018, following which the library collections and specialist faculty equipment were transferred and installed. The buildings commenced academic activities at the end of August 2018.

How NEC4 ALC differs from Australian practice

OWEN HAYFORD DLA PIPER, AUSTRALIA

Sydney Water's decision earlier this year to adopt NEC4 as its standard procurement route for construction works and services (Issue 98) marks a watershed for greater public-sector use of NEC in Australia. It was driven by the need to develop a more collaborative relationship with the company's over-stretched construction supply chain.

As I stated in the same issue, the overheated market on Australia's eastern coast is encouraging contractors to price risk much more fully. The NEC4 suite, with its strong focus on risk allocation and management, should help to ensure a fairer deal for all parties as well as improved productivity, fewer disputes and better value for money.

Alliance contracting is also making a comeback for the same reasons. Australia has a long history of alliancing, meaning the NEC4 Alliance Contract (ALC) will be up against stiff competition from existing forms of alliance contract. It is therefore worthwhile looking at how the ALC differs from traditional Australian alliances and the potential benefits and challenges this may bring.

Achieving consensus

Under the ALC, decisions of the alliance board require unanimous agreement, so each member of the board has a right of veto. Decisions on which the alliance board cannot achieve consensus can be referred to an independent expert for a non-binding opinion to help resolve the matter. This approach has the advantage of forcing the parties to achieve consensus to move forward.

Australian owners may feel the absence of a deadlock-breaking mechanism potentially exposes them to the risk that part or all of the contract could become a legally unenforceable 'agreement to agree'. This is why many Australian alliance contracts include a such a mechanism. They also frequently include decisions that are reserved for the owner alone, which can also be made in its own self-interest rather than in the interest of the project.

Sharing liabilities

ALC embraces the 'no blame' concept by treating all uninsured liabilities incurred by a participant as a result of claims brought against it as an alliance cost. The exception is liability to third parties arising from an intentional act or omission in breach of the contract, which is to be borne by the defaulting participant.

Unlike Australian alliances, ALC allows the owner or another participant to bring a claim against a participant for negligence; makes the resultant liability, to the extent it is not insured, an alliance cost that must be reimbursed by the owner; and shares the 'pain' of this additional alliance cost between all participants in accordance with the agreed gain/pain share regime.

An advantage of the ALC approach is it overcomes the need that arises under most Australian forms for a bespoke professional indemnity insurance policy. This has to cover an alliance loss caused by the professional negligence of an alliance participant despite the participant having no legal liability to the others for its negligence.

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Fairer remuneration

ALC differs from the remuneration model found in most Australian alliances in that the fee is calculated by applying each non-owner participant's stated 'fee percentage' to the actual direct costs incurred by that participant.

There is no mechanism for interim payments of gainshare or painshare in advance of final completion and, if alliance costs are less than the budget/target cost, the cost savings are shared, even if other alliance objectives are not achieved.

Furthermore, the liability of non-owner participants to share the pain of cost overruns is not necessarily capped at an amount equal to its fee, although there is the ability to achieve this result by utilising the optional limitation of liability clause.

Australian owners might see the ALC approach to calculating the fee as incentive for non-owner participants to maximise their direct costs to increase their fees. Care therefore needs to be taken to ensure that the painshare payment incurred by a non-owner participant due to a cost overrun arising from its inefficiency exceeds the resulting increase to its fee.

ALC also only allows the owner to terminate the alliance for convenience if all other participants agree. Australian owners may feel this compromises their ability to manage the risk of a major cost overrun, especially once the cap on the pain-share liability of the non-owner participants is reached.

Managing change

ALC treats every scope variation as a compensation event that entitles the non-owner participants to an adjustment to the budget, target completion date and/or other performance targets, even if it is a minor variation.

Australian alliance contracts only allow the budget and other targets or key performance indicators to be adjusted in very limited circumstances. In particular, variations to the scope of works do not result in an adjustment, unless all participants including the owner agree that the variation is a 'major variation'. This has led to non-owner participants to make higher allowances for risk resulting in higher agreed budgets, though these are more likely to reflect the actual outturn cost.

Conclusion

ALC will almost certainly find a place in the Australian construction contracting scene. It embraces most of the key concepts that that the Australian industry is looking for, as well as being shorter, simpler and easier to use than the forms of alliance contract presently used in Australia.

The differences will make it particularly appealing to non-owner participants, who are crying out for Australian governments and other project owners to adopt a more sustainable approach to the procurement of civil construction services.

But it also presents some challenges to owners, who may wish to retain greater control over their projects.

Collateral warranties and third-party rights

DAVID HUNTER DANIEL CONTRACT MANAGEMENT SERVICES

Collateral warranties and rights of third parties are an important yet frequently misunderstood aspect of construction contracts. Although not a key part of an NEC project manager's day-to-day role, a basic understanding of these topics is vital and clients should always seek competent advice when preparing a contract.

Use of collateral warranties

A collateral warranty gives rights to a client or third party which would not otherwise have direct contractual rights. In NEC4 contracts, collateral warranties can be made part of the contract using secondary option X8 on undertakings.

A collateral warranty is a separate promise made to a client or third party (the beneficiary) by a contractor or subcontractor (the warrantor) that they will perform their contractual obligations. The warranty is therefore said to be 'collateral' as it sits alongside the relevant contract. The beneficiary will usually have an interest in the asset for which contracted work or service is being performed.

The requirement for a collateral warranty may be a condition of a separate agreement. For example, a local highways authority undertaking road bridge works under an asset-protection agreement with Network Rail may be required to obtain collateral warranties from its design-and-build contractor in favour of Network Rail. Furthermore, the highways authority may require undertakings from the contractor's designers and subcontractors to protect itself in the event the contractor becomes insolvent or to extend the benefit of designer's duty of care.

Figure 1 shows how the collateral warranties would operate in the above example using an NEC4 Engineering and Construction Contract (ECC) main contract, NEC4 Professional Service Contract (PSC) design subcontract and NEC4 Engineering and Construction Subcontract (ECS) works subcontract.

NEC option X8 and its use

Option X8 is available for use with all NEC4 long-form contracts except the Supply Contract (SC), Design Build and Operate Contract (DBO) and Alliance Contract (ALC). ECC option X8 enables collateral warranties to be given by the contractor to 'Others', which is a defined term meaning third parties (ECC clause 11.2(12)), or by the subcontractor to the client or others. The names of the beneficiaries and the works relating to the warranty need to be stated in contract data part one, and the form of undertaking (i.e. collateral warranty) must be provided in the scope.

It should be noted that PSC option X8 does not provide for undertakings by subcontractors. So, when using a PSC for early contractor involvement on a design and build project, a client requiring a collateral warranty from the contractor's designer during the pre-construction stage would need to add a Z clause to this effect in the PSC.

Collateral warranty agreements are normally executed after the main contract has come into existence. Option X8 requires the client to prepare the warranties and send them to the contractor (ECC) or consultant (PSC) for signature within 3 weeks, though failure to provide a collateral warranty is not listed in clause 91 as a reason for termination (unlike a bond or guarantee, reason R12).

Option X8 is silent on limitation period, so reliance will need to be made on the wording of the warranty. Recent English case law supports the position that the end of the liability period

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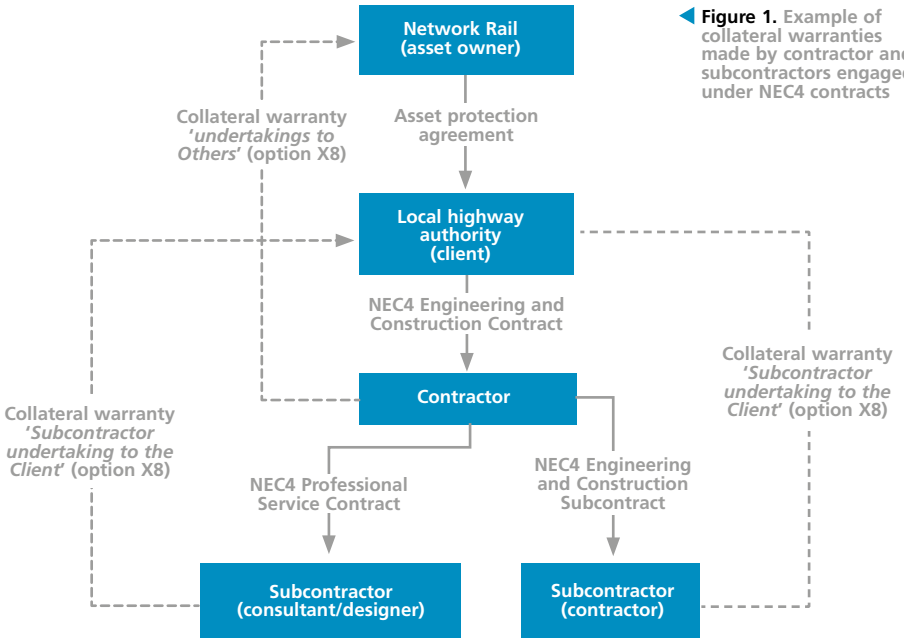

Figure 1. Example of collateral warranties made by contractor and subcontractors engaged under NEC4 contracts

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.

Dealing with an unrealistic programme

Question

We are the project manager on an NEC3 Engineering and Construction Contract (ECC) Option A (priced contract with activity schedule). A contractor has submitted a first programme for acceptance but we do not believe the date for planned completion shown on this programme is realistic. We know the contractor has lost several days work due to recent high winds preventing use of a crane. We are yet to receive notification of a compensation event regarding the weather, but expect one, and the completion date currently remains unchanged.

Our understanding is that this first programme needs to show a realistic picture of the project at the time it is issued, that is reflecting the impact to planned completion due to weather, or any other delay, regardless of whether a compensation event has been implemented or not. As it stands the programme reflects the situation as if no delay has been experienced and, in our view, this is not a sound basis for the management of the contract or assessment of any compensation events. We would welcome your thoughts on this and whether we would be justified in not accepting the programme as it stands.

Answer

The first programme should usually be produced at the very beginning of the project before any substantive work has been carried out, see clause 31.1.

You are nevertheless correct to say the first programme, and all subsequent ones, need to show a realistic picture of the project at the time it was issued. If it does not, you are entitled not to accept it (see the first or third bullet of clause 31.3). The first programme is not required to show delays because there is no previous programme these delays can be shown against. Subsequent revised programmes are required to show delays in any event (see clause 32.1).

If the first programme is showing work that has not yet been done as already carried out, clearly that is incorrect because it is simply not practicable. As such you are entitled not to accept it for a reason stated in the contract (see first bullet of clause 31.3).

But you must be careful not to play games. If there is weather event for wind in your contract (there is not in the standard contract) and that weather event has been exceeded, the contractor is entitled to the delay it has caused, whether or not its programme is technically wrong. That is especially so when you consider that weather events cannot be finalised until the end of the month that they incurred in.

We suggest you have a discussion with the contractor and its planner before you decide to not accept the first programme. A good project manager needs to understand there is no such thing as a perfect programme, because it is all about predicting the future, which we all know is impossible. And that is especially so at the beginning of a contract, where almost everything is yet to be carried out. For that reason, it is better to look for reasons to accept it rather than reasons not to.

Preparing scopes in NEC4 contracts

Question

We are a client writing a scope of an NEC4 Professional Service Contract (PSC). In the guide for preparing a PSC there is an example structure of a scope. However, this structure (numbering and titles) is significantly different from the example for the other forms of contract. Could you please explain why the decision was made to make it different and how the example scope structures were reached?

Answer

The answer is simply that the PSC is designed for professional services and the ECC, for example, is designed for the building of works. The obligations and requirements of the contracts and their scopes are therefore very different. Each contract will refer to different matters that will be dealt with within the scope. Therefore, each example scope has been written for the specific contract, or more correctly, the type of works, services or manufacturing that is involved. So, if you look at the example scopes for the NEC4 Term Service Contract (TSC) or the NEC4 Supply Contract (SC), you will see that those too are different from those in the ECC and PSC and each other.

Where there are similarities these are treated in similar ways and using similar numbers. So, for example, design by the contractor or supplier in the ECC, TSC and SC are covered using similar headings and the same S300 number. But that is not the same in the PSC, as sometimes the design is the whole point and therefore is integral to the scope. But that is not always the case with professional services and therefore design may well be irrelevant. For example, you would expect a structural engineer or architect to design, but you would not expect a lawyer or accountant to do so. It is for the scope itself, not the contract, to set that out.

Where the PSC and the ECC are similar in their requirements then similar terms are used, see for example 'Description of the works/service', 'Accounts and records' and 'Transfer of Rights'.

Finally, you need to bear in mind that these scope layouts are a suggestion only and are entirely optional. You do not have to use the layouts when writing your scope, but you must ensure the scope covers all relevant matters within them. Clients are often let down by their scopes, which can be far from being the 'complete and precise statement' required in a good contract, no matter what the contract is for. That is why the term 'complete and precise statement' is used in the guidance for each and every NEC4 contract.

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runs from completion of the whole of the works (*Swansea Stadium Management Company Limited* v. *City & County of Swansea, Interserve Construction Limited* [2018] EWHC 2192).

NEC does not provide standard forms of collateral warranty. However, the UK Construction Industry Council (CIC) has produced a range of standard warranties for use in England, Scotland and Wales. If using the CIC forms or any other forms, it is important to ensure consistency with the main and sub-ordinate contracts, remembering the unique drafting convention adopted by NEC contracts.

The Y(UK)3 alternative

NEC secondary option Y(UK)3 offers an alternative way for parties to give third-party rights. This invokes the UK Contracts (Rights of Third Parties) Act 1999 ('the Act'), section 1 of which allows people who are not party to a contract to enforce a term of the contract if the contract expressly states they may.

If Y(UK)3 is used, the term(s) of the contract that may be enforced under the Act and the beneficiary must be stated in contract data part one. On the other hand, if the contracting parties wish expressly to exclude third-party rights being conferred under the Act, they should select Y(UK)3 and state 'none' in the contract data entry for the term and beneficiary.

The Act provides a simpler alternative for conferring third-party rights as it avoids the need to prepare and execute separate collateral warranties. But it has yet to become popular with NEC clients and their legal advisors due to concerns about the Act's provisions covering step-in rights and lack of case law.

A recent Court of Appeal decision (*Chudley* v. *Clydesdale Bank plc* [2019] EWCA Civ 344) upheld a ruling that a beneficiary does not need to be named and can be stated by 'class' only, which may give clients more confidence. Option Y(UK)3.3 allows beneficiaries to be identified by class but requires the client to notify the contractor as soon as its name has been identified.

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
Clifford Cheung
Ian Davies
Marcelo De Franceschi
Joe Goff
Jazmine Hayes
Nick James
Daniel Kenworthy
Winnie Lai
Benjamin Lee
Stephen Marnell
Sai Wing Ng
Matthew Poole
John Routledge
David Sandercock
Mark Wardill

Accredited NEC3 ECC Project Managers
Shuk Ying Chan
Man Fai Choi
George Csatlos
Marcelo De Franceschi
P'nina Lesley Drye
Simon Foster
Pui Ting Ho
Andrew Jenkinson
Wong Chi Kwan
Chun Chung Lau
James Leung
Yaser Maqsud
Michael Megarry
Charlie Mogridge
Adam Nickson
Olivia Quinn
Ian Rhodes
Huw Roberts
Josh Roberts
John Routledge
Peter Routledge
Amy Saunders
Joseph Savage
Christopher Scott
Matthew Seadon
Caroline Seely
Andrew Smith
Hoo Hin Tang
Guy Walker
Paul Williams
Arnold Wong
Sunny Yeung

Accredited NEC3 ECC Supervisors
Iain Copeland
Tony Dinan
Martin Hollings

nec DIARY

02 July	NEC3: ECC Project Manager Accreditation	Hong Kong
04 July	NEC4: Introduction to the ECC	Bristol
08 July	NEC3: ECC Project Manager Accreditation	Hong Kong
11 July	NEC3 to NEC4 ECC Project Manager Accreditation extension	Manchester
11 July	**NEC Users' Group Workshop**	**Hong Kong**
12 July	NEC3 to NEC4: ECC Project Manager Accreditation extension	Hong Kong
15 July	NEC3: ECC Supervisor Accreditation	Hong Kong
16 July	NEC3: ECC Project Manager Accreditation	Birmingham
16 July	NEC4: ECC Project Manager Accreditation	London
17 July	NEC3: ECC Supervisor Accreditation	London
25 July	NEC3: Introduction to the ECC	London
20 Aug	NEC3 to NEC4: TSC Service Manager Accreditation extension	Birmingham
26 Aug	NEC4: ECC Project Manager Accreditation	Hong Kong
02 Sept	NEC4: ECC Project Manager Accreditation	Christchurch, NZ

Key: **Bold** – NEC Users' Group event, ECC – Engineering and Construction 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
AWE
Birmingham International Airport Limited
Department for Transport
General Nuclear International Ltd
Geoffrey Osborne Ltd
Gloucestershire County Council
High Speed Two (HS2)
Highways England Co Ltd
Horizon Nuclear Power
Innogy Renewables UK Ltd
INOVYN ChlorVinyls Ltd
Instant ASP
J Murphy & Sons Ltd
Magnox Limited
Pinsent Masons LLP
Sellafield Ltd
Southend Borough Council
Southern Water
Strategic Estates, House of Commons
Surrey County Council
Tarmac
The College of Estate Management
Transport for London
Waveney District Council
Yorkshire Highway Alliance

GOLD
AECOM Professional Services LLP
Anglia Ruskin University
Arcadis
Atkins UK
Balfour Beatty
BAM Construct UK Ltd
BAM Nuttall
Bird & Bird LLP
Bolton Metropolitan Borough Council
Bristol City Council
CampbellReith
Canal & River Trust
Capita Property & Infrastructure Ltd
Cavendish Nuclear Ltd
CCS Group PLC
CEMAR
City Fibre
City of Edinburgh Council
CMS Cameron McKenna
Nabarro Olswang LLP
CNS Planning Ltd
Costain Limited
CPMS
Currie & Brown UK Ltd
Defence Infrastructure Organisation (DIO)
Dover Harbour Board
Driver & Vehicle Standards Agency
Dundee City Council
East Sussex County Council
EDF Energy (Sizewell B)
Ervia
Eurovia Group Ltd
Farrans (Construction) Ltd
Foreign and Commonwealth Office
Framatome
Galliford Try
Gleeds Corporate Services Ltd
Imperial College London
Instalcom Ltd
Interserve Construction Ltd (Birmingham)
Jackson Civil Engineering Group Ltd
KAEFER Ltd
Kings College London
Kone PLC
Laing O'Rourke
Loughborough University
Low Level Waste Repository Ltd
Mace Group
Maris Interiors LLP
Moreton Hayward Ltd
Morgan Sindall Construction & Infrastructure Ltd
Morrison Utility Services
National Grid Plc
Network Rail
NG Bailey
NHS National Services Scotland
Northern Ireland Water
Northumbrian Water Ltd
O'Connor Utilities Limited
Ove Arup & Partners Ltd
Oxfordshire County Council
Perth and Kinross Council
Pick Everard
Port of Dover
Rider Levett Bucknall (RLB)
Robertson Construction Group Ltd
RPS Group Plc
RWE Technology UK Limited
Scottish Water
Sharpe Pritchard LLP
Simec Uskmouth Power Ltd
Sisk Lagan Joint Venture
SKA Organisation
Skanska Construction UK Ltd
Springfields Fuels Ltd
SSE Plc
Synergie Training
Telford & Wrekin Council
The Coal Authority
The Orange Partnership
The Spencer Group
UK Power Networks (Operations) Ltd
Vinci Construction UK Ltd
Volker Services Ltd
Warwickshire County Council
Wood
WSP UK Ltd
WYG Management Services
YGC

SILVER
Aberdeenshire Council
Adeyemi Associates Ltd.
Aquila Nuclear Engineering Ltd
Ashfords LLP
Barhale Plc
Beale & Company
Blake Newport Associates
Borough of Poole
Boskalis Westminster Ltd
Bournemouth Borough Council
Brink Management & Advies
Buckinghamshire County Council
Built Intelligence Ltd
Burness Paull
Cambridgeshire County Council
Carbon Dynamic
Cavendish Nuclear Limited
CH2M HILL Halcrow
City of York Council
Colas Ltd
Connect Plus Ltd
Cornwall Council
Cummings Global Ltd
Dee Valley Water Plc
Defence Science & Technology Laboratory
Dyer & Butler Ltd
Dynniq UK Ltd
East Ayrshire Council
East Riding of Yorkshire Council
Eastern Solent Coastal Partnership
Environment Agency
Faithful+Gould
Foot Anstey LLP
Foundation Piling Ltd
George Leslie Ltd
GMH Planning
Graham Construction
GVE Commercial Solutions
Heathrow Airport Ltd
HKA Global Ltd
Holman Fenwick Willan LLP
Jacobs UK Ltd
Jersey Electricity Co Ltd
Knights Brown Construction Ltd
Lagoni Engineering Limited
Lantis
Leicestershire County Council
MacKenzie Construction Ltd
Management Process Systems Ltd
Mansons Consulting Ltd
Mott MacDonald Limited
National Museum Wales
NBS Services
Nexus Rail
Norfolk County Council
North Ayrshire Council
Northern Ireland Housing Executive
Northumberland County Council
Osborne Clarke
Pagabo
Pick Everard
Playle & Partners LLP
Project Centre Limited
Prysmian Cables & Systems Ltd
RJ McLeod Ltd
Robert Gordon University Aberdeen
Robertson Construction Northern Limited
South Eastern health and Social Care trust
South Gloucestershire Council
South Lanarkshire Council
South West Water Ltd
Stantec
States of Jersey
Sutton & East Surrey Water Plc
Synergie Training
Temple Group Management Ltd
TLT LLP
Topbond
Turner & Townsend
University of Glasgow
Via East Midlands
Walter Thompson (Contractors) Ltd
Wardell Armstrong LLP
West Berkshire Council
West London NHS Trust
Wilsons of Cambridge
Worcestershire County Council
Yelland Savage Ltd

BRONZE
AMEC Foster Wheeler Environment & Infrastructure UK Limited
Ansaldo Nuclear
Anthony Collins Solicitors LLP
Bal Hothi
Bayfield Associates
Beattie Communications
Bennetts Associates
Bezzant Ltd
Bilfinger Industrial Services UK Ltd
Black & Veatch Ltd
Brian Hendry Interiors Ltd
Caledonian Maritime Assets Ltd
Castle Hayes Pursey LLP
CCJ Group Ltd
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City Surveys & Monitoring Ltd
Coborn Ltd
Construction Dispute Resolution
Corderoy
Corrie Consulting Ltd
Costain Limited
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Ctori Construction Consultants Limited
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Deane Public Works Ltd
Department of Health
Diamond Light Source Ltd
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Doig & Smith Ltd
Dumfries & Galloway Council
Dunstan-Consulting Ltd
East Lothian Council
Engineering Contract Strategies cc
Fife Council
First Choice Homes Oldham
Foot Anstey LLP
FTI Consulting
Fulkers
GHD
Glanville Projects Ltd
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GMH Planning
Goodman Derrick LLP
Hanley Pepper Ltd
Hanover Housing Association
Hanscomb Intercontinental
Haskoning DHV UK Ltd
Hydro International (Wastewater) Ltd
IN Construction Consulting Ltd
Institution of Civil Engineers
Ironside Farrar Ltd
J Breheny Contractors Ltd
JJL Consultancy Ltd
John Papworth Ltd
K&L Gates
KJ Taylor Consulting Ltd.
Land & Water Group
Leading Edge Projects
Consulting Ltd
Lilleker Bros Ltd
LM Services
London Borough of Hillingdon
Loughran Associates Limited
Mangotree Kent Limited
Martin Warren Associates
Matt Durbin Associates
McAdam Design
Met Office
MM Miller (Wick) Ltd
MY Cheng & Co (Engineering) Ltd
Natural Resources Wales
NE Consult
Novi Projects
Orkney Islands Council
Palbro Consulting Ltd
Palm Commercial Services Ltd
Pangea Professional Services
Pat Munro (Alness) Ltd
PD Group Management
pdConsult
Peter Cousins & Associates
Portsmouth City Council
Procom-IM Ltd
Pyments Ltd
Quigg Golden Ltd
RA Gerrard Ltd
Ramboll
RG Carter Technical Services Ltd
Ronez
Royds Withy King
RSK
Russell Scott Ltd
RW Hayes
Shropshire County Council
Sisk Lagan Joint Venture
Solomons Europe Ltd
Specialist Engineering Contractor's Group
SPQS Associates Ltd
States Property Services
Steve Brown & Associates Ltd
Summers-Inman LLP
Supacat Ltd
T & N Gilmartin
Tanner Project Management Ltd
TC Consult
The Clarkson Alliance
The Highland Council
Timothy Willis
TKR Consultancy Ltd
Trebes Consulting Ltd
University of Central Lancashire
University of Greenwich
Veale Wasbrough Vizards LLP
VHE Construction Plc
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
Beca Limited
Beria Consultants Ltd
BK Surco Ltd
BKAsiaPacific (Malaysia) Sdn Bhd
Black & Veatch Hong Kong Ltd
Building & Construction Authority
CEMAR
Chun Wo Construction & Engineering Co Ltd
Civil Engineering & Development Department, HKSAR
CLP Power Hong Kong Ltd
Contract Communicator
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
Hargreaves Industrial Services HK Ltd
Highways Department, HKSAR
HKA Global Limited
Hogan Lovells
Hong Kong Construction Industry Council
Hsin Chong Group Holdings Ltd
Kum Shing (KF) Construction Co Ltd
Mannings (Asia) Consultants Ltd
Meinhardt Infrastructure & Environment Ltd
Mott MacDonald Hong Kong Ltd
MTR Corporation
MTRCL
Paul Y Construction Company, Limited
Pinsent Masons
Projection Group
Shui On Construction Company Ltd
Sum Kee Construction Ltd
Sun Fook Kong Construction Management Ltd
The Contracts Group Ltd
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Thomas Telford Ltd
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Vasteam Construction Ltd
VSL Intrafor
Water Supplies Department, HKSAR
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