Using NEC Contracts to Manage Risk and Avoid Disputes
Hong Kong Institute of Arbitrators, 26 April 2012
Richard Patterson, Mott MacDonal
Housekeeping

- Safety
- Facilities
Introductions

• Richard Patterson
• Chartered Engineer
• Mott MacDonald Procurement Practice

• 21 years with Mott MacDonald
• Many forms of contract
• 15 years with the NEC
• A year with NEC as an NEC Consultant
Objectives

• To understand how NEC supports effective project risk management
• To understand how to allocate risk
• To understand relationship between
  – the Risk Register required by NEC3 contracts and
  – a project risk register that may used by the team
• To understand how and why good use of NEC will help you manage risk and avoid disputes
Justice Edwards-Stuart has made some ‘interesting’ comments regarding the NEC plain style of drafting

In Anglian Water Services Ltd v Laing O'Rourke Utilities Ltd [2010] EWHC 1529 (TCC):

- "I have to confess that the task of construing the provisions in this form of contract is not made any easier by the widespread use of the present tense in its operative provisions.
- No doubt this approach to drafting has its adherents within the industry but, speaking for myself and from the point of view of a lawyer, it seems to me to represent a triumph of form over substance."
And, since you ‘like’ disputes, let’s start with the (‘substantial’) case law after 17 years

• Costain v Bechtel [2005] EWHC 1018
• As a certifier (disallowing costs), the *PM* must act impartially.
• ie the *Project Manager* should do what it says in the contract……
• ….as stated in Clause 10.1 😊

• THE END
Dispute resolution Options
Let’s not go here!

- Option W1 – used *unless* UK’s Housing (Grants, Construction and Regeneration Act (HGCRA) 1996 applies
- Option W2 – used *when* the UK’ HGCRA 1996 applies
- Both provide for Adjudication, which can be challenged at the ‘tribunal’, which can be fixed as:
  - arbitration or
  - the courts
- **Option W1 is not adopted in HK pilot NEC contracts**
Dispute resolution in Hong Kong Pilot NEC contracts

• Dispute Resolution Advisor to help minimizing disputes (in most contracts)
• In case of any dispute:
  – *PM* to give “final decision”
  – Then optional mediation / adjudication
  – Then *arbitration*
• Judge Humphrey Lloyd (in a very positive note on NEC) stated:
  – ‘..*adjudicator should be competent to put himself or herself in the position of the parties being expected to operate the contract. Especially (but not exclusively) in a country where NEC contracts are relatively new, it may be difficult to find a single individual with experience and understanding of*
    • technical aspects of the project
    • local law
    • NEC contracts.’
Use of NEC in legal jurisdictions other than English law

RICHARD PATTERSON
MOTT MACDONALD

Organisations, public and private, across the world are wanting to use NEC contracts for all the good reasons that explain why, for example:

- they are specifically endorsed for use by the UK and South African governments
- they have been used successfully in more than 20 countries in the private and public sectors (Figures 1 and 2)
- global organisations, such as Glaxo, are using NEC
- after more than 15 years of use for billions of dollars worth of projects, there is no case law relating to the world of NEC contracts.

This article intends to highlight some of the few issues that need to be addressed to make NEC contracts suitable for use in jurisdictions other than English law. It was prompted and informed by the excellent paper and lecture given by Humphrey Lloyd on this subject (see issue 45). That paper, which is published in a special issue of the NEC Users’ Group newsletter, is recommended to any interested reader. The aim of this article is to give some of the points made in Humphrey Lloyd’s paper a wider audience.

The following sets out some of the key points of specific relevance to a potential user under a jurisdiction other than English law. As stated by Humphrey Lloyd, the issues are all peripheral to the core provisions of NEC contracts and, with only minor modifications, they can be used under most jurisdictions.

This article does not constitute legal advice, but is intended to encourage consideration of the use of NEC contracts in new countries and to assist lawyers that may be asked to review the contracts for use in a particular jurisdiction. It should be noted also that any such lawyer is strongly advised to obtain proper training on the use of NEC contracts before attempting to draft additional conditions of contract (option 2). The author’s experience is that some lawyers (both in UK and outside the UK) have a habit of proposing unnecessary, unwieldy and/or simply incorrect amendments to a contract they do not fully understand.

NEC structure designed for global applicability

NEC contracts were designed to:

- use plain English that can be read and understood (and translated if necessary)
- be free of direct reference to provisions of any particular law and so, as far as possible, be able to be used globally.

Core clause 12.2 of the NEC Engineering and Construction Contract (ECC) states, “This contract is governed by the law of the contract”. This law is simply stated in the required place in the ‘contract data’, one of the documents that forms part of the contract.

It was recognised that certain modifications and additions may be required to use NEC contracts in specific legal jurisdictions. In the UK - which includes Scots law and Northern Ireland law as well as the laws of England and Wales - there are two ‘secondary options’, each a ‘Y clause’ under ECC:

- Y(UK) - the payment and provision of the Housing Grants, Construction and Regeneration Act 1996
- Y(UK)5 - the Contracts (Rights of Third Parties) Act 1999.

In New Zealand, a secondary option (provisionally called Y(NZ)) is being developed with advice from local lawyers to deal with particular issues under New Zealand law.

A few issues need to be considered

The plain and direct language used by NEC contracts to general rules reliance on interpretation of words used in the particular jurisdiction. Instead, the natural and necessary focus of any required interpretation will be on the intended meaning of the words themselves to all the key processes within an NEC contract.

Most jurisdictions recognise the principle of jus cuncta data, meaning ‘agreements must be observed’ and the world of ECC include (clause 12.4), “This contract is the entire agreement between the Parties.” In essence the contract sets out the rules governing the actions required of the parties and rights of the parties. Anyone deciding a dispute under the contract will use the words in the contract and only derive from them if required to do so by the law governing the contract.
There is a plan

• NEC real basics
• Risk Allocation
  – Principles
  – Starting with the right contract
  – Estimating and efficiency risk
  – Specific risks covered by secondary options
  – Other specific risks
    • General
    • Weather
    • Physical conditions
    • Design risk
  – Compensation events and Employer’s risks
  – Z clauses
• Risk Management
  – Risk in the programme
  – early warning (Risk Register and project risk register)
  – Allocating risk in compensation events
• Conclusions

• Bedtime reading
Using NEC contracts to manage risk and avoid disputes

R. Patterson MBA, CEng, MICE
NEC real basics
NEC is well proven. And why we are here.

• 1985 UK Institution of Civil Engineers (ICE)
  – review existing contracts, case law
  – development work for a new contract
• 1991 - Consultative version - South Africa, Hong Kong, UK
• 1995 - Engineering and Construction Contract (2nd Ed.)
• 10 years of successful use and expansion of NEC family
• Specifically endorsed by South African government
• 2005 - NEC3 launched - users’ feedback; new contracts
• 2005 - specifically endorsed by UK government
• 2009 – trials by Hong Kong Government
By the way, please, just ‘NEC’

- **N** – it’s clearly not *new*
- **E** – it’s for far more than *engineering*
- **C** – it’s more than ‘just’ a *contract*
NEC principles – some really good ideas

Flexibility

Stimulus to good management

Clarity and simplicity
Risk management – some definitions

• …… the process of *actively managing risks* that may develop during the life of a project from inception to completion

• …… a process to *identify, evaluate, avoid, mitigate, allocate, control* and *manage* risks and opportunities
Risk management – the link with the contract

- Forecast outturn cost
- Risk
- Base
- Feasibility, outline design, detailed design, construction
- Time
- Client’s risk
- Contractor’s risk
- ‘Contract amount’
- Award of contract
So what about risk in NEC contracts?

- NEC3 is a **family** of contract documents
- Use here the NEC3 Engineering and Construction Contract (ECC) – as example
- NEC is very good at risk
- All NEC3 contracts have a similar approach to risk
- Many core processes are identical
- **Risk Register** in all but the NEC Short Contracts
You *may* (should?) have a project risk register…

<table>
<thead>
<tr>
<th>Description of the risk</th>
<th>Likelihood</th>
<th>Impact (time)</th>
<th>Impact (cost)</th>
<th>Owner</th>
<th>Cost risk allowance in ‘contract amount’</th>
<th>Cost risk allowance as ‘contingency’</th>
<th>Expiry date</th>
<th>Actions to avoid or reduce the risk</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inundation of the Site during construction due to excessive flood levels</td>
<td>10%</td>
<td>H</td>
<td>H</td>
<td>Client</td>
<td></td>
<td></td>
<td></td>
<td>Possible temporary bunding?</td>
<td>ask tenderer for suggestions on how to manage the risk?</td>
</tr>
<tr>
<td>Excessive wind speeds</td>
<td>20%</td>
<td>M</td>
<td>M</td>
<td>Client</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Potentially consider construction techniques less susceptible to high wind speeds</td>
</tr>
<tr>
<td>Unforeseen ground conditions</td>
<td>5%</td>
<td>H</td>
<td>H</td>
<td>Contractor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Client to ensure tenderers have all related information</td>
</tr>
<tr>
<td>Protests</td>
<td>5%</td>
<td>H</td>
<td>M</td>
<td>Client</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Carry out appropriate public consultation and liaison</td>
</tr>
</tbody>
</table>
Risk allocation
the NEC Family – start with the right contract

- Supply Contract
- Supply Short Contract
- Engineering & Construction Contract (ECC)
- Term Services Contract (TSC)
- Professional Services Contract (PSC)
- Engineering & Construction Short Contract (ECSC)
- Term Services Short Contract (TSSC)
- Design
- Construction
- Service / Operation

High Complexity

Low Complexity
The NEC family – for the record

- Engineering and Construction Contract (ECC)
- Engineering and Construction Subcontract (ECS)
- Engineering and Construction Short Contract (ECSC)
- Engineering and Construction Short Subcontract (ECSS)
- Professional Services Contract (PSC)
- Term Service Contract (TSC)
- Term Service Short Contract (TSSC)
- Framework Contract
- Supply Contract
- Supply Short Contract
- The Adjudicators Contract

(Note: Each with Guidance Notes and Flow Charts)

Also NEC Procurement and Contract Strategies guide at www.necccontract.com
Choose right main option to allocate ‘estimating and efficiency risk’

**ECC options**
- A - Priced contract with activity schedule
- B - Priced contract with bill of quantities
- C - Target contract with activity schedule
- D - Target contract with bill of quantities
- E - Cost reimbursable contract
- F - Management contract

**Available also in:**
- TSC, PSC
- TSC, PSC
- TSC, PSC
- PSC G - Framework
## Main (payment) Options

<table>
<thead>
<tr>
<th></th>
<th>activity schedule</th>
<th>bill of quantities</th>
<th>reimbursable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priced contract</td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Target contract</td>
<td>C</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>Cost reimbursable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management contract</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **A** is the activity schedule for the Priced contract.
- **B** is the bill of quantities for the Priced contract.
- **C** is the activity schedule for the Target contract.
- **D** is the bill of quantities for the Target contract.

**E** and **F** are not specified in the table. However, **E** is likely related to options outside the table, as indicated by the arrows pointing to further information:

- Options also in Professional Services Contract (PSC) and Term Service Contract (TSC)

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Main options – estimating and efficiency risk

Risk allocation on target contract depends on ‘share profile’

E, F Reimbursable

D Target BoQ

C Target with act. sched.

B Priced with BoQ

A Priced with act. sched.

Client’s risk ... and flexibility

Contractor’s incentive ... and risk
the ‘Contractor’s share’ in target contracts

the Prices – the moving target!

Price for Work Done to Date (PWDD)

amount

tendered total of the Prices

time

Completion

share percentage

Contractor

share ranges

Employer

Contractor’s share

compensation events

0 %

35 %

50 %

100 %

80 %

120 %

‘gain’

‘pain’

percentage

100 %
Chose relevant secondary options to tune your risk allocation (1)

- X1 - Price adjustment for inflation
- X2 - Changes in the law
- X3 - Multiple currencies
- X4 - Parent company guarantee
- X5 - Sectional Completion
- X6 - Bonus for early Completion
- X7 - Delay damages
- X12 – (multi-party) Partnering
- X13 - Performance bond
- X14 - Advanced payment to the Contractor
Chose relevant secondary options to tune your risk allocation (2)

- X15 - Limitation of the Contractor’s liability for his design to reasonable skill & care
- X16 - Retention
- X17 - Low performance damages
- X18 – Limitation of liability
- X20 – Key Performance Indicators
- Y(UK)2 – The Housing Grants, Construction and Regeneration Act 1996
- Y(UK)3 – The Contracts (Rights of Third Parties) Act 1999
- Z - additional conditions of contract
Project specific risks – ‘compensation events’

- compensation events are
  - events which, if they do not arise from the Contractor's fault, entitle Contractor to be compensated for effect on the Prices, Key Dates and Completion Date
  - the only such events

- Hence all specific risks not to be taken and priced by the Contractor should be made compensation events under the contract
compensation events – where?

- 19 in subclause 60.1
- 3 in main Options B & D re quantities
- Also in some secondary options
- May need to be changes or additional compensation events in secondary Option Z – the additional conditions of contract
compensation events – Cl.60.1

• (1) PM gives instruction changing the Works Information...
• Various – Employer does not do what he is supposed to
• (12) Contractor encounters physical conditions… experienced contractor would have judged …… to have such a small chance of occurring that it would have been unreasonable for him to have allowed for them
• (13) A weather measurement is recorded, less frequently than once in ten years
• (14) An event which is an Employer’s risk stated in this contract (stated in Cl 80.1)
• (19) An event which stops the contractor completing the works by the date on the Accepted Programme…..neither Party could prevent; unreasonable to have allowed for….
client’s risks under ECC

risks that the client wishes to retain should, in the contract, be made:

- compensation events under the contract (Cl.60.1 + certain main and secondary Options incl. Option Z)
- of which some (Cl 60.1(14)) are ‘Employer’s risks’ stated in the contract (Clause 80.1 + Contract Data)

processes for dealing with time and cost effects (section 6)

Also
- indemnity (83.1);
- Contractor no need to insure (84.2)
Who understands the preferred risk allocation for your project?

- NEC drafting panel?
- You?!

- NEC contracts start with a ‘fair’ allocation of risk but can only provide a starting point for risk allocation….
- (But go easy on the Z clauses!)
Eg: flooding

- Not an explicit compensation event under ECC
- Hence might add in via Option Z
- The *additional conditions of contract* are
  - add as Clause 60.1(20):
    - The level in the River Wet where it crosses the boundaries of the Site at the north side of the Site rises above 24 m AOD.
Check the physical condition risk allocation is as you want it. For significant geotechnical risks....
‘is information which either

• **specifies and describes** the *works* or

• states any **constraints on how** the Contractor provides the *works*

and so inevitably sets the detail of risk allocation
What happened to provisional sums?

- Why were they used?
- Should a ‘provisional programme’ allowance to go with it?
- ECC requirement is to construct in accordance with the Works Information
- ‘provisional sum’ is not used
- Instead state best assumptions in Works Information about what is required
  - When assumptions need to be changed, then change the Works Information….
  - …which will be a compensation event
Design risk

- Clause 21.1

- ‘The Contractor designs the parts of the works which the Works Information states he is to design’

- So default is that Employer ‘designs’ everything…and

- The ECC can be used for any level of design by the Contractor
Contractor’s design in the documents

- ‘high level’ performance requirements
- ‘detailed’ design

Works Information (provided by Employer)

‘documents’ required to be submitted by Tenderer (of which) some may be ‘Works Information provided by the Contractor for his design’

Listed in Works Info

‘particulars of the Contractor’s design required for ‘acceptance’ post-contract

May or may not form part of contract – but you have to be clear in instructions to tenderers
Contractor’s design in the documents

Hierarchy set by Cl60.1(1)

Works Information

- Works Information provided by the Contractor for his design
- ‘particulars of the Contractor's design required for acceptance’ post-contract
- other ‘detailed’ design

‘high level’ performance requirements

‘detailed’ design

Contract Data
- part one
- part two

Works Info.
Risk Register

- In Contract Data - from both Employer (Part 1) and Contractor (Part 2):
  - The following matters **will be** included in the Risk Register:

  ..............................................
Risk Register (CI 11.2 (14))

- The Risk Register is a register of
  - the risks which are listed in the Contract Data and
  - the risks which the Project Manager or the Contractor has notified as an early warning matter
- So the Risk Register is a post-contract risk management tool and NOT a place for risk allocation
the (project) risk register

(if there is one) is not the same as the

(NEC3) Risk Register
Included, after award, as the ECC Risk Register

A project risk register, the contract, and the ECC’s Risk Register

<table>
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<th>Description of the risk</th>
<th>Likelihood (%)</th>
<th>Impact (time)</th>
<th>Impact (cost)</th>
<th>‘Owner’</th>
<th>Cost allowance</th>
<th>Expiry date</th>
<th>Actions to avoid or reduce the risk</th>
</tr>
</thead>
</table>

If relevant and ‘to be ‘talked about’ in post award ‘risk reduction meetings’ then include in CD1 as ‘the following matters will be included in the Risk Register’

At clients risk?
Also cut and stick as additional ‘compensation event’ (option Z) or possibly ‘Employer’s risk’ from Contract Data part one

Contractor required to do?
If so, then in Works Information.
If C’s design then in ‘WI for C’s design’

Client’s risk? – overall amount included in Client’s contingency outside Prices

Contractor’s risk? – overall amount included in the ‘Prices’
Risk management - post award
NEC is a collection of project management processes
Risk in the programme

- NEC is the ONLY contract that explicitly deals with ‘time risk’ in the programme
- 31.2: The Contractor shows on each programme which he submits for acceptance provisions for:
  - float
  - time risk allowances
- Delay to the Completion Date (63.3)
  - assessed as the length of time that, due to the compensation event, planned Completion is later than planned Completion as shown on the Accepted Programme
- So who owns float and time risk allowances?
Early warning (CI 16)

• vital part of ECC – reciprocal obligations to both notify and solve

• *Contractor* and *PM* give an early warning… aware of a matter which could
  – increase the total of the Prices
  – delay Completion,
  – delay meeting a Key Date or
  – impair the performance of the works in use
Early warning (Cl 16)

- Early warning has teeth!
- Sanction if not given
  - Cl 63.5 – compensation event assessed as if Contractor had given early warning
  - Option C and D – Disallowed Cost includes those costs incurred because no early warning given
Early warnings and the Risk Register

- *PM* enters early warning matters in **Risk Register** – new in **NEC3**
- **risk reduction meeting**; those attending co-operate in
  - making and considering proposals to avoid or reduce risk, seeking solutions, deciding actions, **updating Risk Register**
- *PM* revises Risk Register to record decisions and issues
So what *is* the Risk Register….

Risk Register **includes** a

• description of the risk and

• a *description of the actions which are to be taken to avoid or reduce the risk*

The Risk Register *in NEC3* has caused some confusion…..
Some project level risks may make it to Contract Data part 1 or 2 and so to ECC Risk Register.

All early warnings go to ECC Risk Register – but are they ‘worth’ going on project risk register?
The ECC PM updates the Risk Register (RR) and may also be the pm who manages the ‘project risk register’ (prr)!

- RR has a subset of the columns of the prr
- RR may have risks (rows) that do not merit going on the prr and
- prr will have higher level project risks (rows) that do not belong on the RR for the contract
- Can we manage this as one database / spreadsheet?
- Need to keep the ECC Risk Register simple and used
Risk Register

project risk register

feasibility, outline design, detailed design, construction

time

award of contract

ECC Risk Register
Early warnings and the **Risk Register**

- Encourages collaboration and **proactive risk management**
- Properly managed, it will also help
  - management of risk
  - management of change and
  - processing of compensation events
NEC ‘Risk Register’ – consideration and tips

• For any ‘early warning’
  – Information phase
  – Agree aims
  – Generate ideas
  – Develop action plan – actions to be clear and precise
  – Update the Risk Register

• What about:
  – ‘Technical Queries’ (TQs)
  – ‘Requests for Information’ (RFIs)
NEC ‘Risk Register’ – consideration and tips (2)

- *PM* has to beware of changes to the Works Information
- Works best if integrated through the supply chain with NEC3 contracts and subcontracts – run by *Contractor*?
- Beware clogging up process with too many risks with low likelihood and low impact
- Use a projector to show on to the wall: update there and then!
**Project Manager’s flexibility in quotations for compensation events: think risk!**

- All commensuration events assessed in the same way: time and cost

- *PM* can instruct change now or quote only for **proposed** instruction? (61.2)

- Quotes for **alternative ways** of dealing with compensation event - after discussing? (62.1)

- Quotes to **include for risk** (63.6) and **not revised** if **forecasts** were wrong (65.2) but ....

- ....*PM* can retain stated risks re event by stating *PM* assumptions (61.6)
Conclusions
NEC and risk – the summary

- Risk allocation is much clearer than in other standard forms
- Modular structure makes for flexible risk allocation
- Compensation events (almost) in one place – and all treated in the same way
- Programme explicit on time risk
- Ongoing risk management in compensation events

  - The main ‘risks’ to both Parties are:
    - Poor understanding and use of NEC pre-contract
    - Not *using* the contract after award

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Bedtime reading
Some articles of mine, I hope, may be of interest

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<thead>
<tr>
<th>Year</th>
<th>Title</th>
<th>Where published</th>
</tr>
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<tbody>
<tr>
<td>2011</td>
<td>NEC3: contracts for partnering</td>
<td>NEC Newsletter No 56, October 2011</td>
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<tr>
<td>2010</td>
<td>Ground Conditions and Risk Allocation: Combining the NEC Engineering and Construction Contract (ECC) and the Geotechnical Baseline Report (GBR)</td>
<td>Tunnels and Tunnelling Magazine, Dec 2010</td>
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<td>2010</td>
<td>6 key links in the ECC</td>
<td>NEC Newsletter No 51, July 2010</td>
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<td>2010</td>
<td>NEC contracts as an enabler to Partnering</td>
<td>May 2010 edition of 'The Partner', which is ‘the annual publication of PSL, which is a CBI and BIS initiative to promote collaborative business relationships <a href="http://www.pslcbi.com">www.pslcbi.com</a> '</td>
</tr>
<tr>
<td>2009</td>
<td>Using NEC contracts to manage risk and avoid disputes</td>
<td>ICE’s Management, Procurement and Law, 2009, No 4.</td>
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<td>2009</td>
<td>Use of NEC in legal jurisdictions other than English law</td>
<td>NEC Newsletter, No,47, July 2009</td>
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<td>NEC – A real opportunity for the Clerk of Works</td>
<td>Site Recorder, Magazine of the Institute of Clerks of Works</td>
</tr>
<tr>
<td>2001</td>
<td>Using NEC for multiple site, undefined contracts</td>
<td>ICE’s ‘Civil Engineering’, May 2001</td>
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</tbody>
</table>

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NEC manuals

- NEC Managing Reality
  - Five volumes covering all aspects of NEC (ECC)
- Barry Trebes (Mott MacDonald) and Bronwyn Mitchell
- Thomas Telford publishing
NEC3 A User’s Guide

- NEC3 A User’s Guide
- Jon Broome
- ice publishing
- Published March 2012
Remember:
NEC is not a panacea or an easy answer

- NEC demands good documentation
- NEC demands active management
Further information

- www.neccontract.com
- www.mottmac.com
- richard.patterson@mottmac.com
- +44 (0) 1223 463 606

- and / or
- Hayman Choi here in Hong Kong
- hayman.choi@mottmac.com.hk
- +852 2828 5826
Back up slides
NEC – good management required – by all

- Collaborative mindset
  - ‘our’ project
  - joint management – rather than ‘stand off’ administration
    - especially under target contract options
- One real, visible, updated Accepted Programme
- A timescale for every action
- No surprises: ‘early warning’
- Sort it NOW
Ultimate client - *Employer* – so what?

- Need to **understand** and use flexibility in contract
- **Investment (resources) required** for
  - better project; better project management
  - ‘incremental certainty’
- Decisions needed quickly so **delegation** – to your ECC *Project Manager* and his ‘delegates’
- **Clash** with organizational procedures and **authority limits**?
- **Expect / require / help** your supply chain to understand ECC
Project manager – so what?

- Project manager needs to understand and use flexibility in NEC for procurement
- NEC is a project management tool
- Project Manager is a very active role – technical and commercial
- Project Manager
  - is not the ‘independent’ ‘Engineer’
  - is very much ‘on the Employer’s side’ – but must ‘act as stated in the contract’
  - Get ‘contractual’ (use the contract) and expect (and require) Contractor to do so too
- Negotiation skills on behalf of Employer
Architects and designers – so what?

- Contracts are ‘built to suit’ the project
  - real procurement advice required
  - careful with ‘cut and paste’
- Need precision in Works Information
  - mistakes / later changes will be very visible
  - every drawing issue is a change to the Works Information
  - careful use of ‘standard spec’ – does it fit?
- Active management role on site
Estimator / QS / Cost Consultant – so what?

- **bill of quantities**
  - contractual role of a bill of quantities is nil (unless option B or D)
  - but quantities still required to build estimates
- Much more focus on ‘**real’ costs**
- Developing and agreeing **target costs** especially under ‘Early Contractor Involvement’
- **Support to Contractor and Project Manager** roles in agreeing forecast effects of compensation events
- Often **audit role** for ‘open book’ costs under target contracts

Working under the NEC PSC might come as a shock....
Contractor’s Site Agent – so what?

- **Programme**
- **Subcontractors**
  - Clash of ECC with contractors’ existing bespoke forms?
  - Use NEC subcontract forms? (Full or short)
- **Early warnings**
  - Clear practical and commercial reasons for using the process
- **Compensation events**
  - Need to notify and keep ‘on top of the process’
  - Negotiation skills
- **Payment**
  - Good costing systems required for options C, D, E

..and the same for Subcontractors?
Planner – so what?

- **Accepted Programme**
  - very high profile in ECC
  - ideally one programme for the project

- Need to be able to test ‘what if?’ options

- Real **resource-driven** programmes?

- Many contractors have underestimated need for planners
‘Resident Engineer’ – so what?

- ‘RE’ role split in ECC between Project Manager and Supervisor
- Project Manager is a more active role – technical and commercial
- Project Manager
  - is not the ‘independent’ ‘Engineer’
  - is very much ‘on the Employer’s side’ – but must ‘act as stated in the contract’
  - Get ‘contractual’ (use the contract) and expect (and require) Contractor to do so too
- Negotiation skills
- Don’t forget: ‘records records records’
Clerk of Works – so what?

• Skills most likely to suit **ECC Supervisor** role

• Clear role under the contract to **enforce compliance** with the Works Information
  – **testing** – Contractor’s and Supervisor’s
  – direct management of the list of **Defects**

• Support to **Project Manager** eg re progress

• May have some delegated actions of the **Project Manager**
Lawyers – so what?

- Organisations may seek **legal advice** if ECC is new to them
- Need to really understand ECC, especially its project management and collaborative ethos
- ECC flexibility lessens need for bespoke contracts
- Beware undoing ECC: **death by Z-clauses**!
- Perhaps support to **dispute resolution processes**..... if it’s all gone wrong
Mott MacDonald expertise

- Mott MacDonald has been using NEC since 1996
- NEC Users Group member 004 of 500
- Training provided internally for hundreds of staff and also for many clients
- NEC methodologies developed and shared through network and intranet
- Experience of most NEC contracts and options
- Building, Roads, Water, Power, Education etc
- UK, South Africa, Antarctica, Dubai
Main options – estimating and efficiency risk

Risk allocation on target contact depends on ‘share profile’

Client’s risk ... and flexibility

Contractor’s incentive ... and risk

A Priced with act. sched.

B Priced with BoQ

C Target with act. sched.

D Target BoQ

E, F Reimbursable
the ‘Contractor’s share’

the Prices – the moving target!

compensation events

Price for Work Done to Date (PWDD)

tendered total of the Prices

amount

time

share percentage

Contractor

Employer

Completion

share ranges

120 %

‘pain’

100 %

80 %

‘gain’

0 %

35 %

50 %

100 %

0 %

35 %

50 %

100 %

0 %

35 %

50 %

100 %

0 %

35 %

50 %

100 %
Compensation events - process

Problem?

Early warning (15)

compensation event? (60.1 + secondary options)

Yes

Notify 61

• C’s fault or
• not happening or
• no effect on cost or Completion Date or
• not a compensation event

61.4

No

STOP

Notify 61

Quotation 62

Implement 65

STOP

Assessment 63 and possible E’s assessment 64
**Contractor** aware of event

- **max 8 wk**

**Contractor** notifies

- **PM says 'no'**

  - **1 wk**

  - **PM instructs quote**

    - **3 wk**

    - **Contractor** quotes

    - **PM replies**

  - **2 wk**

  - **PM to assess**

  - **accept**

- **not agree and**
How collaborative?

• All NEC contracts
  – clarity
  – communication
  – programme
  – early warning
  – compensation events
  – KPIs (X20)
• Target cost options
  – ‘Open book’ and incentive for ‘buyer’ to collaborate
• X12 (multi-party) ‘Partnering’