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Brechin

Commercial Management the NEC Way

Hong Kong Institute of Surveyors

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July 2014

Introductions

Ian Heaphy

Director

Turner & Townsend

Contract Services



Ian specialises in the development and implementation of innovative procurement strategies with particular expertise around target cost / cost reimbursable contracts for major programmes of work. Ian has over 18 years' experience across the industry, including oil & gas, water, aviation, rail, highways, building and ports.

He has been involved with the NEC for over 15 years and has supported government departments, major clients and international contractors deliver the benefits of the NEC forms of contract.

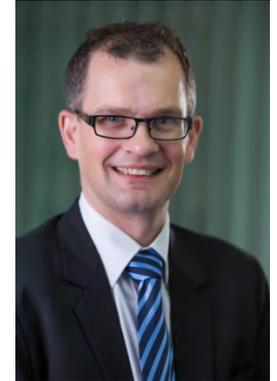
Ian regularly facilitates workshops and delivers training in contract forms and procurement & contract strategies. Ian produced the elearning modules the "International Application of the NEC3" and "ECC as an EPC Contract" for the NEC.. Ian frequently speaks at industry events and has had numerous articles published in construction journals.

Ian also acts as quantum Expert Witness.

Mark Lyddon

Director

Turner & Townsend Brechin



Mark is Turner & Townsend Brechin's Director of Infrastructure, based in their Hong Kong office. Mark has worked in the construction industry for over seventeen years, working for contracting and consulting organisations.

Mark has worked with a variety of infrastructure clients, across the transportation and utility sectors.

The frontier companies have evolved their procurement strategy from traditional lump sum or remeasurement contracts to incentivised, partnering contracts. Mark has been involved from the early adoption of the NEC form of contract and supported these service providers to change their capabilities and cultures to operate NEC based contracts across their supply chains.

Mark has managed teams of consultants to provide procurement strategy advice, Project Management roles and commercial support to clients operating the NEC contracts.

Agenda

Consider the role of the Quantity Surveyor / commercial manager under the NEC3 Engineering and Construction Contract

Agenda

- Roles & responsibilities under the Contract
- Commercial Activities Pre-Contract
- Commercial Activities Post- Contract

NEC in the UK

- 1st Edition of The New Engineering Contract (NEC) issued 1993
- 2nd Edition published 1995 renamed Engineering and Construction Contract (ECC)
- 3rd Edition of all NEC contracts issued 2005
- Amended June 2006 & 2013 NEC3.1
- Endorsed by UK Government – Cabinet Office
- NEC3 most widely used suite in the UK
- NEC used for: -
 - ❑ Olympics
 - ❑ Crossrail
 - ❑ Heathrow Terminal 2 & 5
 - ❑ High Speed 2

NEC in Hong Kong

- Tang's report in 2001 – effective changes from normal procurement approach
- NEC identified as a suitable contractual partnering form for HK
- Pilot Projects from various works departments
- DSD, HyD, ArchSD, CEDD undergoing
- Private Companies also now using the NEC - CLP, MTR, Hong Kong Academy
- Government has decided to use NEC3 contracts generally for all government tendered projects in 2015/16
- Effectiveness to be tested – Is it a better way?



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Roles & Responsibilities

making the **difference**

Roles and responsibilities

Parties to the contract

ECC only identifies:

- *Employer*
 - *Project Manager (contract administration)*
 - *Supervisor (quality of work & defects)*
- *Contractor*
 - *Subcontractor*
- *Adjudicator*

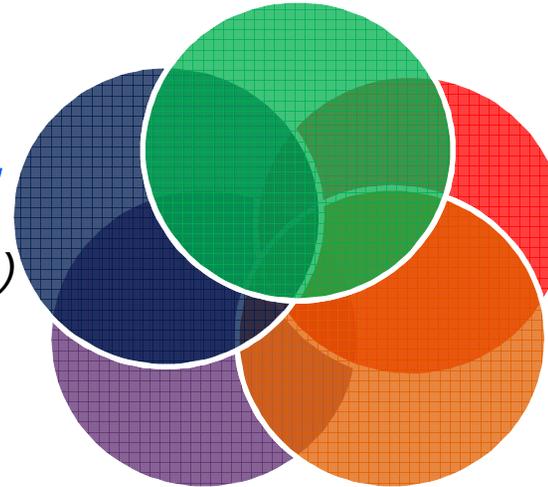
Supervisor

Employer

Project Manager

Adjudicator

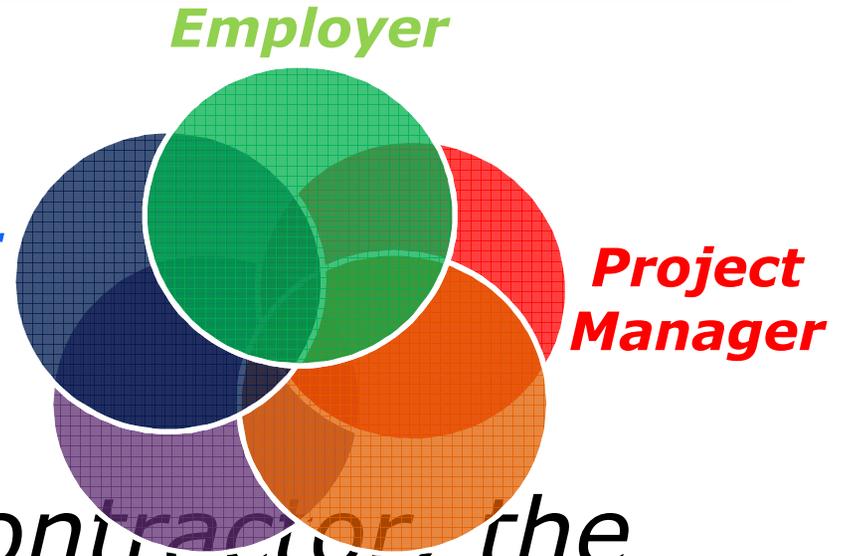
**Contractor
(Subcontractor)**



Roles and responsibilities

Clause 10.1:

"The **Employer**, **Supervisor**, the **Contractor**, the **Project Manager**, the **Contractor**, the **Supervisor**, the **Adjudicator**, the **Contractor** (Subcontractor) and the **Project Manager** and the **Supervisor** shall act as stated in this contract and in a **spirit of mutual trust and co-operation.**"



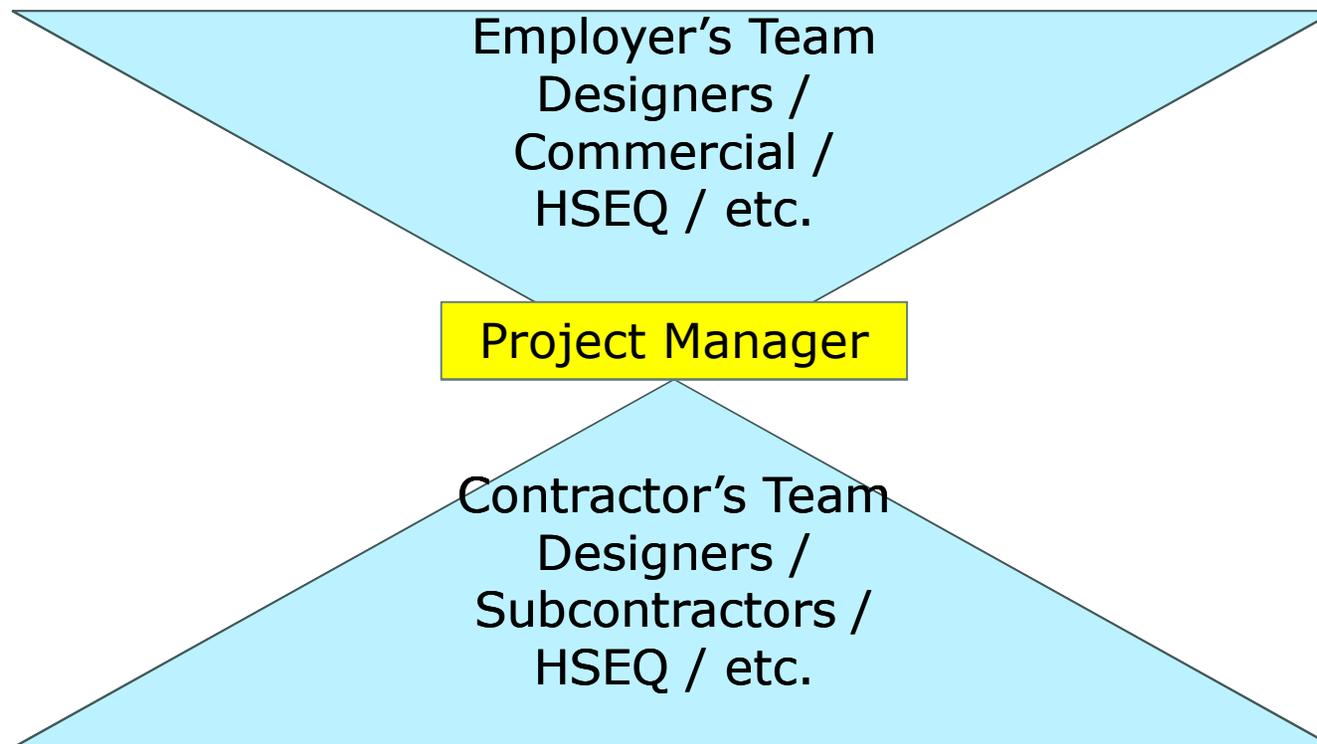
Roles and responsibilities

No reference in contract to: -

- Designer - Architect / Engineers
- Contract administrator
- Quantity Surveyors

Roles and responsibilities

- Project Manager is the focal point for communication to and from the Contractor
- Limit interfaces, avoid conflicting communications but not removal of normal construction functions



Project Manager

- There is not an “independent” Engineer or Contract Administrator
- Appointed by the Employer to “manage the contract for the Employer with the intention of achieving the Employer’s objectives” (ECC Guidance Notes)
- Employed for managerial skills; role not additional to a design appointment
- ECC assumes the Project Manager has the Employer’s authority
- PM is constrained from unreasonable actions under the Contract
- Should act as an impartial certifier (Costain v Bechtel – English Law Case)?
- No right of appeal against a Project Managers decision only recourse is Adjudication or whatever form of dispute resolution identified in the Contract
- Can delegate some or all of their duties

Supervisor

- “Checking” role similar to Clerk of Works
- “To check that the works are constructed in accordance with the contract” (ECC Guidance Notes)
- Can issue Instructions to search for Defects
- Responsible for issuing Defects Certificate
- Can delegate some or all of his actions

Who can act as Project Manager

- Anyone! – who ever is named in the Contract
- Employed for their managerial skills – their ability to manage the contract to time and money (Supervisor for quality)
- In the UK Quantity Surveyors undertake the role of Project Manager and if not they still play a key role under the NEC
- Project Manager & Supervisor can delegate any action
- UK approach – not formal delegation but Project Manager has a “support team”
- Designers / technical experts / H&S / commercial
- Quantity Surveyor to undertake the commercial function
- If a Quantity Surveyor is the Project Manager then the QS would have scheduling support



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Commercial Activities Pre-Contract

making the **difference**

Commercial Activities – Pre-Contract

- Procurement and contract strategies
- Choice of NEC contract
- Main and secondary option selection
- Tender and Contract documents
- Tender process / assessment
- Produce contract documents

NEC Contract Structure

- Core Clauses
- Main options
- Secondary options
- Dispute resolution options
- Geographically specific clauses – UK and New Zealand
- Z Clauses – additional / amendments to the standard
- All contracts are “shell contracts” and require a high level of project specific information to make them work

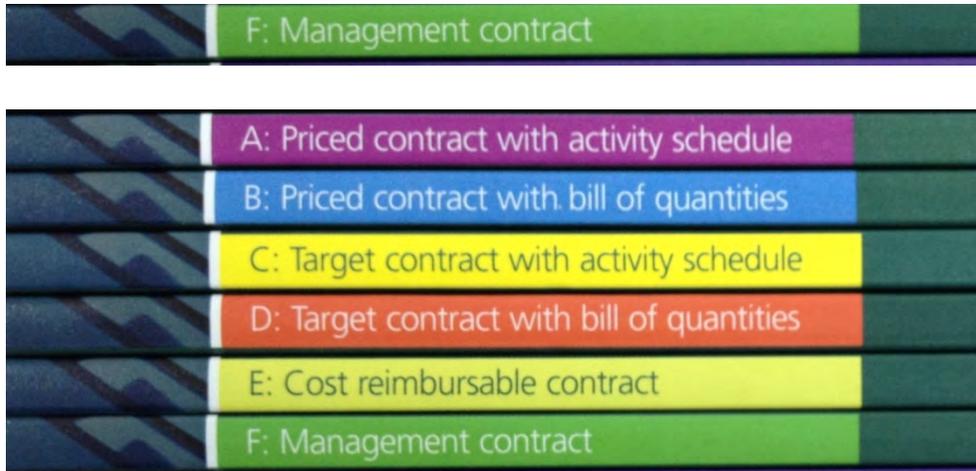
Engineering and Construction Contract

Core clauses - common to all options and form around 85% of the contract:

- 1 - General
- 2 - The Contractor's main responsibilities
- 3 - Time
- 4 - Testing and Defects
- 5 - Payment
- 6 - Compensation events
- 7 - Title
- 8 - Risks and insurance
- 9 - Termination

Main Option Clauses

- There are 6 Main Option clauses.
(generally run to between 1 and 3 pages in addition to core clauses)
 - Employer must select 1 of these:
 - ECC Option A - priced contract with activity schedule
 - ECC Option B - priced contract with bill of quantities
 - ECC Option C - target contract with activity schedule
 - ECC Option D - target contract with bill of quantities
 - ECC Option E - cost reimbursable contract
 - ECC Option F - management contract



Option A

Priced contract with Activity Schedule

- Lump sum contract
- Project should be well defined and subject to minimal change
- Payment on Activity Schedule defined and priced by the contractor, but Employer normally sets template and high level breakdown required for tender assessment
- Activity Schedule should align with programme to allow ease of administration
- Contractor only paid for completed activities
- All financial risk apart from compensation events which includes Employer's risks are the Contractor's
- Suited to design and construct
- Risk is included in the activities and paid regardless of whether they occur
- Greater certainty of price
- Contractor has an interest in minimising cost

Option B

Priced contract with Bill of Quantities

- Remeasurement contract
- BoQ produced by the employer, rates priced by contractor
- Contractor paid for quantity of work completed each month
- Financial risk of quantities / errors in BoQ borne by Employer
- All other financial risks other than compensation events, which includes Employer's risk are the Contractor's
- Not suited to design and construct
- Works should be well defined at tender
- Risks are included in the BoQ and paid regardless of whether they occur
- Contractor has an interest in minimising cost

Options C

Target contract with Activity Schedule

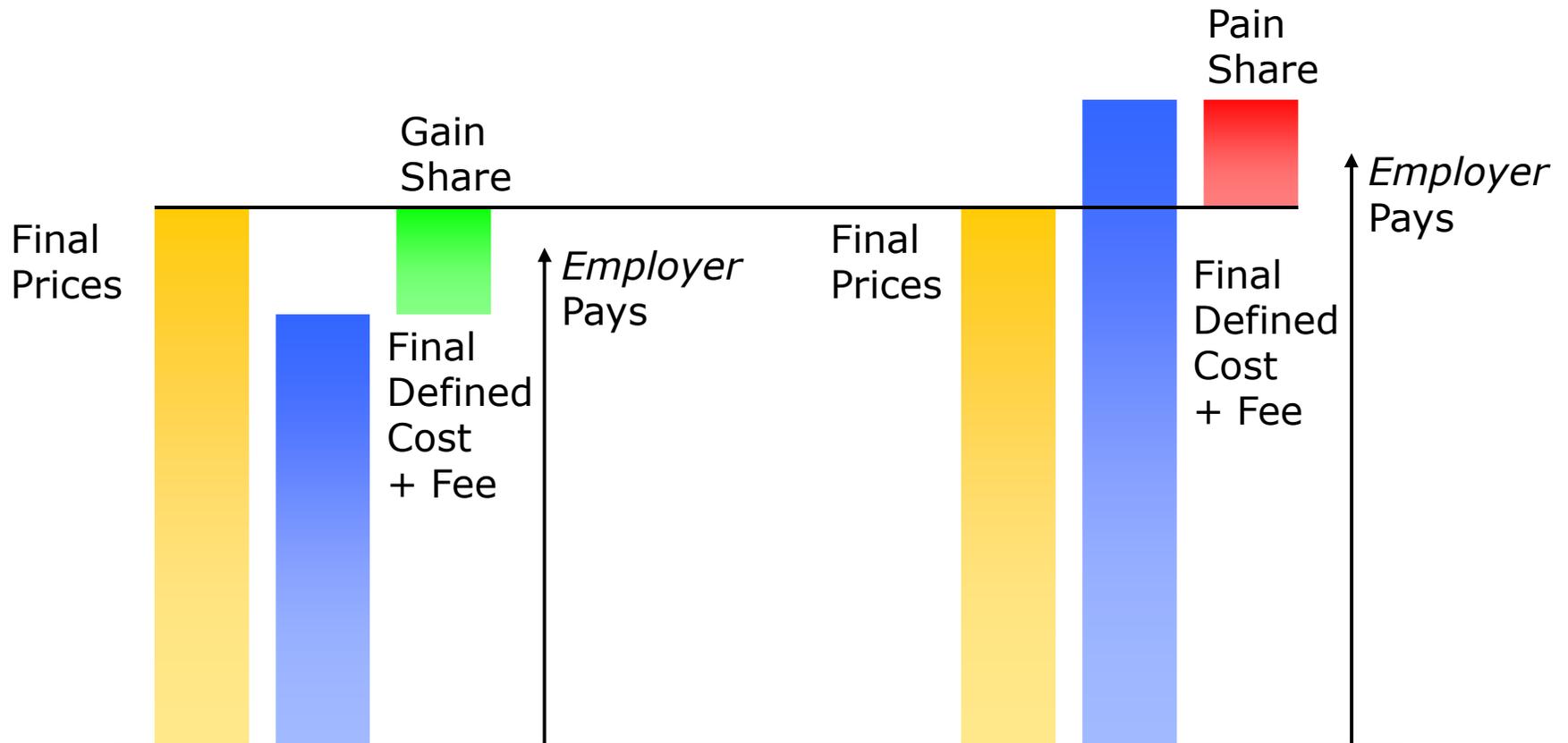
- Works should be adequately defined to allow target to be set
- Target Cost set via Activity Schedule
- Target Cost moves with changes (Compensation Events)
- Greater flexibility for the employer to develop his design
- Contractor paid on a cost reimbursable (Defined Cost) basis
- Employer carries the risk of compensation events which includes Employer's risks
- Contractor carries financial risk of Disallowed Cost and accuracy of the fee percentages
- All other financial risk shared between the contractor and employer through the gain share / pain share process
- Contractor and Employer both encouraged to control costs

Options D

Target contract with Bill of Quantities

- Works should be adequately defined to allow target to be set
- Target Cost set via Bill of Quantities
- Target Cost moves with changes (Compensation Events)
- Greater flexibility for the employer to develop his design
- Employer carries the risk of compensation events which includes Employer's risks and risk of quantities / errors in BoQ borne by Employer
- Contractor carries financial risk of Disallowed Cost and accuracy of the fee percentages
- All other financial risk shared between the contractor and employer through the gain share / pain share process
- Contractor and Employer both encouraged to control costs

Options C & D



- Proportion of saving / overspend received / paid by Contractor is determined by the Employer

Option E

Option E – Cost Reimbursable contract

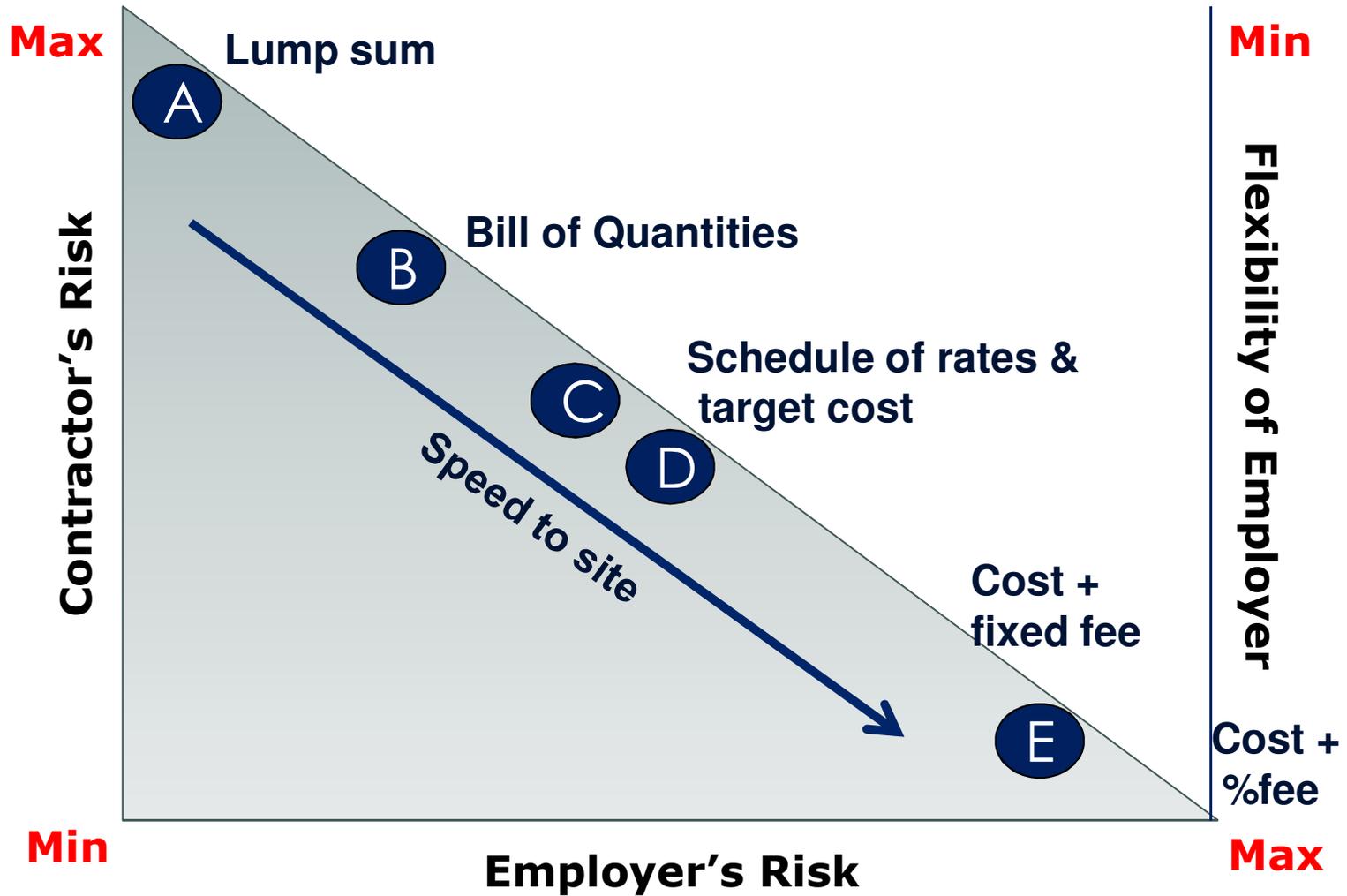
- Limited / no project definition required at tender stage
- Immediate / earlier start on site
- Contractor paid on a cost reimbursable basis
- Contractor carries financial risk of Disallowed Cost and accuracy of the fee percentages
- All other financial risk is with the Employer
- Full flexibility available to the Employer
- Simpler post contract financial management (no contract sum)
- Potential for claims / disputes virtually eliminated

Option F

Option F – Management contract

- Limited project definition required at tender stage
- Earlier start on site
- Employer carries risk of cost increases
- Suitable for contracts with a high degree of specialist contractors
- Contractor directly employees subcontractors
- Contractor responsible for managing the subcontractors to time and quality
- Works subcontractors paid on prime cost
- Contractor tenders preliminaries and Fee

Financial risk reward of the main options



Secondary Option Clauses

- X1 Price adjustment for inflation (used only with Options A, B, C & D)
- X2 Changes in the law
- X3 Multiple currencies (used only with Options A & B)
- X4 Parent company guarantee
- X5 Sectional completion
- X6 Bonus for early Completion
- X7 Delay damages
- X12 Partnering
- X13 Performance bond
- X14 Advanced payment to Contractor

Secondary Option Clauses

- X15 Limitation of Contractors liability for design to reasonable skill and care
- X16 Retention (not used with Option F)
- X17 Low performance damages
- X18 Limitation of liability
- X20 Key performance indicators (not used with Option X12)

Secondary Option Clauses

- Regional specific Secondary Options:
 - Y(UK)1 Project Bank Account
 - Y(UK)2 Housing Grants Construction & Regeneration Act 1996
 - Y(UK)3 Contracts (Rights of Third Parties) Act 1999
 - Y(NZ)1 The Construction Act 2002 & The Contracts (Privity) Act 1982

- Also, Z clauses...
 - Bespoke contract specific amendments

Contract Data

- The Contract Data is in 2 parts:
- Part 1: Completed by Employer and issued as part of Tender documentation
 - Main and Secondary Options selected
 - Details of Employer, Project Manager, Supervisor, Adjudicator
 - Key Dates etc.
- Part 2: Completed by Contractor and returned as part of Tenderer's submission
 - Contractor's key people (e.g.. Agent, Construction Manager etc)
 - Tender price
 - Fee percentages / Data for use with Schedule of Cost Components

Contract Documents

- Form of Tender / Form of Agreement
- Contract Data Part 1 & 2
- Works information
- Site Information – Describes the existing site conditions
- Price – Activity Schedule (Options A & C) or BoQ (Options B & D)
- Programme (can follow later)
- Other executable documents such as Bonds, Guarantees etc.

Contract Documents

- Works Information:
- Key document; provides the contract with the flexibility it does by leaving the finer detail to be prescribed within the Works Info
- Is more than just a specification and drawings and is cross-referenced throughout the core clauses, examples:
 - 11.2(2) 'Completion is when the Contractor has done all the work which the Works Information states he is to do...'
 - 21.1 'The Contractor designs the parts of the works which the Works Information states he is to design'
 - 40.1 'Tests and inspections required by the Works Information...'



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Commercial Activities Post-Contract

making the **difference**

Early Warnings

Sub-clause 16 - Early warning

- Contractor or Project Manager gives an early warning as soon as either becomes aware of a matter that may (can be Contractor or Employer risk)
 - increase the total of the Prices
 - delay Completion or delay meeting a Key Date or
 - impair the performance of the works in use
 - increase the Contractor's total cost

Early Warnings

- The focus is on resolving and mitigating issues rather than seeking to allocate blame and liability
- While there is still time to positively influence the course of events
- Process is not understood or applied correctly
- Considered as part of the compensation event process – they are NOT!
- Failure to raise an early warning will not exclude right to a compensation event
- Notification of an early warning is not notification of compensation event
- Should not be raised for events that have already occurred
- Employer / Project Manager does not raise any
- Issues that affect time, cost, quality not raised & shared if they are not seen as grounds for claim

Early Warnings

- Sanctions for the Contractor if not given:
 - The compensation event is assessed as if the Contractor had given early warning (Clause 63.5)
 - Disallowed cost if cost was incurred because the Contractor did not give an early warning (Clause 11.2 (25) of Option C, D & E)
- No Employer sanctions
 - Employer will lose the opportunity to mitigate the effects of the early warning

Supply Chain Management

Subcontracting (Cl 26)

- If the Contractor subcontracts work he is responsible as if the subcontractors employees and equipment were the Contractors
- The Contractor submits the name of each proposed subcontractor for acceptance by the Project Manager
- The Contractor submits each subcontract to the Project Manager for acceptance unless
 - an NEC contract is proposed or
 - the Project Manager has agreed that no submission is required
- Stated reasons for non acceptance

Payment

- Assessing the amount due (CI 50)
 - Project Manager assesses the amount due at each assessment date
 - No requirement for the Contractor to submit an application
 - Project Manager must give details of assessment
- Amount due is the Price for Work Done to Date (PWDD) +/- other amounts to be paid or retained
- 1/4 of PWDD withheld until the Contractor has submitted a first programme acceptance showing all information which this contract requires
- PWDD – differs between Options

Payment

Option A (Cl 11.2 (27))

- The Price for Work Done to Date is the total of the Prices for
 - each group of completed activities and
 - each completed activity which is not in a group
- A completed activity is one which is without Defects which would either delay or be covered by immediately following work

Payment

Option B (Cl 11.2 (28))

- The Price for Work Done to Date is the total of
 - the quantity of the work which the Contractor has completed for each item in the Bill of Quantities multiplied by the rate and
 - a proportion of each lump sum which is the proportion of the work covered by the item which the Contractor has completed
- Completed work is work without Defects which would either delay or be covered by immediately following work

Payment

Option C, D & E (Cl 11.2 (29))

- The Price for Work Done to Date is the total Defined Cost which the Project Manager forecasts will have been paid by the Contractor before the next assessment date plus the Fee

Payment

Option C, D & E (Cl 11.2(3))

- Defined Cost is
 - the amount of payments due to Subcontractors for work which is subcontractedand
 - the cost of components in the Schedule of Cost Components for other workless any Disallowed Cost

Payment

- Subcontractors – Direct Cost
- Contactor's "other" costs
 - Schedule of Cost Components is split into the following sections
 - 1 People
 - 2 Equipment
 - 3 Plant and Materials
 - 4 Charges
 - 5 Manufacture and fabrication
 - 6 Design
 - 7 Insurance

Payment

Disallowed Cost

- Costs which the Contractor may have incurred and fall within the definition of Defined Cost BUT
- The costs have only been incurred due to some failure or default of the Contractor
- The Employer can reject payment
- Disallowed costs are therefore cost borne entirely by the Contractor

Verifying Defined Cost

- Need to put in place an audit process to validate Contractor's costs
- Need to understand and validate Contractor's costing system
- Sample audit common approach – 10%
- Forensic Cost Assurance – 100% audit
- Works undertaken by internal or affiliated companies
- Review resources on site and material deliveries to ensure that these are correct and not excessive
- Review rates and prices paid to test for value for money
- Quality v price

Payment

Defined Cost (Cl 52)

- Contents of the Fee are not defined
- All the Contractor's cost not included in Defined Cost are deemed to be in the Fee
- Amounts included in Defined Cost are
 - at open market or competitively tendered prices
 - with deductions for all discounts, rebates and taxes which can be recovered

Compensation Events

- Strict process to follow with challenging timescales
- Proactive management of change with the intention that the effects of change is assessed and agreed contemporaneously with event arising and preferable before
- Placing the Employer in the lead of the change control process and providing an opportunity to manage and mitigate risk
- Provide certainty and avoid the potential for claims
- Final account not required as each change has already been assessed and agreed prior to Completion or shortly thereafter

Compensation Events

- There are 19 standard compensation events heads with an additional 7 dependent upon which main and secondary options are chosen. Examples of compensation events: -
 - (1) Project Manager gives an instruction to change the Works Information
 - (2) Employer does not provide access to and use of a part of the Site
 - (5) The Employer or Others do not work within the times shown on the accepted programme, or in accordance with the Works Information
 - (12) The Contractor encounters “unforeseen” physical conditions

Compensation Events

- There are 19 standard compensation events heads with an additional 7 dependent upon which main and secondary options are chosen. Examples of compensation events: -
 - (13) A weather measurement is recorded which is shown to occur on average less frequently than once in 10 years
 - (14) Employers risks
 - (19) Prevention, as event occurs which neither party could foresee, can prevent and stops the Contractor completing the works in time or at all
- Are there more grounds for changes under the ECC or just better defined?

Compensation Events

- The procedure follows a logical chain with strict timescales as follows:
 - Notification 8 weeks
 - Decision on validity / instruction to quote 1 week
 - Quotation 3 weeks
 - Assessment of quotation / reply 2 weeks
 - Implementation

Compensation Events

Notification

- Either party can notify the other of a potential compensation event
- If the Project Manager notifies (61.1) you move straight to quotation
- If the Contractor notifies (61.3) then the Project Manager has to undertake a series of checks to confirm if the notification is a valid compensation event

Compensation Events

- Validity (CI 61.4)
 - Only the Project Manager can instruct a compensation event
 - Decision within 1 week or a longer period to which the Contractor has agreed
 - If the Project Manager decides that the event notified by the Contractor: -
 - ❑ arises through a fault of the Contractor
 - ❑ has not happened and is not expected to happen
 - ❑ has no effect upon Defined Cost or Completion or meeting a Key Date or
 - ❑ is not one of the compensation events stated in this contract
 - The notification is rejected and the matter is closed

Compensation Events

Quotation

- If the Contractor did not give an early warning which an experienced contractor could have given the event is assessed as if they had given the early warning
- If the Project Manager decides that the effects of a compensation event are too uncertain he can state an assumption
 - The assessment of the compensation event is then based on these assumptions
 - If the assumption turns out to be incorrect the Project Manager notifies a correction
 - This leads to the award of a new compensation event for the changed effect (60.1(17))
- The Project Manager can enter into discussion with the Contractor about alternative ways of dealing with the event and can ask for alternative quotes (62.1)

Compensation Events

Assessment

- Contractor has only one opportunity to price all the effects of the compensation event
- All compensation events entitle to the Contractor to claim time and money, there are no “neutral events” (Cl 62.2)
- 2 principle elements to the assessment
 - Time
 - Cost
 - ❖ Direct
 - ❖ Indirect
 - ❖ Disruption

Compensation Events

- The drafters have deliberately broken the link between tendered prices and the evaluation of change
- Compensation events are evaluated on the basis of 'Defined Cost'
- Defined Cost is a defined term that differs between the main options
- The intention is the Contactor should be paid what the events will cost him plus the agreed Fee i.e. he will be compensated

Compensation Events

Cost

- The changes to the Prices are assessed as the effect of the compensation event upon (63.1)
 - the actual Defined Cost of the work already done
 - the forecast Defined Cost of the work not yet done and
 - the resulting Fee
- The date when the Project Manger instructed or should have instructed the quotations divides the work done from the work not yet done

Compensation Events

Option A & B (and can be used under Option C & D if the Parties agree)

- Defined Cost is the cost of the components in the Shorter Schedule of Cost Components whether the work is subcontracted or not excluding the cost of preparing quotations for compensation events
- The Shorter Schedule is in effect a simplified version of the full schedule

Compensation Events

Option C, D & E

- Defined Cost is
 - the amount of payments due to Subcontractors for work which is subcontractedand
 - the cost of components in the Schedule of Cost Components for other workless any Disallowed Cost

Compensation Events

Time

Delay to the Completion Date is assessed as the length of time that planned Completion is later than planned Completion shown on the Accepted Programme (Cl 63.3)

Compensation Events

- Disruption
 - If the programme for the remaining work is altered by the compensation event the Contractor includes alterations to the Accepted Programme in his quotation (CI 62.2)
- Risk
 - Assessment of the effect of a compensation event includes risk allowance for cost and time for matters which have a significant change of occurring and are at the Contractor's risk under this contract (CI 63.6)
- Duty of the Contractor to mitigate the effects of a compensation event
 - Assessment are based upon the assumption that the Contractor responds competently and promptly to the compensation event , that any Defined Cost and time due to the event are reasonably incurred and that the Accepted Programme can be changed (CI 63.7)

Compensation Events

Acceptance

- The Project Manager can
 - Instruct a revised quotation
 - Accept the quotation
 - Notify that a proposed instruction will not be given
 - Notify that he will be making his own assessment
- If the Project Manager instructs the Contractor to submit a revised quotation he explains the reasons for doing so.
- The Contractor resubmits within 3 weeks
- The Project Manager can extend the time allowed for quotation and Project Managers response if the Project Manager and Contractor agree

Compensation events

- Time Bar
 - Contractor notification tests – 8 week time bar
 - But only from “awareness” of the event
- Default Acceptances
 - Default acceptance of Compensation Event if no response from the Project Manager within the correct timescales (1 week + 2 weeks)
 - Default acceptance of quotation if no response from the Project Manger within the correct timescales (2 weeks + 2 weeks)
- Project Manager’s assessment
 - Project Manager can unilaterally determine time and cost effects of a compensation event

Compensation events

- Successful implementation requires considerable resources and commitment from both parties
- Willingness to proactively agree changes
- Problems can occur due to
 - Parties fail to comply and take a traditional approach
 - Deal with direct costs only
 - Exclude time / disruptive effects

Summary

- NEC is an innovative suite of contracts, growing in popularity across the World
- It's use in Hong Kong is expected to increase
- Contract of choice in the UK
- Different format, structure and approach to traditional contracts
- Commercial role is still key
- Quantity Surveyors play a major role and enjoy working under the NEC



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Questions

FAQ 1

Type of project

Question: *On what type of project could we use ECC?*

Answer

- *the ECC is for any work which could be defined as engineering and/or construction and thus embraces civil engineering, building, process and all allied industries.*

FAQ2

Use of engineers

Question: *Is it true that we do not have an engineer under the ECC?*

Answer

- The ECC uses engineers, their role being dependent on the type of project, but ECC does not name an engineer who takes design responsibility and also administers the contract.
- On an ECC project the employer will appoint the following parties:
 - *Project manager appointed by the employer, either from its own staff, or from an outside body.*
 - *Supervisor appointed by the employer for a particular contract.* This role can be likened to that of a clerk of works or resident engineer in other contracts.

FAQ3

Design and construct

Question: *Is there a design and construct version of the ECC?*

Answer

- Under the ECC any or all of the design responsibility, and ultimately the liability for that design, can be apportioned to the contractor through the works information; there is no separate contract document to cover design and construct contracts.

FAQ4

Programmes

Question: *I have heard that the programme requirement is more onerous under an ECC contract?*

Answer

- Under the ECC, the preparation, submission and acceptance of the contractor's programme are key elements of managing the contract as well as reporting progress.
- The programme is an important document for administering the contract. It enables progress to be monitored and the time effects of compensation events to be assessed, including changes to the completion date.

FAQ5

Claims

Question: *Do you have fewer claims under the ECC than under the ICE Conditions?*

Answer

- There are no claims at all in the normal sense under the ECC as it deals with changes and their effects on price and programme in a different way to more traditional contacts.
- Under the ECC, variations such as changes to the works information are compensation events and are assessed based on the forecast effect on actual cost (plus fee percentage) and any delay to the completion date.
- Any extension of time and/or loss of expense are therefore assessed within the compensation event that caused the delay and/or cost.
- The final account and any claims issues (ECC does not use the words final account or claim) are dealt with in a formal manner as the work progresses.



Feed back welcomed