

Evolution of Partnering Contracts
- NEC Trial in Government Projects

Tendering and Working with Project Team of ECC Option C Contract



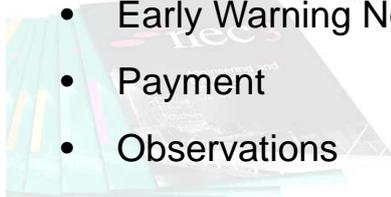
Ir Ko Wing Nin, Ken



Tendering and Working with Project Team of ECC Option C Contract

Agenda

- Introduction
- Tender Preparation
- Subletting
- Early Warning Notification
- Payment
- Observations



Partnering

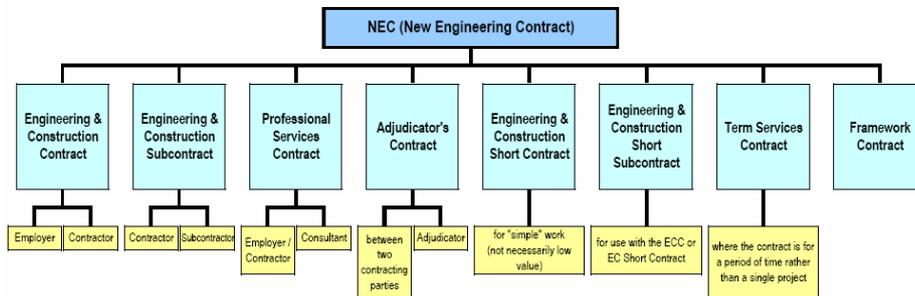
ECC Clause 10.1

“The Employer, the Contractor, the Project Manager and the Supervisor shall act as stated in this contract and in a spirit of mutual trust and co-operation.”

= REAL PARTNERING



3



4

ECC Six types of payment mechanism available in the main Options:

Main Option Clauses

- Option A - Priced Contract with Activity Schedule
- Option B - Priced Contract with Bill of Quantities
- Option C - Target Contract with Activity Schedule
- Option D - Target Contract with Bill of Quantities
- Option E - Cost Reimbursable Contract
- Option F - Management Contract

Brief description of each is as follows:

- Options A and B
 - priced contracts with the risk of carrying out the work at the agreed prices being largely borne by the Contractor
- Options C and D
 - target cost contracts in which the out-turn financial risks are shared between the Client and the Contractor in an agreed proportion
- Options E and F
 - cost reimbursable types of contract with the financial risk being largely taken the Client

Engineering and Construction Contract - Option C Tender Preparation



Tender Documents

Tender Documents consists of:

- Instructions to tenderers (including any instructions for preparing the activity schedule under Options A and C)
- Form of Tender
- Contract Data part one
- Contract Data part two
- Pricing document
 - Activity Schedule (Options A and C)
 - Bill of quantities (Options B and D)
- Work Information
- Site Information



Tendering and Working with Project Team of ECC Option C Contract

Tender Documents - Contract Data part one

Contract Data part one

➤ completed by the *Employer*



Contract Data Part One

CONTRACT DATA

PART one - Data provided by the Employer

- 1 General
- The conditions of contract are the core clauses and the clauses for main Option C, secondary Options X1, X5, X7, X15, X16 and Z of the NEC3 Engineering and Construction Contract (June 2002) with amendments June 2006 and September 2011, as amended or supplemented by the Articles of Agreement.
 - The works are the construction of as more particularly described in the Works Information.
 - The Employer is
 - The Project Manager* is
 - The Supervisor* is
 - The Adjudicator is to be appointed in accordance with Clause G1 of the additional conditions of contract.
 - The Works Information is in the document entitled "Works Information" bound with other contract documents.
 - The Site Information is in the document entitled "Site Information" bound with other contract documents.
 - The boundaries of the site are shown on drawing entitled Site Layout Plan.
 - The language of this contract is English
 - The law of the contract is the law of the Hong Kong Special Administrative Region
 - The period for reply is 2 weeks.
 - The tribunal is the arbitrator to be appointed in accordance with Clause G1 of the additional conditions of contract.
 - The following matters will be included in the Risk Register
 - (1) Congested working environment and difficult access
 - (2) A degree of variation in actual ground conditions including utilities and sub-soil information currently available
 - (3) Traffic management plan is not signed off and/or implemented correctly causing impact
 - (4) Accident caused by improper design or construction of temporary works

Tendering and Working with Project Team of ECC Option C Contract

Tender Documents - Contract Data part one

Contract Data Part One

Contract Data Part One

- (5) Excessive settlement of adjacent structures and ground
(6) Lack of adequate liaison between stakeholders and/or design team and contractors

- 3 Time
- The starting date is the date which is within 2 weeks from the date of letter of acceptance and as notified by the Project Manager after acceptance of tender.

The access dates are

| Portion | Date | Remarks |
|---------|--------------------------|---------|
| A | Commencement of contract | |
| B | April 2013 | |
| C | Commencement of contract | |
| D | | |
| E | April 2014 | |
| F | Commencement of contract | |

- The Contractor is to submit a first programme for acceptance within 2 weeks of the Contract Date.
- The Contractor submits revised programmes for acceptance at intervals no longer than 5 weeks.
- The completion date for the whole of the works is the date of 67 months after the starting date.
- The key dates and conditions to be met are

- 4 Testing and Defects
- The defects date is 56 weeks after Completion of the whole of the works.
 - The defect correction period is 12 weeks.

- 5 Payment
- The currency of this contract is the Hong Kong Dollar.
 - The assessment interval is 5 weeks.
 - The interest rate

The Contractor's share percentages and the share ranges are

| share range | Contractor's share percentage |
|-------------------------------|-------------------------------|
| less than or equal to ...?..% |?.....% |
| greater than... ?.....% |?.....% |

- 8 Risks and insurance
- The Contractor prepares forecasts of Defined Cost for the works at intervals no longer than 5 weeks.
 - The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the works, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) caused by activity in connection with this contract for any one event is HK\$100,000,000.00.

- The Contractor maintain professional indemnity insurance for a minimum amount of HK\$50,000,000 in compliance with Clause D27(1) of the additional conditions of contract
- Each of the Contractor's designer and independent checking engineer maintain professional indemnity insurance for a minimum amount Cover / indemnity is in compliance with Clause F3 of the additional conditions of contract

X5 Sectional Completion

| section | completion date |
|---------|-------------------------------|
| 1 | 5 months after starting date |
| 2 | 32 months after starting date |
| 3 | 39 months after starting date |
| 4 | 67 months after starting date |

The Works Information contains detailed description of each section of the works.

- X7 as amended by the Articles of Agreement Delay damages
- Delay damages for each section of the works are

- X16 Retention
- The retention free amount is
 - The retention percentage is

- Z additional conditions of contract
- The additional conditions of contract are set out in the document entitled "Additional Conditions of Contract" which forms part of the contract.

Tendering and Working with Project Team of ECC Option C Contract
Tender Documents - Contractor Data part two

Contract Data part two

- Contains a list of data to be supplied by the tenderers as part of their offer
- Tendered total of the Prices must be entered
- Transferred from the grand total of the activity schedule or bill of quantities



Tendering and Working with Project Team of ECC Option C Contract
Tender Documents - Contractor Data part two

CONTRACTOR DATA Contract Data Part Two Section One

PART Two - Data provided by the Contractor
Section 1 (To be included in the envelope for Tender Price Documents)
Completion of the data in full is essential to create a complete contract.

For percentage, the activity schedule is the document entitled "Activity Schedule" submitted by the Contractor in its tender with the lump sum prices for each of the activities on the Activity Schedule corrected after applying before application the Correction Rates for Tender Errors as set out in Appendix C to the Special Conditions of Tender.

The tendered total of the Prices is

XI as amended by the Articles of Agreement Price adjustment for inflation

The proportions used to calculate the Price Adjustment Factor are

| Item of Labour and Selected Materials applicable to this Contract (Column No.) | LIMITS | | TENDER (whole number) (*) | Calculated Proportion (1) (2,000/3) |
|--|----------|----------|---------------------------|-------------------------------------|
| | Max. (1) | Min. (2) | | |
| Composite labour for civil engineering contracts | 45 | 20 | | |
| Aggregates | 15 | 5 | | |
| Bitumen | 8 | 4 | | |
| Diesel Fuel | 20 | 10 | | |
| Steel Reinforcement | 15 | 8 | | |
| Consumed motor oil | 15 | 8 | | |
| Portland Cement (tonnes) | 8 | 5 | | |
| Tender Formwork | 8 | 5 | | |
| All other costs not subject to adjustment | - | - | - | 0.1500 |
| TOTAL | - | - | 100 | 1.0000 |

An index figure is any appropriate index figure listed in the "Index Numbers of the Costs of Labour and Materials used in Public Sector Construction Projects (April 2003-1007)" compiled by the Census and Statistics Department of the Government of the Hong Kong Special Administrative Region and applicable to those items against which proportions are stated above.

The base date for the index figures is the date 42 days prior to the date for the return of tenders.

Notes: (*) Column (3) to be filled in by the tenderer in whole number within the limits set in columns (1) and (2).

Contract Data Part Two Section One

(*) Column (4) to be completed by the Project Manager prior to executing the Articles of Agreement.

Name _____
Signature _____
in the capacity of _____
duly authorized to sign tenders for and on behalf of _____
Date: _____

Tendering and Working with Project Team of ECC Option C Contract

Tender Documents - Contractor Data part two

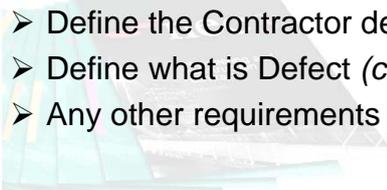
| | |
|---|---|
| <p style="text-align: right; font-size: small;">Contract Data Part Two Section 2</p> <p>CONTRACT DATA</p> <p>PART two - Data provided by the Contractor</p> <p>Section 2 (To be included in the envelope for Technical Submission)</p> <p style="font-size: x-small;">Completion of the data in full is essential to create a complete contract.</p> <p>General statements</p> <ul style="list-style-type: none"> • The Contractor is <ul style="list-style-type: none"> Name _____ Address _____ • The working areas are the Site and _____ • The key people are <ul style="list-style-type: none"> (1) Name _____ Job _____ construction manager _____ <p>Responsibilities _____</p> <p>Qualifications _____</p> <p>Experience _____</p> <ul style="list-style-type: none"> (2) Name _____ Job _____ site agent _____ <p>Responsibilities _____</p> <p>Qualifications _____</p> <p>Experience _____</p> <ul style="list-style-type: none"> (3) Name _____ Job _____ quantity surveyor _____ <p style="text-align: center; font-size: x-small;">COP22Y1</p> | <p style="text-align: right; font-size: small;">Contract Data Part Two Section 2</p> <p>Responsibilities _____</p> <p>Qualifications _____</p> <p>Experience _____</p> <ul style="list-style-type: none"> • The following matters will be included in the Risk Register <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Works Information for Contractor's design</p> <ul style="list-style-type: none"> • The Works Information for the Contractor's design is in <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Name _____</p> <p>Signature _____</p> <p>in the capacity of _____</p> <p>duly authorized to sign tenders for and on behalf of _____</p> <p>Date: _____</p> <p style="text-align: center; font-size: x-small;">COP22Y2</p> |
|---|---|

Tendering and Working with Project Team of ECC Option C Contract

Tender Documents

Work Information

- Specify and describe the *works*
- States any constraints on how the *Contractor Provides the Works (cl 11.2(19))*
- Define Completion (*cl 11.2(2)*)
- Define the Contractor design (*cl 21.1*)
- Define what is Defect (*cl 11.2(5)*)
- Any other requirements



Site Information (cl 11.2(16))

- Describes the Site and its surroundings, e.g.
 - Soils reports
 - Surveys of existing buildings
 - As built drawings for existing structures
- Experienced contractor should expect to find and should allow for in their price (cl 60.2)

15

Activity Schedule - general use with Option A and C

- prepared and priced by the tenderers
- Used to calculate “target”
- Used at the end of the project to calculate the Contractor's share
- not form part of the Works Information or site Information
- not be used to describe the works
- prices entered by the tenderers for each activity are lump sums, not unit rates as in bill of quantities
- tenderer decides how to break up his work into activities

16

Tendering and Working with Project Team of ECC Option C Contract
Tender Documents – Activity Schedule

- **Employer** wants to specify particular activities which the **Contractor** is to identify in the activities schedule, may state his requirements in the instructions to tenderers;
- not all activities in an activity schedule will be direct construction activities; which may be a design activities, administration activities, testing etc;
- **tenderers have to measure quantities from the Works Information for estimating the cost of the work**

Tendering and Working with Project Team of ECC Option C Contract
Tender Documents – Activity Schedule

| Item | Activity | Price (HK\$) |
|---------------------------------|--|--------------|
| ACTIVITY SCHEDULE Schedule C | | |
| C | Section 2 of the works | |
| | Stormwater Storage Tank - Stage 1 (at Pitch Nos. 2, 3 and 4) | |
| | Site Clearance | \$ |
| C.1 | Site Clearance | \$ |
| C.2 | Temporary Fences and/or Hoardings | \$ |
| | Fencing | \$ |
| C.3 | Fencing | \$ |
| C.4 | Handrailing | \$ |
| | Earthworks | \$ |
| C.5 | Excavation & Lateral Support (ELS) | \$ |
| C.6 | Pump Test | \$ |
| C.7 | Excavation | \$ |
| C.8 | Backfilling | \$ |
| C.9 | Formation of Access Ramp | \$ |
| | Foundation | \$ |
| C.10 | Pile foundation | \$ |
| | Drainage and Ducts | \$ |
| C.11 | Sewers, Drains and Trench Drains | \$ |
| C.12 | Air Ducts | \$ |
| C.13 | Gullies, Catchpits, other Chambers and Draughts | \$ |
| C.14 | Manholes | \$ |
| C.15 | Drainage Channels | \$ |
| | Pipeworks | \$ |
| C.16 | Pipes | \$ |
| C.17 | Joints and Connections | \$ |
| | Architectural and Building Works | \$ |
| C.18 | Formwork | \$ |
| C.19 | Reinforcement | \$ |
| C.20 | Concrete | \$ |
| C.21 | Movement Joint | \$ |
| C.22 | Waterproofing | \$ |
| C.23 | Finishes | \$ |
| C.24 | Builder's works in connection with electrical and mechanical installations | \$ |
| | Sundry Metalwork | \$ |
| C.25 | Gal Labdy | \$ |
| C.26 | Heavy Duty Milliput Cover | \$ |
| C.27 | Earth Retaining Structure | \$ |
| | Retaining Wall | \$ |
| | Pump House | \$ |
| | Architectural and building works | \$ |
| C.28 | Formwork | \$ |
| C.29 | Steel reinforcement | \$ |
| C.30 | Concrete | \$ |
| C.31 | Mobile crane | \$ |
| C.32 | Doors, louvers, skylight and shutters | \$ |
| C.33 | Waterproofing | \$ |
| Carried Forward | | |

| Item | Activity | Price (HK\$) |
|---------------------------------|--|-----------------|
| ACTIVITY SCHEDULE Schedule C | | |
| C | Section 2 of the works (Cont'd) | Brought forward |
| C.34 | Finishes | \$ |
| C.35 | Metal works | \$ |
| C.36 | Signage | \$ |
| C.37 | Builder's works in connection with electrical and mechanical installations | \$ |
| | Electrical and Mechanical Installations | \$ |
| C.38 | Electrical Installations | \$ |
| C.39 | Plumbing and drainage installations | \$ |
| C.40 | Testing and commissioning | \$ |
| C.41 | Provision of spare parts | \$ |
| | Fan Room | \$ |
| | Architectural and building works | \$ |
| C.42 | Formwork | \$ |
| C.43 | Steel reinforcement | \$ |
| C.44 | Concrete | \$ |
| C.45 | Steelwork | \$ |
| C.46 | Doors and louvers | \$ |
| C.48 | Waterproofing | \$ |
| C.49 | Finishes | \$ |
| C.50 | Builder's works in connection with electrical and mechanical installations | \$ |
| | Electrical and Mechanical Installations | \$ |
| C.51 | Electrical installations | \$ |
| C.52 | MVAC installations | \$ |
| C.53 | Testing and commissioning | \$ |
| C.54 | Provision of spare parts | \$ |
| | Twin Box Culvert | \$ |
| C.55 | Site Clearance | \$ |
| | Earthworks | \$ |
| C.56 | Excavation & Lateral Support (ELS) | \$ |
| C.57 | Excavation | \$ |
| C.58 | Disposition of fill material | \$ |
| C.59 | Disposal of material | \$ |
| C.60 | Compaction of fill material | \$ |
| | Drainage and Ducts | \$ |
| C.61 | Sewers and Drains | \$ |
| C.62 | Catchpits, other Chambers and Draughts | \$ |
| C.63 | Manholes | \$ |
| | Pipeworks | \$ |
| C.64 | Drainage Pipes & Subsoil Drains | \$ |
| C.65 | Joints and Connections | \$ |
| Carried forward | | |

Tendered total of the Prices

= Total estimated total cost from Activities Schedule + Fee

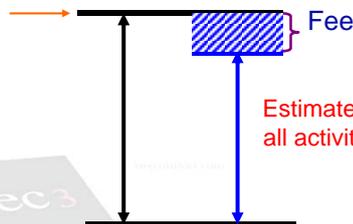
Fee – tenderer shall be specified fee percentage in the Contract Data part two

The Fee **includes** all the costs of the Contractor that are not included in Defined Cost, together with his profit and any allowance for his risks

Defined Cost – ECC Clause 11.2(23)

- payments due to subcontractor
- cost components in ECC including People, Equipment, Plant and Materials
- less Disallowed Cost

Tendered total of the Prices



Estimated total cost for completion of all activities in the Activity Schedule

Subletting



21

Subletting (1/3)

- **Contractor** shall prepare a **Subletting Procedures** for subletting works
- **Subletting Procedures** shall be commented and accepted by **Project Manager** and **ICAC** before subcontract tendering process carried out
- The **Contractor** shall propose a subcontractor tenderer list and the list shall be approved by the **Project Manager**



22

Tendering and Working with Project Team of ECC Option C Contract
Subletting (2/3)

- Join tender opening will be carried out by **Project Manager's, Supervisor's** and **Contractor's** staff
- **Project Manager** or his representative should attend the Tender Interviews with the potential tenderers
- Recommendation of tenderer should get **Project Manager's** approval before awarding to proposed tenderer

23

Tendering and Working with Project Team of ECC Option C Contract
Subletting (3/3)

Project Manager, Supervisor, and Contractor involve in the entire subletting process, to urge **Contractor** to select most competent subcontractor and competitive offer

24

Early Warning Notification



25



Early Warning Notification (1/4)

The purpose of the **Early Warning Notification** is to raise the risk at the early stage solving the problems together rather than against each other

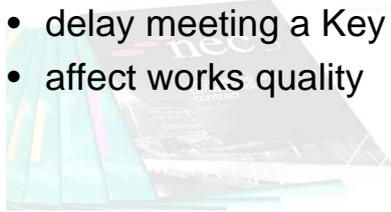


26



Contractor and the **Project Manager** can give an **Early Warning** by notifying the others as soon as either becomes aware of any matter could

- increase the project price
- delay completion
- delay meeting a Key Date or
- affect works quality



Following the **Early Warning Notification**, a **Risk Reduction Meeting** amongst **Project Manager**, **Supervisor** and **Contractor** will be conducted. It may be agreed that other people attend according to particular circumstances. All parties will discuss to find out the root problem and solution for eliminating / reducing the risk together.

Risk is owned by All Parties



Tendering and Working with Project Team of ECC Option C Contract
Early Warning Notification (4/4)

ECC+ACC

Risk Register (ECC16.1-16.4)

Following the Risk Reduction Meeting, Risk Register shall be revised by **Project Manager** to record the actions taken for avoiding or reducing the risk.

| Risk ID | Identified Risk Item | | Existing Control Measures (ECMs) | | Initial Risk Analysis | | Risk Treatment Plan | | | | | Residual Risk Analysis | | | Close Out | | | | | | | |
|---------|--|--|--|------------|-----------------------|-----------|--|-------------|---|-----------------------------|-------------------------------------|-----------------------------|-------------------------|---------------------------|--------------------|-------------------------|----------------|------|------|------|------|--|
| | Risk Item | Scope of Risk Identification / Date of Issue | Consequences & Additional Comments / Notes | Risk Owner | ECMs Already in Place | ECM Owner | Consequence of Likelihood of Risk Rating | Risk Rating | Possible Treatments (Additional Risk Control Measures (RCMs)) | Approved for Implementation | Risk treatment Action Plan Ref. No. | Responsible Treatment Owner | Completion of Treatment | Likelihood of Risk Rating | Actual Risk Rating | Actual Risk Rating Date | Comment Status | | | | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | |
| 1 | Changes to Works information during the construction stage | CD 1.1.7 CD 11 S2 | | C | | | | | | | | | | | | | | | | | | |
| 2 | A degree of variation in actual ground conditions including utilities and sub-soil information currently available | CD 1.1.2 CD 11 S2 | | C | | | | | | | | | | | | | | | | | | |
| 3 | Insufficient number of access points to site | CD 1.1.3 CD 11 S2 | | C | | | | | | | | | | | | | | | | | | |
| 4 | Accident caused by improper design or construction of temporary works | CD 1.1.4 CD 11 S2 | | C | | | | | | | | | | | | | | | | | | |



Tendering and Working with Project Team of ECC Option C Contract

ECC Option C
Payment



Payment Amount Due:

- **Price for Work Done to Date (PWDD)**
- plus other amounts to be paid to the **Contractor**
- less amounts to be paid by or retained from the **Contractor**
- **Price for Work Done to Date (PWDD)**

PWDD = total Defined Cost + Fee

- * **Contractor** shall present the proof of the payments which have been paid

ECC+ACC

Disallowed Cost – ECC Clause 11.2(25)

- Should not have been paid to a Subcontractor or Supplier in accordance with his contract
- Correcting defects after completion
- Correcting defects caused by the Contractor not complying with constraints in Works Information
- Surplus resources, plant & materials etc
- The cost of preparation for and conduct of an adjudication or proceedings of the tribunal

Assessment of Payment

- **Defined Cost** which the **Contractor** has paid and presented the receipt at each assessment date (such as Subcontractors payments; salary of site personnel, plant and equipment, etc)
- **Project Manager / Supervisor** can access to **Contractor's** account records (i.e. **Open Account**) which is transparency and subject to audit by **Project Manager** auditor team
- **Project Manager / Supervisor** can monitor the overall financial arrangement of the **Contractor** for the project

33

ECC + ACC

Pain / Gain Sharing (Option C): -

Actual Cost < Contract Price (Y)

→ Contractor and Client share 50% of gain value.

Actual Cost ≤ 110% Contract Price (Y)

→ Contractor and Client share 50% of pain value.

i.e. The maximum of the Final Amount will be $(\$Y \times 1.05 = \$1.05Y)$

Actual Cost > 110% Contract Price (Y)

→ Contractor will share 100% of pain value

*i.e. the ceiling of the Final Amount is $\$1.05Y$ only for **Client***

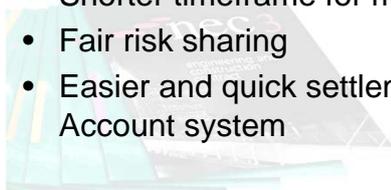
34

Observations



Observations

- More Target/Project Orientated (Common Goal)
- Real Partnering (trust, collaborative and early risk identification)
- Foresight applied collaboratively mitigates problems and shrinks risk
- Shorter timeframe for making decision
- Fair risk sharing
- Easier and quick settlement due to Open Book Account system



Thank You

