

Estimating, Costing & Pricing of construction contracts

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Course Overview

1. Tendering fundamentals
2. CIDB Standard for Uniformity
3. Preferential Procurement regulations of 2020
4. Expressions of Interest
5. Invitation to Tender
6. Pricing of the tender document
7. Tender Finalization
8. Tender Strategy
9. Tender programme & execution plan
10. Risk & opportunity management
11. Distribution of Tender Mark-up
12. Escalation
13. Completion of Tender document

Principles of estimating

- What is estimating?
 - It is the evaluation of the cost of items or events and then decide what we can afford to do or not to do - all of us do it all the time!!
 - The need to base your estimates on real costs & not guesswork, for example:
 - Holidays, household budgeting, etc.
- Business success is dependent on setting a budget & working to it

1. Tendering Fundamentals

- The 3 Main Role Players
 - The Employer
 - The Contractor
 - The Employer's Agent, e.g. Engineer, Principal Agent, Project Manager

1. Tendering Fundamentals

- **The Employer** – the “master” in the contract, owner of the project & pays for the project in accordance with the terms and conditions of the contract
- **The Contractor** - the other party to the contract, contracted to construct the project “the Works” for payment of money within a period of time
- **The Employer’s Agent** – employed by the Employer as his agent to design and/or administer the contract. Acts always in the best interests of the Employer.

1. Tendering Fundamentals

- The Employer solicits tender offers from Contractors/Service Providers using standard methods of procurement
- The Tenderer prices the tender based on the information provided with the tender document
- The Contractor or SP makes a formal Offer which the Employer is free to accept.

2. CIDB Standard for Uniformity

- CIDB Standard for Uniformity in Engineering & Construction Works contracts – August 2019
 - Establishes requirements for engineering and construction works contracts with the aim of bringing about standardisation and uniformity in construction contracts documentation, practices and procedures.
 - Incorporates the PPPFA regulations into the standard
 - Includes Standard Conditions of tender: SANS 10845-3: Part 3
 - Includes Standard conditions for calling of expressions of interest

2. CIDB Standard for Uniformity

- Other Regulations you need to be aware of:
- Employer's SCM regulations
- Department of National Treasury – regulations pertaining to the industry and holds the funding
- PFMA & MFMA
- AG's Office – annual audits
- Public Procurement Bill

2. CIDB Standard for Uniformity

- The standards are framed around the South African Constitutional imperatives for procurement, viz.
 - that the system is fair, equitable, transparent, competitive and cost effective
 - Fair - The process of offer and acceptance is conducted impartially without bias, providing simultaneous and timely access to participating parties to the same information
 - Equitable - Terms and conditions for performing the work do not unfairly prejudice the interests of the parties.
 - Transparent - The only grounds for not awarding a contract to a tenderer who satisfies all requirements are restrictions from doing business with the employer, lack of capability or capacity, legal impediments and conflicts of interest.
 - Competitive - The system provides for appropriate levels of competition to ensure cost effective and best value outcomes.

2. CIDB Standard for Uniformity

- Solicitation of tender offers
 - Tenders shall be solicited using one of the Standard Procurement procedures & tender evaluation methods:
 - Negotiation procedure with a single tenderer
 - Competitive selection procedure
 - Competitive negotiation procedure

2. CIDB Standard for Uniformity

- Negotiation procedure with a single tenderer
 - Tender offer solicited from a single tenderer
- Competitive selection procedure
 - Contract awarded to the lowest financial offer or highest points score using any of the following procurement procedures:
 - Nominated procedure – contracts awarded from a database
 - Open procedure – tenders offers in response to an advertisement
 - Qualified procedure – Expression of interest first & tenders invited from those selected
 - Quotation procedure – Tenders solicited from at least 3 tenderers
 - Proposal procedure using the 2-envelope system – technical & financial proposal in 2 separate envelopes, financial proposal only opened if technical is acceptable
 - Proposal procedure using the 2-stage system – non financial proposal invited, tender offers invited thereafter or Employer negotiates contract with one tenderer
 - Shopping procedure – Offers invited for goods & order placed with lowest price offer

2. CIDB Standard for Uniformity

- Competitive negotiation procedure
 - Procedure where a series of negotiations take place with competing tenderers, remaining tenderers invited to submit final offers
 - Restricted Competitive negotiations – negotiation with tenderers selected from a response to an expression of interest invitation
 - Open Competitive negotiations - negotiation with tenderers selected from an open tender

2. CIDB Standard for Uniformity

- Engineering & construction works contracts shall be solicited using standard methods of procuring different categories of works

Contracting strategies

| STRATEGY | DESCRIPTION |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Construction management | Design supplied by the employer. A management contractor is appointed to manage trade contractors. |
| Traditional build only | Design supplied by the employer. Contractor does the construction. Usually a re-measurable bill. |
| Develop and construct | Employer provides a concept design. Contractor does detailed design and builds it. |
| Design and build (turnkey) (EPC) | Employer provides an output spec (a brief). Contractor does all the design and construction. Usually a lump sum contract. |
| Design-build-operate (EPCM) | Employer provides an output spec. Contractor does the design & construction, and operates the facility. eg. Sewer and water treatment works |
| Private finance initiative (PFI) | Similar to design-build-operate, but the contractor provides finance. PPP = public-private partnership BOT = build, operate, transfer |

Increasing risk passed to the contractor

2. CIDB Standard for Uniformity

- **Evaluation of Tenders:**

- Generally tenders are evaluated in terms of Financial offer (tender price) & preference – 90/10 or 80/20
- If functionality is a requirement it must be stated in the tender documents
 - Criteria must be objective & must be specified
 - Must specify points for each criteria or sub-criteria
 - Minimum qualifying score for functionality
 - A tender that fails to meet the min. qualifying score is not an acceptable tender
 - Each tender that meets the min. score must be evaluated further in terms of price & preference together with any objective criteria envisaged in the PPPFA regulations.
 - Min. 3 people fully conversant with the technical aspect of the scope of work shall undertake the functionality evaluation

2. CIDB Standard for Uniformity

- **Preparation of Procurement documents:**

- The documents shall in general require tenderers to submit particulars sufficient for the employer to evaluate their tenders and to assess their status, capabilities and capacities to perform the contract;
- Set out, in a clear and unambiguous manner, the criteria by which tenders are to be evaluated;
- Define the risks, liabilities and contractual obligations of the parties to the contract;
- Define the nature and quality of construction works to be provided in the performance of the contract.

3. Preferential Procurement Regulations

- The 2017 regulations repealed and replaced with the 2022 regulations
- Regulations apply to all organs of state, i.e. Government departments, Municipalities, SOE's
- Organ of state must stipulate in the tender documents the preference points system applicable to the tender,
 - 80/20 for contracts valued at less than R50m
 - 90/10 for contracts above R50m
- Preference points to be based on the specific goals specified in the tender
- The formula to be used to calculate the points:
$$Ps = 80 \text{ or } 90 (1 - \frac{Pt - Pmin}{Pmin})$$

3. Preferential Procurement Regulations

- The specific goal may include:
 - contracting with persons, or categories of persons, historically disadvantaged by unfair discrimination on the basis of race, gender or disability;
 - implementing the programmes of the Reconstruction and Development Programme as published in Government Gazette No. 16085 dated 23 November 1994;
- any specific goal for which a point may be awarded, must be clearly specified in the invitation to submit a tender;
- Any goals contemplated in the tender enquiry must be measurable, quantifiable and monitored for compliance.
- Contract must be awarded to tenderer scoring the highest points

3. Preferential Procurement Regulations 2017

- Designated sector
 - The DTI may designate a sector, sub-sector, industry or product in accordance with national policies
 - Stipulate a minimum threshold for local production & content
 - Organ of state must advertise the tender with a specific condition that only tenders complying with the above will be considered
 - Where there is no designated sector, an organ of state may include as a specific condition of tender that only locally produced goods or services will be considered
 - A tender that fails to meet the minimum threshold will not be accepted

3. Preferential Procurement Regulations 2017

- Prequalification criteria
 - Organ of state must state in the tender document if the tender will be evaluated on functionality
 - Evaluation criteria must be objective
 - The points for each criteria & the minimum qualifying score
- Objective criteria
 - Can stipulate only certain BBEEE level tender
 - Local employment categories
 - Targeted subcontractors from local business forums registered on the National Supplier database, but cannot stipulate entity

Deleted

3. Preferential Procurement Regulations 2017

- Subcontracting
 - For contracts >R30m, an organ of state must apply subcontracting to advance designated groups (if feasible)
 - Tender must be advertised with a condition that the successful tenderer to subcontract a min. of 30% of contract value to an EME or QSE
 - Organ of state to make available the list of Suppliers registered on a database approved by National Treasury from which the tenderer must select a supplier
 - Subcontracting to be approved by the organ of state
 - All procurement processes must be done according to Supply Chain rules and regulations, competitive bidding or quotations
 - Main contractor may not subcontract more than 25% to any other enterprise that has a BEE scorecard equal or higher than tenderer

3. Preferential Procurement Regulations

- What does this mean for the Construction Industry?
 - Intended consequences:
 - Transformation of Industry
 - Provide opportunities to the previously disadvantaged
 - Improve BBEE scorecard thru Enterprise & Supplier Development (35-45%)
 - Unintended consequences:
 - Lawlessness (the emergence of business forums), resulting in delays & cost over-runs

2. CIDB Standard for Uniformity

- **Procurement documents:**
- Construction procurement documents for engineering and construction works shall be formatted and compiled in accordance with a standard approach:
 - Calling for expressions of interest
 - Invitation to tender
- Tenderers to familiarize themselves with the standard conditions of tender and standard conditions for the calling of EOI

4. Expressions of Interest (EOI)

Documents relating to the call for expressions of interest

Part E1: Submission procedures

| | |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| E1.1 Notice and invitation to submit an EOI | Alerts tenderers to submit their credentials to be invited to submit tenders should they satisfy the stated criteria, or to be admitted to a database. |
| E1.2 Submission Data | Establishes the rules from the time a call for an expression of interest is advertised to the time a submission is evaluated. |

Part E2: Returnable documents

| | |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| E2.1 List of returnable documents | Ensures that everything the employer requires a respondent to include in his submission is included in, or returned with, such a submission. |
| E2.2 Submission schedules | Contains documents that the respondent is required to complete for the purpose of evaluating submissions. |

4. Expressions of Interest (EOI)

Documents relating to the call for expressions of interest

Part E3: Indicative scope of work

E3 Indicative scope of work

Indicates to respondents what the contract is likely to entail so that they can make an informed decision as to whether or not they wish to respond and, if so, structure their submission around the likely demands of the project.

4. Expressions of Interest (EOI)

- **Pros & Cons:**

- Intent is to prequalify tenderers with capabilities & competencies to execute the Works
- Some Employers are using it to filter tenderers to reduce the number of objections
- Purportedly speeds up the award of contracts & thereby effective service delivery
- Allows for rotation of Service Providers on the database to open up opportunities to everyone

- Opens the door to corrupt practice
- May lead to the Employer's paying more for the service or contract

4. Expressions of Interest (EOI)

- **Why prequalify Tenderers?**

- Ensure that only those tenderers who satisfy stated criteria are admitted to the tender process
- Reduce the number of tenders submitted to a manageable number
- Apply the CIDB contractor grading system in framework contracts
- Admit respondents to an electronic database

5. Invitation to Tender

Documents relating to the tender

Part T1: Tendering procedures

| | |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| T1.1 Tender notice and invitation to tender | Informs tenderers on the nature of the tender. |
| T1.2 Tender Data | States what the applicable conditions of tender are, and gives the variables. eg. Date for tender briefing meeting, closing date & place for tenders, alternative offers, etc. Describes the procedure for evaluating tenders. |

Part T2: Returnable documents

| | |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| T2.1 List of returnable documents | List of all the documents that the tenderer must submit with his tender. eg. Programme, H&S plan, CV's of key personnel... |
| T2.2 Returnable schedules | A set of documents that the tenderer must complete, eg. List of subcontractors, BEE declaration... |

5. Invitation to Tender

Documents relating to the contract to be awarded

Part C1: Agreements and contract data

| | |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| C1.1 Form of offer and acceptance | Formalises the legal process. Signed by employer and contractor. |
| C1.2 Contract data | States the applicable condition of contract (GCC, JBCC, FIDIC, NEC...) Provides variations and additions to it. These documents lay down the risks, liabilities and obligations of the contracting parties, and the procedures for administering the contract. |

Part C2: Pricing data

| | |
|---------------------------------------------|--------------------------------------------------------|
| C2.1 Pricing instructions | Instructions to the tenderer on how to price this doc. |
| C2.2 Bill of quantities / activity schedule | Used for pricing the tender. |

Part C3: Scope of Work

| | |
|------------------|-------------------------------------------------------------------------------|
| C3 Scope of Work | Scope of works, site facilities for the contractor, technical specifications. |
|------------------|-------------------------------------------------------------------------------|

Part C4: Site information

| | |
|---------------------|------------------------------------------|
| C4 Site information | Details of site conditions, access, etc. |
|---------------------|------------------------------------------|

5. Invitation to Tender

Documents relating to the tender

Part T1: Tendering procedures

T1.1 Tender notice and invitation to tender

Informs tenderers on the nature of the tender.

T1.2 Tender data

States what the applicable conditions of tender are, and gives the variables. eg. Date for tender briefing meeting, closing date & place for tenders, alternative offers, etc.

Describes the procedure for evaluating tenders.

Part T2: Returnable documents

T2.1 List of returnable documents

List of all the documents that the tenderer must submit with his tender.

eg. Programme, H&S plan, CV's of key personnel...

T2.2 Returnable schedules

A set of documents that the tenderer must complete, eg. List of subcontractors, BEE declaration...

Tender Notice

- Tender notice & invitation to tender
 - Brief description of project
 - BBEEE designation level
 - CIDB grading
 - Any other conditions of tender
 - Where tender documents can be sourced
 - Tender briefing/clarification meeting
 - State whether Compulsory or non compulsory
 - Why Attend?
 - Tender Closing date/Opening of tenders
 - Contact details for any queries

5. Invitation to Tender

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|---------------------------|----------------------------------------------------------------------------------------------------|

Tender Data (cont.)

- Tender Submission, closing date/time & delivery address
- Tender validity period
- Withdrawal of tender
- Arithmetical errors, omissions, discrepancies and imbalanced unit rates
- Must state procedure for the evaluation of responsive tenders
- Tender evaluation methods:
 - Method 3 - Price and preference (90/10 or 80/20)
 - Method 4 - **Functionality**, price and preference
- Must stipulate JV requirements
- Employer can conduct a due diligence on the Contractor's ability to perform the contract.
- Unsuccessful Tenderers can request reasons in writing

Tender Data

- Conditions of tender are the Standard conditions of tender as contained in SANS 10845- 3
- Tender Data contains the contract specific data & has precedence over the standard conditions
 - Employer's details
 - Lists the tender documents
 - Employer's Agent
 - Eligibility criteria, if any
 - Cancellation of tender
 - State minimum local content
 - Registration on National Supplier Database
 - Pre-qualification criteria
 - Previous experience
 - Tender Responsiveness
 - Alternative tenders

5. Invitation to Tender

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Returnable Documents

- The following schedules and forms are to be completed and submitted with tender:
 - Returnable schedules
 - Form of Offer (& Letter of Acceptance)
 - Contract Specific Data provided by the Contractor
 - Schedule of Quantities

5. Invitation to Tender

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| T2.2 Returnable schedules | A set of documents that the tenderer must complete, eg. List of subcontractors, BEE declaration... |

Returnable schedules

- Tenderer is required to complete each and every schedule
- Used in the evaluation of the tender
- Do not form part of the eventual contract

Returnable Schedules

- **RETURNABLE SCHEDULES**
- A Certificate of attendance at clarification meeting
- B record of addenda to tender documents
- C compulsory enterprise questionnaire
- D certificate of authority
- E Local content declaration
- F plant & equipment
- G experience of tenderer
- H proposed subcontractors
- I key personnel
- J deviations and qualifications
- K contractor's health and safety declaration
- L tax clearance certificate
- M tenderer's bee verification certificate
- N confirmation of financial capacity from Bank
- O Letter of Good standing from COIDA
- P schedule of alternative tenders
- Q Certificate of registration with CIDB
- R Tenderer's indicative programme, method statement & cashflow

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5. Invitation to Tender

Documents relating to the contract to be awarded

Part C1: Agreements and contract data

| | |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| C1.1 Form of offer and acceptance | Formalises the legal process. Signed by employer and contractor. |
| C1.2 Contract data | States which condition of contract applies (GCC, JBCC, FIDIC, NEC...) Provides variations and additions to it (particular conditions of contract). |

Part C2: Pricing data

| | |
|---------------------------------------------|-----------------------------------------------------------|
| C2.1 Pricing instructions | Instructions to the tenderer on how to price this tender. |
| C2.2 Bill of quantities / activity schedule | Used for pricing the tender. |

Part C3: Scope of Work

| | |
|------------------|---------------------------------------------------------------------------------------------------------------|
| C3 Scope of Work | Scope of works, site facilities for the contractor, and technical specifications. (NEC - "Works information") |
|------------------|---------------------------------------------------------------------------------------------------------------|

Part C4: Site information

| | |
|---------------------|--------------------------------------------------------------------------------------------------|
| C4 Site information | Description of the site, geotechnical information, rainfall information, existing services, etc. |
|---------------------|--------------------------------------------------------------------------------------------------|

Form of Offer and Acceptance

- Formalises the legal process
- Form of Offer must be signed by a person authorized by the tendering entity – failure to sign invalidates your tender
- The tender amount to be filled in by tenderer in words and figures
- Letter of Acceptance to be signed by the Employer
- Pro forma Offer & Acceptance
 - [Pro Forma Offer.docx](#)
 - [Pro Forma Acceptance.docx](#)
 - [Pro Forma Schedule of Deviations.docx](#)

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Contract data

- The Contract Data comprises one of the acceptable standard forms of contract:
 - FIDIC conditions of contract – full suite
 - GCC for construction contracts
 - JBCC for building works – major & minor works
 - NEC 3 – full & short form

Note: Latest edition of the referenced document should be used at all times with minimal amendments

Contract data

- The contract data is a vital part of a contract
- It defines all the variables in the contract, such as:
 - contract period & defects liability period
 - retention
 - penalties (R per day...)
 - insurance requirements, etc., etc.
 - Requirements for Practical Completion
- The contract data comprises:
 - Information provided by the Employer
 - Information provided by the Contractor
 - Particular conditions of contract – amendments to standard clauses or new clauses
 - Any conditions, e.g. Subcontracting, targeted employment, etc

Sample Contract Data

Information by Employer

- The following contract specific data, referring to the General Conditions of Contract for Construction Works, Third Edition, 2015, are applicable to this Contract:
- **Clause 1.1.1.13:**
- The Defects Liability Period is **12** months.
- **Clause 1.1.1.14:**
- The time for achieving Practical Completion is, inclusive of the 14 day period referred to in Clause 5.3.2 below, and inclusive of non-working days referred to in Clause 5.8.1 below, but exclusive of special non-working days.
- **Clause 1.1.1.15:**
- The **Employer** is
- **Clause 1.2.1.2:**
- The address of the Employer is:.....

Sample Contract Data

- **_ Clause 1.1.1.16:**
- The **Employer's Agent** is.....
- **Clause 1.2.1.2:**
- The address of the EA is:.....
- **Clause 1.1.1.26**
- The Pricing Strategy is a re-measurement contract
- **Clause 3.1.3:**
- The Engineer shall obtain the specific approval of the Employer before executing any of his functions or duties according to the following Clauses of.....
- **Clause 5.3.1:**
- The documentation required before commencement with Works execution is:
 - (1) Health and Safety Plan (Refer to Clause 4.3)
 - (2) Initial programme (Refer to Clause 5.6)
 - (3) etc.,etc.
- **Clause 5.3.2:**
- The time to submit the documentation required before commencement with

Sample Contract Data

- **Clause 5.4.2:**
- Access to and possession of the site shall not be exclusive to the Contractor insofar as the provisions of Clause 4.8 apply, and where ongoing use by the general public is required.
- **Clause 5.8.1:**
- The non-working days are Sundays.
- The special non-working days are:
 - (1) All gazetted public holidays falling outside the year end break.
 - (2) The year end break commencing mid December and ending on early January.
- **Clause 5.12.2.2:**
- No extension of time will be granted in respect of any delays attributed to normal climatic conditions. The number of days quoted below shall be regarded as a fair estimate of the delays to be anticipated and allowed for under normal climatic conditions where inclement weather prevents or disrupts critical work.

Sample Contract Data

- January 5 days;
- February 6 days
- March 5 days
- April 3 days
- May 1 days
- June 1 days
- July 1 days
- August 1 days
- September 1 days
- October 3 days
- November 4 days
- December 4 days
- **Clause 5.13.1:**
- The penalties for failing to complete the works is R5000 per calendar day:
- **Clause 5.14.1**
- The requirements for achieving Practical Completion are.....
- **Clause 5.16.3:**
- The latent defects period is **10** years
- **Clause 6.2.1:**
- The security to be provided by the Contractor shall be a performance guarantee of 10% of the Contract Sum.
- **Clause 6.5.1.2.3:**
- The percentage allowance to cover overhead charges is **10%**

Sample Contract Data

- **Clause 6.8.2:**
- *Add the following to Clause 6.8.2:*
- The Contract Price shall be subject to contract price adjustment in accordance with Clause 6.8 of the General Conditions of Contract.
- The value of “x” is 0,15.
- The values of the coefficients are:
- $a = 0,20$ $b = 0,25$ $c = 0,50$ $d = 0,05$
- The base month is one month prior to the month in which the tender closed.
- **Clause 6.10.1.5:**
- The percentage advance on materials not yet built into the Permanent Works is **80%**.
- **Clause 6.10.3:**
- Interim payments to the Contractors shall be subject to a retention by the Employer of an amount of **5%** of the said amounts due to the Contractor, with no limit. A guarantee in lieu of retention is not permitted.

Sample Contract Data

- **Clause 8.6.1.5:**
- In addition to the insurances required in terms of General Conditions of Contract Clauses 8.6.1.1 to 8.6.1.4 the following insurance is also required:
- XXXXXXXXXX
- **Clause 10.5.1**
- The determination of disputes shall be by a standing adjudication board or ad-hoc adjudication
- **Clause 10.5.3:**
- The number of ad-hoc Adjudication Board Members to be appointed is 1(one).
- **Clause 10.7.1:**
- The determination of disputes shall be by arbitration.

Sample Contract Data

- **Part 2: Data provided by the Contractor**

- **Clause 1.1.1.9:**

- The name of the Contractor is

.....

- **Clause 1.2.1.2:**

- The address of the Contractor is

- Physical

Postal

- Address:

Address:

.....

- Telephone :

Fax:.....

- email :

- **Clause 6.8.3: Variation in the cost of special materials**

- SPECIAL MATERIALS:

- XXXXXXXX

5. Invitation to Tender

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Part C4: Site information

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Pricing Data

- The Pricing Data consists of:
 - Pricing Instructions
 - Schedule of Quantities or Activity schedule

Pricing Instructions

- Contains the detailed Pricing Instructions
- Fixed or re-measurable Bill of Quantities
- Applicable contract specifications, e.g. Colto, SANS 1200
- Items are measured net per drawings
- No allowance made for waste
- Rates & prices to be fully inclusive
- Imbalanced Rates
- Pro forma Pricing Instructions

Pricing Instructions

- Hierarchy in pricing an item in the boq:
 1. Item prefixed with a 'B' – refer Project particular specification
 2. Standard numbering – refer standard specifications
 3. Drawings
 4. In the absence of 1 or 2 – state assumptions in schedule of deviations/qualifications

Pricing strategies

| STRATEGY | DESCRIPTION |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lump sum | <ul style="list-style-type: none"> • The Contractor tenders a lump sum for the Works • Activity schedule: scope of work broken down into activities, each one is priced as a lump sum • All risk is passed on to the Contractor • Pay a price premium to pass on this risk |
| Unit price | <ul style="list-style-type: none"> • Bill of quantities • Amount paid for each item = rate X quantity • The quantities are re-measurable • The risk of under-estimated quantities is removed from the Contractor • Takes more effort to prepare, but may get a lower price than a lump sum contract |
| Cost reimbursable | <ul style="list-style-type: none"> • The Contractor is paid his actual costs plus a fee • Low risk for the Contractor |
| Target cost | <ul style="list-style-type: none"> • The Contractor is paid on a cost reimbursable basis • Difference between the final cost and a target cost is shared between Contractor and Employer |

Decreasing risk passed to the contractor



5. Invitation to Tender

| Documents relating to the contract to be awarded | |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Part C1: Agreements and contract data | |
| C1.1 Form of offer and acceptance | Formalises the legal process. Signed by employer and contractor. |
| C1.2 Contract data | States which condition of contract applies (GCC, JBCC, FIDIC, NEC...) Provides variations and additions to it (particular conditions of contract). |
| Part C2: Pricing data | |
| C2.1 Pricing instructions | Instructions to the tenderer on how to price this tender. |
| C2.2 Bill of quantities / activity schedule | Used for pricing the tender. |
| Part C3: Scope of Work | |
| C3 Scope of Work | Scope of works, site facilities for the contractor, and technical specifications. (NEC - "Works information") |
| Part C4: Site information | |
| C4 Site information | Description of the site, geotechnical information, rainfall information, existing services, etc. |

Pricing Schedules

- The Bill of Quantities:
 - Provide information on the quantities of work
 - Enable tenders to be prepared efficiently and accurately
 - Used for evaluation of work executed
 - Different specifications divide the work into separate items in the boq, e.g. SANS 1200, Colto/Coto.
- Activity schedule:
 - Scope of work broken down into activities
 - Each activity priced as a lump sum
 - Payment is made only upon completion of each activity, except for the preliminary time related general items

5. Invitation to Tender

Documents relating to the contract to be awarded

Part C1: Agreements and contract data

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Part C3: Scope of Work

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|------------------|---------------------------------------------------------------------------------------------------------------|

Part C4: Site information

| | |
|---------------------|--------------------------------------------------------------------------------------------------|
| C4 Site information | Description of the site, geotechnical information, rainfall information, existing services, etc. |
|---------------------|--------------------------------------------------------------------------------------------------|

Scope of work

- The contract is for the successful delivery of the entire Scope of Works and not the bill of quantities.
- This section includes:

| | |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A description of the scope of the contract | <i>It is vital that the scope is clearly understood at tender stage, so as to understand the risks/opportunities that will arise during construction.</i> |
| Project specifications | List the technical specifications that are applicable, eg. SANS 1200, COLTO , etc. |
| Particular specifications | Specs written specifically for this contract, eg. <ul style="list-style-type: none">• Environmental Management spec• Health and Safety spec• Project specific specs |
| Other information | eg. Site facilities for the Contractor. |

5. Invitation to Tender

Documents relating to the contract to be awarded

Part C1: Agreements and contract data

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Part C4: Site information

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|---------------------|--------------------------------------------------------------------------------------------------|
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|---------------------|--------------------------------------------------------------------------------------------------|

Site Information

- Geographical information
- Site investigation report
- Site specific conditions
- Climatic & rainfall data
- Drawings

6. Pricing of the tender document

- **Traditional Build only or Unit price**
- The pricing of items in the bill of quantities is made up of the following:
 - Resource (or Direct) Costs that make up the item
 - Preliminary & General (or Indirect) Costs
 - Risk allowances
 - Markup

6. Pricing of the tender document

- Resource Costs are defined as follows:
 - Plant and Equipment (hire rate+fuel/lubricants+wear parts+operator)
 - Labour (hourly rate+oncosts+overtime allowance)
 - Materials (offloading+distribution on site+waste)
 - Subcontractor (labour+plant+materials+markup)
 - [Worksheet Examples.xlsx](#)

6. Pricing of the tender document

- Subcontractors:
 - 3 types of subcontractors:
 - Domestic – used where main contractor does not have the resources
 - Selected – specialist contractor e.g. piling
 - Nominated – normally a provisional sum
 - Quotations to be obtained at tender stage
 - Subcontractor attendance
 - Main contractor to develop a “symbiotic” relationship with his subcontractors

 - CPG subcontractors – imposed on the main Contractor as a condition of the contract. Typically priced after award of the contract by subcontractors from a local database

6. Pricing of the tender documents

- Sources of Productivity rates:
 - Publications e.g. Merkels handbook
 - Equipment Supplier catalogues
 - Historical data from own site controls
- Only practical experience of the work itself will tell you what resources you need and how long you need them for.

6. Pricing of the tender document

- Preliminary & General Costs or P&Gs are defined as follows:
 - Resource items provided on a site that do not form part of the requirement for the permanent works, e.g.
 - Common site costs
 - Site management
 - Head Office costs, if any
 - Any costs not priced under the items in the bill of quantities
 - [Indirect Costs Template.xlsx](#)

6. Pricing of the tender document

- Estimating software commonly used in industry:
 - CCS (Construction Computer Software)
 - Build Smart (actual costing package)
 - WINQS
 - Plus a large selection on the internet
- Start using the technology as more and more Employers are requesting a full rate breakdown with the tender.

6. Pricing of the tender document

- Risk Allowances:
 - Construction is a high risk business with low profits
 - The standard forms of contract appropriate risks between the Parties
 - The Employer has the right to shift risks on to the Contractor
 - So risks are to be priced accordingly in the event they should occur

6. Pricing of the tender document

- Mark-Up
 - Percentage applied to cost rates to cover head office overheads, profit & risk.
 - Factors that have an effect on the percentage:
 - Current commitments
 - Market conditions
 - Risk appetite
- The selling rate for any item = Cost rate + markup
- This is the sum/rate which the Tenderer inserts into the items in the bill of quantities

6. Pricing of the tender document

- **Activity schedule or Lump sum**
 - Scope of work broken down into activities, each one is priced as a lump sum
 - The lump sum priced as in the bill of quantities, and totalled up into the lump sum
- **Turnkey or Design & construct**
 - Contractor and Professional team price the tender together
 - Professional team prepare the design and bill of quantities
 - Contractor prices the items
 - Risk on quantities resides with the Contractor
 - Add in the design & supervision costs to the final tender price

7. Tender Finalization

- Estimator has up to now priced the items by himself with help from colleagues (from Site) & Senior Manager
- Tender team should ideally be set up to “vet” the tender
- Set aside a time/date for finalizing the tender price
- Responsible director/contracts manager to present programme & execution plan
- Mark-up to be agreed taking into account the business plan
- Agree/sign off on the final price to be submitted.

8. Tender Strategy

- Selection of Tenders to be based on the core business model
- A Bid-winning strategy entails the following:
 - Detailed analysis of the project risks & opportunities
 - Maximization of tender points – tender price and BEE points
 - Well thought out execution plan
 - Resourcing, views on pricing, discounting, etc.
 - All of the above to be documented
- Tender strategy to be transferred to the contract team

9. Tender Programme & Execution Plan

- Tender Programme
 - Engineer's programme is only a guide
 - Tenderer to produce his own programme based on his plan
 - Use the tender programme to price indirect costs accordingly
 - Generally used for negotiations
- Execution Plan
 - When drawing up programme, must have a game plan of how you're going to attack the project
- Cashflow forecast
 - Prepare a forecast of the cashflow based on tender programme

10. Risk Management

- Risk management in construction projects is designed to plan, monitor and control those measures needed to prevent exposure to risk
 - Identify the hazard
 - assess the extent of the risk
 - Provide measures to control the risk
 - Manage any residual risk
- Risks must be identified at every stage of the project's life (initiation, planning, implementation, closure)
- [RISK SCHEDULE TEMPLATE.xlsx](#)

10. Risk Management

- For both Parties, the identification of Risks starts during the inception phase of the project:
- Feasibility stage:
 - Is the project financially viable?
- Design/documentation stage:
 - Contract documentation
 - Contract Data
 - Particular Conditions of Contract
 - Scope of Work
 - Drawings – buildability?
 - Project Specifications
 - Site Inspection
 - Site conditions
 - Availability of services
 - Pricing
 - Quantities - take off key quantities
 - Project Specifications

10. Risk Management

- Tender finalization
 - Programme
 - Capacity
 - Competition
 - Previous Experience with Employer/Engineer
- List all risks, then rate probability of risk happening.
- Depending on risk appetite, price in all the risks in accordance with the contract

10. Opportunity Management

- Every tender has opportunities that must be carefully assessed before submitting a tender
- Should not tender if there are no opportunities on the contract
- Examples:
 - Poorly prepared schedule of quantities v Scope
 - Programme
 - Previous experience with Employer/Engineer
 - Future project extensions

11. Distribution of Tender Mark-up

- Distribution of the Mark-Up
 - Front-end vs back-end loading
 - Cash upfront - spread mark up on the Fixed obligation items
 - Cash later – spread markup on the job completion items
 - Under-billed quantities
 - Overbilled quantities
 - Rate Only items

12. Escalation or CPA

- Compensation for increased costs for long term contracts(> 12 months), not profit
- Part of risk management, so need to make a provision for under-recovery
- Indices provided by STATSSA
- Fixed price contracts
 - Should only be used in short term contracts < 12 months

13. Completion of Tender Documents

Documents to be submitted with tender:

- Returnable schedules
- Schedule of quantities
- Signed Form of Offer
- Contract Data by Contractor
- Amendments to/deviations from tender

Summary and Close

- Conclusion
- Questions???

THANK YOU

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