

CONTRACTING AND PRICING STRATEGIES FOR WORKS

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cidb's **inform practice notes** provide guidance and clarity in achieving client objectives in construction procurement and delivery. Practice notes inform clients and practitioners on how to embrace best practice and to deal with issues that may arise. They are aligned with, but do not replace regulation.

Synopsis:

Construction works have historically been delivered using a design by employer contracting strategy. Contractors have had to price the works either on a lump sum basis or in terms of a bill of quantities. The development of a construction procurement strategy requires an understanding of the alternative contracting and pricing strategies that are available so that informed choices can be made.

This practice note outlines the range of contracting and pricing strategies that are available and indicates when it is appropriate to apply such strategies.

1. Introduction

A **package** (works which have been grouped together for delivery under a single contract or a package order) is defined at any stage in the project delivery cycle by the **package information** i.e. the brief, design documentation, programme and cost plan. A strategic brief for a package flows out of planning processes and is progressively developed through a number of stages of development. The work flow (key activities) of an identified project may be linked to stages and key deliverables as described in the CIDB Infrastructure Gateway System (see Inform Practice Note # 22.)

Activities	Stage		Key deliverable
	No	Description	
Planning at a portfolio level	1	Infrastructure planning	Client approved infrastructure plan
	2	Procurement planning	Client accepted procurement strategy for implementing the infrastructure plan over the Medium Term Expenditure Framework (MTEF) period
Planning at a package level	3	Package preparation	Client accepted strategic brief
	4	Package definition	Client accepted concept report
Detailed design	5	Design development	Client accepted design development report
	6a	Design documentation (Production information)	Completed and client accepted production information
	6b	Design documentation (Manufacture, fabrication and construction information)	Client accepted manufacture, fabrication and construction information
	6c	Design documentation (Logistics information)	Client accepted logistic support plan
Site	7	Works	Completed works which are capable of being occupied or used and accepted by the client.
	8	Hand over	Works which have been taken over by the user complete with record information
Close out	9a	Asset data	Archived record information and updated asset register
	9b	Package completion	Completed contract or package order

Key deliverables and activities associated with the CIDB Infrastructure Gateway System

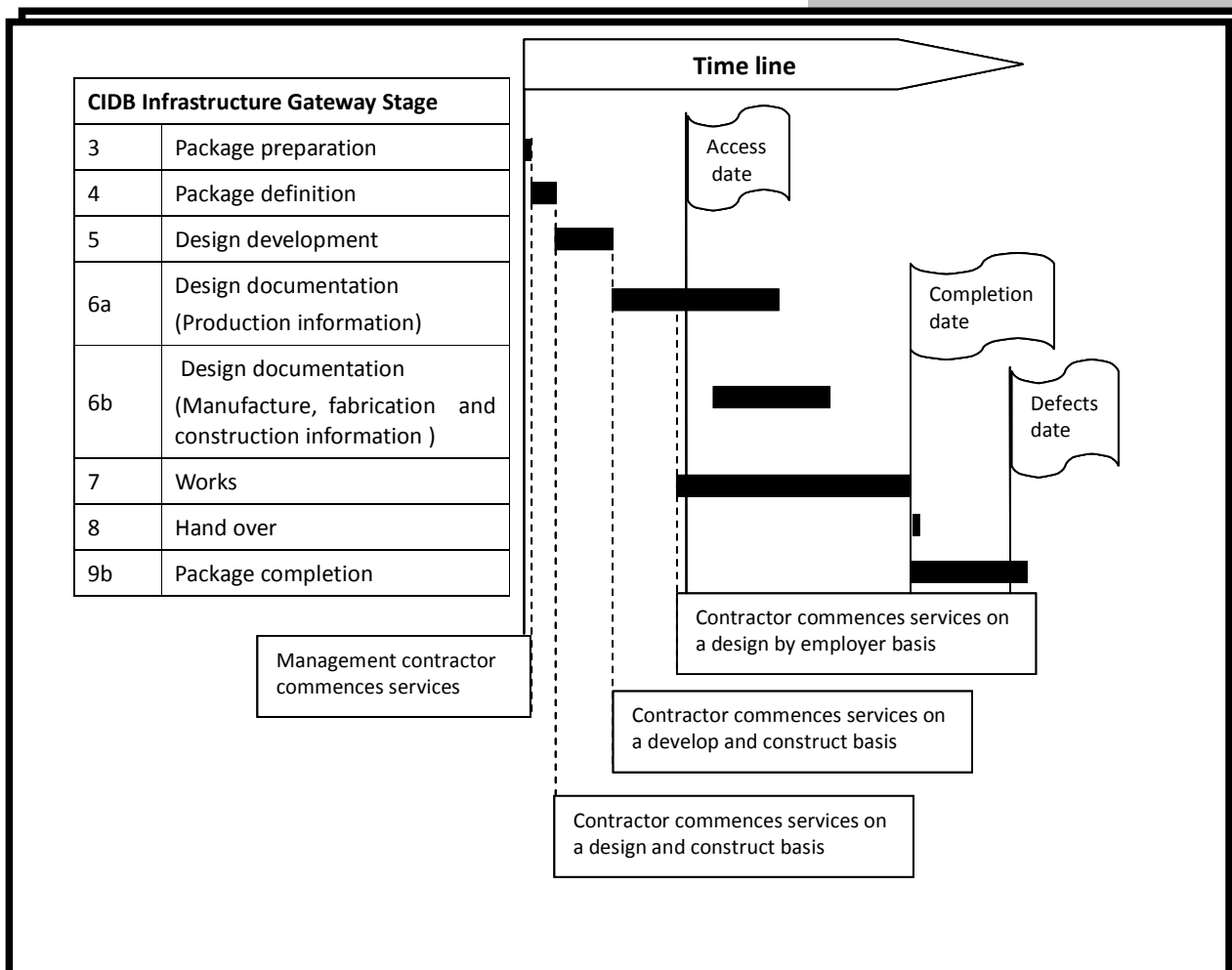
The **design by employer contracting strategy** is appropriate where:

- The client wishes to make significant technical inputs into the design process and design details
- The client requires flexibility in the development of the design
- Reasonable certainty of cost and time before a commitment to build is made and a contract is entered in to construct the works
- Independent design advice is required.

The historic approach to the delivery of infrastructure has been the **design by employer contracting strategy** whereby the contractor undertakes only construction on the basis of full designs issued by the employer. This contracting strategy requires that the design and specifications be adequately developed before tenders are invited so that they can be priced i.e. most of

the production information associated with **stage 6a – design documentation** has been completed. Ideally only work associated with items such as bending schedules should be outstanding when tenders are called for. This enables the design to meet the employer’s requirements closely and the construction works contract when awarded can proceed without major change, delay or disruption.

ISO 10845-1 defines a **contracting strategy** as a strategy that governs the nature of the relationship which the employer wishes to foster with the contractor, which in turn determines the risks and responsibilities between the parties to the contract and the methodology by which the contractor is to be paid



2. Alternative contracting strategies

2.1 Design and construct and develop and construct contracts

An alternative to the design by employer contracting strategy is the so-called **design and construct contracting strategy**. In this strategy, the contractor undertakes most of the design and all construction in accordance with the employer’s brief and his detailed tender submission. This option provides single point accountability and allows the construction to commence before the detailed design has been completed.

The **design and construct contracting strategy** is appropriate where the employer requires:

- Integrated **design** and construction and single point accountability for the design and delivery of the works
- the works to be priced and to commence before the design has been completed

The **develop and construct contracting strategy** is appropriate where

- the employer requires integrated detailed design and construction, based on the employer's design concept, and single point accountability for the development of the production information
- standard designs exist which need to be made site specific
- the works need to be priced and to commence before the design has been completed

Novation is the substitution of a new contract in place of an old one or the substitution of one party for another party in a contract. Novation takes place where a contractor is required in terms of his contract to contract with or take over the contract entered into between the employer and a consulting firm responsible for the development of some of the deliverables associated with stages prior to the formation of the contract..

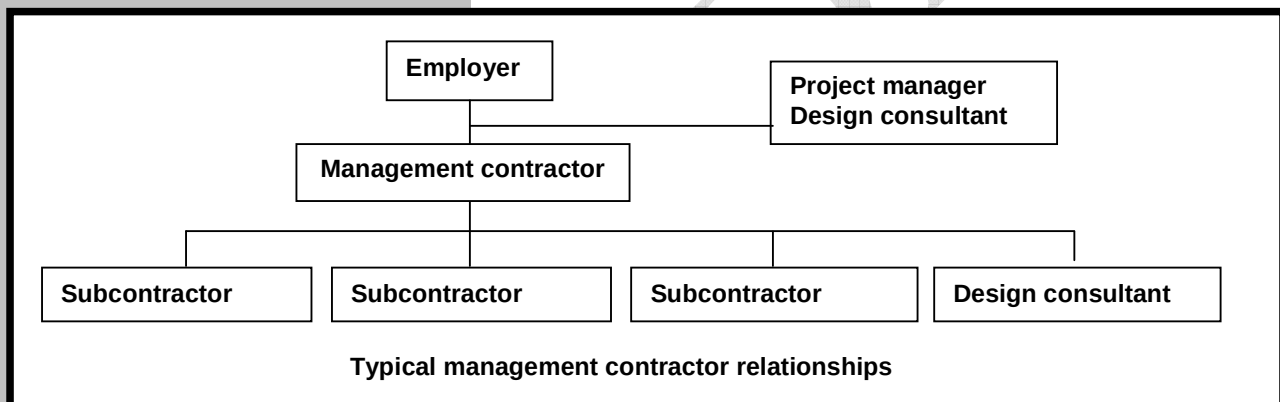
The **concept report** (deliverable at the end of stage 4 – **package definition**) forms the basis of the scope of work for such a contractor.

A variation to the design and construct contracting strategy is the **develop and construct contracting strategy**. This strategy is similar to that of design and construct, except that the employer issues a concept design as a baseline document for the development of the design.

The **design development report** (deliverable at the end of stage 5 – **design development**) forms the basis of the scope of work for such a contractor.

The design and construct and develop and construct contracting strategies allow a contractor to **manage the design team** from one stage to another. Contractors in these contracting relationships usually engage the services of consulting firms to provide the required design services.

The employer in the design and construct and develop and construct contracting strategies frequently retains some of the services of the consulting firms that were used to develop the concept report or design development report. This is to review the stage deliverables produced by the contractor for general conformity with design intent and conformance with the relevant requirements of the scope of work. In some instances, employers can require the contractor to employ some of the consulting firms that were used to develop the concept report or the design development report which forms the basis of the contractor's scope of work, e.g. the consulting engineer for developing the heating, ventilation and airconditioning (HVAC) system.



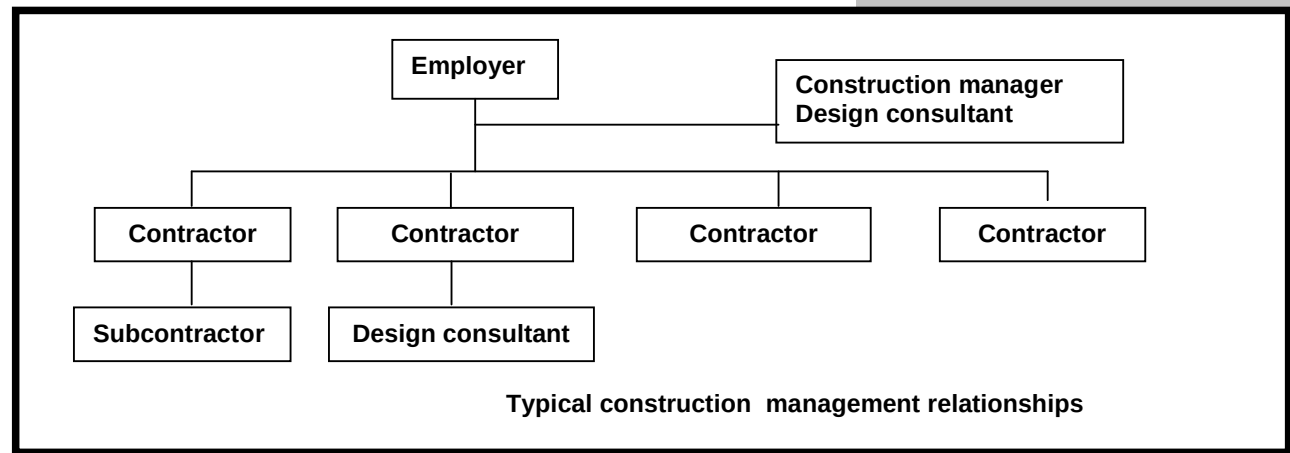
The **management contractor contracting strategy** is appropriate where:

- The employer has limited capability or capacity to advance the work beyond a strategic brief.
- The employer retains most of the risks
- The contractor needs to work alongside the design team to develop the programme for construction design and tender

2.2 Management contractor and construction management contracts

In the **management contractor contracting strategy** a management contractor provides consultation during the design stage and is responsible for planning and managing all post-contract activities, including any design of the works or portion thereof, and for the performance of the whole of the contract. Any trade contracts are between the management contractor and the various trade contractors.

The **strategic brief** (deliverable at the end of stage 3 – **package preparation**) usually forms the basis of the scope of work. It is, however, possible to appoint a management contractor to perform limited design services or no design services.



In the **construction management strategy**, a third party (professional service provider) provides consultation during the design stage and is responsible for planning and managing all post-contract activities for contractors appointed by the employer. Construction managers are typically appointed as professional service providers where

- the interfaces between interrelated packages need to be managed;
- it is desirable to have direct contracts with specialist trade contractors; or
- construction and / or materials management support is required to enable fledgling contractors, embryonic enterprises or aspirant entrepreneurs to complete their contracts satisfactorily.

It should be noted that a management contractor and construction management contracting strategy can be implemented on a design by employer, develop and construct or design and construct basis or any combination thereof.

3. Pricing strategies

3.1 Price based strategies

Contractors can be required to price a scope of work in terms of the any of the following **priced based pricing strategies**:

Lump sum	Contract in which a contractor is paid a lump sum to perform the works. (Interim payments which reflect the progress made towards the completion of the works may be made)
Bill of quantities	Contract in which a bill of quantities lists the items of work and the estimated / measured quantities and rates associated with each item to allow contractors to be paid, at regular intervals, an amount equal to the agreed rate for the work multiplied by the quantity of work actually completed

ISO 10845-1 defines a **pricing strategy** is a strategy which is adopted to secure financial offers and to remunerate contractors in terms of the contract.

Price list / schedule	Contract in which a contractor is paid the price for each lump sum item in the Price List / Schedule that has been completed and, where a quantity is stated in the Price List / Schedule, an amount calculated by multiplying the quantity which the contractor has completed by the rate
Activity schedule	Contract in which the contractor breaks the scope of work down into activities which are linked to a programme and prices each activity as a lump sum, which he is paid on completion of the activity. The total of the activity prices is the lump sum price for the contract work.

A bill of quantities (see Inform Practice Note #21) is a common form of pricing strategy used where the contractor undertakes construction on the basis of full designs issued by the employer. A bill of quantities is usually prepared in accordance with an industry standard system of measurement that provides rules and procedures for describing, measuring and documenting the works in a standard manner.

The primary purpose of a bill of quantities is to arrive at a tender price within relatively short time frames so that a tender can be evaluated and a contract awarded. The employer is liable for increases in the tender price arising from increases in quantities and mistakes in compiling the bill of quantities e.g. omissions, departures from the rules of measurement, ambiguities and inconsistencies.

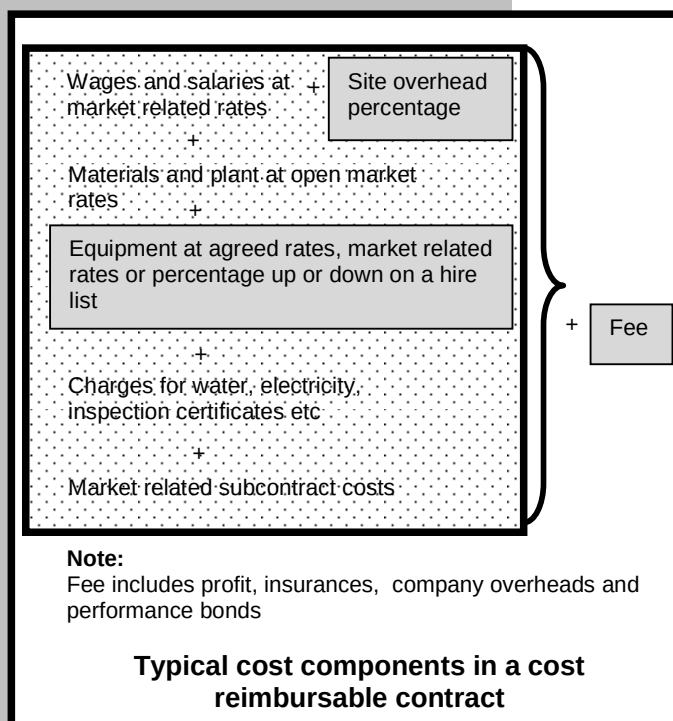
Lump sum, price list / schedule and activity schedule pricing strategies may be used with the design by employer, design and construct and develop and construct contracting strategies. The activity schedules are developed by the contractor, possibly in terms of a framework for activities specified by the employer. Price lists / schedules can be either developed by the employer or the contractor.

In the lump sum and activity based pricing strategy, the contractor is at risk for costs associated with completing the contract and is not compensated for any errors or omissions in arriving at the lump sum or the total of prices for all the activities. Likewise in the price list / schedule pricing strategy, the items included in such lists cover all that the contractor is to be paid in terms of the contract. The employer is only at risk should a stated quantity increase.

3.2 Cost based strategies

Contractors can be required to perform a contract in terms of either of the following **priced based pricing strategies**:

Cost reimbursable	Contract in which the contractor is paid for his actual expenditure plus a percentage or fee
Target cost	Cost reimbursable contract in which a target cost is estimated and on completion of the works the difference between the target cost and the actual cost is apportioned between the employer and contractor on an agreed basis



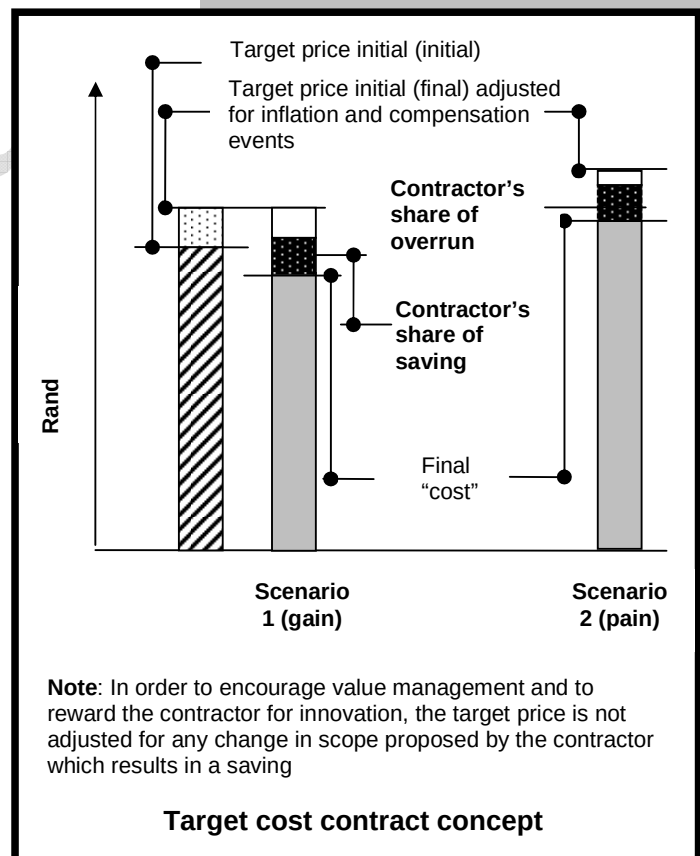
In a **cost reimbursable contract** wages, salaries, materials, plant and equipment can be reimbursed at open market or competitively tendered prices with deductions for all discounts, rebates and taxes which can be recovered. Some of the items of equipment can be reimbursed at prices that are agreed in terms of the contract or at a percentage up or down of published hire lists such as those published by the Contractor's Plant Hire Association in their publication Hire SA in Africa. Overhead charges for telephones, hand tools, personal safety equipment, refreshments, first aid facilities, toilet facilities etc can be included in a percentage overhead charge applied to wages and salaries of those working on site. Charges can be based on actual cost. Fees to cover items such as profit, company overheads, finance charges, insurances, and performance bonds, as relevant, can then be added. Such contracts can be competitively tendered as tenderers can compete on the basis of margins and rates (i.e. the percentages that are to be applied to the various cost components, the rates tendered for equipment and the fees).

A cost reimburseable pricing strategy can be used with any of the aforementioned contracting strategies and is most often used in emergency situations, unless the productivity / costs can be controlled. The management contractor contracting strategy enables costs to be controlled should such a contractor be required to subcontract most of the works and services for which he is responsible to others, preferably in terms of a competitive tender process, and keeps the work done by himself to a minimum.

A **target cost contract** enables productivity to be controlled by means of a target price. If the cost overruns are borne entirely by the contractor, the contract may be regarded as being a guaranteed maximum price contract.

The target price can be established using a bill of quantities or an activity schedule. A bill of quantities approach is not recommended as the employer is exposed to cost uncertainties in the formulation of the bill and hence the final target price. The use of an activity schedule to set the target price is preferred as this approach transfers the price risk to the contractor and provides cost certainty. The activity schedule which links lump sum prices for activities to a programme, allows planned value (authorised budget) and earned value (value of work completed and partially completed) to be readily established at a point in time. These values can be compared with actual cost and can be used to answer the following questions:.

- Is the project under or over our budget (target)?
- How efficiently are resources being used?
- How efficiently must the remaining resources be used?
- What will the remaining work cost i.e. what is the project likely to cost?



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We would like to hear from you about your progress, challenges and ideas.

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ISO 10845-1, Construction procurement – Part 1: Processes, methods and procedures, defines a framework contract as a “*agreement between an employer and one or more contractors, the purpose of which is to establish the terms governing contracts to be awarded during a given period, in particular with regard to price and, where appropriate, the quantity envisaged*”

A framework agreement can be based on a design by employer, develop and construct or design and construct contracting strategy



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Research has indicated that in order to provide higher value and less waste the fragmentation in design needs to be addressed, preferably before 25% of the design is complete. Target cost contracts can be used to facilitate early contractor involvement in terms of the design by employer, develop and construct and design and construct contracting strategies should contractors be contracted on the basis of their cost parameters and a target price is negotiated when there is sufficient production information available to agree a target price. Escape clauses can be inserted in to design and construct contracts to enable the employer to use the designs and approach the open market in the event that agreement cannot be reached regarding the target price.

4. Framework agreements

Framework agreements (see Inform Practice Note # 15), which are entered into following a competitive procurement process and enable employers to procure works on an instructed basis over a term without any commitment to the quantum of work instructed, need as a minimum to contain:

- the period during which a package order may be issued
- the scope of what may be included in a package order
- the basis for remuneration for instructed work, and
- where a framework contract is entered into with more than one contractor, the manner in which competition between framework contractors for a package order is to be conducted

The challenge with framework agreements is to decide on how contractors are to be remunerated for broadly defined work which is not sufficiently scoped to enable it to be priced. Cost based pricing strategies are well suited to framework agreements as:

- a cost reimbursable pricing strategy linked to the management contractor contracting strategy (see NEC3 Engineering and Construction Contract (Option F)) allows the cost of the project to unfold as the bulk of the works and services that are provided by the contractor is subcontracted
- the target price in the target cost contract (see NEC3 Engineering and Construction Contract (Option C)) can be agreed before the issuing of a package order or to proceed with the construction of the works associated therewith

Cost based pricing strategies enable a framework agreement to be entered into with a single contractor.

It is possible to enter into framework agreements with a number of contractors for a well defined scope of work involving a limited number of repetitive items in a specific geographic area e.g. provision of sidewalks within a municipality. In such cases, contractors can be contracted on the basis of a tendered price list. Framework contractors must, however, be invited to compete for package orders and base their prices for each package order on their tendered price list – they may reduce but not increase these prices when tendering for a package order.