Learning package 3

Introduction to procurement systems, standard forms of contracts and tendering process

# Introduction to procurement systems

In simple terms, “procurement” of a construction project is the process of getting the project completed by making decisions on a variety of issues based on project needs. It determines the organisational structure adopted by the client for the implementation (or even operation) of a project. It is also the strategy to satisfy client’s development and / or operational needs with respect to the provision of constructed facilities.

Procurement strategy entails the process of obtaining goods and services to complete the construction project from different parties for some consideration.

Despite some common misconceptions, procurement is about the whole project **not** just about the main building contract. As such, in addition to the provisions of main building contract, it includes the activities / services rendered by consultants, specialist contractors, nominated sub-contractors, suppliers etc. Due to this broad scope, selection of an appropriate procurement system is a crucial strategic decision, which can have a significant impact upon project success.

Fundamentally 5 categories of procurement system:

* Price in advance (fixed price / lump sum)
* Design and build
* Management
* Cost reimbursement
* Partnering / alliancing / framework agreements

Each of these systems has their own characteristics, advantages and disadvantages. An in-depth assessment of all these procurement systems is presented within the “**procurement systems in construction and property**” module.

**More reading:**

Please read the following book to understand more about various procurement systems and how to select the most suitable procurement system for various project priorities.

Masterman (2003). An introduction to building procurement systems. Taylor & Francis.

# Contractual relationships in procurement systems

Among other things, procurement systems determine the nature of contractual relationships between the parties in construction projects. Based on the procurement system adopted, the contractual relationship between the client / contractor (s) and the consultant(s) may vary in different construction projects. This is due to the fact that different procurement systems assign different levels of responsibilities for the stakeholders. For example, the figure 1 below illustrates the contractual relationships between parties, under the price in advance (traditional) procurement systems.

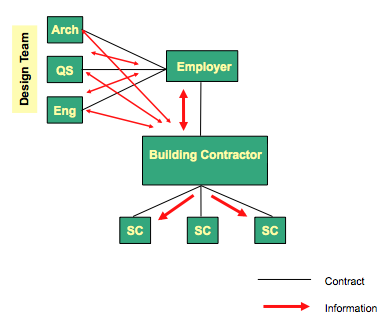


Figure 1 - Information flow and contractual relationships in the traditional procurement system

Its is clear from the above that, under the traditional procurement system the employer (client) has separate contractual relationships between the building contractor and the design team. While the information flow between the building contractor and the design team needs to be strong for a successful project completion, it is important to note that there is no direct contractual relationship between the design team and the building contractor. This follows the main characteristic of the price in advance procurement system, the distinct separation between the design and the construction.

In contrast with the above arrangement, the design and build procurement system warrants a close integration between the design and the construction aspects. Figure 2 below illustrates the contractual relationships between various parties under the Design and Build procurement system.

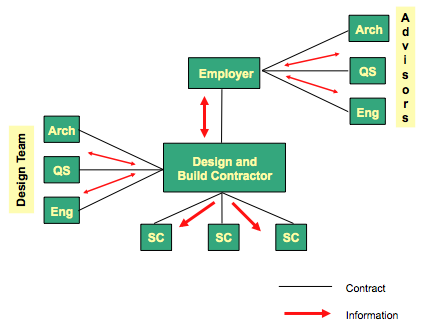


Figure 2 - Information flow and contractual relationships under the Design and Build Procurement system

As the figure 2 above shows, under the design and build procurement system, the Design and Build contractor has direct contractual relationships with the design team and the sub contractors who are responsible for the construction work. This contractual arrangement facilitates the main feature of the Design and Build procurement system, the integration between the design and the construction.

Construction contracts are agreements enforceable at law, made between two or more persons, by which rights are acquired by one or more, for acts or forbearances on the part of others. As with any other agreement, there are three fundamental elements in a construction contract, an offer, the acceptance and consideration. The terms of the agreement are formulated and noted within “the forms of contract”. In construction contracts, majority of the terms of the agreement between the parties can share common wordings, due to commonality in roles and responsibilities defined by various procurement systems. As such, in for construction contracts, often “standard form of contracts” are used. There are few variants of standard forms of contracts used within the construction industries all over the world. In UK, Joint Contracts Tribunal (JCT) and New Engineering Contracts (NEC) has gained the popularity while International Federation of Consulting Engineers (FIDIC) standard forms is also popular in many parts of the world.

The terms of standard forms are developed and amended over the years. Often, the terms are settled through negotiation by representative bodies of various interests (e.g. RIBA, RICS, BEC etc.). In addition, over the years, the terms are further developed, based on experience and practice of various construction industries. In principle therefore their terms of standard forms of construction contracts should be fair and reasonable.

There are various advantages of using standard forms of contracts. Some of those include; familiarity and well understood by the industry; saves time and cost; avoids writing terms for each transaction; impartial; allocate contingent risk; anticipate risk and facilitate calculations; enable accurate quotations from sub-contractors and suppliers and removes the discretion of individuals.

However, in some instances, terms are unilaterally amended by clients (often on the advice of lawyers). This is an attempt to protect themselves by changing the balance of risk within the contract. Alterations can take various forms; clauses deleted entirely; clauses partially deleted and in some cases, new clauses can be inserted. As an example, changes often made to payment clauses and related issues. As a result of that often advantages are undermined. It triggers unilateral imposition thereby rendering the terms unfair. As a result, contractors can become suspicious and have less confidence in the formulated contract. Further, in case of a breach of contract, customised terms can pose challenges as there may be no legal precedents.

Following is a list of standard form of contracts used within the UK construction industry.

**Joint Contracts Tribunal (JCT)**

* Standard Building Contract 2005 (SBC05)
  + With Quantities
  + With Approximate Quantities
  + Without Quantities
* Design & Build Contract (DB05) *[also Major Project Form]*
* Management Contract (MC98)
* Client and Construction Manager Agreement (C/CM02)
* Intermediate Building Contract (IC05)
* Minor Works Building Contract (MW05)

**NEC**

* New Engineering Contract (NEC)

**ACA**

* Project Partnering Contract (PPC2000)

**More reading:**

Royal Institution of Chartered Surveyors (RICS) has conducted a survey in 2010 about the use of various standard form of contracts within the UK construction industry. Please use the link below to read the results:

<http://www.rics.org/Global/CONTRACTS%20IN%20USE_FINAL_%20Nov2012_%20lteage_081112.pdf>

# Building procurement and the tendering process

One of the main parts of building procurement is to appoint appropriate builders to complete the construction work. Often these builders are appointed through a tendering process. The tendering process takes the form of either open tendering or selective tendering. Open tendering is where an open invitation is published in public media to all the potential tenderers and the selection is based on all the submissions made by potential bidders by the closing date / time. In this method, no pre-selection will occur and the maximum competitiveness is ensured as the tender invitation is extended to all the interested parties.

Conversely, in the form of selective tendering, a group of potential bidders will be selected by going through a pre-selection process, and then a final contractor will be selected based on written submissions / presentations / negotiations. While the competitiveness may be limited by the pre-selection process in this method, the reliability of the contractors performance is better, ensuring relative smooth project operation. Following is a typical list of processes involved in selective tendering:

* To establish the list of contractors before formal tender invitation
* To determine whether the contractor selection by competition or negotiation
* Preliminary enquiry sent to the identified potential contractors
* To receive contractors’ responses, organise presentations & interviews
* Final tender list and formal invitation to tender

Decision to tender for a project is a crucial decision to be made by every contractor. While the decision to tender for a particular project may potentially increase the revenue of the contractor (if successful), it also is a resource intensive process (costly). Hence, the decision to tender for a particular project by a contractor depends on the circumstance and various parameters.

When evaluating a decision to tender, one of the first considerations by the contractor to asses whether a pre-selection occurred or not. As the chances of being successful as a preselected bidder is much greater than under an open tendering scenario, this helps the bidder to assess the risks more realistically. Inspecting the tender documents thoroughly by the bidder is also important as it helps in establishing the scope of the project. Depending on the current workload, resource levels the bidder can then make an early decision about his capability to complete the work successfully. This capability will also depend on factors such as time given for tender, adequate information, type / nature of work, etc.

Once the decision has been made to tender for a project, the contractor can follow certain good practices to manage the tender submission process appropriately. One of the first tasks in this context is to appreciate the project in more detail. Following are some of the steps that can be taken to ensure proper project appreciation:

* Maintain a tender register
* Check tender documents received
* Create a timetable for estimate & tender
* Do a thorough examination of documents (conditions, spec, drawings, BOQ, etc.)
* Distribute documents among relevant staff members for pricing / method statements.
* Arrange visits to site & consultants

Once the project is appreciated properly to identify and organise the tender submission process, often the inquiries and quotations are organised to enable the estimating and pricing process. Following actions can take place during this stage:

* Abstract forms are prepared that list materials & trade packages for quotations
* Prepare / obtain records of suppliers and sub-contractors
* Make Enquiries (project details, specifications, programme, method of construction, quantity, special conditions, dates, discounts etc.)
* Quotation receipt and analysis

After arranging quotations from suppliers / sub-contractors, the execution of construction work and temporary work can be planned for better costing / price certainty. Within this stage, principal quantities (important & critical items in the programme) can be extracted from the tender drawings. Method statements (written descriptions of how operations are done) can also be prepared to ensure accurate pricing. It is also a good practice to prepare a tender programme, so that activities can be planned to ensure the tender is submitted on time. Temporary works (eg: site layout to show storage, accommodation, services etc.) are also need to be assessed and costed appropriately. Along with this, other cost items such as use of plants need to be considered in the tender estimate (by preparing plant schedules). This may also be a good time to a mid-tender review.

Costing and pricing a tender requires a through knowledge on various estimating techniques and pricing strategies. Generally, the final tender price is made of two main elements, the estimate and the mark up. Estimate is technically the direct cost of the project to the contractor. Mark-up his overheads and profits. The estimate comprises of the following items:

* Measured work - Direct work

& Sub-contractors work

* PC and provisional sums
* Project overheads

The mark-up includes;

* Profit
* Organisational overheads

The markup is a strategic business decision often made by the top management on project by project basis. Calculation of the basic project cost (estimate) can be done in several ways. The objective here is to calculate the cost of the project to the contractor. Often the estimate for the tender is prepared using all-in rates and unit rate pricing. In this approach plant, labour and material costs for each of the Bill of Quantities (BoQ) items are calculated to arrive at the direct project cost. When the detail designs and BoQs are absent for unit rate pricing alternative methods are used.

Following are the typical sections of a Bill of Quantities:

* Preliminaries ( project overheads)
* Preambles (specification notes for pricing)
* Measured work ( eg: earthwork, concrete etc)
* Prime cost (PC) & provisional sums
* Summary

Prime cost sums are the cost items for nominated suppliers and subcontractors work. When a sub contractor is nominated by the client, the estimator needs to add his profit & attendance for the nominated work. Provisional sums are for items of work which cannot be fully described or measured. Often a schedule of Dayworks is also to be priced as a part of the tender submission and this forms the basis to calculate rates for various or ancillary works carried out by the contractor. It is worth noting that PC & provisional sums are not always separated in the BOQ.

Project overheads are indirect costs that would contribute to the final project cost. Following is a list of some such cost considerations:

* Employer’s requirements
  + Client’s facilities, Specific limitations- timing, security, safety etc.
* Contractor’s general cost items
  + Tender programme, method statements, etc.

After completing the initial costing, the estimator would need to attend to some important activities before finalising the tender estimate. Those include:

* Extending BOQ s
* Prepare the net cost summaries
* Consider and account for price fluctuations
* Consider and account for the cash flow requirements

Once the tender estimate is prepared, the mark-up is to be decided and the rates should be adjusted in the final tender document (e.g. BoQ) accordingly before the submission.

**More reading:**

Please search for and read articles on the following subject areas:

Bidding efficiency

E-tendering

Factors affecting the decision on the mark-up

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