

## **Quantity Surveyor's Role: Conception to Delivery**

### **Who is a Quantity Surveyor (QS)?**

The New Zealand Institute of Quantity surveyors say they are the construction cost professionals who measure and estimate the cost of resources for construction projects...

The Canadian Institute of Quantity Surveyors call themselves the construction cost consultants/cost estimators who make sure the costs of building and infrastructure projects are accurately estimated.

The RICS (Royal Institute of Quantity Surveyors) describes the QS as the financial guardian of the construction project.

Whereas the two other descriptions of a quantity surveyor are generally proper, my preference leans towards the term “financial guardian” as you will see as our little discussion develops.

### **What does he do?**

To be that Guardian, The Quantity Surveyor should be able to provide protective coverage of the financial aspect of a project and maintaining it from conception to completion and delivery. He should rightly be the “first man in and last man out”.

The quantity surveyor is trained in:

- Construction technology (how construction is done) best practices.
- The fundamentals of the other disciplines (land surveying, drawing, engineering fundamentals, services, management, economics and so on) sufficiently to lend quality support to the architect, engineers and other professionals of the team.
- Contract law and other fundamentals of law, necessary to adequately deal with contracts and matters pertaining to the legal issues of construction projects. Matters such as land, contract law, and statutory matters.
- Estimating the cost of projects to ultimately determine their feasibility at the outset.
- Preparing documentation for competitive tendering or negotiating for contracts

- Managing and exercising such control over the financials to ensure the imperatives of the feasibility are maintained throughout projects, thus ensuring cash-flow and the profitability of projects.
- Controlling and managing subcontractors and suppliers.
- Concluding contracts upon completion of projects

He is therefore best engaged at the project conception stage so the Architect, designers and other consultants can benefit from his expertise during the design process and for the purpose of proper feasibility studies.

Once feasibility is established, he proceeds to prepare a complete budget and thereafter he will guide the financial aspect up to the contractual stage, into and throughout the construction process.

At the end of the project, he will prepare the final accounts.

### **Project Phases**

There are basically two construction phases.

- Pre-Contract
- Post Contract

Together they comprise a total of six (6) stages. Today we will focus on these two phases.

#### **1. Pre- Contract**

Once the project is conceived, the client would state the project objective, develop a project proposal outline and seek to determine viability. At this stage he would engage the necessary professionals to determine what the expected outcome of the project will be, the amount and types of buildings and other facilities that will be necessary to be constructed.

The quantity surveyor will provide the costings necessary to arrive at a preliminary budget which will guide the studies to establish the feasibility of the project.

If feasibility is established, or is at least on the radar, preliminary designs will be developed by the architect and from these initial designs, cost checks and cost studies will be done to ensure that it falls within the budgetary parameters.

As the designs are developed as cost checks are done, this is followed by the preparation of detailed cost plans to ensure that the final design accords with the budget.

The costings are normally presented in analytical details, usually in terms of cost per square meter of building. This is important as it will show how each element contributes to the overall construction budget.

Should the preliminary estimates fall outside the expected budget, the cost plans will provide guidance as to where to look for possible cost reductions.

Other things can be discovered at this point, such as the areas of design efficiencies and/or deficiencies.

### Cost Studies

Looking for ways to refine the budget or an element may not necessarily require a redesign. It could require further studies in:

- Methodology/construction process
- Procurement methods and/or sources
- Construction efficiencies
- Use of alternative materials or building systems

When all refinements of the design are complete and all are satisfied with the design and the budget, the project then proceeds to the development of detailed construction working drawings. From these working drawings the quantity surveyor would prepare bills of quantities. This is that document that breaks down the project into the various components, sections and details with item descriptions, unit costs, rates, subtotals and totals to arrive at the project price.

### Procurement.

After the preparation of bills of quantities, a procurement process follows. This is the process of deciding who will become the contractor. It may involve:

1. A negotiation process or
2. A tender process, often selective tendering whereby contractors capable of undertaking such a project are shortlisted for this purpose and invited to tender or bid.

### Bills of Quantities

The bills of quantities is that recognized document produced by a quantity surveyor, that forms the basis of construction contracts. This document is used for either a negotiation or tender process. It generally comprises four (4) sections.

- The preliminary items and conditions of contracts
- Specifications
- Measured works
- Appendices

### Preliminary items and general conditions

This is that section of the bills of quantities that contains the contractual obligations necessary to execute the project. It includes special conditions of application and reference to the form of contract to be used. It also provides for pricing of items pertaining to the work that do not become a part of the permanent finished work.

### Specifications

The specifications section is that part of the document that it is descriptive. It expands annotations and notes on the set of design drawings, verbalizing and organizing them in such ways to ensure that qualitative imperatives are understood. These may be

standards of material, labour, and such details necessary for the works to be compliant with the drawings, and to be met during construction.

They provide clarity for the purpose of tendering or negotiations and make references to local and/or international building standards, codes, testing methods and any other necessary credible product information sources to ensure the finished product is exactly as the designer/s intend.

A well-done set of specifications should promote good compliance and result in minimal misunderstandings, disputes, and contractual claims.

### Measured Works

This is the section of the bills of quantities that breaks down the building/s into what is known as elements, for example foundation, frame, roof, windows doors etc.

Each element is further broken down into measurable items which are quantified in terms of units, extended by prices to arrive at totals. The totals are then casted to summaries and then to a general summary to arrive at the final contract sum.

The accuracy level of this measured work section must be extremely high and brings into focus the expertise of the quantity surveyor. Where exact details are unknown, appropriate provisional sums should be provided to ensure that those items are properly accounted for.

### Appendices

Appendices are necessary to complete properly prepared bills of quantities. They include the basis on which the contract rates are derived. Such basic prices include material, labor, plants, equipment and currency exchange rates.

### Invitations to tender.

Tenders are invited, resulting in the most responsive tender being selected, and the contract awarded to the selected contractor.

### The Tender process

- Invitation to tender (open or selective) or negotiation
- Receipt and opening of tenders.

- Assessment of tenders, reporting,
- Acceptance, award and Contract signing.

### Post Contract

This is the period commencing after the signing of the contract.

The work is required to commence within a given time after signing (a contract period and completion date is stated with consequences for overruns).

The quantity surveyor by structured methods ensures that the costs are managed so that the project is completed within the contract sum or any revised sum consequent upon variations. It involves:

- Interim (periodic) valuation for certification by the architect
- Pricing of variations
- Interim periodic cost reporting
- Assessment of claims if they arise.
- Preparation of Final accounts upon completion

Other services provided by a quantity surveyor may include:

- Undertaking cost analysis for repair and maintenance work.
- Preparing projects schedules
- Litigation support, expert witness etc.
- Insurance claims preparation

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