

Pre contract cost planning and cost controlling construction essay



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In the Construction industry, cost planning is a vital management process for control the overrun cost of project and gets maximum returns to the client within agreed budget. Generally Quantity Surveyor as a Cost Manager who is involve to prepare cost planning and cost controlling process for specific stages of project with respect to the RIBA plan of work.

There are some significant estimating methods for cost planning process utilize in construction project. Hence those methods give preliminary estimate for the client at the design stage.

And Pre-Contract Cost Planning and Cost Control process are also very important for successful planning, design and construction of projects and is aimed at providing best value solutions. Basically it is a pre-costing method of a project.

In addition, Term of life cycle costing can be described, according to the definition of Hoar and Norman (1990) noted as appropriately defined the life cycle cost of an advantage as the present value of total cost of the asset over its operating life including initial capital costs, occupational costs, operating costs, etc.

Specially, Quantity surveyor monitors the cost of every phases of a construction project as a cost manager to minimize the costs of the project and make more cost savings for the project success.

Hence strongly recommend for getting maximum benefits of the pre-contract Cost planning and Controlling activates to be implemented with respect to the RIBA plan of work.

INTRODUCTION

This report emphasizes for identifying critical phases of pre contract cost planning and controlling process in the life cycle of project with respect to the RIBA plan of work & how to manage them and how to obtain a maximum turnover of the project within the quantity surveyor's role as a cost manager.

Hence, this study will discuss significant project pre contract cost planning and controlling process, such as methods of estimates for cost planning for different stages of RIBA work plan, pre-contract cost planning and cost controlling process with respect to the RIBA plan of work a client/consultant may adopt during each stage, the term life cycle costing and related terminology and the quantity surveyor's role as a cost manager, in the life cycle of the project.

MAIN BODY

Explain the methods of preparing estimates for cost planning for different stages of RIBA work plan.

What Is Cost Planning?

The Cost Planning is a method of cost controlling the cost (Price to client) of a project within a pre-determined sum up to the tender stage. (Page3, Cost studies)

Cost Planning give advice to client how much will be project cost. As well, cost planning will advise when the expected expenses will most possible occur. Hence it's important for get required project finance and for determining possible project profit.

Methods of Estimating for Cost Planning

There are some significant estimating methods uses in construction industry for Cost planning process. Those methods give preliminary estimate, hence Quantity Surveyor has to modify predetermine data considering the followings, such as , market conditions, Size, number of storeys, specification level, inclusions & exclusions, service, site & foundation conditions and other factors.

Conference Estimating Method

RIBA Stage A of Options Appraisal and stage B Design Brief,

This method uses for preparation of the initial price estimate give to the client. It is based on a co-operative view of a group of persons, and not quantify in any particular way.

Financial methods

RIBA Stage A of Options Appraisal and stage B Design Brief,

This method fixes a cost limit on the building design, according to the unit of accommodation or rental values.

Unit method

RIBA Stage A of Options Appraisal and stage B Design Brief,

The unit method is multiplies desire standard unit of accommodation by an approximate cost per unit. Not required specific drawings, specifications, only the concept of the project relevant to the required function.

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For example:

Schools - costs per pupil enplace

Hospitals - costs per bed enplace

Car parks - cost per car space

Estimate = Standard units of accommodation x Cost per unit

Cube method

Design Stage

This is the superseded method because of inherent disadvantages; this method needs some sketch drawings, historical cost data, etc.

For example:

Building A(40x40x5m)= 8000m³Cost Rs35, 000, 000. 00= Rate per cub is 4, 375

Building B (45x45x6m)= 12150m³ x rate 4, 375= Rs 53, 156, 250. 00, it is 52% than building A, but floor has increased 1600m² to 2025m² of 27% only.

Superficial area method

RIBA Stage B Strategic Briefing and also can be used for Stage C

This is most common method use of presently, its use for early price estimating purposes. The area of each of the floors multiplied by the cost per

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square meter. Mostly important Storey heights, plan shape and methods for when choose on the rate to be used.

For example:

Building A(40x40m)= 1600m²Cost Rs35, 000, 000. 00= Rate per m² is 21, 875

Building B (45x45m)= 2025m² x rate 21875= Rs 44, 296, 875 it is 27% than building A.

Story enclosure unit method

All elements measure in areas basis, roof, wall and floors. Each is weighted by a different percentage and the resultant figures are story enclosure area. Also twice the area of the lowest floor and twice area of upper floors including additional 15% for 1st floor, 30% for 2nd floor, 45% for 3rd floor.

For example:

Building A (Completed), Lowest floor (40x40m)= 1600m² x 2 = 3200m²

Roof (40x40m)= 1600m² x 1 = 1600m²

Ext. walls (2(40+40)x5m)= 800m² x 1 = 800m²

Total = 5600m²

Cost Rs 35, 000, 000 representing Rs 6250/m² of story enclosure area

Building B (Proposed), Lowest floor (45x45m)= 2025m² x 2 = 4050m²

Roof (45x45m)= 2025m² x 1 = 2025m²

Ext. walls (2(45+45)x6m)= 1080m² x 1 = 1080m²

Total = 7155m²

7155m² x Rs 6250 = Rs 44, 718, 750

Elemental Cost estimating

Detail Design Stage (Production information Stage F)

This can be used for establish the approximate cost of a construction project. It analyzes, the cost of the project on an elemental basis using from other similar projects. Also provides cost advice during the design stages. And detail drawings are required.

For example:

Details of Buildings

Gross Internal Floor Area : 32400 m²

Project tender price : 8, 750, 000 AED

Table 1. 1 Cost Analyses (used all data are assumptions)

Elements	Total Cost	Cost/ m²	Qty	Unit	Unit Rate
Substructure	1, 450, 000	3625	125	m ²	45

Superstructure

Frame 135, 000 1765 225 m2 435

Upper Floor 125, 000 625 1205 m2 285

Roof 1, 681, 3736 450 m2 3500

Stair and Ramps (3Nr) 55, 000 1625 1025 nr 145

External walls 65, 000 525 125 m2 345

Main Contract Preliminaries 125, 00

Contract overhead and profit 85, 000

Risk (client contingencies) 75, 000

Total Contract/ Project Cost - 8, 750, 000 AED

Resource analysis

(Pre Construction Stage Tender Documentation -G)

This method is traditionally adopted by contractors' estimators to decide their individual rates for measured items in bills of quantities. All individual measured items are analyzed into its element parts such as labour, materials and plant. This method is not a pre-tender method of price prediction strictly.

Explain the pre-contract cost planning and cost controlling process with respect to the RIBA plan of work a client/consultant may adopt during each stage

What Is Pre-contract Cost Planning?

Pre- Contract Cost planning is very important to successful planning, design and construction of projects and is aimed at providing best value solutions. Basically it is a pre-costing method of a project. As well as Pre-estimation of a design proposal will give clear picture about the cost to the employer and design team.

Pre-Contract Cost Planning Process

The pre-contract cost planning process according to the RIBA plan of work 1998; it can be described as follows.

Pre-Design

Inception of Feasibility

Pre-stage A

Work Stage A (1)

Work Stage B (2)

Establishing the need (Establish the budget)

Options Appraisal (Cost of preferred solution)

Strategic Briefing (Target cost)

Pre-construction Stage

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Work Stage C

Work Stage D

Work Stage E

Outline proposals (Prepare initial cost plan)

Detailed Proposals (Firm Cost Plan)

Final Proposals (Cost checks, design against cost plan)

Work Stage F

Production Information (Final cost checks of design against cost plan)

Graph - 2. 1

Pre-stage A (Establish the budget)

Client appointing client's management team (Consultants) such as, client representative, cost consultant, according to his requirements.

Identify objectives, physical scope of project, standard of quality of building and services, timeframe and establishing the budget.

Emphasis nature of client's problems and functional requirements on proposed project.

Work Stage A (Options Appraisal)

Consultant has to identify of client prerequisite and possible limitation on development and cost of the ideal solution.

Prepare technical, functional and cost studies by consultant and then it should enable to the client to take decision on his project weather he can continue the first proposal or could do some changes to the first proposal etc. also select the possible procurement method.

Work Stage B (Strategic Brief)

Consultant has to prepare initial cost proposal to the client based on an outline statement of client's needs, also to determine target cost. This establish an initial budget for client

Client has to investigate availability of finance for the project and value of money framework.

Pre Contract Cost Control

Generally Pre-contract cost controlling process is implemented from this stage according to the RIBA plan of work as mentioned by chart 1. 2,

Pre Contract Cost Control process give ensure the cost of the project is within the client's budget or not. Hence pre-contract cost control is a very essential process in a project since it is planning, design finalizing and tendering and selecting a suitable contractor too.

Outline Proposals- Stage C

Consultant has to involve preparing outline proposal and estimate of cost as initial cost plan. As well as Investigate the site conditions and preliminary sketches for requirement of cost plan.

Evaluate strategic brief through consideration of time, cost, risk and environmental issues. Also establish design management procedures.

Detailed Proposals – Stage D

At this stage, consultant prepares full detailed proposals for the client, and also prepares firm cost plan & detailed elemental cost plan etc.

Client team evaluate outline proposals for make the final decision,

Receive design and cost input from client appointed team and extend detailed design solution. And review procurement advice.

Final Proposals – Stage E

Consultant has to prepared final proposal at this stage.

Carry out cost check of the design as it develop against the cost plan, hence it Confirmation of the cost limits for the project.

Most cost effective in satisfying level of project brief to confirm or put final budget and to check the elemental cost targets.

Consultant prepares all required submission for legal approvals.

Production Information – Stage F

All legal approvals should have completed when at this stage.

This is the assessment of lowest acceptable tender price based on completed contract documents. And also ensure that the completed designs are controlled within the cost limits.

Supply all required information for final cost checks of design against cost plan.

Explain the term life cycle costing and related terminology.

Definition of the life cycle costing

According to the definition of Hoar and Norman (1990) appropriately defined the life cycle cost of an advantage as the present value of total cost of the asset over its operating life including initial capital costs, occupational costs, etc.

Hence life cycle costing is related with the time stream of costs and benefits that flow throughout the life of the project.

There are number of term use in industry to identify different stages in the life cycle costing techniques, hence flowing are the specially use in construction industry.

Life cycle cost analysis (LCCA)

Quantity surveyor assist to prepare this, based on collection and analysis of historic data on actual costs of occupying building (running cost and performance).

Life cycle cost management (LCCM)

Actually it is derived from life cycle cost analysis and identities, by this way client can be compared building cost and controlling occupancy cost throughout the life of building to get maximum value.

Life cycle planning (LCCP)

This is as part of life cycle cost management; it is constitute the prediction of total costs of a building, part or individual element taking account of initial capital costs, subsequent running cost and residual values.

There are several costs related with acquiring, operating, maintaining & disposing of a construction or building system. Hence related costs generally fall into Initial Costs, Energy Costs, Operation, Maintenance and Repair Costs, Replacement Costs, Residual Values, Finance Charges, Non-Monetary Benefits or Costs, etc.

For Example:

Sieglinde Fuller Source: Sustainable Building Technical Manual / Joseph J. Romm, Lean and Clean Management, 1994.

Life cycle costing Terminology

Explain the Quantity Surveyor's role as a cost manager, in the life cycle of the project.

Role of the Quantity Surveyor as a Cost Manager

Quantity surveyor is the person/ firm who manage the cost relating to the construction projects, such as new constructions, maintenance work and renovations. Quantity surveyor monitors the cost of every aspects of a construction project as a cost manager.

Furthermore when study about Quantity Surveyors in a Cost manger position, hence has to identify their duties and Responsibilities properly.

He should conduct feasibility studies and writing procurement reports at the project inception stage.

He should manage estimating and cost planning process and presenting the final cost plan.

He should manage the procurement process, and ensure that all phases with pre-qualification, enquiry, analysis, selection and contract preparation are carried out effectively.

Ensuring that post-contract cost variances and change control tasks are directed effectively.

Involving with cost checking and valuation works to manage them effectively.

Preparation of monthly post-contract cost reports and presenting them to the client.

Preparation of value engineering and life cycle costing, and also final accounts negotiated and agreed process.

Give leadership role to manage the client and other consultants, at every project phases.

Working with top managers and directors, and identify and performing new opportunities to improve the cost management procedures.

CONCLUSION/ RECOMMENDATION

As the conclusion which identify at the end of this study, particularly Client or his managers should have sufficient knowledge and awareness concerning the Cost planning and controlling process of pre-contract stage, to get maximum benefits within pre-contract cost planning and Controlling techniques. Hence strongly recommend for every Construction project that they would be able to get maximum benefits of the pre-contract Cost planning and Controlling activates by implementing with respect to the RIBA plan of work.