Costing a building construction project

ASSIGN BUSTER

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Task 1

1. Identify and further describe any five (3) components of cost in the building construction?

Cost is a calculation which can be calculated by evaluating the actual cost which is paid by the client or the contraction industries. The cost of building construction is the process of adding structure to real property. All building construction projects include some elements in common – design, financial, estimating and legal considerations. However, the commercial of building construction is procured privately by various delivery methodologies, including cost estimating, profit, price and management contracting, In addition, there are some components of cost in the building construction. These are;

- Cost of profit.
- Cost of overheard.
- Cost of material.
- COST OF PROFIT.

Profit is the amount of financial reward which base on the contractor aim that achieves the risk which take during the meeting of construction work. Example, Profit = Total sales – Total cost. Perhaps, cost of profit can be define as the major component of cost which variable change during in work or in discussion of the cost between the client and contractor. However, this component of cost is important source of finance for business like; construction work, which earned amount of financial in a company. This is

known as retained profit. For example, the higher the risk the more profit is needed, this profit is varies according to the types of construction risk and the time of construction, therefore when the contractor take a more risk in the work and time the cost of profit will be needed to the construction work.

- COST OF OVERHEAD.

One among the component of cost in a building construction are cost of overhear, which can be define as the cost of resources which is used by an organization just to maintain its existence. Although, the awareness of cost overhead is important for more than just knowing how much profit is being made. Usually, cost of overhead is measured in monetary terms, but non-monetary overhead is possible in the form of time required to accomplish tasks. For examples, salaries, maintenance, utility, rent and production expenses. In addition, the total overhead is calculated by % basic and as lump sum between 5 – 10% of total component of cost. Furthermore, the cost of overhead is divided into two categories. These are

- Fixed cost.
- Variable cost.

- Fixed cost.

Fixed cost is the one among the categories of overhead cost which deals in a salary of administrative staff which is include the contribution and allowance, rent and taxes on the office. This is usually occurring in short period time.

- Variable cost.

This variable cost is the categories of overhead cost that change according to a crease or decrease in the work. For example, interest, rate, loans, and director’s salary which is based on rate of profit.

- COST OF MATERIAL.

Cost of material is the amount of money invested in the production of a product. Also it can be define as the cost of materials which can be easily identified with the unit of production. A contractor must submit his own material cost in the measured rate analysis. For example, the cost of glass is a pure materials cost in light bulb manufacturing. This manufacturing’s of products are good required material as the prime element. In general, these materials are divided into two categories. These categories are;

- Direct materials.
- Indirect materials.

In addition, material cost includes this cost;

- Basic cost of materialwhich is bought by manufacturer or supplier.
- Transportation, which deals about the cost of transport material to site, and some time it’s depend on how long will take to there (distance and time).
- Unloading and storage of material , the cost must be taken into consideration in overall cost. For example, if the site is inaccessible, the contractor will incur additional cost of material and send to the site.

(b) There are many sources of cost data in construction industry. Do some research and identify the main sources of cost data that available in Malaysia.

Cost data is every important in control construction activities, this is critical data which is used to establish whether the estimate is reasonable or not. The main sources of cost data are;

- Cost planning during design.
- Contract estimating for tendering purpose.

1. Cost planning during design.

Cost planning is mostly referred to the ‘ designing to a cost’ or ‘ target cost planning’ since a cost limit is fixed for the scheme and the architect must then prepare a design not to exceed this cost. ‘’Is a typically for buildings, which enables the cost of a scheme to be monitored during design development’’ this known as cost planning during design. Cost planning ensures the amount of money which including the requirement for the building and construction industry. During the design cost planning is allow the options to be analysed and may be required to determine best value for money by assessing recurrent costs. The cost planning and analysis may include a comprehensive cost-benefit analysis or cost-effectiveness analysis for the contractor and client requirements. For example, when the contractor and architect are determine the total cost of the project and design that ensure the estimated cost produce are close.

2. Contract estimating for tendering purpose.

Contract estimating for tendering purpose are the one of the purposes of cost data in construction industry which is control a contract operation especially in the interim payment and final accounting procedure. A full Estimating and Tendering solutions to all of the client in a construction

industry including Main Contractors, Sub-Contractors and Private Clients, can be provide by Quantity Surveyors. For example, a cost reconciliation and speed up tender submission. In addition the purpose of producing a contract estimating tendering for the client can be classified into two (2) categories. These are;

1. Budgeting

- This decides whether the project should proceed as envisaged.

2. Controlling

This uses the estimate as a control mechanism throughout

(c) Discuss on the precautions should be adopted before attempting to use existing Cost Data and applying that to the new projects.

Cost data are needed in the construction industries at different stages of sophistication for the theory and practice of building economics. For example, a contractor’s are required during the inception levels of the design process, so that they can provide clients with an indication of possible cost associated with a correct proposed construction project. These are precautions of cost data. These are;

- Prediction of cost.
- The prediction of cost can show both time and hourly rate that would be supplied to the other side at the first opportunity. Thus it would be sent with the letter of claim or with the defendant’s response to the letter of claim. Also this use of cost data (Prediction of cost) can be used to predict cost of information for example, cost of various

buildings, element unit rate, equipment and schedule of rate in the bill of quantities. In this case the contractor can be use this form in order to estimate the whole cost of the project in a construction industries and he can also save in word excel.

- Comparison of cost.
- Comparison of cost is the ways which help a contractor and engineer to identify the correct cost of the project in construction industries. Also, this use of cost data is used to compare the cost of different building. In addition, the aim of the constructors when they applied this use of cost data is to make the best and beneficial comparison of a various item, element, tools and equipment of the building in different design. For example, this use of cost data, occur when the contractor is calculate the total cost of the building includes all the function, element, design and payment of all engineering, Architect, survey and etc. in last year and total cost of the building in this year, in order to compare the cost of the building. In this case the contractor can save the money in the next building.

TASK 2

MR Ahmed is a project manager at GEDS Developer Sdn Bhd just realizes about the construction cost database is an importance sources of information for those who are directly or indirectly involved in the building industry. It is not only important to quality surveyors but also other disciplines such as architects, engineers, accountants, administrators, amongst other. He is seeking for your help to construct their own construction cost database.

1. Define Gross Floor Area (GFA) and explain how the GFA is used to organize the construction cost database.

Gross Floor Area (GFA) is the total amount of floor space in a building, “ Gross Floor Area (GFA) is a real estate term referring to the total floor area inside the building envelope. Including the external walls and excluding the roof”. In the construction work Gross Floor Area is very important for determining rent and advertising with real estate companies and the acquiring building permits. For example, the area within the perimeter of the outside walls of a building can be measured from the inside surface of the exterior walls, with no designed for hallways, stairs, closets, thickness of walls, columns, or other interior features.

Gross Floor Area (GFA) is a real estate term referring to the total floor area inside the building envelope. Including the external walls and excluding the roof. In addition, databases may exist in the form of physical files folders, documents, or formatted automated data processing system data files. According to the above scenario the main uses of Gross Floor Area (GFA) in a construction of cost database are shown as follow;

- Gross Floor Area (GFA) can be used as GLA, even though GLA usually excludes corridors and other public areas inside the development, while both figures include areas occupied by structure, like walls and columns.
- Gross Floor Area (GFA) in a construction of cost database is used to measure the length of the surface area or wall area, for example Balconies, this are intended to be covered semi-outdoor spaces. Covered balconies constitute gross floor area (GFA). Also the provision

of balconies is encouraged to achieve the planning objective of enhancing the garden city ambience and promote greenery in the sky. The GFA of the balconies is allowed to be computed over and above the Master Plan control, However, this would not apply to existing developments whose building form, height or use are not in accordance with the planning intention as indicated in the Master Plan, Building Height Plan or Special and Detailed Control Plan.

2. Suggest and display the format and the construction cost database.

Cost database is an organization or collection of costdata. In addition, database means a collection of data fields that make up a record. This information is easily updated and edited. A contractor can create charts for the construction work using the records of a database. The term database is correctly applied to the data and their supportingdata structures, and not to thedatabase management system(DBMS). The database data collection with DBMS is called adatabase system. Although, a database can provide the ITS professional community with quick and easy access to costs data to be used in developing cost estimates of ITS deployments. For example; entries of unit cost components have been compiled from available sources and provided in table format. Perhaps, when you base the above scenario there are so many format of cost database in a construction industry. One among those is;

- Bill of Quantities (BOQ).

Bill of quantities (BOQ) is a document which is used intenderingin theconstructionindustry in whichmaterials, parts, and labour and their costs are itemized. Also it (BOQ) can be define as “ the major source of cost information that must be used with the great care as the rates between 2 BQ

for the same project that will show a considerable variation for may item". This bill of quantities can be proceed and prepare by the quantity surveyors and is the one among the source of development of Quantities surveyor's as a separate profession. Bills of quantities may prevent contractors from developing effectivecost controlsystems. However bill of quantities can be prepare by a taking of process in which the cost of building and the structure of the building are estimated for measurement in the structural engineer drawing, this form can be used to create a cost estimate, for example in regard to the square are in meter of wall and roofs.

TASK 3

1. Define

1. Price Analysis
2. Cost Analysis
3. Elemental cost analysis

1. Price Analysis

Price analysis is an evaluation of a proposed price without analysing any of the separation of the cost element. Also this is essentially price comparison. In addition this price analysis is used or applied whenever the estimator comparing lump sum price. Example of price analysis, comparisons of prospective bidders in the current procurement.

2. Cost Analysis

Cost analysis is an evaluation of a separate material that make up a contractor's total cost proposal or price to determine if they are allowable, directed related to the requirement and ultimately, reasonable. For example,

labour and material cost. This cost analysis is needed by using a competitive proposal method of contracting like Survey, Engineering or Architect services, also this method are required to submit a cost proposal that identify all element of cost, example, material, labour, profit and overheard cost.

3. Elemental cost analysis: is an arrangement of Cost analysis and Cost control, commonly for structures, which empowers the expense of a plan to be checked throughout outline improvement.

2. Describe theFIVE (5)principle of cost analysis

The main aim of cost analysis is to provide cost centers for the work under examination. The Standard Form of Cost Analysis for building projects is used throughout the UK to provide data which allows comparisons to be made between the costs of achieving various building functions in one project with that of achieving equivalent functions in other projects. In addition the standard forms of cost analysis to identify the major cost items for the project cost manager to address himself. There are 5 principles of cost analysis

1. Building within a project shall be analyzed separately.
2. Analysis should be in stages with each stage giving progressively more details; the total detailed costs in each stage should equally the cost the relevant group in the proceeding stage.
3. Information shall be provided to facilitate the preparation of estimates based on abbreviated.
4. Preliminaries shall be dealt with as a separate item (not apportioned amongst elements).

5. Lump sum adjustment shall be spread pro-rate amongst all elements if the buildings and external works, excluding prime cost sum and the provisional sum contained within the elements.

In addition the principle of cost analysis is; “ if the material increase also the cost will be increase”. This show that cost is increase when the material are high quality. Also “ An element should be easy definable and capable of having the appropriate costs allocated against it with a minimum of effort on the part of the user”. However the analysis of cost should bring out those features in different building which bear most heavily upon cost, also the qualitative aspect of the project should be expressed by means of reference to accompanying specification notes. For example, after soliciting competitive sealed bids, one receives only on bid, and it differs substantially from one independent estimate of the contract price. In that case, one must obtain a cost breakdown of the single bid price and use cost principle to determine if that price is reasonable.

(C) Describe the contents of cost analysis.

(i) Complete contract document: in order for the cost to be analysed it must be prepared in the form of full document.

(ii) Quantity factors and other working drawings and specification to calculate the quantity: if we want to make this cost analysis we in order for it to be done we must sketch first and we must calculate

4. Tender report- in the cost analysis we must have a special report we it can show the information regarding the market, and the numbers of tenders etc.

5. Manual for preparing cost analysis. Cost analysis if its prepared by manually it will be good because someone concentrate on doing it
6. Standard form of cost analysis: in making the cost analysis everything in the project must be standard.

References

- Ashworth, A. (2004). *Cost studies of buildings* . 1st ed. Harlow, England: Pearson/Prentice Hall.
- Hillebrandt, P. (1974). *Economic theory and the construction industry* . 1st ed. [London]: Macmillan [Distributed in the U. S. by Halsted Press, New York.
- Langston, C. (2005). *Life-cost approach to building evaluation* . 1st ed. Oxford: Butterworth Heinemann.
- Myers, D. (2004). *Construction economics* . 1st ed. New York: Spon Press.
- Smith, J. and Jaggar, D. (2007). *Building cost planning for the design team* . 1st ed. Amsterdam: Butterworth-Heinemann.