International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 07 Issue: 08 | Aug 2020 www.irjet.net p-ISSN: 2395-0072

A Research Paper on

"ESTIMATION OF G+1 SCHOOL BUILDING AND BILL OF QUANTITIES (TENDERING)"

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Abstract:-*During construction project planning and implementation, we need to know the quantities and costs of various items required to meet the objective of the project. That is, construction project manager has to anticipate the cost of project. The process of calculation of quantities and costs of various items in connection with the construction project is called an "estimate". An estimate is prepared by first obtaining the quantity of the items required to complete the project and multiplied by unit cost of the items. Details of the estimate depend upon the purpose of carrying out estimate.*

This project is carried out to determine the cost estimation of the G+1 School building near Deori, gondia. Centerline method is used to calculate the quantities of different items of work. Centerline method has been used for getting most accurate Estimate. The Rate Analysis is carried out as per CSR 2018-19 for Nagpur division excluding GST. The effect of GST has been applied to the total cost calculated for whole structure as 18%. The estimate of total of fifty five quantities has been carried out that are being used in the structure by the centerline method.

Key words: Purpose of Estimate, Types of Estimate, Types of Method, Tendering Process, Measurement Work, etc.

1. INTRODUCTION

Estimate is the techniques of calculating or computing the various quantities and expected expenditure to be included on a perpendicular work or project. There are different types of estimate are used Approximate, Detailed, Quantity, Supplementary estimate.

The approximate estimate to find out the approximate cost in short time before the starting of project. The preliminary estimate should be produce accurate cost of project these varies up to 10 to 15%.

1.1 Detailed estimate is accompanied by:

- Report
- Specification
- Detailed drawing, showing plans, different elevation or index
- Design data and calculation

The basis of rates adopted in the estimate such a detailed estimate is prepared for technical sanction administrative approval and also for the execution of a contract with the contractor.

Method of obtaining quantities of the items involved is called quantity estimate and method of obtaining unit cost of the items is called rate analysis.

These are different types of method of estimate:

- Center line method
- Long wall short wall method
- Crossing method

The center line method used to calculate the quantities of the different items of work.

1.2 Bill of Quantity :(BOQ):

Bill of quantity shall be used in every phase (pre contract and post contract) of the project but need of BOQ different based contract agreement to project.

Measurement work is the actual estimate work will be carried out to complete the project. The work have been measured in different unit value of measured work will be calculated by multiplication of quantity and rates.

The tendering process:

Project Definition and Scoping

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Selection Process for Tender

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Tender Documentation

⬇

Criteria for Selection

⬇

Call for tenderers

⬇

Tenderers meeting

⬇

Amendments to tender documents

⬇

Submission and closing of tender

⬇

Tender Analysis

⬇

Tender Clarification

⬇

Tender selection and Award

2. Objective:

- To know the approximate quantity of various material and labour required.
- To know the approximate cost of work.
- To have an idea about the time of completion.
- Its help in financial planning to once before going construction.
- For invite tender and arrangement of contract.
- To justify the investment from benefit cost ratio.
- An estimate for an existing is needed to valuation.

3. Procedure and Methodology:

Preparation of Building Layout using

AutoCAD:

The layout for the proposed building was prepared, discussed and approved by an architect. The layout was then prepared using AutoCAD. The various layouts were prepared and then later discussed with the architect for error correction.

Cost Estimation using Microsoft Excel

Excel is a typical spreadsheet which is nowadays widely used in cost estimation and also sometimes for planning purposes.

Method of estimate:

There are three different method of estimate

- Centre line method
- Long wall and short wall method
- Crossing method

What is Centre line method?

In this method of estimate the total Centre line length of wall in a building is first calculated then the Centre line length is multiplied with the breadth and depth of respective items to get the total quantity at a time.

The Centre line length for different section of wall in a building shall be worked out separately.

4. RESULT & CONCLUSION:

- **RESULT**

The Estimation of G+1 commercial building (school building) is carried out successfully.

The Estimation is done manually.

The quantities were calculated with the help of center line method and the Rate analysis was performed with respect to the rates of CSR 2018-19 excluding GST.

The percentage of GST (18%) was applied to the total estimate calculated to get the final amount.

The total Estimation cost was found to be Rs. 42238229.00

- **CONCLUSION:**

The cost estimate for the project has been calculated using Centre Line Method in Microsoft Excel.

For the Abstract cost CSR 2018-19 for Nagpur Division of rates has been followed and a total cost of Rs.42238229.00 has been calculated.

ACKNOWLEDGEMENTS:

We would like to express our thanks and gratitude to our teacher Mr. Bhagyesh Chachere Sir, Mr. Praful Misal Sir and our Head of Department Mr. Ashish Moon Sir who guided us in this research.

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