



“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

A bill of quantities is a document used in tendering in the construction industry in which materials, parts, and labor are itemized. It also details the terms and conditions of the construction or repair contract and itemizes all work to enable a contractor to price the work for

which he or she is bidding is a document used try in which materials of details the terms repair contract and it e in price the work.

BILLS OF QUANTITIES (BOQ):

The survival of any business is heavily depending on the success of commercial management When it comes to commercial management in construction industry, Bill of Quantities (BOQ) is the term which brings attention of every construction professionals and stakeholders.

It is one of the communication tools which connect the parties (Client, consultant & contractor) of construction project. Keith defines BOQ is a schedule which categories, details and quantifies the materials and other cost items to be used in construction project. It is important to know that, direct costs & indirect costs are to be considered for complete cost of the project which are covered in different parts of the BOQ

2. LITERATURE REVIEW

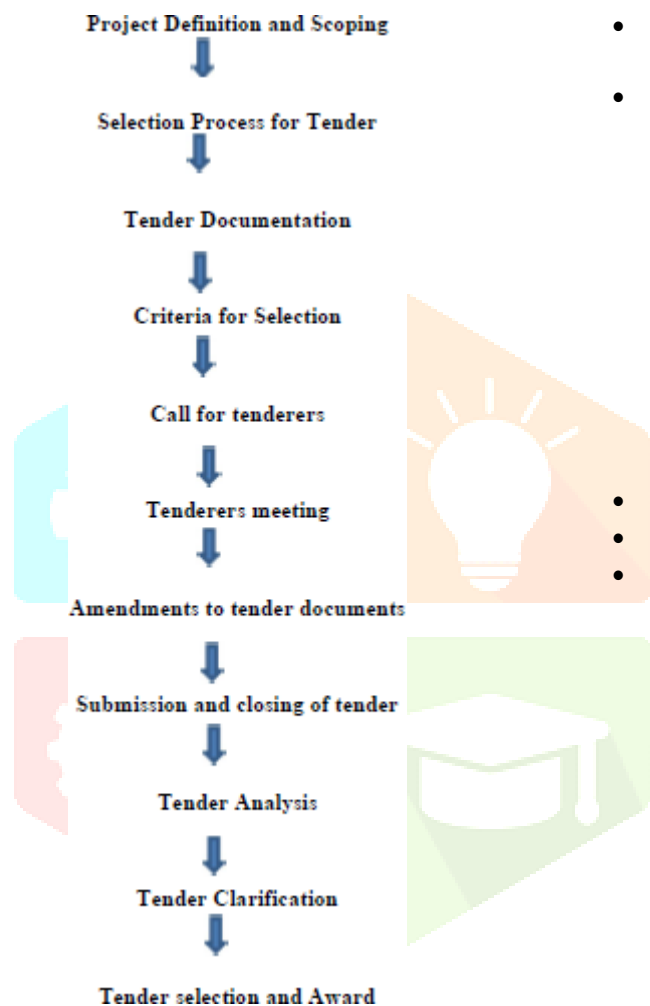
National Building Code of India (2005):

The national building code is also known as a complete building code. It is a national tool providing guidelines for regulating the building construction activities across the country, it serves as a specific for adoption by all companies involved in construction sector, the code mainly contains rules and regulations regarding development control and general building requirements like fire safety , structural design and other things related to construction

The code was first published in 1970 and then revised in 1983 and thereafter amendments are being implemented in year 1987 and 1997, considering further advancement of techniques used in building construction, the revised NBC is now available as NBC 2005, which we have used in our project.

- For invite tender and arrangement of contract.
- To justify the investment from benefit cost ratio.
- An estimate for an existing is needed to valuation.
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The tendering process:



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.

4. 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.

3. 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.

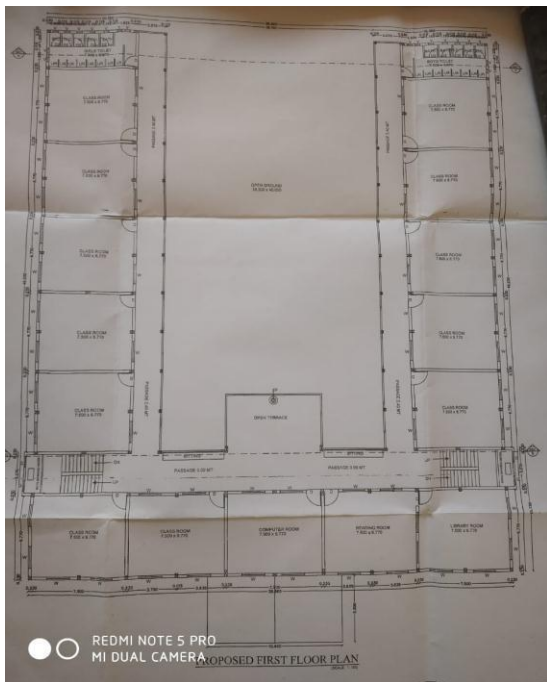


Fig (b) First Floor plan

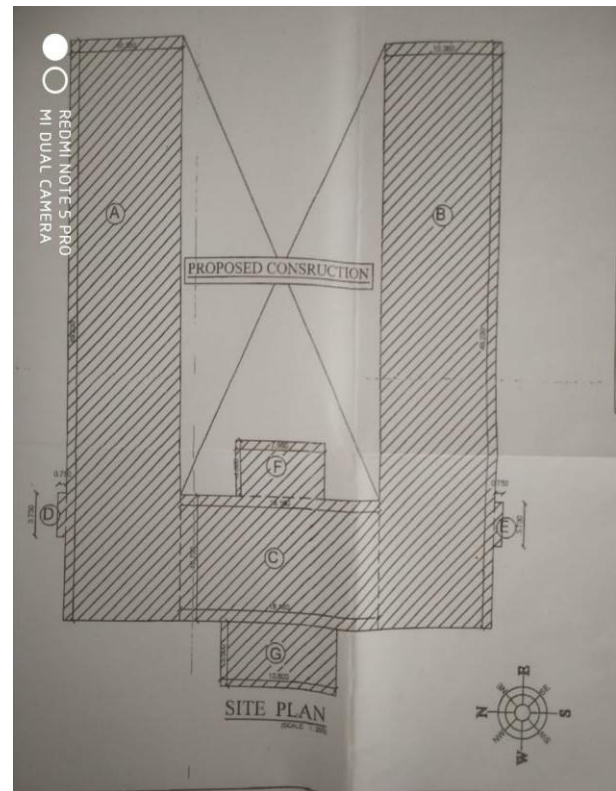


Fig (d) Site plan

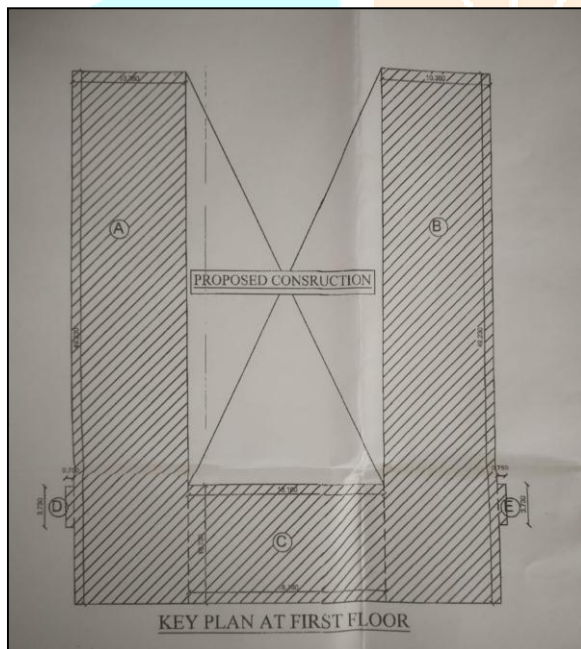


Fig (c) Key plan at First floor

5. 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.

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