

## Estimation & Costing Of Residential Building

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### ABSTRACT

This paper is about to estimation & costing of double storey residential building consisting four two-roomed quarters (two quarters in each storey). The estimation of ground floor and first floor should be prepared separately. The estimation of the Mumty room (staircase room in the 2<sup>nd</sup> floor) should be included in the estimate of the first floor.

For all engineering works it is required to know beforehand the probable cost of construction known as the estimated cost. If the estimation cost is greater than money available, then attempts are made to reduce the cost by reducing the work or by changing the specification.

The subject of estimating is simple, nothing much understands, but Knowledge of drawing is essential. One who understands and can read drawing may find out

The dimensions- length, breadths, heights, etc. from the drawing without difficulty and may calculate the quantities. The calculations mainly consist of, length\*breadth\*height or length\*height or length\*breadth.

Accuracy in estimate is very important, if estimate is exceeded it becomes a very difficult problem for engineers to explain, to account for and arrange for the additional money. In framing a correct estimate, care should be taken to find out the dimension of all the items correctly, and to avoid omissions of any kind of work or part thereof. The rate of each item should also be reasonable and workable. The rate in the estimate provide for the complete work, which consist of the cost of material, cost of transport, cost of labour, cost of scaffolding, cost of tools and plants, cost of water, taxes, establishment and supervision cost, reasonable profit of contractor, etc.

### INTRODUCTION

➤ A building has the following component:

1. Foundation
2. Masonry units: walls and columns.
3. Floor structure.
4. Roof structure.
5. Door, windows and other openings.
6. Vertical transportation structure, such as stairs, lifts, ramps etc.
7. Building finishes.

➤ Every building consists of two basic components:

- 1- **Super-structure:** The superstructure is usually that part of the building which is above ground, and which serves the purpose of its intended use.
- 2- **Substructure or foundation:** The substructure or foundation is the lower portion of the building, usually located below the ground level, which transmit the load of the super-structure to the sub-soil.

- Foundation: The basic function of a foundation is to transmit the loads, live loads and other load to the sub-soil.
- Masonry units: Masonry may be defined as the construction of building units bonded together with mortar. These building units, commonly known as masonry units may be stones, bricks or precast blocks. Masonry is used for the construction of foundation walls, columns and other similar structural components.
- Floor structure: Floor are the horizontal elements which divide the building into different levels for the purpose of creating more accommodation within a restricted space one above the other and provide support for the occupants, furniture and equipment of a building.

**PRINCIPLE:** The simple method is to take the long walls and short or cross walls separately and to find out the center to center length of the walls and short walls from the plan.

Long walls method: Long wall length out-to-out = center to center length + half breadth on one side

Short walls method: short wall length in-to-in = center to center length – one breadth

Conclusion:

It is a well-known fact that up-to-date and reliable databases and information systems that support estimators are needed to make accurate cost estimation for different phases of the building construction process. Recent developments in information and communication technology enable to the development of such kinds of tools. However, the most important matter in cost estimation is the simplicity and applicability of the system to the factual cases. Cost estimation systems must be simple, reliable, flexible and convenient to the nature of the application area.

Several computer-aided cost analysis and two cost estimation systems have been developed for different phases of the building construction process in

Istanbul Technical University (ITU). One of them, the building cost estimation model based on functional elements in the feasibility and schematic design phases developed for residential projects is introduced in this paper.

The building cost estimation model based on functional elements helps the user to estimate the total building cost using historical data of the similar projects. Total building cost can be estimated in feasibility or in the schematic design phase depending on the detail level of project data available.

#### REFERANCE-

1. Estimation and costing by B.N.Dutta
2. Building const. by Dr. B.C. Punmia