

# Estimating & Costing-I (26442)



**WELCOME TO ALL**

# Chapter One

## Concept of Estimating



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## Concept of Estimating



### ESTIMATION

Estimation or estimating is the process of **calculating the quantities of various items of works** involved in the project.



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### এস্টিমেট (Estimate) :

সাধারণভাবে প্রকৌশল কাজের সম্ভাব্য পরিব্যয় (Cost) নির্ণয়ের পদ্ধতিকে প্রাক্কলন বা এস্টিমেট (Estimate) বলে।

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### ESTIMATE

Estimate is a document which furnishes **the quantities of different works involved, their rates and the expenditure** anticipate in a project



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### NECESSITY OF ESTIMATES

- To know about the approximate cost of the building construction.
- To calculate the tax of the building
- To fix the rent of building
- The know about the various items of works involved in the building construction and arrange the available materials of the construction.
- To arrange the labours of the construction works.
- Take the approval for the government projects.
- To having the loan from the bank.

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### QUANTITY SURVEYOR

- Takking Off Quantities
- Squaring Dimension And Calculating Of Quantity
- Data (Calculation Of Rate Per Unit)
- Abstract Estimate
- Measurement Billing.



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### DUTIES OF QUANTITY SURVEYOR

- The quantity surveyor must be well versed with the drawing of work.
- He should be able to read the drawing correctly and bill the quantities accurately.
- He should have the knowledge of the construction procedure
- He should be able to write the description of different works.
- He should be able to prepare the schedule of the project
- He should be able to value all variations under the contract.



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### TYPES OF ESTIMATE

The estimates may be divided in to the following categories:-

- (1) Preliminary or Approximate estimate.
- (2) Rough cost estimate based on plinth area.
- (3) Rough cost estimate based on cubic contents.
- (4) Detailed estimate.
- (5) Annual repair estimate.
- (6) Special repair estimate.
- (7) Revised estimate
- (8) Supplementary estimate.
- (9) Complete estimate.



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এস্টিমেটের প্রকারভেদঃ বিভিন্ন ধরনের এস্টিমেটগুলো নিম্নরূপ :

- ১। প্রাথমিক বা আনুমানিক বা রাফ এস্টিমেট (Preliminary or Approximate or Rough Estimate)
- ২। পোতা ক্ষেত্রফলভিত্তিক এস্টিমেট (Plinth area Estimate)
- ৩। ঘনত্বভিত্তিক রেট এস্টিমেট (Cube Rate Estimate or Cubical Content Estimate)
- ৪। আনুমানিক পরিমাণভিত্তিক এস্টিমেট (Approximate Quantity Method Estimate)
- ৫। একক দরভিত্তিক এস্টিমেট (Item Rate Estimate or Detailed Estimate)
- ৬। সংশোধিত এস্টিমেট (Revised Estimate)
- ৭। অনুপূরক এস্টিমেট (Supplementary Estimate)
- ৮। অনুপূরক এবং সংশোধিত এস্টিমেট (Supplementary or Revised Estimate)
- ৯। বাৎসরিক মেরামত বা রক্ষণাবেক্ষণ এস্টিমেট (Annual Repair or Maintenance Estimate)

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### 1. Preliminary or Approximate Estimate

This estimate is prepared to decide *financial aspect, policy* and to give idea of the cost of the proposal to the competent sanctioning authority. It should clearly show the necessity of the proposal and how the cost has been arrived at .

**The estimate which is prepared using any rough method to get approximate cost of the construction anticipate in a project is called approximate estimate.**

The following documents should be attached with it.

- (a) Detailed report
- (b) Site plan of the proposal
- (c) It should also clearly mention about the acquisition of land, Provision of electric and water supply etc.

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প্রাথমিক এস্টিমেট : মজুরি লাভের উদ্দেশ্যে যথাযথ কর্তৃপক্ষকে পরিকল্পের (Scheme of Project) আর্থিক দিক সব জন্য স্বল্পতম সময়ে যে এস্টিমেট

প্রস্তুত করা হয়, তাই প্রাথমিক এস্টিমেট, যেমন : আবাসিক প্রকল্প (Residential Building Project), ইরিগেশন প্রজেক্ট, ইত্যাদি।

পোতা ক্ষেত্রফলভিত্তিক এস্টিমেট এ পদ্ধতিতে প্রস্তাবিত এলাকায় একই ডিজাইন, বিনির্দেশে নির্মিত অনুরূপ শ্রেণির ইमारতের পোতা ক্ষেত্রফল নির্ণয়ে মেঝের তলস্ত বহিমাএর পরিমাপ নেয়া হয়।  
উদাহরণস্বরূপ- দালান অনেকগুলো অংশে বিভক্ত

বুনিয়াদ, দেওয়াল, মেঝে, স্ল্যাব, দরজা-জানালা, ইলেকট্রিক, স্যানিটারি ও পানি সরবরাহ, আনুষঙ্গিক পযায়ে এক অবিচ্ছেদ্য অংশ হিসাবে দণ্ডায়মান। তাই এগুলোর মূল্যায়নের জন্য একটি প্রচলিত রীতিতে বিভিন্ন অংশগুলোর খরচ ও দর বাহির করে একটি মান মূল্য নির্ধারণ করা হয়।

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### 2. Plinth area Estimate (Based on Rough Cost)

**Plinth area of a building means Length x Breadth ( roofed portion only ) excluding plinth offsets. The estimates are prepared on the basis of plinth areas of the various buildings proposed to be constructed. The rates are being arrived at the dividing the total cost of construction with its plinth area.**

The following documents are attached with the estimate.

- (a) Line plan with brief specifications.
- (b) Cost of various services added i.e. electric and water supply etc.
- (c) North line should be shown clearly on line plan.

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### 3. Detailed Estimate

- After getting Administrative approval on rough cost estimate, detailed estimates are prepared.
- The estimate which provide the itemwise quantities of works, itemwise unit rate and itemwise expenditure in the project is called detailed estimate.
- In this, the estimate is divided in to sub-heads and quantities of various items are calculated individually.
- The detailed estimate shall also provide for the cost of approach road, water supply, electric installations and acquisition of land etc., so as to call it a comprehensive estimate.

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### 4. Cubic Contents Estimate

- The cubic contents of a building means **plinth area x height of the building**. The height is taken from top of floor level to top of roof.
- The cubic contents of the proposed building are multiplied with cubic rates arrived at for the similar construction i.e. total cost of construction divided by cubic contents = cost per cubic metre.

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### 5. Annual maintenance estimate

**Annual maintenance estimates are being prepared by the concerned department for getting allocation of funds made in the annual budgets.**

In order to keep building and roads in perfect condition, annual repairs should be carried out as follow:-

- (i) In case of a building-white washing, oiling and painting of doors and windows, cement plaster repairs (inside & outside), repairs of floors etc. In no case this annual repair amount should increase more than 1 1/2% to 2% of the capital cost of the building.
- (ii) In case of a road-filling patches, maintenance of berms etc.



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### 6. Special repair estimate

**If the work cannot be carried out of the annual repair funds due to certain reasons resulting in the genuine increase in cost, then special repairs estimate is to be prepared.**

The reason of increase may be:-

- (i) In case of a building-opening of new doors, change of floors, plastering walls etc.
- (ii) In case of roads-if the whole surface is full of corrugation & patches, then the total surface is to be scarified. The old metal is taken out, consolidation by adding more metal is done and top surface is repainted.

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### 7. Revised estimate

When the sanctioned estimate exceeds by 5% either due to the rate being found insufficient or due to some other reasons, a fresh estimate is prepared which is called a Revised Estimate. A comparative statement on the last page of the estimate is attached giving there in the reasons of the increase of cost in case of each item.

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### 8. Supplementary Estimate

This is fresh detailed estimate in addition to the original sanctioned estimate prepared when additional works are deemed necessary during the progress of a work to supplement the original works. The abstract of cost should show the amount of the original sanctioned estimate as well as the supplementary amount of the original sanctioned estimate as well as the supplementary amount for which sanction is required.

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### 9. Complete estimate

- The estimate which includes, in addition to the cost of construction, the cost of land, the expenses towards surveying, preparation of plans and estimates, legal assistance, registration of documents, payment of taxes and service charges , etc.... Is called complete estimate.

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### Sub estimate

Sub estimate are being prepared for each and every such items in detail to ensure and see that the expense towards these items do not exceed the corresponding provisions already made in the original estimate.

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**Any Question Please ?**



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**Thank you**

**for**

**Kind Attention**