



Different Techniques For Cost Reduction In Construction

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Abstract: For the construction project cost is too variable on site and estimated cost, on site there is various types of changes occurs so due to that cost of project is increases. For the construction work main objective of that project is cost reduction and maintain the quality of work as well as complete within the time. Duration of activity is increases it directly effects on the cost of that project.

Objective of this paper to reduce the cost of construction by using Proper Planning, Estimation, Material Replacement, Project Monitoring Techniques, by reducing project overruns, Material Management Techniques, etc. This will help us to reduce the duration of project, maintain the quality and it will be completed within stipulated time. This paper is covering the discussion on the how to select the plot, how to plan activities on site as well as factor which are affecting directly on the cost of construction.

Index Terms–Project Monitoring Techniques, Material Management, Cost Control, Cost Overrun Quality, Estimation, etc.

I.INTRODUCTION

The wastage of material and time both factor are responsible for the increase in the cost of construction as well as increases the duration of the project work and all activity of construction being late, so it's necessary of proper planning, Scheduling and control the wastage of material by using various types of techniques for that it's necessary to keep record of material by using proper methods. Project planning and scheduling is the sole of construction industry and cost reduction techniques is not an easy task. Cost control techniques should have to properly used by the related activity contractor under observation of site engineers and there is main role of store manager also important for that he should have to check on site material availability which is issued before after that checking all things he should allow for issue the material, and on site there should have proper control on employee also because of some money are given on site as a contingency from that money site engineer purchase local material so that it fails to complete within the cost of that activity or project, at the time of construction there are more difficulties arises such as increase the material cost and well shortage of material and labour shortage, material wastage, climate condition as well as main factor that is the loss of communication

Attention should be most important things for the reduction of the cost of construction in that main factor is resources, If the area of construction is less that time there should have to avoid use of high resources like more labour.

1.1 Related terminologies:

- a. **Project Monitoring Techniques:** It is the techniques of project tracking as well as progress, budget and associated tasks to ensure everything is completed on time as per requirement.
- b. **Material Management:** It is the process of control the flow of material as per construction activity.
- c. **Cost Control:** project cost control is nothing but managing the cost of project expenses protecting financial project risks.
- d. **Cost Overrun:** It is nothing but increase in the actual cost which is calculated while planning.
- e. **Estimation:** To calculate the approximate cost of the project is called Estimation.

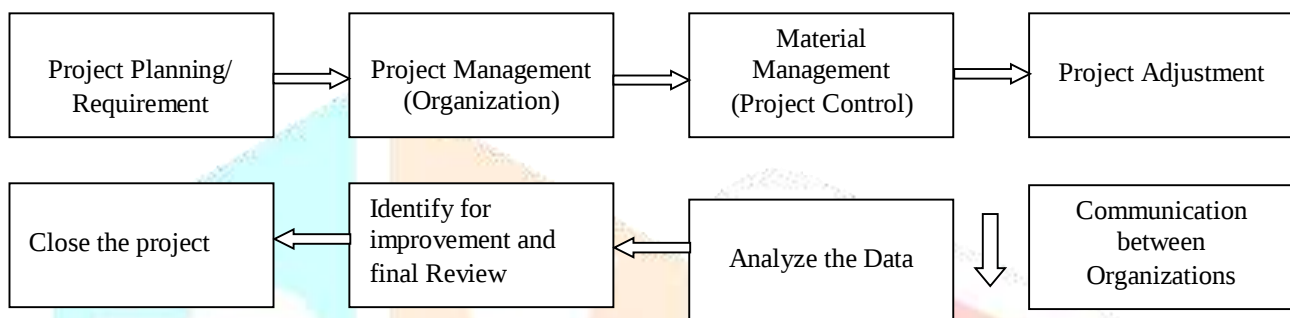


Fig.1.1 Project Management Process

II.LITERATURE REVIEW:

Using Advance Methods and Replacement Reducing in Cost of Construction paper of P.Sathish and A. Basker they discussed on achievement of satisfactory results of time and cost by applying cost reduction techniques. The selection of low-carbon and sustainable building material is crucial in reducing and built environment's carbon footprint (ISSN:2393-8374, Vol-7, Issue-9,2020).

Cost Control Techniques for Construction Project' of Punam Bhimrao Kokate, Prof. Milind Darade they reduced the cost of construction of residential building by using alternative material as well as to reducing the reactive accident which is reduces the cost of project work.(e-ISSN: 2395-0056, p-ISSN: 2395-0072, Volume: 05 Issue: 06 [June 2018]).

'Impact of Cost Control Techniques on Cost Overruns in Construction of S.N. Malkanthi, A.G.D Premalal and R.K.P.C.B. Mudalinge they concentrated on cost control as at present the construction industry is using different cost control techniques and they suggested that CIDA(ICTAD) should encourage contractor to use controlling techniques by conducting training Program, Awareness Program.(Vol.L,04,pp.[53-60] 2017).

'Cost Planning and Estimation for Residential Building' of Punam Bhimrao Kokate, Prof. Milind Darade calculated the preconstruction cost of residential building by using elemental method for more accuracy of cost.(Vol.3, Issue 4, April-2018, ISSN No:-2456-2165)

III. Methodology:

This Research include both Cost Control and Quality of work because when we decide the to reduce the cost of construction that time quality of material decreases, so we must maintain the quality of work and project will be complete within the duration without any difficulties, so the proper methodology is given below:

3.1 Process of Project Management:

- **Project planning/Requirement:** while planning the project that time first off, all we need to do the survey for location of the project after that investigation related to soil for foundation design before that for cost reduction site should be clean and space for material storage should be available on site, if not available then transportation cost will be increase and plus RMC required so the machine cost also increases. While we going to Select the plot, we need to focus on following factor which is directly effects on cost of construction:
 - i. Plot should be on road site
 - ii. Confirm the water supply and Electrical Supply
 - iii. Structure of Construction should be Rectangular
- **Project Management (Organization):** project management is also important factor for consideration for cost control. In organization there should have proper control on every employee such as site engineer, supervisor, store manager and project manager including contractor and labor also, all should have to report every activity as well daily work to the higher person so all can keep record of every material and account. Then and then there will be transparency between work.
- **Material Management:** In all types of Construction project the material plays an important budget-effective role. Purchase the material in a lot so can get the more discount on cost of material as well material should have to purchase from local dealer because we get more cost reduction on rate, while purchase the material first step is make comparative from at least three dealers and go for lowest price and make attention on quality of material also.
- **Project Adjustment:** Project Adjustment is nothing but adjustment made during construction in terms of cost, in terms of design and planning, specification, changes in rates that should have to recalculated and redesign so it should be easy for cost calculation. in project adjustment we have to remember the rate of material as we have planned as per that at the time of construction if there is need to replace the material it should also follow by the owner for reducing the cost of project.
- **Communication between Organizations:** Keeping clear communication across organization it can help improve cost reduction. Cost management tools, such as cost presentations, can help communicate cost information to different audiences.
- **Analyse the Data:** Analyse the data means the collecting and examine the design and drawings as well as collecting the information about customers demand what they want as per that information should have to decide the goals and process for controlling the cost.
- **Identify for Improvement and Final Review:** While analysing or review the project we have to find out the areas of improvement, determine the project track as well as cost track, requirements and determines the projects fulfilment as per requirement that will effect on cost control.
- **Close the Project:** Review all expenditures, make any outstanding payments, and ensure that invoices and contracts are closed to ensure the total cost.

3.2 Project Monitoring Techniques: By using various techniques like CPM i.e. critical path method Risk management, Quality assurance as well as workload assessment.

3.3 Material Management Techniques: By using EOQ analysis, Inventory managements as well as ABC analysis and main thing is to material requirements planning we have reduce the cost of construction.

3.4 Reducing Accident on Site: Reducing the proactive and reactive accident on site we can reduce the cost of construction.^[2] as per **Punam Kokate** in Cost control techniques in construction site.

3.5 Estimation: By using elemental method calculate the cost of each and every element in construction process.^[4] as stated in 'Cost Planning and Estimation for Residential Building' of International Journal of Innovative Science and Research Technology of Punam Bhimarao Kokate.

IV.CONCLUSION:

As on above research for cost control technique we have to decide the actual process of project cost control as per that strategy need to decide the aim of the project as per that aim or goal we have follow the guidelines while doing the task. We have to focus on project planning, project monitoring, Estimation as well as material management techniques, the parameter which said in project management process that have to look while execution of project.

The decision for cost control should have to do immediate for cost control as like material replacement as per rate in market as well as changes in design also.

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