

# Cost Control Techniques for Construction Project

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**Abstract** - Today due the increasing the population space required for living to human being is decreases so need to build-up high rise structure, budget required for construction of high rise structure in too much. For high rise structure first of all to calculate the cost required from drawings. The cost required for construction is more that time need to reduces the cost by using various methods and techniques. In this research the cost of construction of residential building is reduced by using alternative material as well as to reducing the reactive accident which is reduces the cost of project work. At the time of construction of building think on the important issues like same project work done in past mean that to avoid the proactive accident done on same project. In this project the cost is controlled by reducing the wastage at the time of construction such as material waste (bricks, concrete and wood) , insulation nails, electrical wiring, etc.

**Key Words:** Cost planning, Cost plan accuracy management, Cost control, Cost reduction, Budget

## 1. INTRODUCTION

### 1.1 Importance of cost planning and cost control

Now days in construction sector the main objective is the reduce the cost of project or the control the cost of work and the finish the project work within the duration of project hence we can reduces the cost of project. The cost plan is useful for the controlling the estimated cost of project during the construction and the design phase of work. The success of the construction project or the construction sector is depends on the how the management reduces the cost of the work. The management of inventory like material management, scheduling, avoiding cost overrun, etc., the management of project work is doing in systematically means according to the day by day activity that time it is easy to understand and easy to obey, then time required for the understanding the activity and it's time period is less so due to this project is completed within the duration that time there are a lot of chances to control the cost of project. The cost plan is provided one type of cost framework and it's make sure about the project is within the budget or not. The cost planning is done according to the architectural drawings, as well as market rate of material, labour, equipment, etc.

### 1.2 Concept of cost planning and control

- 1) Cost Planning: Cost planning is the process of management looks for the control the design and development with the buyer's budget. This help to buyer for choose the how he/she wants to issue the budget to the different types of part of project work, and it is used for representational cost plan for project. The project planning is providing the cost structure of the work. It is useful for the deciding the cost of project or the budget of project and the activity of element construction work as well as the duration of project work.
- 2) Cost control: Cost control is the process of reducing the project budget by using various techniques and by replacing the alternative material which help to reduce the cost of project. The cost is controlled by using the past construction information and reducing the wastage of material, extra equipment as well as the using the alternative material by replacing costly material for construction. The main aim of cost control is the gain maximum profit within the decided project duration.

### 1.3 Problem statement

In construction sector it is usually the actual cost of project work is more than estimated cost. This type problem need to proper management, planning and control the work to resolve this type of problem, so the cost of work can control by the replacing the material by alternative material and reduces the proactive and reactive accident.

### 1.4 Objective for the project work

The objective for the project is the control the cost of project by replacing the alternative material and the avoiding the proactive as well as reactive accident at construction site.

### 1.5 Description of project work

The project work choose for the study is the residential building 'Pride Ashiyana' it is the suburban area of Dhanori situated near to lohegaon, Pune. It offers 548 apartments covering the total area of 10 acres; this is only for the second phase of construction of project.

## 2. LITERATURE REVIEW

### 2.1 Background for the study

Layer et al. (2002) found the three different kinds of estimation calculations within the production process, along with a diagram representing the concept of determining costs. Pre-calculation estimates the future costs before start of production and used for cost based decision making as well as intermediate calculations are performed within the project for the purposes of control the cost.

Most of the problems on building sites are the wastage of material due to the varying circumstances (Butler 1982). This type of problem need to strict supervision on the losses. According to the Hendrickson (1988), the wastage of material takes place within the procurement process, storage and uses i.e. the damage due to the unnecessary handling, transportation etc. According to Chitkara (2005) some of unavoidable wastage is inherent during utilization, but excessive wastage of concern to the material management and it affects productivity adversely, with consequences of extra cost. Alinaitwe (2006) observed that construction of industrializing would probably reduce the cost of construction by about 30% which would likely settle the backlog of 25% of Ugandans without proper housing.

Chitkara (2005) said the relationship between the time and cost is very important for the control the cost of project. It is important to keep record and daily report of all work involving material, labour and plant on sites daily diary report and the project budget. Labour productivity achieved at the construction site for given task provides a measure of laborer's efficiency and the level of site organization. It shows the total time for which labour was employed at work, the time he was productive on work and the time he remained unproductive (Chitkara 2005).

## 3. RESEARCH METHODOLOGY

### 3.1. Introduction

For this project the cost is controlled by replacing the alternative material which can help to control the cost of construction as well as the maintain the quality of construction.

#### Cost control techniques

In this research the cost is controlled by avoiding the reactive and proactive accident.

1. The proactive accident which avoids at the time of construction which given bellow:
  - Create the safety plan specific to the project and site.
  - Training should be provided ongoing activity of project to all employees.

- Do not allow the work to resume until the issue has been adequately addressed.
- Monitor, evaluate and adjust. As work progresses, conditions changed drastically from one day to next day.

2. The reactive accident which avoids at construction site as bellow:

- The worker not wearing the proper protective aprons for job.
- A worker not following the rules and regulation.
- Tools and malfunction and misuse.

#### *Cost is controlled by using alternative material*

The material which is replaced by using alternative material which is save the profit and maintain the quality.

The material which is replaced is given in table.

Element	Alternatives	Alternative chosen	Justification
Window	Glass louvered aluminum frame, Glass casement	Powder Coated Aluminum	Preserve the cool air, lower electricity consumption; longer machine life.
Floor	Parquet, cement sand screed, polyvinyl plastic terrazzo, ceramic tiles	Terrazzo ceramic tiles	Durable withstands moisture, abrasion resistant, easy to clean.
External render	Tyrolean render, emulsion paint	Special weather resistant paint	Resist mould attack which is common in the locality.
Plumbing and Eng. Install	Vary	Grouping of pipes on one stake	Easy maintenance

## 4. CONCLUSIONS

This project of residential building is accomplished as per planning, estimating and controlling. Total cost of project can be calculated in feasibility; even in case of knowing the constructional area that time it's easy to calculate.

As per planned:

Project duration=550days

Planned budget of project=555,972,500

After updating day to day progress report up to 10<sup>th</sup> February 2018

Original duration=460 days

Actual cost=535,923,400 the project is completed.

The cost is reduced about 3.5% of planned cost budget.

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