

MANAGEMENT OF COST AND TIME IN CONSTRUCTION PROJECTS

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ABSTRACT: Construction planners face the challenge of optimum resource utilization to compromise between different aspects of projects, especially time and cost. Recent contracts consider the quality performance of projects in addition to time and cost. These new and emerging contracts impose an increasing pressure on decision makers in the construction industry to search for an optimal/near-optimal resource utilization plan that minimizes the construction cost and the time, while maximizing its quality. This creates new and pressing need for advanced resource utilization models that are capable of optimizing the multiple and conflicting objectives of construction time, cost and quality. If durations of the activities are compressed, the cost will increase due to more resources allocated to their rapid accomplishment. On the other hand, using fewer resources will result in extended duration of activities. In addition to time and cost of activities, every resource utilization option will yield a specific performance quality. Trade-off between these conflicting aspects of project is a challenging job and as such planners are faced with numerous possible combinations for project delivery.

OBJECTIVE

The objective of this project is to reduce the increased project duration from original duration and to meet a specific deadline, with the least cost. . Recent contracts consider the quality performance of projects in addition to time and cost. These new and emerging contracts impose an increasing pressure on decision makers in the construction industry to search for an optimal/near-optimal resource utilization plan that minimizes the construction cost and the time, while maximizing its quality. If durations of the activities are compressed, the cost will increase due to more resources allocated to their rapid accomplishment. On the other hand, using fewer resources will result in extended duration of activities.

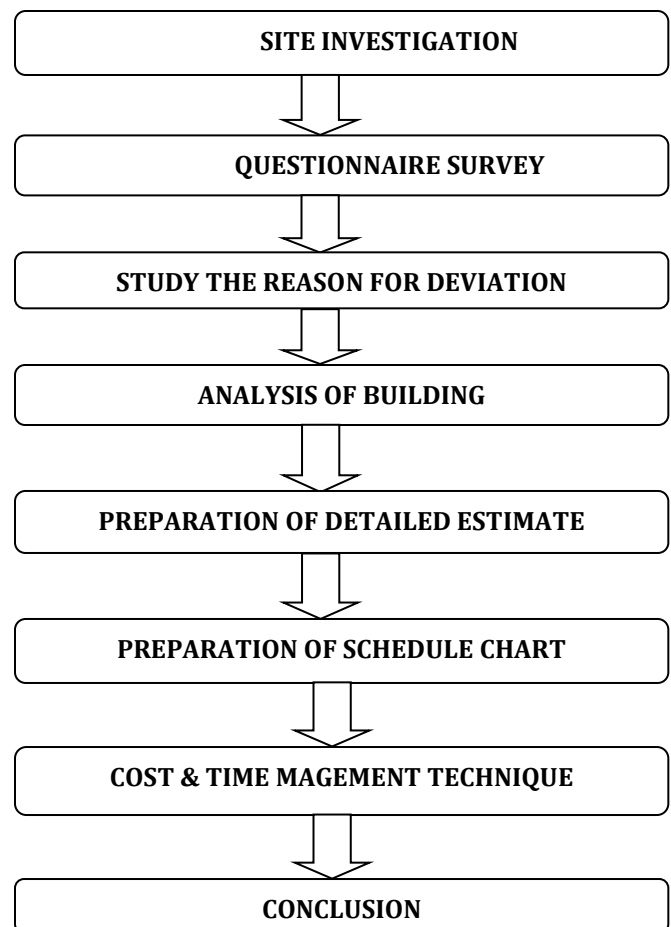
In addition to time and cost of activities, every resource utilization option will yield a specific performance quality.

In addition to that it might be necessary to finish the project in a specific time to:

- Finish the project in a predefined deadline date.
- Recover early delays.
- Avoid liquidated damages.

METHODOLOGY

The Methodology for achieving the above objectives are as follows:



BUILDING DETAILS

- The building is a residential building consisting of 2 floors.
- Each floor has 5 flats.
- Foundation of the building is normal single rectangular foundation
- The building is a framed structure,

ESTIMATION

The total budgeted estimation the building is Rs.79,50,000/-

SCHEDULING

The total budgeted duration of the project is from 10th Nov 2016 to 27th June 2017.

FACTORS AFFECTING THE COST & TIME

- Local social problems.
- Environmental conditions.
- Lack of resources.
- Local festivals.

TECHNIQUE FOR COST & TIME MANAGEMENT

The cost and time can be manager by using crunching and crashing technique and it is analysed in the primavera software.

REPORT

- **BY CRUNCHING TECHNIQUE**

WBS Code	Actual Total Cost	WBS Name	Total Activities	Earned Value Labor Units
G+2-5	rs7,787,602	sri appartments 1 project	153	5095h
G+2-5.1	rs928	SITE WORK	3	25h
G+2-5.2	rs703,100	FACILITATE AT SITE	3	72h
G+2-5.3	rs413,961	FOUNDATION	11	233h
G+2-5.4	rs287,006	PLINTH BEAM	9	216h
G+2-5.9	rs1,160,523	GROUND FLOOR	24	848h
G+2-5.9.1	rs612,976	COLUMN 1	6	220h
G+2-5.9.5	rs353,092	BEAM 1	5	111h

ACTUAL COST =7787602, Project ends on 5th june 2017.

- **BY CRASHING TUCHNIQUE**

WBS Code	Actual Total Cost	WBS Name	Total Activities	Earned Value Labor Units
G+2-5	rs8,254,269	sri appartments 1 project	153	5095h
G+2-5.1	rs928	SITE WORK	3	25h
G+2-5.2	rs703,100	FACILITATE AT SITE	3	72h
G+2-5.3	rs413,961	FOUNDATION	11	233h
G+2-5.4	rs287,006	PLINTH BEAM	9	216h
G+2-5.9	rs1,160,523	GROUND FLOOR	24	848h
G+2-5.9.1	rs612,976	COLUMN 1	6	220h

ACTUAL COST =8254269, Project ends on 27th june 2017.

RESULT

The cost and time of the construction project is managed effectly by crunching technique, from that the actual cost will be Rs 7787602 and actual project completion is on 5th june 2017.

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