



Studying Project Management System for Mumbai Residential Building

AYUSH BHARDWAJ¹, MANAV DAVE², OMKAR MAHIMKAR²

Dept. of Civil Engineering, Thakur College of Engineering and Technology, Mumbai, India¹

Dept. of Civil Engineering, Thakur College of Engineering and Technology, Mumbai, India²

Dept. of Civil Engineering, Thakur College of Engineering and Technology, Mumbai, India³

Abstract: Construction management is a diverse discipline focused on the delivery of projects that compose the world's built environment. Included are the determination of project requirements, management of design, procurement of materials, and management of the construction of the project within cost, time, and design parameters. In terms of rupee value output, the construction industry is the largest single production activity in the Indian economy- accounting for almost 10 percent of the gross national product. The construction industry is heterogeneous and enormously complex. The major classifications of construction differ markedly from one another: residential, commercial, industrial, and infrastructure, as well as specialties such as electrical, mechanical, framing, excavation, and roofing. In this paper construction management of residential buildings is studied and optimum solutions are found to minimize the construction cost of the building. Construction management is the study of how projects are conceived, designed, and built; the types of materials and methods used; techniques for estimating the cost of construction; design and contract law construction accounting oral and written communications; safety requirements; project planning and project management.

Keywords: project, management, Mumbai, building, residential.

I. INTRODUCTION

One of the most persistent problems in the construction industry is the delays in the completion of construction projects. In a previous study, in the same specific location where the present study was carried out, 28% of the contractors participating in this study pondered construction delays were very frequent, and 61% regarded delays as comparatively less frequent, while only 11% indicated that they were occasional. Thus, in the construction industry it is very common for contractors failing to complete the projects on time. Then sequences of delays is fairly visible on all people and organizations involved in the project. This condition mainly prevails for the owner's business since any delays in the start-up of the project will impede obtaining the expected project revenue and will significantly increase financial costs. In addition, the owner may face several other difficulties resulting from the commitments assumed based on the delivery date established in the contract. On the other hand, prolonging the project execution time usually results in contractors that have to deal with cost overruns due mostly to the following causes: extra cost on management personnel, increase of price of materials, extra financial cost, paying contract penalties, and so forth. The construction industry is very competitive, the contractors unable to complete the project on time face severe losses with their reputation at stake. The projects quality is significantly affected if less time is allocated to the quality control team. The workers are usually required to work overtime to keep a check on the lost time. In developing countries delays during the construction of public assets, such as schools, could also result in social harm given the fact that this kind of infrastructure is usually urgently needed. Therefore, the sooner those projects are completed, the better for satisfying the social needs in those countries.

II. NEED TO STUDY

Construction Management- Proper management of construction work can be done by giving importance to Risk, Cost and Schedule. The study of this professional service with the help of specialized management technique will help to oversee the planning, design, and construction of a project from start to end.

III. CAUSES OF DELAY

We asked the engineers at the site and managers of the project about the reasons due to which the project was delayed. reviewing all the reasons, we came to the following main reasons Unpredictable weather conditions. Most of the



construction works are carried outside without any shelter. As a result, construction sites are exposed to weather. This site is situated in Mumbai. Hence from June to September this city experiences heavy unpredictable rainfalls. During heavy rainfall periods, the site is closed as it is difficult to work under such adverse conditions. The project management process is facilitated by closely monitoring weather predictions. Allowances were made in the month of June as “Bad weather days”, but in the month of September, there were days of unexpected rainfall and as a result the construction was delayed.

1. Lack of Finances.

This is one of the most important cause for a delay in a construction project. Inability to purchase the materials needed for completing the job and problems in check clearances causes delay. It is important to plan the estimates with your contractor and plan the date and day of ordering the materials so that the work is not delayed at any point of time. It may be possible that the quality control team gets involved because of poor material quality and suggests to re-order the materials which can also cause an unavoidable delay.

2. Inadequate Communication.

In almost every construction firm, there is a major problem of lack of communication. All the project managers and engineers gave this as one of the main reasons for a project delay. It is essential to establish proper communication methods between all the major parties including the Architect, Contactor, Site Engineer, Design Engineer and the Developer. Significant amount of time can be saved if there is a proper communication between all the parties. A regular correspondence is recommended by providing detailed weekly and monthly status reports to regularly update everyone on the progress being made on the project.

3. Inadequate project tracking.

This can cause the project to fall behind very quickly. It is often the case when project manager is handling more than one site. In experienced project manager may fail to keep an eye on each and every project which can cause the delay.

4. Administrative Approvals.

The government authorizations often take a significant amount of time and thereby cause delays. Even though project managers provide an adequate time for these approvals but in most of the cases approvals take more time. As a result, the whole project is delayed and in some case it is delayed by even a month

Methodology

1. By studying the detailed scheduling of the project

In project management, schedule is a listing of a project milestones, activities, and deliverables, usually with intended start and finish dates.

Planning and scheduling of construction activities helps engineers to complete the project in time and within the budget. To develop a project schedule, the following needs to be completed:

- Project scope
- Sequence of activities
- Tasks grouped into 5 project phases (conception, definition & planning, launch, performance, close)
- Task dependencies map
- Critical path analysis

By doing the cost assessment of the project

Cost assessment is a broader term which consist of analysing various cost incurred during the project which results in minimizing the overhead cost of the project. Project basically includes three types of cost Direct cost Value of all the goods, services, and other resources that are consumed in the provision of an intervention, side effects, other current and future consequences linked to it. Indirect cost Indirect cost are costs that are not directly accountable to a cost object (such as a particular project, facility, function or product). Indirect costs may be either fixed or variable. Indirect costs include administration, personnel and security costs. These are those costs which are not directly related to production. Some indirect costs may be overhead. But some overhead costs can be directly attributed to a project and are direct costs. Thus by doing thorough analysis of cost inculcated the losses in the project are minimize on account of maximum profit.

3. Providing optimum solutions from our perspective in case of any delay

Optimum solutions includes of preparing risk register in which we will study daily progress reports and find out various delays occurring in the project which will help us in identifying the risk involved in the project and providing various ways and means to mitigate the risk.

4. Collection of data

The process of data collection is done by doing regular site visits through which we will get an idea of various task involved in the project and understanding the same. Further data is collected by collecting weekly reports from the site engineers which will give us the overall knowledge of daily progress of various activities of the project. Diaries, logs, and daily field reports keep track of the daily activities on a job site each day.



IV. TABLE

Sr.No.	Task Name	Duration	Start	Finish	Status
1	Mobilization	10 days	4/10/17	4/19/17	On time
2	Period Plumb	5 days	4/15/17	4/19/17	On time
3	Concrete Box type waterproofing	10 days	4/20/17	4/29/17	On time
4	Raft foundation	25 days	4/25/17	5/19/17	On time
5	Plumb concrete	10 days	5/15/17	5/24/17	On time
6	vertical wall Retaining wall	15 days	5/25/17	6/18/17	On time
7	Ground floor slab	20 days	7/14/17	8/2/17	On time
8	Second floor slab	15 days	9/18/17	10/1/17	Delay
9	Third floor slab	15 days	10/2/17	10/15/17	Delay
10	Fourth floor slab	15 days	10/18/17	11/1/17	Delay
11	Fifth floor slab	13 days	11/4/17	11/21/17	Delay
12	Sixth floor slab	13 days	11/25/17	12/10/17	Delay
13	Seventh Floor slab	13 days	12/15/17	12/30/17	Delay
14	Eighth floor slab	13 days	01/2/18	01/15/18	Delay
15	Ninth floor slab	13 days	01/20/18		Delay

V. OUTCOME

- Exhibit the planning, organization, execution, and legal skills of a construction manager.
- Compare construction management technologies, innovations, and processes.
- Evaluate the logistics underlying construction systems and device strategies for managing these complexities.
- Demonstrate the financial, managerial, and cognitive acumen of a leader in the construction industry.
- Analyse how issues of cost and design impact project development and implementation

CONCLUSION

In order to carry out effective time management of a project, a project manager should exhibit the planning, organization, execution, and legal skills. The results of study reported in this paper indicate a significant effect of the use of processes related to Project Time Management on project performance, especially for completing the construction phase within the original schedule. However, the results obtained from the studies are indicative of poor project management skills. This result shows that poor project planning and controlling are one of the main reasons of project delays. Some of the delays are unavoidable but appropriate methods must be found in order to short unexpected weather conditions and the time taken for the administrative approval. One of these delays could have been shortened with use of some equipment in order to work in poor weather conditions. However, despite poor project management observed in this project, it was proved that the more effort dedicated to project schedule management the more likely to succeed on timely completion of construction projects. In most of the projects in which completion was attained on time, a greater amount of tasks associated with schedule planning and controlling was used

REFERENCES

1. The Use of Project Time Management Processes and the Schedule Performance of Construction Projects in Mexico RómelG.Solís Carcaño, Gilberto A.Corona-Suárez, and AldoJ.García-Ibarra
2. Study of Delay Management in a Construction Project byB. Indhu, P. Ajai.
3. FEM Construction Pvt. Ltd.