CONSTRUCTIOIN PLANNING AND CONTROL USING PRIMAVERA P6

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ABSTRACT

Monitoring and controlling a project is very important which is done through a complete process of collecting, recording and reporting project performance. For any construction projects around the world, time and cost plays a very important factor in completion of any project. As per report the project within the construction industry exceeds up to 30% due to irresponsible planning and execution. Due to lack of detail project sometime leads to cost overrun, time mismanagement and poor productivity. In this project we are going to plan and schedule a G+2 office building using a very conventional project scheduling software Primavera P6. Primavera provides a very comfortable space to manage project programs activities and resources with the help of its enterprise project portfolio management solution. In this project several activities and task where performed during the planning phase, duration where allotted, baseline where mentioned, activity detail, activity start and finish. Primavera helps in timely completion of the project and reduction in costs. So it is mostly uses in large construction industry. A detailed sequence of tasks are performed in order to examine the consequences of collected data in terms of scope and duration of the project. In this current project Primavera helps in planning, monitoring, scheduling, resources allocation and time management. Primavera is one the best software use in construction planning due to its better quality management process and easy results

Keywords- *Planning, Scheduling, Resource allocation, Activity ID*

1 INTRODUCTION

Construction industry is one of the largest growing industry in the world's and India get 2nd place in the race. Effective planning techniques is very important in determining the success of any project. Project cost in the construction industry continually increases up to 30% due to un-organized planning and scheduling techniques. Various construction project deals with major scheduling issues including time management, cost overrun, resources use on daily basis due to lack of proper management.

Basically by the use of Primavera P6 software. It is one of the latest and the best available tool used by various group of construction industries. It helps to plan, monitor and analyze multiple projects at same time to ensure the timely completion sand per plan and also within budget planned. Primavera is widely used in complex project where large number of activities are performed at different places and different agencies and sub organizations at same time at different levels

The main objectives of this study are basically to plan, schedule, and track a commercial project with help of primavera p6 software, and to study the results generated, the best thing possible to suggest which method is suitable for the selected commercial project. Project Monitoring acts like a advance warning tool; it is the complete process of recording the data, collecting and reporting the information regarding project performance so that work get done and can be shown to the project manager and others whenever they wish to know. Monitoring phase includes watching the progress of the project against time constrain, performance schedule and resources during actual execution of the project and also helps to identify the lagging areas in the project which require timely attention and actions when needed. Primavera p6 helps to monitor the project and to make a great control over it. Primavera guides the project between the planned progress of construction work to the actual work perform so that work get completed in the desired time.

1.2 SCOPE OF WORK

The scope of work is planning the project and define task and activities

- To schedule activities and task
- To monitor and control the activities
- To check weekly progress activities
- To monitor and control the activities
- To check weekly progress

2. METHODS USED IN STUDY

Pre data collection:

The first stage consists of literature review, setting of objectives, goals and problem statement and based on that selection of research area has been done. For the research purpose, cognizant building is taken under consideration for study.

Data collection:

For proper collection of data continuous site visits were carried out to identify the construction sequence of the project of the desired building. The data required for preparing analysis in the software is collected by the help of different staffs and contractor

Post data collection:

In this stage analysis will carried out in Primavera software to mark the construction sequence and for tracking, monitoring of the project schedule and all the reports as per planned and results generated from the software will be studied to decide the necessary changes to be brought in the order to speed up the construction work

Contract Document:

The following project Data are furnished from the contract agreement, project report and tender documents. Civil and interior construction work was performed for office building for 150 employees for IXes Technologies, NCR.

2.2 Given below are Steps Involved in Monitoring and Control in Primavera P6:

1. Creating EPS: The first step of planning in primavera is to create an ideal schedule for any project, firstly we collect all the data available for the project. The steps that can be followed in Primavera P6 software are such as to create the complete structure of the company with its branches, which is basically executing the project using primavera P6. This is known as Enterprise project structure (EPS)

2. Creating OBS: After creating EPS , organization breakdown structure is created which is the hierarchy of the project

3. Creating new project: The project contains a set of different activities and associated information that constitutes a plan for creating a product or service. The project is created under respective divisions in EPS. The project can be given planned start and finish dates. The project is assigned a calendar which can be global, resource or project calendar.

4. Creating a calendar: The calendar is plays a very important role in planning. Calendar is created and assigned to each and every activity. The calendars performs major role in defining the available work hours in each calendar days listed according to plan. Calendar also help to specify different holiday like national holidays, organizations, and project- specific work/non a workdays and resource vocation days, special holiday.

5. Work breakdown structure: It is the most essential part of planning in Primavera WBS elements have defined and organize the project elements. It continuously helps to clearly identify the deliverables, report and summarize project schedule as per plan objective and also estimated cost data at different levels of detail in the

project. WBS is a hierarchy of any project work that must be accomplished to complete a construction project in the given time period. Each and every project has its own project WBS hierarchy structure which have top level WBS element being equal to each EPS node of the project. Every WBS element contains a listed detailed in WBS levels, activities, or both resources constraints.

6. Defining activity: Defining activity is very important. Mainly activities are the fundamental and key work elements of any project and it is represented form the top to lowest level of a WBS element and, are the smallest subdivision of any project. A project activity has the different characteristics so like activity ID, activity name, start and finish dates, activity calendar, activity codes, activity type, constraints, expenses, predecessor and successor relationships, resources, roles, budget, resources etc.

7. Relationship between activity: In order to form a network, and for proper scheduling the activities should always be connected to each other, which is basically done by assigning the succeeding and preceding activities with a significant relationship to the overall project activities listed.

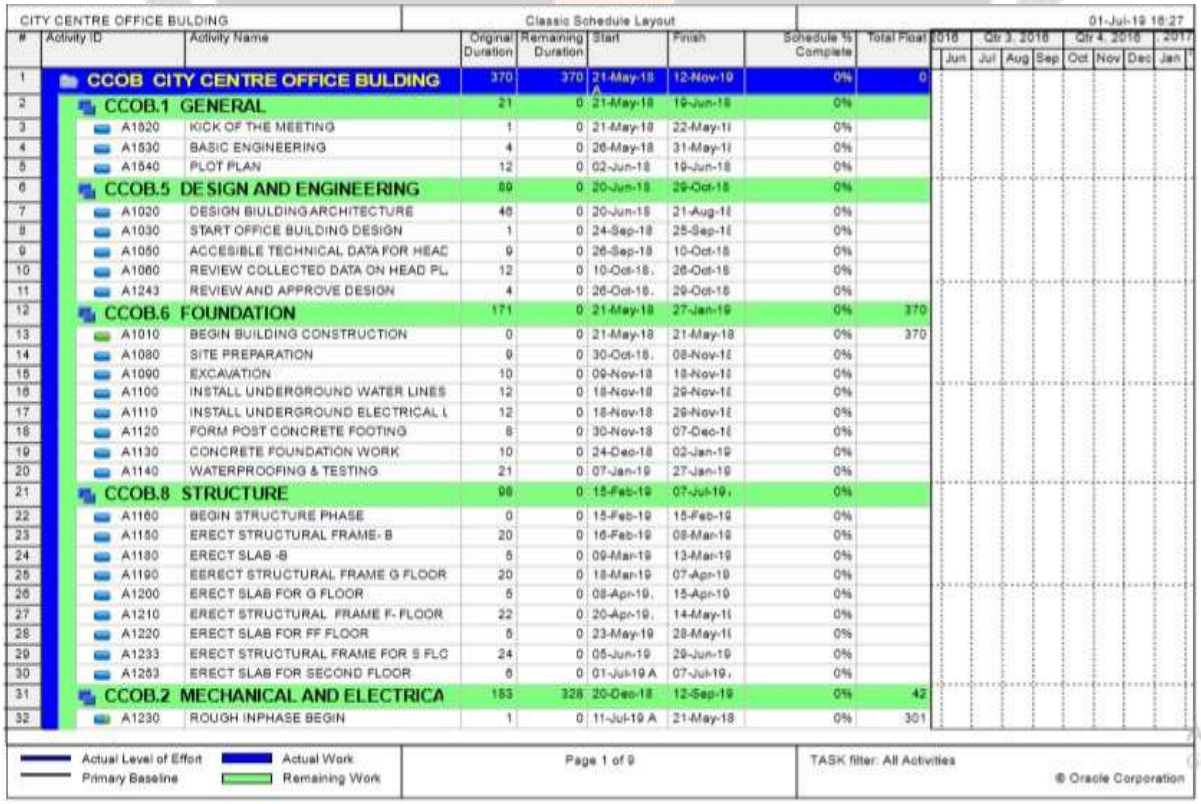
8. Activity Duration: time plays a very important role in every project. While planning the work, the given project duration is entered in the original duration field in the activity. The actual duration can only be entered for the project activities, which are completed accordingly.

9. Activity Dates: The following types of project activity dates available in the primavera; actual start, planned start, actual finish, planned finish

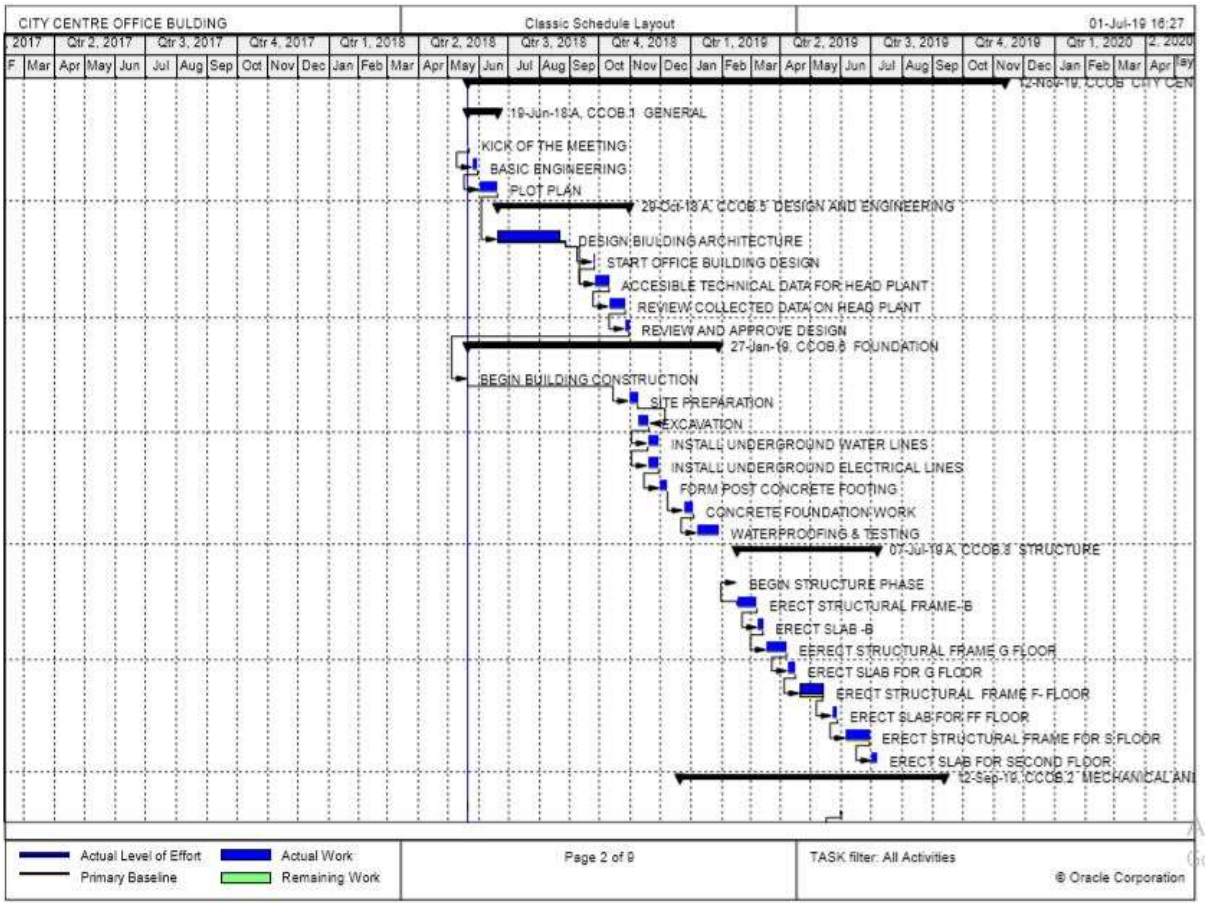
10. Creating baseline: a baseline is like milestones. A simple baseline plan is basically a complete copy of the original schedule which provides a target against which a project's performance is tracked and monitored. First step choose project. Select maintain baseline. Then add the activity and save a copy of current project as a new baseline B1 in the data. Daily updates to be made so to feed accordingly

11. Resource assigning: Resource play a very important role in construction industry. Primavera resource allocation window shows all the resources grouped by labor and non-labor. On the site most of the resources are taken as material. Human worker is listed as labor.

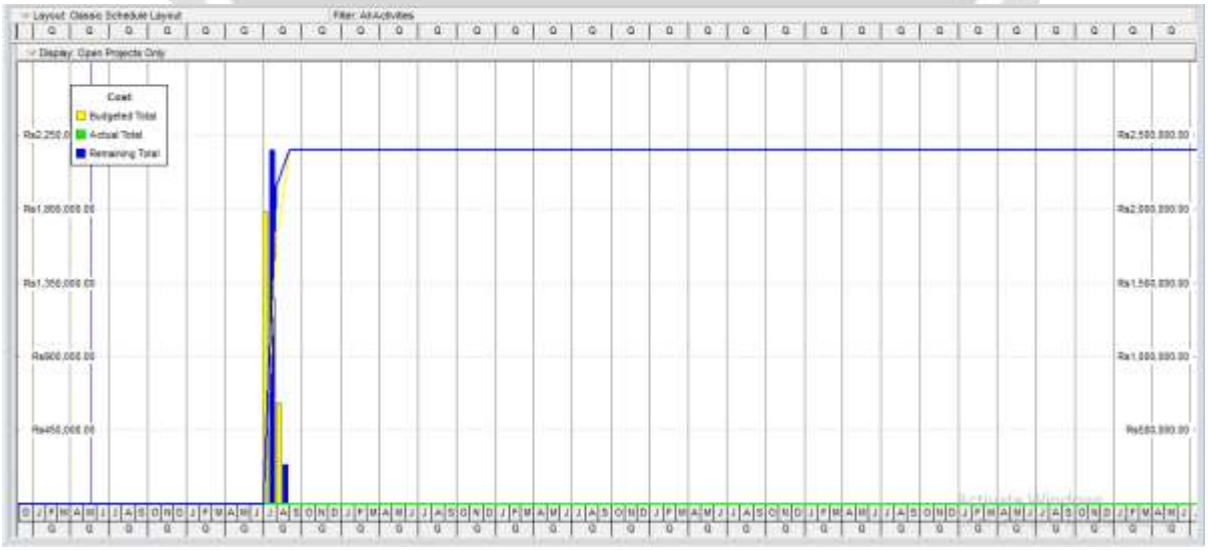
3. DATA ANALYSIS



Activity relationship



Graph between actual and budgeted cost



Conclusion:

The main objective of study is understand the role of monitoring and control during complete progress of construction work. After complete analysis on Primavera P6 through literature and methodology, it was observed that planning, scheduling, tracking can be done efficiently due to which the time duration of completion of any project can be reduced. Therefore after the keen knowledge of the software primavera p6 anyone can monitor and control the project in terms of time and cost which leads to cost optimization. Primavera helps in managing multiple project at the same time very efficiently and provides a controlled window in the project, primavera helps in managing resources and effectively work in resource leveling as well as help in the smooth flow and effectiveness of project in a construction project. In this study I was able to understand the role of monitoring, analyzing problem and control in the progress and timely completion of a construction project. It is very necessary for the planning team to carefully select and decide the activity accordingly and provide Activity ID, it helps in smooth flow of work according to scheduled program. So usefull terms like start date, end date, original duration, taskbar, gantt chart, remaining duration are present in the table to provide a clear view of the things going in the project and to provide a better understanding to the user for efficient scheduling. The study also helped me in identifying problem that arise during the process. The software is less time consuming and require no paper work, it provides detailed knowledge of cost, time, working hours, and update made in the project it helps in better tracking of the project by the method of finding out critical activity which can be given special concern to avoid delay in the project, it helps in reduction of labor cost up to 5%. This study proved to be a guide line in understating the progress of construction. Result of the study shows the basic drawbacks of the present project management system to the newly planned project management system.

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