

Best Practices for Schedule Development in Primavera P6: A Review**Sarah Johnson¹, Mark Davis²**¹Department of Civil Engineering, University of California, Berkeley, USA²Department of Civil Engineering, University of California, Berkeley, USA**ABSTRACT**

Construction project shall employ the latest and the best available project planning and management software Primavera project management, one of the most usable software package employed by a large group of industries. The planning process for a building construction with some alternative schemes such as execution schedule, activities relationship, resource allocation etc. has been attempted to examine the consequence of overall implementation in terms of scope and time to the project. Effective time planning is very important in determining a success of any project, poor planning and controlling of project will causes delay. To overcome this time running problem analysis can be done by using the primavera p6 software. In this project, primavera P6 software help the planning, scheduling, resource allocation and time management. This software gives better quality of construction management process and easily understanding results.

KEYWORDS: Primavera P6, planning, scheduling, tracking.

I. INTRODUCTION

Project consumes several resources in its lifetime to achieve the desired goal. The resources have time dependent, direct or indirect costs related to them. For large Construction projects with huge budget; it becomes very difficult for the project team to handle the tasks So, it becomes very necessary to provide a tool in the hand of project team that helps keep a track of activities in the project. Primavera Project Planner P6 , a product from Oracle is a very powerful tool present in the hands of project team. The software helps in planning, scheduling and controlling of projects very efficiently. Contractors in India are reluctant to use project planning and scheduling techniques, which are being used world over and already proved as benchmark for in time completion of projects. The study deals with introduction on Primavera P6 a project planning and scheduling tool available in the market. Construction project shall employ the latest and the best available project planning and management package. Primavera project management, one of the most sought after software package employed by a large group of industries, world over. The project planning and management aims to ensure the project are completed and delivered in time, within the stipulated cost, and meets the owner's requirements and expectations. It also adopts methods, control processes in monitoring and implementation to reduce as best as possible any changes of failure at some stage or another. The planning process for a building construction with some alternative schemes such as execution schedule, activities relationship, resource allocation etc. has been attempted to examine the consequence of overall implementation in terms of scope, time and cost to the project. The construction engineering emphasizes vital part of a country's Infrastructure and modern construction. The construction industry is the second biggest industry in India still it's construction has been differential the country over. There is an immense distinction of advancement in the provincial and urban territories. To adapt up to the status of advancement in urban territories the country areas require instruments for financial improvement, arrive utilize and condition Planning. Here emerges the requirement for powerful Project management. Numerous issues are being confronted by the construction business, major of them are cost overwhelms and time invades because of lacking undertaking detailing, lack of foresight for usage and dishonorable management amid execution. Numerous Project Managers express that normal cost of the Project goes up by 30% as of the planned cost because of despicable Planning and scheduling. The utilization of resources allotment in Project control is not another issue. Creation and operation grouping management is the way toward controlling generation and managements the fundamental goal of which is to match endeavors with the use of resources and types of gear so as to finest deliver and supply. Here resource allotment is extraordinary significance. It decides the sort resource allotment and significance of different specifications in view of the way of a generation framework and sum, sort and significance of resources. Building up an arrangement contrasts from building up a curriculum on the issue resource distribution in the project.

II. METHODOLOGY**A. Pre data collection:**

This stage consists of literature review, setting of objectives and problem statement and based on that selection of research area has been done. For the research purpose, Hostel building is taken for study.

B. Data collection:

Frequent site visits were carried out to identify the construction sequence. Of the building and also practical time durations for executing activities were worked out. The data required for conducting analysis in the software is collected.

C. Post data collection:

The analysis will be carried out in Primavera software, for tracking of the project schedule and all the reports and results generated from the software will be studied.

D. Contract Document:

The following project Data are furnished from the contract agreement, project report and tender documents.

Name of the Project:

Construction of 200 Trainee hostel building in campus of Dr. Panjabrao Deshmukh prabodhini, Amravati.

- Contract period : 24 months
- Contract value : Rs. 11.96 crores
- Nature of contract : item rate contract
- Client : Public Works Department.

E. Steps Involved in Monitoring and Control:**1. Creating EPS**

To create an ideal schedule for any project, first step is to collect data available for the project. The following steps can be followed in Primavera P6 software. Create the complete structure of the company with its branches, which is executing the project using primavera P6. This is known as Enterprise project structure (EPS).

2. 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.

3. Creating a calendar

The calendar can be created and assigned to each activity. These calendars define the available work hours in each calendar days. Also specify national holidays, organizations, and project- specific work/non a workdays and resource vacation days.

4. Work breakdown structure

WBS elements have been defined and organized the project elements. It helps to clearly identify the deliverables, report and summarize project schedule and estimated cost data at different levels of detail. WBS is a hierarchy of any project work that must be accomplished to complete a construction project. Each project has its own project WBS hierarchy structure with top level WBS element being equal to that of each EPS node of the project. Each WBS element contains more detailed in WBS levels, activities, or both resources constraints.

5. Defining activity

Activities are the fundamental and key work elements of a project and form the top to lowest level of a WBS and, are the smallest subdivision of a project. A project activity has the following characteristics like activity ID, activity name, start and finish dates, activity calendar, activity codes, activity type, constraints, expenses, predecessor and successor relationships, resources, roles etc.

6. Relationship between activity

To form a network, scheduling the activities should be connected to each other, which is done by assigning succeeding, preceding activities with significant relationship to the overall project activities.

- ☐ Finish to start (FS) relationship
- ☐ Start to start (SS) relationship
- ☐ Finish to finish (FF) relationship
- ☐ Start to finish (SF) relationship

7. Activity Duration

When planning the work, the project duration is entered in the original duration field. The actual duration can only be entered for the project activities, which are completed.

8. Activity Dates

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

9. Creating baseline

A simple baseline plan is a complete copy of the original schedule which provides a target against which a project's performance is tracked. Choose project. Maintain baseline. Then add and save a copy of current project as a new baseline B1. Then choose project baseline as B1 and assign primary baseline as B1. Daily updates to be made.

10. Resource assingning :

The resource allocation window shows all the resources grouped by labor and non labor. An approximate rate analysis was done for rates of individual resource groups, considering the various component resources. Most of the resources are taken as material. Machines are taken as non-labor and human worker is listed as labor.

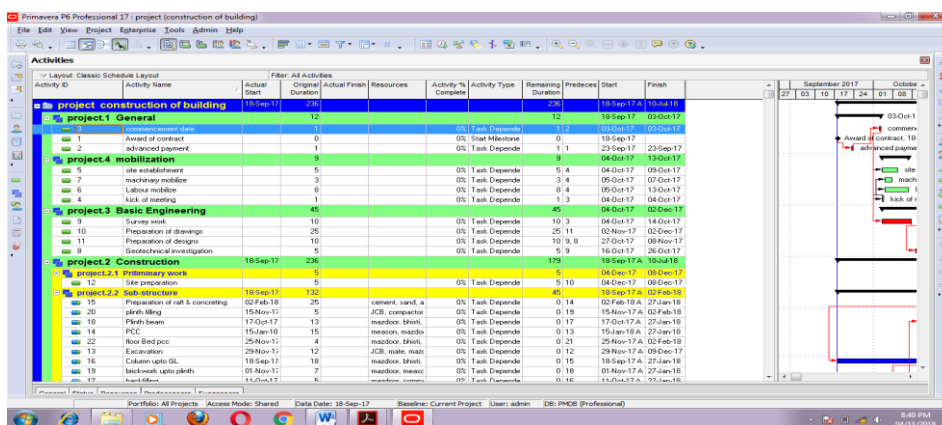


Fig.1 Activity Id, Activity name, Activity type

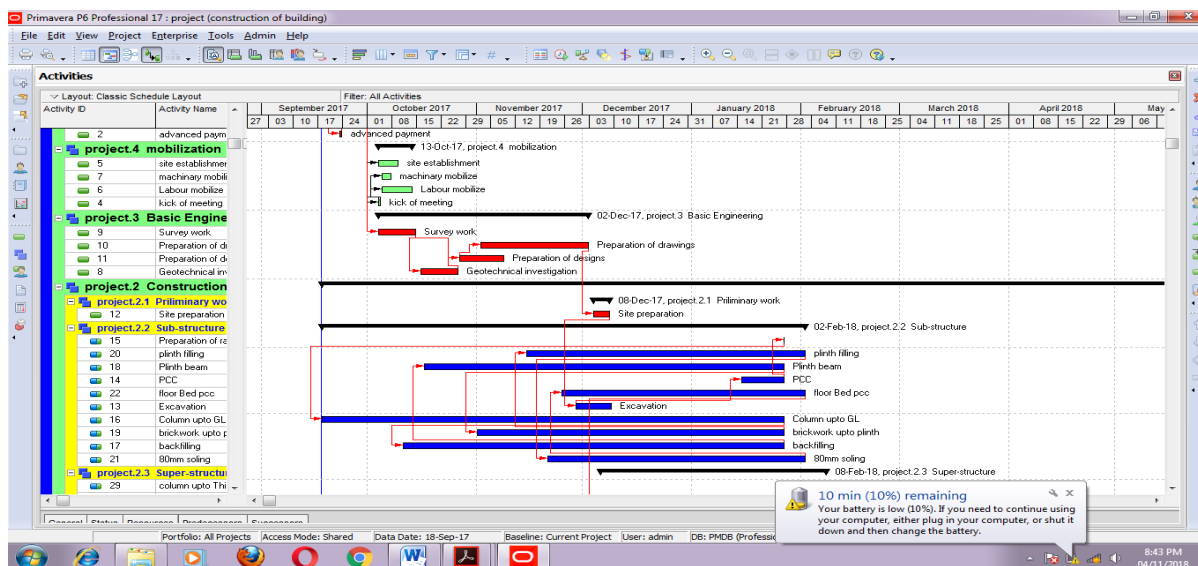


Fig.2 Relationship Gantt chart

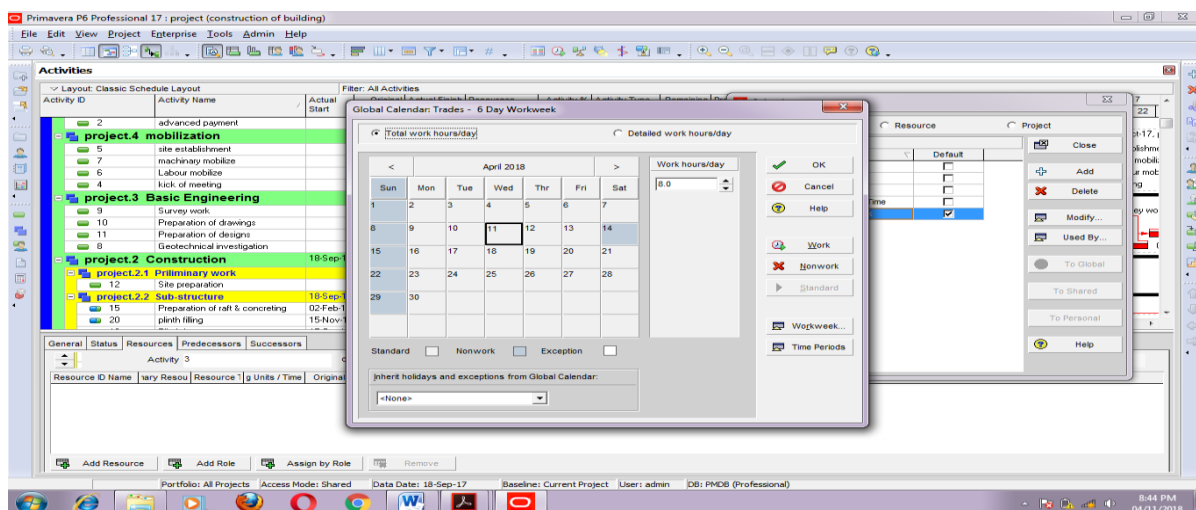


Fig.3 Calender

III. RESULTS AND DISCUSSION

After analysis on Primavera P6, It was observed that after planning and scheduling, the time duration of the building completion was reduced by nearly 3 months. Hence after careful studying this software one can control the project in terms of duration hence leading to cost optimization.

IV. CONCLUSION

Planning, monitoring and controlling, as well as the need and effectiveness of project management software like Primavera P6 in a construction project of this study was to understand the role of monitoring and control in the progress and timely completion of a construction project. This objective was achieved through revision of literatures and methodologies involved in monitoring and control. The study proved to be a guideline in understanding the progress of construction work and also to identify the specific problems arising during the process. Results of this study show the drawbacks of the present project management system in running project and the importance efficient. An efficient and cost effective new project management plan is brought to conclusion.

V. REFERENCES

- [1] Satinder Chopra, Arvind Dewangan, Developing an Efficient Schedule in Primavera P6: Significance of Activity ID & Descriptions, International Journal of Innovative Research in Science, Engineering and Technology(An ISO 3297: 2007 Certified Organization) Vol. 3, Issue 7, July 2014
- [2] V.dhanalakshmi, high cost infrastructure report monitoring by p6 software, international conference on engineering innovations and solutions(ICEIS – 2016)
- [3] P. Esakki Thangam, R. Magdalene Benila, Planning, Scheduling and Time Management of Six Lanes Road Construction Work at V.O.C Port Trust using Primavera P6 Software IJSTE - International Journal of Science Technology & Engineering | Volume 2 | Issue 11 | May 2016
- [4] Unmesh. Y. Polekar, Rohit. R. Salgude Planning, Scheduling and Tracking of a residential Project using Primavera Software, International Journal of Advance Research in Computer Science and Management Studies, Volume 3, Issue 5, May 2015
- [5] T. Subramani, A. Sarkunam, J. Jayalakshmi, Planning and Scheduling of High Rise Building Using Primavera, T. Subramani et al Int. Journal of Engineering Research and Applications www.ijera.com ISSN : 2248-9622, Vol. 4, Issue 6(Version 5), June 2014, pp.134-144
- [6] P Raghunath Reddy, B.Harish Naik Planning and Resource Scheduling of Residential (G+7) Project Using Primavera International Journal of Innovative Research in Science,Engineering and Technology(An ISO 3297: 2007 Certified Organization) Vol. 5, Issue 10, October 2016
- [7] Vipin Kumar Dr. Shreenivasreddy Shahpur Maneeth P. D. Brijbhushan S., Analysis of Academic Building by Planning, Scheduling & Resource Allocation Using Oracle® Primavera P6, © 2017 IJSRST Volume 3 Issue 6
- [8] Hitanshu Saini, Khushpreet Singh, Uma Malik, Project Management Using Primavera International Journal of Civil Engineering and Technology (IJCIET)Volume 8, Issue 8, August 2017