

# Scheduling And Monitoring of a Case Study of a Commercial Complex (Bansal One) Using Primavera P6

Vishesh Jain<sup>1</sup>, Ravindra Kumar Raj<sup>2</sup>

P/G/ SCHOLAR<sup>1</sup>, ASST. PROF.<sup>2</sup>

Department of Civil Engineering, Babulal Tarabai Institute of Research and Technology, Madhya Pradesh, India

## ABSTRACT

### Article Info

November-December-2022

### Publication Issue :

Volume 6, Issue 6

### Page Number : 56-67

### Article History

Accepted : 03 Nov 2022

Published : 15 Nov 2022

Project management is a skill development technique which says that project can be laid on an easy ongoing way to protect the losses and damages occur at site. This technique is very effective in managing big projects where proper management at site is mandatorily required.

Construction project manages the projects considering all boundary conditions such as equipment's, resources, skilled persons, labor, machinery etc. These tools helps in promoting project speed and management of all these equipments lead to a successful project completion in a bounded time duration.

In this paper presenting case study scheduling and monitoring using management tool primavera p6

Keywords : Primavera, Scheduling, Management , Planning, Activity, Delay, Risk

## I. INTRODUCTION

Primavera is a management tool which can be said as the tool which furnished and provide a platform where all these data can be put together in a formatted way attaching to the assigned activities and progress of work. This tool promotes development stages and records the variation and overall development of the project.

Thus project management can be state as the condition which leads to the proper development of the project from starting to the completion considering all activities data and assignments.

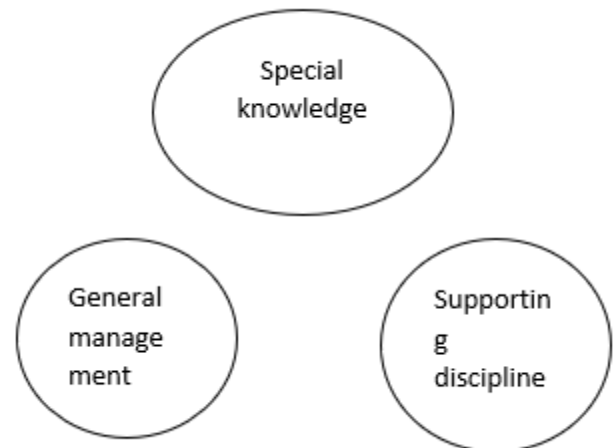


Fig 1: Basic ingredients in project management

## II. Literature Survey

Priyanka Soni et. Al. (2016). In this study author illustrated the effect of lateral forces over high rise, midrise and tall structure by considering three different heights of the structure. In this analysis author utilizes loading conditions such as dead, live and lateral forces as per code provisions. Here author concluded that shear wall generated in each plan case is working whereas in terms of displacement tall structure shows most favorable results which shows that shear walls resist the lateral displacement of the structure.

Karate Vijitha and Dr. B. Pandurang Rao (2019). Here creator examined the use of shear divider in a tall G+15 story structure where bracings are likewise acquainted which give horizontal wellbeing the design. These constructions are more exact yet savvy. Here creator presumed that considering parallel powers additionally there is a viable work of shear dividers and shear dividers with bracings as both are opposing the construction.

Rameshwar et. Al. (2018). Here author illustrated the G+14 story structure which is analyzed in tabs software. In this study author adopted seismic force as per I.S. provision considering seismic zone III and shear wall of width 200mm. here author conclude that shear wall at corner positions are resisting lateral forces and providing stability to the structure.

Sylvia B and P. Shareworthy (2018). Author studied the effect of dynamic response over the structure with considering shear wall as a resisting member. Author performs this analysis of forces, displacement, drifts and observed that performance increased by 26% after installation of shear-walls.

hammed Imran and Dutta Kawana (2018). Here author illustrated nonlinear delta analysis over a high

rise building where installation of shear wall is done to observe the behavior. The structure observed as the prone and here results are elaborated on the basis of column forces. These forces are compared to determine the stability and he concluded that structure become stiffer with shear walls.

Objectives-

1. To determine the proper management of construction project via primavera p6.
2. To justify the utilization of scheduling software.
3. To develop a programmed to identify risk and management.
4. To describe a proper tool.
5. To assign labor resources as per is code.

Project-Data

Preconstruction work

This process involves inventory of the project including levelling, cleaning and mobilization process at site. This process is considered as the first phase of project before its start. Where site offices, lab, store room, labor room and other amenities are installed at site.



Fig: 2 Levelling of the site

Sub-Structure

In this process we perform layout at the site. Further process for excavation as per layout details than

creating PCC and creating foundation work up to the plinth level above ground level.



Fig. 3 Footing of actual site

Super-Structure

Final layout of building with scheduled work.



Fig 3.3 building after partial completion



Fig 4 side view of building from the site





Fig 5 Actual Building final stage from the site Collection - Information Data  
General project information is given in Table 1.  
Table 1 : Project Information

Work	Commercial structure
Name of Agency	BANSAL
Land	16500 Sq. m.
Amount of Project	17 crores
Date of start	01-05-2019
Structure	G+10
Project Head	Er. Shrivastava

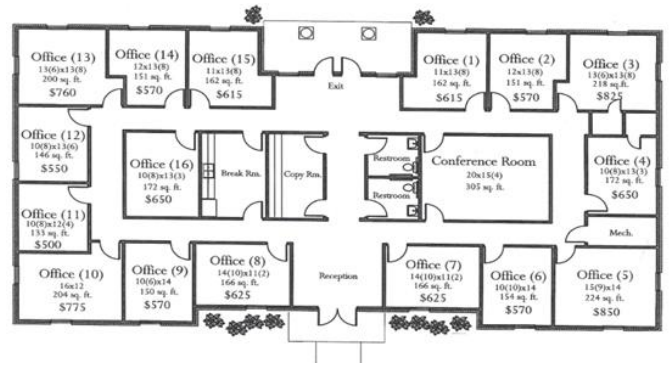
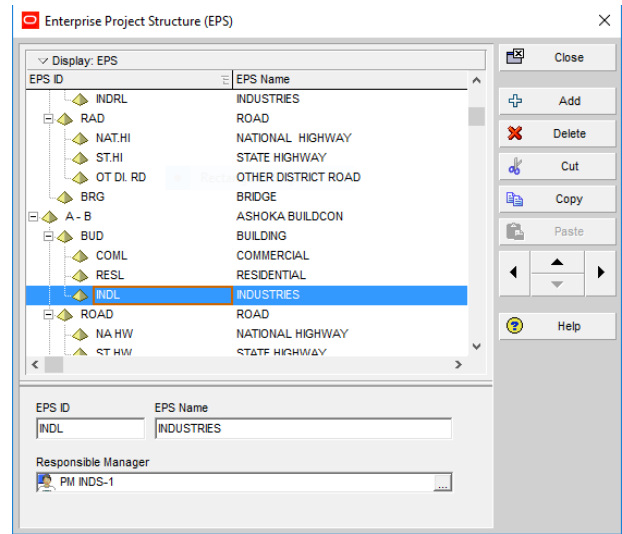


Figure 3 : Plan of the building by Auto cad software

**Primavera scheduling**

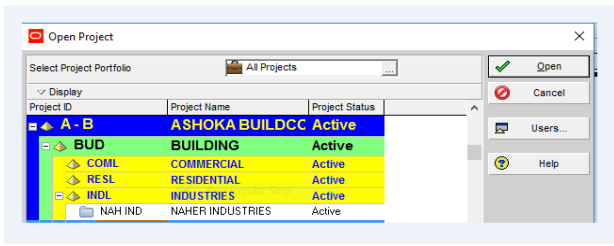
**Step-1: In this step assigning proper sequence of the company profile**

While using the project we need to assign the sequence of the company having different expertise to ensure the timely completion of project by the tendering company.



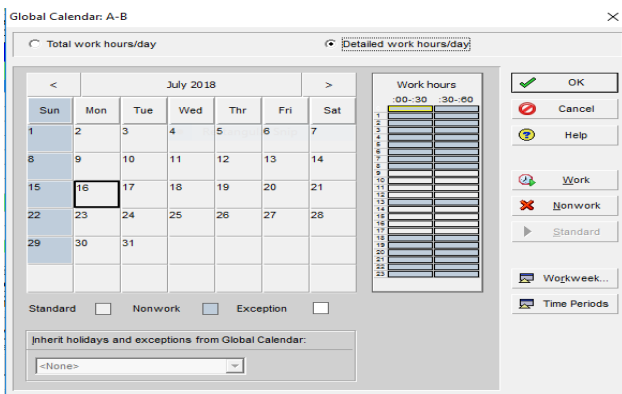
**Step-2: In this step providing different streams of the company**

Companies having different streams such as construction, security, residential, industrial are assigned for the feed in the software so that it selects the right company for the right work to be done.



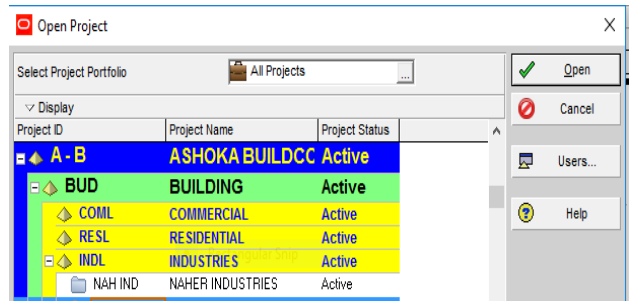
**Step-3: In this step provided calendar for activity working**

Calendar work is done in the software for the assignment of time limit to different work. It will ensure the project completion on time and any delay in one work will eventually affect the successor activity. Thus assigning proper time will give the best result as compared to no management project.



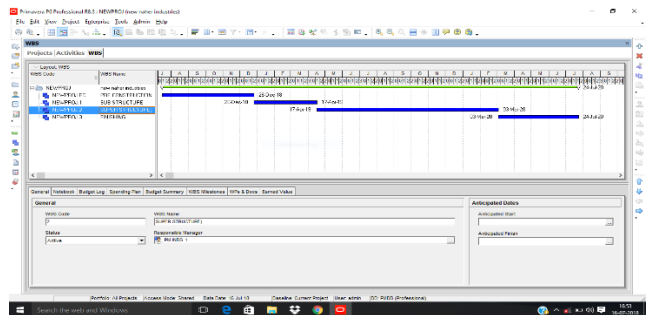
**Step-4 here providing portfolio of the project work**

Project portfolio management combines general management, project and program management, It drives strategic execution and maximizes business value delivery. It prioritized all program in organization reconciled to the resources available to accomplish them.



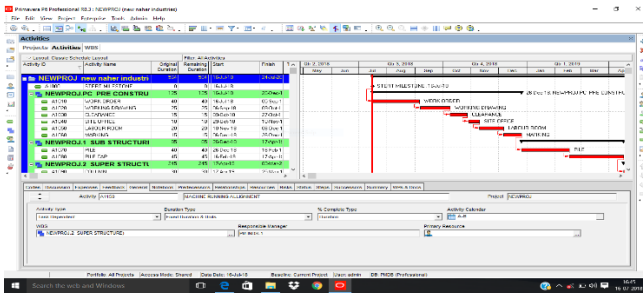
**Step-5: in this step assigning activity duration for the project**

Different activities require different level of work and timing and according to environment and atmosphere of the site it can vary accordingly. Thus assigning the time limit to activities like footing, foundation, curing, concreting etc. will give result oriented project completion as it will not cause delay in activities thus not affecting predecessor and successor activity thereon. And this will create a timely completion of the project work which will crash money as well as resources like labor, equipment's.



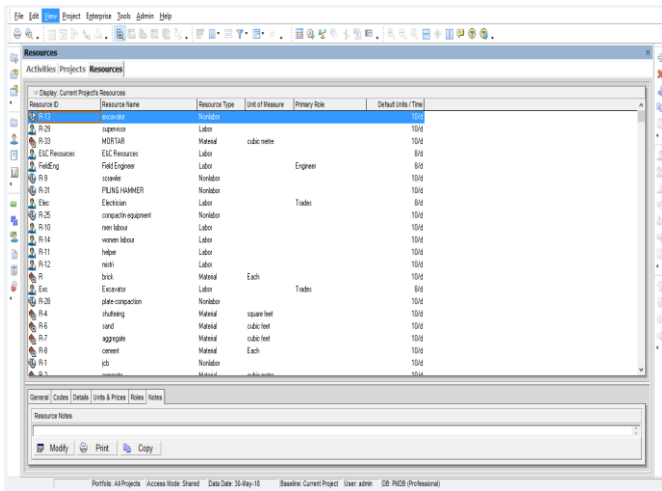
**Step-6: Linking activities for scheduling work**

Every work in the construction project is linked to one other such as for example without construction of footings we can't start constructing column and beams therefore each activity work is linked to other in time and resource. Here in this picture we are assigning time limit for the work for the timely execution of project work and without affecting predecessor and succeeding activity.

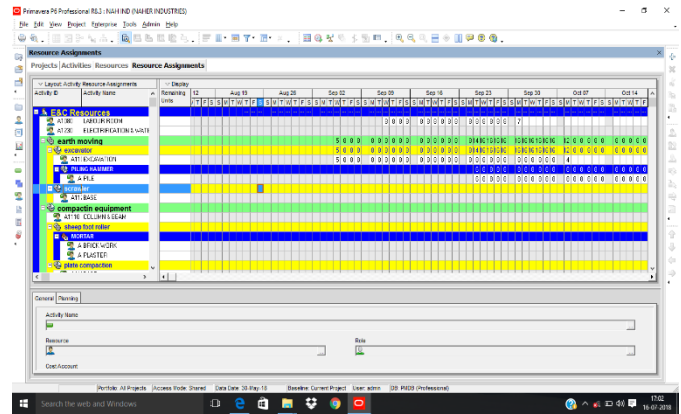


**Step-7: Assigning resources and allocated them.**

Resources requirement for any activity is required according to the type of work thus we need to calculate the exact calculation of resources for allocating them in the software so that it will assign the need of the activity accordingly for example a beam work may require less number of labor as compared to the labor required for the footing excavation.

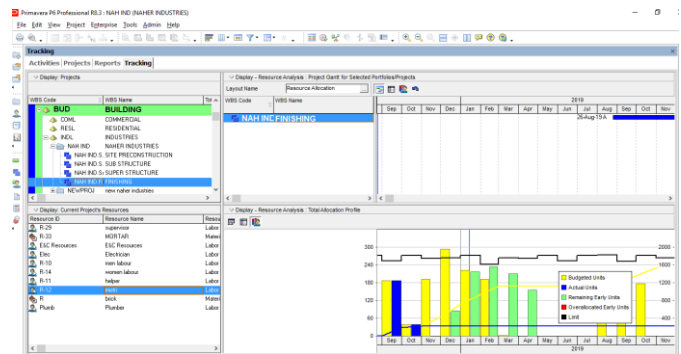


**Step-8 Assigning resources in each activity as per I.S. 7272**



**Step-9: Tracking of project after starting the work at site.**

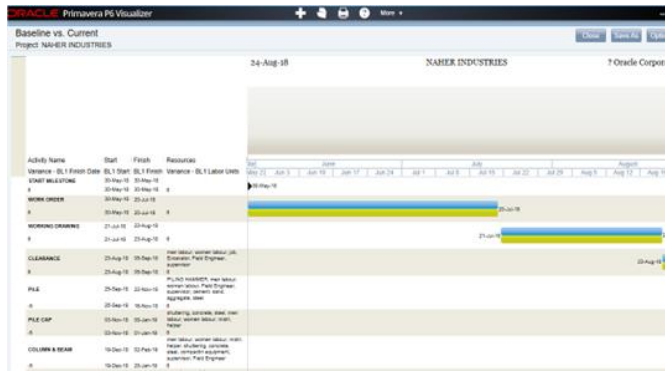
After successful allocation of companies and resources, time in the scheduled activity now there is a time for the tracking of activities and manage it according to the external factor such as atmospheric conditions, traffic while concreting, resources availability etc. this will help us to manage resources from one activity to other and plan accordingly for the crashing of time and resources in the project completion.



**Step-10 comparison of project**

The last step to do is to compare the project according to management by software and manual management.

**ANALYSIS RESULT**



Preconstruction activities duration in days		
	Scheduled	Proposed
Start milestone	0	0
Work order	41	39
Working drawing	21	20
Clearance	14	12
Marking	13	12
Site office	14	8
Labor room	23	11
Excavation	42	22

SUB STRUCTURE		
	Scheduled	Proposed
Pile	41	39
Pile cap	44	31

SUPER STRUCTURE		
	Scheduled	Proposed
Plinth beam	31	26
Column	22	25
Beam and slab	33	24
stairs	34	23

2 <sup>nd</sup> floor	33	22
3 <sup>rd</sup> floor	42	42
4 <sup>th</sup> floor	51	46

FINISHING		
	Scheduled	Proposed
Brick work	21	14
Electrification & Water pipes	12	5
Plaster	21	26
Flooring	22	16
Generator Set Up	4	4
Tube well	2	3
Putty	13	12
Paints	11	12
Finish Milestone	0	0



OVERALL COST		
Serial no	Type	cost
1	Proposed scheduling	RS 1,71,40,000
2	As per scheduling	RS 1,78,20,000

### III. CONCLUSION

In this comparative analysis following conclusion is observed as follows:

- In this project it is observed that with utilization of project management tool we can minimize the risk of resource wastage.
- In this study we concluded that with scheduling of project considering sequential linking of activities we can save time, resources and overall cost of the project in terms of indirect cash.
- In this study we considered a building project where utilization of rainy season for structure curing and implementation of inner plaster work show that we can even utilize the time lapse where structure outer work is prohibited.
- Here we can conclude that utilization of management tool helps in binding the project by linking the work in sequence.

### IV. Summary

Here we can provide a closure to the study by state that utilization of project management tool primavera ensures us that it helps in managing and controlling of project work.

### V. REFERENCES

- [1]. Piyush Pramod Bagade and Prof. Abhijit Bhirud, "Review on construction design operation software primavera p6" transnational journal of engineering lores & exploration technology, ISSN 2277-9655, January, 2018, PN( 110- 117).
- [2]. Poonam Raykar and Ghadge A.N., " assaying the Critical Factors impacting the Time Overrun and Cost Overrun in Construction Project " International Journal of Engineering Research, VolumeNo. 5, ISSN2319- 6890, 9 Jan 2016, PN( 21- 25).
- [3]. A. Ray Chaudhuri, B. Sivakonda Reddy and S.K. nimbal, " Resource Management in Construction systems – a case study " Engineering Science and Technology An International Journal( ESTIJ), ISSN 2250-3498, Vol. 2, No. 4, August 2017 PN( 660 – 665)
- [4]. A.R. Nikumbh and S.S. Pimpliker, " Planning and controlling of a National Highway Project- A case study ", Journal of the Indian Road Congress PaperNo. 613, April – June 2014 PN( 91 – 102).

- [5]. P M Wale<sup>1</sup>, ND. Jain, N R Godhani, S R Beniwal and A A Mir, « Planning and Scheduling of Project using Microsoft Project( Case Study of a structure in India», IOSR Journal of Mechanical and Civil Engineering, ISSN 2320-334X, Volume 12, Issue 3 Ver. III( May. -Jun. 2015), PN 57- 63.
- [6]. Shaik Mohammad, Kunal B. Badgujar, B.A. Konnur and Amarsinh B. Landage “A Review of EVM Analysis with Primavera ”; International Journal of Engineering Research ISSN 23196890( online), 2347- 5013 Volume No. 5, Issue Special 1 9 Jan 2014 PN 164- 167
- [7]. Hamid, R. Gupta, Parag S. Mahatme and Taran C. Bhagat “The cost controlling and covering of Construction design through earned Value operation system ” International Journal of Advanced Technology in Engineering and Science www.ijates.com Volume No 03, Special Issue No. 01, March 2013 ISSN( online) 2348 – 7550
- [8]. P. Dayakar and M. Udhayakumar, « Study on Project Management of an Ongoing Construction design Using MSP Sub Structure ” Volume 2 Issue 5 Number 2 – Oct 2012, PN 202- 212.
- [9]. Stephenson, P. and Fapohunda, J.A. “ Optimal Construction coffers Application Reflections of point directors ’ Attributes. The Pacific Journal of Science and Technology, Vol. 11.No. 2. November 2010( Fall) PN 105- 109.
- [10]. Tranner, D.S. Stephan Jabasingh and J. Jayalakshmi “ Analysis of Cost Controlling In Construction diligence by Earned Value Method Using Primavera ”; Int. Journal of Engineering Research and Applications www.ijera.com ISSN 2248- 9622, Vol. 4, Issue 6( Version 1), June 2009, PN. 145- 153.
- [11]. Prabhakar, G.P. What’s Project Success A Literature Review. International Journal of Business and Management. September, 2008.
- [12]. Kerzner, H.. Project Management A Systems Approach to Planning, and Controlling. New Delhi. CBS Publishers and Distributors Pvt. Ltd. 2003.
- [13]. Cinch, M. and Li, H., 2003. Resource- exertion Critical- Path system for Construction Planning. Journal Of Construction Engineering and Management © ASCE/ July/ August 2003. ISSN 3365, PN 13- 19. Piyush Pramod Bagade and Prof. Abhijit Bhirud, “ Review on construction design operation software primavera p6 ” transnational journal of engineering lores & exploration technology, ISSN 2277- 9655, January, 2018, PN( 110- 117).
- [14]. Poonam Raykar and Ghadge A.N., “ assaying the Critical Factors impacting the Time Overrun and Cost Overrun in Construction Project ” International Journal of Engineering Research, Volume No. 5, ISSN 2319- 6890, 9 Jan 2016, PN( 21- 25).
- [15]. A. Ray Chaudhuri, B. Sivakonda Reddy and S.K. nimbal, “ Resource Management in Construction systems – a case study ” Engineering Science and Technology An International Journal( ESTIJ), ISSN 2250- 3498, Vol. 2, No. 4, August 2017 PN( 660 – 665)
- [16]. A.R. Nikumbh and S.S. Pimpliker, “ Planning and controlling of a National Highway Project- A case study ”, Journal of the Indian Road Congress Paper No. 613, April – June 2014 PN( 91 – 102).
- [17]. P M Wale<sup>1</sup>, ND. Jain, N R Godhani, S R Beniwal and A A Mir, « Planning and Scheduling of Project using Microsoft Project( Case Study of a structure in India», IOSR Journal of Mechanical and Civil Engineering,

- ISSN 2320-334X, Volume 12, Issue 3 Ver. III( May. -Jun. 2015), PN 57- 63.
- [18]. Shaik Mohammad, KunalB. Badgujar,B.A.Konnur and AmarsinhB. Landage “A Review of EVM Analysis with Primavera ”; International Journal of Engineering Research ISSN23196890( online),2347- 5013 VolumeNo. 5, Issue Special 1 9 Jan 2014 PN 164- 167
- [19]. Hamid,R. Gupta, ParagS. Mahatme and TaranC. Bhagat “The cost controlling and covering of Construction design through earned Value operation system ” International Journal of Advanced Technology in Engineering and Sciencewww.ijates.com Volume No 03, Special IssueNo. 01, March 2013 ISSN( online) 2348 – 7550
- [20]. P.Dayakar andM.Udhayakumar,« Study on Project Management of an Ongoing Construction design Using MSP Sub Structure ” Volume2 Issue 5 Number2 – Oct 2012, PN 202- 212.
- [21]. Stephenson,P. and Fapohunda,J.A. “ Optimal Construction coffers Application Reflections of point directors ’ Attributes. The Pacific Journal of Science and Technology,Vol. 11.No. 2. November 2010( Fall) PN 105- 109.
- [22]. Tranner,D.S. Stephan Jabasingh andJ. Jayalakshmi “ Analysis of Cost Controlling In Construction diligence by Earned Value Method Using Primavera ”; Int. Journal of Engineering Research and Applicationswww.ijera.com ISSN 2248-9622,Vol. 4, Issue 6( Version 1), June 2009,PN.145- 153.
- [23]. Prabhakar,G.P. What’s Project Success A Literature Review. International Journal of Business and Management. September, 2008.
- [24]. Kerzner,H.. Project Management A Systems Approach to Planning, and Controlling. New Dehli. CBS Publishers and DistributorsPvt.Ltd. 2003.
- [25]. Cinch,M. and Li,H., 2003. Resource- exertion Critical- Path system for Construction Planning. Journal Of Construction Engineering and Management © ASCE/ July/ August 2003. ISSN 3365, PN 13- 19.

**Cite this article as :**

Vishesh Jain, Ravindra Kumar Raj, "Scheduling And Monitoring of a Case Study of a Commercial Complex (Bansal One) Using Primavera P6", International Journal of Scientific Research in Civil Engineering (IJSRCE), ISSN : 2456-6667, Volume 6 Issue 6, pp. 56-67, November-December 2022.

URL : <https://ijsrce.com/IJSRCE22668>