International Journal of Multidisciplinary Engineering in Current Research - IJMEC
Volume 8, Issue 5, May-2023, http://ijmec.com/, ISSN: 2456-4265

CONSTRUCTION MANAGEMENT AND SCHEDULING OF RESIDENTIAL BUILDING

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ABSTRACT: Proper planning and scheduling are very important in construction projects for reducing and controlling delays of the project. Substantial amounts of time, money, resources are wasted each year in a construction industry due to improper planning and scheduling. With globalization the construction projects have become vast and complex. Planning of such projects requires huge amount of paperwork, which can be reduced with the help of project planning software. Providing good planning, proper organization, sufficient flow of resources to a project cannot automatically achieve desired result. A warning mechanism must be present which can alert the organization about its possible success and failures throughout the project. The main objectives of this study are to plan, schedule, and track a residential project with help of primavera software, study the results generated, it is possible to suggest which method is suitable for the selected residential project. Also, to recommend measures to the organization for enhancing their project planning skills for similar projects in future.

Keywords: Planning, Scheduling, Tracking, Project Planning Software, Primavera.

INTRODUCTION

Construction industry is an integral component of a nation's infrastructure and industrial growth. Construction industry is the second largest industry in India still its growth has been differential across the nation. There is a vast difference of development in the rural and urban areas. To cope up with the status of development in urban areas the rural regions need tools for economic development, land use and environment planning. Here arises the need for effective project management. Many problems and issues are being faced by the construction industry, major of them are cost overruns and time overruns due to inadequate project formulation, poor planning for implementation and improper management during execution. Many analysts state that average cost of project goes up by 30% as of the budgeted cost due to improper planning and scheduling. Observations show that proper skilful management is essential for a project to complete within time, estimated budget and with allocated resources. Providing good planning, proper organization, sufficient flow of resources to project can automatically achieve the desired result. A warning mechanism must be present which can alert the organization about its possible success and failures throughout the project.

Project Monitoring acts like a warning mechanism; it is the process of recording, collecting and reporting information regarding project performance that the project manager and others wish to know. Monitoring includes watching the progress of the project against time, performance schedule and resources during actual execution of the project and it identified the lagging areas which require timely attention and actions. It is very common to see project failing to achieve their missions within specified time and budget, the factors causing overrun as stated above inadequate project formulation, poor planning and lack of project management during execution, but the main cause of failure can be attributed to cost estimation failure and management failure. Large projects become more complex and the ability to exchange information on paper within organization on a timely basis gets difficult.

The traditional project management system cannot meet the demands of today's projects, as tremendous amount of information and data on a project are always changing. Project managers from construction industry state that their 70-80% time is spent on communication and 70% of project documentation is paper based. The main objectives of this study are to plan, schedule, and track a residential project with help of primavera software, study the results generated, it is possible to suggest which method is suitable for the selected residential project. Also, to recommend measures to the organization for enhancing their project planning for similar projects in future.

OBJECTIVE OF STUDY

The objectives of this study are:

1. To identify construction sequence for a residential building construction.
2. To work out the practical durations required to carry out the activities.
3. To identify scheduling technique used by the organization in developing plan and scheduling.
4. To develop scheduling using Primavera project planner's software.
5. To track the project and analyse the reasons for delays, and increase in estimated budget etc.
6. To investigate defects in the planning and scheduling procedure of the organization, and suggest suitable improvements in their methods.

CONSTRUCTION PLANNING

Construction planning is a fundamental and challenging activity in management and execution of construction projects. It includes the selection of technology, the definition of work task, the estimation of required durations and resources of individual task, and identify the interactions between different work tasks. A good construction plan is the base for developing the schedule and the budget for work. Developing the construction plan is a critical task in construction management, even if the plan is not written or else formally recorded. During planning a planner begins with a result (a design) and he must synthesize the steps required to yield this result. The necessary aspects of construction planning include the generation of required activities, analysis of the implications of these activities and the choice among various alternatives methods of performing these activities. A planner must imagine the final design and describe it in plans and specifications.

In developing a construction plan the importance is given either cost or schedule. Some projects a primarily divided into expense categories with associated cost in these cases planning is cost oriented. In this category, a distinction is made between cost incurred directly in the performance of the activity and indirectly for the accomplishment of the project. For other projects where time is a critical or the planner ensures that proper predeceasing among activities is maintained and that efficient scheduling of the available resource prevails. In such cases a critical path scheduling procedure is followed. Finally, most of the complex projects require considerations of both cost and schedule over time, so that planning; monitoring and record keeping must be considered in both dimensions. In these cases, integration of budget and scheduling information is a major concern.

SCHEDULING

Scheduling is determination the timing of events in the project that is when and which task will be performed? Putting it in simple words it is a reflection of plan. In other words, we can say, planning is How, What and Who whereas scheduling is when and why. Scheduling can be also defined as the detailed plan of the project work tasks with respect to time. A schedule is also a good communication tool between all the stakeholders of the project. Schedule gives an overall sense of expected progress of the project without schedule it is very difficult to explain someone unfamiliar with the project what is going on and what is expected to take place.

TRACKING

Tracking is the process of collecting, entering and analysing of actual project performance values, such as work on tasks and actual durations. Tracking is the second major phase of project management. The main thing to focus on project planning is developing and communicating the details of project plan before actual work starts. When work begins, the next phase of project management is tracking progress. Tracking means recording project details such as what work did by whom, when the work was done, and at what costs these details are called as actual. Properly tracking actual work and comparing it's against original plan is useful to identify the difference in actual and planned and it enables to adjust incomplete task of the plan.

LITERATURE REVIEW

Subramani.T and Chinnadurai.K(2015) has discussed that long-introduced Industrialized Building System (IBS) has promised to solve and improve the current construction method and scenario in our country, but the IBS method has not gained enough popularity. One of the reasons is due to lack of research works done to quantifying the benefit of IBS especially in construction time saving. In lieu with such scenario, this study conducted to quantify evidence of time saving in IBS application. Primavera P6 is amazing software, which is used not just by planners, but also managers, engineers, schedulers, and anyone else involved in planning, management, reporting

of a project.. Designed to make managing large or complex projects a piece of cake, Primavera is the ideal tool for anyone who is involved in planning, Monitoring and reporting on the progress of any big task, development or venture. Primavera allows for top level planning as well as being ideal for managing the intricate details. This enables project managers, planners, planning controllers and other associated professionals to have instant access to all the project information they require at the touch of a button. Also from this study shown not all IBS components can improved to the overall construction duration, however by adopting IBS components can improve and expedite the construction of 18 stories residential building from the point of departure of the project throughout of the whole of project‘s with a total 405 days or 42% the time saving.

Andrew Fernans Tom and Sachin Paul (2013) have proposed that project monitoring and control is the process of collecting, recording, and reporting information concerning project performance. Project controlling uses the data from monitor activity to bring actual performance to planned performance. The present study deals with the project monitoring process of “Standard Design Factory”; a four storied (G+3) factory building whose construction is in progress at Cochin, Kerala. A comparison between the planned progress of construction work and actual progress is performed in this study using project management software Primavera P6. Despite well-established principles and policies of project monitoring the process itself may not be efficiently accomplished in a project, because of those practical problems existing or arising in the project Such an attempt in realizing the practical problems in implementation of project monitoring and control will contribute to proper recognition of the problem areas and putting in place the control process to rectify the deviations.

SandipPawar and Attarde.P.M(2013) has described that planning and scheduling using tools and devices are helpful in comparing the project with stipulated cost, time and quality. Sequencing model proposed to overcome the delay factor from the critical area, to minimize that delay of the construction and to reduce the time, cost and it also helpful to concentrate on the major areas in the project. It has hands-on experience in an ongoing project, and evaluation of schedule of equipment, staff, labour and material. It helps to plan and evaluate the resources for the construction of the building project. It also compares the cost variation due to the delay of the project and rescheduling the project by crashing process.

CPM/ PERT

The modern network techniques are called by various names such as PERT (Program Evaluation and Review Technique), CPM (Critical Path Method) and bar charts. All the advanced new emerged network techniques are emerged from the two basic well known techniques PERT and CPM.

The aim of the project is to present the planning, scheduling, cost of a multi stored building (G+5) with the help of most accurate network methods CPM and PERT.

CPM is a technique used for the planning and controlling the most logical and economic sequence of operations for completing a project whereas PERT is a technique used for scheduling and controlling the projects, whose activities are subjected to considerable degree of uncertainty in the performance time.

In order to achieve the aim of the project we have collected plans and layout of a building from the construction site then calculated required estimates of various activities of the building, scheduled time, labour requirement of

each activity specified with the help of schedule rates given. A network diagram is drawn in order to analyse the critical path. Considering factor like float, the project is schedule to a certain number of days.

RESOURCES AND NEED FOR MANAGEMENT:

The resources required for the construction industry are:

- Men for skilled and unskilled work, supervision and management. Technical and managerial personnel are efficient use of human resources and to achieve project completion within estimated time and budget.
- Materials depending on the nature of the work such as cement, bricks, aggregates, reinforcement, fittings and fixtures for water supply and sanitary works, consumable items like fuels, lubricants etc.
- Machines required for the type of work to be executed such as trucks earth moving equipment pumps and mortars vibrators pile drivers etc. together with spare parts to attend repair and maintenance facilities.
- Funds should be available for smooth completion of the project. Financial planning is essential for smooth cash flow and outflow to void delays in project activities funds form an important resource as all other resources are dependent on the availability of funds.

NEED FOR CONSTRUCTION MANAGEMENT:

- To estimate the required man power, materials, machinery and finance in carrying out different activities of the project.
- To select and procedure different materials required for the construction especially when there is a limitation on the available resources.
- To have proper co-ordination among the various agencies involved in completing the project.
- To derive maximum benefit in terms of construction output under conditions of varying degrees of uncertainty
- To anticipate the factors that may cause delays resulting in increased costs and to take suitable remedial measures by efficient management.
- To provide an efficient programming and to apply improved techniques in scheduling and organizing which also provides a means of checking the progress of work and controlling the quality of work.

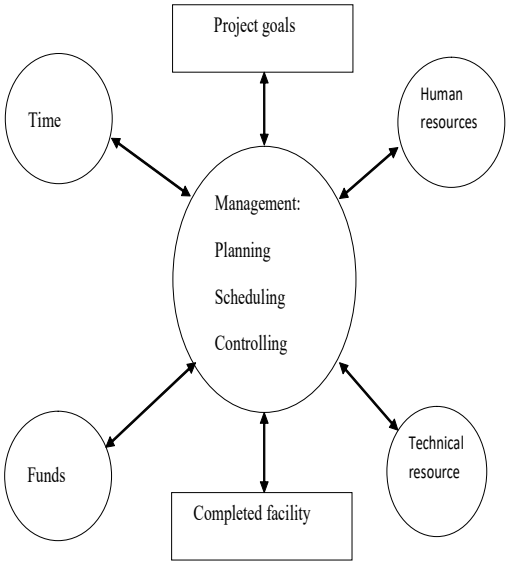
ADVANTAGES OF MANAGEMENT TECHNIQUES:

The following are the advantages through efficient management:

- Helps as a key for completing the given task.
- Accelerates the rate of construction and thus minimizes the duration of construction.
- Motivates people in the organization to the effective utilization of material resources i.e. machines, materials, methods and money for the achievement of organization goals.
- Helps to control the quality of materials and workmanship.
- Reduces cost of construction and makes any activity more economical.

ELEMENTS OF PROJECT MANAGEMENT:

Project management aims to achieve the stated goals of the project leading to completed facility, by virtue of planning, scheduling and controlling time, funds and human and technical resources.



FACTORS INVOLVED IN CONSTRUCTION MANAGEMENT:

- Planning, scheduling, organizing and controlling for arriving at optimum temperature.
- Selection of proper materials, their cost including lead charges, magnitude of man power and equipment.
- The appropriate time for using particular equipment during the construction.
- Availability of raw materials future demand and the probability of increase in cost.
- Procurement of materials and machinery.
- Probable time delays due to natural conditions like floods famine etc, or due to non-availability of men & material.
- Skills required in finishing the task as per specifications and quality.
- Co-ordination between different organizations involved in construction.

Thus, project management is a highly specialized job, to achieve the above objectives, which involves the following, three phases:

1. Project planning
2. Project scheduling
3. Project controlling.

The first two phases are accomplished before the actual project starts. The third phase is operative during the execution of the project.

Following are some of the tools or techniques of project management:

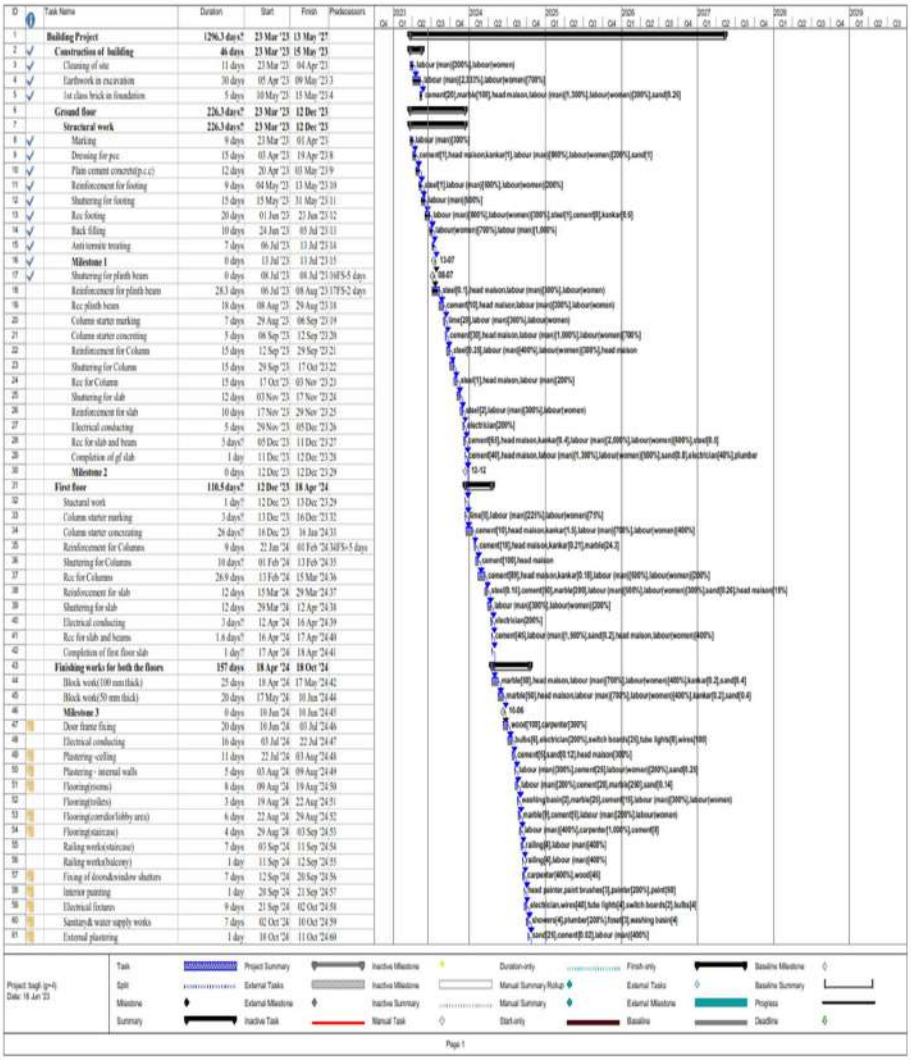
a. Gantt-Bar charts.
b. Milestone charts.
c. Network diagrams.

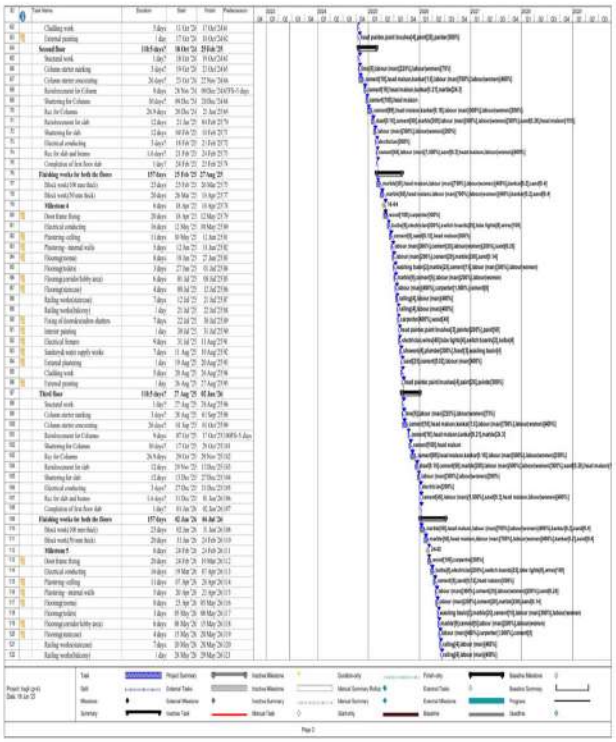
Gantt-Bar Chart:

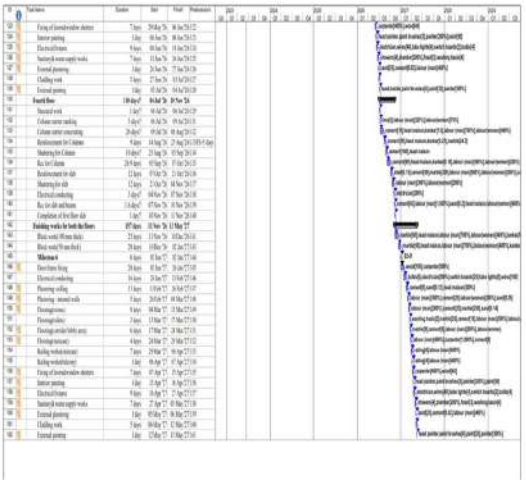
The chart is a graphical representation of a project, and given the fact that activities are shown on a real-time

Scale, they are easy to understand and very useful in reviewing progress. It is one of the oldest methods and an effective technique for overall project planning. These charts were developed by Henry L. Gantt during World War 1 and, accordingly, these are also sometimes referred to as Gantt charts. They give an idea of duration of activities/project and, hence, can be useful in preparing strategy for working.

In a bar chart, the activities are shown as horizontal time scale where the start and end locations of the bars coincide with the start and finish dates of the activities.







SALIENT FEATURES OF BAR CHART:

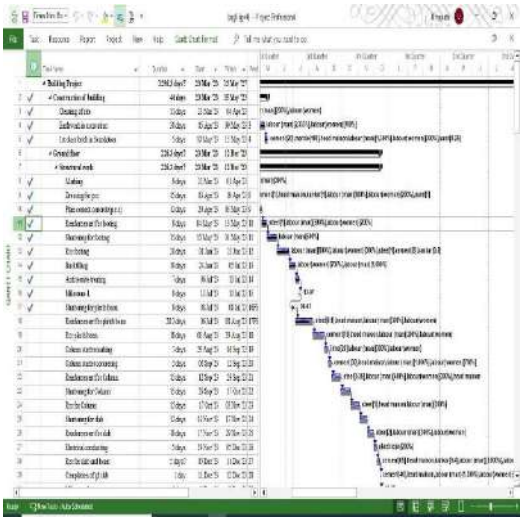
1. The chart is simple to prepare and interpret.
2. Each activity is shown separately.
3. Modification to the chart as on required basis can be carried out easily.

SHORT COMMINGS OF BAR CHARTS AND ITS MODIFIED BAR CHART:

Bar charts have following shortcomings. These shortcomings can be partly overcome by the following suggested remedial measures.

Lack of degree of details:

On bar chart, only major activities are shown. If too many activities or tasks are separately shown, it becomes clumsy. Due to this, bar charts are not very useful for big projects. A particular activity whether big or small is shown by one bar, without any details of sub-activities contained in it. These sub-activities cannot be separated out. Due to this, effective control over the activities cannot be achieved.



RESEARCH WORK

BASIC BUILDING PLANNING PRINCIPLES:

- Integrated Design
- Performance Measures and Functional Objectives
- Environmental Sensitivity.
- Urban Context.
- Basic Configurations and Core Placement
- Placement of Core Elements and Distance

This Narrative Statement is pertaining to generate the Schedule report for a RESIDENTIAL BUILDING construction project using Microsoft Project.

Purpose

The purpose of this narrative statement is to provide to outline methodology /work procedure and approach to the execution of works and logic taken into consideration for the preparation and development project plan to be followed at site which is in the line with contractual requirement.

Reference Document

Letter of Award

Contract Document

Procedure

The Programme has been prepared considering the points described as under

Key Dates

Sr. No	Description of stage	Time to achieve in days
1	Project Commencement	23 Mar 2023
2	Project Duration	1296 days
3	Project Completion	13th May 2027
4	Receipt of Affection Plan	4th April 2023
5	Receipt of Bench Mark	10th April 2023
6	Receipt of Building Permit	15th April 2023

PROJECT CALENDAR:

- The 5 days a week calendar has been considered while preparing the
- Detailed Work Programme
- The 5 days a week calendar has been considered for Authority Approvals
- Working hours considered as Eight hours per day
- The project week begins on Monday
- The unit of duration has been taken as day.

ASSUMPTIONS CONSIDERED FOR WORK PROGRAMME

Sr.No	ASSUMPTION CONSIDERED IN WORK PROGRAMME
1	Access to the site is available from the employer for initial survey
2	Affection Plan, DM Bench Mark & Building Permit will be received on time
3	Work will be taken up in sequence concurrently at multiple fronts
4	Design of wall will be done in sequence
5	Total BOQ cost of wall items are proportionally considered for each walls. Further the cost of each wall is broken down to activities as under: ➢ Design - 10% ➢ Excavation - 40% ➢ Filling - 20% ➢ Material - 25% ➢ Wall Installation - 5%

PROPOSED SCHEDULE

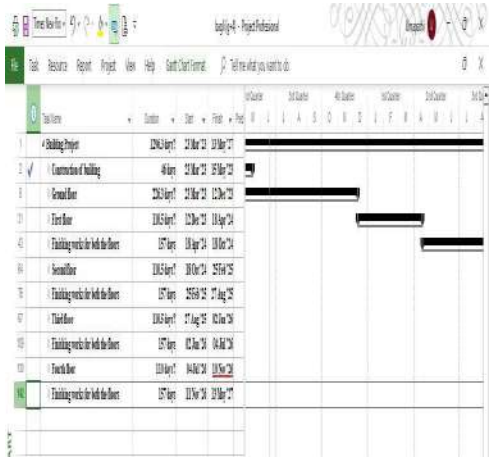
Adding a Project

Working with WBS

Hierarchal structure that identifies the company-wide projects and enables

Adding Activities (Task)

To add Task with duration



Task Name	Duration	Start	Finish	Predecessors
Building Project	**1296.3 days?**	**23 Mar '23**	**13 May '27**	
Construction of building	**46 days**	**23 Mar '23**	**15 May '23**	
Cleaning of site	11 days	23 Mar '23	04 Apr '23	
Earthwork in excavation	30 days	05 Apr '23	09 May '23	3
1st class brick in foundation	5 days	10 May '23	15 May '23	4
Ground floor	**226.3 days?**	**23 Mar '23**	**12 Dec '23**	
Structural work	**226.3 days?**	**23 Mar '23**	**12 Dec '23**	
Marking	9 days	23 Mar '23	01 Apr '23	
Dressing for pcc	15 days	03 Apr '23	19 Apr '23	8
Plain cement concrete (p.c.c)	12 days	20 Apr '23	03 May '23	9
Reinforcement for footing	9 days	04 May '23	13 May '23	10
Shuttering for footing	15 days	15 May '23	31 May '23	11
Rcc footing	20 days	01 Jun '23	23 Jun '23	12
Back filling	10 days	24 Jun '23	05 Jul '23	13
Anti termite treating	7 days	06 Jul '23	13 Jul '23	14
Milestone 1	0 days	13 Jul '23	13 Jul '23	15
Shuttering for plinth beam	0 days	08 Jul '23	08 Jul '23	16FS-5 days
Reinforcement for plinth beam	28.3 days	06 Jul '23	08 Aug '23	17FS-2 days
Rcc plinth beam	18 days	08 Aug '23	29 Aug '23	18
Column starter marking	7 days	29 Aug '23	06 Sep '23	19
Column starter concreting	5 days	06 Sep '23	12 Sep '23	20
Reinforcement for Column	15 days	12 Sep '23	29 Sep '23	21
Shuttering for Column	15 days	29 Sep '23	17 Oct '23	22
Rcc for Column	15 days	17 Oct '23	03 Nov '23	23
Shuttering for slab	12 days	03 Nov '23	17 Nov '23	24
Reinforcement for slab	10 days	17 Nov '23	29 Nov '23	25
Electrical conducting	5 days	29 Nov '23	05 Dec '23	26
Rcc for slab and beam	5 days?	05 Dec '23	11 Dec '23	27
Completion of gf slab	1 day	11 Dec '23	12 Dec '23	28

RELATIONSHIPS

A relationship defines how an activity relates to the start or finish of another activity or assignment. Add relationships between activities to create a path through your schedule from the first activity to the last activity. These relationships, which form the logic of the project network, are used together with activity durations to determine schedule dates. An activity can have as many relationships as necessary to model the work that must be done. You can also identify relationships between activities that are in different projects; this type of relationship is referred to as an external relationship.

Relationship Types

- Finish to start
- Finish to finish
- Start to start
- Start to finish

Relationship Types	Symbols	Description
1. (FS) Finish to start		It indicates that the successor activity can begin only when the predecessor activity has completed.
2. (FF) Finish to finish		It indicates that the finish of the successor activity depends on the finish of the predecessor activity
3. (SS) Start to start		It indicates that the start of the successor activity depends on the start of the predecessor activity
4. (SF) Start to finish		It indicates that the successor activity cannot finish until the predecessor activity starts.

SCHEDULING

Your project schedule can be calculated one of two ways: when you choose the Scheduling command or, each time you make a change that affect schedule dates.

The Critical Path Method (CPM) scheduling technique is used to calculate project schedules. CPM uses activity durations and relationships between activities to calculate the project schedule.

RESOURCES

levelling resources.

Definition of a Resource:

The resource has been defined as many ways.

A resource is any entity that contributes to the accomplishment of project activities.

- Personnel
- Equipment
- Contractors
- Spaces
- Materials

Classification of Resources: Resources are responsible for actually completing the tasks in the project. They can be classified in various way based on various factors involved in different projects.

A)Based on nature:

Resources can be classified as follows.

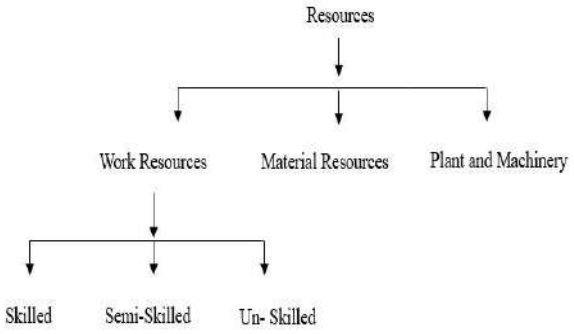
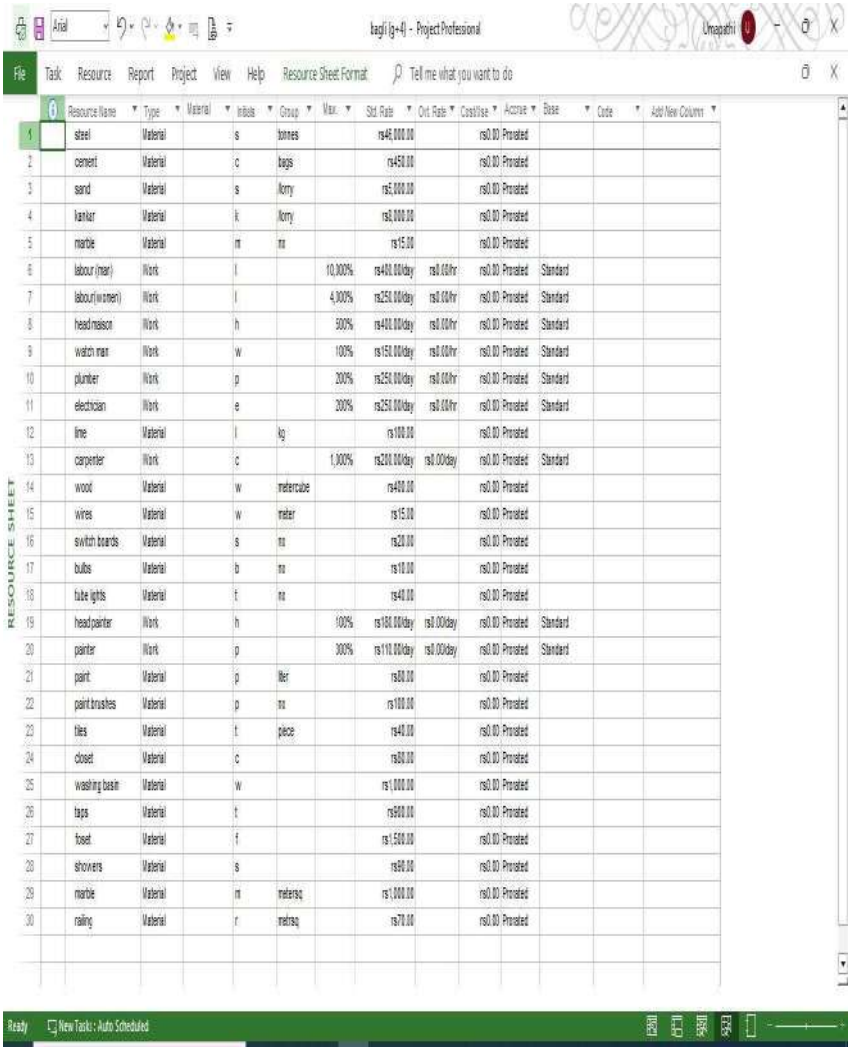


Fig. Classification of Resources.

Adding Resources:



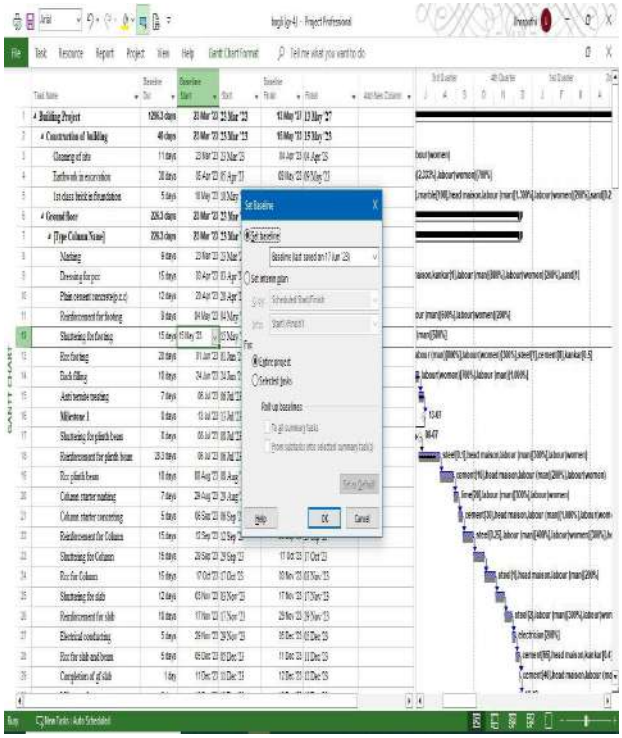
6 Month Cash Flow

Task Name	Baseline Start	Baseline Finish	Cost	Baseline Cost
Building Project	**23 Mar '23**	**13 May '27**	**rs5,167,857.41**	**rs5,167,857.41**
Construction of building	**23 Mar '23**	**15 May '23**	**rs385,250.00**	**rs385,250.00**
Cleaning of site	23 Mar '23	04 Apr '23	rs10,500.00	rs10,500.00
Earthwork in excavation	05 Apr '23	09 May '23	rs332,500.00	rs332,500.00
1st class brick in foundation	10 May '23	15 May '23	rs42,250.00	rs42,250.00
Ground floor	**23 Mar '23**	**12 Dec '23**	**rs854,555.41**	**rs854,555.41**
[Type Column Name]	**23 Mar '23**	**12 Dec '23**	**rs854,555.41**	**rs854,555.41**
Marking	23 Mar '23	01 Apr '23	rs8,400.00	rs8,400.00
Dressing for pcc	03 Apr '23	19 Apr '23	rs74,950.00	rs74,950.00
Plain cement concrete(p.c.c)	20 Apr '23	03 May '23	rs0.00	rs0.00
Reinforcement for footing	04 May '23	13 May '23	rs68,500.00	rs68,500.00
Shuttering for footing	15 May '23	31 May '23	rs30,000.00	rs30,000.00
Rcc footing	01 Jun '23	23 Jun '23	rs132,600.00	rs132,600.00
Back filling	24 Jun '23	05 Jul '23	rs57,500.00	rs57,500.00
Anti termite treating	06 Jul '23	13 Jul '23	rs0.00	rs0.00
Milestone 1	13 Jul '23	13 Jul '23	rs0.00	rs0.00
Shuttering for plinth beam	08 Jul '23	08 Jul '23	rs0.00	rs0.00
Reinforcement for plinth beam	06 Jul '23	08 Aug '23	rs46,225.00	rs46,225.00
Rcc plinth beam	08 Aug '23	29 Aug '23	rs30,600.00	rs30,600.00
Column starter marking	29 Aug '23	06 Sep '23	rs12,150.00	rs12,150.00
Column starter concreting	06 Sep '23	12 Sep '23	rs33,730.41	rs33,730.41
Reinforcement for Column	12 Sep '23	29 Sep '23	rs52,750.00	rs52,750.00
Shuttering for Column	29 Sep '23	17 Oct '23	rs0.00	rs0.00
Rcc for Column	17 Oct '23	03 Nov '23	rs64,000.00	rs64,000.00
Shuttering for slab	03 Nov '23	17 Nov '23	rs0.00	rs0.00
Reinforcement for slab	17 Nov '23	29 Nov '23	rs106,500.00	rs106,500.00
Electrical conducting	29 Nov '23	05 Dec '23	rs2,500.00	rs2,500.00
Rcc for slab and beam	05 Dec '23	11 Dec '23	rs104,950.00	rs104,950.00
Completion of gf slab	11 Dec '23	12 Dec '23	rs29,200.00	rs29,200.00

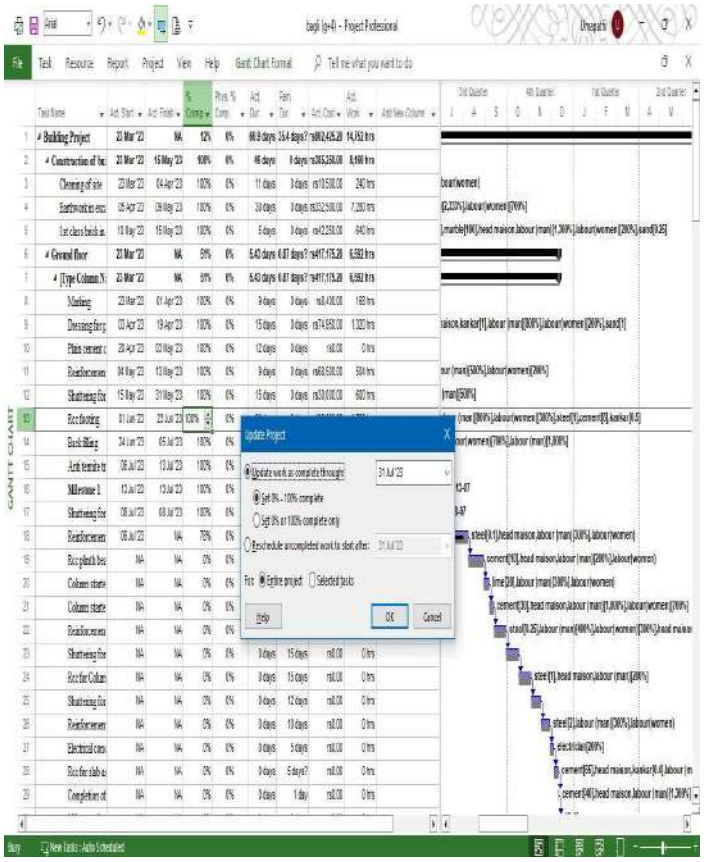
METHODOLOGY

Baseline Schedule

A Baseline is a complete copy of a project plan that you can compare to the current schedule to evaluate progress. Before updating a schedule for the first time create a baseline. It provides a target against which one can track a project's cost, schedule and performance. Up to three baselines can be compared at once. Baseline projects do not exist as separate project to access.



Schedule Update and Analysis



Update Progress

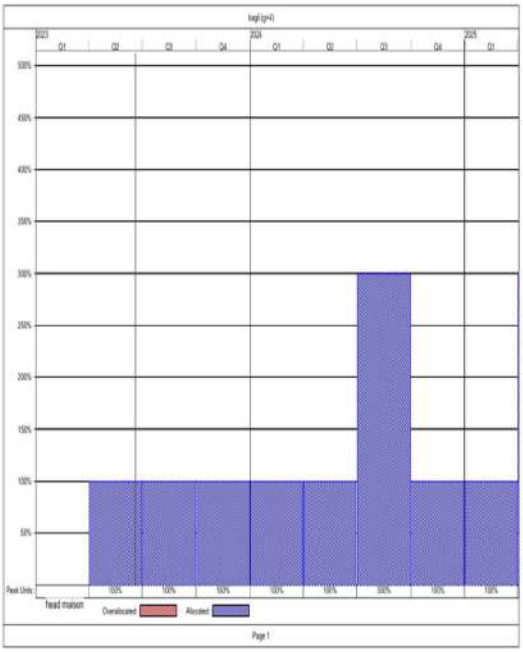
|

Task Name	Act. Start	Act. Finish	% Comp.	Act. Dur.	Rem. Dur.	Act. Cost	Act. Work
Building Project	**23 Mar '23**	**NA**	**12%**	**160.9 days**	**1135.4 days?**	**rs802,425.20**	**14,752 hrs**
Construction of building	**23 Mar '23**	**15 May '23**	**100%**	**46 days**	**0 days**	**rs385,250.00**	**8,160 hrs**
Cleaning of site	23 Mar '23	04 Apr '23	100%	11 days	0 days	rs10,500.00	240 hrs
Earthwork in excavation	05 Apr '23	09 May '23	100%	30 days	0 days	rs332,500.00	7,280 hrs
1st class brick in foundation	10 May '23	15 May '23	100%	5 days	0 days	rs42,250.00	640 hrs
Ground floor	**23 Mar '23**	**NA**	**51%**	**115.43 days**	**110.87 days?**	**rs417,175.20**	**6,592 hrs**
[Type Column Name]	**23 Mar '23**	**NA**	**51%**	**115.43 days**	**110.87 days?**	**rs417,175.20**	**6,592 hrs**
Marking	23 Mar '23	01 Apr '23	100%	9 days	0 days	rs8,400.00	168 hrs
Dressing for pcc	03 Apr '23	19 Apr '23	100%	15 days	0 days	rs74,950.00	1,320 hrs
Plain cement concrete(p.c.c)	20 Apr '23	03 May '23	100%	12 days	0 days	rs0.00	0 hrs
Reinforcement for footing	04 May '23	13 May '23	100%	9 days	0 days	rs68,500.00	504 hrs
Shuttering for footing	15 May '23	31 May '23	100%	15 days	0 days	rs30,000.00	600 hrs
Rcc footing	01 Jun '23	23 Jun '23	100%	20 days	0 days	rs132,600.00	1,760 hrs
Back filling	24 Jun '23	05 Jul '23	100%	10 days	0 days	rs57,500.00	1,360 hrs
Anti termite treating	06 Jul '23	13 Jul '23	100%	7 days	0 days	rs0.00	0 hrs
Milestone 1	13 Jul '23	13 Jul '23	100%	0 days	0 days	rs0.00	0 hrs
Shuttering for plinth beam	08 Jul '23	08 Jul '23	100%	0 days	0 days	rs0.00	0 hrs
Reinforcement for plinth beam	06 Jul '23	NA	78%	22 days	6.3 days	rs45,225.20	880 hrs

RESULTS & DISCUSSION

RESOURCE CURVES

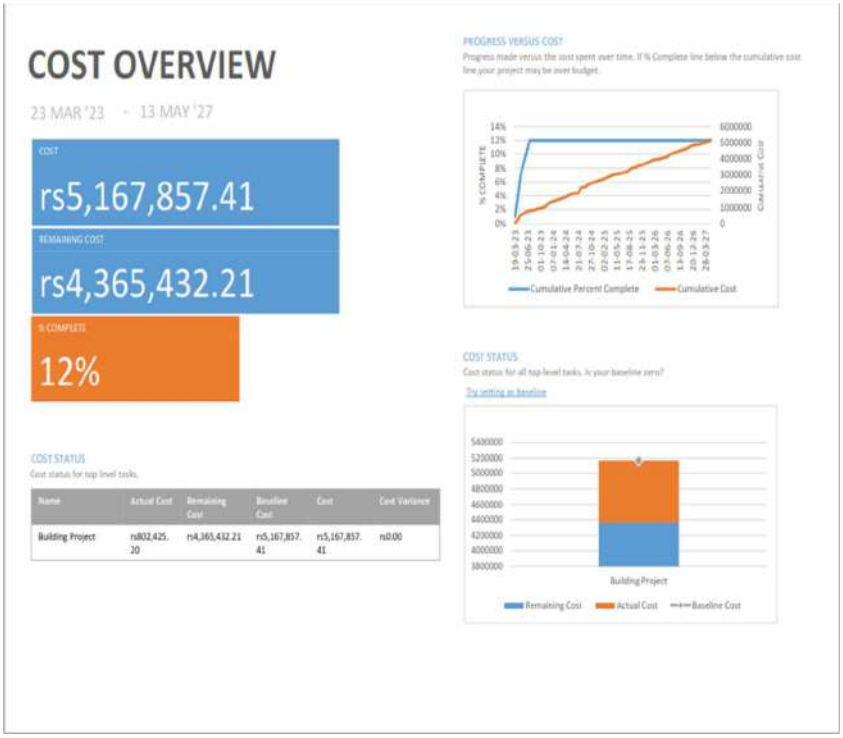
Resource/cost distribution curves enable you to specify how you want resource units or costs spread over the duration of an activity. Resource units and costs are distributed evenly during an activity unless you specify nonlinear distribution using curves.



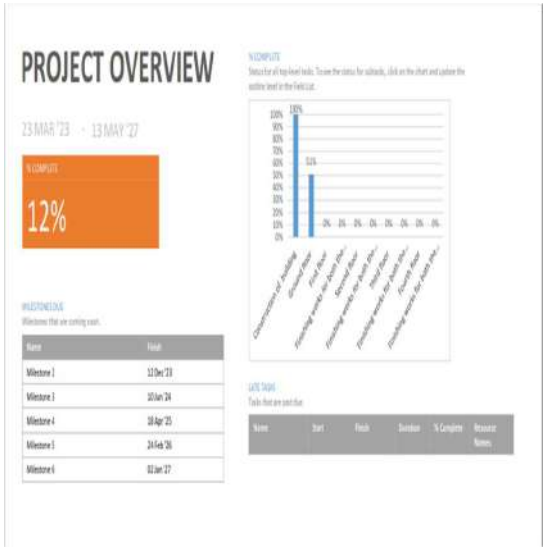
RESOURCE GRAPH FOR HEAD MAISION

REPORTS

COST OVERVIEW



PROJECT OVERVIEW



WORK OVERVIEW

CASH FLOW

EARNED VALUE

RESOURCE COST OVERVIEW

TASK COST OVERVIEW

CRITICAL TASKS

CONCLUSION

Based on the comparison between the manual scheduling and primavera scheduling, Primavera is efficient for scheduling the project and also to optimize the days by using Primavera. The critical path scheduling is done by using Microsoft Project.

Microsoft Project is efficient for the project because linking the project activities easily and also by using the four relationships can optimize the time of project. They should not have any modification in critical path.

The delay of the construction project is due to improper planning and scheduling. Thus, this project concludes that the delay can be rectified by proper scheduling and periodical tracking throughout the project.

The construction planning and scheduling was done using the project management software known as Primavera and was found effective in scheduling, allocation of resources and tracking of project. The schedule which was prepared here involves periodical as well as day to day observation in scheduling and tracking of the project. Scheduling using computer software as a tool was found to be easy and accurate. The project schedule and project track generation were its main highlight. The schedule report helps in identifying start date, finish date, also the duration of the project as a whole.

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