



PROJECT ON TIME & RESOURCE MANAGEMENT OF MULTI-STORIED BUILDING – ‘MS PROJECT’

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ABSTRACT:

Time and resource management (Planning and scheduling) are important task in construction projects. For th is work huge amount of paperwork is required, which makes management very burdensome. These problems can be solved using a project management software which helps to give a planned approach to planning using Microsoft project. Most commonly used software for time and resources managing are Primavera & MSP (Microsoft Project). These software helps to accomplish task with precision and meet the project objectives within time. It allows managers to develop project successfully fulfilling project resources demands on time. We are using MSP (Microsoft project) for our Project work. Our project includes scheduling of project with the knowledge of activities and reducing the wasting of time, resources and money on a multi-storied building. Our study concludes MSP (Microsoft project) is an effective tool for generating Gantt chart which reflects the schedule of a construction, offering minimum duration of construction time, managing resources and budget for construction project, tracking progress of construction project, analyzing workloads of construction project.

Key words: - Project Management, Time, Resources, Planning, Scheduling, Activities, Microsoft Project.

INTRODUCTION:

The Building professional as an integral component of a nation's structure and plays an important role in financial growth through multiple effects on other sectors of economy. Companies are always looking for developments in utilities features, communication tools, effective management methods, and harnessing human resources. Many project planners say that the cost of the project goes above the planned cost by 30% and it is due to improper planning and scheduling. Project management involve the application of various knowledge areas, tools and skills along with numerous technique to congregate project requirement like estimation technique, resource assignment, duration and cost management. Time and Cost are always critical and need special attention. The project is expected to get completed within specified time frame and budget. Due to the delay in a project the estimation and costing

management suffers harshly. Planning of huge projects requires huge amount of paperwork.

The factors that affect project management are:

- 1)Project cost: Projects must be within the plan budget.
- 2)Project time: Project must be delivered on specified time.
- 3)Project scope: Project must be within precised scop.
- 4)Project requirement: Project should meet client's requirement without affecting the quality, budget, precised scop and should be completed and delivered on specified time.

Which can be solved by using the softwares which available in the market for project management. MS PROJECT and PRIMAVERA are widely used for planning and scheduling. We have demonstrated the planning & scheduling of G+5 apartment building. These tools help us for the optimal and resourceful organization of activities which helps to give the vision to

complete the project in planning duration and within the budget.

2. ABOUT MICROSOFT PROJECT SOFTWARE

WHAT IS MICROSOFT PROJECT (MSP) ?

MS PROJECT is the project management software program, developed and sold by Microsoft. It is handy tool which helps to assist a project manager in :

- 1) Developing a schedule.
- 2) Assigning resources to tasks.
- 3) Tracking progress.
- 4) Managing the budget.
- 5) Analyzing workloads of on going project.
- 6) Generating Gantt chart.
- 7) Offering minimum duration.

MICROSOFT PROJECT (MSP) FEATURES :

Project managers and their teams need plenty of features to manage the work better, and MS PROJECT has many features as follows :

- 1) Planning scheduling: Prioritization, task management, team calendar
- 2) Board view: A visual kanban board view that help manage workflow and status
- 3) Gird view: A project view used to plan and manage project with a task list.
- 4) Timeline view: the traditional Gantt chart is used for scheduling task over a project timeline.
- 5) Communication & collaboration: teams can work together on projects.
- 6) Roadmap: track programs and project portfolios.
- 7) Timesheets: collect project and non-project time for payroll and invoicing.
- 8) Resource management: manage resources by requesting and assigning tasks.
- 9) Mutiple project: Microsoft project also allows project managers to work on various project on the same platform, making it easier to deal with different project in same company or team.

3. LITERATURE REVIEW

Planning and Scheduling for a Multi-Storied Building using MS-Project (2019) Sachin Pashupatihai, Prof. Vidyasagar V. Moogi In this

study they taken a multistoried building for project work. The methodology has been clone in two phases in first phase collection of data structural drawings, soil test report are collected in second phase actual scheduling process start by using MS project. After obtaining results they concluded that MS project helps to understand the under allocation and over allocation of the project and allows it to level the resources timely. Also, with seven Basic Quality tools project was executed with zero defects.

Study of Scheduling In Microsoft Project Software (2019) Shubhashree P. Deshmukh Akshay V. Sagale, Dr. Manish M. Bai This states Planning and scheduling helps in future situation and implementation of the project. Scheduling using Microsoft project Software gives good controlling and clear schedule to a project Microsoft Project is the modern tool of Project Management that aid to overcome the obstacles faced owing to traditional way of Planning and Management. It helps for the optimum and effective organization of activities which helps to give the vision to complete the project in planned duration and within the Economy.

Study on project planning, scheduling and execution of residential apartment using MSP (2019) Roopa M (Ph.D.), Dr. T V Mallesh, Rahul Guna Vyjayanth, Geethanjali, Geetanjali Lukram In this Project Planning, Scheduling, Resource Allocating, Levelling and Tracking is done using a construction management tool Microsoft Project 2013 which is very much efficient than excel and is used by construction companies for their effective output. Tracking at any sort of date allows managers to have control over delays in the work, the situation arising can be easily managed by the managers. Company having several number of similar projects can utilize this system of analysis and can update with the best possible alternatives as per the requirements.

Planning and scheduling of multistorey RCC Building using Microsoft project (2019) Pooja Tripathi , Vinay Kumar Singh , Pravin Singh Tomar , J. P. Gupta They concluded Microsoft project software works on Gantt chart concept. This gives the easy understanding of the progress of work with scheduled time. By adding more resources or increasing working hours project manager can finish the project within the duration. In order to achieve quality project crashing is a good technique. Thus optimization of time is achieved.

Study on Time and Resource Management in Construction Projects Using MS Project (2018) T. Subramani, T.M. Karthick This study was carried out to have an overall schedule of the project and find the optimized use of all resources to complete the project. Comprehensive study made in the project about the scheduling, monitoring, and optimization of various construction activities and to use software Microsoft project. The study concluded that effective method of time managements perceived by the respondents was Critical Path Method (CPM).

Comparative study of planning and scheduling of a construction project using Microsoft Project (2018) Shruti Singh , Shweta Istape , Amruta Surve , Sahil Pandey , Avinash Singh , Sangram More In the project of planning and scheduling they had selected the site located near Karjat, Mumbai, India. The building is under construction. The estimated time required to complete this building as per their planning is 20 months. They used MSP software for planning. They concluded that time required for completing the project as per their planning and scheduling is 4 months prior.

Planning & Scheduling of Residential Building Using MS Project (2018) S. T. Gavde , Kanase Swapnali , Mulani Apreen , Jadhav Varsha , Mane Mayuri Experience is very important in project management, but it is only part of the

resource requirements. They done CPM and PERT analysis and used MSP software for planning. They oncluded that time required for completing the project as per their planning and scheduling is 4 months prior to their planning and scheduling. That's why they completed their project in 8 months and 8 days. Hence our method of planning and scheduling is more scientific.

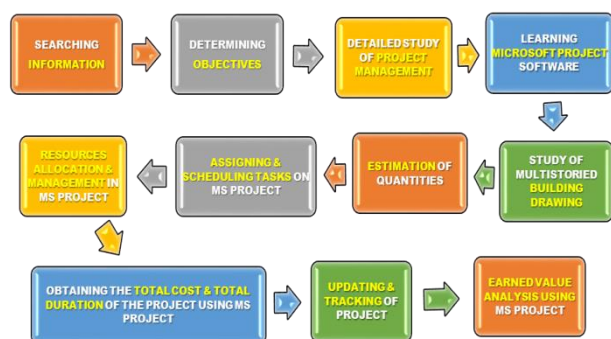
A Review on Scheduling of Construction Project By Microsoft Project Planner(MSP)(2018) Miss Dhanashri M. Panchbhute , Prof. Dr.P. P.Bhangale In This they concluded Microsoft project software, is very helpful for the successful completion of project. This software has much advantage, like it can be useful for scheduling, costing, allocation of resources, tracking of project and updating. By the use of this MSP software we can complete project successfully and at required time and budget.

Planning and scheduling of a project using Microsoft project (MSP) (2017) Shubham Laddha , Prerna Chanda and Sneha Khedekar They stated traditional way of planning doesn't sub divide the main task which future gets the hurdle of over allocation of resources, improper judgment of resources for particular activities etc. Microsoft project is the modern tool of project management that aid to overcome the obstacles faced owing to traditional way of planning and management.

Study of MS project software and its application in construction project and case study at Anand (2016) Chourajit K Sharma , Jay A Mistry , Ravi V Gohel , Vishal B Chauhan , Amit N Bhavsar Study state that implementation of MS Project software for Time and Cost Management is proven technique. Implementation of MS Project software for construction of Buildings such as Villas, for Time and Cost Management provides effective monitor and control. Software provides effective Monitoring and Controlling through various Reports.

Planning and Scheduling of Project using Microsoft Project (Case Study of a building in India) (2015) P M Wale , N D. Jain , N R Godhani , S R Beniwal, A A Mir Construction of building using Traditional way proves to be uneconomical and consumes more time with many complexity and enormous error with actual execution of the Project. Microsoft Project is the modern tool of Project Management that aid to overcome the obstacles faced owing to traditional way of Planning and Management. Study states it helps for the optimum and effective organization of activities which gives vision to complete the project in planned duration and within the Economy.

METHODOLOGY :



Searching Information :

We have studied about project management which helps us to know a different terms and techniques of project management. We have studied numerous research papers which are which are based on project management. Project management is the use of specific knowledge, skills, tools and techniques to deliver something of value to people. It includes initiation, definition and planning, execution, implementation, control and close. The project should have a proper start and end time, it should complete within the obtainable funds and resources and within the assigned time the task must be managed by achieving the project. The planning, executing and controlling are

performed on a continues basis till the project are realized.

Determining Objectives :

The Objectives is determined in such a way that proper planning of residential building can be performed.

The main objectives of project are as follows ;

- 1) To develop effective schedule by defining the various activities and arranging these activities in an appropriate sequential order.
- 2) To identify the resources required for all activities, allocating and managing the same with efficiency.
- 3) Estimate duration required to complete the individual activity with the available resources .
- 4) To estimate the resources of the project according to the quantities calculated.
- 5) Using estimation calculations for duration and resources management.
- 6) Developing critical path method to calculate total duration of the project and its critical task.
- 7) Optimization of scheduling using fast tracking, crashing of the duration and bottom up estimation.
- 8) To identify the cost of quality of the budget.
- 9) To establish the ease of monitoring & control using software.
- 10) To understand all key functions of Ms project.

Detailed Study Of Project Management :

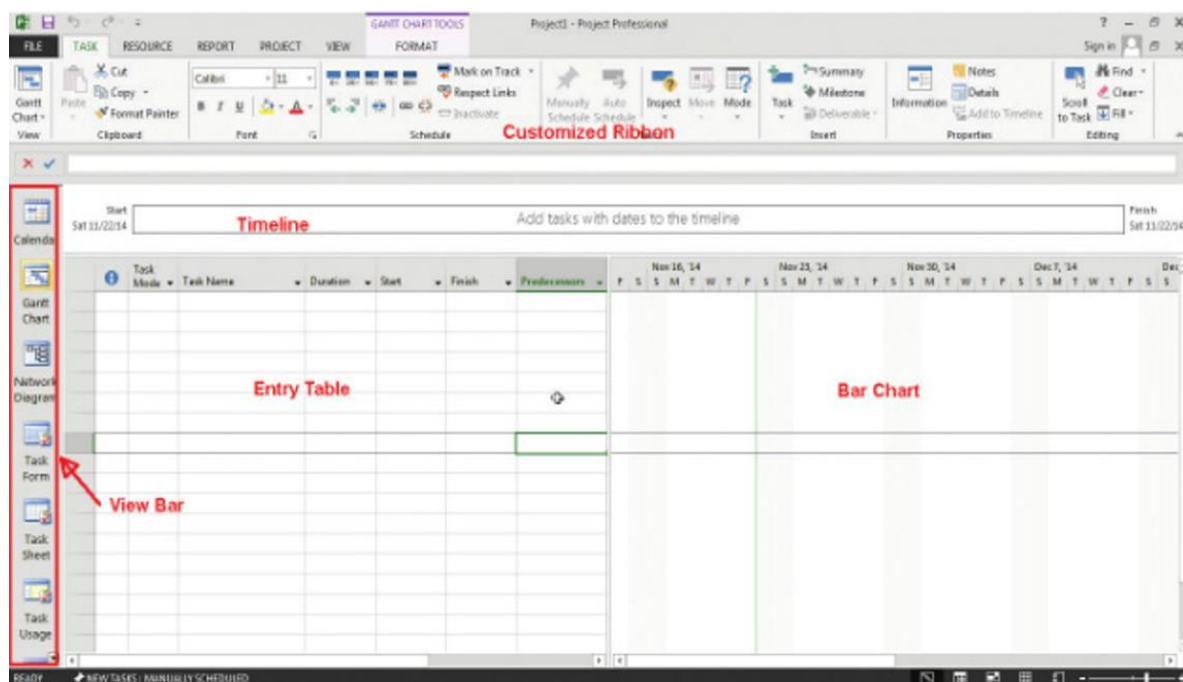
Project management is one of the key challenges of any workplace. Without the right tool, it can be difficult to keep tasks and deadlines organized for a single person, let alone for a full team. Project management is the application of knowledge, skills, tools and techniques to execute projects effectively and efficiently. It is the process and activity of planning, organizing, motivating, and controlling resources, procedures and protocols to achieve specific goals in scientific or daily problems. The primary

challenge of project management is to achieve all of the project goals and objectives while honouring the preconceived constraints. The primary constraints are scope, time, quality and budget. The secondary and more ambitious challenge is to optimize the allocation of necessary inputs and integrate them to meet pre-defined objectives. A project life cycle is a collection of generally sequential and sometimes overlapping project phases whose name and number are determined by the management and control needs of the organization or organizations involved in the project, the nature of the project itself, and its

area of application. A life cycle can be documented with a methodology. The project life cycle can be determined or shaped by the unique aspects of the organization, industry or technology employed. A project manager is a professional in the field of project management. Project managers can have the responsibility of the planning, execution and closing of any project.

Learning MICROSOFT PROJECT Software :

We have learned Microsoft project software which help us to keep resources organized, on task and on time.



Interface of MS Project Softwares is explained as follows ;

- ✓ The Ganttchart : The Gant chart is a combination of the entry table and the bar chart. This is the main working area of projecis.
- ✓ Entry Table : The Entry Table will hold a listing of every task included in the project and will show calculated details for each task. The entry table contains columns like indicator field, task mode, task name,

duration, start, finish and etc. There is also an option for insert columns.

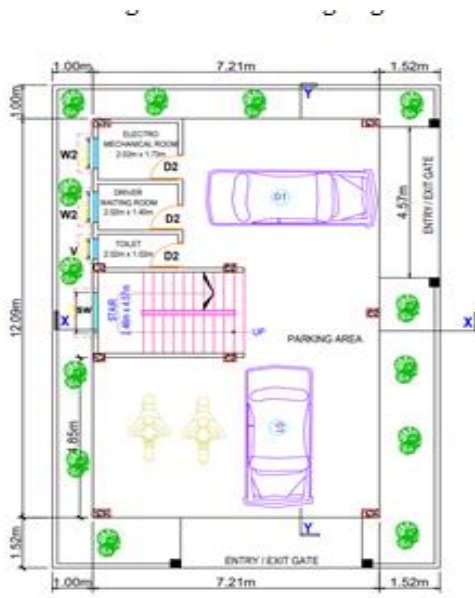
- ✓ Bar Chart : The Bar Chart will show bars drawn to represent the time span of each task against a calendar timescale.
- ✓ Customized Ribbon : The customized Ribbon is placed in top of the screen. It performs easy way to access the tabs.
- ✓ Timeline : Timeline view Create a visually compelling "project at a glance" view that includes just the summary tasks, tasks, and milestones that you choose. Timeline

view can be easily copied as a graphic image to paste into word or mail and send it to anyone who needs it.

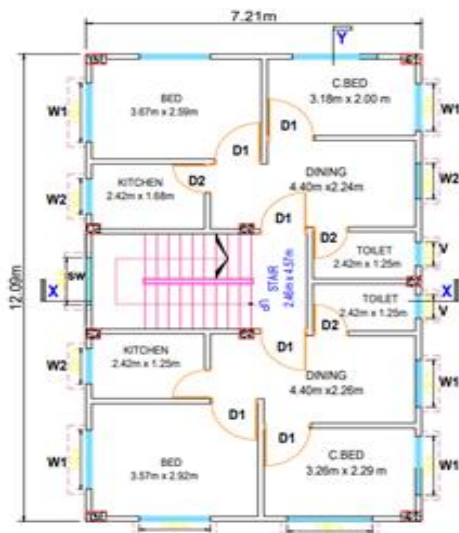
- ✓ View Bar : On the left of the Gantt Chart view bar is present. It will show the various views when we select it and visualize

Study Of Multi-Storied Building Drawing :

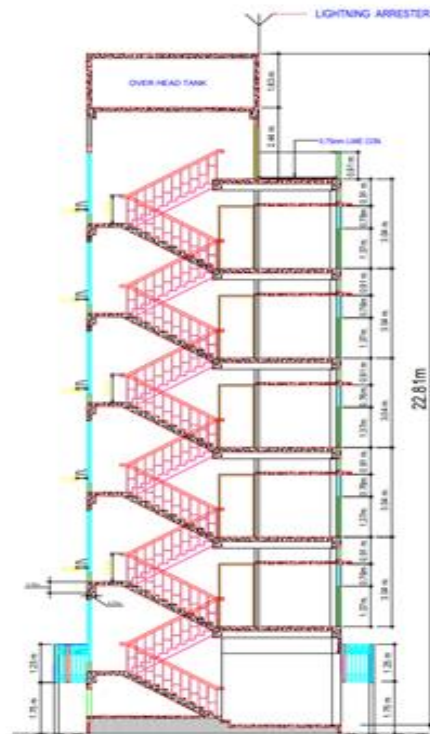
We have chosen a G+5 multi-storied for time resource i.e. For Planning and Scheduling work managing work. We are using Microsoft Project as a project management software for our work. The Plan and Section Drawings of the Building is given below ;



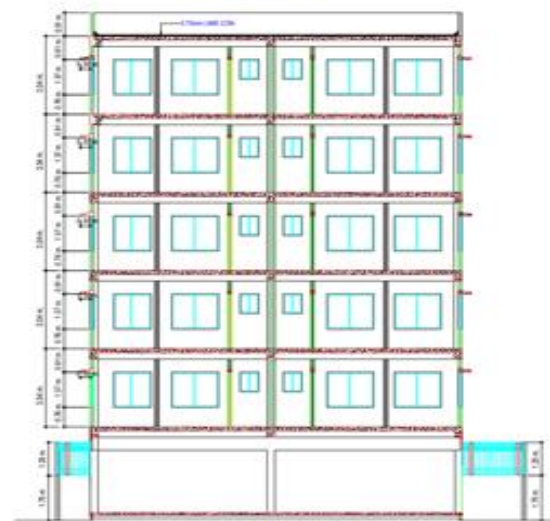
GROUND FLOOR PLAN
SCALE : 1: 100



1ST TO 5TH FLOOR PLAN
SCALE : 1: 100



SECTION : X-X
SCALE : 1: 100



SECTION : Y-Y
SCALE : 1: 100

Estimating The Quantities Of Work :

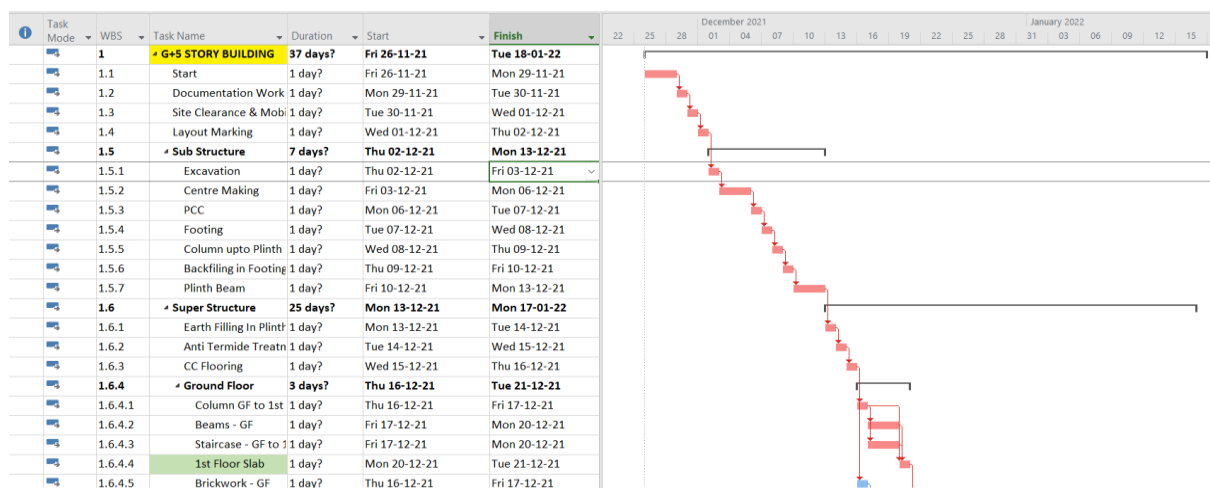
An Estimate is the calculation of quantities of various items work, and the expenses likely to be incurred there on. The total of this preferable expenses to be incurred on the work is known as estimated cost of work. The estimated cost of work is close approximation of its actual cost. By Using long wall-Short wall Method we have estimated the quantities which are required for the construction of Multi-Storied Building.

The detailed BOQ obtained by estimating quantities of Exacavation work, PCC work, RCC work of footing, column, beam, staircase and slab, Brickwork, Plastering work and Painting work are given in the table below ;

ITEM	UNIT	QUANTITY
Excavation work	Cum	56.52
PCC Laying work	Cum	3.53
Column work	Cum	15.7
Beam work	Cum	16.66
Staircase work	Cum	12
Slab Casting Work	Cum	70.83
Brickwork	Cum	109
Plastering	Sq. m	5760
Painting	Sq. m	5760

Assigning & Scheduling of tasks on Microsoft Project :

Task is an activity performed to achicve the required work and is the basic unit of the project. We spend much of our time in Project adding and modifying the tasks. In this section we created a project by entering tasks, duration, milestone etc. and futher we Scheduled them with Gantt Charts and WBS. In MSP, the left side of the Gantt chart contains a sheet view, and the right side contains a bar graph along a timescale.



1.6.4.7	Water supply& Sa	1 day?	Fri 17-12-21	Mon 20-12-21
1.6.4.8	Electrification - G	1 day?	Fri 17-12-21	Mon 20-12-21
1.6.4.9	Internal Plaster - G	1 day?	Mon 20-12-21	Tue 21-12-21
1.6.5	1st Floor	3 days?	Tue 21-12-21	Fri 24-12-21
1.6.5.1	Column - 1st to 2	1 day?	Tue 21-12-21	Wed 22-12-21
1.6.5.2	Beams - 1st Floor	1 day?	Wed 22-12-21	Thu 23-12-21
1.6.5.3	Staircase - 1st to	1 day?	Wed 22-12-21	Thu 23-12-21
1.6.5.4	2nd Floor Slab	1 day?	Thu 23-12-21	Fri 24-12-21
1.6.5.5	Brickwork - 1st Fl	1 day?	Tue 21-12-21	Wed 22-12-21
1.6.5.6	Door and Window	1 day?	Wed 22-12-21	Thu 23-12-21
1.6.5.7	Water supply& Sa	1 day?	Wed 22-12-21	Thu 23-12-21
1.6.5.8	Electrification - 1:	1 day?	Wed 22-12-21	Thu 23-12-21
1.6.5.9	Internal Plaster -	1 day?	Thu 23-12-21	Fri 24-12-21
1.6.6	2nd Floor	3 days?	Fri 24-12-21	Wed 29-12-21
1.6.6.1	Column - 2nd to 3	1 day?	Fri 24-12-21	Mon 27-12-21
1.6.6.2	Beams - 2nd Floor	1 day?	Mon 27-12-21	Tue 28-12-21
1.6.6.3	Staircase - 2nd to	1 day?	Mon 27-12-21	Tue 28-12-21
1.6.6.4	3rd Floor Slab	1 day?	Tue 28-12-21	Wed 29-12-21
1.6.6.5	Brickwork - 2nd Fl	1 day?	Fri 24-12-21	Mon 27-12-21
1.6.6.6	Door and Window	1 day?	Mon 27-12-21	Tue 28-12-21
1.6.6.7	Water supply& Sa	1 day?	Mon 27-12-21	Tue 28-12-21
1.6.6.8	Electrification - 2:	1 day?	Mon 27-12-21	Tue 28-12-21
1.6.6.9	Internal Plaster -	2nd Floor	1 day?	Tue 28-12-21
1.6.7	3rd Floor	3 days?	Wed 29-12-21	Mon 03-01-22
1.6.7.1	Column - 3rd to 4th	1 day?	Wed 29-12-21	Thu 30-12-21
1.6.7.2	Beams - 3rd Floor	1 day?	Thu 30-12-21	Fri 31-12-21
1.6.7.3	Staircase - 3rd to	4th Floor	1 day?	Thu 30-12-21
1.6.7.4	4th Floor Slab	1 day?	Fri 31-12-21	Mon 03-01-22
1.6.7.5	Brickwork - 3rd	Floor	1 day?	Wed 29-12-21
1.6.7.6	Door and Window	Work - 3rd Floor	1 day?	Thu 30-12-21
1.6.7.7	Water supply&	Sanitary fitting - 3rd	1 day?	Thu 30-12-21
1.6.7.8	Electrification - 3rd	Floor	1 day?	Thu 30-12-21
1.6.7.9	Internal Plaster -	3rd Floor	1 day?	Fri 31-12-21
1.6.8	4th Floor	3 days?	Mon 03-01-22	Thu 06-01-22
1.6.8.1	Column - 4th to 5th	Floor	1 day?	Mon 03-01-22
1.6.8.2	Beams - 4th Floor	1 day?	Tue 04-01-22	Wed 05-01-22
1.6.8.3	Staircase - 4th to	5th Floor	1 day?	Tue 04-01-22



Resources Allocation & Management On

Microsoft Project :

Microsoft Project 2013 supports three types of Resources. They are work resources, as well as two special purpose resources:- Cost and Material. Resources are the people, supplies and equipment that enable you to complete the tasks in your project. Apart from these three mentioned resources we also have two more resources. They are generic resources and budget resources. The Resources are defined in the Resources which are required for the execution work of G+5 Multi-Story Building are added in the 'Resources Sheet' of MS Project Software.

Resource Sheet. The Resource sheet contains more than 12 fields. The data's are entered in this field and assigned to a task in the project.

There are 3 types of resources in MS PROJECT which are as follows ;

- 1) **Work Resources** include the people and equipment needed to complete the task.
- 2) **Cost Resources** represent a financial cost associated with a task that need to account for
- 3) **Material Resources** are consumable that use up as the project proceed.

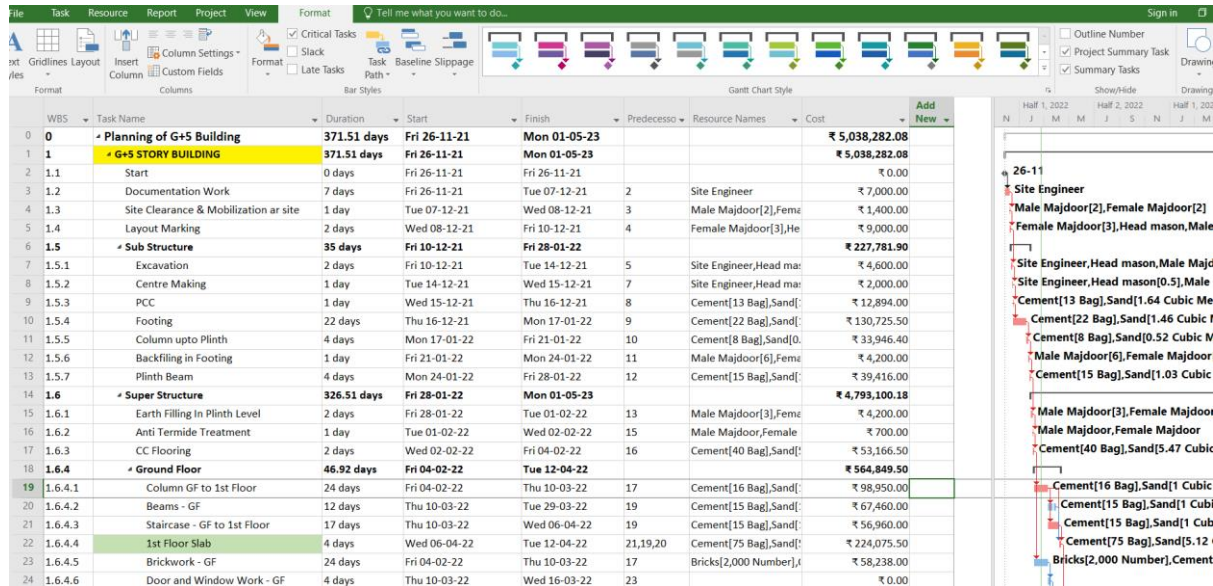
Resources are added with there type, material label and standard rates in Rupees (₹) as shown in below ;

ID	Resource Name	Type	Material Label	Initials	Group	Max. Units	Std. Rate	Ov
1	Site Engineer	Work		S		1	₹ 1,000.00/day	
2	Supervisor	Work		S		1	₹ 800.00/day	
3	Head mason	Work		H		1	₹ 600.00/day	
4	Mason	Work		M		1	₹ 500.00/day	
5	Helper(Mason)	Work		HM		1	₹ 300.00/day	
6	Painter	Work		P		1	₹ 400.00/day	
7	Helper(Painter)	Work		HP		1	₹ 300.00/day	
8	Bhisty	Work		B		1	₹ 300.00/day	
9	Mixture with operator	Work		M		1	₹ 2,500.00/day	
10	Vibrator with operator	Work		V		1	₹ 1,500.00/day	
11	Carpentor	Work		C		1	₹ 550.00/day	
12	Helper(Carpenter)	Work		CH		1	₹ 400.00/day	
13	Bar Bender	Work		B		1	₹ 550.00/day	
14	Helper(Bar Bender)	Work		BH		1	₹ 350.00/day	
15	Male Majdoor	Work		M		1	₹ 400.00/day	
16	Female Majdoor	Work		F		1	₹ 300.00/day	
17	Cement	Material	Bag	B			₹ 370.00	
18	Sand	Material	Cubic Meter	S			₹ 1,200.00	
19	Aggregates (20mm)	Material	Cubic Meter	A20			₹ 1,000.00	
20	Aggregates (40mm)	Material	Cubic Meter	A40			₹ 950.00	
21	Fly ash bricks	Material	Number	FB			₹ 4.50	
22	Red bricks	Material	Number	RB			₹ 6.00	
23	Tor steel	Material	Kg	T			₹ 60.00	
24	Binding wire	Material	Kg	BW			₹ 65.00	
25	Rubble	Material	Cubic Meter	R			₹ 1,150.00	
26	Through stone	Material	Number	TS			₹ 550.00	
27	Excavator	Cost		E				
28	Paint	Cost		P				
29	Electric Accessories	Cost		E				
30	Water Supply &Sanitary Accessories	Cost		W				
31	nail	Cost		n				
32	centairing	Cost		c				

Obtaining The Total Cost, Total Duration & Critical Path Of The Project Using Ms Project

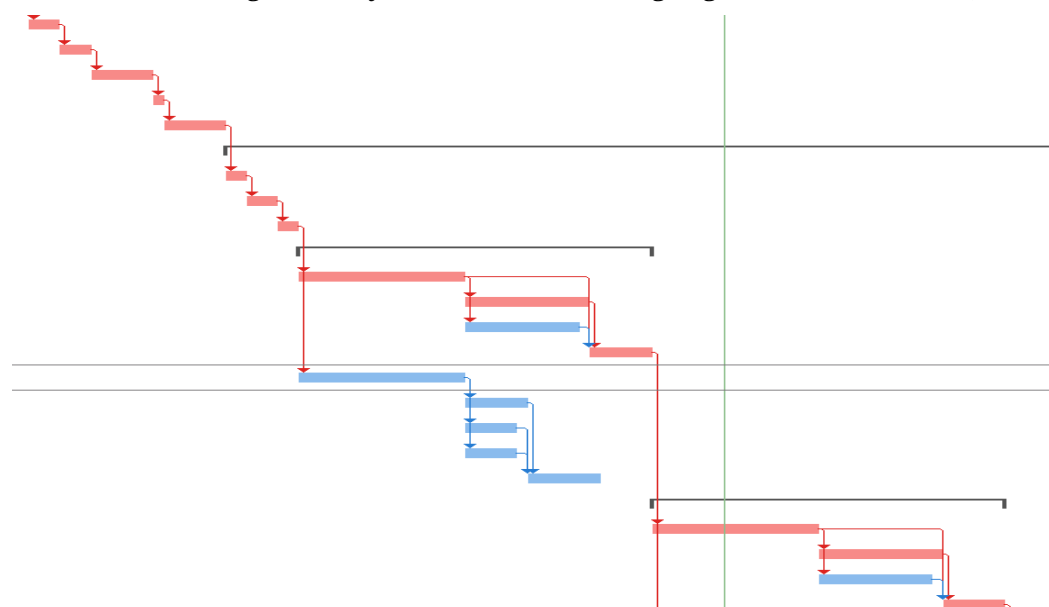
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 By using the features of MS project we can easily calculate Total cost and Duration of the project. There is a project Summary task option

in MS Project which can show a project as a summary task in the task list. A project summary task displays your whole project on a single row with its own summary taskbar as shown below ;



The Critical Path Method or CPM is the technique that underlies scheduling. The focus of CPM is to analyze all series of linked tasks in a project and determine which series has the least amount of scheduling flexibility i.e. the

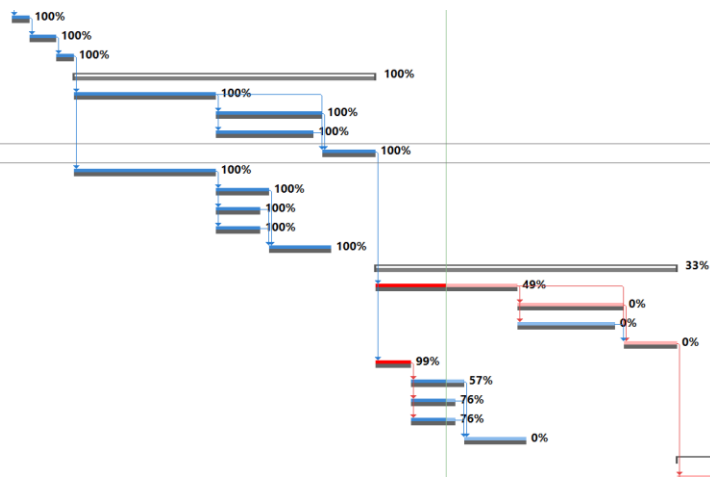
least amount of slack. This series becomes designated as the critical path. MS Project directly shows the Critical path of the project as well as critical tasks. The critical tasks of project are high lighted in red as shown ;



Updating & Tracking Of Project :

Tracking is the process of collecting, entering and analyzing of actual project performance values, such as work on tasks and actual durations. The tracking is the second major phase of project management. properly tracking actual work and comparing it against the original plan enables you to identify variance and adjust the incomplete

1.6.1	Earth Filling In Plinth Level	2 days	W
1.6.2	Anti Termite Treatment	1 day	Fri
1.6.3	CC Flooring	2 days	M
1.6.4	Ground Floor	24 days	W
1.6.4.1	Column GF to 1st Floor	12 days	W
1.6.4.2	Beams - GF	8 days	Fri
1.6.4.3	Staircase - GF to 1st Floor	7 days	Fri
1.6.4.4	1st Floor Slab	4 days	W
1.6.4.5	Brickwork - GF	12 days	W
1.6.4.6	Door and Window Work - GF	4 days	Fri
1.6.4.7	Water supply & Sanitary fitting - GF	3 days	Fri
1.6.4.8	Electrification - GF	3 days	Fri
1.6.4.9	Internal Plaster - GF	5 days	Th
1.6.5	1st Floor	24 days	Tu
1.6.5.1	Column - 1st to 2nd Floor	12 days	Tu
1.6.5.2	Beams - 1st Floor	8 days	Th
1.6.5.3	Staircase - 1st to 2nd Floor	7 days	Th
1.6.5.4	2nd Floor Slab	4 days	Tu
1.6.5.5	Brickwork - 1st Floor	3.6 days	Tu
1.6.5.6	Door and Window Work - 1st Floor	4 days	Fri
1.6.5.7	Water supply & Sanitary fitting - 1st Floor	3 days	Fri
1.6.5.8	Electrification - 1st Floor	3 days	Fri
1.6.5.9	Internal Plaster - 1st Floor	5 days	Th
1.6.6	2nd Floor	24 days	M



For tracking the project we have to set a base line for a project and update the project we can do tracking in tracking gantt interface of MS Project. The tracking of project is shown below ;

Earned Value Analysis Using MS Project :

Earned value method is important when planning projects using MS Project as it allows budgeting and scheduling issues to be recognised early, even in very complex projects with hundreds or thousands of tasks, allowing enough time for resolution therefore helping projects to be completed on time and within budget. The prerequisites of Earned Value are important as their presence allows you to use the automatically calculated Earned Value Method, generate Earned Value performance reports and ultimately satisfy your customer or stakeholder expectations of the Earned Value tracking for your project. Before you can calculate and track your project's Earned Value there are a number of prerequisites, these can be thought of as EVM building blocks.

task of the plan. Tracking in Project consists of entering information about actuals, such as the actual start date, the actual finish date, and the actual duration of a task. When you enter information about actuals, Project shows you a schedule with projections of how the remaining of the schedule is going to complete, based on your actual activity.

To be able to use EVM in Project, you first need to perform the following steps:

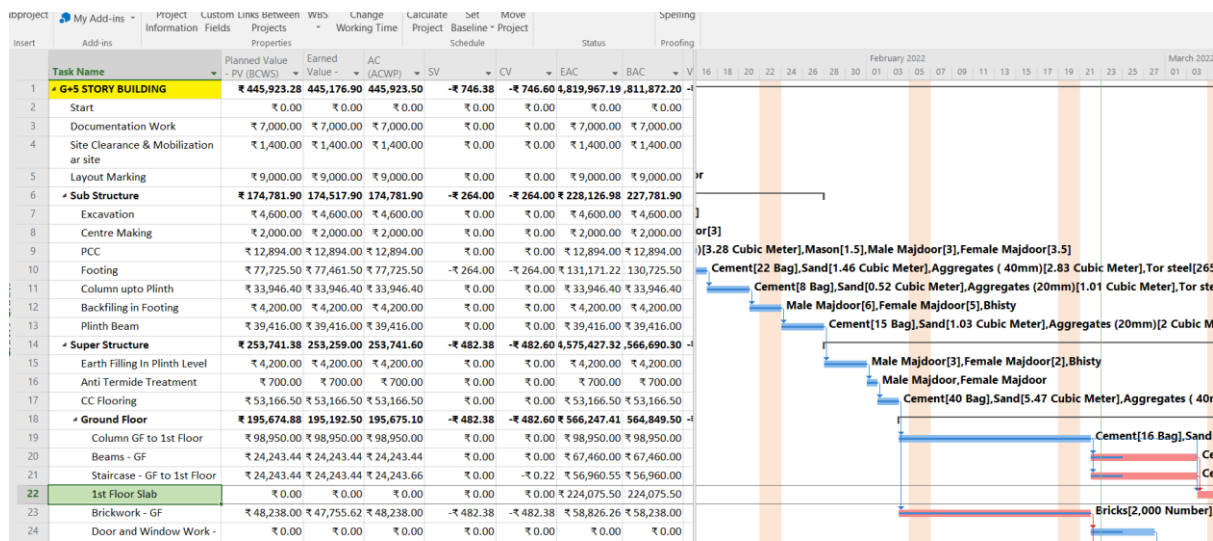
- 1) Produce a properly structured project schedule : Ensure that your project schedule is structured properly with a well-defined Work Breakdown Structure (WBS) which includes all project tasks required to complete the project.
- 2) Assign resources : Ensure all tasks have a resource assigned to allow Project to know which resource is undertaking which task. It is also important to assign accurate assignment units for each resource (i.e. if a resource is working full time on the project task, their assignment unit would be 100%) to allow Project to calculate accurate project costs as well as track progress accurately.
- 3) Set hourly rates for resources : Ensure all resources have an hourly rate assigned to them, this the cost incurred by the project for each hour that the resource works on the task. This allows Project to calculate respective costs for tasks using the hourly

rates of resources. Entering an hourly rate for resources effects the Gantt chart as the 'cost' column will be automatically calculated by Project for each task by considering the resource cost.

- 4) Pre-work project baseline set : Save the baseline of the planned project. It is important that the baseline is set prior to any project work beginning.
- 5) Ensure project progress is being tracked regularly and accurately : Once the project has begun it is important that the progress begins to be tracked, meaning that the

actual start and finish dates of each task are being tracked so that these can be compared to the planned dates. The percentage completion method can be used to track task progress, for example it would state that a task which is half complete would be 50% complete.

- 6) Set project status date correctly : Ensure that the project status date is set to reflect the date of the last progress entry meaning that the progress of the project is accurate as of the date you have entered.



EARNED VALUE

Earned value management helps you quantify the performance of a project. It compares costs and schedules to a baseline to determine if the project is on track. If the charts don't look right, make sure you have set a baseline, assigned costs to tasks or resources, and entered progress.

EAC	ACWP	BCWP
₹ 4,819,967.19	₹ 445,923.50	₹ 445,176.90



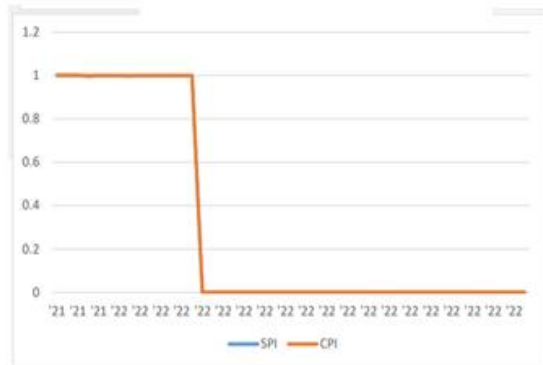
EARNED VALUE OVER TIME
 The project's earned value based on the status date. If actual cost (ACWP) is higher than earned value (BCWP), then the project is over budget. If planned value (BCWS) is higher than earned value, then the project is behind schedule.



VARIANCE OVER TIME
 Cost and schedule variances for the project based on status date. If CV is negative then, the project is over budget. If SV is positive then the project is behind schedule.

INDICES OVER TIME

Cost and schedule performance indices for the project based on status date. The greater the performance index, the more on schedule and cost saving the project.



1.

CONCLUSION:

Construction of the building using traditional way proves to be on economical and consumes more time with many complex problems and high errors with actual execution of the project. Traditional way of planning cannot sub-divide main tasks of over allocation of resources, improper judgement of resources for typical activities etc. Where as Microsoft project is a modern tool for project management which overcomes the obstacles faced owing to traditional way of managing resources and time. It helps for the optimum and effective organization of activities which gives vision to complete the project in planned duration and within the Economy.

It is concluded that project scheduling which is done by using project management software i.e. Microsoft Project is very helpful for the successful completion of project. This software has many advantages as follows ;

- 1) Projects and tasks can be created with a few clicks and a few keystrokes. Dates and team member assignments can be set and edited quickly from a simple interface.
- 2) It helps to understand the under allocation and over allocation of the project and allows it to level the resources timely i.e. It keeps your projects on time.
- 3) It works on Gantt chart concept. This gives the easy understanding of the progress of work with scheduled time.
- 4) Features like Critical Path Method in Microsoft Project for Planning and Scheduling is proved to be very effective than doing manual Planning and Scheduling.
- 5) By planning on MS Project we can reduce the wasting of time, money and resources. i.e. we can complete project on time and within the budget.

- 6) MS Project software provides effective Monitoring and Controlling through various Reports.

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