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COMPARATIVE STUDY ON PLANNING, SCHEDULING & RESOURCE ALLOCATION OF A LIVE PROJECT WITH UPCOMING PROJECT OF SAME ASPECT.

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ABSTRACT

The Aim of this study is to compare the actual project done with upcoming project in terms of planning, scheduling and resource allocating with respect to TIME & Cost. The actual project was subjected to a financial break up as a result, delay of project was observed. Now assuming that if financial break ups would not have occurred & allocation of resources would have done according to IS 7272 by taking CPWD rates 2014 then, best result was obtained w.r.t. time-cost for each activity in W.B.S. so for upcoming project which has same specification as actual project already done, new project duration, planning and resource allocation is performed & results are studied. Results are giving too main heading's

1. Amount saved on activity along with crashing & durations
2. Amount invested on activity to achieve desired duration.

For this , total amount saved on project resource is compared to total amount invested to achieve target duration for upcoming project. Also, indirect cost which includes only the salary packages of PMC is also considered along with resource costing

.

KEYWORDS: planning, scheduling, resource allocation, PMC, MSP, durations.

INTRODUCTION

NOOR-US-SABAH Residencial project is working on cost plus contract type. This is a biggest project of central INDIA as per Standards. It is developed in 17.5 acres of land at a prime location of Bhopal. This Project is governed by Remigate infra developers pvt ltd.

Residential project are the project which have many factors for their successful completion. Most important are the concept of pre-sales of unbuilt apartment which result like top gear in financial flow. This financial flow actions the rapid construction process, leading to good output in short duration. On the other hand, if sales result are poor this effect in delay of project leading to expansion of duration along with rises in prices of every construction activity.

Here the research work is on a broad view on this project is taken as a case study. Its full analysis and study is done on a basis of W.B.S. (work breakdown structure), every activity of W.B.S. is quoted by D.P.R. (daily progress report). Then on completion of two residential blocks, their resource cost and indirect cost is calculated along with the total duration invested on their completion.

This study is based on comparison of a live project with upcoming project to determine optimum project duration, planning and their respective resource allocation.

LITERATURE REVIEW

P.Dayakar and M. Udhayakumar (2012) described best schedule in such a way that meets the primary objectives of the total project. Those primary objectives are to create a quality project, completed on time, within budget, and in a safe work environment. Hence in this study an ongoing construction project is taken and the execution of the project is compared with the schedule with the help of Microsoft Project and concluded that It is

important to realize that there will be changes to the schedule logic as well as differences between the planned progress and actual progress.

METHODOLOGY

For preparing an overall comparative report, actual working data is collected by working at site and noting down daily progress report, with activity name, quantity of work done resources held. Then after completion of overall structural completion of construction of two blocks tables are prepared for upcoming project as follows:-

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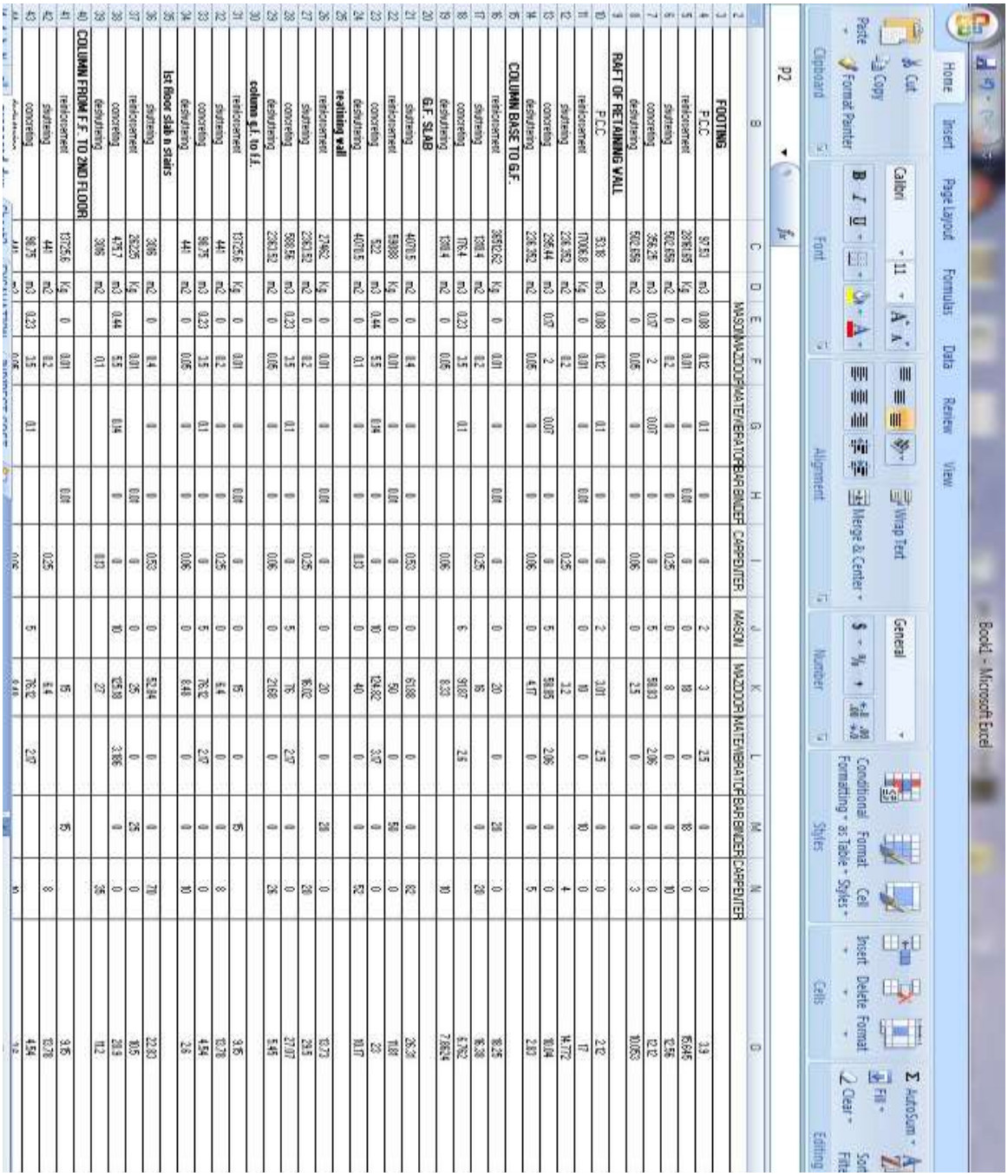

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	B	C	D	E	F	G	H	I	J	K	L	M	N	O
45	2ND FLOOR SLAB N STAIRS													
46	shuttering	3016	m2	0	0.4	0	0	0.53	0	52.84	0	0	70	22.83
47	reinforcement	26225	Kg		0.01		0.01	0	0	25	0	25	0	10.5
48	concreting	475.7	m3	0.44	5.5	0.14	0	0	10	125.18	3.186	0	0	20.9
49	deshuttering	3016	m2		0.1			0.13		27			35	11.2
50	column 2nd floor to 3rd floor													
51	reinforcement	11831	Kg		0.01		0.01			20		20		5.9
52	shuttering	441	m2		0.2			0.25		6.4			8	13.78
53	concreting	98.75	m3	0.23	3.5	0.1	0		5	76.12	2.17			4.54
54	deshuttering	441	m2		0.05			0.06		8.48			10	2.6
55	3rd floor slab n stairs													
56	shuttering	3016	m2	0	0.4	0	0	0.53	0	52.84	0	0	70	22.83
57	reinforcement	26225	Kg		0.01		0.01	0	0	25	0	25	0	10.5
58	concreting	475.7	m3	0.44	5.5	0.14	0	0	10	125.18	3.186	0	0	20.9
59	deshuttering	3016	m2		0.1			0.13		27			35	11.2
60	column from 3rd to 4th floor													
61	reinforcement	11831	Kg		0.01		0.01			20		20		5.9
62	shuttering	441	m2		0.2			0.25		6.4			8	13.78
63	concreting	98.75	m3	0.23	3.5	0.1	0		5	76.12	2.17			4.54
64	deshuttering	441	m2		0.05			0.06		8.48			10	2.6
65	4th floor slab casting													
66	shuttering	3016	m2	0	0.4	0	0	0.53	0	52.84	0	0	70	22.83
67	reinforcement	26225	Kg		0.01		0.01	0	0	25	0	25	0	10.5
68	concreting	475.7	m3	0.44	5.5	0.14	0	0	10	125.18	3.186	0	0	20.9
69	deshuttering	3016	m2		0.1			0.13		27			35	11.2
70	LUMN FROM 4TH FLOOR TO 5TH FLOOR													
71	reinforcement	9927	Kg		0.01		0.01			20		20		5.9
72	shuttering	441	m2		0.2			0.25		6.4			8	13.78
73	concreting	98.75	m3	0.23	3.5	0.1	0		5	76.12	2.17			4.54
74	deshuttering	441	m2		0.05			0.06		8.48			10	2.6
75	5TH FLOOR SLAB CASTING													
76	shuttering	3016	m2	0	0.4	0	0	0.53	0	52.84	0	0	70	22.83
77	reinforcement	26225	Kg		0.01		0.01	0	0	25	0	25	0	10.5
78	concreting	475.7	m3	0.44	5.5	0.14	0	0	10	125.18	3.186	0	0	20.9
79	deshuttering	3016	m2		0.1			0.13		27			35	11.2
80	LUMN FROM 5TH TO TERRACE FLOOR													
81	reinforcement	9927	Kg		0.01		0.01			20		20		5.9
82	shuttering	441	m2		0.2			0.25		6.4			8	13.78
83	concreting	98.75	m3	0.23	3.5	0.1	0		5	76.12	2.17			4.54
84	deshuttering	441	m2		0.05			0.06		8.48			10	2.6
85	TERRACE SLAB WORK													
86	shuttering	3016	m2	0	0.4	0	0	0.53	0	52.84	0	0	70	22.83
87	reinforcement	26225	Kg		0.01		0.01	0	0	25	0	25	0	10.5

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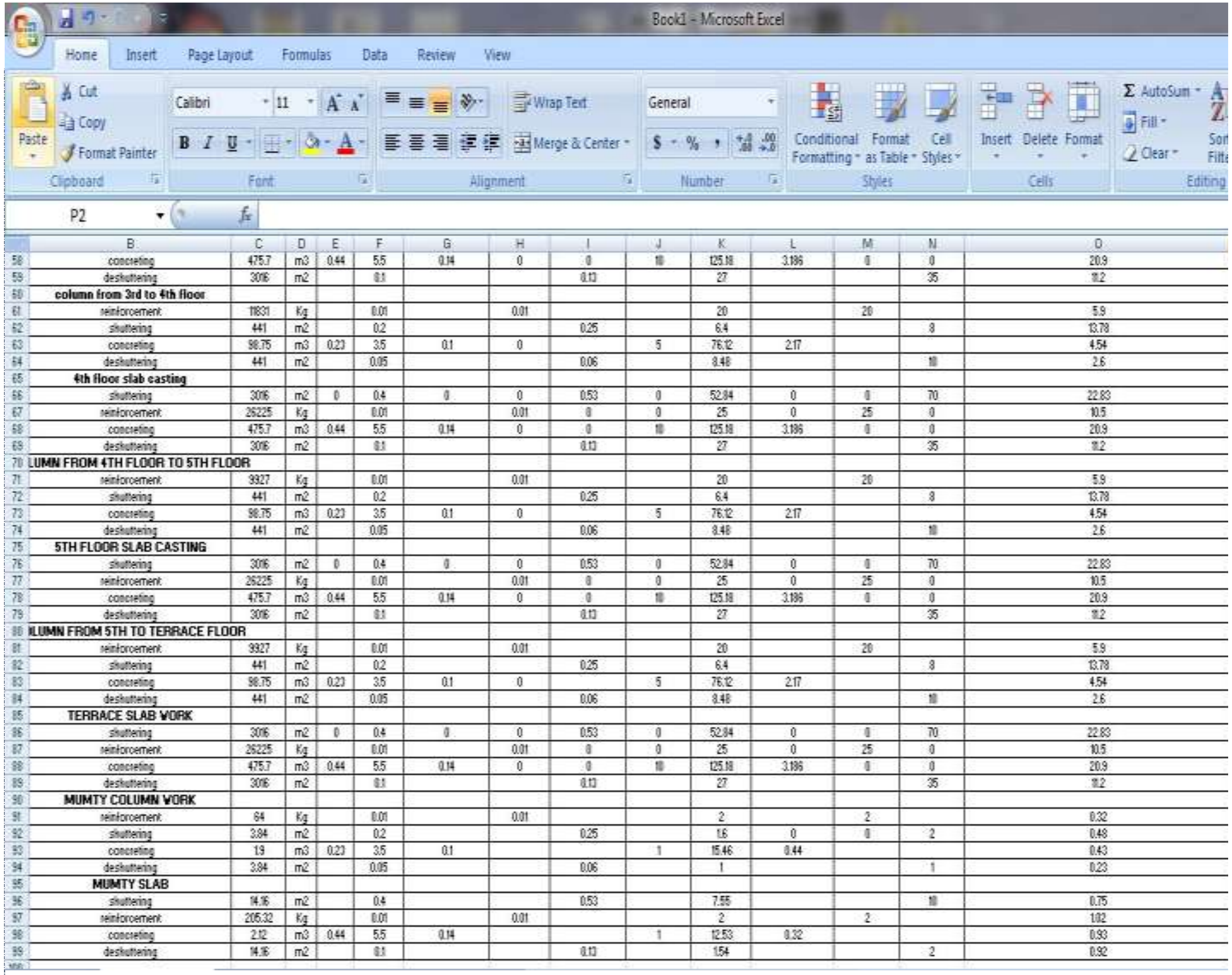

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58	concreting	475.7	m3	0.44	5.5	0.14	0	0	10	125.18	3.186	0	0	20.9
59	deshuttering	3016	m2		0.1			0.13		27			35	11.2
60	**column from 3rd to 4th floor**													
61	reinforcement	11831	Kg		0.01		0.01			20		20		5.9
62	shuttering	441	m2		0.2			0.25		6.4			8	13.78
63	concreting	98.75	m3	0.23	3.5	0.1	0		5	76.12	2.17			4.54
64	deshuttering	441	m2		0.05			0.06		8.48			10	2.6
65	**4th floor slab casting**													
66	shuttering	3016	m2	0	0.4	0	0	0.53	0	52.84	0	0	70	22.83
67	reinforcement	26225	Kg		0.01		0.01	0	0	25	0	25	0	10.5
68	concreting	475.7	m3	0.44	5.5	0.14	0	0	10	125.18	3.186	0	0	20.9
69	deshuttering	3016	m2		0.1			0.13		27			35	11.2
70	**LUMN FROM 4TH FLOOR TO 5TH FLOOR**													
71	reinforcement	9927	Kg		0.01		0.01			20		20		5.9
72	shuttering	441	m2		0.2			0.25		6.4			8	13.78
73	concreting	98.75	m3	0.23	3.5	0.1	0		5	76.12	2.17			4.54
74	deshuttering	441	m2		0.05			0.06		8.48			10	2.6
75	**5TH FLOOR SLAB CASTING**													
76	shuttering	3016	m2	0	0.4	0	0	0.53	0	52.84	0	0	70	22.83
77	reinforcement	26225	Kg		0.01		0.01	0	0	25	0	25	0	10.5
78	concreting	475.7	m3	0.44	5.5	0.14	0	0	10	125.18	3.186	0	0	20.9
79	deshuttering	3016	m2		0.1			0.13		27			35	11.2
80	**LUMN FROM 5TH TO TERRACE FLOOR**													
81	reinforcement	9927	Kg		0.01		0.01			20		20		5.9
82	shuttering	441	m2		0.2			0.25		6.4			8	13.78
83	concreting	98.75	m3	0.23	3.5	0.1	0		5	76.12	2.17			4.54
84	deshuttering	441	m2		0.05			0.06		8.48			10	2.6
85	**TERRACE SLAB WORK**													
86	shuttering	3016	m2	0	0.4	0	0	0.53	0	52.84	0	0	70	22.83
87	reinforcement	26225	Kg		0.01		0.01	0	0	25	0	25	0	10.5
88	concreting	475.7	m3	0.44	5.5	0.14	0	0	10	125.18	3.186	0	0	20.9
89	deshuttering	3016	m2		0.1			0.13		27			35	11.2
90	**MUMTY COLUMN WORK**													
91	reinforcement	64	Kg		0.01		0.01			2		2		0.32
92	shuttering	3.84	m2		0.2			0.25		1.6	0	0	2	0.48
93	concreting	1.9	m3	0.23	3.5	0.1			1	15.46	0.44			0.43
94	deshuttering	3.84	m2		0.05			0.06		1			1	0.23
95	**MUMTY SLAB**													
96	shuttering	14.16	m2		0.4			0.53		7.55			10	0.75
97	reinforcement	205.32	Kg		0.01		0.01			2		2		1.02
98	concreting	2.12	m3	0.44	5.5	0.14			1	12.53	0.32			0.93
99	deshuttering	14.16	m2		0.1			0.13		1.54			2	0.92

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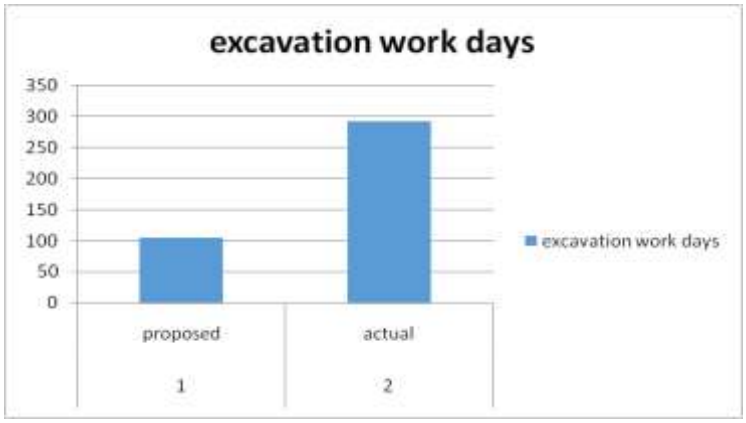
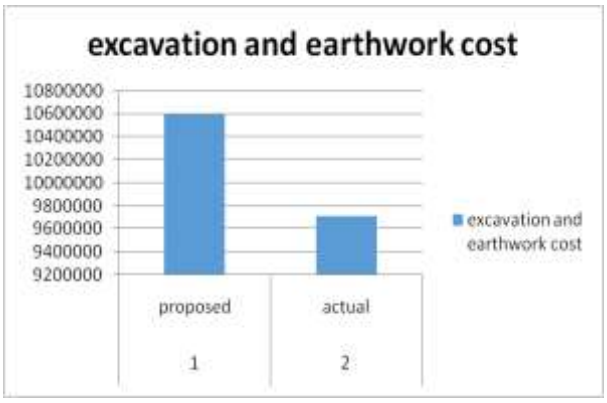
RESULTS

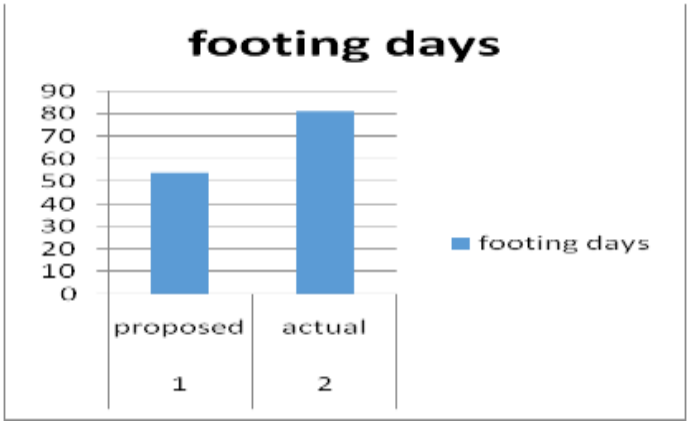
RESULT ANALYSIS- TIME & COST COMPARISION

4.1 EXCAVATION





4.2.1 FOOTING WORK



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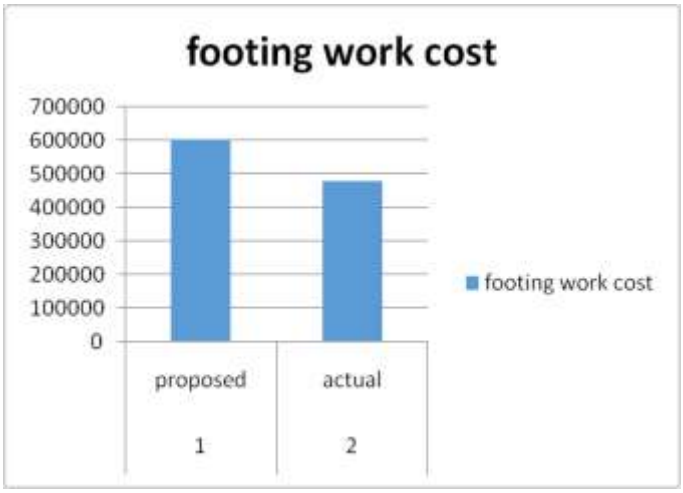
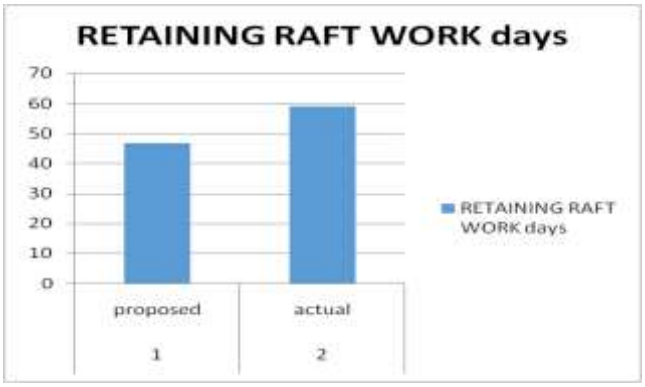
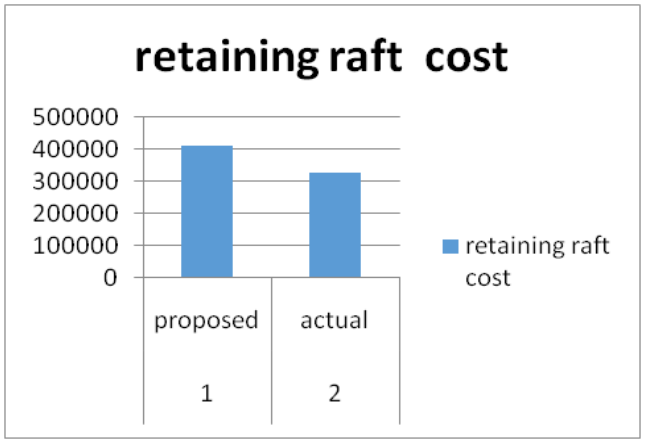


4.3.1 RETAINING RAFT WORK





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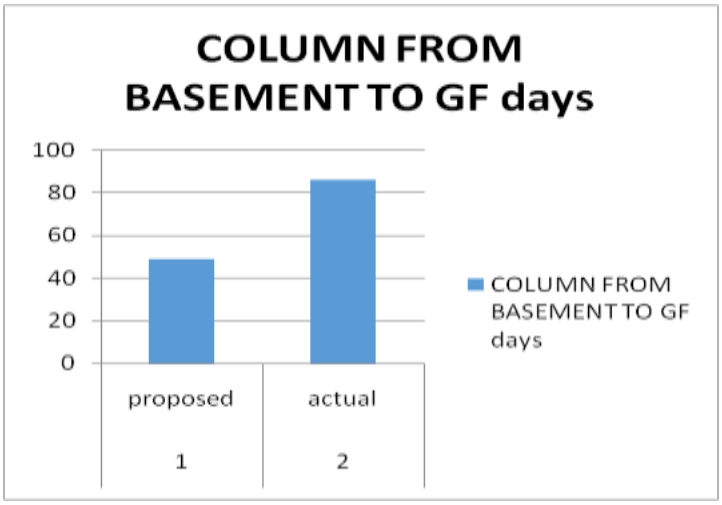
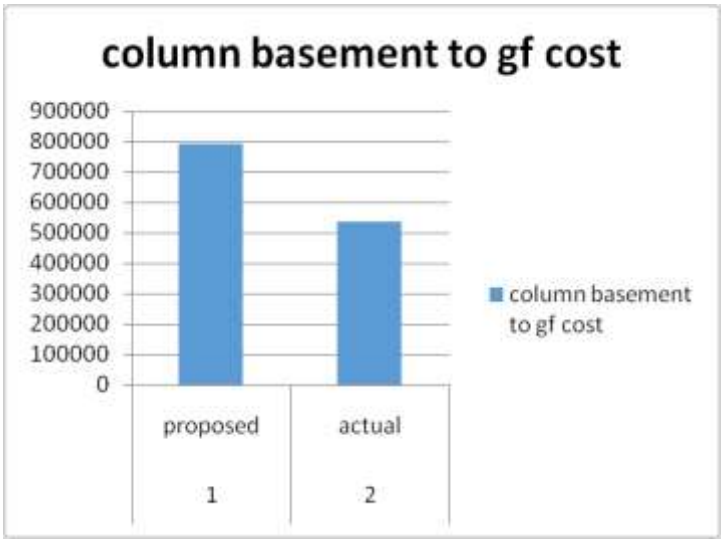
4.4.1. COLUMN WORK BASEMENT TO GROUND FLOOR





4.5.1 SLAB WORK

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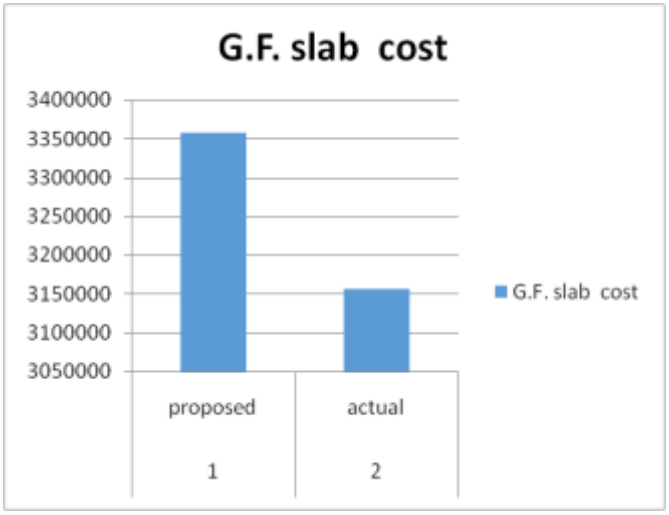
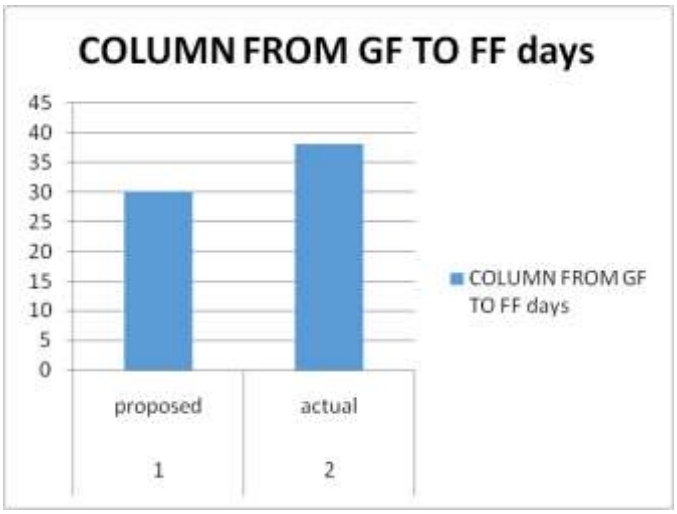
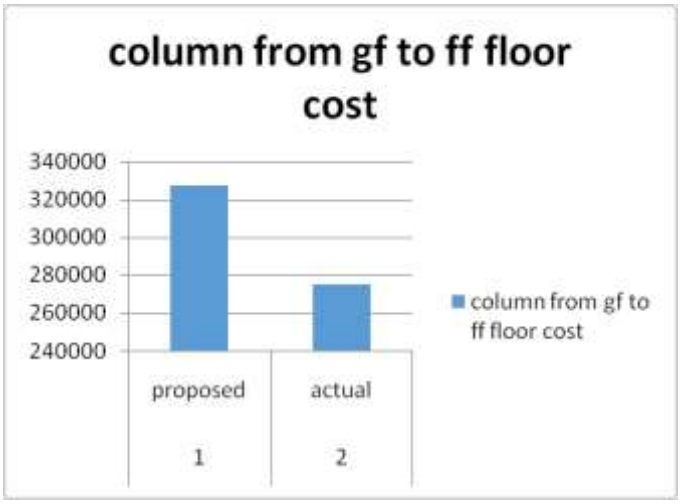


4.5.1 COLUMN GF TO FF





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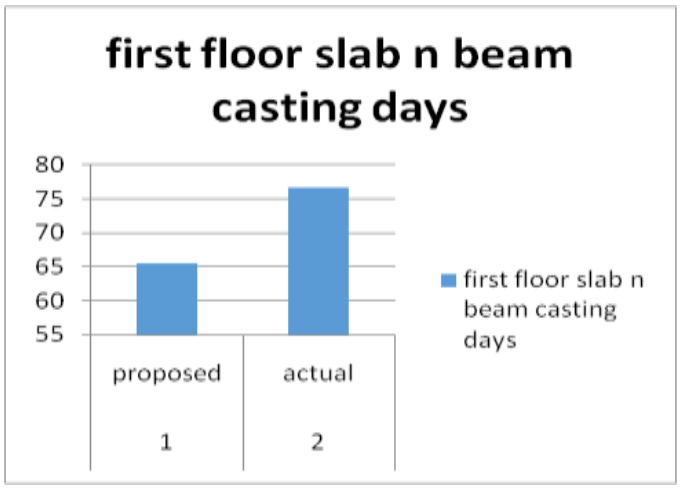
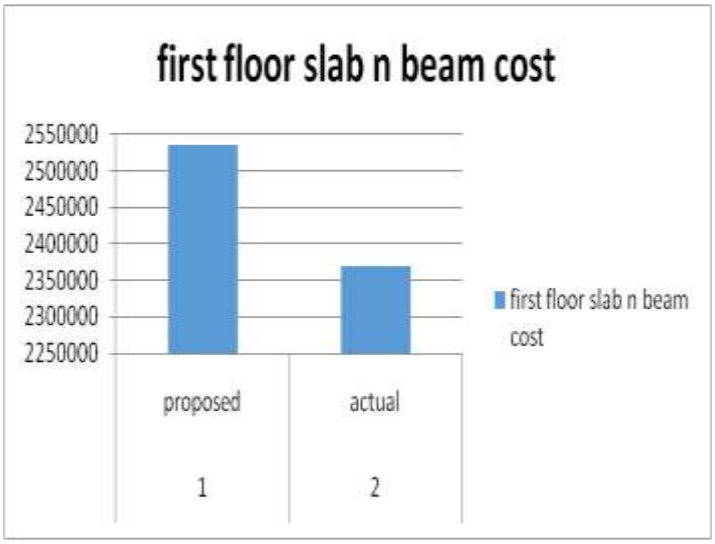
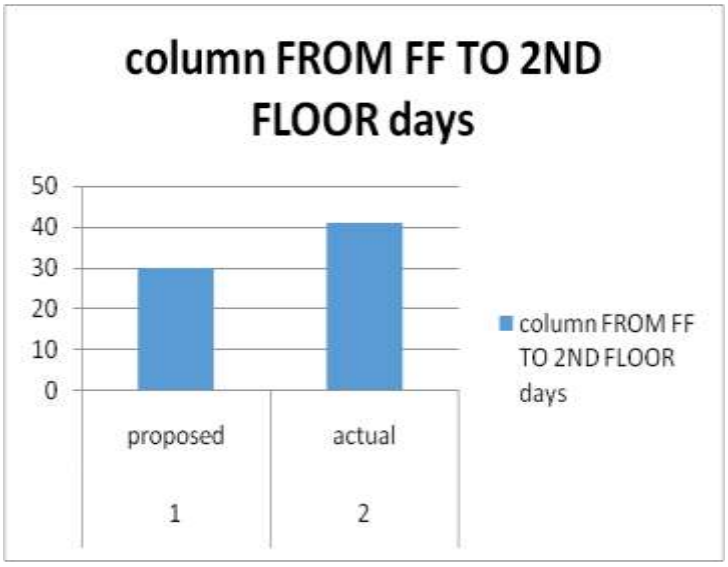
4.6.1 SLAB FIRST FLOOR





5.1.8 COLUMN WORK FROM 1ST FLOOR TO 2ND FLOOR



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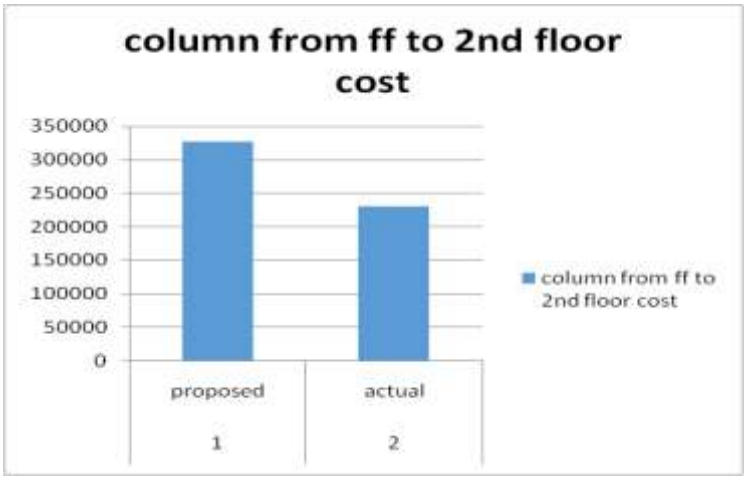
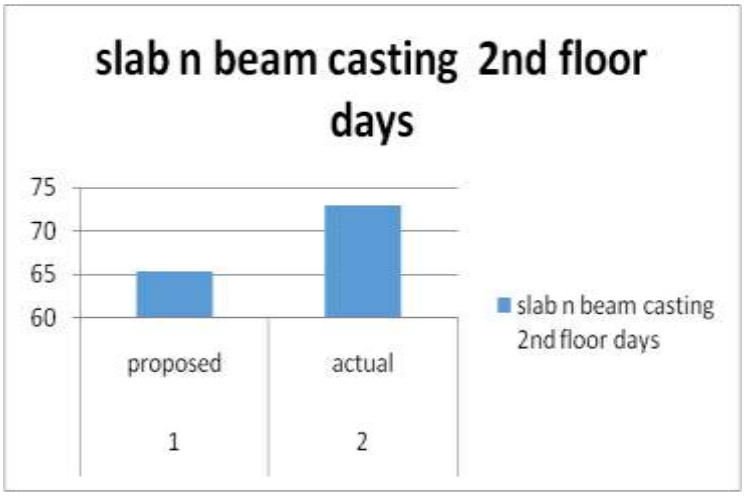
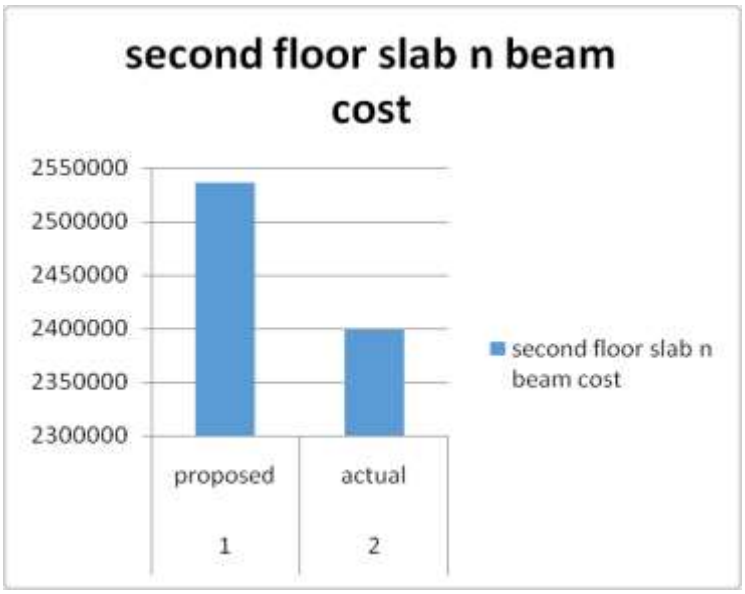


5.1.9. 2ND FLOOR SLAB WORK





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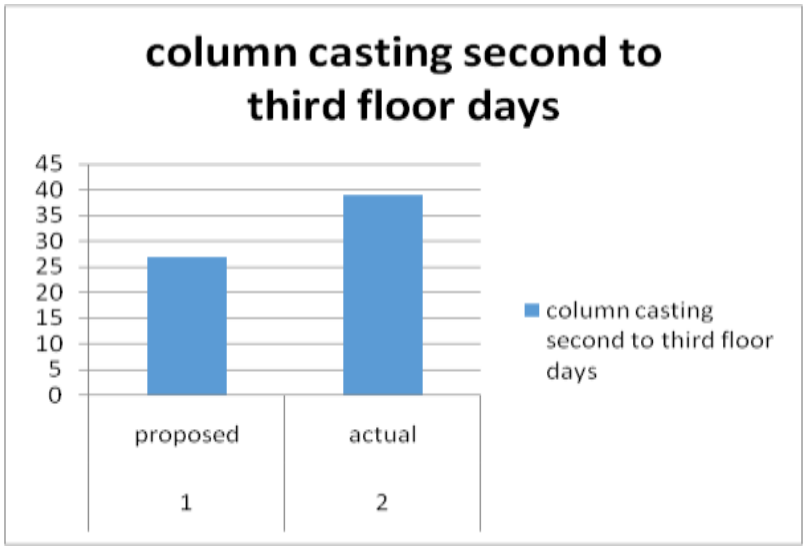
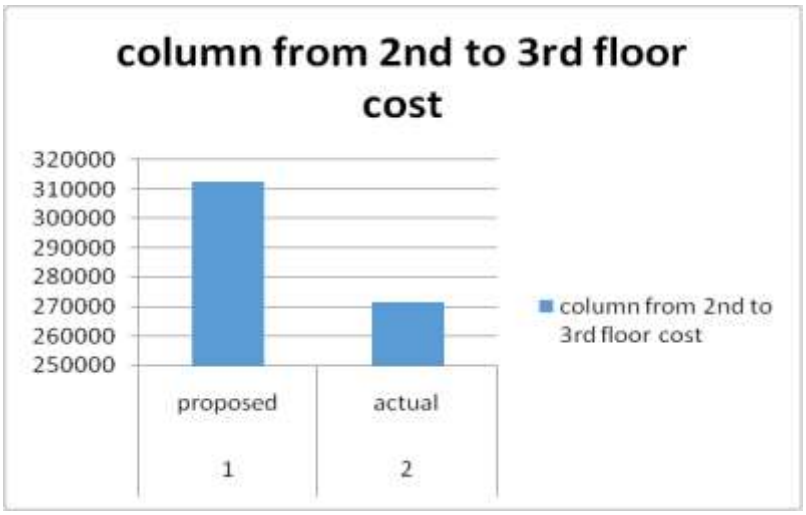
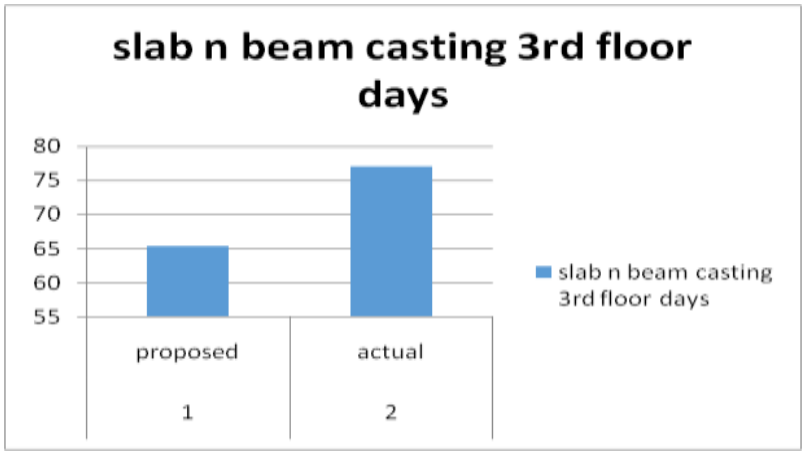
5.1.10 COLUMN CASTING FROM 2ND TO 3RD FLOOR.





5.1.11 SLAB CASTING 3RD FLOOR.



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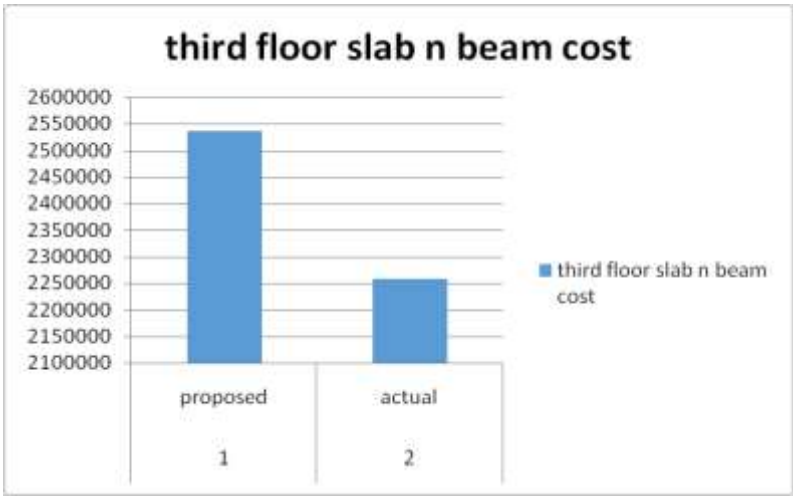
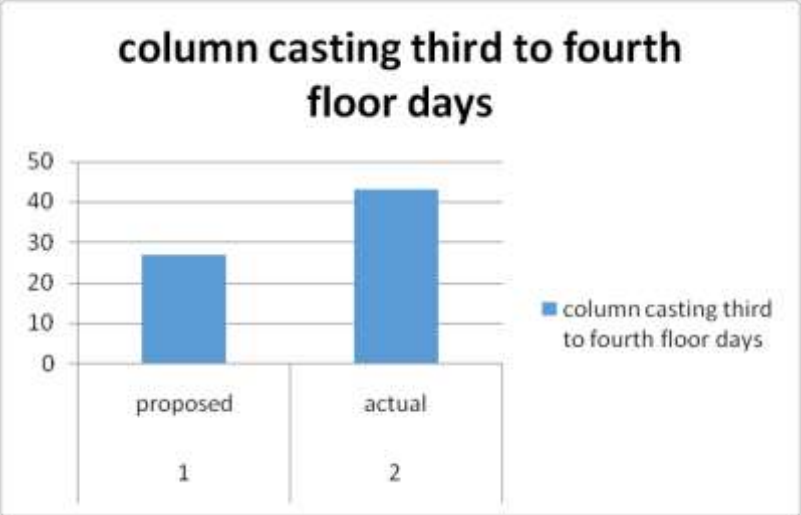
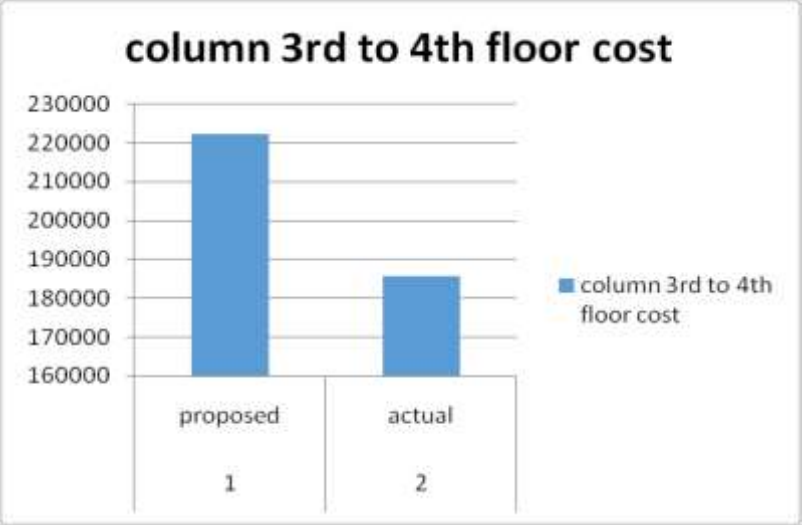


5.1.12 COLUMN CASTING FROM 3RD TO 4TH FLOOR.





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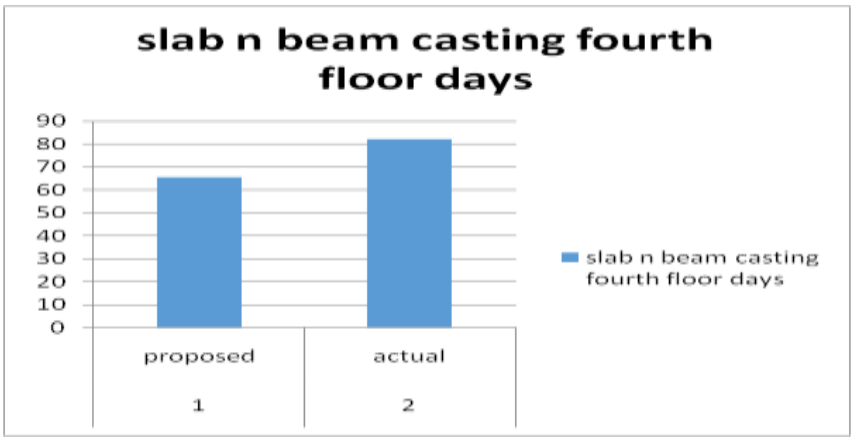
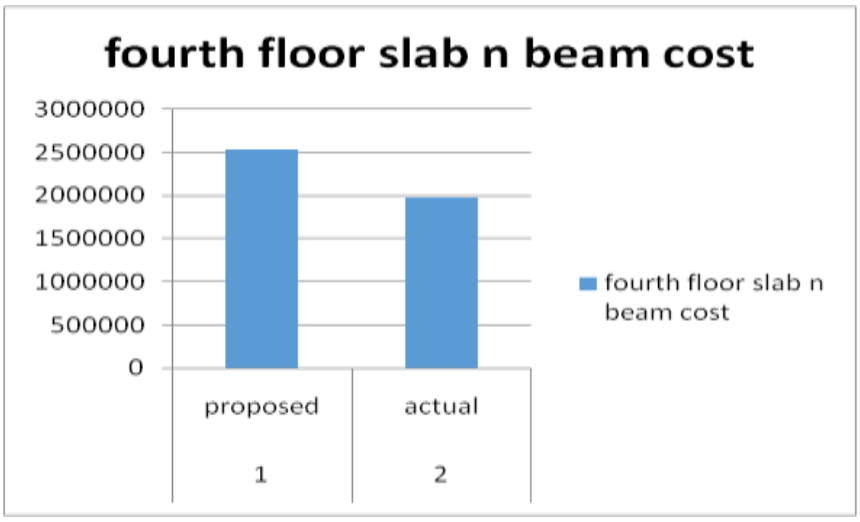
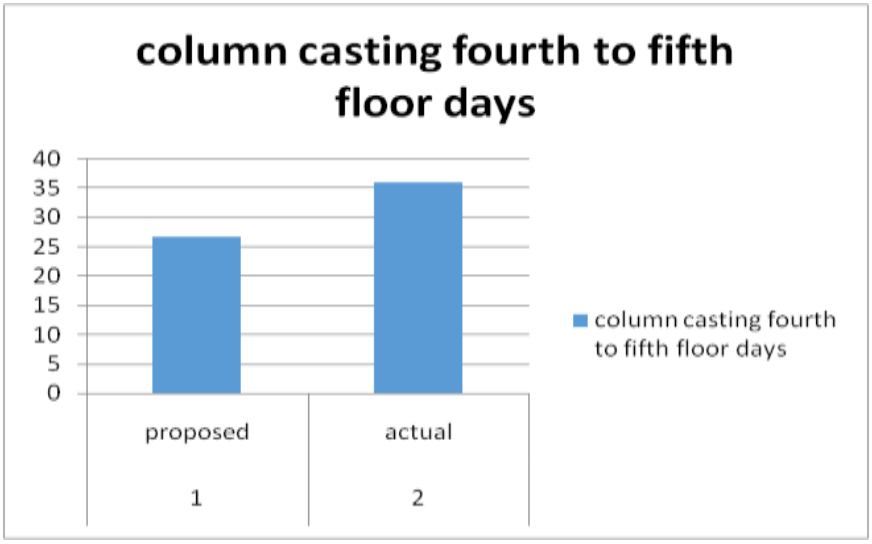
5.1.14 SLAB CASTING 4TH FLOOR.





5.1.15 COLUMN CASTING 4TH TO 5TH FLOOR



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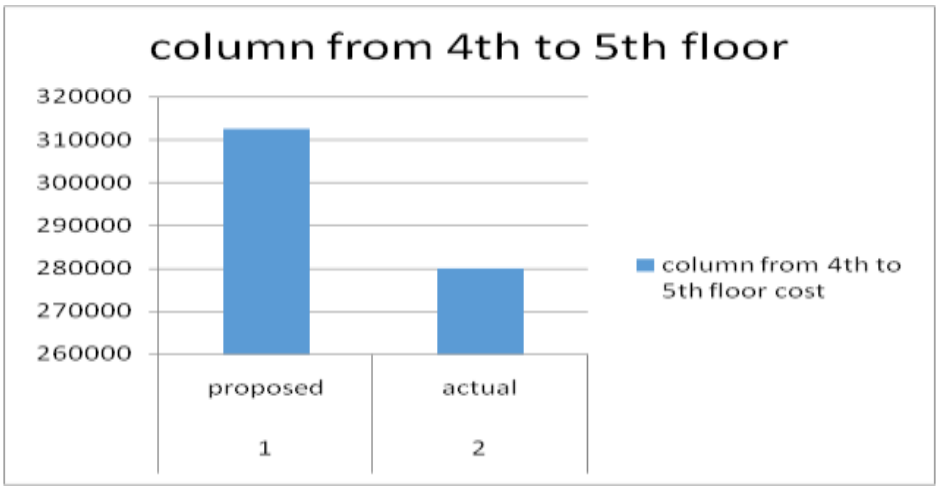
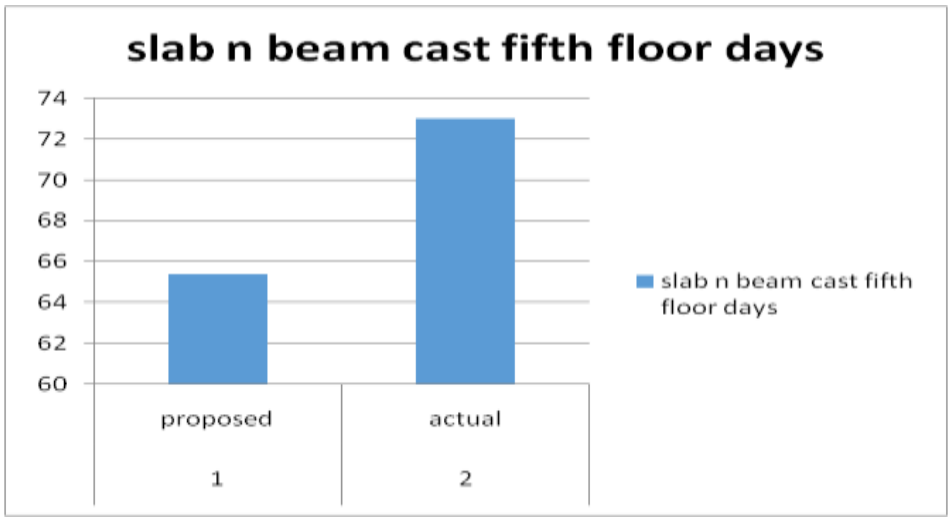
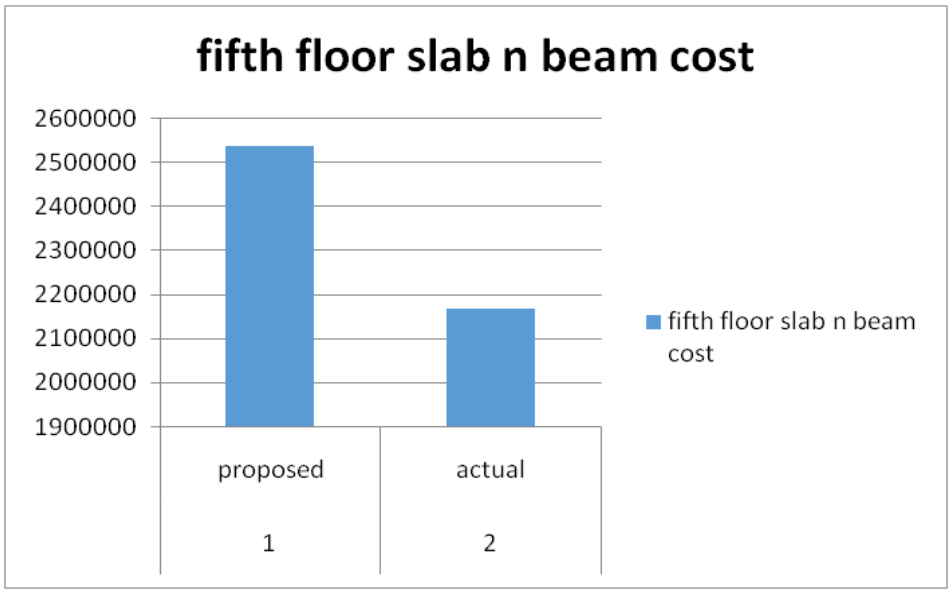


5.1.16 5TH FLOOR





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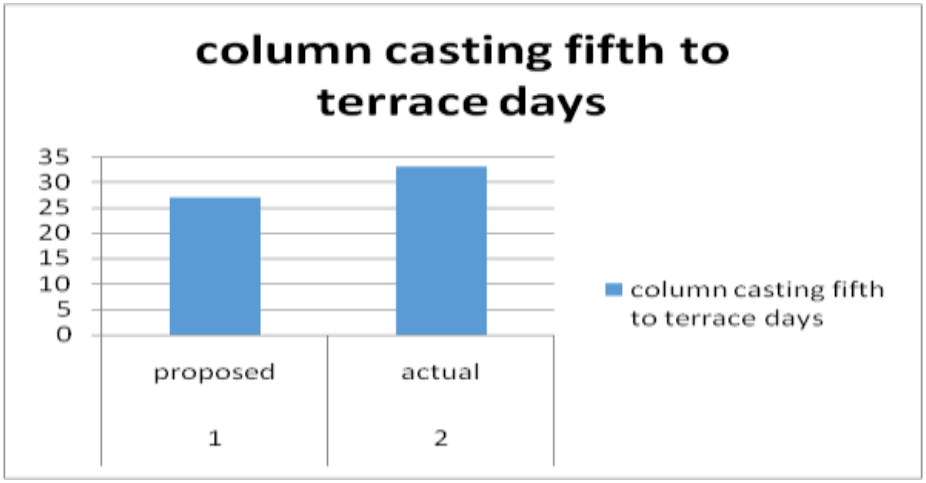
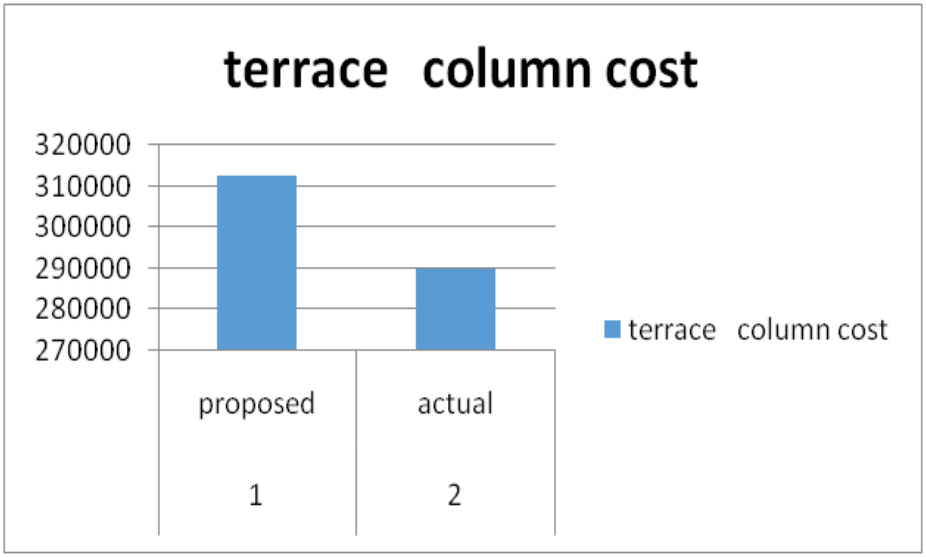
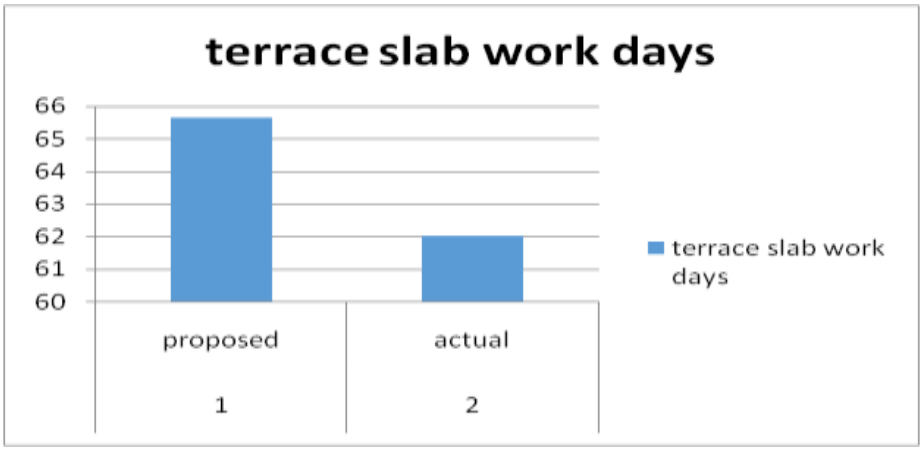
5.1.17 COLUMN CASTING FROM 5TH TO TERRACE FLOOR





5.1.18 TERRACE SLAB



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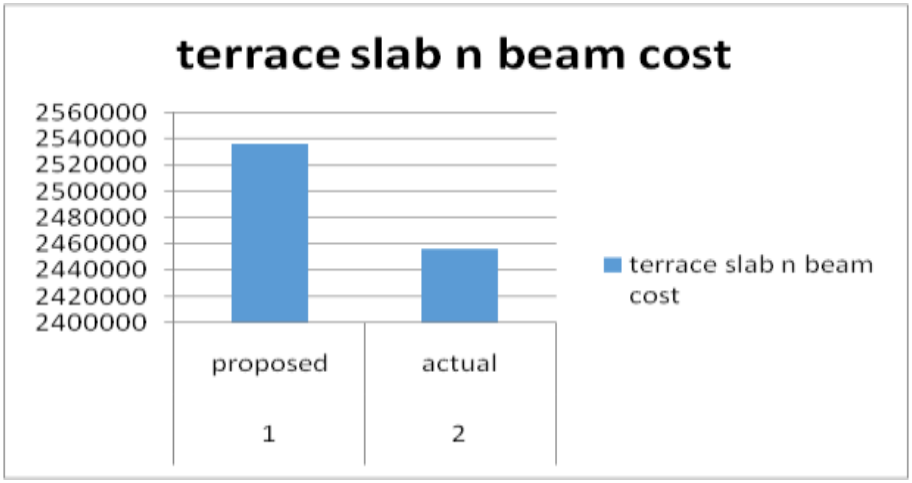
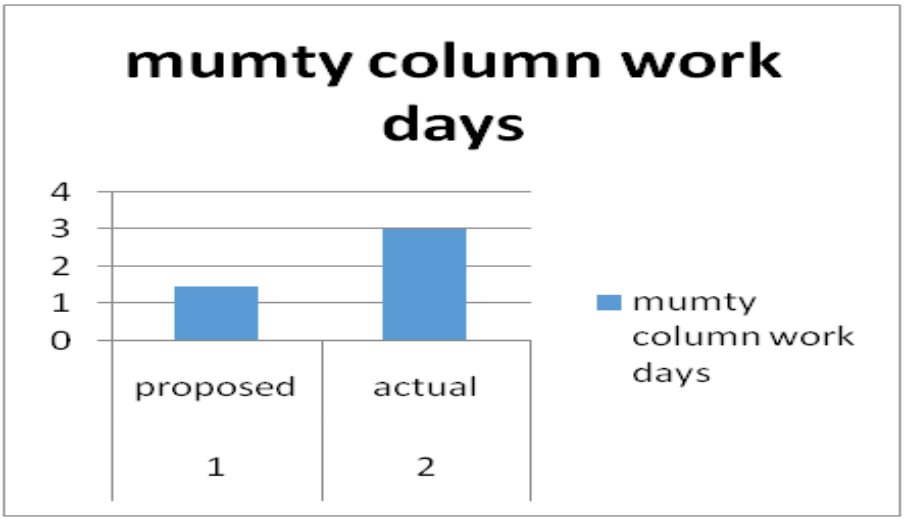
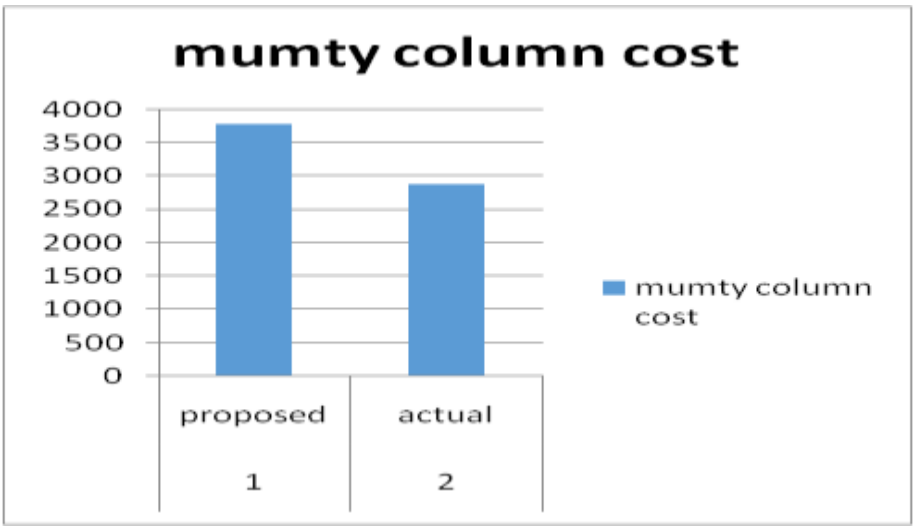


5.1.18 MUMTY COLUMN





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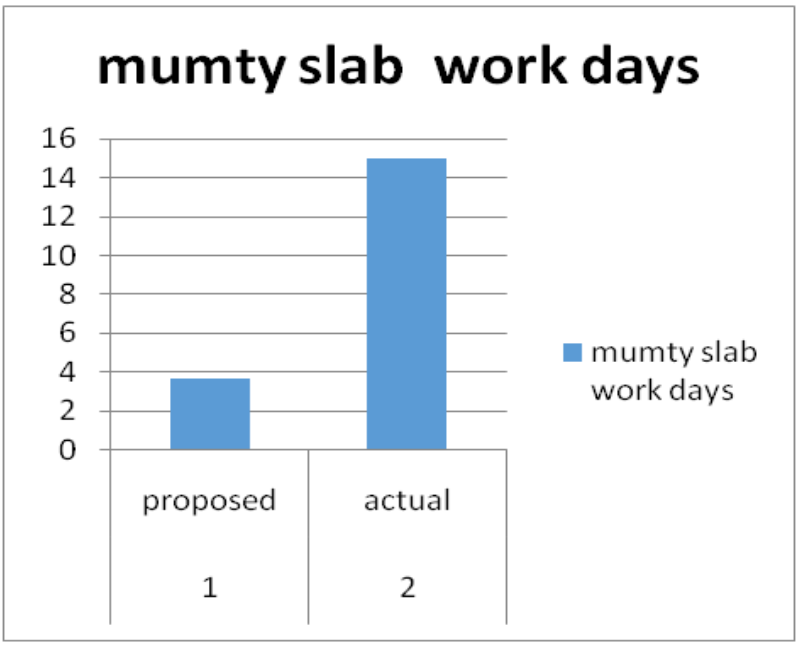
5.1.19 MUMTY SLAB



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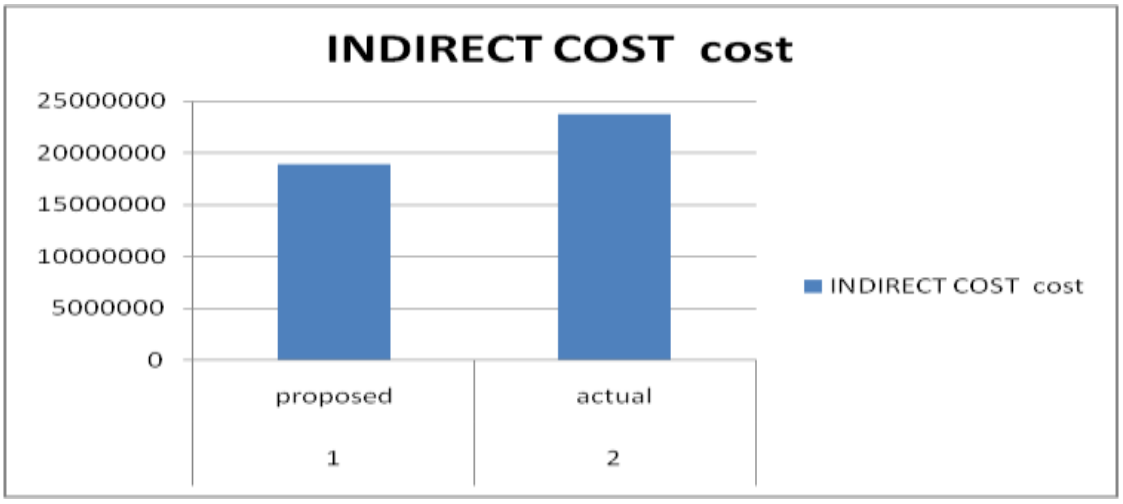
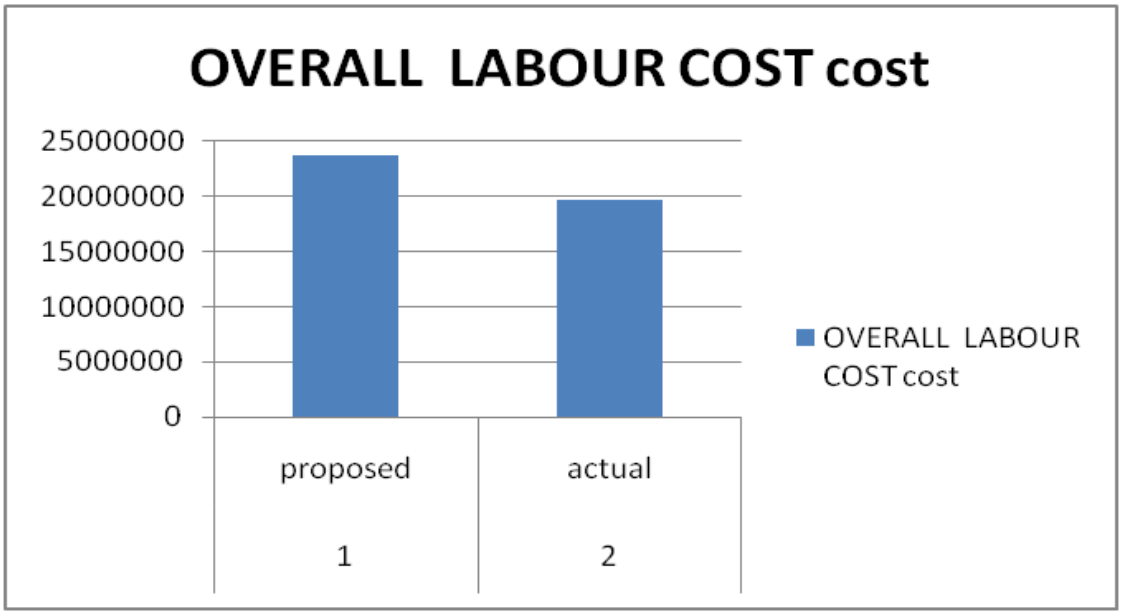
5.2.1 INDIRECT COST COMPARISON



5.3.1 OVERALL LABOUR RESOURCE COST



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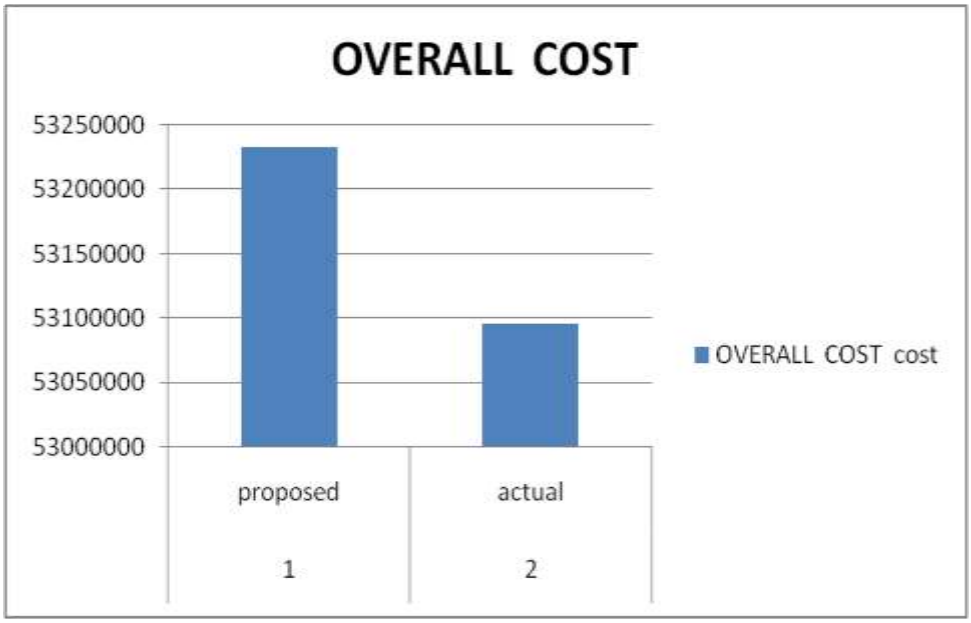
5.3.1. OVERALL COST



CONCLUSION

AS PER RESULTS IT CAN BE CONCLUDED THAT BY DECREASING THE DURATION OF A PROJECT BY PROPPER SCHEDULING AND STARTING ACTIVITIES SIMULTANEOUSLY, DURATION IS DECREASE AND CHANCES OF DELAYING THE PROJECT IS MINIMISED WHEREAS COST OF RESOURCES, OVERALL PROJECT IS INCREASING BUT INDIRECT COST WILL DECREASE. THE ABOVE RESULTS CAN ONLY BE OBTAINNED UNDER NO FINANCIAL BREAKUP CONDITION.

HERE WE USE MICROSOFT PROJECT FOR PROPER SCHEDULING AND RESOURCE ALLOCATION.

Project Duration for Upcoming Project is found by Critical Path analysis from CPM Network charts.

FUTURE SCOPE

- This comparative study can help the working p.m.c to get pre remedies for any activity which was delayed at greater extent at actual project done. and thus preventing any breakup in working schedule.
- Here we have taken residencial buuilding project in future study can be done on highway project.
- In this study microsoft project has been taken in future primavvera siftware can be used instead of msp**.**

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