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Cash Flow of High Rise Residential Building

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ABSTRACT- Cash flow is very essential in every construction project as it gives the detail idea about how much money or amount we are spending on project as a cash outflow and how much amount we are getting back from the project as a cash inflow & when we combine the both inflow and outflow with the help of graph we can understood that how much inflow and outflow is their in each month so its easy to compare and to know that how much profit we are getting and also we can plot 'S' curve of month Vs cumulative cost from which we can know month wise how much cost get added up to the last month of the project.

To define all this in detail I have taken case study of my project in the paper on which I have worked. That is Pebbles 9 Floored building in Bavdhan for this case study I have collected data like item wise quantities in each activity then basic labor & material rates, then total consumption of items for each activity & total BOQ is prepared from that which shows item wise quantity, rate and amount.

Then I have used Microsoft project software in this project so I have put all the activities in software as a work breakdown structure i.e. (WBS) then duration for activities given and then linking part is done then set the baseline and tracking part is done by doing tracking grant. It gives planned and actual duration of the project from that we can understand whether project is as per plan or it is lagging and if it is lagging then by how much duration its lagging then resource cost summery report generated in MSP using visual reports for whole project duration and we can do this for each month also to understand how much cost spend on each resource in each month. Then Inflow and Outflow generated then combination of Inflow and outflow generated from which we can understand simultaneously then inflow and outflow in each month so, that we can easily calculate the project duration.

Like this cash flow of the any project get generated which is very necessary for clear understanding that how much money we are spending and in that how much money we are getting back.

KEYWORDS- Cash flow, Inflow, Outflow, Resource cost summary report, Microsoft project software, consumption, project duration.

INTRODUCTION-

The case study I have taken in my project is the 9 floored building Pebbles constructed in bavdhan.I have collected data regarding this from the site like data required to work out quantities of all the items from which quantities of items worked out and also collected basic labor and material rates and area details etc. then all the collected data entered in Microsoft project software step by step to generate the required output that is cash flow of the project.

For that steps I have followed are given below-

I have entered WBS.

Prepared list of activities with its durations with start date and finish dates it gives total duration of activity

Then linking part is done

Then set the baseline

Then tracking done by using tracking gantt option it gives the planned and actual duration of the project

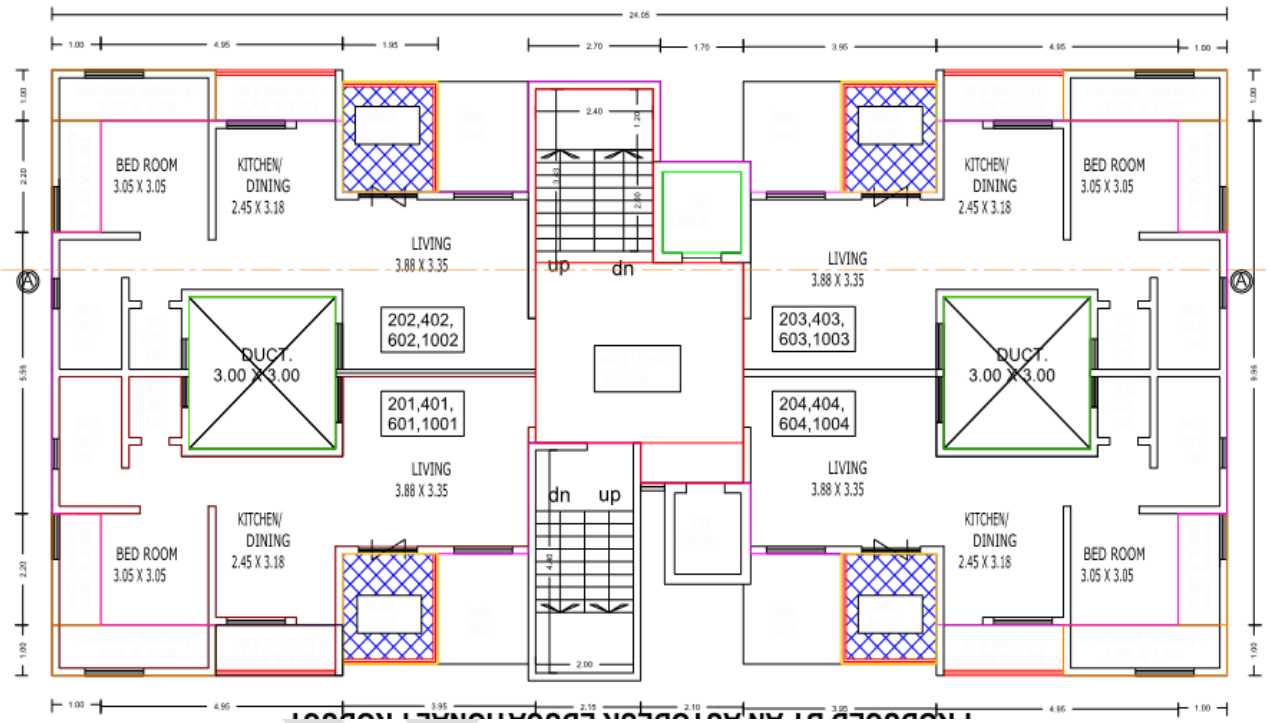
Then outflow generated by using visual reports

Then inflow generated

After combining inflow and outflow it gives the total cashflow of the project

Then s curve generated that is month vs. cumulative cost.

Typical floor plan of Building-



Information about project site-

Name of Site: Pebbles

Location: Survey no.340/3348/1 near dsk ranvara

Bavdhan budruk, Pune.

Type of Project: High rise Residential Building.

Project Manager: Mr. Santosh Runwal

Site Engineer.	Mr. Nitin Chougule.
Name of Contractor/Builder-	Rainbow Housing
Landscape consultant:	Designterra
Plumbing Consultant:	Amit Infrastructure Consultant
Structural Consultant:	Hansal Parekh & Associate
Electrical Consultant:	Consolidated Consultants & Engrs. Pvt. Ltd
Project Architect:	Abhikalpan Architects & Planners

Area Statement-

Slab Area	Saleable area	Unit
22,457	17,808	Sqft

Resource sheet in MSP- All required resources inserted in resource sheet in Microsoft project software and its per unit cost also mentioned and it gives amount of each resources.

Resource sheet in MSP

	Resource Name	Std. Rate	Type	Work	Material	Cost
1	Excavation	Rs. 150.00	Material	792.08 CUM	CUM	Rs. 118,812.00
2	Back filling with available material	Rs. 71.00	Material	731.26 CUM	CUM	Rs. 51,919.46
3	Back filling Labour Rate	Rs. 0.00	Material	731.26 CUM	CUM	Rs. 0.00
4	Filling in Plinth - With Murum Brought from outside	Rs. 459.00	Material	54.57 CUM	CUM	Rs. 25,047.63
5	Soling - 230mm - In Plinth	Rs. 1,018.63	Material	46.49 CUM	CUM	Rs. 47,356.11
6	Anti-Termite Treatment	Rs. 61.50	Material	246.98 SQM	SQM	Rs. 15,189.27
7	Box type - Shahabad tile waterproofing	Rs. 652.57	Material	81.23 SQM	SQM	Rs. 53,008.26
8	PCC- 1:4:8	Rs. 2,370.52	Material	55.89 CUM	CUM	Rs. 132,488.36
9	Concrete - M20	Rs. 3,563.07	Material	669.36 CUM	CUM	Rs. 2,384,976.54
10	Reinforcement	Rs. 48,779.98	Material	78.04 MT	MT	Rs. 3,806,789.64
11	RCC Labour	Rs. 120.00	Material	22,458 SFT	SFT	Rs. 2,694,960.00
12	100 mm thk - Brickwork	Rs. 0.00	Material	0 SQM	SQM	Rs. 0.00
13	150 mm thk - Brickwork	Rs. 499.78	Material	0 SQM	SQM	Rs. 0.00
14	230 mm thk - Brickwork	Rs. 0.00	Material	0 SQM	SQM	Rs. 0.00
15	Internal ceiling plaster sanala - 6-8 mm thk	Rs. 57.30	Material	552.44 SQM	SQM	Rs. 31,654.81
16	Internal wall plaster sanala - 12-15 mm thk	Rs. 88.04	Material	574.49 SQM	SQM	Rs. 50,578.10
17	Internal wall Tar plaster below dado - 12-15 mm thk	Rs. 81.04	Material	815.35 SQM	SQM	Rs. 66,075.96
18	External Sandface Plaster - Single coat - 12 mm thk	Rs. 0.00	Material	0 SQM	SQM	Rs. 0.00
19	External Sandface Plaster - Double coat - 20 mm thk	Rs. 133.03	Material	4,095.26 SQM	SQM	Rs. 544,792.44
20	Fixing Chicken mesh - 300 mm wide	Rs. 11.90	Material	6,396.42 RMT	RMT	Rs. 76,117.40
21	SLAB AREA	Rs. 65.00	Material	0 SFT	SFT	Rs. 0.00
22	Ceiling Gypsum punning - Patra finish- 6mm thk	Rs. 122.75	Material	1,193.6 SQM	SQM	Rs. 146,514.40
23	Ceiling Gypsum punning - Patra finish- 6mm thk_Labour Rate	Rs. 0.00	Material	1,193.6 SQM	SQM	Rs. 0.00

24	Wall Gypsum Plaster - 12mm thk	Rs. 209.85	Material	1,634.23 SQM	SQM	Rs. 342,943.17
25	Wall Gypsum Plaster - 12mm thk_Labour rate	Rs. 0.00	Material	1,634.23 SQM	SQM	Rs. 0.00
26	Armstrong Board False ceiling- for Toilets	Rs. 646.00	Material	0 SQM	SQM	Rs. 0.00
27	POP Board False Ceiling for all Rooms	Rs. 377.00	Material	0 SQM	SQM	Rs. 0.00
28	Gypsum Board False Ceiling for all Rooms	Rs. 592.00	Material	0 SQM	SQM	Rs. 0.00
29	Wooden False Ceiling for all Rooms	Rs. 1,668.00	Material	0 SQM	SQM	Rs. 0.00
30	POP Cornis	Rs. 65.60	Material	0 RMT	RMT	Rs. 0.00
31	Toilet Sunk Waterproofing - Basecoat+Brickbat+Finish Coat	Rs. 1,064.21	Material	127.4 SQM	SQM	Rs. 135,580.35
32	Toilet Sunk Waterproofing - Basecoat+Brickbat+Finish Coat Labour Rate	Rs. 0.00	Material	127.4 SQM	SQM	Rs. 0.00
33	Chemical Waterproofing	Rs. 377.00	Material	0 SQM	SQM	Rs. 0.00
34	Attached Terrace Waterproofing - Cleaning Basecoat +Brickbat+Finish Coat	Rs. 617.71	Material	187.32 SQM	SQM	Rs. 115,709.44
35	Attached Terrace Waterproofing - Cleaning Basecoat +Brickbat+Finish Coat_Labour Rate	Rs. 0.00	Material	187.32 SQM	SQM	Rs. 0.00
36	Top Terrace Waterproofing - Cleaning Basecoat +Brickbat+Finish Coat	Rs. 845.98	Material	220.29 SQM	SQM	Rs. 186,360.93
37	Top Terrace Waterproofing - Cleaning Basecoat +Brickbat+Finish Coat_Labour Rate	Rs. 0.00	Material	220.29 SQM	SQM	Rs. 0.00
38	OHWT - 20mm thk inside waterproof plaster	Rs. 317.40	Material	161.08 SQM	SQM	Rs. 51,126.79
39	OHWT - 20mm thk inside waterproof plaster_Labour	Rs. 0.00	Material	161.08 SQM	SQM	Rs. 0.00
40	Kadimal Waterproofing - 100 mm thk	Rs. 108.00	Material	0 SQM	SQM	Rs. 0.00
41	Flooring-Paving/Interlocking Block- bed of 20mm thk	Rs. 86.00	Material	0 SQM	SQM	Rs. 0.00
42	Flooring-Chequred Tile-CM(1:4) bed of 20mm thk	Rs. 536.72	Material	178.2 SQM	SQM	Rs. 95,643.50
43	Flooring-Chequred Tile-CM(1:4) bed of 20mm thk_Labour Rate	Rs. 0.00	Material	178.2 SQM	SQM	Rs. 0.00
44	IPS LMR 75mm thk.	Rs. 364.19	Material	23.48 SQM	SQM	Rs. 8,551.18
45	IPS LMR 75mm thk._Labour	Rs. 0.00	Material	23.48 SQM	SQM	Rs. 0.00
46	600X600 Vitrified Tile Living +Dining + Bed_Entrance All Rooms+Refuge	Rs. 791.01	Material	932.68 SQM	SQM	Rs. 737,759.21
47	600X600 Vitrified Tile Living +Dining + Bed_Entrance All Rooms+Refuge_Labour Rate	Rs. 0.00	Material	932.68 SQM	SQM	Rs. 0.00
48	300X300 Ceramic Tile common Lobby	Rs. 653.43	Material	116.83 SQM	SQM	Rs. 76,340.23
49	300X300 Ceramic Tile	Rs. 0.00	Material	133.19 SQM	SQM	Rs. 0.00
50	300X300 Ceramic Tile common Lobby_Labour Rate	Rs. 0.00	Material	0 SQM	SQM	Rs. 0.00
51	300X300 Antiskid Tile Att.Terrace_Dry Bal_ Toilet	Rs. 630.97	Material	314.72 SQM	SQM	Rs. 198,578.88
52	300X300 Antiskid Tile Att.Terrace_Dry Bal_ Toilet_Labour Rate	Rs. 0.00	Material	314.72 SQM	SQM	Rs. 0.00
53	300X300 Antiskid Tile	Rs. 0.00	Material	357.21 SQM	SQM	Rs. 0.00
54	Tandoor Staircase Midlanding	Rs. 624.15	Material	62.88 SQM	SQM	Rs. 39,246.55
55	Tandoor Staircase Midlanding_Labour Rate	Rs. 0.00	Material	62.88 SQM	SQM	Rs. 0.00
56	Staircase Tread -Marble- (wide-275mm)- CM(1:4)	Rs. 180.00	Material	0 RMT	RMT	Rs. 0.00
57	Staircase Tread - Tandoor- (wide-275mm)- CM(1:4)	Rs. 302.20	Material	345.6 RMT	RMT	Rs. 104,440.32
58	Staircase Tread - Tandoor- (wide-275mm)- CM(1:4)_Labour Rate	Rs. 0.00	Material	726.72 RMT	RMT	Rs. 0.00
59	STAIRCASE - Skirting_Labour Rate	Rs. 0.00	Material	412.88 RMT	RMT	Rs. 0.00
60	Staircase Riser -Marble- (wide-170mm)- CM(1:4)	Rs. 148.00	Material	0 RMT	RMT	Rs. 0.00
61	Staircase Riser -Tandoor - (wide-170mm)- CM(1:4)	Rs. 224.96	Material	345.6 RMT	RMT	Rs. 77,746.18
62	Staircase Riser -Tandoor - (wide-170mm)- CM(1:4)_Labour Rate	Rs. 0.00	Material	345.6 RMT	RMT	Rs. 0.00
63	600X600 Vitrified Tile skirting Material Rate	Rs. 116.86	Material	962.78 RMT	RMT	Rs. 112,510.47
64	600X600 Vitrified Tile skirting Labour Rate	Rs. 0.00	Material	962.78 RMT	RMT	Rs. 0.00
65	300X300 Ceramic skirting Materials Rate	Rs. 105.38	Material	75.6 RMT	RMT	Rs. 7,966.73
66	300X300 Ceramic skirting Labour Rate	Rs. 0.00	Material	75.6 RMT	RMT	Rs. 0.00

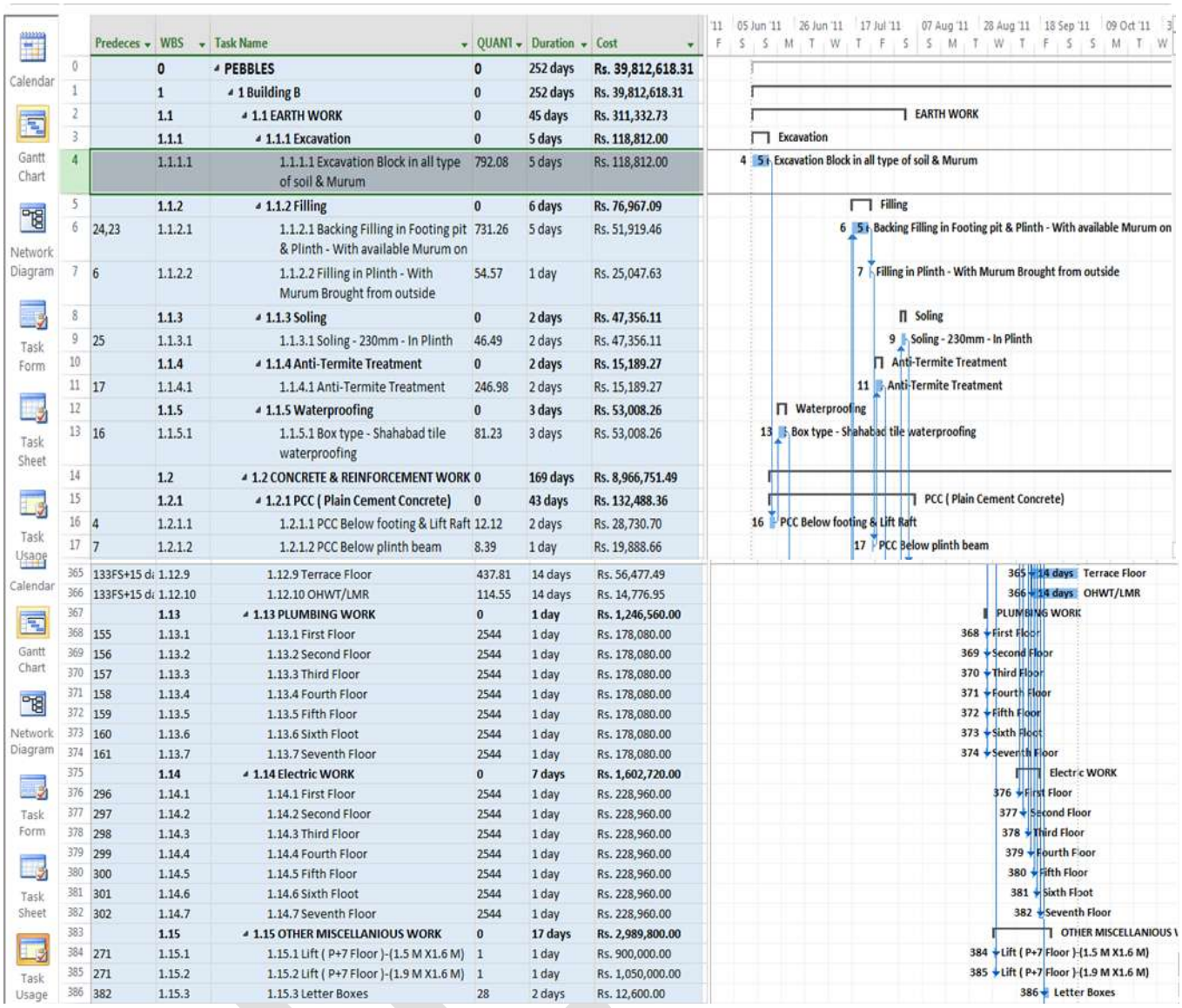
67		300X300 Antiskid Tile skirting Materials Cost	Rs. 103.05	Material	186.76 RMT	RMT	Rs. 19,245.62
68		300X300 Antiskid Tile skirting Labour Rate	Rs. 0.00	Material	186.76 RMT	RMT	Rs. 0.00
69		STAIRCASE - Skirting	Rs. 120.31	Material	412.88 RMT	RMT	Rs. 49,673.59
70		DADO-CM(1:4) bed of 20mm thk Toilet_Kitchen_Dry Terrace_Passage	Rs. 782.87	Material	933.52 SQM	SQM	Rs. 730,824.80
71		DADO-CM(1:4) bed of 20mm thk Toilet_Kitchen_Dry Terrace_Passage Labour Rate	Rs. 0.00	Material	933.52 SQM	SQM	Rs. 0.00
72		WALL CLADDING-Granite- CM(1:4)	Rs. 1,898.67	Material	0 SQM	SQM	Rs. 0.00
73		WALL CLADDING-Granite- CM(1:4)_Labour Rate	Rs. 0.00	Material	78.2 SQM	SQM	Rs. 0.00
74		WALL CLADDING-Green Marble- CM(1:4)	Rs. 1,898.67	Material	78.2 SQM	SQM	Rs. 148,475.99
75		Door Jambs-Jet Black Granite- - (wide-150mm)- CM(1:4)	Rs. 497.67	Material	310.8 RM	RM	Rs. 154,675.84
76		Door Jambs-Jet Black Granite- - (wide-150mm)- CM(1:4)_Labour Rate	Rs. 0.00	Material	310.8 SQM	SQM	Rs. 0.00
77							
78		Window Sill- - (wide-150mm)- CM(1:4)	Rs. 188.56	Material	353.12 RM	RM	Rs. 66,584.31
79		Window Sill- - (wide-150mm)- CM(1:4)_Labour Rate	Rs. 0.00	Material	0 RM	RM	Rs. 0.00
80							
81		Umbra Patti-Granite - (wide-150mm)- CM(1:4)	Rs. 351.07	Material	28 RMT	RMT	Rs. 9,829.96
82		Umbra Patti-Granite - (wide-150mm)- CM(1:4)_Labour Rate	Rs. 0.00	Material	0 RMT	RMT	Rs. 0.00
83							
84		Counter-Granite - (wide-700mm)- CM(1:4)	Rs. 4,610.60	Material	106.96 RMT	RMT	Rs. 493,149.78
85		Counter-Granite - (wide-700mm)- CM(1:4)_Labour Rate	Rs. 0.00	Material	106.96 RMT	RMT	Rs. 0.00
86							
87		Counter-Granite - (wide-675mm)- CM(1:4)	Rs. 1,957.00	Material	21 RMT	RMT	Rs. 41,097.00
88		Counter-Granite - (wide-675mm)- CM(1:4)_Labour	Rs. 0.00	Material	21 RMT	RMT	Rs. 0.00
90		D1 - 0.925 x 2.4 - Main Door	Rs. 10,125.00	Material	28 NOS	Nos	Rs. 283,500.00
91		D2 - 0.90 x 2.4 - All Bed Room Door	Rs. 7,758.00	Material	28 NOS	Nos	Rs. 217,224.00
92		D3 - 0.750 x 2.4 - Bath/WC Door	Rs. 6,172.00	Material	56 NOS	Nos	Rs. 345,632.00
93		D3 - 0.750 x 2.4 - BALCONY Door	Rs. 6,172.00	Material	30 NOS	Nos	Rs. 185,160.00
94		3 track Alu. Sliding Doors	Rs. 2,313.00	Material	80.64 SQM	SQM	Rs. 186,520.32
95		3 track Alu. Sliding Windows	Rs. 2,152.00	Material	269.16 SQM	SQM	Rs. 579,232.32
96		2 track Alu. Sliding Windows	Rs. 1,991.00	Material	0 SQM	SQM	Rs. 0.00
97		Alu.Lou. Ventilator	Rs. 1,883.00	Material	30.24 SQM	SQM	Rs. 56,941.92
98		MS Window Grills	Rs. 1,506.00	Material	299.4 SQM	SQM	Rs. 450,896.40
99		MS Pipe Hand rail (150mm dia pipe) - Staircase Railing	Rs. 738.00	Material	86.4 RMT	RMT	Rs. 63,763.20
100		MS Ladder (450mm wide)	Rs. 12,500.00	Material	2 LS	LS	Rs. 25,000.00
101		MS STAIRCASE FOR LMR with 2 coats of Oil paint	Rs. 20,000.00	Material	2 LS	LS	Rs. 40,000.00
102		MS manhole cover- 630MM DIA	Rs. 3,500.00	Material	2 EACH	EACH	Rs. 7,000.00
103		Plumbing Work	Rs. 70.00	Material	17,808 SFT	SFT	Rs. 1,246,560.00
104		Electrical Work	Rs. 90.00	Material	17,808 SFT	SFT	Rs. 1,602,720.00
105		Painting-White Wash for Lift Shaft	Rs. 32.00	Material	329.24 SQM	SQM	Rs. 10,535.68
106		Painting-OBD with primer & putty - Internal Ceiling	Rs. 102.00	Material	1,746.04 SQM	SQM	Rs. 178,096.08
107		Painting-OBD with primer & putty - Internal wall	Rs. 102.00	Material	2,208.64 SQM	SQM	Rs. 225,281.28
108		Painting-Asian Apex paint with primer & putty - External Paint	Rs. 129.00	Material	4,095.26 SQM	SQM	Rs. 528,288.54
109		Painting-Wooden Oil paint with primer	Rs. 81.00	Material	665.8 SQM	SQM	Rs. 53,929.80
110		Painting-Metal Oil paint with primer coat	Rs. 75.00	Material	429.94 SQM	SQM	Rs. 32,245.50
111		Lift (P+7 Floor)-(1.5 M X1.6 M)	Rs. 900,000.00	Material	1 NOS	Nos	Rs. 900,000.00
112		Lift (P+7 Floor)-(1.9 M X1.6 M)	Rs. 1,050,000.00	Material	1 NOS	Nos	Rs. 1,050,000.00

113	Letter Boxes	Rs. 450.00	Material	28 NOS	Nos	Rs. 12,600.00
114	Door Name Plate	Rs. 650.00	Material	28 NOS	Nos	Rs. 18,200.00
115	Video Door Phone	Rs. 8,000.00	Material	28 NOS	Nos	Rs. 224,000.00
116	Flat Owner Name Board at Parking	Rs. 20,000.00	Material	1 NOS	Nos	Rs. 20,000.00
117	Notice Board at Parking	Rs. 4,500.00	Material	1 NOS	Nos	Rs. 4,500.00
118	Building / Wing Name Plate	Rs. 10,500.00	Material	1 NOS	Nos	Rs. 10,500.00
119	Fire fighting system for (P+7) floor	Rs. 750,000.00	Material	1 NOS	Nos	Rs. 750,000.00
120	MS Railings (h-450 mm) - Terrace Railing	Rs. 1,148.00	Material	203.98 RMT	RMT	Rs. 234,169.04
121	Murum	Rs. 0.00	Material	82.17 CUM	CUM	Rs. 0.00
122	Murum Backfilling Labour Rate	Rs. 0.00	Material	54.57 CUM	CUM	Rs. 0.00
123	Rubble	Rs. 0.00	Material	58.11 CUM	CUM	Rs. 0.00
124	Rubble Soling Labour Rate	Rs. 0.00	Material	46.49 CUM	CUM	Rs. 0.00
125	Anti-Termite Liquid	Rs. 0.00	Material	74.09 LIT	LIT	Rs. 0.00
126	Anti-Termite Labour Rate	Rs. 0.00	Material	246.98 SQM	SQM	Rs. 0.00
127	Rough Shahabad	Rs. 0.00	Material	85.29 SQM	SQM	Rs. 0.00
128	Cement 43 Grade	Rs. 0.00	Material	2,716.21 BAG	BAG	Rs. 0.00
129	River Sand	Rs. 0.00	Material	272.18 CUM	CUM	Rs. 0.00
130	Waterproofing Compound	Rs. 0.00	Material	600.5 LIT	LIT	Rs. 0.00
131	Rough Shahabad Water Proofing Labour Rate	Rs. 0.00	Material	81.35 SQM	SQM	Rs. 0.00
132	Cement 53 Grade	Rs. 0.00	Material	5,133.84 BAG	BAG	Rs. 0.00
133	Crush Sand	Rs. 0.00	Material	536.14 CUM	CUM	Rs. 0.00
134	Metal - 20mm	Rs. 0.00	Material	719.44 CUM	CUM	Rs. 0.00
135	Fly Ash	Rs. 0.00	Material	26,735 KG	KG	Rs. 0.00
136	Rheobuild 850i	Rs. 0.00	Material	1,618.09 KG	KG	Rs. 0.00
137	RCC Labour Including formwork_reinforcement_and Concreting on slab area	Rs. 120.00	Material	0 SQFT	SQFT	Rs. 0.00
138	6 mm Bar	Rs. 0.00	Material	85.05 KG	KG	Rs. 0.00
139	8 mm Bar	Rs. 0.00	Material	29,807.35 KG	KG	Rs. 0.00
140	10 mm Bar	Rs. 0.00	Material	8,086.05 KG	KG	Rs. 0.00
141	12 mm Bar	Rs. 0.00	Material	12,002.5 KG	KG	Rs. 0.00
142	16 mm Bar	Rs. 0.00	Material	22,265.2 KG	KG	Rs. 0.00
143	20 mm Bar	Rs. 0.00	Material	4,958.05 KG	KG	Rs. 0.00
144	25 mm Bar	Rs. 0.00	Material	497.65 KG	KG	Rs. 0.00
145	32 mm Bar	Rs. 0.00	Material	0 KG	KG	Rs. 0.00
146	Binding Wire	Rs. 0.00	Material	1,013.8 KG	KG	Rs. 0.00
147	Brick - 6" (6" X 9"X3.5")	Rs. 0.00	Material	125,809.36 NOS	NOS	Rs. 0.00
148	BBM_Internal Sanala and External Plastering Labour Rates	Rs. 65.00	Material	22,457 SQFT	SQFT	Rs. 1,459,705.00
149	150 mm thk - Brickwork	Rs. 499.78	Material	2,435.95 SQM	SQM	Rs. 1,217,439.09
150	Internal ceiling plaster sanala - 6-8 mm thk Matrial Rate	Rs. 57.30	Material	0 SQM	SQM	Rs. 0.00
151	Sanala (25kg/bag)	Rs. 0.00	Material	78.77 BAG	BAG	Rs. 0.00
152	Chicken Mesh	Rs. 0.00	Material	222.1 SQM	SQM	Rs. 0.00
153	Wire Nails	Rs. 0.00	Material	50.7 KG	KG	Rs. 0.00
154	Gypsum (25 kg bag)	Rs. 0.00	Material	1,258.11 KG	KG	Rs. 0.00
155	Brick - 4" (4" X 9"X2.75")	Rs. 0.00	Material	20,517.54 NOS	NOS	Rs. 0.00
156	Rubber moulded Chequred 300 x 300 tiles	Rs. 0.00	Material	187.11 SQM	SQM	Rs. 0.00
157	Tandoor	Rs. 0.00	Material	308.16 SQM	SQM	Rs. 0.00

158	White Cement	Rs. 0.00	Material	278.81 KG	KG	Rs. 0.00
159	Main Door Shutter & Fittings	Rs. 0.00	Material	28 NOS	NOS	Rs. 0.00
160	Main Door Shutter & Fittings_Labour Charges	Rs. 0.00	Material	28 NOS	NOS	Rs. 0.00
161	Bed Room Door Shutter & Fittings	Rs. 0.00	Material	28 NOS	NOS	Rs. 0.00
162	Bed Room Door Shutter & Fittings_Labour Charges	Rs. 0.00	Material	28 NOS	NOS	Rs. 0.00
163	BAth Room Door Shutter & Fittings	Rs. 0.00	Material	56 NOS	NOS	Rs. 0.00
164	Bath Room Door Shutter & Fittings_Labour Charges	Rs. 0.00	Material	56 NOS	NOS	Rs. 0.00
165	Balcony Room Door Shutter & Fittings	Rs. 0.00	Material	30 NOS	NOS	Rs. 0.00
166	Balcony Room Door Shutter & Fittings_Labour Charges	Rs. 0.00	Material	30 NOS	NOS	Rs. 0.00
167	W - 0.90 X 1.65 - LIVING/BEDROOM Aluminium Sliding Windows	Rs. 0.00	Material	83.16 SQM	SQM	Rs. 0.00
168	W1 - 1.2 X 1.65 - LIVING/BEDROOM Aluminium Sliding Windows	Rs. 0.00	Material	110.88 SQM	SQM	Rs. 0.00
169	KW2 - 1.2 X 1.2 - KITCHEN Aluminium Sliding Windows	Rs. 0.00	Material	40.32 SQM	SQM	Rs. 0.00
170	W3 - 2.0 X 0.825 - STAIRCASE Aluminium Sliding Windows	Rs. 0.00	Material	18.15 SQM	SQM	Rs. 0.00
171	W4 - 2.24 X 0.825 - STAIRACSE Aluminium Sliding Windows	Rs. 0.00	Material	16.65 SQM	SQM	Rs. 0.00
172	V - 0.6 X 0.9 Alu.Lou. Ventilator	Rs. 0.00	Material	30.24 SQM	SQM	Rs. 0.00
173	Tiles 12 x 18 - Dado	Rs. 0.00	Material	1,026.83 SQM	SQM	Rs. 0.00
174	POP (25 kg bag)	Rs. 0.00	Material	181.51 BAG	BAG	Rs. 0.00
175	Acid	Rs. 0.00	Material	555.32 LIT	LIT	Rs. 0.00
176	MARBLE - Lift Cladding+Lift Door Frame	Rs. 0.00	Material	0 SQM	SQM	Rs. 0.00
177	GRANITE Kitchen Otta with SS Sink-600mm Wide	Rs. 0.00	Material	0 RMT	RMT	Rs. 0.00
178	MARBLE - Window Sill - (150 mm wide)	Rs. 0.00	Material	0 RMT	RMT	Rs. 0.00
179	MARBLE - Ventilator Frame-(150 mm wide)	Rs. 0.00	Material	0 RMT	RMT	Rs. 0.00
180	MARBLE/GRANITE -Toilet Door Frame	Rs. 0.00	Material	0 RMT	RMT	Rs. 0.00
181	MARBLE/GRANITE -Dry Door Frame	Rs. 0.00	Material	0 RMT	RMT	Rs. 0.00
182	WHB - Counter	Rs. 0.00	Material	0 RMT	RMT	Rs. 0.00
183	600X600 Vitrified Tile	Rs. 0.00	Material	1,103.76 SQM	SQM	Rs. 0.00
184	Development Work	Rs. 170.00	Material	22,475 SQFT	SQFT	Rs. 3,820,750.00
185	Overheads	Rs. 426.00	Material	22,475 SQFT	SQFT	Rs. 9,574,350.00
186	Granite	Rs. 0.00	Material	347.54 SQM	SQM	Rs. 0.00
187	Marble	Rs. 0.00	Material	63.56 SQM	SQM	Rs. 0.00
188	Cudappa Stone	Rs. 0.00	Material	492.62 SQM	SQM	Rs. 0.00

Activities and durations entered in Microsoft project software and also done linking part , all the project activities entered in project like shown below that is first and last part.

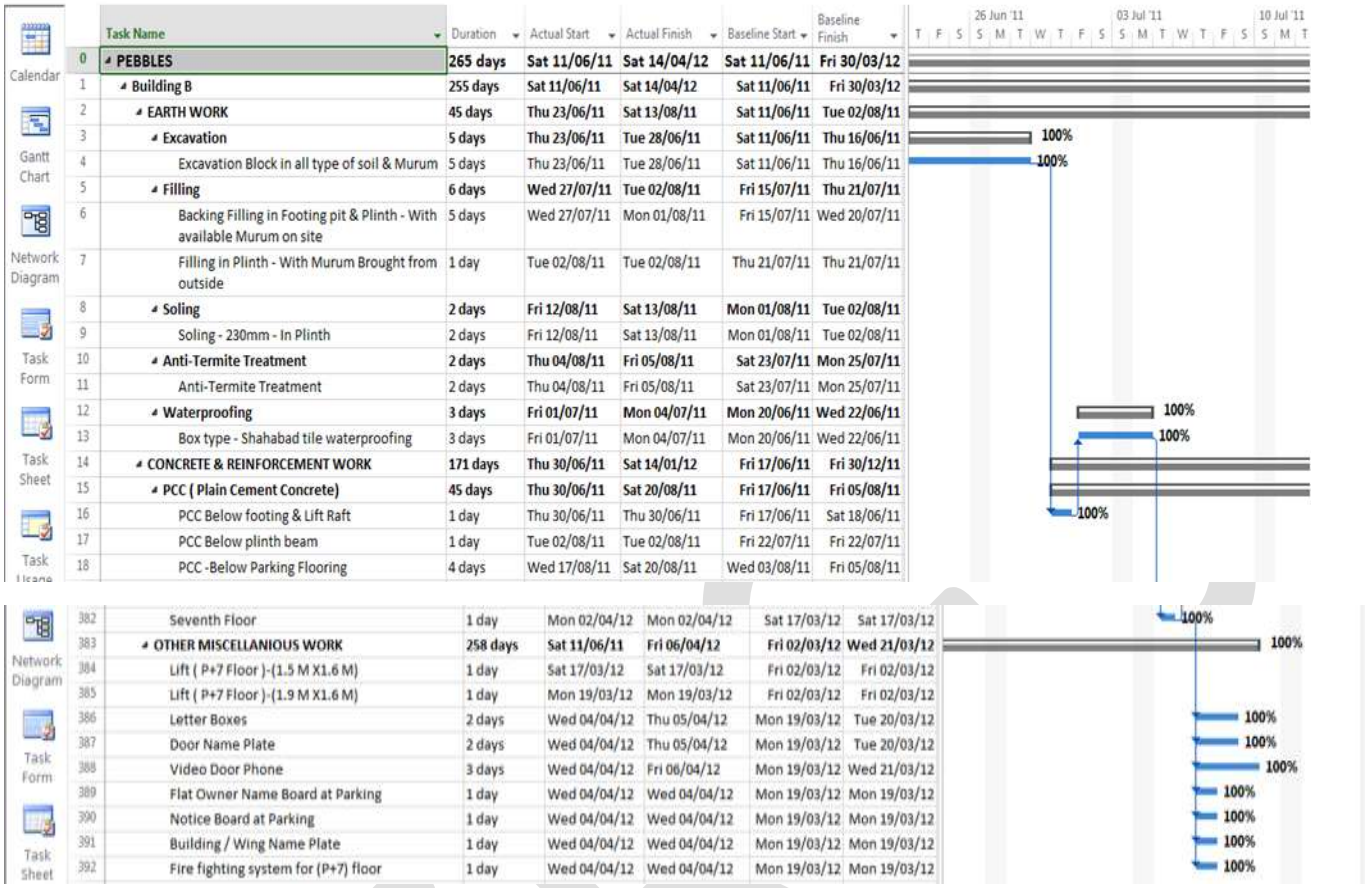
Activities and durations has been set as given below-



	Predeces	WBS	Task Name	QUANT	Duration	Cost
0		0	PEBBLES	0	252 days	Rs. 39,812,618.31
1		1	1 Building B	0	252 days	Rs. 39,812,618.31
2		1.1	1.1 EARTH WORK	0	45 days	Rs. 311,332.73
3		1.1.1	1.1.1 Excavation	0	5 days	Rs. 118,812.00
4		1.1.1.1	1.1.1.1 Excavation Block in all type of soil & Murum	792.08	5 days	Rs. 118,812.00
5		1.1.2	1.1.2 Filling	0	6 days	Rs. 76,967.09
6	24,23	1.1.2.1	1.1.2.1 Backing Filling in Footing pit & Plinth - With available Murum on	731.26	5 days	Rs. 51,919.46
7	6	1.1.2.2	1.1.2.2 Filling in Plinth - With Murum Brought from outside	54.57	1 day	Rs. 25,047.63
8		1.1.3	1.1.3 Soling	0	2 days	Rs. 47,356.11
9	25	1.1.3.1	1.1.3.1 Soling - 230mm - In Plinth	46.49	2 days	Rs. 47,356.11
10		1.1.4	1.1.4 Anti-Termite Treatment	0	2 days	Rs. 15,189.27
11	17	1.1.4.1	1.1.4.1 Anti-Termite Treatment	246.98	2 days	Rs. 15,189.27
12		1.1.5	1.1.5 Waterproofing	0	3 days	Rs. 53,008.26
13	16	1.1.5.1	1.1.5.1 Box type - Shahabad tile waterproofing	81.23	3 days	Rs. 53,008.26
14		1.2	1.2 CONCRETE & REINFORCEMENT WORK	0	169 days	Rs. 8,966,751.49
15		1.2.1	1.2.1 PCC (Plain Cement Concrete)	0	43 days	Rs. 132,488.36
16	4	1.2.1.1	1.2.1.1 PCC Below footing & Lift Raft	12.12	2 days	Rs. 28,730.70
17	7	1.2.1.2	1.2.1.2 PCC Below plinth beam	8.39	1 day	Rs. 19,888.66
365	133FS+15 d	1.12.9	1.12.9 Terrace Floor	437.81	14 days	Rs. 56,477.49
366	133FS+15 d	1.12.10	1.12.10 OHWT/LMR	114.55	14 days	Rs. 14,776.95
367		1.13	1.13 PLUMBING WORK	0	1 day	Rs. 1,246,560.00
368	155	1.13.1	1.13.1 First Floor	2544	1 day	Rs. 178,080.00
369	156	1.13.2	1.13.2 Second Floor	2544	1 day	Rs. 178,080.00
370	157	1.13.3	1.13.3 Third Floor	2544	1 day	Rs. 178,080.00
371	158	1.13.4	1.13.4 Fourth Floor	2544	1 day	Rs. 178,080.00
372	159	1.13.5	1.13.5 Fifth Floor	2544	1 day	Rs. 178,080.00
373	160	1.13.6	1.13.6 Sixth Floot	2544	1 day	Rs. 178,080.00
374	161	1.13.7	1.13.7 Seventh Floor	2544	1 day	Rs. 178,080.00
375		1.14	1.14 Electric WORK	0	7 days	Rs. 1,602,720.00
376	296	1.14.1	1.14.1 First Floor	2544	1 day	Rs. 228,960.00
377	297	1.14.2	1.14.2 Second Floor	2544	1 day	Rs. 228,960.00
378	298	1.14.3	1.14.3 Third Floor	2544	1 day	Rs. 228,960.00
379	299	1.14.4	1.14.4 Fourth Floor	2544	1 day	Rs. 228,960.00
380	300	1.14.5	1.14.5 Fifth Floor	2544	1 day	Rs. 228,960.00
381	301	1.14.6	1.14.6 Sixth Floot	2544	1 day	Rs. 228,960.00
382	302	1.14.7	1.14.7 Seventh Floor	2544	1 day	Rs. 228,960.00
383		1.15	1.15 OTHER MISCELLANIOUS WORK	0	17 days	Rs. 2,989,800.00
384	271	1.15.1	1.15.1 Lift (P+7 Floor)-(1.5 M X1.6 M)	1	1 day	Rs. 900,000.00
385	271	1.15.2	1.15.2 Lift (P+7 Floor)-(1.9 M X1.6 M)	1	1 day	Rs. 1,050,000.00
386	382	1.15.3	1.15.3 Letter Boxes	28	2 days	Rs. 12,600.00

Tracking-

Then set the base line and tracking part is done by using tracking gantt of all the activities from which we can understand planned and actual duration of each activity. Whether activity is on time or lagging or before time, which shown below in first and last part.



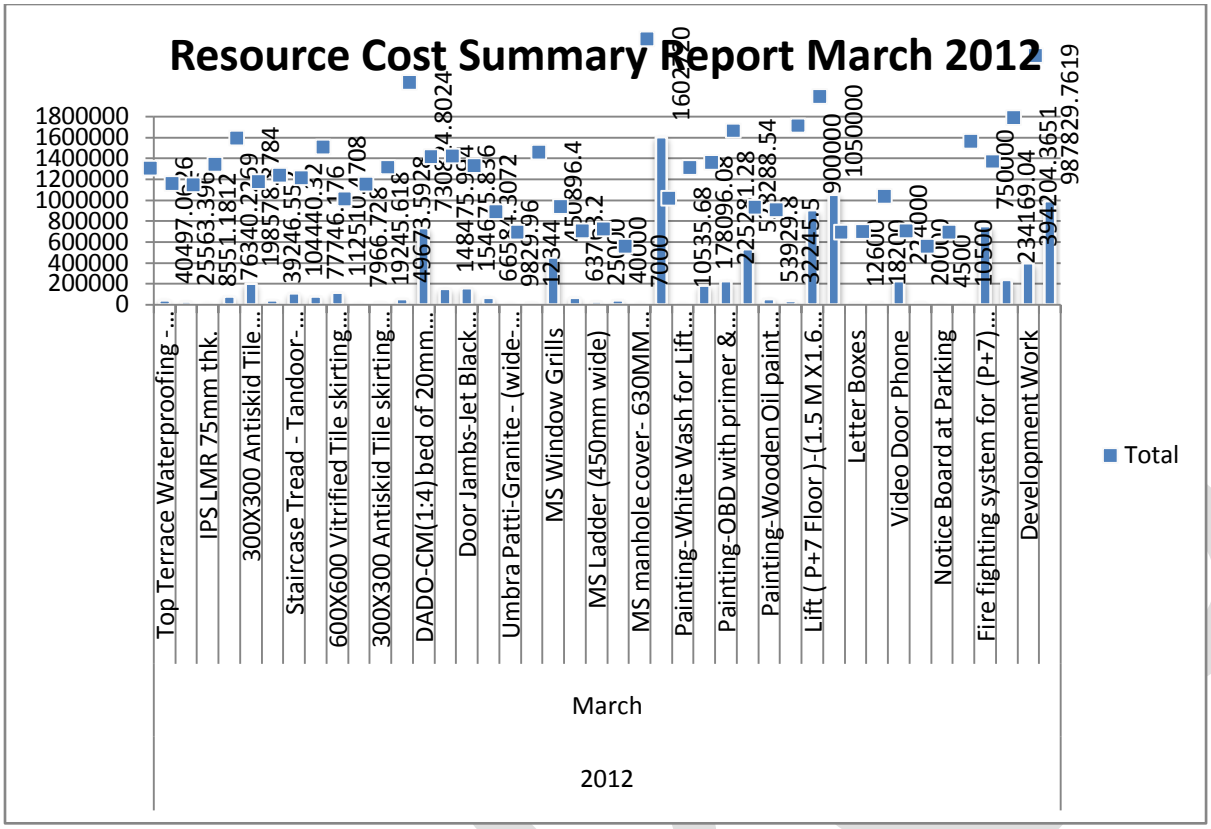
	Task Name	Duration	Actual Start	Actual Finish	Baseline Start	Baseline Finish
0	**PEBBLES**	**265 days**	**Sat 11/06/11**	**Sat 14/04/12**	**Sat 11/06/11**	**Fri 30/03/12**
1	**Building B**	**255 days**	**Sat 11/06/11**	**Sat 14/04/12**	**Sat 11/06/11**	**Fri 30/03/12**
2	**EARTH WORK**	**45 days**	**Thu 23/06/11**	**Sat 13/08/11**	**Sat 11/06/11**	**Tue 02/08/11**
3	**Excavation**	**5 days**	**Thu 23/06/11**	**Tue 28/06/11**	**Sat 11/06/11**	**Thu 16/06/11**
4	Excavation Block in all type of soil & Murum	5 days	Thu 23/06/11	Tue 28/06/11	Sat 11/06/11	Thu 16/06/11
5	**Filling**	**6 days**	**Wed 27/07/11**	**Tue 02/08/11**	**Fri 15/07/11**	**Thu 21/07/11**
6	Backing Filling in Footing pit & Plinth - With available Murum on site	5 days	Wed 27/07/11	Mon 01/08/11	Fri 15/07/11	Wed 20/07/11
7	Filling in Plinth - With Murum Brought from outside	1 day	Tue 02/08/11	Tue 02/08/11	Thu 21/07/11	Thu 21/07/11
8	**Soling**	**2 days**	**Fri 12/08/11**	**Sat 13/08/11**	**Mon 01/08/11**	**Tue 02/08/11**
9	Soling - 230mm - In Plinth	2 days	Fri 12/08/11	Sat 13/08/11	Mon 01/08/11	Tue 02/08/11
10	**Anti-Termite Treatment**	**2 days**	**Thu 04/08/11**	**Fri 05/08/11**	**Sat 23/07/11**	**Mon 25/07/11**
11	Anti-Termite Treatment	2 days	Thu 04/08/11	Fri 05/08/11	Sat 23/07/11	Mon 25/07/11
12	**Waterproofing**	**3 days**	**Fri 01/07/11**	**Mon 04/07/11**	**Mon 20/06/11**	**Wed 22/06/11**
13	Box type - Shahabad tile waterproofing	3 days	Fri 01/07/11	Mon 04/07/11	Mon 20/06/11	Wed 22/06/11
14	**CONCRETE & REINFORCEMENT WORK**	**171 days**	**Thu 30/06/11**	**Sat 14/01/12**	**Fri 17/06/11**	**Fri 30/12/11**
15	**PCC (Plain Cement Concrete)**	**45 days**	**Thu 30/06/11**	**Sat 20/08/11**	**Fri 17/06/11**	**Fri 05/08/11**
16	PCC Below footing & Lift Raft	1 day	Thu 30/06/11	Thu 30/06/11	Fri 17/06/11	Sat 18/06/11
17	PCC Below plinth beam	1 day	Tue 02/08/11	Tue 02/08/11	Fri 22/07/11	Fri 22/07/11
18	PCC -Below Parking Flooring	4 days	Wed 17/08/11	Sat 20/08/11	Wed 03/08/11	Fri 05/08/11

382	Seventh Floor	1 day	Mon 02/04/12	Mon 02/04/12	Sat 17/03/12	Sat 17/03/12
383	**OTHER MISCELLANIOUS WORK**	**258 days**	**Sat 11/06/11**	**Fri 06/04/12**	**Fri 02/03/12**	**Wed 21/03/12**
384	Lift (P+7 Floor)-(1.5 M X1.6 M)	1 day	Sat 17/03/12	Sat 17/03/12	Fri 02/03/12	Fri 02/03/12
385	Lift (P+7 Floor)-(1.9 M X1.6 M)	1 day	Mon 19/03/12	Mon 19/03/12	Fri 02/03/12	Fri 02/03/12
386	Letter Boxes	2 days	Wed 04/04/12	Thu 05/04/12	Mon 19/03/12	Tue 20/03/12
387	Door Name Plate	2 days	Wed 04/04/12	Thu 05/04/12	Mon 19/03/12	Tue 20/03/12
388	Video Door Phone	3 days	Wed 04/04/12	Fri 06/04/12	Mon 19/03/12	Wed 21/03/12
389	Flat Owner Name Board at Parking	1 day	Wed 04/04/12	Wed 04/04/12	Mon 19/03/12	Mon 19/03/12
390	Notice Board at Parking	1 day	Wed 04/04/12	Wed 04/04/12	Mon 19/03/12	Mon 19/03/12
391	Building / Wing Name Plate	1 day	Wed 04/04/12	Wed 04/04/12	Mon 19/03/12	Mon 19/03/12
392	Fire fighting system for (P+7) floor	1 day	Wed 04/04/12	Wed 04/04/12	Mon 19/03/12	Mon 19/03/12

Like in excavation activity planned duration was 11 june 11 but in actual its extended upto23 june 11, in fire fighting system planned date was 19 march 12 but its extended upto 4 april 12

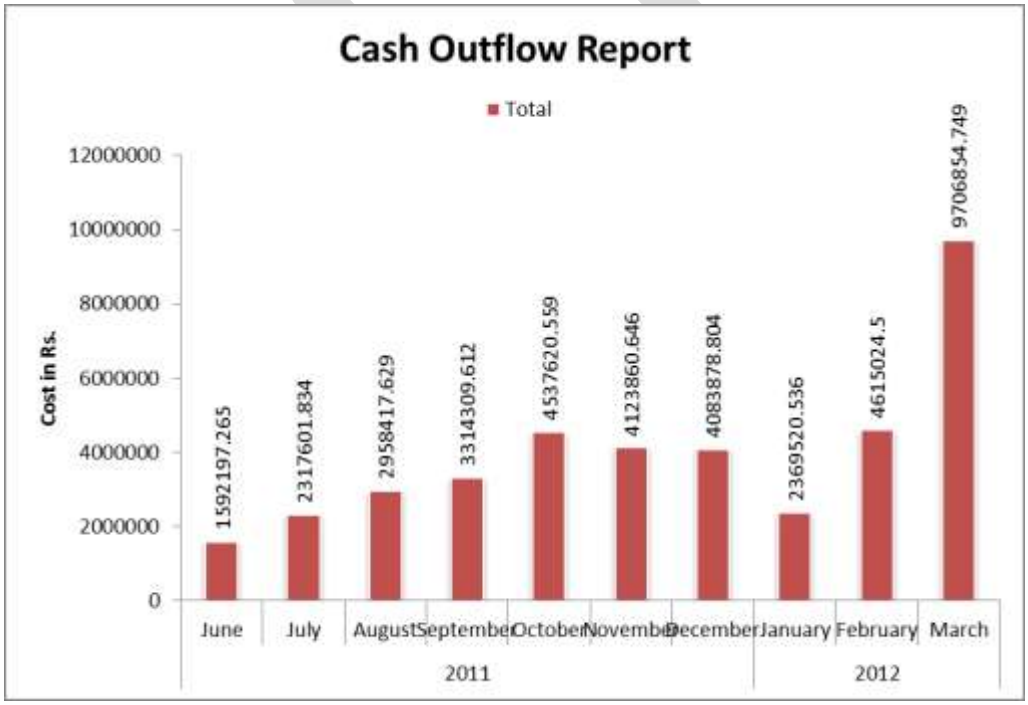
Resource cost summary report-

Then resource cost summary report generated using visual reports from which we can understand how much amount spent in each month on each resource. For example shown below the resource cost summary report for month march 2012



Resource cost summary report

Then outflow generated which shows expenditure in each month that is shown below



Cash outflow report

Above cash outflow report generated from visual reports which gives total expenditure of the project.

cash outflow of the project- Rs.39619286

Cash inflow of the project-

Cash inflow get from the clients in specific percentage after completion of the specific work that payment schedule is given below

After completion of work-	**Percent of amount received**
Excavation	20
R.C.C	50
Brickwork	10
Plastering	10
Flooring	5
Finishing	5

Payment schedule for inflow

Basically amounts received in particular months only like-

After completion of Excavation amount received-Rs. 17965600

After completion of R.C.C amount received- Rs.44914000

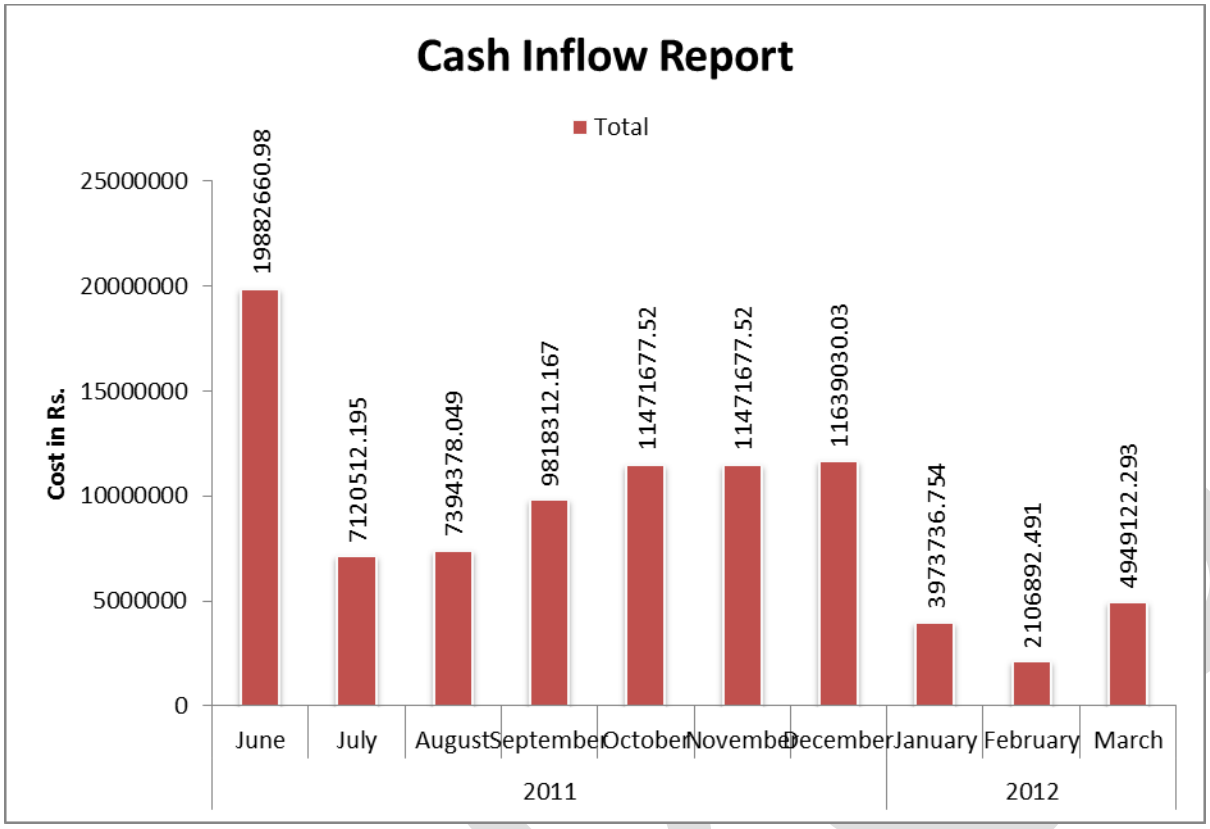
After completion of Brickwork amount received- Rs.8982800

After completion of Plastering amount received- Rs.8982800

After completion of Flooring amount received- Rs.4491400

After completion of Finishing amount received -Rs.4491400

As in some months there was no inflow but to maintain inflow of the project the amount received previously was utilized to keep smooth flow.so we get the proper inflow of every month. Finally we get inflow more than outflow after deducting overheads of 7% from total inflow

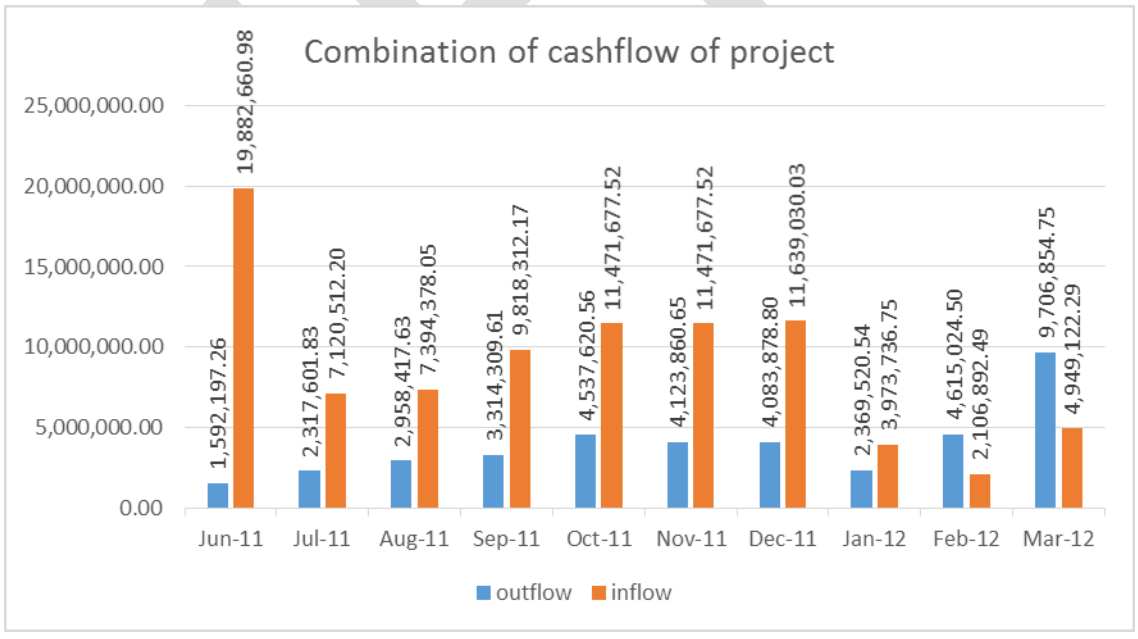


Cash inflow report of project

Cash inflow report get generated from visual reports.

Cash inflow of the project- Rs.83540040

Cash flow of the project



Outflow of project- Rs.39619286

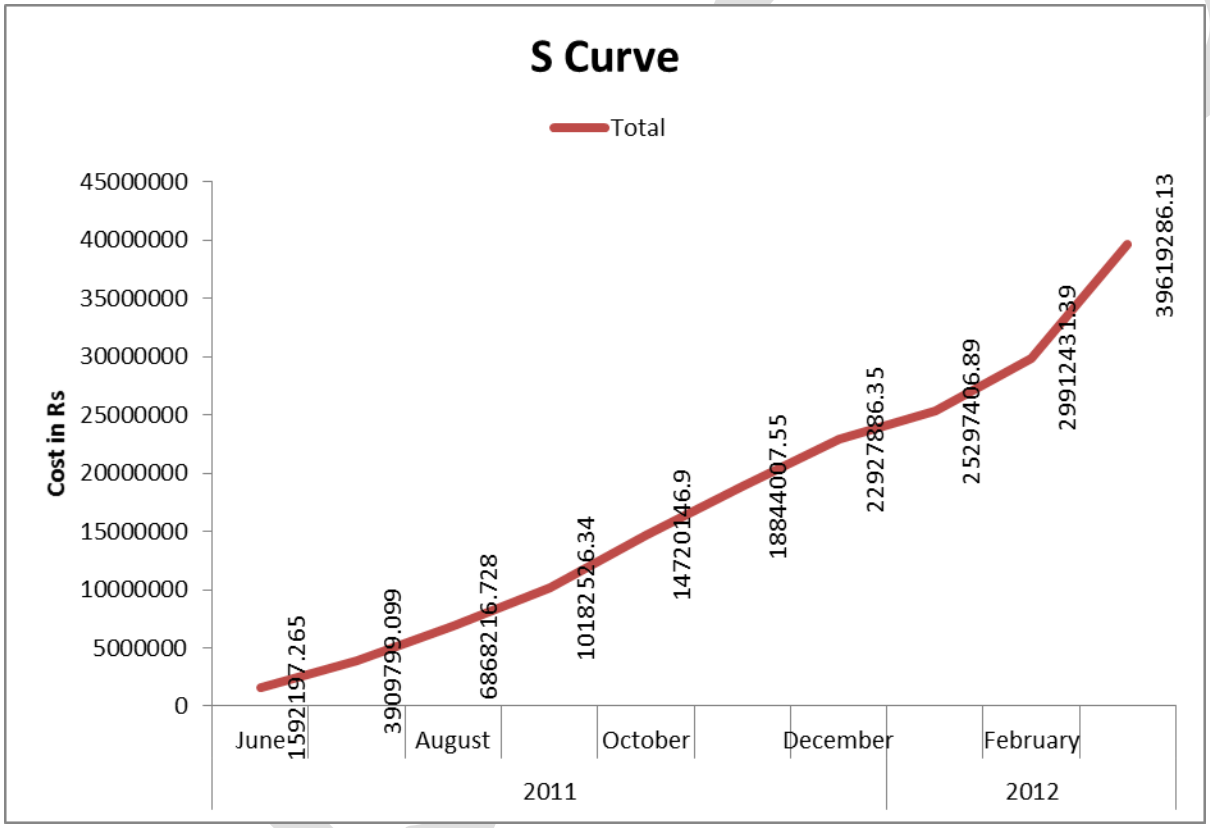
Inflow of project- Rs.89828000-Rs.6287960

After deducting overheads =Rs.83540040

Cash flow of project report shows combination of the project inflow and project outflow. Red color showing project inflow and blue color showing project outflow. As we can see project inflow is greater than project outflow that mean this construction project is successful with gaining proper required profit

S Curve of the project-

S curve report shows the graph time vs. Cumulative cost. It shows the progress of the project after feeding all required data and costs its get generated from the visual reports. It means adding every month outflow one by one so final we get sum that is cumulative cost. It shows the progress and flow of the total project.



S Curve of the project

Acknowledgement-

Its my Pleasure to prepare this paper under the valuable guidance of Prof S.S.Pimplikar, H.O.D. civil department, M.I.T .Pune and also I am thankful to Prof. Baliram Ade for help.

Conclusion-

From all above things we can conclude that-

1. Cash flow is the backbone of any construction project and if we fail to manage that then project can fail.

2. All the items should be considered in cash flow like material cost according to its quantity, equipment's charges, labor wages, fixed cost, overhead expenses and all direct and indirect cost expenses.

3. Poor cash flow hampers on construction project and results in delay of project completion, increase in costs etc.

4. Special attention required in case of execution of High Rise Buildings due to increase in variables, which needs special study and analysis experienced at different stages in construction

5. From this we understand that cash flow is essential to work out because it gives total inflow and outflow of the project and combination of it gives cash flow of the project. And from that easy to determine profit of the project

6. From this we also understand that how the cash flow generated with the help of Microsoft project software

7. with the help of this software it becomes easy to calculate cash flow as we gives input and comes output.