LECTURE NOTE

ESTIMATION & COSTING LAB MANUAL 3RD SEMESTER

Diploma (Civil Engineering)



Miss. Gayatree Sahoo

Department of Civil Engineering

PNS School of Engineering & Technology Kendrapara,

Email: gayatrisahoo590@gmail.com

EXPERIMENT NO-1

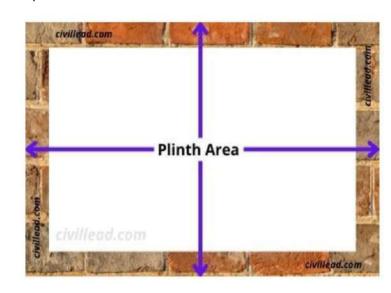
> Aim of the Experiment: -

To calculate the plinth area of a building.

> Requirement: - Given the details of plinth area work.

Theory

Plinth area: - The built up covered area of a building measurement at floor level of any storey is called plinth area.



Procedure – Find out outer to outer distance of walls.

- > Find out distance of long wall.
- > Find out distance short wall.

<u>Calculation: -</u> Plinth area = long wall * short wall

=5m*4m

 $= 20m^2$

Precaution: -

- 1. All unit of item of works area correct.
- 2. Calculate should be done carefully.

Result – Total plinth area =20m²

Conclusion: - In above experiment we have concluded that the calculation of plinth.

Experiment-2

➤ Aim of the Experiment: -

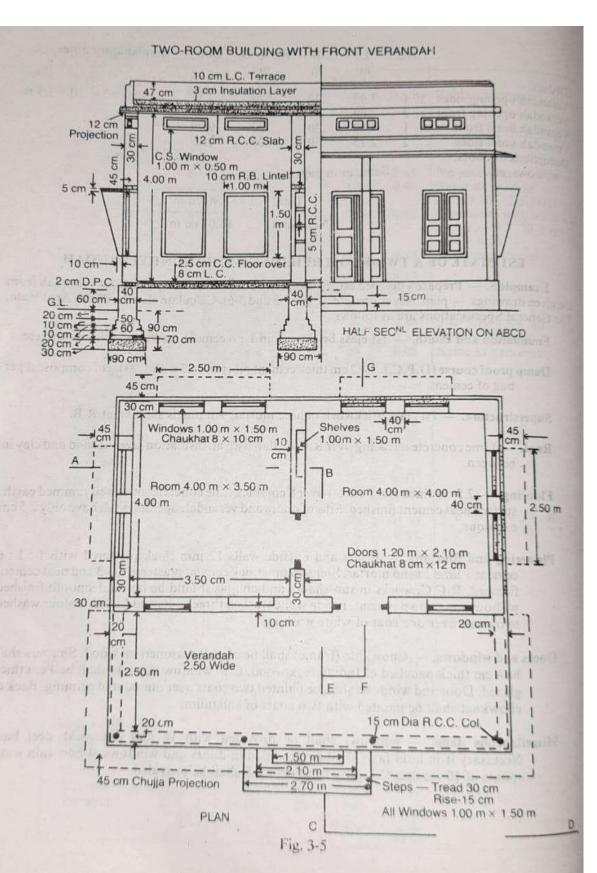
Calculate single storeyed two roomed building with specification as per PWD rate analysis.

Requirement: - Given plan, section and elevation of a two roomed building.

Given specification.

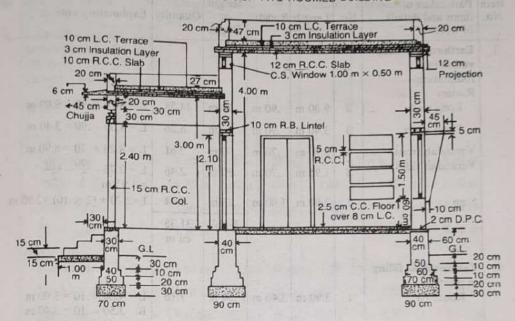
Procedure: - Calculate quantities of all items of work.

> Find out the total rate of given specification and quantities of all items of work of a building.



CROSS-SECTION OF TWO-ROOMED BUILDING

DEFAILS DE MEAST REMENT AND CALCLE ATION DE CELLUTIES (EM SI



SECNL ELEVATION ON CEFG

Fig. 3-6

Note - Foundation of verandah is continuous of same section.

Centre to centre lengths -

Room Long walls -- 3.50 + 4.00 + .30 + $(2 \times \frac{30}{2})$ = 8.10 m combined total length.

Room Short walls
$$-4.00+(2\times\frac{.30}{2})=4.30$$
 m

Verandah Front—Extreme outer length at plinth— $(2 \times \frac{.30}{2})$ = $\{3.50+4.00+(3 \times .30)+(2 \times .05)\}$ - .30=8.20 m

Verandah Sides—2.50+
$$\frac{.30}{2}$$
+ $\frac{.20}{2}$ =2.75 m

DETAILS OF MEASUREMENT AND CALCULATION OF QUANTITIES (Ex. 5)

Item No.	Particulars of items and details of works		No.	Length	Breadth	Height or Depth	Quantity	Explanatory note
1.	Earthwork in exc vation in foundation—	ca-	digiti m. 05	D SAN	30			A The poor was
	Rooms Long walls		2	9.00 m	.90 m	.90 m	14.58	L = 8.10 + .90 = 9.00 m
	Short walls		3	3.40 m	.90 m	.90 m	8.26	L = 4.3090 = 3.40 m
	Verandah front		1	8.90 m	.70 m	.90 m	5.61	L = 8.20 + .70 = 8.90 m
	Verandah sides		2	1.95 m	.70 m	.90 m	2.46	$L = 2.75 - \frac{.90}{2} - \frac{.70}{2}$ $= 1.95 \text{ m}$
	Step		1	2.90 m	1.00 m	.15 m	0.44	$L=2.70 + (2 \times .10) = 2.90 \text{ m}$
	Jacobsky Br	NO.	6 19V	or de la company		Total	31.35	
	79,00-4	3	C. C.				cu m	
2.	Earthwork in fill	ing					and S	
10 mm	Room (i)	***	1	3.90 m	3.40 m	.54 m	7.16	L = 4.0010 = 3.90 m B = 3.5010 = 3.40 m
				21	12 140 16	nevalus a	mone.	Ht. = 60 + 2 - 8 = 54 cm = .54 m
	Room (ii)		1	3.90 m	3.90 m	.54 m	8.22	(L = 8.2030 = 7.90 m
	Verandah		1	7.90 m	2.40 m	.54 m	10.23	$\begin{cases} B=2.75 - \frac{.40}{2} - \frac{.30}{2} = 2.40n \end{cases}$
	The task to					Total	25.61	
	105027	Saby	boui	mos mi	01.38 4	And and	cu m	
3.	Lime concrete in foundation					ME AS		
	Rooms —	-			(mi) ale	dans i	ino and	
	Long walls		2	9.00 m	.90 m	.30 m	4.86	May be taken 1/3 of
	Short walls	1000	. 3	3.40 m	.90 m	.30 m	2.75	excavation.
	Verandah front		1 -	8.90 m	.70 m	.30 m	1.87	
	Verandah sides		2	1.95 m	.70 m	.30 m	0.82	
	Step		1	4	1.00 m	.15 m		
					-100 111		0.44	
			154		1	Total	10.74 cu m	No. of the last of

							(Ex. 5 Conta.)
Item No.	Particulars of items and details of works	No.	Length	Breadth	Height or Depth	Quantity	Explanatory note
4.	I-class Brick-work in Foundation and Plinth in 1:6 cement mortar—	1	or (0.0 m (F. 181 2	re se	Plints walk 10 cm above (ocune Plints wall terrising
	ROOMS —	Tall	00-4	S. Imil		1	
	Long walls —	060 913	m	t, land	0 m 0	10 1-	gsss zel usta bell
	1st footing	2	8.80 m	.70 m	.20 m	2.46	L = 8.10 + .70 = 8.80 m
	2nd footing	2	8.70 m	.60 m	.10 m	1.04	L = 8.8010 = 8.70 m
	3rd footing	2	8.60 m	.50 m	.10 m	0.86	L = 8.7010 = 8.60 m
	Plinth wall	2	8.50 m	.40 m	.80 m	5.44	L = 8.6010 = 8.50 m
	Short walls —	98.7		20-1	- m	2 8	
	1st footing	3	3.60 m	.70 m	.20 m	1.51	L = 4.3070 = 3.60 m
	2nd footing	3	3.70 m	.60 m	.10 m	0.67	L = 3.60 + .10 = 3.70 m
	3rd footing	3	3.80 m	.50 m	.10 m	0.57	L = 3.70 + .10 = 3.80 m
	Plinth wall	3	3.90 m	.40 m	.80 m	3.74	L = 3.80 + .10 = 3.90 m
	VERANDAH—						draw-soria zarin-l è
	Front wall (long)—		0.50	144			
	1st footing	1	8.70 m	.50 m	.20 m	0.87	L = 8.20 + .50 = 8.70 m
	2nd footing	10	8.60 m	.40 m	.10 m	0.34	L = 8.7010 = 8.60 m
	Plinth wall	1	8.50 m	.30 m	.90 m	2.30	L = 8.6010 = 8.50 m
	Side wall (short) —	TRA	me	a and		18 1	
	1st footing	2	2.15 m	.50 m	.20 m	0.43	$L=2.75 - \frac{.50}{2} - \frac{.70}{2} = 2.15 \text{m}$
True!	2nd footing	2	2.25 m	.40 m	.10 m	0.18	$L=2.75 - \frac{.40}{2} - \frac{.60}{2} = 2.25 \text{m}$
	100 Uil -		7-1-111		C.O.	20.41	
	The second second		911	a my	EL LITTE		Sign water

Item No.	Particulars of items and details of works	No.	Length	Breadth	Height or Depth	Quantity	Explanatory note
	OI WOLKS			TOTAL TOTAL	B.F.	20.41	
	Plinth wall 10 cm above footing	2	2.35 m	.30 m	0.10 m	0.14	$L=2.75-\frac{.50}{2}-\frac{.30}{2}=2.35$
	Plinth wall remaining portion	2	2.40 m	.30 m	.80 m	1.15	$L=2.75 \frac{.40}{2} - \frac{.30}{2} = 2.40$
	Steps — 1st step 2nd step	1 1	2.70 m 2.10 m 1.50 m	.90 m .60 m	.15 m .15 m	0.36 0.19 0.07	- New 2061
	3rd step	10	1.50 III	in (Total	22.32 cu m	(a) giritor and
5.		86	To the	L. m. 6	a fan (181 4	gnixed but
	Rooms — Long walls	2	8.50 m	.40 m		6.80	Length, breadth same as
	Short walls	3	3.90 m	.40 m	La La	4.68	for plinth wall.
	002=01-1008-1	170.	The state of the s		Total	11.48	
	Deduct door sills	2	1.20 m			0.96	artinol bit
	102F = 01, + 02F = 1	25	i in	Net	Total	10.52 sq m	as a May don't
6.	I-class Brick-work in superstructure in lime mortar—						VER ANDAR
	Rooms — Long walls	2	8.40 m	.30 m	4.00 m	20.16	Length — Out to out.
	Short walls	3	4.00 m	.30 m	4.00 m	14.40	Length — In to in.
	Ver. above lintels (over pillars)—	08,	a la	100	i in i	La E	Plant will
	Front (long) Sides (short)	1 2	8.40 m 2.50 m		.30 m	0.50 0.30	- (thous) lies and
	Parapet — Over Rooms — Long walls	1000	9.40		to lan	2 2 2	A CO.
	Long walls	2	8.40 m	.20 m	.60 m	2.02	Ht. = 47 + 10 + 3 = 60 °C = .60 m
		2	4.20 m		.60 m		$L=4.00 + (2 \times .30) - (2 \times .20) = 4.20 \text{ m}$
West !	or bereitige pullers the	the same	STERON I	A CLEEN	C.O.	38.39	debarrer to nountries

Item No.	Particulars of items and details of works	No.	Length	Breadth	Height or Depth	Quantity	Explanatory notes
					B.F.	38.39	M. A. Store State of the store
	Verandah — Front (long)	1	8.40 m	.20 m	.40 m	0.67	Ht. = 27 + 10 + 3 = 40 cm = 40 cm
	Side (short)	2	2.50 m	.20 m	.40 m	0.40	including form
					Total	39.46	seel compter fair
	admonths in the	100	1 70	1 2		cu m	- Internet
	Deduct-	100					
	Door openings	2	1.20 m	.30 m	2.10 m		S. R.C.C. vork exclus
	Window openings	10	1.00 m	.30 m	1.50 m	4.50	ati bus franciani its
	C.S. Window ,,	12	1.00 m	.30 m	0.50 m	1.80	but and synthesis but facilities
	Shelves,,	2	1.00 m	.20 m	1.50 m	0.60	Back of shelf 10 cm
	R.B. lintels over— Doors	2	1.40 m	.30 m	.10 m	0.084 (a)	10 cm bearing.
-	Windows	10	1.20 m	.30 m	.10 m		Roef slab year.
	C.S.Windows	12	1.20 m	.30 m	.10 m	0.432 (a)	Total of (a) s = 0.948 cu m
	Shelves	2	1.20 m	.30 m	.10 m	0.072 (a)	ahiz mil
					Total	9.36	Sun-shed and
		0.225	20.	Net	Total	30.10 cu m	windows
7.	R. B. work in lintels	70.0	7.0	I tt	56.1	cu m	Botton
1902	excluding steel and	221:0	3 2 3	21+15	al ac	2-3	Sides
	its bending but including centering and shuttering and	259.9	30	053	ut.	EXC	Shelf slab
	binding steel— Over doors,	SEE LE	Ibus				
	windows and shelves		Same (a) in	as for item	items no, 6 =	marked 0.948	10. Mild stee burs incl- uers a tending in re- information for 1-8
i	Over ver. pillars— Front Sides	1 2	8.40 2.80	.20	.30	0.504 0.336	Out to out. Insidé bearing 30 cm
1	Politica	1999	na naker	nd utn	Total	1.788 cu m	Tura - dan

Item No.	Particulars of items and details of works	No.	Length m	Breadth	Height or Depth m	Quantity	Explanatory notes
8.	R. C. C. work in ver. columns excluding steel and	38.39	13.0	20 m	I'm Oto		Cincil India
30	its bending, but including form	98.0	m 01	m 0s			Side (slide)
	work and binding steel complete fair finished	14	$\pi (.15)^2$	×	2.70	= 0.19 cu m	30 cm insertion into the plinth wall below floor.
		18.1	m 01	5 m 08			egninego roof . 3-6
9.	R.C.C. work exclud- ing steel and its	08.8	- m 62	1950		11 11 es	nissao wobniW
	bending, but includ-	08.1	10:02				C.S. Window
	ing centering and shuttering and binding steel, fair	0 60	111.02		m 60		Shelves
	finished— Roof slab rooms	1	8.64	4.84	.12	5.018	12 cm projections.
	Roof slab ver	01 (s)	8.40	2.80	.10	2.352	10 cm inner bearing, excluding chujja.
ef us	Chujja projections Ver. front	SPA I	9.30	.45	.06	0.251	Average thickness.
	Ver. sides	2	2.70	.45	.06	0.146	A REVESS
	Sun-shed and breakers in windows—	(3) (6.8	Inio				
	Тор	4	2.50	.45	.05	0.225	
	Bottom	4	2.50	.15	.05	0.075	5 cm insertion into wall.
	Sides	4 × 2	1.50	.50 + 15	.05	0.195	5 cm insertion and average
	Shelf slab	2 × 3	1.10	.20	.05	0.066	breadth. 5 cm bearing.
					Total	8.328 cu m	and binding steel— Over doors
10.	Mild steel bars incl- uding bending in re- inforcement @ 1% of R.B. and R.C.C.	169	- 0	i lida mai			- him swebniw
	works	BULL	10.31	× 1 ×	78.5 =	8.10q	1% of total of items 1, 8 and 9.

Note. — Chujjas, sun sheds, etc. may be taken under a separate item.

I.am	Particulars of		10 11	Total Co		Unight		The section is 100 to order
No.	items and details of works	igna igna	No.	Length m	Breadth m	Height or Depth m	Quantity	Explanatory notes
11.	10 cm Lime							lifer) know gord 21
11.	concrete in roof terracing complete with surface finishing—							and window grat- and window grat- ings-
			1	8.00	4.20	-	33.60	Clear roof area in between parapet.
	Verandah	•••	1	8.00	2.50	-	20.00	" meating "
dia	Zaron petro S. w	-19			-	Total	53.60	
12.	3 cm thick insulation layer of sand and clay—	が野		lusT			sq m	
-	Rooms Verandah	1001	1	8.00 8.00	4.20 2.50	_	33.60 20.00	Clear roof area.
				13.		Total	53.60	
13.	Sal wood work in						sq m	
000/4	chowkhat wrought framed and fixed-						3×61	windows
100	Doors (3 cm inser-						TXXX	
F	tion into floor)	***	2	5.46	.12	.08		2 Vert.—2.13 m each. 1 Hor.—1.20 m each. 2 Vert.—1.50 m each
	Windows	121	10	5.00	.10	.08	0.400	2 Hor.—1.00 m each. 2 Vert.—0.50 m each.
74	C.S. Windows		12	3.00	.08	.08	0.230	2 Hor.—1.00 m each.
						Total	0.735	
14.	4 cm thick Indian	104		4.00.4	- 64		cu m	
× 00	teak wood panelled door and window	d		7 (00.m) 1 × 00.3		100.0		
-3	shutters including	100		DOS			1	
-	fittings— Doors		2	1.07	_	2.035	4.355	Rebate 1.5 cm.
		4,31	10	0.87		1.37	11.919	Ver S gerathove
	Windows	0	7	T do.		Total	16.274	201 19334 457
15.	4 cm thick Indian	. 0			25	3.00	sq m	bon this round
	teak wood glazed shutters including						1.	Solinia of ce-
1	fittings— C.S. Windows		12	0.87	65.	0.37	3.863	A SECOND
16.53	C.S. Windows	**	12	0.07	100	0.5	sq m	1988

Item No.	Particulars of items and details of works	No.	Length m	Breadth m	Height or Depth m	Quantity	Explanatory notes
				1-1-23	0		Jour ni straznos
16.	Iron work (mild steel) in hold fasts			Mary 1			este con amontros
	and window grat-						sontrunding.
	ings—					12 nos.	6 nos. per door.
	Hold fasts in doors	2×6	-	4.20	502		20110000
	Hold fasts in	10×4		-	TES	40 nos.	4 nos. per window.
	windows Hold fasts in	1004		177.5	The state of		2 nos. per C.S. window.
	C.S. windows	12×2	Land 1	-	-	24 nos.	Z nos. per C.S. window,
	C.S. Willdows	pr pr	1		Total	76 nos.	inschaften laver
						@ 1 kg	send and clay
		in art		05.1	0018	each	amoust ;
	sors root area	20.00		2.50	3.00.8	= 76 kg	distance?
	Window bars 16	V022.2	Lister		4	1 1	
	mm dia. @ 1.58	OTHER STATE	1010			1 - 1 -	AL Sale nood work by
	kg/m— Windows	10×8	1.50	-	1 -	120	Ver. bars at 10 cm centre
	William III				The second		approx.
	C.S. windows	12×2	2 1.00	-	-	24	Two horizontal bars.
	Sweet at State of Sta	1000	80.	121	344.7	144 m	(TABLE
17.	The second of th					1.58 kg	
17.	ing in walls 1:1:6			Harry.	= 227	. 52 kg	A PER AND THE REAL PROPERTY.
	cement, sand, lime	200	80.	1) 1) 1)		303.52 kg	- sanstarW
	mortar —	DEE.C	80_	20	00.7	3.035 q	C.S. Windows
	INSIDE — Rooms —	100 0	mig				
	(i)	2	3.50		4.00	28.00	May be taken as inner p
		2	4.00	-	4.00	32.00	meter \times ht. = 15.00 \times 4.0
	(ii)	4	4.00	-	4.00	64.00	viganes bas mobiles
	Verandah inner wall	1	8.40		3.00	25.20	Length out to out.
	Ver. Front above	415	1 200	2	TO		A STATE OF THE STA
	cols. inner face Ver. Sides above	1	8.00	-	.60	4.80	E100Cl
	cole inner fore	2	2.50		10	1 01	N-tuitones
	Jambs sills and	72	2.30	7	.60	3.00	
	soffits of shelves	. 2	5.00	.20	_	2.00	1-2-10-2-15-60
	Soffits of ver.		11			2.00	$L=2 \times 1.0 + 2 \times 1.5 = 5.0$
100	lintel —	1		411 4	16.50		shutters including
	Front	the same of the same	8.40	.20	1 580	1.60	New Additional Control
	Sides	. 2	2.50	.20		1.68	No deduction for col. en
	and the conversal and the	449	man.	CLEANE IN	T-4.1		
1000	anasi men	1	1 19	all make and	Total	161.68	Some Limeral

Item No.	Particulars of items and details of works	No.	Length	Breadth	Height or Depth m	Quantity	Explanatory notes
1075	Deduct openings in wall in between ver. and room —	9.5	47			1007 1	Front soil order
1	Door openings Window openings	2 2	1.20	7-	2.10 1.50	5.04 3.00	One surface of each. One surface of each.
	Little Charles	10			Total	8.04	Other doors and windows deducted from outside.
	1365 - 20 - 11	2		Net	Total	153.64 sq m	Total of inside plastering.
	OUTSIDE — Rooms —	10	1-1		e la	2.5	Side wall top face
	Back plinth including			and a			
	10 cm below G.L Back super-	1	8.50	-	.75	6.38	Ht. = $.60 + .05 + .10 = .75$ m These can be combined as-
	structure Sides plinth	1	8.40	121_	4.00	33.60	$1 \times 8.40 \times 4.75 = 39.90$
	including 10 cm	Di	40	+ 17	- 11/10	102 50	C.S. window
	below G.L Sides super-	2	4.70	-	.75	7.05	These can be combined as-
	structure	2	4.60	-	4.00	36.80	$\int 2 \times 4.60 \times 4.75 = 43.70$
	Above cols, front		K -				Spiretor loubell was
	outer face Above cols, sides	1	8.40	N - 1	.60	5.04	and hand hand and a
	outer face Plinth front	2	2.70	-	.60	3.24	Endy all ver, patents wall, from wall allows ver, root littel
	including 10 cm below G.L.	1	8.50	ent-300	.70	5.06	
	Dlinth sides	2	2.75	2111	.70	5.95 3.85	Ht. = $.60 + .10 = .70 \text{ m}$
	Wall above ver. roof Parapet – Rooms –	ĩ	8.40		.77	6.47	Ht. = 4.00 - 3.23 = .77 m
	Long wall outer face Long wall inner	2	8.40	Service .	.60	10.08	These can be taken approx
	face	2	8.00	-	.47	7.52	in one operation as — = (total centre length + inner ht. + top width ×
	Long wall top face Short walls	2	8.40	.20	+	3.36	outer ht.)
	outer face Short walls	2	4.60	-	.60	5.52	a seit gas pd.
	inner face	2	4.20	-	.47	3.95	$ = (2 \times 8.40 + 2 \times 4.20) $ \(\times (.47 + .20 + (.47 + .10))
	Short wails	THE PERSON	Total Cales	1		Bullion.	+ .03)
	top face	2	4.20	.20	-	1.68	$= 25.20 \times 1.27 = 32.00 \text{ sq m}$
				10 1	C.O.	140.49	- 1.27 - 32.00 sq iii

Item No.	Particulars of items and details of works	No.	Length	Breadth m	Height or Depth m	Quantity	.Explanatory notes
				TE TE	B.F.	140.49	
	Verandah parapet— Front wall outer face Front wall	1	8.40		.40	3.36	These can be takenap in one operation as=
	inner face Front wall	180	8.00		.27	2.16	(Total centre length) (inner ht. +top width
	top face	I _a	8.40	.20		1.68	outer ht.)
	Side wall outer face	2	2.70		.40	2.16	$= (8.65 + 2 \times 2.50) \times$
	Side wall inner face	2	2.50	cso!	.27	1.35	$\begin{bmatrix} .27 + .20 + (.27 + .10 +) \\ = 13.65 \times .87 = 11.88 \end{bmatrix}$
	Side wall top face	2	2.50	20		1.00	- Edizine
	Side wan top tare				Total	152.20	withufort finite
e bei	Deduct — Window openings (in outer walls)	8	1.00	0.4	1.50	12.00	One surface of each.
	C.S. window						
	openings	12	1.00		0.50	6.00	One surface of each.
	Step from plinth wall	1 08	2.70	00-	0.70	1.89	Including 10 cm below G.L.
	Ends of ver. side wall and lintel above col. level Ends of ver. parapet wall, from wall	2		.20	.60	0.24	This may be neglected
	above ver. roof level	2		.20	.27	0.11	This may be neglected
	97. = 01 00. = 2H.	20	Total of	deduc	ions	20.24	
	T. = EC.E - 00.A = AH	CB.		Net	Total	131.96 sq m	Total of outside plaste
	Phesena bersker	80.0	Grand outside	Total of plaster		and 285.60	
18.	20 mm thick cement plaster 1:3 in step finished cement rendered —			300		sq m	
105	1st step riser 2nd step riser 3rd step riser	1	4.50 3.30 2.10	=	.15	1.49	Front and sides. Front and sides. Front and sides.

No.	Particulars of items and details of works	No.	Length m	Breadth	Height or Depth m	Quantity	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	Ist step tread	1	3.90		.30	1	Front and sides.
	2nd step tread	1	2.70	Haye 1	.30	2.43	Front and sides.
	3rd step tread	1	1.50		.30)	Front and sides.
	Plinth wall above	90	ol i		4.60	10:0	Calific of cont
	lst step	2	.30		.45	0.27	Sides.
	2nd step 3rd step	2	1.50	No.T	.30	0.18	Sides.
	3rd step	10	1.50				Macs.
					Total	4.59 sq m	Cultivaries controls
19.	2.5 cm thick c.c. 1:2:4 over and						grinzan sinte to
	including 8 cm lime		CHEC	(S)() at	Total Control of	nue as la plus caring	ella W
	Room (i)	1	4.00	3.50		14.00	Christian front
	Room (ii)	1	4.00	4.00		16.00	Charin ser sides
	Verandah	1	8.00	2.50		20.00	Sills of verandah opening have been taken under
					Total	50.00 sq m	item 20.
20.	2.5 cm thick c.c.	334			8-91	Sy m	sjoT – avobeler
20.	1:2:4 floor in	0/	2	-	2	4 250	menef
	Door sills	2	1.20	.30		0.72	Side
	Sills of ver. opening	100	St.	1	0 1	THE RES	Edwards and S.
	front		8.50	.25	4	2.12	Including .05 m plinth outer offset. No. deduc-
		0.9	MT :		7	- 394	tion for cols.
	Sills of ver, opening sides	2	2.50	.25		1.25	Deduct purtice
	m bl. W.	122	m I	No.	Total	4.09	
	Deduct pillars	4	π×(.15)	bni	edema	0.07	This deduction may be
			4	Net	Total	4.02 sqm	neglected.

No.	Particulars of items and details of works	No.	Length m	Breadth	Height or Depth m	Quantit	y Explanatory notes
21.	White washing		7	1		100 B	beau note an
	three coats inside – Walls	Same	as for tering	inside in item	wall (17) =	153.64	based specified
	Ceiling of room	17 1 6 3	4.00	3.50		14.00	
	Ceiling of room	. 1	4.00	4.00		16.00	A CHARLEST STORY
10	Ceiling of ver.	13	8.00	2.50	- 1	20.00	de la constant de la
		20			Total	203.64 sq m	
	Colour washing two coats over one coat of white washing outside —		12	HOT.			2.5 cm thick e.c.
	Walls	Same plas		outside in item	wall (17) =	131.96	1 = 2 = Enverande = p including 8 cm lime = p concrete Door—
	Chujja ver. front		9.30	.95		8.84	Upper and lower faces ar edges.
gn, I	Chujja ver. sides	2	2.70	.95	_	5.13	Upper and lower faces are edges.
	Sunshade and sun- breakers in	00)	163			
- 1	windows —Top	4	2.50	.95		9.50	Upper and lower faces an
	Bottom	4	2.50	.25	-	2.50	edges.
	Sides	8 × 2	1.50	15 + .10	-	6.60	Inner and outer faces.
	Edges of sides Outer projection of	8	1.50	.05		0.60	This may be neglected.
-3410	roof slab	1 2	26.00	.36	- 1	-9-14-15	L=Outer perimeter of room B = .12 + .12+.12=.36 m
D	Deduct portion				Total	174.49	
	below G.L.		9.10	- 10	.10		L=Outer perimeter—Steps = 2(8.50 + 7.40) - 2.70
	le—Lower sides of c	202.6		Net -	Total	171.58	= 29.10 m

(Ex. 5 Contd.)

Item No.	Particulars of items and details of works	No.	Length m	Breadth m	Height or Depth m	Quantity	Explanatory notes
23.	Painting doors and windows two coats over one coat of priming—	THE REAL PROPERTY.	en tos		en la	of the second	ni poni si dicocorni.
100	Doors panelled	2 × 21/4	1.20	-	2.10	11.34	21/4 times one surface for both sides.
	Windows panelled	10 ×	1.00	-	1.50	33.75	n name the surrous
	C.S. windows glazed	12×1	1.00	-	0.50	6.00	One surface for both sides:
	Window bars	10	0.84	1.34	Non-it	11.25	Excluding chowkhat, one flat area for over all.
	C.S. window bars	12	0.84	0.34	Total	3.43 65.77	I liat area for over all.
				199	i construi	sqm	
24.	Solignum painting two coats in back of chaukhat—				authority of the second	n Jone	
	Doors	2	5.46	.12	-	1.31	1
	Windows	10	5.00	.10	0.000	5.00	Lengths same for chowkhat in item (13)
	C.S. windows	12	3.00	0.08	1-1	2.88	Secretaria Charles In the
	22	17.11	100 150		Total	9.19 sq m	
25.	C.I, Pipe 10 cm dia. (rain water spout) complete with						
	painting	4	1.00	-	-	4.00	

ABSTRACT OF ESTIMATED COST (Ex. 5)

Item	The second secon	The same	el em		Rate	istation	Amoun
No.	Particulars of items	Q	uantity	Unit	Rs. P	Per	Rs. P
1.	Earthwork in excavation in foundation .		31.35	cu m	350.00	% си т	109.72
2.	Earthwork in filling in plinth		25.61	cu m	275.00	% cu m	70.43
3.	Lime concrete in foundation		10.74	cu m	220.00	per cu m	2362.80
4.	I-class brickwork in foundation and plinth it I: 6 cement sand mortar	n 	22.32	cu m	320.00	per cu m	7142.40
5.	2 cm damp proof course (D.P.C.) 1 : 2 cemen mortar with water proofing compound	t .	10.52	sq m	18.00	per sq m	189.36
6.	I-class brickwork in superstructure in lime mortar	e .	30.10	cu m	320.00	per cu m	9632,00
7.	R.B. Work in lintels with 1: 3 cement morta excluding steel and its bending, but including centering and shuttering and binding steel	3	1 799		520.00	per cu m	929.76
8.	R.C.C. work 1: 1½: 3 in verandah columns excluding steel and its bending, but including form work and binding steel complete fair finished	S	482		590.00	s woodi	
9.	R.C.C. work 1:2:4 in slab excluding stee and its bending, but including centering an shuttering and binding steel, complete fair finished	d	8.328		775.00	per cu m	112.10
10.	Mild steel including bending in reinforcement		0.520	-	773.00	per cu m	6454.20
11.	10 cm Lime concrete in roof terracing		8.10	9	515.00	per q	4171.50
100	complete with surface finishing		53.60	sq m	12.00	per sq m	643.20
12.	3 cm thick insulation layer of sand and clay		53.60	sq m	1.50	per sq m	80.40
13.	Sal wood work in chaukhat wrought framed. and fixed.	(0)	0.735	cu m		per cu m	3454.50
						C.O.	35352.37
		1		6 16	sib	uro Al sur	I IOIN

em	Parabores Inch Organical	Quantity	Unit	Rate	Per	Rs. P.
No.	Particulars of items		Tarrett Co.	Rs. P.	the say	
14.	4 cm thick C.P. teak wood panelled door and window shutters including fittings	16.274	sq m	225.00	B.F. per sq m	35352.37 3661.65
	4 cm thick C.P. teak wood glazed shutters including fittings	3.863	sq m	200.00	per sq m	772.60
16.	Iron work in hold fasts and window gratings	3.035	quin- tal	700.00	per q	2124.50
17.	12 mm thick plastering in walls 1:1:6 cement: lime: sand mortar	285.60	sq m	2.90	per sq m	828.24
18.	20 mm thick cement plaster in steps finished cement rendered	4.59	sq m	16.00	per sq m	73.44
19.	20 mm thick c.c. 1:2:4 floor over and including 8 cm lime concrete	50.00	sq m	18.65	per sq m	932.50
20.	2.5 cm thick c.c. 1:2:4 floor in sills	4.02	sq m	18.00	per sq m	72.36
21.	White washing 3 coats inside	203.64	sq m	0.75	per sq m	152.73 -
22.	Colour washing 2 coats over one coat of white washing outside	171.58	sq m	0.82	per sq m	140.70
23.	Painting doors and windows two coats over one coat of priming	65.77	sq m	10.40	per sq m	684.00
24.	Solignum painting two coats	9.19	sq m	3.50	per sq m	32.16
25.	C.1. pipe 10 cm dia. rain water spouts complete with painting	4.00	m	27.00	per m	108.00
20125	Add 3% for Contingencies Add 2% for Workcharged E	stablishme	ent	7	otal	44935.25 1348.05 898.70
				Grand 7	Total	47181.00

Precaution: - All units of item of work are concert.

> Calculate should be done carefully.

Conclusion: - From above the experiment we conclude that rate analysis of a two roomed building with specification as per P.W.D.

Experiment -3

Aim of the Experiment: -

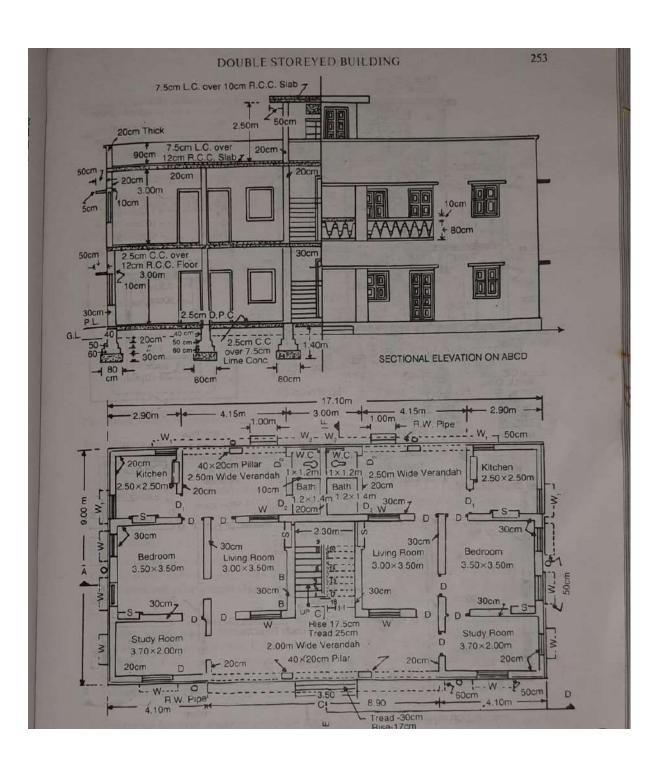
Calculate two stored pucka building with specification.

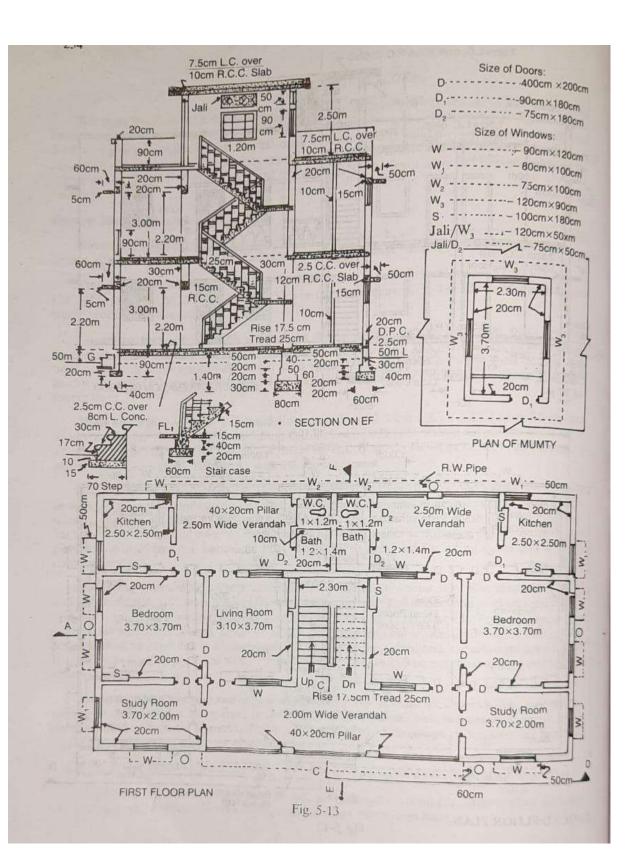
Requirement: - Given plan

Given specification and rate.

Procedure: -

- > Calculate quantities of all items two stored building.
- ➤ Calculate the rate of all items of work as per Odisha PWD rate analysis.





Ground Floor Centre to Centre Length of Walls-

Main Rooms-

Back long walls of all rooms including stair case room C. to C. length
=2(3.50+3.00)+2.30+4×30 +.30/2+.30/2=16.80 m
Front long wall of bed and living room on one side of staircase room C. to C. length

Cross or short wall C. to C. length=3.50+3.00+.30/2+.20/2+

Front Verandah-

Study room, front long wall C. to C. length=3.70+.20/2+.20/2=3.90 m Study room cross or short wall C. to C. length=2.00+.30/2+.20/2=2.25 m Verandah wall in between study rooms C. to C, length=8.90+.20/2+.20/2=9.10 m

Back Verandah-

Kitchen, back wall C. to C. length=2.50+.20/2+.20/2=2.70 m Kitchen, cross or short wall C. to C. length=2.50+.30/2+.20/2=2.75 m Bath and W.C. Two sets combined, back long wall C. to C. length=2×1.20+.20+2×.20/2=2.80 m Bath and W.C. cross or short wall C. to C. length=1.40+1.00+.10+.30/2+.20/2=2.75 m Verandah wall in between kitchen and W.C., C. to C. length=4.15+.10+.10+.10=4.45 m

First Floor Centre to Centre Length of Walls-

Main Rooms-

Back long wall of all rooms including stair case room C. to C. length $= (3.70+3.10)\times2+2.30+(4\times.20)+.20/2+.20/2=16.90 \text{ m}$ Front long wall of bed and living rooms on one side of staircase room C. to C. length $= (3.70+3.10)+.20+2\times.20/2=7.20 \text{ m}$

Cross or short walls C. to C. length=3.70+2×.20/2=3.90 m

Front Verandah-

Study room—Front long wall C. to C. length=3.70+2×.20/2=3.90 m

Study room—Cross or short wall C. to C. length=2.00+2×.20/2=2.20 m

Verandah wall in between study rooms C. to C. length=3.10+2.30+3.10+(2×.20)+2×.20/2=9.10 m

Back Verandah-

Kitchen—Back wall C. to C. length= $2.50+2\times.20/2=2.70$ m Kitchen—Cross or short wall C. to C. length= $2.50+2\times.20/2=2.70$ m Bath and W.C.—Two sets combined, back wall C. to C. length= $1.20+1.20+.20+2\times.20/2=2.80$ m Bath and W.C.—Cross walls C. to C. length= $1.40+1.00+.10+2\times.20/2=2.70$ m Verandah wall in between kitchen and W.C., C. to C. length= $4.15+2\times.20/2=4.35$ m

The estimate has been prepared sub-head wise storey by storey, first the ground floor and then the first floor, in the following pages.

Ground Floor Centre to Centre Length of Walls-

Main Rooms-

Back long walls of all rooms including stair case room C. to C. length

Front long wall of bed and living room on one side of staircase room C. to C. length =2(3.50+3.00)+2.30+4×.30 +.30/2+.30/2=16.80 m

Cross or short wall C. to C. length=3.50+.30/2+.30/2=3.80 m =3.50+3.00+.30+.30/2+.30/2=7.10 m

Front Verandah-

Study room, front long wall C. to C. length=3.70+.20/2+.20/2=3.90 m Study room cross or short wall C. to C. length=2.00+.30/2+.20/2=2.25 m Verandah wall in between study rooms C. to C, length=8.90+.20/2+.20/2=9.10 m

Back Verandah

Kitchen, back wall C. to C. length=2.50+.20/2+.20/2=2.70 m Kitchen, cross or short wall C. to C. length=2.50+.30/2+.20/2=2.75 m Bath and W.C. Two sets combined, back long wall C. to C. length=2×1.20+.20+2×.20/2=2.80 m Bath and W.C. cross or short wall C. to C. length=1.40+1.00+.10+.30/2+.20/2=2.75 m Verandah wall in between kitchen and W.C., C. to C. length=4.15+,10+,10+,10=4.45 m

First Floor Centre to Centre Length of Walls-

Main Rooms-

Back long wall of all rooms including stair case room C. to C. length

= $(3.70+3.10)\times2+2.30+(4\times.20)+.20/2+.20/2=16.90$ m

Front long wall of bed and living rooms on one side of staircase room C. to C. length =(3.70+3.10)+.20+2×.20/2=7.20 m

Cross or short walls C. to C. length=3.70+2×.20/2=3.90 m

Front Verandah-

Study room—Front long wall C. to C. length=3.70+2×.20/2=3.90 m

Study room—Cross or short wall C. to C. length=2.00+2×.20/2=2.20 m

Verandah wall in between study rooms C. to C. length=3.10+2.30+3.10+(2×.20)+2×.20/2=9.10 m

Back Verandah-

Kitchen-Back wall C. to C. length=2.50+2×.20/2=2.70 m

Kitchen—Cross or short wall C. to C. length=2.50+2×.20/2=2.70 m

Bath and W.C.—Two sets combined, back wall C. to C. length=1.20+1.20+.20+2×.20/2=2.80 m

Bath and W.C.—Cross walls C. to C. length=1.40+1.00+.10+2×.20/2=2.70 m

Verandah wall in between kitchen and W.C., C. to C. length=4.15+2×.20/2=4,35 m

The estimate has been prepared sub-head wise storey by storey, first the ground floor and then the first floor, in the following pages.

No.	Particulars of items and details of works	No.	Length m	Breadth m	Height or Depth m	Quantity	Explanatory notes
	Kitchen Bath and W.C. Verandah front Verandah back	2 2 1 2	2.40 1.10 8.80 4.05	2.40 2.40 1.90 2.40	B.F. .425 .425 .425 .425	24.01 4.90 2.24 7.11 8.26	
4	II. Concrete— Lime concrete in foundation—				Total	46.52 cu m	ers to project
	Main rooms— Back long wall full length end to end	1	17,60	0.80	0.20	1.00	an and the best of
	Front long walls of bed and living rooms		24.4)	2 1	0.30	4.22	L. Same as excavation
	100 m	2	7.90	0.80	0.30	3.79	L. Same as excavation
	Cross short walls	6	3.00	0.80	0.30	4.32	L. Same as excavation
	Front long walls Cross short walls Kitchens—	2, 4	4.50 1.65	0.60 0.60	0.20 0.20	1.08 0.79	L. Same as excavation L=2.2560/260/2 =1.65 m
	Back walls (long)	2	3.30	0.60	0.20	0.79	L. Same as excavation.
	Cross walls (short)	4	2.15	0.60	0.20	1.03	L=2.7560/2-60/2 =2.15 m
	Bath and W.Cs.— Back walls (long)	1	3.40	0.60	0.20	0.41	L. Same as excavation.
	Cross walls (short)	3	2.15	0.60	0.20	0.77	L=2.7560/260/2 =2.15 m
	Verandah pillars	4	0.80	0.60	0.20	0.38	
	Front verandah plinth dwarf wall	1	7.50	0.40	0.20	0.60	L=9.10—2×.40/2—2× 60 =7,50 m
	Back verandah plinth dwarf wall	2	3.35	0.40	0.20	0.54	L=4.35—2×.40/2—1×.60 =3.35 m
	Staircase base	1	1.10	0.60	0.20	0.13	
ned.	Step front	-1	2.50	0.70	, 0.15	0.26	
	Step back	2	1.20	0.70	0.15	0.25	
				def	Total	19.36 cu m	

5	R.C.C. work 1:2:4 exc	1-	A SHOP				In emission of the
	uding steel reinforcemen			049.9		200	Son thems and details
	bars and its bending incl	11-	In the same	100			admin to
	ding centering and shut-			100	100		
	tering and binding steel-			+			
	R.C.C. slab—						
	Bed and living rooms .	. 2	7.40	3.80	0.12	6.749	Bearing-ends full
		``	1	1000	1 1 100	0.37771000	wall (30 cm), sides
		N	8.4	DE TE	488	1	half wall (15 cm).
	Front verandah including		COLE !	103	- Marie		the state of the carry.
	study rooms	1	17.10	2.35	0.10	4.019	Bearing-outer full
		0	Bull Control			0000000	wall (20 cm), inner
		100				1	half wall
S inches	Back verandah	100					(-15 cm).
1	including kitchen, bath			1 - 4			
F (15 2 19	and W.C. rooms	1	17.10	2.85	0.10	4.874	Total of slab=15.642
	The second secon		7.11.7.7.55			1	cu m.
	Lintels—			10 34		170	THE PARTY OF THE P
	Over doors D main room	8	1.30	0.30	0.10	0.312	(a) 15 cm bearing.
	Over windows W main						to the starting.
5 7 3	rooms	8	1.20	0.30	0.10	0.288	(a)
11	Over shelves S in 30 cm		Marin T.		The second second		
	wall	6	1.30	-0.30	0.10	0.234	(a) 11 (a)
	Over entrance of stair				-		
10	case	1	2.70	0.30	0.20	0.162	Extronsipms
	Over doors D study room	2 2	1.30	0.20	0.10	0.052	(b) 11 1001
	Over doors Di kitchen	2	1.20	0.20	0.10	0.048	(b)
- 1	Over doors D ₂ bath and W.C.					A SECTION AND A	
	Over windows W.	4	1.05	0.20	0.10	0.084	(b)
	Over windows W study		10000	A STATE OF	E to W	Total Section	and where the li
	Over windows	4	1.20	0.20	0.10	0.096	(b)
	W. kitchen	2	1.10	0.20		1.3	Territoria
6. 1	Over shelves	2	1.10	0.20	0.10	0.044	(b) Side windows.
	S kitchen	2	1.20	0.20	0.10		The Resident
	Over R.C.C. Jalli over	- 4	1.30	0.20	0.10	0.052	(b)
	door D ₂ of		100				The state of the s
	Bath and W.C.	4	1.05		0.10	521	A Company of
			1.03	0.20	0.10	0.084	Total of (a)s=0.834
			OF THE REAL PROPERTY.	131	- D	1 1 1 Table 1 Table 1	cu m.
				# V 1.1		(b)	Total of (b)s=0.460
	Over front verandah 20						cu m.
C	m thick	1	9.20	0.20	0.20	0.246	Continuous over
	Over back verandah		7.20	0,20	0.20	0.368	pillars
						la l	
C	ontinuous including						
C W	vindow W ₁ W ₂	1	13.60	0.20	0.15	0.400	
S	vindow W ₁ W ₂	1	13.60	0.20	0.15	0.408	15 cm thick.
SO	unshades— Over window W, 4 in	10.		0.20	0.15	0.408	
S O m	window W ₁ W ₂ unshades— Over window W, 4 in nain rooms and 4 in	10,0	13.60	0.20	0.15	0.408	15 cm thick.
S O m	unshades— Over window W, 4 in the main rooms and 4 in the udy rooms	10.					15 cm thick.
S O m st O	unshades— Over window W, 4 in nain rooms and 4 in udy rooms ver window W, of	8	1.20	0.20	0.15	0.408	15 cm thick.
S O m st O ki	window W ₁ W ₂ unshades— Over window W, 4 in nain rooms and 4 in udy rooms ver window W ₁ of tchen	8	1,20		0.05	0.240	15 cm thick. Average 5 cm thick.
S O m st O ki	window W ₁ W ₂ unshades— over window W, 4 in nain rooms and 4 in udy rooms ver window W ₁ of	8	1.20	0.50	0.05	0.240	15 cm thick.
S O m st O ki	window W ₁ W ₂ unshades— Over window W, 4 in nain rooms and 4 in udy rooms ver window W ₁ of tchen	8	1,20	0.50	0.05	0.240	15 cm thick. Average 5 cm thick.

	Over back verandah			-	D.F.	10 445	grade statz
	continuous includ-		W. D.	1. 50	B.F.	18.445	constraint to The
	ing back windows				6 700		
1		1	13.60	0.50	0.05	0.340	Length same as for lintel.
	W ₁ & W ₂	1	13.00	0.50	0.03	0.340	Bearing 5 cm.
	Slabs of shelves 25	000	1.10	0.25	0.04	0.264	Total of sunshades and
	cm wide 4 cm thick	8×3	1.10	0.25	0.04	0.204	shelf slabs = 1.175 cu m.
	14, 2, 2, 1			1 100	11 1 9 9	- In Said	Shell states 1.172
	Staircase		254		0.15	0.020	$L = \sqrt{2^2 + 1.575^2} = 2.54 \text{ m}$
	Inclined slabs	2	2.54	1.10	0.15	0.838	L-V 2- 1.575
	Above wall at base	1	1.10	0.50	0.15	0.083	Schulg skitment
	Landing slab		Variet	21	THE DO	0.410	The rest of the re
	middle	1	2.60	1.05	0.15	0.410	Libertact - Tombert
	Landing slab	- 39					- co 15 75
* /	1st floor level	1	2.60	0.75	0.15	0.293	B=.60+.15=.75 m
	Steps without			1	-17		Dulas sills saudi
	reinforcement	8×2	×1.10	×1/2(.2	5×.175)	0.385	Triangular section.
		(34)	The second second		Total	21.058	Total of staircase slabs
					Total	cu m	(excluding base)
		-1	10-11-1	1 1 1	18 13	cu in	=1.541 cu m.
6	2.5 cm C.C.			100		BUS	-1.547 Cd III.
	1:2:4 nosing in	0.			10 1	4 - 6	3. 10. 12. 20 10.00
	steps—						Edward Lead
	Staircase steps	9×2	1.10	TO THE	N State	19.80	
	Front steps		2.30	-	3	6.90	II Brickwark
	Back steps	2.0	1.00	-	_	6.00	seats raiff 11
	Back steps			1	Total	32.70 m	
		1		100	Total	32.70 11	coweel hangement.
7							- carlie patracel
	post 10 cm×10 cm,				HIT IT		
	I m high including						Take roung
	reinforcement com-			10.5		2 nos.	Charleson to sall
	plete work	. 2	1	To the	_	2 1108.	- algaritat
8	R.C.C. 1:2:4				NA I	- 9 1	The temporal fall
0	Hand rail in stair-	1		The state of			and footber
	case including rein-	T .	3				line during
	forcement complete	1		TA TA	SELECT NO.	CELLO I	The second secon
	work	2	2.74	-	-	5.48 m	L=2.54+.20=2.74 m
Ç			-	Was I		property I	a. mincot rel
,	Jalli including rein-			56		1 2	"2mg looting
	Jaill including remi			SOLUTION OF	61	p E	Le Hipt 3
	forcement complete	4	0.75		0.50	The second	The second secon
	work	- -	0.75		B F F	sqm	Over doors D ₂
			OF STATE	DIE S	50	All The Paris	The same of the sa
- 1	0 2.5 cm Damp proo	1	89 7	0 0	- B	OL S	
	course C.C. 1: 11/2	:		015 6	11.8	17 3 7 3	Hereatte H
	3 with water proof-				31111		2. 017 1/215
	ing compound—				3		and the same same
	Main rooms—		17.0	0 04	0	6.88	L=16.80+.40=17.20 m
	Back long wall .		17.2	550	2/11/11		
	Front long walls .	57200	7.5	700	Tree leading to the same of	8.16	
	Cross short walls .	(3.4	0 0.4			
			- 1		C.C	0. 21.0	4
						-	

side water

al of (a)

n. al of (b)=1 n. tinuous =1 trs

m thick.

rage its

					1		THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.
	Study rooms— Front walls (long) Cross walls (short)	2 4	4.20 1.90	0.30 0.30	1	2.52 2.28	L=3.90+.30=4.20 m L=2.2540/230/2 =1.90 m
	Kitchen— Back walls (long)	2	3.00 2.40	0.30 0.30	1-11	1.80 2.88	L=2.70+.30=3.00 m L=2.7540/230/2=2.40 m
	Cross walls (short) Bath and W.C.— Back walls (long) Cross walls (short)	1 3	3.10 2.40	0.30	- 27	0.93 2.16 0.60	L=2.80+.30=3.10 m L=2.7540/230/2=2,40 m
	Verandah pillars	4	0.50	0.30	Total	34.21	all an band
	Deduct— Dopr sills main rooms D	8	1.00	0.40	-	3.20	ation with stars
	Door sills study	2	1.00	0.30	- 11	0.60	The season of th
	Door sills kitchen	2	0.90	0.30		0.54	a 2.5 cm C,C
	Door sills Bath & W.C., D2	4	0.75	0.30	_	0.90	n_ n_onicon 1 - C - L - C
	,,c,,-,		Total	of ded	uction	5.24	Staliouse stops 1 2
	III. Brickwork	DE -		Net	Total	28.97 sq m	Examt steps (a) 2
1	First class brickwork in lime mortar and founda- tion and plinth—	0.07	SE BY				post (Com/I) on.
	Main rooms—				76		and the state of t
	Back wall full length—	.86					Sanwaland
	1st footing 2nd footing Plinth wall	1 1 1	17.40 17.30 17.20	0.60 0.50 0.40	0.20 0.20 0.70	2.09 1.73 4.82	L=16.80+.60=17.40 m L=17.40—.10=17.30 m L=17.30—.10=17.20 m
	Front long walls— list footing	2 2	7.70	0.60	0.20	1.85	L=7.10+.60=7.70 m
	2nd footing Plinth wall	2	7.60 7.50	0.50 0.40	0.20 0.70	1.52 4.20	L=7.70—.10=7.60 m L=7.60—.10=7.50 m
	Cross walls— 1st footing 2nd footing Plinth wall	6 6	3.20 3.30 3.40	0.60 0.50 0.40	0.20 0.20 0.70	2.30 1.98 5.71	L=3.80—.60=3.20 m L=3.20+.10=3.30 m L=3.30+.10=3.40 m
	Study rooms— Front walls—				0.000		- barrograph 3
	Footing Plinth walls	2 2	4.30 4.20	0.40 0.30	0.20 0.70	0.69 1.76	L=3.90+.40=4.30 m L=4.30—.10=4.20 m
					C.O	28.65	- 1.50 -, 10-4,20 til

	ross walls—		23			B.F	28.65	
I	ooting		4	1.80	0.40	0.20	0.58	1-2.25 / 50/2
	Plinth wall	200		05:11	07.01	0.20	0.36	L=2.2550/2
			4	1.90	0.30	0.70	1.60	.40/2=1.80 m
1	Kitchen—	Col.				0.70	1.00	L=1.80+.10=1.90 m
F	Back walls-	3	3	4. mm 44	Santi-			Clear pro CE) slates F
F	Footing		2	3.10	0.40			250000000000000000000000000000000000000
	Plinth wall		2	3.00	0.40	0.20	0.50	L=2.70+.40=3.10 m
1	Cross walls	***	-	3.00	0.30	0.70	1.26	L=3.10 .10=3.00 m
	Footing		4	2 20	Carrier III			in 26 m wall
	· · · · · · · · · · · · · · · · · · ·	***	4	2.30	0.40	0.20	0.74	L=2.7550/2-
1	Plinth wall	124		2 10	020 5	104 7		.40/2=2.30 m
			4	2.40	0.30	0.70	2.02	L=2.30+.10=2.40 m
	Bath and W.C.		3	00 5	QE Q	100 5		alls, w Mond design
	Back walls—		4	100.0	916	PE H	1	Kaldien cross walls
	Footing		1	3.20	0.40	0.20	0.26	L=2.80+.40=3.20 m
	Plinth walls		1	3.10	0.30	0.70	0.65	L=3.20—.10=3.10 m
	Cross walls—						0.00	2 3.20 3.14 11
	Footing	.0	3	2.30	0.40	0.20	0.55	1 225 15012
			3	2.30	0.40	0.20	0.55	L=2.75—.50/2
14	Plinth wall	- 1	3	2.40	0.30	0.70		.40/2=2.30 m
		100	3	2.40	0.30	0.70	1.51	L=2.30+.10=2.40 m
	Verandah pillars-							culting states and the
	Footing	7	4	0.60	0.40	0.20	0.19	Control on the control
	Plinth wall		4	0.50	0.30	0.70	0.42	
	Front verandah			H. H. H.		15.5-7	THE RESERVE	Indial
	plinth dwarf wall	1 - 10		No.	950	044		- 141 April 261 200 C
	sum total length		1	7.80	0.20	0.70	1.09	L=9.10—2×.30/2—2×.50
		- 30			12-30		4 7 1 2 1 6	=7.80 m
	Back verandah	140			300	no h		Water war a mile of a
	plinth dwarf wall		2	3.55	0.20	0.70	0.99	L=4.35-2×.30/2-1×.50
			i di	1004	64.0	-4)4.0		=3.55 m
	Staircase base		.01	1.10	0.50	0.40	0.22	Walletonary water a
	Stair front 1st		1	2.30	0.60	0.20	0.28	and reverted 3. 3.
-	Step front 2nd		1	2.30	0.30	0.15	0.10	
	Step back 1st		2	1.00	0.60	0.20	0.24	Ar Strated a saviage
0.5	Step back 2nd	100	2	1.00	0.30	0.15	0.09	Althor to Division I
	otep outst and		100	1.07	Harris I	Total	41.94	
2	First class		100	- A 27		Total	cu m	allaw load to to talk I
	brickwork in lim	e	0.0	610	0.20	09.5	The state of the s	
	mortar in superst	tru-	1			THE REAL PROPERTY.		Washing San take
	cture in 30 cm wa	alls	nio.	0.15	es_0-	ALL	2 1 0	Starts to affice deal ne
	of main rooms-			115 72 -575	81, 31,0	1.5564		
	Back wall full len		1	17.10	0.30	3.00	15.39	L=16.80+.30=17.10 m
13	Front long walls		2	7.40	0.30	3.00	13.32	L=7.10+.30=7.40 m
y	Cross walls		6	3.50	0.30	3.00	18.90	L=3.80—.30=3.50 m
	Staircase room		1		The state of			A REPORT OF THE WORLDAND
	front wall		1	2.30	0.30	0.60	0.42	Above lintel.
	II OII II III	1		00.7	10 201	Total	48.03	

	Deduct— Door openings D	10	1.00	0.30	2.00 1.20	6.00 2.59 2.16	4 in main rooms and
	Window openings W Shelves opening	6	1.00	0.20	1,80		2 in kitchen
	Lintels (30 cm wall)	in i	tem 5 pa		s mar ke	0.834	The Analysis
13	First class brickwork in	***	Total	of ded	uction	11.58	Town Mary 19
Ast.	1 : 6 cement local sand mortar in superstructure		Total	Net	Total	36.45	cu m
	in 20 cm walls—	1	1.10	0.20	3.00	4.92	L=3.90+.20=4.10 m
	Study rooms front walls	2	4.10	0.20	3.00	4.80	L=2.2530/2-
	Study rooms cross walls	4	2.00	0.20	100		.20/2=2.00 m
	TO A LA SELL STEEL	1	2.90	0.20	3.00	3.48	L=2.70+.20=2.90 m
	Kitchen back walls	2	2.50	0.20	3.00	6.00	L=2.7530/2-
	Kitchen cross walls	4	2.50	0.20			.20/2=2.50 m
		1	3.00	0.20	3.00	1.80	L=2.80+.20=3.00 m
	Bath and W.C. back wall	03	2.50	0.20	3.00	4.50	L=2.75—.30/2—
	Bath & W.C. cross wall	3	2.30	0.20			.20/2=2.50 m
	Verandah pillars	4	0.40	0,20	2.20	0.70	Footing
	Front verandah wall above lintel	1	8.90	0.20	0.60	1.07	Ht. above lintel 60 cm.
	Back verandah walls						Nomero de pillare
	above lintel	2	4.15	0.20	0.65	1.08	Ht. above lintel
	above linter		WT D	183			65 cm.
	Deducet		101.0		Total	28.35	- dabne ov me
	Deduct— Door openings D	2	1.00	0.20	2.00	0.80	Study room doors.
		2	0.90	0.20	1.80	0.65	Kitchen doors.
	Door openings D ₁	4	0.75	0.20	1.80	1.08	Bath and W.C.
	Door openings D ₂ ···		0.15	0.20	1.00		doors.
	Window openings W	. 4	0.90	0.20	1.20	0.86	Study room windows,
	Window openings W1	4	0.80	0.20	1.00	0.64	Kitchen windows.
	Window openings W ₂ R.C.C. Jalli over doors	2	0.75	0.20	1.00	0.30	W.C. room windows
	D ₁ Shelves opening in	4	0.75	0.20	0.50	0.30	step troot 2nd
	kitchen	2	1.00	0.10	1.80	0.36	Back of shelves 10 cm
7	Lintels (20 cm wall)		Same	as mar	ked (b)		WY ADD MAKE SAN
	1110		in item	5 page	258	0.46	An add to the s
	Lintel over back wall of		LARGE TO THE PARTY OF THE PARTY	- F-6-	230		
	W.Cs.	1	3.00	0.20	0.15	0.09	belskwork in fune
	Lintel over windows W ₁				N	1.51-4	A STANKE II STROME
	on back walls of kitchen	2	1.15	0.20	0.15	0.07	forms if in one
1			Total		uction	5.61	a-Lauge mean to
	10 cm thick first class		90,5	100000000000000000000000000000000000000	100000000000000000000000000000000000000		B de wall full en
	brickwork in partition		RE	Net	Total	22.74	cu m
1	wall in 1:3 cement		GAE I		WE 8		S SW EROT
	course sund moreur with		No.				SLOCA S LOTHER
	hoop iron or 6 mm dia.		.ea.e		ann.		
	steel reinforcement	2			08.5	100	ting mind
1-4	every fourth layer	2	1.20	L	3.00	7.20	sq m

15	IV. Wood work—Door and window— Sal wood work in chau-						
	khats in doors and windows— Door D (10 cm×7.5 cm section) Door D ₁ Door D ₂ Window W Window W ₁ Window W ₂	12 2 4 12 4 2	5.10 4.60 4.45 4.20 3.60 3.50	0.10 0.10 0.10 0.10	0.075 0.075 0.075 0.075 0.075 0.075	0.459 0.069 0.134 0.378 0.108 0.053	5 cm in insertion into floor.
16	3 cm thick panelled shutters of Deodar wood in door and windows—				Total	1.201 cu m	
	Doors D Doors D Doors D Window W Window W Window W Window W Window W Window W	12 2 4 12 4 2	0.88 0.78 0.63 0.78 0.68 0.68		1.94 1.74 1.74 1.08 0.88 0.88	20.486 2.714 4.385 10.109 2.394 1.109	15 mm rebate """ """ """ """ """ """ """ """ """ "
17	Doors and windows fittings of oxydized iron		Same	as in ite	Total m (16)	41.197 41.197 sq m	sq m May also be taken per no. of different
18	V. Steel and Iron work— Steel reinforcement bars including bending in R.C.C. work Iron work in hold fasts		20.67	× 1/100 ×	78.5	16.226 q	@ 1% of R.C.C. work in item 5 excluding steps = 1% of (21.055—.385)= 1/100×20.67 cu m
19	and window bars— Hold fasts in doors Hold tasts in windows	18× 18×	6@1kg 4@1kg	each each	CLA CREE	108 kg 72 kg	6 nos. in each door. 4 nos. in each window.
	20 mm dia. window bars @ 2.47 kg per m— 12 windows 90×120 cm (W)	12×	8×1.20	=	115.20	m	8 bars 1.20 m each.
	4 windows 80×100 cm (W ₁)	4×	7×1.00	=	28.00	m	7 bars 1.00 m each.
	2 windows 75×100 cm	2×	6×1.00	=	12.00	m	6 bars 1.00 m each.
	(W ₂)		Total @ 2.47	155.20 kg per	m m	= 383.34	4 kg
	OP R		HOLITAL	ds tu	Total	563.34 =5.633	

Iron grill w	ailing			The L			to at 2000 business
two flights high)	(80 cm	1	5.38		0.80	4.304	L=2×2.54+.30=5.38 m
VI. Plaster	ing and					sq m	e de la marchia de la companya de la
Pointing-		43		De Ball		114	A Labelton
12 mm pla	stering		PAGE !	0.50			1 1000
with 1:60	ement					1	Englading Ct.
local sand walls				in the	15.		Excluding Skirting and Dado at bottom
Inside Plas	tering			SIL II	200	70 40	1 -1 -10000
Bed rooms		2	14.00	-	2.80	78.40	L=Inner perimeter= 14.00 n
Living roo	ms	2	13.00		2.80	72.80	L=Inner perimeter=13.00 n
Staircase r	oom	1	11.60	-	2.80	32.48	L=Inner perimeter= 11.60 n
30 cm face	of wall	100	BULL	DE TO	93 C	114.0	G and the
below stain		1	0.20	100	2.00	1.20	
entrance li		2	0.30	-	2.00	1.20	- CI MOUT
Shelves—J and soffits	amos, sill		5.00	0.20	27 C L	(70	1-(10,10), 2 5 5
Shelves—J	ambe cill	6	5.60	0.20	BOTT !	6.72	L=(1.0+1.8)×2=5.60 m
and soffits	amos, sm		5.60	0.10	10/0	1.12	1-(10:10)42-550
Study room	ne 39	2 2 2	11.40	0.10	2.80	63.84	L=(1.0+1.8)×2=5.60 m
Kitchens	115	2	10.00	Diez.	2.50	50.00	L=Inner perimeter=11.40 m
Bathroom		2	5.20		2.00	20.80	L=Inner perimeter=10.00 m
W.C.		2	4.40		2.50	22.00	L=(1.4+1.2)×2=5.20 m
Front vera	ndah-	-	7.70		2.30	22.00	L=(1.0+1.2)×2=4.40 m
Long wall		1	8.90		2.80	24.92	Openings to be deducted.
Long wall	outer		0.70		2.00	24.92	Openings to be deducted.
above pilla	r	1	8.90		0.80	7.12	
Side walls		2	2.00		2.80	11.20	
Back verai							
Long walls		2	4.15	-	2.80	23.24	
Long wall						21	et la constant and to
above pilla	r	2	4.15	-	0.80	6.64	- Special Westerns Lungs
Side walls		4	2.50	MORE IS	2.80	28.00	PIGGER BERNE
Pillars 3 fa 20 cm face	ces of well	4	0.80	11 12 1	2.00	6.40	L=40+20+20=80 cm
below vera	ndah	1.					Total of Study, Kitchen,
lintel	iluali	6	0.20		2.00	enur	Bath and W.C. rooms,
		0	0.20		2.00	2.40	Verandahs, etc. of 20 cm
COUNTY OF STREET						La TE	wall=268.80 sq m
Deduct-					Total	459.28	Sq m above Skirting and
Door oper	ings D	12	1.00				Dado.
Door oper	ings D.	2	0.90	-	1.80	21.60	One face only.
Door oper	ings D	4	0.75		1.60	2.88	One face only.
Window o	penings	4	0.90		1.60	4.80	One face only.
R.C.C. Jal	li		_		1.20	4.32	One face only.
Staircase e	ntrance			9-1			No deduction being small.
openings		2	2.30	-	2.00	9.20	
				6)			
	A .	Total	Total of	of ded	uction	42.80	sq m

(Ex. 9 Contd.)

	Outside Plastering— Outer side (including plinth and 10 cm below G.L.)	1	52.20	_	3.77	196.79	L=outer perimeter =2 (17.10+9.00) =52.20 m Ht. =3.0+.50+.05+ .10+.12= 3.77 m
	Deduct— Window openings W Window openings W ₁ Window openings W ₂ Front verandah openings	8 4 2 1	0.90 0.80 0.75 8.10		1.20 1.00 1.00 2.20	8.64 3.20 1.50 17.82	One face. L=8.90—2×.40=
	Back verandah openings Step front Step back	2 1 2	3.75 2.30 1.00	111	2.20 0.65 0.65	16.50 1.50 1.30	8.10 m L=4.15—.40=3.75 m Ht.=.50+.05+.10 =.65 m
	013		Total	of ded	uctions	50.46	distinguish most
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Net	Total plas	of out tering	side 146.33	sq m
22	6 mm plastering with 1: 3 cement, medium sand		Grand inside plaster	Total and ing =	of outside 562.81	sq m	James sounds to D
	mortar in ceilings— Bedrooms Living rooms 4 Study rooms Kitchens	2 2 2 2 2	3.50 3.00 3.70 2.50 1.20	3.50 3.50 2.00 2.50 1.40	1111	24.50 21.00 14.80 12.50 3.36	m southeless on
	Baths W.C.s Front verandah Back verandahs	2 1 2	1.20 8.90 4.15	1.00 2.00 2.50	=	2.40 17.80 20.75	dram 1 state 1 - man 2 man - man hatem
	Soffits of front verandah lintels	1	8.10	0.20		1.62	L=8.90—2×.40 =8.10 m
	Soffits of back verandah	0.50	- 1	90.01	5 3	n dal	and of peutotest
	lintels	2	3.75	0.20	-	1.50	L=4.15—.40=3.75 m
	Staircase— Inclined slab Landing slab middle	2	2.54 2.30	1.10 0.90	-	5.59 2.07	on I consisted.
	Landing slab (Ist floor level) Soffit of lintel at entrance Under sides of sun-	1	2.30 2.30	1.10- 0.30	-	2.53 0.69	and to same.
	shades— Sun shades W	8	1.20	0.50	-	4.80	Total of sunshade=18.22sq m*
	Sun shades W ₁ kitchen side	2	1.10	0.50	-	1.10	Total excluding bed
	Front verandah sun	1	9.20	0.60		5.52	and living rooms =103.83 m
	Back verandah sun shade continuous	1	13.60	0.50	-	6.80	1
	Continuos			100	Total	149.33	sq

	Skirting 20 cm high with 12 mm thick 1 : 3 cement					wolse in	
	coarse sand mortar neat	To		02.52	* 1	28.00	Lengths inner
	cement finished—	2	14.00			to the source	perimeter.
	10 10 10 10 10 10 10 10 10 10 10 10 10 1	2	13.00	0.00	-	26.00	
	Living rooms	- 4	15.00	25.0	2 10	3.00	Allego Medalaria
	Jambs of main rooms doors D	10	0.30	0-3	-	9.90	
	Staircase room	1	9.90	THE.		0.60	dalastor Ludia
	Jambs at entrance	2	0.30	77.		22.80	and the second
	Study rooms	2	8.90	109	2	8.90	See block
	Front verandah long wall	1	2.20	100		4.40	
	Front verandah side walls	2 2	4.15			8.30	
	Back verandah long walls Back verandah side walls	4	2.70	35/4	-	10.80	
	Pillars 3 faces	4	0.80		-	3.20	Total of study room.
-	Jambs study rooms door		11/10	Bright	200	0.40	verandahs etc. =
	D	2	0.20	inseks	Teles	0.40	69.30 m
	THE REAL PROPERTY.			100	-	126.30	emog ball his
	DCAS (na.	THE PARTY	Total	120.30	anen gand.
	Deduct door opening D	12	1.00	F FT	0		Smoot work
	to unit		1 GE 1	Net	Total	114.30	Mulenens An Observation
	BLIC I		0.6.1	CHICAL !		m	ALL CONTRACTOR OF THE PARTY OF
24	Dado 12 mm thick 1:3		0.00	34.8	T-I-I		Front verindar
	cement coarse sand mortar neat cement		00.5	A.15.1			Buck vermanh
	finished (in kitchen, bath		1	Di ir			Soffits of Cont
	and W.C.)—		0.00	1 01 8			
	Kitchen 50 cm high	2	10.00	-	0.50	10.00	Lengths inner
		2	4.40		0.50	4.40	perimeter.
	W.C. 50 cm high Bathroom 1 m high	2	5.20		-1.00	10.40	Act wall-ord
	Jambs of kitchen door D	2	0.20	2.30	0.50	0.20	
	Jambs of W.C. door D ₂	2	0.20		0.50	0.20	Cala dictorias
	Jambs of bath door D2	2	0.20	1-0-1	1.00	0.40	(per molt (ch)
			1		Total	25.60	
		1				sq m	-reburb*
	Deduct-		68.0	1.2			V chistonal
	Kitchen door Di	2	0.90	-	0.50	0.90	
	W.C. door D ₂ Bath door D ₂	2 2	0.75	- A.	0.50	0.75	A Spart and
	100000000000000000000000000000000000000	2			1.00	1.50	to Black of the State of the St
	1 5.52 200 Think had a	1	Total	of ded	uction	3.15	al alleries
	080		OF NAME	AND	Mary C	sq m	Buch nerginalist
	pt a mi			Net	Total	22.45	The state of the s
	THE RESERVE	-				sq m	

(Ex. 9 Contd.)

							(Ex. 9 Contd.)
25	20 mm plastering with		1			1	
	1: 3 cement coarse sand						
	mortar neat cement	The said of					
	finished in steps—	3/1/20/20	1	19.3	The same	1.00	
	Front steps tread and riser	1	2.30	1.21	I BENE	2.78	B=2×.30+3×.17+.10=
	Back steps, tread and	-	HATO TECHN		1 198	2.70	1.21 m
	riser	2	1.00	1 21	THE STATE OF	0.40	1,21 111
	Sides of front and back	6	1.00	1.21		2.42	
	steps	3×2	1	0.60	0.27	0.07	
	The state of the same of the s	3×2		0.80	0.27	0.97	
	Stair case steps, tread	3.2	IST 3	0.50	0.17	0.31	
	and riser	2×8	1.10	0.425		7.48	B=25+17.5=42.5 cm
		20	1.10	0.423		7.40	=.425 cm
				1000			425 CIII
	VII. Flooring—	0.80	10-11	NE T.	Total	13.96	
26	2.5 cm C.C. 1:2:4 floor					sq m	
	over and including 7.5 cm	threat			9-1-3		
	lime concrete —		100			24.50	
	Bedrooms	2	3.50	3.50	-	24.50	THE THE
	Living rooms	2	3.00	3.50		21.00	0.466
	Staircase room	1	2.30	3.50		8.05	
	Sill of entrance	1. 2	2.30	0.30		0.69	
	Study rooms	2	3.70	2.00		12.50	
	Kitchens	2	1.20	1.40		3.36	
	Bathrooms W.Cs	2	1.20	1.00		2.40	Ober of the City
	re-converse and a large	1	8.90	2.00		17.80	enthour modes
		2	4.15	2.50		20.75	THE WHITE WITH
	Back verandans	25	The same	2.50			The first support to the
				11 11	Total	125.85	September 1997
	1 2 20 20 20 20 20 20 20 20 20 20 20 20 2	(15.50	1000	901		sq m	THE PERSON NAMED IN
27	2.5 cm C.C. 1:2:4 floor		The state of				
21	(without lime concrete)—	Del Bel					STATE OF THE PARTY
	Sills of door D	10	1.00	0.30		3.00	Carried Toler
	Sills of door D	1000					latino l
	(study room)	2	1.00	0.20	-	0.40	pallough shell
	Sills of door Di	0	0.90	0.20	1000	0.36	
	Sills of door D2	4	0.75	0.20	-	0.60	
	Sills of verandah	1	No. 18	1985		100	
	openings over plinth		13 194	H Was		The party of	
	dwarf wall—	A STATE OF				162	L=8.90-2×.40=
	Front verandah	. 11.0	8 10	0.20		1.62	8.10 m
	the left and the l			0.20		1.50	L=4.15—.40=3.75 m
	Back verandah		3.75	0.20		2.07	Over R.C.C. landing
	Staircase landing	. 1	2.30	0.90		2.07	slab.
	St. So. a					1 1 1	
	Statement on the base			1981	Total	9.55	A STATE OF THE STA
	The state of the state of the				1 474.644	sq m	

Steep		1					
	VIII. Painting—					drive	content in or fre
28	Painting two coats	7 11				Brattle of	
23	over one coat of					Ten v	Color de la
	priming —	12×21/4	1.00	_	2.00	54.00	11/8 for one face.
	Panelled door D	2×21/4	0.90	_	1.80	7.29	rearright was "
-11	Panelled door D ₁	4×21/4	0.75		1.80	12.15	" "
	Panelled Window W	12×21/4	0.90	_	1.20	29.16	,, ,, ,,
	Panelled Window W.	4×21/4	0.80	130.4	1.00	7.20	22 25
	Panelled Window W ₂	2×21/4	0.75		1.00	3.38	TE SHOW! IN MERCHAN
	Painting Window bars						
	W	12	0.75		1.05	9.45	One clear flat area in
	Painting Window bars				The P		between chaukhat.
	W ₁	4	0.65	-	0.85	2.21	the plant
	Painting Window bars			TOL T			- Charles and
	W ₂	2	0.60		0.85	1.02	
	Iron grill in staircase				0.00	4.20	winter Housing
	railing	1	5.38	-	0.80	4.30	C. L. D. Daniel, D. A.
29	Coaltar painting two				Total	130.16	roternal bay 1970
	coats on back of	120	100		Total	sq m	office of the second
	chaukhats—			E STATE	Fig. 1		
	Door D	12	5.10	0.10	-	6.12	Lengths same as for
	Door D ₁	2	4.60	0.10	-	0.92	chaukhats in item 15.
	Door D ₂	4	4.45	0.10	-	1.78	ment ar an is
	Window W	12	4.20	0.10	-	5.04	Salisana Nellia
	Window W ₁	4	3.60	0.10		0.70	s same or front
	Window W ₂	2	3.50	0.10		0.70	The state of the s
	La distance de la constance de		01-1	0:4	Total	16.00	To same Named
	IX. White washing and	Margan.	1 6.1		11.15	sq m	
20	colour washing —	Plane -	9-0-	The Galley			in busing more
30	White washing 3 coats—Walls (inside)	The state of	Same	as for	inside		FEBRUARY AND A STATE OF THE STA
		nlast	ering	in item	1 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	416.48	
	Ceiling, under side of	Piase	Same	as for	ceiling		C. Cale - Talk T. Fr
	sunshade, etc.	plast	ering	in item	(22)	149.33	The state of the s
	C	1				37 N N N N	25 cm (1) ma &4 %
31	Colour washing two			11 33	Total	565.81	fallact finie co
	white washing	1	THE REAL PROPERTY.	101	1 20	sq m	Threat to life
	(outside)—			Mary 1	De la la	0.7	Classic locality
	Walls (outside)	177	Same	as for	outside	wall	urber vban
- 1		plas	tering	in item	(21)	146.33	Portion below G.L.
	Upper surface of	THE THE	P 192 1	100		- Little - I little	to be deducted
	sunshades		Same	as	marked		Under surface same
		1 - 1 -	item	(22)	-	18.22	as lower surface.
	Deduct 10 cm portion	ME V			Total	164.55	Edges neglected.
	below G.L.	1	47.90	11-45	0.10	4.79	L=outer perimeter-
			1000				steps
	The state of the s	10	100	Ci.	I COL		$= (2 \times 17.10 + 2 \times 9.00)$
	X Misc. Items-		1CDUT	Net	Total	159.76	(2.30+2×1.00)=
32	10 mm dia. A.C. rain	16.	Rail.	1		sq m	47.90 m
22	water pipes (6 nos.)	6	3.60		-	21.60 m	L=3.00+.12+.50=3.62
					1 1 1 1		=3.60 m

FIRST FLOOR

Details of Measurement and Calculation of Quantities (Ex. 9)

Item No.	Particulars of items and details of works	No.	Length	Breadth m	Height or Depth m	Quantity	Explanatory notes
	II. Concrete						antida, mard
1	Lime concrete in roof terracing 7.5 cm thick complete with surface	472	IEN SE				Marie Co
	finishing — Roof of 1st floor in	(ET)	1-25.1	1 01	244		
4.	between parapet	1	16.70	8.60	-	143.62	Mumty room to be deducted.
1	Roof of stair case room	91.5	100,0				deducted.
	(mumty room) including	UTI	1 1 1 1	Marries .		-1-10-10-10	L=2.30+2×.20+2×.50
	chujja projection	1	3.70	5.10	_	18.87] =3.70 m B=3.70+2×.20+2×.50
	Deduct mumty room at				Total	162.49	= 5.10 m
	1st floor level	1	2.70	4.10		11.07	
	W W 3			Net	Total	151.42	
2	R.C.C. work 1 : 2 : 4				-	sq.m.	
2	excluding steel reinforcement and its bending but including centering and shuttering						
	and binding steel-		Same	as in	item (5)		
	Roof slab		of G.F.	page	258	15.642	Slab of all rooms and verandahs.
	Lintels—						
	Over main room doors D Over main room	8	1.30	0.20	0.10	0.208	Bearing 15 cm
	windows W	8	1.20	0.20	0.10	0.192	
	Over main room shelves	4	1.30	0.20	0.10	0.104	
	Over entrance of staircase	1	2.70	0.20	0.20	0.108	
	Over doors D study room	2	1.30	0.20	0.10	0.052	
	Over doors D ₁ kitchen Over doors D ₂ Bath and	2	1.20	0.20	0.10	0.048	
	W.C. Over window W study	4	1.05	0.20	0.10	0.084	
	room	4	1.20	0.20	0.10	0.096	
	Over window W1 kitchen	2	1.10	0.20	0.10	0.044	Side windows
	Over shelves kitchen Over R.C.C. Jalli over	4	1.30	0.20	0.10	0.104	
	door D2 of bath and W.C.	4	1.05	0.20	0.10	0.084	

ESTIMATING AND COSTING

270		1 .	9.20	0.20	0.20	0.368	20 cm thick.
	Over front verandah Over back verandah continuous including window W ₁ W ₂ Sunshades, shelf slab	P Logor	13.60 Same of G.F.	as 111	0.15 item (5) 259	0.408	15 cm thick.
	Stair case inclined slab and landings		Same of G.F.	as in page	item(5) 259	1.541	on Consideration (T)
	Steps (without reinforcement)	8×2	1.10	½ (.25×	175)	0.385	Legal of the House
	Mumty room— Roof slab including chujja projections Lintel over door	1 1 3	3.70 1.20 1.50	5.10 0.20 0.20	0.10 0.10 0.10	1.887 0.024 0.090	Bearing 15 cm
3	Lintel over windows 2.5 cm c.c.	3	01.8	3270	Total	22.644 cu m	anna and a man
	1:2:4 nosing in steps of stair case neat cement finished	9×2	1.10	-	-	19.80m	The tool pa
4	R.C.C. 1: 2: 4 newal post in stair case 10 cm × 10 cm 1 m high including reinforcement complete work	3		-	_	3 nos.	One at first floor one at middle and one at mumty floor.
5	R.C.C. 1:2:4 handrail over grill including reinforcement complete work—	153	Name In	onto		pair m	Alega Later bac
	Stair Case inclined Upper landing Front verandah	1 1 1	5.38 1.30 8.10	- 1		5.38 1.30 8.10	L=8.90—2×.40
	Back verandah	2	3.75	-	1-	7.50	=8.10 m L=4.15—.40=3.75 m
6	4 m thick R.C.C. Jalli including reinforcement complete work — Over	05.0	DE-R		Total	22.28 m	n ber energen
	doors of Bath and W.Cs. Over windows of mumty	4	0.75		0.50	1.50	Groen section
	room	3	1.20	-31	0.50	1.80	Water Street
	A may 2 2 2 22 4			1 7	Total	3.30 sq m	Walter State of

(Ex. 9 Contd.)

III. Brickwork-	1	1	100	1	1 30	The second second
First class brickwork in			13: 1		- venilla	This is seen
1: 6 cement local sand				19.79	1000	And the party of
mortar in superstructure Main rooms—	100	100				The same of the same of
Deale well full least		17.10		1	7997	AND DESCRIPTION OF THE PARTY OF
	1	17.10	0.20	3.00	10.26	L=16.90+.20 =17.10 m
Front long walls	2	7.40	0.20	3.00	8.88	L=7.20+.20=7.40 m
Cross walls	6	3.70	0.20	3.00	13.32	L=3.90—.20=3.70 r
Stair case room front				2000	-	
wall	1	2.30	0.20	0.60	0.28	Above lintel
				Total	32.74	
Deduct-	100	141 -				
Door openings D	10	1.00	0.20	2.00	4.00	
Window opening W	8	0.90	0.20	1.20	1.73	
Shelve opening	4	1.00	0.10	1.80	0.72	Back of shelf 10 cm
Lintels over door	10	1.30	0.20	0.10	0.26	Duck of shell 70 cm
Lintels over window W	8	1.20	0.20	0.10	0.20	
Lintels over shelves	4	1.30	0.20	0.10	0.10	may be to be
		Total	of ded	uction	7.01	
Net	Total	for	main	rooms	25.73	(i)
	1		SILIAN		cu m	
Study room, kitchen, Bath and W.Cs.,						
front and back verandahs	1	Same	as for	item	(13)	
Mumty room—		G.F.	page	262	22.74	(ii)
All 4 walls	1	12.80	0.20	2.50	6.40	Total centre line
***	1	12.00	0.20	2.50	0.40	length =12.80 m
Deduct Door Wi	1	0.90	0.20	1.80	0.32	
Deduct Window W2	3	1.20	0.20	0.90	0.52	= 1.33 cu m
Deduct Jalli above W3	3	1.20	0.20	0.50	0.36	1.55 cu iii
		Total	of	Mumty	100	
- and a second				room	5.07	(iii)
Parapet long wall Parapet short wall	2 2	17.10	0.20	0.975	6.67	
Parapet short wall	2	8.60	0.20	0.975	3.35	
ALEXANDER OF THE PARTY OF		Total	of para	pet	10.02	(iv)
Grand	Total	of (i),	(ii), (iii)	and(iv)	63.56	
					cu m	

(Ex. 9 Contd.)

							(Ex. 9 Conta.)
15	Iron work in hold fasts and window bars—Doors and windows of first	100	4		12 3	West.	Sustain selection
	floor	0	Same G.F.	as in page	item 263	(19) of 563.34	Name of State of Stat
	Mumty room— Hold fast in door D ₁ Hold fast in windows W ₂	6	@ 1 kg	each	0	kg 6 kg	Sabnersy arang
172	20 mm dia window bars in windows W ₂ of mumty	3×4	@ 1 kg	each	8-7-1	12 kg	Cash rescalar
	room @ 2.47kg per m	3×9	×0.90	×2.47	=	60.02 kg	6 bars 0.90 m each
16	Iron grill work in railings—Staircase railing	- Files	Solse	de la fina	Total	641.36 =6,414 q	kg
	two flights Upper landing Front verandah railing	1	5.38	_	0.80	4.31 0.96	Larriage Bagging (F)
	The state of the s	1 0	8.10	- 0	0.80	6.48	L=8,90—2×.40 =8.10 m
	Back verandah railing	2	3.75	-	0.80	6.00	L=4.15—.40=3.75 m
	VI. Plastering and	10			Total	17.75 sq m	Manual Son
17	Pointing— 12 mm plastering with 1: 6 cement local sand mortar in walls—		1		8.0	2011	rycami tumod G
	Inside plastering — Main rooms—		0.00			-	Excluding Skirting and Dado at bottom.
	Bedrooms	2	14.80		2.80	82.88	L=Inner perimeter
	Living rooms	2	13.60		2.80	76.16	=14.80 L=Inner perimeter =13.60
	Staircase room	1	12.00	uu <u>a.</u>	3.00	36.00	L=Inner perimeter =12.00
	Face of wall below stair case entrance lintel 20 cm		Sta - Artis		T b on		
	wide Shelves—Jambs, sills and	2	0.20	SE TOP	2.00	0.80	
1 1 1	soflits	4	5.60	0.10	-	2.24	on a real to be
	Study room, Kitchens, Bath and W. Cs.,			WE T	18 1 5	8150	
	Verandahs, etc. (of 30 cm wall)		Same	as for	item	(21) in	
			G.F.	page	264	268.80	
*	Mumty room	1	12.00		2.50	30.00	
	Deduct Door and				Total	496.88	
	Window openings		Same G.F.	as for page	item 264	(21) in 42.80	more parties
	n U. Saukennot - 1 in . 2	Net	Total plaster	of in	side	454.08 sq m	

ESTIMATING AND COSTING

Outside plastering —		52.20		3.00	156.60	L=outer perimeter= 2 (17.10+9.00)=52.20 m
Deduct Window opening W	8 4	0.90	111	1.20 1.00 1.00	8.64 3.20 1.50	One face.
Window openings W ₁ Window openings W ₂ Front verandah	2	0.75 8.10		2.20	17.82	L=8.90-2×.40=8.10 m
openings Back verandah	2	3.75	-	2.20	16.50	L=4.1540=3.75 m
openings ···	1	Total of	deducti	on	47.66	A CONTRACTOR OF THE PARTY OF TH
1 1 1 1 1 1 1	Net		outside	floor	108.94 sq m	(i)
Parapet wall (outer top and inner)	1	51.20	-	2.00	102.40 sq m	(ii) L=Total length of 4 walls=51.20 m Ht.=2×.90+.20=2.00 m
Mumty room — Outer side of walls	1	13.60	-	2.50	34.00	L=Outer perimeter =13.60 m
Deduct door openings	1	0.90		1.80	1.62	
Deduct window openings W ₃ Deduct R.C.C. Jalli	3	1.20	-	0.90 0.50	3.24 1.80	} =6.66 sq m
TO THE REAL PROPERTY OF THE PARTY OF THE PAR	Net	Total	of mum	ty	27.34 sq m	(ii)
The level 1, 100	Total ter	of ing (i),	outside (ii) and	plas- (iii)=	238.68	sq m
6 mm plastering with	Gran and	d Total outside		side ing=	692.76 sq m	
1:3 cement medium sand mortar in ceiling Bedrooms Living rooms	2, 2	3.70 3.10	3.70 3.70	12 1 2	27.38 22.94	
First floor study room, Kitchen, bath and W.C., verandahs, stair-			77	100	22.94	
case, Sunshades, etc.	Same		item	(22) of		ERRIT
Mumty room—Ceiling		G.F.	page	265	103.83	The second
Chujjas long	1	2.30	3.70	U =-	8.51	
Chujjas short	2 2	5.10 2.70	0.50 0.50	-	5.10 2.70	L=3.7+.4+2×.5=5.10 m L=2.30+.40=2.70 m
		Lunger		Total	170.46	sq m

20 m

D

th of

(Ex. 9 Conto

								(Lx, 5 come
19	Skirting 20 cm high	100	0			1		
12	with 12 mm thick 1	: 3						
	cement coarse sand	35				A		
	mortar neat cement					Barre Barre		
	finished- Bedroom	S	2	14.80	_		29.60	L=Inner perimeter.
	Living rooms		2	13.60		CU P	27.20	L'inner permieter.
	Jambs of Main room	n				100	27.20	Sylobolia besiafer
	doors D		10	0.20	200	NO. I WALL	2.00	STALL WALKER !
	Study rooms,	2010/20				2700	2.00	the second second
	verandahs, etc.		Same	as in	item	(23) of		
		10.0000		G.F.	page	266	69.30	
				2000	Page			
	Deduct door openin	gs				Total	128.10	The state of the s
	D		12	1.00	_	-	12.00	
					Net	T-4-1	116.10	to stand and street
20	Dado 12 mm thick				Net	Total	116.10	700
20	1: 3 cement coarse					17 - 131		The state of the s
	sand mortar neat							reporter.
	cement finished (in							
	kitchen, Bath and							TO STATE OF THE ST
	W.C.)		Same			(24) -6		ad made a
	W.C.)	***	Same	as in G.F.	item	(24) of	22.45	AND THE RESERVE OF THE PARTY OF
				G.F.	page	266	22.45	
	VII Flooring—		1				sq m	- 4
21	2.5 cm C.C. 1:2:4		32		1 1 2			
. 21	floor—				in a little			
	Bedrooms		2	3.70	3.70		27.20	42 3 2 2 2
	Living rooms	***	2	3.10		-	27.38	The state of the s
	Study rooms	1.11	2	3.70	3.70 2.00	_	22.94	West State State
	Kitchens		2	2.50	2.50	_	14.80 12.50	Comments of the Party of the Pa
	Bathrooms	* * * *	2	1.20	1.40	_	3.36	10-11-0 - COND.
	W. Cs		2	1.20	1.00	_	2.40	
	Front verandah	* * * *	1	8.90	2.20		19.58	Including sills openin
	Back verandahs		2	4.15	2.70		22.41	Including sills openin
	Staircase landing (fir		-	4.13	2.70		22.41	mending shis openin
	floor levels)		1	2.60	0.40		1.04	
	Staircase landing		1	2.00	0.40		1.04	
	(middle)		1	2.60	1.00		2.60	
	Staircase landing (2		1	2.00	1.00		2.00	
	floor levels)		1	2.60	0.40		1.04	
	Sills of doors D		12	1.00	0.20		2.40	
	Sills of doors D ₁		2	0.90	0.20	_	0.36	Carlotte Carlotte
	Sills of doors D ₂	20000	4	0.75	0.20		0.60	The second second
	01110 01 00010 22							
			13	Sugar	Digital L	Total	133.41	THE PERSON NAMED IN
	VIII. Painting—			100	100		sq m	
22	Painting two coats		1	and the same	Acres 1			
	over one coat of			1	1			
	priming— First floo	OF						
	doors windows,	01						
	window bars, staire	250	1 23 11		22 3	1		
	railing grills		Same	as in	item	(28) of	9110	AN SHARRANTE STREET
	Tuning grins	17	June	G.F.	page	268	130.16	
-	The state of the s				P-B-	200	150.10	The second secon

	Front verandah grill	_ 1	8.10	1-	0.80	6.48	
	Back verandah grill Staircase upper	2			0.80		The state of the s
	landing grill Mumty room— Panelled door	1×2			1.80		
	Glazed windows	3× 3×	1 1.20	-	0.75	2.36	Contract
h i i				1	Tota	1 152.8: sq m	
23					I STITE		The state of the state of
	coats on back of chaukhats— First floor doors and	Sam	e as in G.F.	item	2/0	16.00	In the least of
	windows Mumty room—		G.F.	page		sq m	-
	Deer D	. 1	4.60 4.20	0.10 0.10	-	0.46 1.26	
	The state of the s				Total	17.72 sq m	
	IX. White Washing and Colour Washing-			MALE I	100		
24	White washing 3 coats— Walls (inside)	Same	as insi	de plas	tering	2 15	a south the said
	Ceiling underside of		in item	(17) page	F.F. 273-74	454.08	The same of
	sunshades		Same	as plas	tering F.F.	in item	and a martin chaff
N. J.	100			page	-274	170.46	antinal control
					Total	624.54 sq m	The state of the s
25	Colour washing two coats over one coat of white washing — Walls			05.0	00 A		
			as out	side (17)	plaster F.F.	ing	
				page		238.68	The second second
26 1	X. Misc. Items— 100 mm dia. A.C. rain					sq m	ATTENDED TO A
	water pipe	6	3.20	1	1	19.20 m	Including band.

Conclusion: - From above the experiment we get quantiles of two stored building.

Experiment-4

➤ Aim of the experiment.

Analysis at rates in details for above items of work basing Odisha govt. with help of MS Excel.

Requirement: - MS Excel given specification and rate analysis from above experiment.

Procedure: -

- Open MS Excel.
- Create a new work book.
- > Save a work book.
- \triangleright Enter date and sum \rightarrow save the date.
- Print, copy etc.

GROUND FLOOR

Abstract of Estimated Cost (Ex.9 Ground Floor)

Item No.	Particulars of items of work	Quantity	Unit	Rate	Per	Amount
		Callinary	Onn	Rs. P.	Per	Rs. P.
1	I. Earthwork — Site clearance and setting out	1	Job	150.00	L.S.	150.00
2	Earthwork in excavation in foundation	55.75	cu m	350.00	% cu m	195,12
3	Earthwork in filling in plinth	46.52	cu m	275.00	% cu m	127.93
4	II. Concrete— Lime concrete in foundation	19.36	cu m	220.00	/ cu m	4259.20
5	R.C.C. work 1:2:4 excluding steel reinforcement bars and its bending but including centering and shuttering and binding steel	21.058	cu m	675.00	/ cu m	14214.15
6	2.5 cm 1 : 2 : 4 nosing in steps neat cement finished	32.70	m	6.00	/ m	196.20
7	R.C.C. 1:2:4 Newal post 10 cm × 10 cm, 1 cm height including reinforcement complete work	2	No.	20.00	each	40.00
8	R.C.C. 1:2:4 Hand rail in stair case including reinforcement complete work	5.48	m	24.00	/ m	131.52
9	4 cm thick R.C.C. Jalli including reinforcement complete work	1.50	sq m	120.00	/ sq m	180.00
10	2.5 cm Damp proof course C.C. 1:2:3 with water proofing compound	28.97	sq m	20.00	/ sq m	579.40
11	III. Brickwork — First class brickwork in lime mortar in foundation and plinth	41.94	cu m	295.00	/ cu m	12372.30
12	First class brickwork in lime mortar in superstructure in 30 cm wall	36.45	cu m	320.00	/ cu m	11664.00
13	First class brickwork in 1:6 cement local sand mortar in superstructure in foundation and plinth	22.74	cu m	340.00	/ cu m	7731.60
-	the second second		17 11		C.O.	51841.42

ESTIMATING AT

278			Unit	Rate	Per	Amoun
ltem	c.uark	Quantity	Unit	Rs. P.		Rs. P.
No.	Particulars of items of work		110	1 20 2012	THE RESIDENCE	
14	10 cm thick first class brickwork in partition wall in 1; 3 cement coarse sand mortar with hoop iron or 6 mm dia, steel reinforcement every fourth layer	7.20	sq m	42.00	/sq m	302.40
	IV. Wood work - Doors and Windows-			9 10 30 10	en Albri	
15	Salwood work in chowkhats in doors and windows	1.201	cu m	4700.00	/cu m	5644.70
16	4 cm thick panelled shutters of Deodar wood in doors and windows	41.197	sq m	200.00	/ sq m	8239.40
17	Door and window fittings of oxydized iron	41.197	sq m	30.00	/sq m	1235.91
18	V. Steel and Iron work— Steel reinforcement bars including bending	16.226	quintal	515.00	/q	8356.39
19	Iron work in hold fasts and window bars	5.633	quintal	700.00	/ q	3943.10
20	lron grill work in stair case railing	4.304	sq m	200.00	/ sq m	860.80
21	VI. Plastering and Pointing— 12 mm plastering with 1: 6 cement local sand mortar in walls	562.81	sq m	7.10	/sq m	3995.95
22	6 mm plastering with 1:3 cement medium sand mortar in ceiling	149.33	sq m	5.80	/sq m	866.11
23	Skirting 20 cm high with 12 mm thick 1:3 cement coarse sand mortar neat cement finished	114.30	9.9 s	4.00	/ m	457.20
24	Dado 12 mm thick 1:3 cement coarse sand mortar neat cement finished	22.45	sq m	9.50	/ sq m	213.27
25	20 mm plastering with 1:3 cement coarse sand mortar neat cement		Harry say	Granon- Craffe by	TO SEL	
	finished in steps VII. Flooring	13.96	sq m	15.00	/ sq m	209.40
26	2.5 cm C.C. 1: 2: 4 floor over and including 7.5 cm lime concrete	125.85	sq m	24.40	/ sq m	3070.74
	The fact that I have the			Halle to	G.O.	89236.79

No.	Particulars of items of work	Quantity	Unit	Rate	Per	Amount
		Quantity	Oint	Rs. P.	Per	Rs. P.
27	2.5 cm C.C. 1 : 2 : 4 floor	9.55	sq m	18.00	/sq m	171.90
	VIII Painting—			Jan 19	STATE OF THE STATE OF	
28	Painting two coats over one coat of priming	130.16	sq m	6.90	/ sq m	898.10
29	Coal tar painting two coats on back of chowkhats	16.00	sq m	2.30	/ sq m	36.80
	IX. White washing and colour washing—	1000		in late t		
30	White washing 3 coats inside	565.81	sq m	0.75	/sq m	424.36
31	Colour washing 2 coats over one coat of white washing	159.76	sq m	0.82	/ sq m	131.00
	X. Miscellaneous items—				Barr Birt	
32	100 mm dia. A.C. rain water pipe	21.60	m	27.00	m	583.20
	Add 8% for Water Supply and Add 8% for Electrification Wor		orks .	op residents de la fiscale genodia landarriago	Total	91482.15 7318.57 7318.57
	Add 3% for Contingencies	T. I.		been T	otal	106119.29
1	Add 2% for Workcharged Estal	blishment				2122.39
				Grand T	otal	111425.26

Plinth Area Rate of Ground Floor—

Plinth Area=17.10×9.00=153.9 sq m. Plinth Area Rate Inclusive of Water Supply and Sanitary Work and Electrification Works = $\frac{\text{Total}}{}$ = $\frac{\text{Rs.}111425.26}{}$ = 724.00 per sq m. Plinth Area 153.9 sq m

TIMATED COST (EX. 9	FIRST FLOOR
TIMATED COST (E	Date

ABSTRACT OF ESTIMATED COST (EXT.				Rate	Per	Amount	
		Quantity	Unit	Rs. P.	rei	Rs. P.	
Item No.	Particulars of items of work					-	
1	II. Concrete— Lime concrete in roof terracing 7.5 cm thick complete with surface finishing	151.42	sq m	18.00	/sq m	2725.56	
2	thick complete with surface R.C.C. work 1:2:4 excluding steel reinforcement and its bending but including centering and shuttering and	22.644	cu m	680.00	/cu m	15397.92	
3	2.5 cm C.C. 1: 2: 4 nosing in steps of	19.80	m	6.00	/ m	118.80	
4	R.C.C. 1:2:4 newal post in stail case 10 cm × 10 cm, 1 m height including	3	nos.	20.00	/ nos.	60.00	
5	R.C. C. 1:2:4 hand rail over grill including reinforcement complete	22.28	m	20.00	/ m	445.60	
6	4 cm thick R.C.C. jalli including steel reinforcement complete work	3.30	sq m	120.00	/ sq m	396.00	
7	III. Brickwork— First class brickwork in 1:6 cement local sand mortar in superstructure in 20 cm thick wall 10 cm thick first class brickwork in	63.56	cu m	343.00	/ cu m	21801.08	
	partition wall with 1:3 cement coarse sand mortar with hoop iron or 6 mm dia. steel reinforcement every fourth	ros ban		West a	+ alies		
9	layer 10 cm thick brick band with 1:6	7.20	sq m	42.00	/ sq m	302.40	
	cement local sand mortar at top of parapet	52.20	m	4.00	/ m	208.80	
10	IV. Wood work Door and windows— Salwood work in chowkhats in doors and windows	1.331	cu m	4700.00	/ cu m	6255.70	
11	3 cm thick panelled shutters of Deodar wood in doors and windows	42.554	sq m	200.00	/ sq m	8510.80	
12	3 cm thick fully glazed shutters of deodar wood	3.931	the first		I allow to		
13	Door and window fittings of oxydized	46.485	sq m	125.00	_/sq m	491.37	
14	V. Steel and iron work— Steel reinforcement bars including	40.483	sq m	30.00	/ sq m	1394.55	
15	Iron work in hold fasts and window	17.544	quintal	515.00	/ q	9035.16	
	bars	6.414	quintal	700.00	/ q	4489.80	

						281		
Item No.	Particulars of items of work	Quantity	Unit	Rate	Per	Amount		
			-	Rs. P.		Rs. P.		
10	Iron gril in railings VI. Plastering and pointing— 12 mm plasteing with 1: 6 cement	17.75	sq m	200.00	B.F. / sq m	71633.54 3550.00		
17	local sand mortar in waits	692.76	sq m	7.10	/ sq m	4918.59		
18	medium sand mortal in centing	170.46	sq m	5.80	/ sq m	988.67		
1	1:3 cement coarse sand mortar neat cement finished Dado 12 mm thick 1:3 cement coarse	116.10	m	4.00	/ m	464.40		
20	sand mortar neat cement linished	22.45	sq m	9.50	/sq m	213.27		
21	2.5 cm C.C. floor VIII. Painting—	133.41	sq m	18.00	/ sq m	2401.38		
22	painting two coats over one coat of	152.85	sq m	6.90	/ sq m	1054.66		
23	Coaltar painting two coats on back of chowkhats	17.72	sq m	2.30	/ sq m	40.75		
	IX. White washing and colour	A CALLSON		1.10				
24 25	White washing 3 coats inside	624.54	sq m	0.75	/ sq m	468.40		
	coat of white washing	238.68	sq m	0.82	/ sq m	195.71		
26	X. Miscellaneous items— 100 mm dia. A.C. rain water pipe	19.20	m	27.00	/sq m	518.40		
-	Add 8% for Water Supply and	Sanitary W	orks		Total	86447.77 6915.82 6915.82		
	Add 8% for for Electrification	WOIK		7	Total	100279.41		
	Add 3% for Contingencies	linia relate				3008.38		
	Add 2% for Workcharged Esta	blishment			Cotal	2005.59 105293.3		
Total Say Rs.					105293.0			
Plin	th Area Rate of First Floor-	To be in	at Villagi	- Tropic	and the same of th			
	Plinth Area=17.10×9.00=153.9 sq m. Plinth Area Rate Inclusive of Water Sup ks= Total = Rs. 105293.00 = 684.	oply and Sa	nitary W	ork and F	lectrificat	ion		
Plinth Area 153.9 sq m Plinth Area Rate of the Double storeyed building, for both Ground floor and First floor Plinth Area Rate of the Double storeyed building, for both Ground floor and First floor Plinth Area Rate of G.F.+P.A. Rate of F.F.=Rs. 724.00+Rs. 684.16=Rs. 1408.16 per-sq m.								

Conclusion: - from above the experiment we know that, how to use MS Excel in estimating rate analysis.