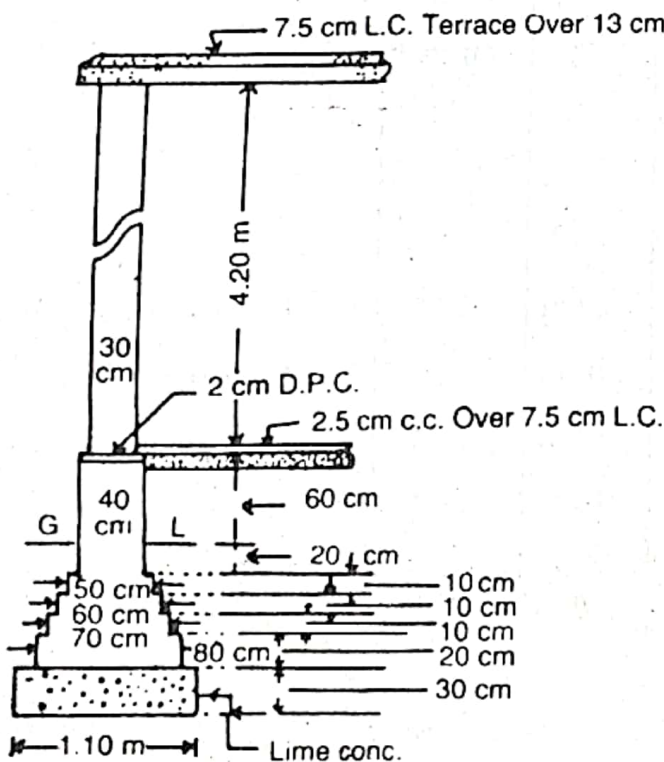
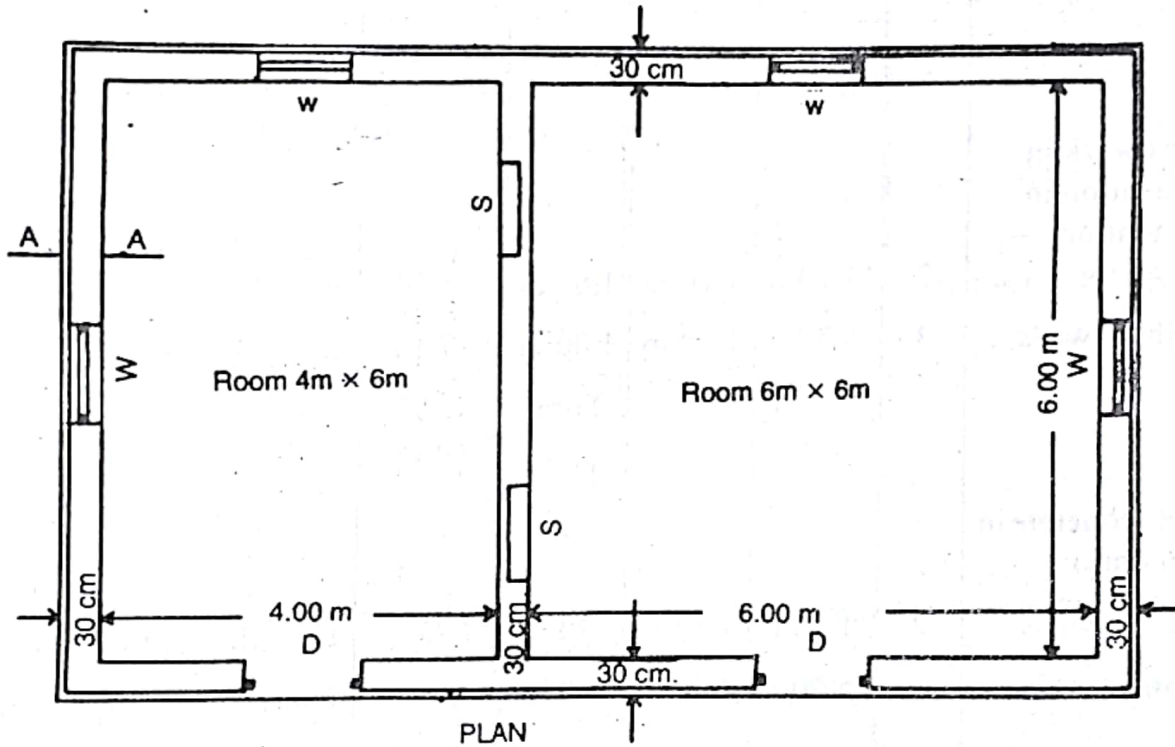


**Example 4(a).** — Estimate the quantities of the following items of a two roomed building from the given plan and section (Fig. 2-6) :—

- (1) Earthwork in excavation in foundation,
- (2) Lime concrete in foundation,
- (3) 1st class brickwork in cement mortar 1 : 6 in foundation and plinth,
- (4) 2.5 cm c.c. damp proof course, and
- (5) 1st class brickwork in lime mortar in superstructure.

**TWO ROOMED BUILDING**



All Walls are of same section  
Lintels over Doors, Windows and  
Shelves are 15 cm thick R.B.

Doors D-1.20 m × 2.10 m  
Windows W-1.00 × 1.50 m  
Shelves S-1.00 m × 1.50 m

**DETAILS OF MEASUREMENT AND CALCULATION OF QUANTITIES (Ex. 4a)**

Item No.	Particulars of Items	No.	Length	Breadth	Height or Depth	Quantity	Explanatory note
1.	<b>Earthwork in excavation in foundation —</b> Long walls ... Short walls ...	2	11.70 m	1.10 m	1.00 m	25.74	Long wall, c/c. length = $4 + 6 + .30 + 2 \times \frac{.30}{2} = 10.60$ m Short and Inter walls, c/c. length = $6 + 2 \times \frac{.30}{2} = 6.30$ m  L = $10.60 + 1.10 = 11.70$ m L = $6.30 - 1.10 = 5.20$ m
		Total		42.90 cu m			
2.	<b>Lime concrete in foundation —</b> Long walls ... Short walls ...	2	11.70 m	1.10 m	.30 m	7.72	Length same for excavation Quantity = 3/10 of excavation
		3	5.20 m	1.10 m	.30 m	5.15	
		Total				12.87 cu m	
3.	<b>1st class brickwork in 1 : 6 cement mortar in foundation and plinth —</b> Long walls — 1st footing ... 2nd footing ... 3rd footing ... 4th footing ... Plinth wall above footing Short walls — 1st footing ... 2nd footing ...	2	11.40 m	.80 m	.20 m	3.65	L = $10.60 + .80 = 11.40$ m
		2	11.30 m	.70 m	.10 m	1.58	L = $10.60 + .70 = 11.30$ m
		2	11.20 m	.60 m	.10 m	1.34	L = $10.60 + .60 = 11.20$ m
		2	11.10 m	.50 m	.10 m	1.11	L = $10.60 + .50 = 11.10$ m
		2	11.00 m	.40 m	.80 m	7.04	L = $10.60 + .40 = 11.00$ m
		3	5.50 m	.80 m	.20 m	2.64	L = $6.30 - .80 = 5.50$ m
		3	5.60 m	.70 m	.10 m	1.18	L = $6.30 - .70 = 5.60$ m

**Note : —** Length of subsequent footings of long walls after 1st footing may be obtained simply by deducting 10 cm from first footing.

Item No.	Particulars of Items	No.	Length	Breadth	Height or Depth	Quantity	Explanatory note	
4.	3rd footing ...	3	5.70 m	.60 m	.10 m	1.03	$L = 6.30 - .60 = 5.70 \text{ m}$	
	4th footing ...	3	5.80 m	.50 m	.10 m	0.87	$L = 6.30 - .50 = 5.80 \text{ m}$	
	Plinth wall above footing	3	5.90 m	.40 m	.80 m	5.66	$L = 6.30 - .40 = 5.90 \text{ m}$	
					Total	26.10		
						cu m		
	<b>Damp proof course</b> 2.5 cm thick c.c. —							
	Long walls ...	2	11.00 m	.40 m	—	8.80	Lengths same as for plinth wall in item 3.	
	Short walls ...	3	5.90 m	.40 m	—	7.08		
					Total	15.88		
	Deduct door sills ...	2	1.20 m	.40 m	—	0.96		
			Net	Total	14.92			
					sq m			
5.	<b>1st class brickwork in lime mortar in superstructure</b>							
	Long walls ...	2	10.90 m	.30 m	4.20 m	27.47	$L = 10.60 + .30 = 10.90 \text{ m}$	
	Short walls ...	3	6.00 m	.30 m	4.20 m	22.68	$L = 6.30 - .30 = 6.00 \text{ m}$	
					Total	50.15		
						cu m		
	<b>Deduct —</b>							
	Door openings	2	1.20 m	.30 m	2.10 m	1.51		
	Window openings ...	4	1.00 m	.30 m	1.50 m	1.80		
	Shelves ...	2	1.00 m	.20 m	1.50 m	0.60	Back of shelves 10 cm thick wall.	
	Lintels over doors ...	2	1.50 m	.30 m	.15 m	0.14	Bearing 15 cm	
Lintels over windows ...	4	1.30 m	.30 m	.15 m	0.23	Bearing 15 cm		
Lintels over shelves ...	2	1.30 m	.30 m	.15 m	0.12	Bearing 15 cm		
		Total of	deduc-	tion	4.40	cu m		
			Net	Total	45.75	cu m		

Note : — Length of subsequent footing of short walls after 1st footing may be obtained simply by adding 10 cm from first footing.