

J. II. CONCRETE WORKS:

I. FOOTING

F-1 @ 13 sets

L: 3800mm

W: 3800 mm


T: 500mm

D: 1500mm

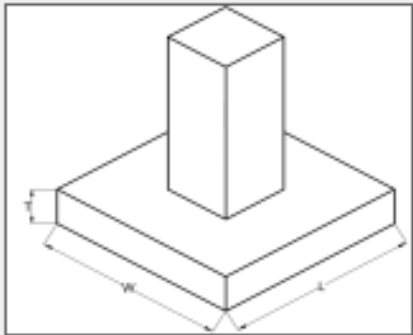
$$V = L \times W \times T \times QTY$$

$$V = (3800) \times (3800) \times 500 \times 13 = (9.386 \times 10^{10} \text{ mm}^3 / 10^9) = 93.86 \text{ m}^3$$

To Convert mm³ to m³, divide the answer with 10⁹

 Add Structural Member



Footing (Column) ▼	Name: F-1	Unit: Millimeter
Footing Type: Isolated Footing ▼		
Dimensions		
Length:	3800	
Width:	3800	
Thickness:	500	
Quantity:	13	
Depth:	1500	
		
Longitudinal Reinforcement		Transverse Reinforcement
Diameter:	0	Diameter: 0
Quantity:	0	Quantity: 0
Hook Type:	90 ▼	Hook Type: 90 ▼
<div>Save</div>		

CF-1 @ 13 sets or qty

L: 5500mm

W: 4000mm

T: 500mm

D:1500mm

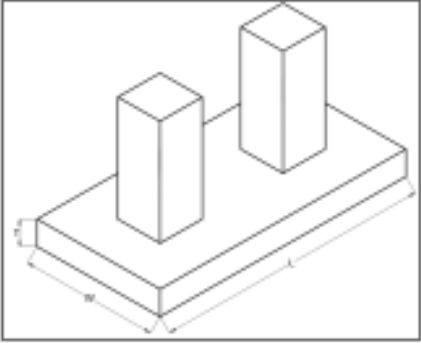
$$V = L \times W \times T \times QTY$$

$$V = (5500) \times (4000) \times 500 \times 13 = \mathbf{143 \text{ m}^3}$$



Add Structural Member



Footing (Column) ▼		Name: CF-1	Unit: Millimeter		
Footing Type:		Combined Footing ▼			
Dimensions					
Length:	5500				
Width:	4000				
Thickness:	500				
Quantity:	13				
Depth:	1500				
Upper Reinforcement		Transverse Reinforcement	Longitudinal Reinforcement		
Diameter:	0	Diameter:	0	Diameter:	0
Quantity:	0	Quantity:	0	Quantity:	0
Spacing:	0	Spacing:	0	Spacing:	0
Hook Type:	90 ▼	Hook Type:	90 ▼	Hook Type:	90 ▼
Save					

WF-1

L: 30.44m

L f-f: 22.19

BT: 500mm

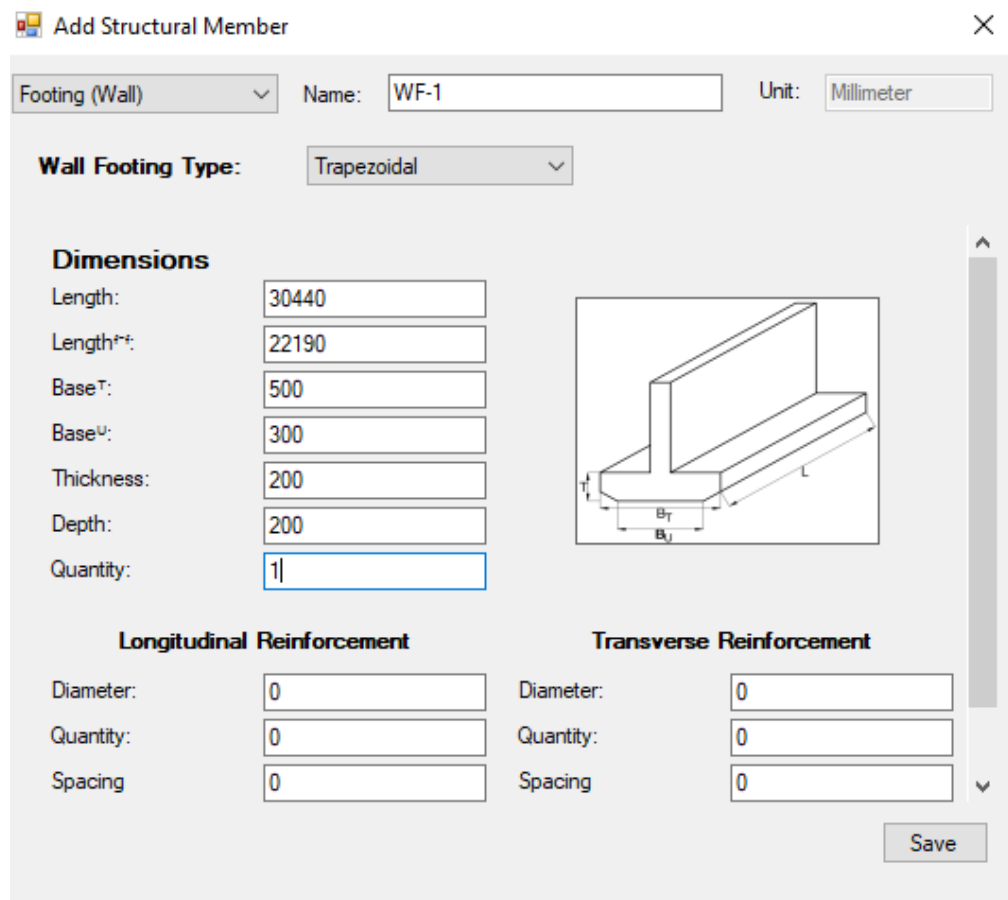
BU: 300mm

T: 200mm

D: 200mm

$$V = (((BT+BU)/2) * T) * L * QTY$$

$$V = (((500+300)/2) * 200) * 30440 * 1 = 2.4352 \text{ m}^3$$

The image shows a software dialog box titled "Add Structural Member". It contains fields for "Footing (Wall)" type, "Name" (WF-1), and "Unit" (Millimeter). The "Wall Footing Type" is set to "Trapezoidal". Under "Dimensions", there are input fields for Length (30440), Length f-f (22190), Base T (500), Base U (300), Thickness (200), Depth (200), and Quantity (1). To the right of these fields is a 3D diagram of a trapezoidal footing with dimensions labeled: L (length), T (thickness), BT (top base), and BU (bottom base). Below the dimensions are sections for "Longitudinal Reinforcement" and "Transverse Reinforcement", each with fields for Diameter (0), Quantity (0), and Spacing (0). A "Save" button is at the bottom right.

$$\text{VOLUME TOTAL (FOOTINGS)} = 93.86 + 143 + 2.4352 = 239.2952 \text{ or } \mathbf{239.3 \text{ m}^3}$$

$$239.3 \text{ m}^3 @ 4000\text{psi (P 4910.00 / m}^3) = 239.3 \text{ m}^3 \times \text{P 4910.00 / m}^3 \\ = \mathbf{P 1,174,963.00}$$

$$\text{F.S. } 5\% = 239.3 \times 5\% = 11.965 \text{ or } 11.97 \text{ m}^3 \times 4910 = \mathbf{Php 58,772.70}$$

$$\text{Labor cost} = \text{P 400.00 / m}^3 = 239.3 \times 400 = \mathbf{P 95,720.00}$$

II. COLUMN

C-1 @ 13 sets (GROUND FLR AND FIRST FLOOR)

H1: 3469 mm

B: 600 mm

D: 600 mm

STRUCTURAL MEMBER: COLUMN NAME: C-1

UNIT: mm

DIMENSIONS

B: 600

D: 600

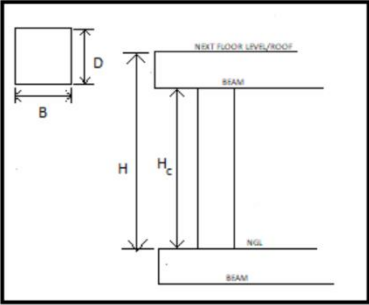
H: 3469

H_c: 2869

QUANTITY: 13

CONNECTION BELOW: F-1

MAIN REINFORCEMENTS:



Parameters

Unit: Millimeter

Concrete Mix

Concrete Grade: CLASS AA

Gravel Type: G1

Ready Mix

Concrete Cover

Footings: 75

Suspended Slab: 40

Slab on Grade: 20

Beams Exposed on Earth: 40

Beams Exposed on Weather: 40

Columns Exposed on Earth: 75

Columns Exposed on Weather: 40

Reset Save

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER: SLAB NAME: S-1 (A)

UNIT: mm

QUANTITY: 1

THICKNESS: 100

ELEVATION: 319

REINFORCEMENTS

LONGITUDINAL

TRANSVERSE

DIAMETER

SPACING

SPLICE TYPE: MECHANICAL

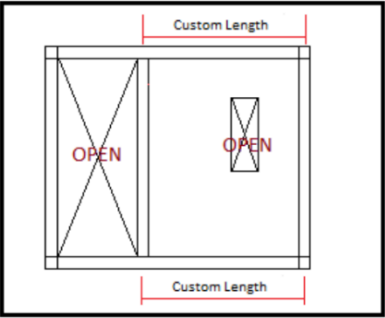
SLAB BORDER

TOP LENGTH: 55000

BOTTOM LENGTH: 55000

LEFT LENGTH: 9500

RIGHT LENGTH: 9500



Add Structural Member

Footing (Column) Name: F-1 Unit: Millimeter

Footing Type: Isolated Footing

Dimensions

Length: 3800

Width: 3800

Thickness: 500

Quantity: 13

Depth: 1500

Longitudinal Reinforcement

Diameter: 0

Quantity: 0

Hook Type: 90

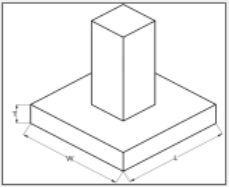
Transverse Reinforcement

Diameter: 0

Quantity: 0

Hook Type: 90

Save



$$V_T = V_1 + V_2$$

$$V_1 = (\text{DEPTH OF FOOTING} + \text{AVERAGE SLAB ELEVATION} - \text{THICKNESS OF FOOTING})(B + 2(\text{CC}_{\text{COLUMN EXPOSED TO EARTH}} - \text{CC}_{\text{COLUMN EXPOSED TO WEATHER}})(D + 2(\text{CC}_{\text{COLUMN EXPOSED TO EARTH}} - \text{CC}_{\text{COLUMN EXPOSED TO WEATHER}}))$$

$$V_2 = B * D * (H - \text{AVERAGE SLAB ELEVATION})$$

$$V_1 = (1500 + 319 - 500)(600 + 2(75 - 40)(600 + 2(75 - 40) = 0.5920991 \text{ m}^3$$

$$V_2 = 600 * 600 * (3469 - 319) = 1.134 \text{ m}^3$$

$$V_T = 0.592 + 1.134 = 1.726 \text{ m}^3 * 13 \text{ sets} = 22.438 \text{ m}^3$$

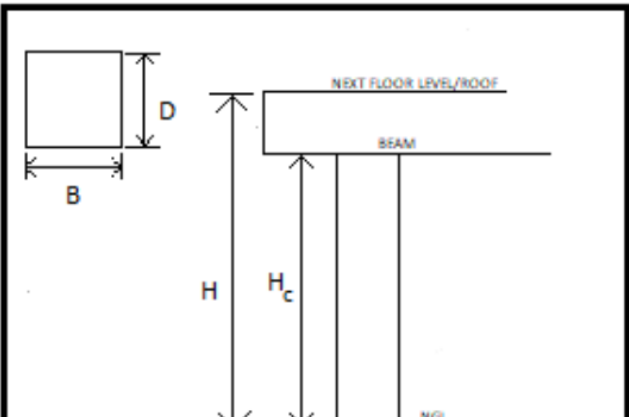
C-1 @ 13 sets (2ND FLOOR – 4TH FLOOR)

H: 3150 mm

B:600

D:600

$$v = 3150 \times 600 \times 600 \times 13 = \mathbf{14.742 \text{ m}^3}$$

<p>STRUCURAL MEMBER</p> <div style="border: 1px solid black; padding: 2px; display: flex; justify-content: space-between;"> COLUMN ▼ </div>	<p>NAME:</p> <div style="border: 1px solid black; padding: 2px; display: flex; justify-content: space-between;"> C-1 ▼ </div>
<p>UNIT: <div style="border: 1px solid black; padding: 2px 10px;">mm</div> ▼</p>	
<p>DIMENSIONS</p> <p>B <div style="border: 1px solid black; padding: 2px 20px;">600</div></p> <p>D <div style="border: 1px solid black; padding: 2px 20px;">600</div></p> <p>H <div style="border: 1px solid black; padding: 2px 20px;">3150</div></p> <p>H_C <div style="border: 1px solid black; padding: 2px 20px;">2550</div></p> <p>QUANTITY <div style="border: 1px solid black; padding: 2px 20px;">13</div></p>	 <p>The diagram illustrates a column cross-section and its vertical dimensions. The cross-section is a square with width B and depth D. The total height of the column is H, measured from the Next Ground Level (NGL) to the top of the column. The height of the column above the beam level is H_C. The top of the column is labeled 'NEXT FLOOR LEVEL/ROOF'. The beam level is labeled 'BEAM'. The NGL is indicated at the bottom of the column.</p>

C-2 @ 13 sets (GROUND FLR AND FIRST FLOOR)

H1: 3469 mm

B: 600 mm
D: 600 mm

STRUCTURAL MEMBER
COLUMN

NAME: C-1

UNIT: mm

DIMENSIONS

B: 600

D: 600

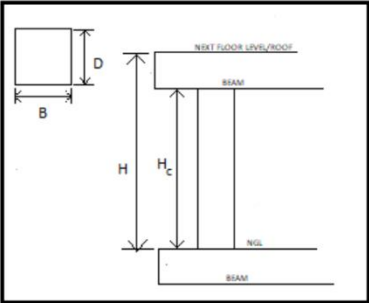
H: 3469

H_c: 2869

QUANTITY: 13

CONNECTION BELOW: C-F-1

MAIN REINFORCEMENTS:



Parameters

Unit: Millimeter

Earthworks Formworks Concrete Reinforcements Paint Tiles Masonry Stairs Labor & Eqpt Misc

Concrete Mix

Footings Columns Beams Slabs W

Concrete Grade: CLASS AA

Gravel Type: G1

Ready Mix

Concrete Cover

Footings: 75

Suspended Slab: 40

Slab on Grade: 20

Beams Exposed on Earth: 40

Beams Exposed on Weather: 40

Columns Exposed on Earth: 75

Columns Exposed on Weather: 40

Reset Save

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER
SLAB

NAME: S-1 (A)

UNIT: mm

QUANTITY: 1

THICKNESS: 100

ELEVATION: 319

REINFORCEMENTS

LONGITUDINAL TRANSVERSE

DIAMETER SPACING SPLICE TYPE

MECHANICAL MECHANICAL

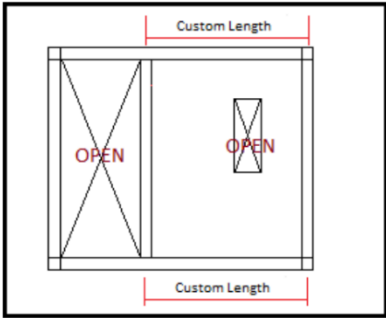
SLAB BORDER

TOP LENGTH: 55000

BOTTOM LENGTH: 55000

LEFT LENGTH: 9500

RIGHT LENGTH: 9500



Add Structural Member

Footing (Column) Name: CF-1 Unit: Millimeter

Footing Type: Combined Footing

Dimensions

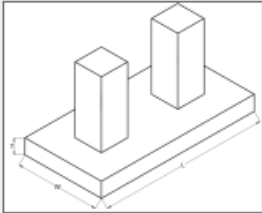
Length: 5500

Width: 4000

Thickness: 500

Quantity: 13

Depth: 1500



Upper Reinforcement

Diameter: 0

Quantity: 0

Spacing: 0

Hook Type: 90

Transverse Reinforcement

Diameter: 0

Quantity: 0

Spacing: 0

Hook Type: 90

Longitudinal Reinforcement

Diameter: 0

Quantity: 0

Spacing: 0

Hook Type: 90

$$V_T = V_1 + V_2$$

$V_1 = (\text{DEPTH OF FOOTING} + \text{AVERAGE SLAB ELEVATION} - \text{THICKNESS OF FOOTING})(B + 2(\text{CC}_{\text{COLUMN EXPOSED TO EARTH}} - \text{CC}_{\text{COLUMN EXPOSED TO WEATHER}})(D + 2(\text{CC}_{\text{COLUMN EXPOSED TO EARTH}} - \text{CC}_{\text{COLUMN EXPOSED TO WEATHER}}))$

$$V_2 = B * D * (H - \text{AVERAGE SLAB ELEVATION})$$

$$V_1 = (1500 + 319 - 500) * [600 + 2 * (75 - 40)] * [600 + 2 * (75 - 40)] \\ = 0.5920991 \text{ m}^3$$

$$V_2 = 600 * 600 * (3469 - 319) = 1.134 \text{ m}^3$$

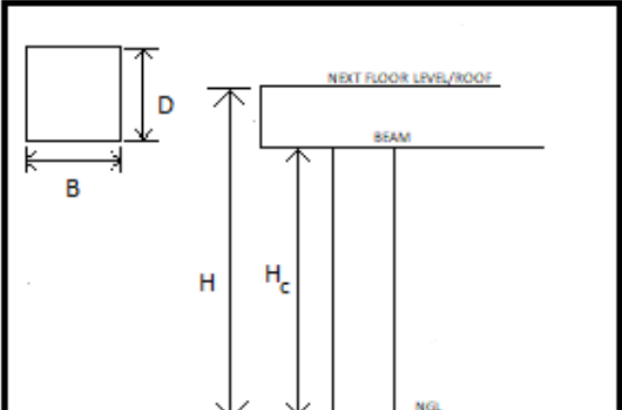
$$V_T = 0.592 + 1.134 = 1.726 \text{ m}^3 * 13 \text{ sets} = 22.438 \text{ m}^3$$

C-2 @ 13 sets (2ND FLOOR – 4TH FLOOR)

H: 3150 mm

B: 600s

D: 600

STRUCURAL MEMBER <div style="border: 1px solid black; padding: 2px; display: flex; justify-content: space-between;"> COLUMN ▼ </div>	NAME: <div style="border: 1px solid black; padding: 2px; display: flex; justify-content: space-between;"> C-1 ▼ </div>
<div style="text-align: right; margin-bottom: 10px;"> UNIT: <div style="border: 1px solid black; padding: 2px 10px;">mm</div> ▼ </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>DIMENSIONS</p> <p>B <div style="border: 1px solid black; padding: 2px 20px;">600</div></p> <p>D <div style="border: 1px solid black; padding: 2px 20px;">600</div></p> <p>H <div style="border: 1px solid black; padding: 2px 20px;">3150</div></p> <p>H_c <div style="border: 1px solid black; padding: 2px 20px;">2550</div></p> <p>QUANTITY <div style="border: 1px solid black; padding: 2px 20px;">13</div></p> </div> <div style="width: 50%; text-align: center;">  </div> </div>	

$$v = 3150 \times 600 \times 600 \times 13 \text{ sets} = \mathbf{14.742 \text{ m}^3}$$

C-3 @ 13 sets (GROUND FLR AND FIRST FLOOR)

H1: 3469 mm
B: 600 mm
D: 600 mm

STRUCTURAL MEMBER: COLUMN NAME: C-1 UNIT: mm

DIMENSIONS
B: 600
D: 600
H: 3469
H_c: 2869

QUANTITY: 13
CONNECTION BELOW: C-F-1

MAIN REINFORCEMENTS:

Parameters

Unit: Millimeter

Concrete Mix: CLASS AA, Gravel Type: G1, Ready Mix Concr

Concrete Cover:
Footings: 75
Suspended Slab: 40
Slab on Grade: 20
Beams Exposed on Earth: 40
Beams Exposed on Weather: 40
Columns Exposed on Earth: 75
Columns Exposed on Weather: 40

Reset Save

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER: SLAB NAME: S-1 (A) UNIT: mm

QUANTITY: 1
THICKNESS: 100
ELEVATION: 319

REINFORCEMENTS
LONGITUDINAL: MECHANICAL
TRANSVERSE: MECHANICAL

SLAB BORDER
TOP: LENGTH 55000
BOTTOM: LENGTH 55000
LEFT: LENGTH 9500
RIGHT: LENGTH 9500

Add Structural Member

Footing (Column) Name: CF-1 Unit: Millimeter

Footing Type: Combined Footing

Dimensions
Length: 5500
Width: 4000
Thickness: 500
Quantity: 13
Depth: 1500

Upper Reinforcement: Diameter: 0, Quantity: 0, Spacing: 0, Hook Type: 90
Transverse Reinforcement: Diameter: 0, Quantity: 0, Spacing: 0, Hook Type: 90
Longitudinal Reinforcement: Diameter: 0, Quantity: 0, Spacing: 0, Hook Type: 90

Save

$$B+2(CC_{\text{COLUMN EXPOSED TO EARTH}} - CC_{\text{COLUMN EXPOSED TO WEATHER}})$$

$$V_T = V_1 + V_2$$

$$V_1 = (\text{DEPTH OF FOOTING} + \text{AVERAGE SLAB ELEVATION} - \text{THICKNESS OF FOOTING})(B + 2(\text{CC}_{\text{COLUMN EXPOSED TO EARTH}} - \text{CC}_{\text{COLUMN EXPOSED TO WEATHER}})(D + 2(\text{CC}_{\text{COLUMN EXPOSED TO EARTH}} - \text{CC}_{\text{COLUMN EXPOSED TO WEATHER}}))$$

$$V_2 = B * D * (H - \text{AVERAGE SLAB ELEVATION})$$

$$V_1 = (1500 + 319 - 500)(600 + 2(75 - 40)(600 + 2(75 - 40) = 0.5920991 \text{ m}^3$$

$$V_2 = 600 * 600 * (3469 - 319) = 1.134 \text{ m}^3$$

$$V_T = 0.592 + 1.134 = 1.726 \text{ m}^3 * 13 \text{ sets} = 22.438 \text{ m}^3$$

C-3 @ 13 sets (2ND FLOOR – 4TH FLOOR)

H: 3150 mm

B:600s

D:600

STRUCURAL MEMBER <div style="border: 1px solid black; padding: 2px; display: flex; align-items: center;"> COLUMN ▼ </div>	NAME: <div style="border: 1px solid black; padding: 2px; display: flex; align-items: center;"> C-1 ▼ </div>
<div style="text-align: right; margin-bottom: 10px;"> UNIT: mm ▼ </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>DIMENSIONS</p> <p>B <input style="width: 150px;" type="text" value="600"/></p> <p>D <input style="width: 150px;" type="text" value="600"/></p> <p>H <input style="width: 150px;" type="text" value="3150"/></p> <p>H_c <input style="width: 150px;" type="text" value="2550"/></p> <p>QUANTITY <input style="width: 100px;" type="text" value="13"/></p> </div> <div style="width: 50%; text-align: center;"> </div> </div>	

$$v = 3150 \times 600 \times 600 \times 13 \text{ sets} = \mathbf{14.742 \text{ m}^3}$$

COLUMN CONCRETE VOLUME TOTAL

C-1 @ 13 sets (GROUND FLR AND FIRST FLOOR) = $22.438 \text{ m}^3 * 1 \text{ FLOOR} = 22.438 \text{ m}^3$

C-2 @ 13 sets (GROUND FLR AND FIRST FLOOR) = $22.438 \text{ m}^3 * 1 \text{ FLOOR} = 22.438 \text{ m}^3$

C-3 @ 13 sets (GROUND FLR AND FIRST FLOOR) = $22.438 \text{ m}^3 * 1 \text{ FLOOR} = 22.438 \text{ m}^3$

Add Floor
Parameters

1

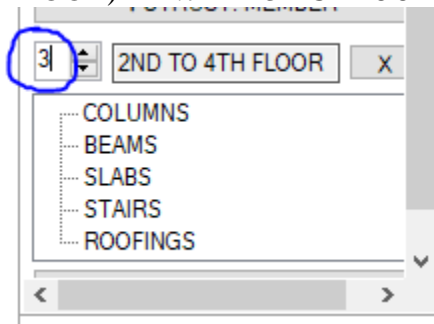
↑ ↓
GROUND FLOOR
X

FOOTINGS
[]

COLUMNS
[]

BEAMS
[]

C-1 @ 13 sets (2ND FLOOR – 4TH FLOOR) = 14.742 m³ * 3 FLOOR = 44.226 m³
 C-2 @ 13 sets (2ND FLOOR – 4TH FLOOR) = 14.742 m³ * 3 FLOOR = 44.226 m³
 C-3 @ 13 sets (2ND FLOOR – 4TH FLOOR) = 14.742 m³ * 3 FLOOR = 44.226 m³



TOTAL = 22.438 + 22.438 + 22.438 + 44.226 + 44.226 + 44.226 = 199.992 m³

199.992 m³ @ 4000psi (P 4910.00 / m³) = **P 981,960.72**

F.S. 5% = 198.89 x 5% = 9.996 or 10 m³ x 4910 = **P 49,100.00**

Labor cost = P450.00 /m³ = 199.992 m³ x 450.00 = **P 89,996.40**

III. BEAMS

RED FONTS ARE INPUTS AND THIS IS HOW THE SYSTEM WILL COMPUTE:
 ALL THE DIMENSIONS FOR **B** AND **D** IN THIS EXAMPLE FOR ALL FOOTING
 TIE BEAMS (**FTB**) ARE THE SAME. **B** = 400mm or 0.4 m ; **D** = 600mm or 0.6 m

VOLUME = (B X D X CLEAR LENGTH) X QUANTITY OF BEAM

FTB -1A

V = (0.4 X 0.6 X 4.23) X 1 QTY = 1.0152 m³

FTB-1

$$V = (0.4 \times 0.6 \times 3.83) \times 10 \text{ QTY} = 9.192 \text{ m}^3$$

FTB -1A

$$V = (0.4 \times 0.6 \times 4.23) \times 1 \text{ QTY} = 1.0152 \text{ m}^3$$

TOTAL VOLUME FOR BEAM ROW 1

$$= 1.0152 \text{ m}^3 + 9.192 \text{ m}^3 + 1.0152 \text{ m}^3 = 11.224 \text{ m}^3 \times 2 \text{ QTY} = 22.4448 \text{ m}^3$$

Finally, multiply the QTY of the whole beam row (UI under “Depth”)

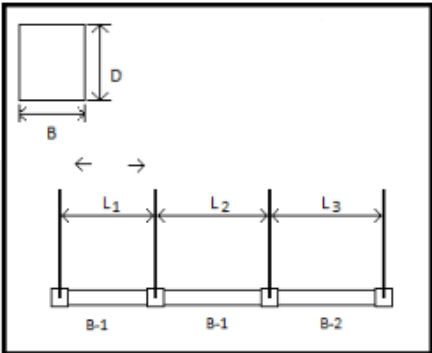
ADD STRUCTURAL MEMBER


STRUCTURAL MEMBER: **BEAM** NAME: **BR-1**

BEAM TYPE: **FOOTING TIE BEAM** UNIT: **mm**

Depth: **1500** Quantity: **2**



MAIN BARS HOOK TYPE: **90°** STIRRUP HOOK TYPE: **135°** SPLICE TYPE: **MECHANICAL**





L_c or Clear Length
Top Reinforcement:
Bottom Reinforcement:

BEAM ROW				
Beam Name	Quantity	Length	Clear Length	Support
FTB-1A	1	4.9	4.23	
FTB-1	10	4.5	3.83	
FTB-1A	1	4.9	4.23	

SUSPENDED BEAM SCHEDULE								
Name	B	D	Properties	Ext. Support	Midspan	Int. Support	Stirrups	Web Bars
FTB1-A	400	600		Dia. Qty	Qty	Qty	Dia. Rest	Dia.
				Qty	Qty	Qty		Qty.
FTB-1	400	600		Dia. Qty	Qty	Qty	Dia. Rest	Dia.
				Qty	Qty	Qty		Qty.

BEAM ROW 2

FTB -1

$$V = (0.4 \times 0.6 \times 3.83) \times 10 \text{ QTY} = 9.192 \text{ m}^3$$

FTB-1

$$V = (0.4 \times 0.6 \times 3.83) \times 10 \text{ QTY} = 9.192 \text{ m}^3$$

FTB -1

$$V = (0.4 \times 0.6 \times 4.23) \times 1 \text{ QTY} = 1.0152 \text{ m}^3$$

TOTAL VOLUME FOR BEAM ROW 2

$$= 1.0152 \text{ m}^3 + 9.192 \text{ m}^3 + 1.0152 \text{ m}^3 = \mathbf{11.224 \text{ m}^3}$$

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER

BEAM ▼

NAME:

BR-2 ▼

BEAM TYPE

FOOTING TIE BEAM ▼

UNIT:

mm ▼

Depth

Quantity

MAIN BARS HOOK TYPE

STIRRUP HOOK TYPE

SPLICE TYPE

L_c or Clear Length

Top Reinforcement

Bottom Reinforcement

BEAM ROW				
Beam Name	Quantity	Length	Clear Length	Support
FTB-1	1	4.9	4.23	
FTB-1	10	4.5	3.83	
FTB-1	1	4.9	4.23	

SUSPENDED BEAM SCHEDULE									
Name	B	D	Properties	Ext. Support	Midspan	Int. Support	Stirrups	Web Bars	
FTB1-A	400	600		Qty	Qty	Qty	Dia.	Dia.	
				Qty	Qty	Qty	@		
				Qty	Qty	Qty	Rest @		Qty.
FTB-1	400	600		Qty	Qty	Qty	Dia.	Dia.	
				Qty	Qty	Qty	@		
				Qty	Qty	Qty	Rest @		Qty.
				Qty	Qty	Qty	Dia.	Dia.	
				Qty	Qty	Qty	@		
				Qty	Qty	Qty	Rest @		Qty.

BEAM ROW

FTB -2A

$$V = (0.4 \times 0.6 \times 6.23) \times 1 \text{ QTY} = 1.4952 \text{ m}^3$$

FTB -2

$$V = (0.4 \times 0.6 \times 1.73) \times 1 \text{ QTY} = 0.4152 \text{ m}^3$$

$$\text{VOLUME TOTAL FOR BEAM ROW 3} = 1.4952 \text{ m}^3 + 0.4152 \text{ m}^3 = 1.9104 \text{ m}^3 \times 4 \text{ QTY}$$

$$= 7.6416 \text{ m}^3$$

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER

BEAM ▼

NAME:

BR-3 ▼

BEAM TYPE

FOOTING TIE BEAM ▼

UNIT:

mm ▼

Depth

Quantity

MAIN BARS HOOK TYPE

STIRRUP HOOK TYPE

SPLICE TYPE

L_c or Clear Length

Top Reinforcement

Bottom Reinforcement

BEAM ROW	Beam Name	Quantity	Length	Clear Length	Support
	FTB-2A	1	6.9	6.23	
	FTB-2	1	2.4	1.73	

SUSPENDED BEAM SCHEDULE									
Name	B	D	Properties	Ext. Support	Midspan	Int. Support	Stirrups	Web Bars	
FTB1-A	400	600		Dia. Qty.	Qty.	Qty.	Dia. Qty.	Dia.	
				Qty.	Qty.	Qty.	Rest Qty.	Qty.	
FTB-1	400	600		Dia. Qty.	Qty.	Qty.	Dia. Qty.	Dia.	
				Qty.	Qty.	Qty.	Rest Qty.	Qty.	
FTB-2	400	600		Dia. Qty.	Qty.	Qty.	Dia. Qty.	Dia.	
				Qty.	Qty.	Qty.	Rest Qty.	Qty.	
FTB-2A	400	600		Dia. Qty.	Qty.	Qty.	Dia. Qty.	Dia.	
				Qty.	Qty.	Qty.	Rest Qty.	Qty.	

BEAM ROW 4 (C

FTB -2A

$$V = (0.4 \times 0.6 \times 6.23) \times 1 \text{ QTY} = 1.4952 \text{ m}^3$$

FTB -2

$$V = (0.4 \times 0.6 \times 1.73) \times 1 \text{ QTY} = 0.4152 \text{ m}^3$$

$$\text{VOLUME TOTAL FOR BEAM ROW 4} = 1.4952 \text{ m}^3 + 0.4152 \text{ m}^3 = 1.9104 \text{ m}^3 \times 9 \text{ QTY}$$

= 17.1936 m³

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER

BEAM ▼

NAME:

BR-4 ▼

BEAM TYPE

FOOTING TIE BEAM ▼

UNIT:

mm ▼

Depth

Quantity **9**

MAIN BARS HOOK TYPE 90° ▼

STIRRUP HOOK TYPE 135° ▼

SPLICE TYPE MECHANICAL ▼

L_c or Clear Length

Top Reinforcement

Bottom Reinforcement

Beam Name	Quantity	Length	Clear Length	Support
FTB-2	1	6.9	6.23	
FTB-2	1	2.4	1.73	

Name	B	D	Properties	Ext. Support	Midspan	Int. Support	Stirrups	Web Bars
FTB1-A	400	600		Qty. <input type="text"/>	Qty. <input type="text"/>	Qty. <input type="text"/>	Dia. <input type="text"/>	Dia. <input type="text"/>
FTB-1	400	600		Qty. <input type="text"/>	Qty. <input type="text"/>	Qty. <input type="text"/>	Rest <input type="text"/>	Qty. <input type="text"/>
FTB-2	400	600		Qty. <input type="text"/>	Qty. <input type="text"/>	Qty. <input type="text"/>	Dia. <input type="text"/>	Dia. <input type="text"/>
FTB-2A	400	600		Qty. <input type="text"/>	Qty. <input type="text"/>	Qty. <input type="text"/>	Rest <input type="text"/>	Qty. <input type="text"/>

Total volume of concrete for ground floor = 22.4448 + 11.224+ 7.6416 + 17.936 = **58.504 m³**
BEAM ROW 5 (2ND TO 4TH FLOOR)

G-2

$$V = (0.25 \times 0.4 \times 4.3) \times 1 \text{ QTY} = 0.43 \text{ m}^3$$

G-2

$$V = (0.25 \times 0.4 \times 3.9) \times 10 \text{ QTY} = 3.9 \text{ m}^3$$

G-2

$$V = (0.25 \times 0.4 \times 4.3) \times 1 \text{ QTY} = 0.43 \text{ m}^3$$

$$\text{VOLUME TOTAL FOR BEAM ROW 5} = 0.43 \text{ m}^3 + 3.9 \text{ m}^3 + 0.43 \text{ m}^3 = 4.76 \text{ m}^3 \times 2 \text{ QTY} = 9.52 \text{ m}^3$$

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER

BEAM ▼

NAME:

BR-5 ▼

BEAM TYPE

GRADE BEAM ▼

UNIT:

mm ▼

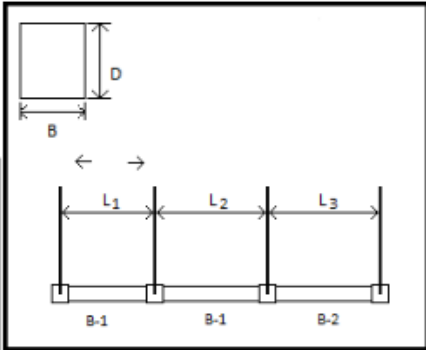
Depth: 1500

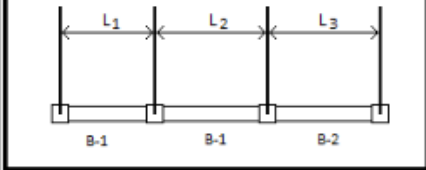
Quantity: 2

MAIN BARS HOOK TYPE: 90° ▼

STIRRUP HOOK TYPE: 135° ▼

SPLICE TYPE: MECHANICAL ▼











L_c or Clear Length

Top Reinforcement:

Bottom Reinforcement:

BEAM ROW				
Beam Name	Quantity	Length	Clear Length	Support
G-2	1	4.9	4.3	
G-2	10	4.5	3.9	
G-2	1	4.9	4.3	

SUSPENDED BEAM SCHEDULE									
Name	B	D	Properties	Ext. Support	Midspan	Int. Support	Stirrups	Web Bars	
G-2	250	400		Qty	Qty	Qty	Dia.	Dia.	
				Qty	Qty	Qty	Rest	Qty.	
				Qty	Qty	Qty	Dia.	Dia.	
				Qty	Qty	Qty	Rest	Qty.	
				Qty	Qty	Qty	Dia.	Dia.	
				Qty	Qty	Qty	Rest	Qty.	

BEAM ROW

G-3

$$V = (0.4 \times 0.5 \times 4.3) \times 1 \text{ QTY} = 0.86 \text{ m}^3$$

G-3

$$V = (0.4 \times 0.5 \times 3.9) \times 10 \text{ QTY} = 7.8 \text{ m}^3$$

G-3

$$V = (0.4 \times 0.5 \times 4.3) \times 1 \text{ QTY} = 0.86 \text{ m}^3$$

$$\text{VOLUME TOTAL FOR BEAM ROW 6} = 0.86 \text{ m}^3 + 7.8 \text{ m}^3 + 0.86 \text{ m}^3 = \mathbf{9.52 \text{ m}^3}$$

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER

BEAM ▼

NAME:

BR-6 ▼

BEAM TYPE

GRADE BEAM ▼

UNIT:

mm ▼

Depth

Quantity

MAIN BARS HOOK TYPE

STIRRUP HOOK TYPE

SPLICE TYPE

L_c or Clear Length

Top Reinforcement

Bottom Reinforcement

BEAM ROW				
Beam Name	Quantity	Length	Clear Length	Support
G-3	1	4.9	4.3	
G-3	10	4.5	3.9	
G-3	1	4.9	4.3	

SUSPENDED BEAM SCHEDULE									
Name	B	D	Properties	Ext. Support	Midspan	Int. Support	Stirrups	Web Bars	
G-2	250	400		Qty	Qty	Qty	Dia.	Dia.	
				Qty	Qty	Qty	@	Qty.	
G-3	400	500		Qty	Qty	Qty	Rest	Qty.	
				Qty	Qty	Qty	@	Qty.	
				Qty	Qty	Qty	Rest	Qty.	
				Qty	Qty	Qty	@	Qty.	

BEAM

B-1

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER

BEAM ▼

NAME:

BR-7 ▼

BEAM TYPE

GRADE BEAM ▼

UNIT:

mm ▼

Depth

Quantity

MAIN BARS HOOK TYPE

BEAM ROW 8 (2ND TO 4TH FLOOR)

B-1

$V = (0.25 \times 0.4 \times 3.47) \times 2 \text{ QTY} = \mathbf{0.694 \text{ m}^3}$

ADD STRUCTURAL MEMBER

STRUCURAL MEMBER

NAME:

BEAM

BR-8

BEAM TYPE

UNIT:

GRADE BEAM

mm

Depth

BEAM ROW 9 (2ND TO 4TH FLOOR)

G-1C

$$V = (0.4 \times 0.6 \times 6.3) \times 1 \text{ QTY} = 1.512 \text{ m}^3$$

G-1B

$$V = (0.4 \times 0.6 \times 1.8) \times 1 \text{ QTY} = 0.432 \text{ m}^3$$

$$\text{VOLUME TOTAL FOR BR-9} = 1.512 \text{ m}^3 + 0.432 \text{ m}^3 = 1.944 \text{ m}^3 \times 4\text{sets} = \mathbf{7.776 \text{ m}^3}$$

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER

BEAM ▼

NAME:

BR-9 ▼

BEAM TYPE **GRADE BEAM** ▼

UNIT: mm ▼

Depth

Quantity

MAIN BARS HOOK TYPE ▼

STIRRUP HOOK TYPE ▼

SPLICE TYPE ▼

L_c or Clear Length

Top Reinforcement

Bottom Reinforcement

BEAM ROW				
Beam Name	Quantity	Length	Clear Length	Support
G-1C	1	6.9	6.3	
G-1B	1	2.4	1.8	

SUSPENDED BEAM SCHEDULE											
Name	B	D	Properties	Ext. Support	Midspan	Int. Support	Stirrups	Web Bars			
G-2	250	400		Qty	Qty	Qty	Dia.	Dia.			
G-3	400	500		Qty	Qty	Qty	Rest	Qty.			
B-1	250	400		Qty	Qty	Qty	Dia.	Dia.			
G-1C	400	600		Qty	Qty	Qty	Rest	Qty.			
G-1B	400	600		Qty	Qty	Qty	Rest	Qty.			

BEAM ROW

G-1

$$V = (0.4 \times 0.6 \times 6.3) \times 1 \text{ QTY} = 1.512 \text{ m}^3$$

G-1A

$$V = (0.4 \times 0.6 \times 1.8) \times 1 \text{ QTY} = 0.432 \text{ m}^3$$

$$\text{VOLUME TOTAL FOR BR-9} = 1.512 \text{ m}^3 + 0.432 \text{ m}^3 = 1.944 \text{ m}^3 \times 9 \text{ sets} = 17.496 \text{ m}^3$$

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER

BEAM

NAME:

BR-10

BEAM TYPE

GRADE BEAM

UNIT:

mm

Depth

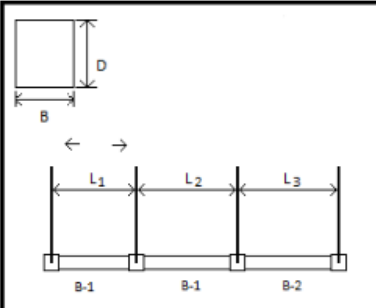
Quantity

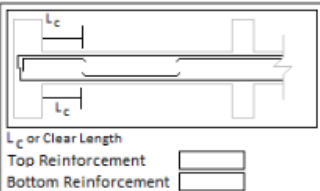
MAIN BARS HOOK TYPE

STIRRUP HOOK TYPE

SPLICE TYPE

MECHANICAL

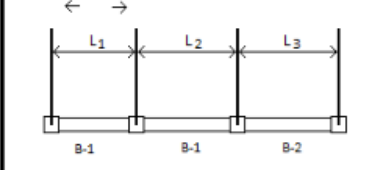




L_c or Clear Length

Top Reinforcement

Bottom Reinforcement



BEAM ROW	Beam Name	Quantity	Length	Clear Length	Support
	G-1	1	6.9	6.3	
	G-1A	1	2.4	1.8	

SUSPENDED BEAM SCHEDULE									
Name	B	D	Properties	Ext. Support	Midspan	Int. Support	Stirrups	Web Bars	
G-2	250	400		Qty	Qty	Qty	Qty	Qty	
				Qty	Qty	Qty	Qty	Qty	
				Qty	Qty	Qty	Qty	Qty	
G-3	400	500		Qty	Qty	Qty	Qty	Qty	
				Qty	Qty	Qty	Qty	Qty	
				Qty	Qty	Qty	Qty	Qty	
B-1	250	400		Qty	Qty	Qty	Qty	Qty	
				Qty	Qty	Qty	Qty	Qty	
				Qty	Qty	Qty	Qty	Qty	
G-1C	400	600		Qty	Qty	Qty	Qty	Qty	
				Qty	Qty	Qty	Qty	Qty	
				Qty	Qty	Qty	Qty	Qty	
G-1B	400	600		Qty	Qty	Qty	Qty	Qty	
				Qty	Qty	Qty	Qty	Qty	
				Qty	Qty	Qty	Qty	Qty	
G-1	400	600		Qty	Qty	Qty	Qty	Qty	
				Qty	Qty	Qty	Qty	Qty	
				Qty	Qty	Qty	Qty	Qty	
G-1A	400	600		Qty	Qty	Qty	Qty	Qty	
				Qty	Qty	Qty	Qty	Qty	
				Qty	Qty	Qty	Qty	Qty	

BEAM ROW 11 (

B-1

$$V = (0.25 \times 0.4 \times 4.1) \times 10 \text{ QTY} = 4.1 \text{ m}^3$$

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER

BEAM

NAME:

BR-11

BEAM TYPE

GRADE BEAM

UNIT:

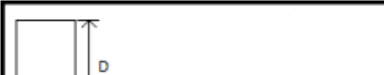
mm

Depth

Quantity

MAIN BARS HOOK TYPE

90°



BEAM ROW 12 (2ND TO 4TH FLOOR)

CB-1

$V = (0.25 \times 0.4 \times 1) \times 1 \text{ QTY} = \mathbf{0.1 \text{ m}^3}$

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER		NAME:	
<div>BEAM</div>		<div>BR-12</div>	
BEAM TYPE		UNIT:	
<div>GRADE BEAM</div>		<div>mm</div>	
Depth	<div></div>	<div></div>	
Quantity	<div>1</div>		

CB-1

$$V = (0.25 \times 0.4 \times 1) \times 1 \text{ QTY} = \mathbf{0.1 \text{ m}^3}$$

BEAM TYPE: **GRADE BEAM** UNIT: **mm**


Depth:

Quantity: **1**

MAIN BARS HOOK TYPE: **90°**

STIRRUP HOOK TYPE: **135°**

SPLICE TYPE: **MECHANICAL**



BEAM ROW 14 (2ND TO 4TH FLOOR)

CB-1

$V = (0.25 \times 0.4 \times 1) \times 1 \text{ QTY} = 0.1 \text{ m}^3$

BEAM TYPE

GRADE BEAM

UNIT: mm

Depth

Quantity

1

MAIN BARS HOOK TYPE


90°

STIRRUP HOOK TYPE

135°

SPLICE TYPE

MECHANICAL



IV. STAIR
BEAM ROW 15 (2ND TO 4TH FLOOR)

B-2

$V = (0.25 \times 0.4 \times 4.425) \times 2 \text{ QTY} = \mathbf{0.885 \text{ m}^3}$

ADD STRUCTURAL MEMBER

STRUCURAL MEMBER

NAME:

BEAM

BR-15

BEAM TYPE

GRADE BEAM

UNIT:

mm

Depth

Quantity


1

MAIN BARS HOOK TYPE

90°

STIRRUP HOOK TYPE

135°



Total volume of concrete for a single floor:

$$=9.52+9.52+0.88+0.694+7.776+17.496+4.1+0.1+0.1+0.1+0.885 = 51.171 \text{ m}^3$$

Total Volume of Concrete for 2nd floor to 4th floor :

$$51.171 \text{ m}^3 \times 3 \text{ floors} = \mathbf{153.513 \text{ m}^3}$$

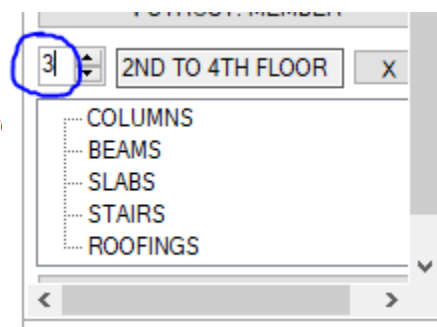
ROOF BEAM (note: same illustrations and inputs as 2nd to 4th flr)

BEAM ROW 16 (ROOF DECK)

RG-2

$$V = (0.25 \times 0.4 \times 4.3) \times 1 \text{ QTY} = 0.43 \text{ m}^3$$

RG-2



eam

$$V = (0.25 \times 0.4 \times 3.9) \times 10 \text{ QTY} = 3.9 \text{ m}^3$$

RG-2

$$V = (0.25 \times 0.4 \times 4.3) \times 1 \text{ QTY} = 0.43 \text{ m}^3$$

$$\text{VOLUME TOTAL FOR BEAM ROW 5} = 0.43 \text{ m}^3 + 3.9 \text{ m}^3 + 0.43 \text{ m}^3 = 4.76 \text{ m}^3 \times 2 \text{ QTY} = 9.52 \text{ m}^3$$

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER

BEAM ▼

NAME:

BR-5 ▼

BEAM TYPE

GRADE BEAM ▼

UNIT:

mm ▼

Depth

Quantity

MAIN BARS HOOK TYPE

STIRRUP HOOK TYPE

SPLICE TYPE

L_c or Clear Length

Top Reinforcement

Bottom Reinforcement

BEAM ROW				
Beam Name	Quantity	Length	Clear Length	Support
G-2	1	4.9	4.3	
G-2	10	4.5	3.9	
G-2	1	4.9	4.3	

SUSPENDED BEAM SCHEDULE									
Name	B	D	Properties	Ext. Support	Midspan	Int. Support	Stirrups	Web Bars	
G-2	250	400		Dia. Qty	Qty	Qty	Dia. @	Dia.	
				Dia. Qty	Qty	Qty	Rest @	Qty.	
				Dia. Qty	Qty	Qty	Dia. @	Dia.	
				Dia. Qty	Qty	Qty	Rest @	Qty.	
				Dia. Qty	Qty	Qty	Dia. @	Dia.	
				Dia. Qty	Qty	Qty	Rest @	Qty.	

BEAM ROW

RG-3

$$V = (0.4$$

RG-3

$$V = (0.4 \times 0.5 \times 3.9) \times 10 \text{ QTY} = 7.8 \text{ m}^3$$

RG-3

$$V = (0.4 \times 0.5 \times 4.3) \times 1 \text{ QTY} = 0.86 \text{ m}^3$$

$$\text{VOLUME TOTAL FOR BEAM ROW 6} = 0.86 \text{ m}^3 + 7.8 \text{ m}^3 + 0.86 \text{ m}^3 = \mathbf{9.52 \text{ m}^3}$$

ADD STRUCTURAL MEMBER

STRUCURAL MEMBER

BEAM ▼

NAME:

BR-6 ▼

BEAM TYPE

GRADE BEAM ▼

UNIT:

mm ▼

Depth

Quantity

MAIN BARS HOOK TYPE

STIRRUP HOOK TYPE

SPLICE TYPE

L_c or Clear Length

Top Reinforcement

Bottom Reinforcement

BEAM ROW				
Beam Name	Quantity	Length	Clear Length	Support
G-3	1	4.9	4.3	
G-3	10	4.5	3.9	
G-3	1	4.9	4.3	

SUSPENDED BEAM SCHEDULE									
Name	B	D	Properties	Ext. Support	Midspan	Int. Support	Stirrups	Web Bars	
G-2	250	400		Qty	Qty	Qty	Dia.	Dia.	
				Qty	Qty	Qty	@	Qty.	
G-3	400	500		Qty	Qty	Qty	Rest	Dia.	
				Qty	Qty	Qty	@	Qty.	
				Qty	Qty	Qty	Rest	Dia.	
				Qty	Qty	Qty	@	Qty.	
				Qty	Qty	Qty	Rest	Dia.	
				Qty	Qty	Qty	@	Qty.	

BEAM

B-1

ADD STRUCTURAL MEMBER

STRUCURAL MEMBER

BEAM ▼

NAME:

BR-7 ▼

BEAM TYPE

GRADE BEAM ▼

UNIT:

mm ▼

Depth

Quantity

BEAM ROW 19 (ROOF DECK)

B-1

$V = (0.25 \times 0.4 \times 3.47) \times 2 \text{ QTY} = \mathbf{0.694 \text{ m}^3}$

ADD STRUCTURAL MEMBER

STRUCURAL MEMBER

NAME:

BEAM

BR-8

BEAM TYPE

UNIT:

GRADE BEAM

mm

Depth

BEAM ROW 20 (ROOF DECK)

RG-1C

$$V = (0.4 \times 0.6 \times 6.3) \times 1 \text{ QTY} = 1.512 \text{ m}^3$$

RG-1B

$$V = (0.4 \times 0.6 \times 1.8) \times 1 \text{ QTY} = 0.432 \text{ m}^3$$

$$\text{VOLUME TOTAL FOR BR-20} = 1.512 \text{ m}^3 + 0.432 \text{ m}^3 = 1.944 \text{ m}^3 \times 4\text{sets} = \mathbf{7.776 \text{ m}^3}$$

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER

NAME:

BEAM TYPE

UNIT:

Depth

Quantity

MAIN BARS HOOK TYPE

STIRRUP HOOK TYPE

SPLICE TYPE

L_c or Clear Length

Top Reinforcement

Bottom Reinforcement

BEAM ROW				
Beam Name	Quantity	Length	Clear Length	Support
G-1C	1	6.9	6.3	
G-1B	1	2.4	1.8	

SUSPENDED BEAM SCHEDULE											
Name	B	D	Properties	Ext. Support	Midspan	Int. Support	Stirrups	Web Bars			
G-2	250	400		Qty	Qty	Qty	Dia.	Dia.			
G-3	400	500		Qty	Qty	Qty	Rest	Qty.			
B-1	250	400		Qty	Qty	Qty	Dia.	Dia.			
G-1C	400	600		Qty	Qty	Qty	Rest	Qty.			
G-1B	400	600		Qty	Qty	Qty	Rest	Qty.			

BEAM ROW

RG-1

$$V = (0.4 \times 0.6 \times 6.3) \times 1 \text{ QTY} = 1.512 \text{ m}^3$$

RG-1A

$$V = (0.4 \times 0.6 \times 1.8) \times 1 \text{ QTY} = 0.432 \text{ m}^3$$

$$\text{VOLUME TOTAL FOR BR-21} = 1.512 \text{ m}^3 + 0.432 \text{ m}^3 = 1.944 \text{ m}^3 \times 9 \text{ sets} = 17.496 \text{ m}^3$$

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER

BEAM

NAME:

BR-10

BEAM TYPE: **GRADE BEAM**

UNIT: mm

Depth:

Quantity: **9**

MAIN BARS HOOK TYPE: **90°**

STIRRUP HOOK TYPE: **135°**

SPLICE TYPE: **MECHANICAL**

L_c or Clear Length

Top Reinforcement:

Bottom Reinforcement:

BEAM ROW				
Beam Name	Quantity	Length	Clear Length	Support
G-1	1	6.9	6.3	
G-1A	1	2.4	1.8	

SUSPENDED BEAM SCHEDULE									
Name	B	D	Properties	Ext. Support	Midspan	Int. Support	Stirrups	Web Bars	
G-2	250	400		Qty	Qty	Qty	Dia.	Dia.	
G-2	250	400		Qty	Qty	Qty	Dia.	Dia.	
G-2	250	400		Qty	Qty	Qty	Dia.	Dia.	
G-3	400	500		Qty	Qty	Qty	Rest	Dia.	
G-3	400	500		Qty	Qty	Qty	Dia.	Dia.	
G-3	400	500		Qty	Qty	Qty	Dia.	Dia.	
B-1	250	400		Qty	Qty	Qty	Rest	Dia.	
B-1	250	400		Qty	Qty	Qty	Dia.	Dia.	
B-1	250	400		Qty	Qty	Qty	Dia.	Dia.	
G-1C	400	600		Qty	Qty	Qty	Rest	Dia.	
G-1C	400	600		Qty	Qty	Qty	Dia.	Dia.	
G-1C	400	600		Qty	Qty	Qty	Dia.	Dia.	
G-1B	400	600		Qty	Qty	Qty	Rest	Dia.	
G-1B	400	600		Qty	Qty	Qty	Dia.	Dia.	
G-1B	400	600		Qty	Qty	Qty	Dia.	Dia.	
G-1	400	600		Qty	Qty	Qty	Rest	Dia.	
G-1	400	600		Qty	Qty	Qty	Dia.	Dia.	
G-1	400	600		Qty	Qty	Qty	Dia.	Dia.	
G-1A	400	600		Qty	Qty	Qty	Rest	Dia.	
G-1A	400	600		Qty	Qty	Qty	Dia.	Dia.	
G-1A	400	600		Qty	Qty	Qty	Dia.	Dia.	

BEAM ROW 22 (

RB-1

$$V = (0.25 \times 0.4 \times 4.1) \times 10 \text{ QTY} = 4.1 \text{ m}^3$$

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER

BEAM

NAME:

BR-11

BEAM TYPE: **GRADE BEAM**

UNIT: mm

Depth:

Quantity: **1**

MAIN BARS HOOK TYPE: **90°**

BEAM ROW 23 (ROOF DECK)

RCB-1

$V = (0.25 \times 0.4 \times 1) \times 1 \text{ QTY} = 0.1 \text{ m}^3 \times 26 \text{ QTY} = \mathbf{2.6 \text{ m}^3}$

ADD STRUCTURAL MEMBER

STRUCURAL MEMBER

NAME:

BEAM

BR- 23

BEAM TYPE

UNIT:

ROOF BEAM

mm

Depth

Quantity

MAIN BARS HOOK TYPE

90 °

D

B-2

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER <div style="border: 1px solid black; padding: 2px; display: flex; justify-content: space-between;"> BEAM ▼ </div>	NAME: <div style="border: 1px solid black; padding: 2px; display: flex; justify-content: space-between;"> BR-15 ▼ </div>
BEAM TYPE <div style="border: 1px solid black; padding: 2px; display: flex; justify-content: space-between;"> GRADE BEAM ▼ </div>	UNIT: <div style="border: 1px solid black; padding: 2px; display: flex; justify-content: space-between;"> mm ▼ </div>

Depth

Quantity

1

MAIN BARS HOOK TYPE


90°
▼

STIRRUP HOOK TYPE

135°
▼

SPLICE TYPE

MECHANICAL
▼



Total volume of concrete for a single roof deck floor:

= $9.52+9.52+0.88+0.694+7.776+17.496+4.1+2.6+0.885 = 53.471$ m³

Total volume for all beams = $58.504 + 153.513 + 53.471 = 265.488$ m³

Total cost: $265.488 \times 4910 = \text{P } 1,303,546.08$

V. STAIRS CONCRETE

STAIRS (U-STAIRS) @ 6 SETS (2 PER FLOOR, 1st to 3rd Flr.)

TREAD WIDTH: 300mm

Riser: 175mm

STEPS FLIGHT 1: 9

STEPS FLIGHT 2: 9

Waist slab thickness: 150 mm

Landing slab thickness: 150 mm

Stair Width: 1.6m
Gap: 100mm
Landing width: 1.2m

@ 4000 psi (27.6 mpa)

WAIST SLAB:

Length = $(0.3 \times 9)^2 + (0.175 \times 9)^2 = 3125.799$ mm or **3150mm**

= $0.150 \times 1.6 \times 3.15$
= $0.756 \text{ m}^3 \times 2$ (1st and 2nd flight) = **1.52 m³**

STEPS:

= $[(0.3 \times 0.1752)/2] (1.6) (18) = \mathbf{0.756 \text{ m}^3}$

LANDING:

= $0.15 \times 1.2 \times (1.6 + 0.1 + 1.6) = \mathbf{0.594 \text{ m}^3}$

Total volume for a U-Stair = $1.52 + 0.756 + 0.594 = \mathbf{2.87 \text{ m}^3}$

Total volume for all U Stairs = $2.87 \times 6 = \mathbf{17.22 \text{ m}^3}$

STAIRS (L-STAIRS) @ 2 SETS (FOURTH FLOOR,)

TREAD WIDTH: 250 mm

Riser: 175 mm

STEPS FLIGHT 1: 9

STEPS FLIGHT 2: 9

Waist slab thickness: 150 mm

Landing slab thickness: 150 mm

Stair Width: 1m

Landing width: 1m

Concrete:

@ 4000 psi (27.6 mpa)

WAIST SLAB:

Length = $(0.25 \times 9)^2 + (0.175 \times 9)^2 = 2.75$ m or 2750mm

= $0.150 \times 1 \times 2.75$
= $0.4125 \text{ m}^3 \times 2$ (1st and 2nd flight) = **0.825 m³**

STEPS:

$$= (0.25 \times 0.1752) (1)(18) = \mathbf{0.39375 \text{ m}^3}$$

LANDING:

$$= 0.15 \times 1 \times 1 = \mathbf{0.15 \text{ m}^3}$$

$$\text{Total Volume for an L-stair} = 0.825 + 0.39375 + 0.15 = \mathbf{1.37 \text{ m}^3}$$

$$\text{Total Volume for all L-stair} = 1.37 \times 2 = \mathbf{2.74 \text{ m}^3}$$

$$\text{Total Volume of Concrete for Stairs} = 17.22 + 2.74 = 19.96 \text{ or } \mathbf{20 \text{ m}^3}$$

$$\text{CONCRETE: } 20 \text{ m}^3 @ 4000\text{psi} (\text{P } 4910.00 / \text{m}^3) = \mathbf{\text{P } 98,200.00}$$

$$\mathbf{\text{F.S. } 5\% = 20\text{m}^3 \times 5\% = 1 \text{ m}^3 \times 4910 = \text{P } 4,910.00}$$

$$\text{Labor cost} = \text{P}450.00 / \text{m}^3 = 20 \text{ m}^3 \times 450.00 = \mathbf{\text{P } 9,000.00}$$

V. SLAB

Slab on grade

L TOP: 55000mm

W LEFT: 9500mm

T: 100mm

$$V = 55000 \times 9500 \times 100 = 52.25 \text{ m}^3$$

ADD STRUCTURAL MEMBER

STRUCURAL MEMBER

SLAB
▼

NAME:

S-1 (A)
▼

UNIT: mm ▼

QUANTITY 1

THICKNESS 100

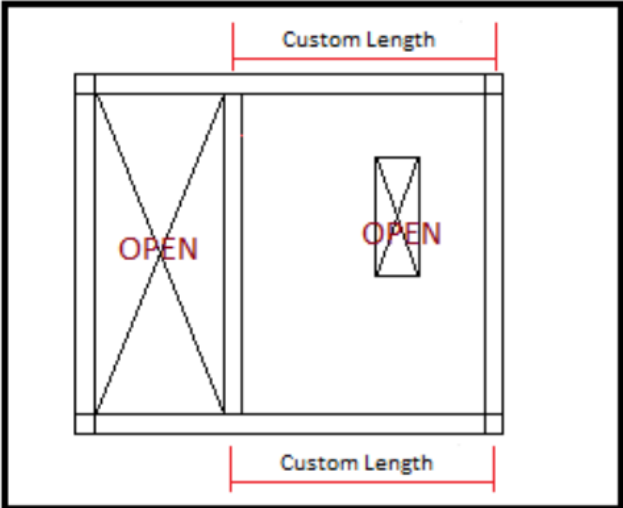
ELEVATION 319

REINFORCEMENTS

	LONGITUDINAL	TRANSVERSE
DIAMETER	<div style="border: 1px solid black; height: 15px; width: 100%;"></div>	<div style="border: 1px solid black; height: 15px; width: 100%;"></div>
SPACING	<div style="border: 1px solid black; height: 15px; width: 100%;"></div>	<div style="border: 1px solid black; height: 15px; width: 100%;"></div>
SPLICE TYPE	MECHANICAL ▼	MECHANICAL ▼

SLAB BORDER

TOP	LENGTH	55000
BOTTOM	LENGTH	55000
LEFT	LENGTH	9500
RIGHT	LENGTH	9500



The diagram shows a rectangular slab with a width of 9500mm and a length of 55000mm. The top and bottom edges are labeled 'Custom Length'. The left and right edges are labeled 'Custom Length'. The slab is divided into two sections by a vertical line. The left section is labeled 'OPEN' and contains a diagonal line. The right section is also labeled 'OPEN' and contains a vertical line. The diagram illustrates the reinforcement layout for the slab.

CONCRETE: 52.25 m³ @ 4000psi (P 4910.00 / m³) = **P 256,547.50**

F.S. 5% = 52.25 m³ x 5% = 2.6125 m³ x 4910 = **P 12,827.38**

Labor cost = P450.00 /m³ = 52.25m³ x 450.00 = **P 23,512.50**

Hanging or Suspended Slab (2nd floor to 4th floor)

S-1 (A) @ 2 sets

L TOP: 4400mm

W LEFT: 2675mm

T: 100mm

$$V = 4.4 \times 2.675 \times .100 = 1.177 \text{ m}^3 \times 2 = \mathbf{2.354 \text{ m}^3}$$

ADD STRUCTURAL MEMBER

STRUCURAL MEMBER

NAME:

UNIT:

SLAB MARK
 QUANTITY
 SLAB POSITION

SLAB DETAIL

 La
 Lb

Bent Up/Continuous

LONGITUDINAL
 TOP
 BOTTOM

TRANSVERSE
 TOP
 BOTTOM

SLAB BORDER

TOP	LENGTH	CLEAR LENGTH	<input type="text" value="4400"/>
BOTTOM	LENGTH	CLEAR LENGTH	<input type="text" value="4400"/>
LEFT	LENGTH	CLEAR LENGTH	<input type="text" value="2675"/>
RIGHT	LENGTH	CLEAR LENGTH	<input type="text" value="2675"/>

SLAB SCHEDULE

SLAB MARK	THICKNESS	REBAR SPACING ALONG SHORT DIRECTION				REBAR SPACING ALONG LONG DIRECTION				REMARK
		SIZE	EXT. SUPP.	MIDSPAN	INT. SUPP.	SIZE	EXT. SUPP.	MIDSPAN	INT. SUPP.	
		TOP	BOTT.	TOP	BOTT.	TOP	BOTT.	TOP	BOTT.	
S-1	100									2-WAY

S-1 (B) @ 10 sets
 L TOP: 4100mm
 W LEFT: 2800mm
 T: 100mm

$$V = 4.1 \times 2.800 \times .100 = 1.148 \text{ m}^3 \times 10 = 11.48 \text{ m}^3$$

ADD STRUCTURAL MEMBER

STRUCURAL MEMBER

NAME:

S-1(B)

10

4100
4100
2800
2800

S-1 100

S-1 (C) @ 10 sets

L TOP: 4100mm

W LEFT: 3350mm

T: 100mm

$$V = 4.1 \times 3.35 \times .100 = 1.3735 \text{ m}^3 \times 10 = 13.735 \text{ m}^3$$

$$\text{volume} = 2.354 + 11.48 + 13.735 = \mathbf{27.569 \text{ m}^3}$$

S-2 (A) @ 2 SETS

L TOP: 4400mm

W LEFT: 1900 mm

T: 100mm

$$\text{Volume} = 4.4 \times 1.9 \times 0.1 \times 2 = \mathbf{1.672 \text{ m}^3}$$

ADD STRUCTURAL MEMBER

STRUCTURAL MEMBER

SLAB ▼

NAME:

S-2(A) ▼

UNIT: mm ▼

SLAB MARK: S-2

QUANTITY

SLAB POSITION ▼

SLAB DETAIL

La Bent Up/Continuous

Lb

Custom Length

Custom Length

LONGITUDINAL TRANSVERSE

TOP MECHANICAL ▼ MECHANICAL ▼

BOTTOM MECHANICAL ▼ MECHANICAL ▼

SLAB BORDER

TOP	LENGTH <input type="text"/>	CLEAR LENGTH <input type="text" value="4400"/>
BOTTOM	LENGTH <input type="text"/>	CLEAR LENGTH <input type="text" value="4400"/>
LEFT	LENGTH <input type="text"/>	CLEAR LENGTH <input type="text" value="1900"/>
RIGHT	LENGTH <input type="text"/>	CLEAR LENGTH <input type="text" value="1900"/>

SLAB SCHEDULE

SLAB MARK	THICKNESS	REBAR SPACING ALONG SHORT DIRECTION						REBAR SPACING ALONG LONG DIRECTION						REMARK
		SIZE (Dia.)	EXT. SUPP.	MIDSPAN	INT. SUPP.	SIZE (Dia.)	EXT. SUPP.	MIDSPAN	INT. SUPP.					
		TOP	BOTT.	TOP	BOTT.	TOP	BOTT.	TOP	BOTT.	TOP	BOTT.	TOP	BOTT.	
S-1	100													2-WAY
S-2	100													

S-2 (A)

L TOP:

W LEFT:

T:

V= 4.1 x

@ 10 SETS

4100mm

1900 mm

100mm

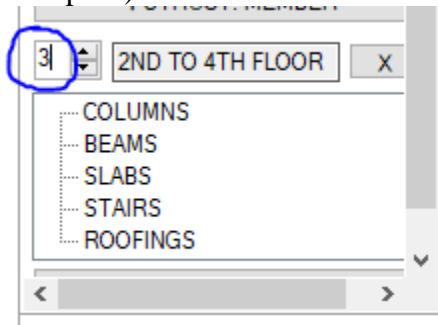
$$1.9 \times .1 \times 10 = \mathbf{7.79 \text{ m}^3}$$

S-3 (A) @ 2 SETS

L TOP: 1250mm
W LEFT: 3475mm
T: 100mm

$$V = 1.25 \times 3.475 \times .100 = 0.434375 \text{ m}^3 \times 2 = \mathbf{0.86875 \text{ m}^3}$$

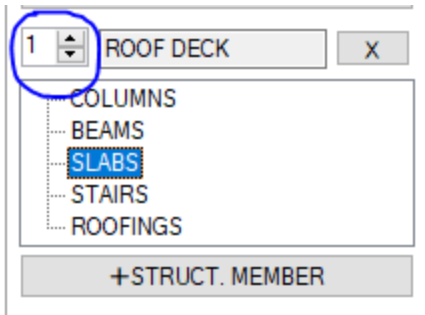
V= 37.899 m³ (single floor, 2nd floor. Since 2nd floor to 4th floor is the same, use multiplier)



$$\mathbf{VOLUME \ SUSPENDED \ SLAB \ (FLOOR \ 2-4) = 37.899 \times 3 = 113.7 \text{ m}^3}$$

ROOF DECK
S-1 (A) @ 2 SETS
L: 4400 mm
W: 2675 mm
T: 100mm

$$V = 4.4 \times 2.675 \times 0.1 \times 2 = \mathbf{2.354 \text{ m}^3}$$



VOLUME TOTAL = 116.054 m³

CONCRETE: 116.054 m³ @ 4000psi (P 4910.00 / m³) = **P 569,825.14**

F.S. 5%=116.054 m³ x 5% = 5.8027 m³ x 4910 = **P28,491.257**

Labor cost = P450.00 /m³ = 116.054 m³ x 450.00 = **P52,224.30**