

## Computer Help

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Computer Help  
Software  
&  
Other Services offered

Software Presentation by  
Er. Prakash B Bajaj



# Our Team

CEO	Prakash B Bajaj	Ravin Desai	Pervin Solomon
Software Deveoper			
	Amruta Mandekar	Deepak Maurya	
	Mukesh Kadakia	Siddhi Kadam	
Engineers			
	Huzefa Sathalia	Usama Chaugule	Abhishek Waghmare
	Chetan Kholakia	Ashiwin Phulari	
Marketting			
	Parikshit Gupta	Jayesh Purohit	Vaibhav Kasalkar
Our Associate			
	Radhesh Prabhakar	Rakesh	



**It is our sincerest belief that engineer  
should not be using his time & Energy  
to do repetitive work.**



Keeping this in mind, we have developed number of software in field of structural engineering which can increase the productivity by at least 3 to 4 times or More



- 2D to 3D
- PLANWIN
- DRAFTWIN
- Drawing Automation
- Linking Spread Sheet with ETABS
- STP Design
  
- Retaining wall Analysis / Design / Drawing / Costing
- Pile / Pile cap Optimization
- Wall Planner
  
- Triangulation
- Export Excel to CAD
- Export CAD to EXCEL



# 2D to 3D

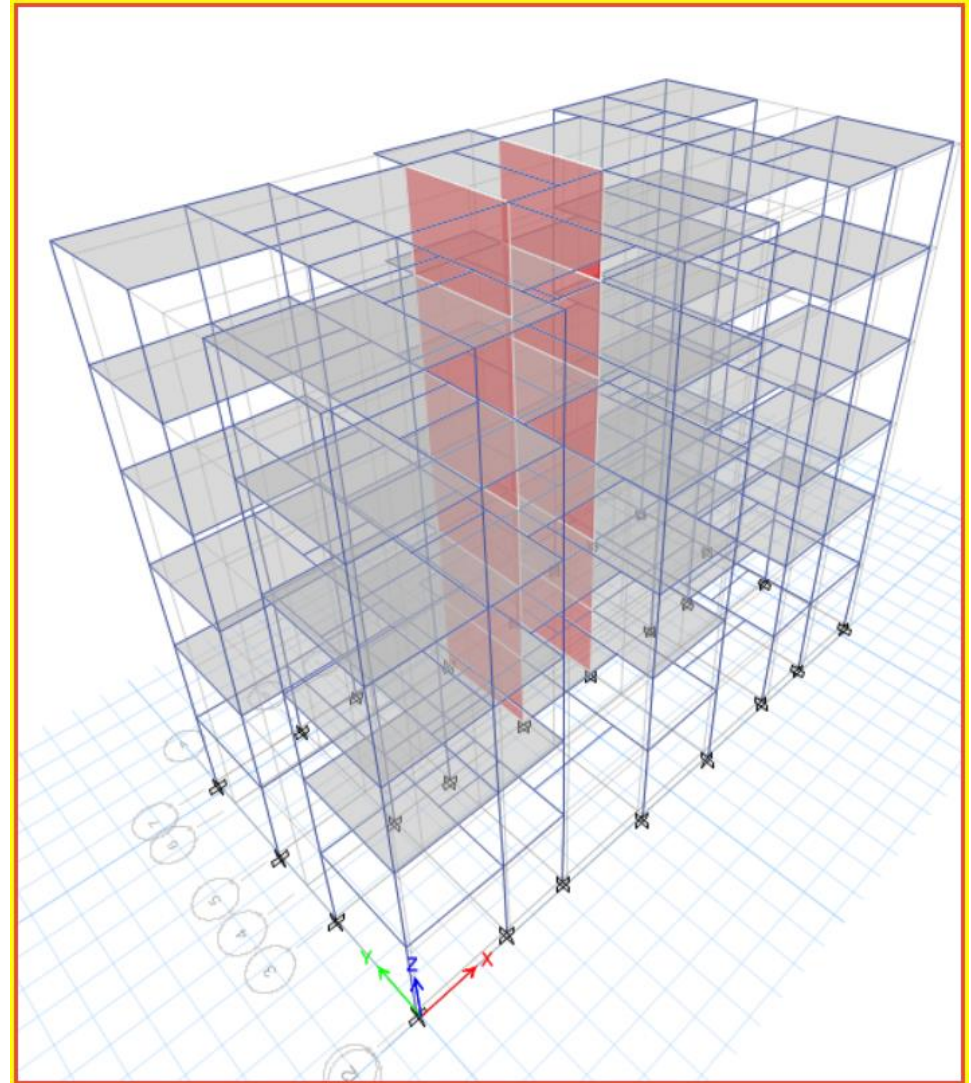
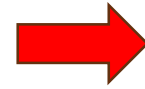
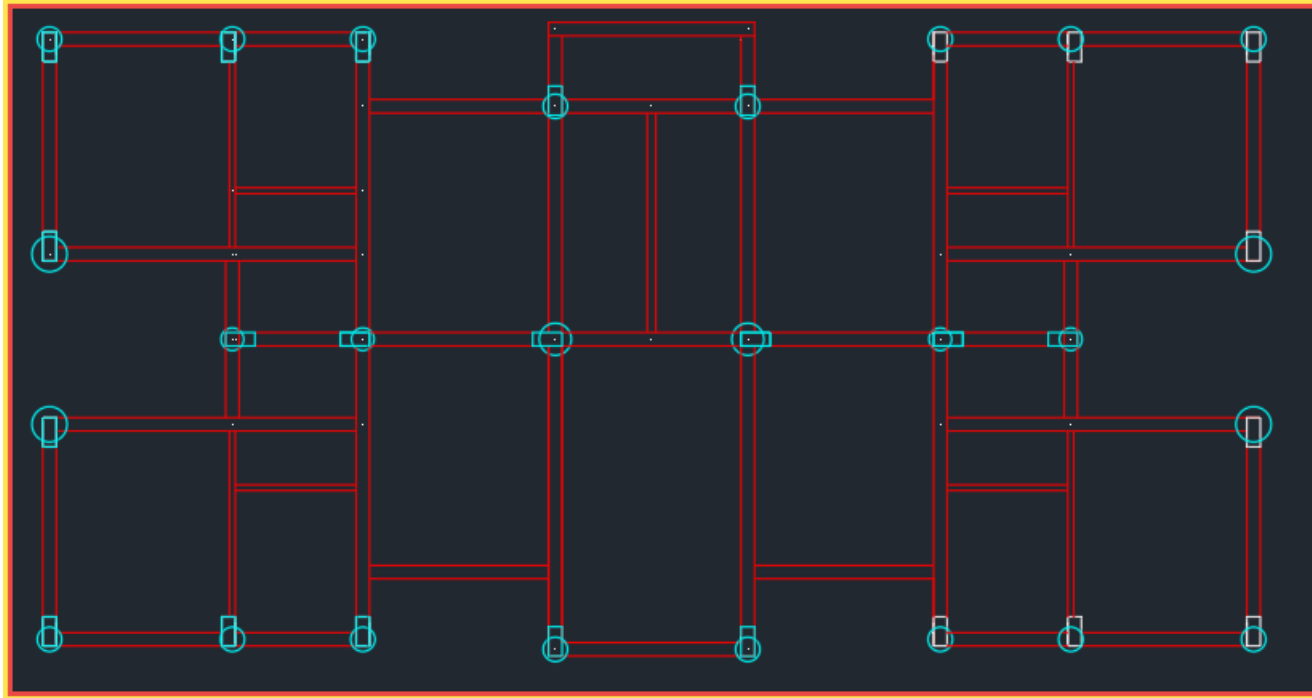
All the structural design begins with architectural plan. Above software converts 2D to 3D which gives complete idea in 3D about the structure.



Converts 2D to 3D in less than 2 Minutes



# PLANWIN / FRAMEWIN



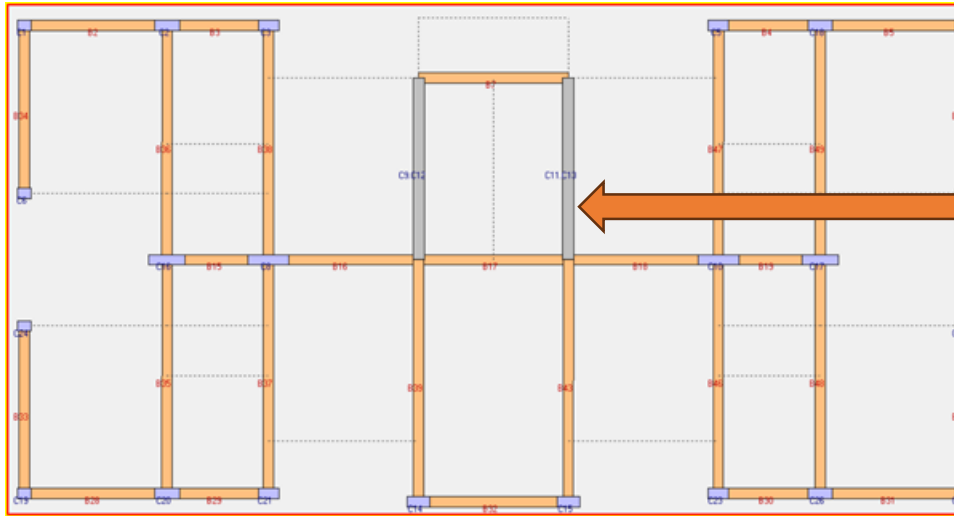
Creates ETABS / STAAD file from architectural plan



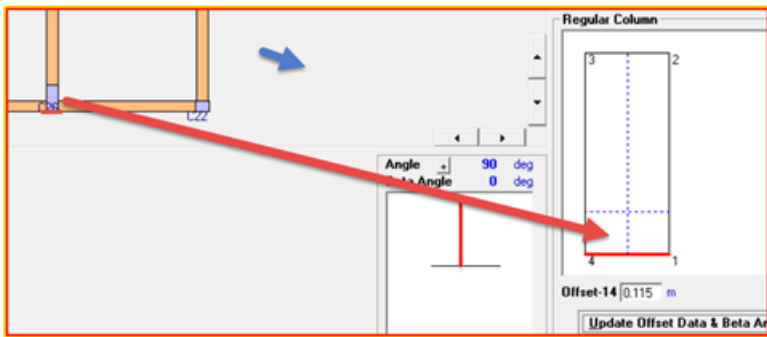




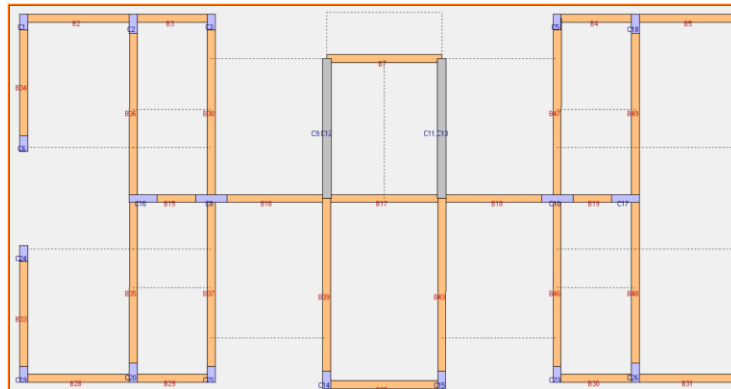
For say 6 Levels you have 3 types of plan namely Plinth, Typical and Terrace. You will create 3 type of levels and specify file name for each level.



Option to mark shear wall



Option to Align and flush the column as per Architectural plan



This way you can resize, change the orientation and flush the column.



**Wind Parameters**

City: MUMBAI Wind Speed: 44 m/s  
 Life Span (Yrs): 50 Risk Coeff (k1): 1

Terrain Category 1	Exposed Open Terrain With few or no obstruction and in which the average height of any object surrounding the structure is less than 1.5 M
Terrain Category 2	Open terrain with well Scattered Obstructions having heights generally between 1.5 to 10 M
Terrain Category 3	Terrain with numerous closely spaced obstructions having the size of building structures upto 10 M in height with or without a few isolated tall structures
Terrain Category 4	Terrain with numerous large high closely spaced obstructions

Height Below Ground: 3 m Parapet Wall: 1 m

Ok Cancel

**Seismic Parameters (Response Spectrum Method)**

City: Mumbai Seismic Coefficient: 0.16 Zone: 3

Importance Factor: 1.5

Rock or Soil Sites Factor: Hard Soil: 1, Medium Soil: 2, Soft Soil: 3

Damping Factor: Damping %: 0, 2, 5, 7, 10, 15, 20, 25, 30; Factors: 3.2, 1.4, 1, 0.9, 0.8, 0.7, 0.6, 0.55, 0.5

Response Reduction Factor:

Building Frame Systems		
1	Ordinary RC moment-resisting frame (OMRF)	3
2	Special RC moment resistance frame (SMRF)	5
3a	Steel Frame With Centric braces	4
3b	Steel Frame With Ecentric braces	5
4	Steel moment resisting frame designed as per SP 6 (6)	5
Building with Shear Walls		
5a	Load bearing masonry wall building - Unreinforced	1.5
5b	Load bearing masonry wall building - Reinforced with horizontal RC bands	2.5
5c	Load bearing masonry wall building - Reinforced with horizontal RC bands and vertical bars at corners of rooms and jambs of openings	3
6	Ordinary reinforced concrete shear walls	3
7	Ductile shear walls	4
Building with Dual Systems		
8	Ordinary shear wall with OMRF	3
9	Ordinary shear wall with SMRF	4
10	Ductile shear wall with OMRF	4.5
11	Ductile shear wall with SMRF	5

Depth of Foundation (m): 2

Px (in Sec): 0.3567 Pz (in Sec): 0.5011

Ok Cancel

**Space Frame File Generation**

Bracing: Master Slave Plate  
 Torsion Release: Column, Beam  
 Seismic Analysis: Siesmic Coefficient Method, Response Spectrum Method

Member Offset: Consider member offset  
 Options: Add Design Statement, View Output File

File Generation: Std File, E2k File (checked)

File 1: C:\Computer Help\Project 2023\RA\Example\Planwin\G+4\Planwin\Planwin\_Frame.e2k

Slab Section Type: All Shell, All Membrane, Auto  
 Diaphragm: Rigid, Semi Rigid  
 Building Type: Regular, Irregular

Wind Parameters: Windward Coefficient: 0.8, Leeward Coefficient: 0.5, Bottom Story: BASE

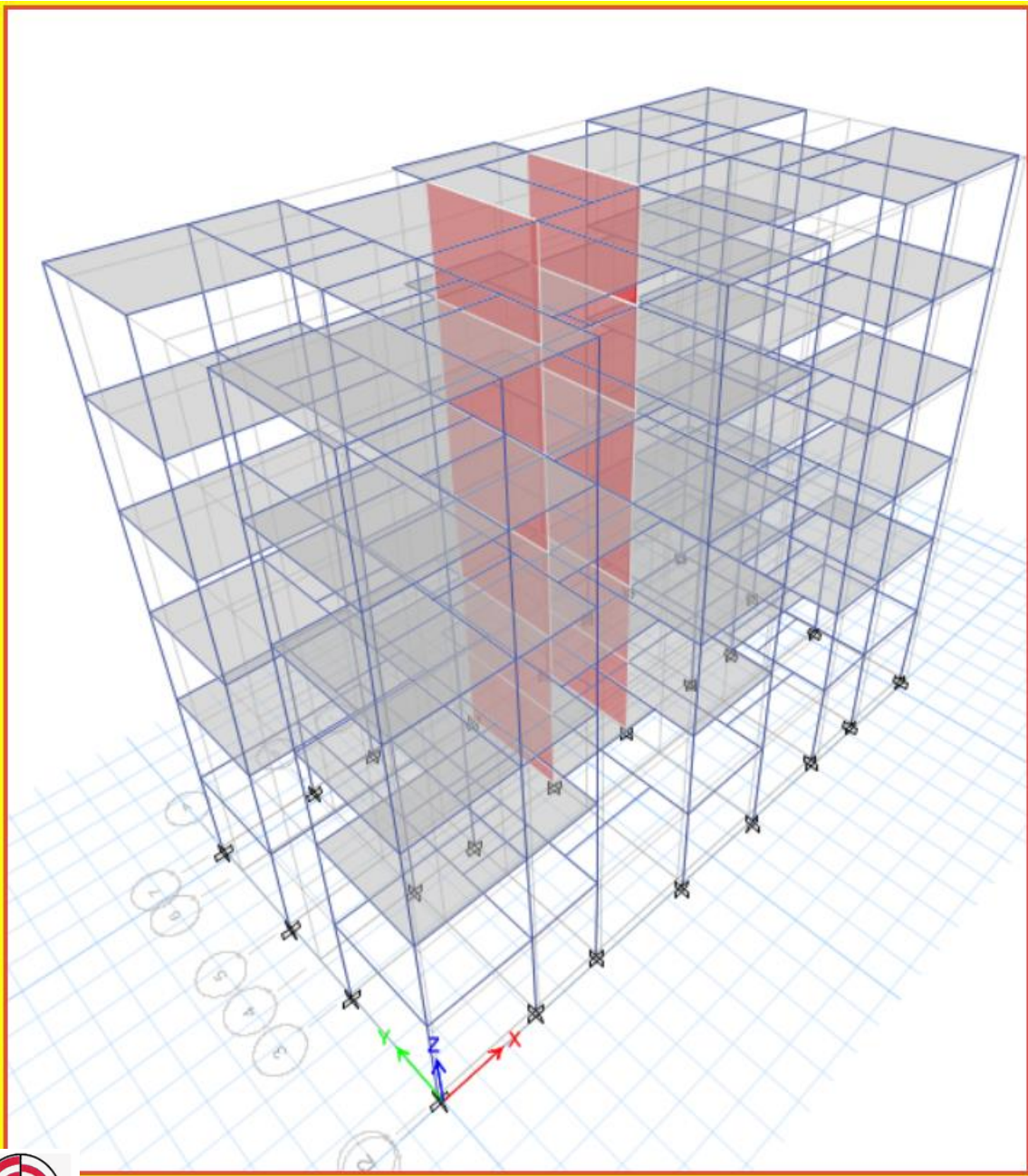
Generate

Once done you can create wind loads based on city

Once done you can create Seismic loads based on city  
 Type of frame and other parameters

Next you can create staad or ETABS file





This way you can create ETABS or STAAD file. Next step is to analyze and design beam , column and shear wall

Once done you can select DRAFTWIN to create drawings and estimation (Concrete, Formwork and reinforcement) for

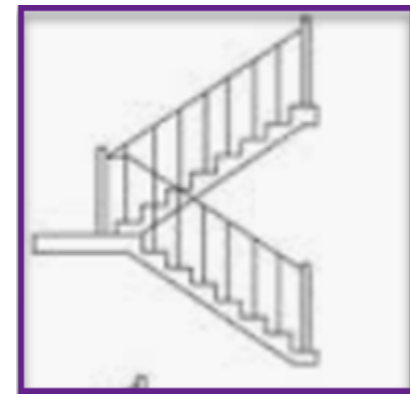
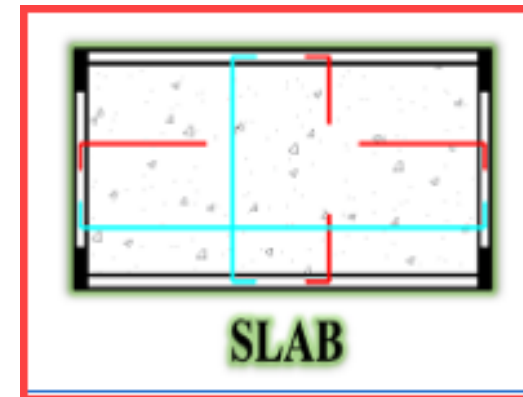
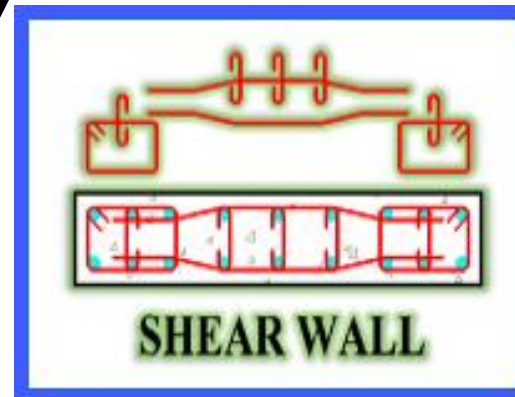
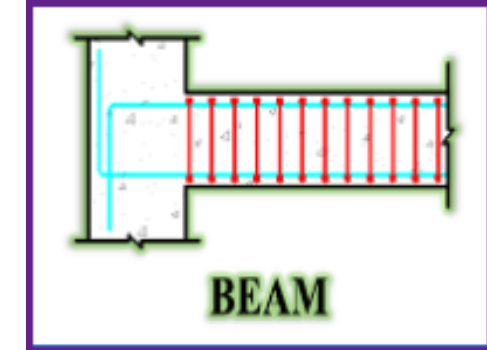
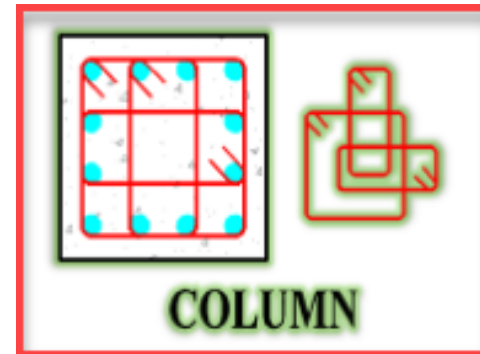
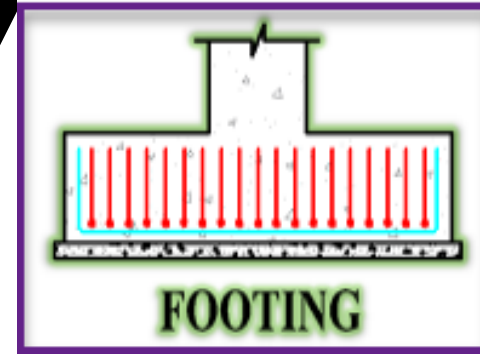
1. Footing (Isolated)
2. Column
3. Beam
4. Shear wall
5. Combine shear wall
6. Slab (Rectangle)
7. Stair Case



# DRAFTWIN

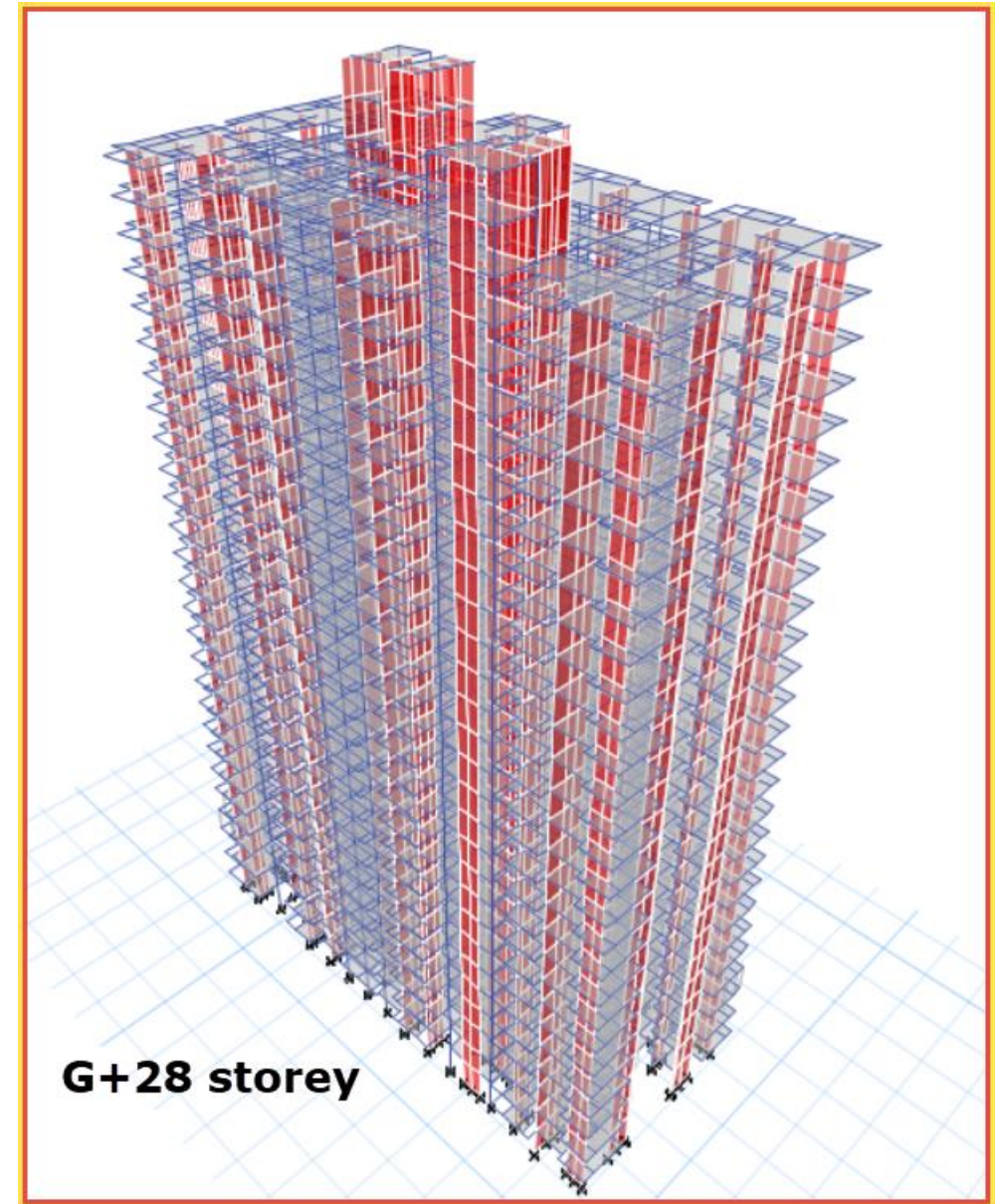
Preparation of drawings is biggest bottle neck.

DRAFTWIN makes drawing at lighting speed about 100 drawings in less than 40 minutes with quantity Concrete, formwork & Reinforcement





Producing drawing for  
building shown would  
have taken  
at least **one month**  
now time is  
reduced to  
**2 days**  
that too with  
quantity for  
concrete  
formwork  
&  
reinforcement



# Drawing for Column

Home File Option Execute Output Help Exit

Input Output

Col No	User Col No	Level	Depth (mm)	Width (mm)	Grade (mm)	% Reqd.	Ast. Reqd. (mm <sup>2</sup> )	Total Bar - Nos.	Reinf.	% Pro.	Ast. Pro. (mm <sup>2</sup> )	Utility %	End Zone	Mid Zone	Remark
C1	C1	S27 T...	750	750	M30	0.8	4500	20	8-T20+12-T16	0.88	4926.02	91.35	T8@75	T8@250	
C2	C2	S26 2...	750	750	M30	0.8	4500	20	8-T20+12-T16	0.88	4926.02	91.35	T8@75	T8@250	
C3	C3	S25 2...	750	750	M30	0.8	4500	20	8-T20+12-T16	0.88	4926.02	91.35	T8@75	T8@250	
C4	C4	S24 2...	750	750	M30	0.8	4500	20	8-T20+12-T16	0.88	4926.02	91.35	T8@75	T8@250	
C5	C5	S23 2...	750	750	M30	0.8	4500	20	8-T20+12-T16	0.88	4926.02	91.35	T8@75	T8@250	
C6	C6	S22 2...	750	750	M30	0.8	4500	20	8-T20+12-T16	0.88	4926.02	91.35	T8@75	T8@250	
C7	C7	S21 1...	750	750	M30	0.8	4500	20	8-T20+12-T16	0.88	4926.02	91.35	T8@75	T8@250	
C8	C8	S2018...	750	750	M30	0.8	4500	20	8-T20+12-T16	0.88	4926.02	91.35	T8@75	T8@250	
C9	C9	S19 1...	750	750	M30	0.8	4500	20	8-T20+12-T16	0.88	4926.02	91.35	T8@75	T8@250	
C10	C10	S18 1...	750	750	M35	0.8	4500	20	8-T20+12-T16	0.88	4926.02	91.35	T8@75	T8@250	
C11	C11	S17 1...	750	750	M35	0.8	4500	20	8-T20+12-T16	0.88	4926.02	91.35	T8@75	T8@250	
C12	C12	S16 1...	750	750	M35	0.8	4500	20	8-T20+12-T16	0.88	4926.02	91.35	T8@75	T8@250	
C13	C13	S15 1...	750	750	M35	0.8	4500	20	8-T20+12-T16	0.88	4926.02	91.35	T8@75	T8@250	
C14	C14	S14 1...	750	750	M35	0.8	4500	20	8-T20+12-T16	0.88	4926.02	91.35	T8@75	T8@250	
C15	C15	S13 1...	750	750	M35	0.8	4500	20	8-T20+12-T16	0.88	4926.02	91.35	T8@75	T8@250	

3

4

750

750

T16

T20

Main Shear

Total No. of Bar 20

No. of Bar X-Dir 6

No. of Bar Y-Dir 6

N1 8

D1(mm) 20

N2 12

D2 (mm) 16

Ast Reqd. (mm<sup>2</sup>) 4500

Ast Prov. (mm<sup>2</sup>) 4926.01

Reset Accept

1 Column No

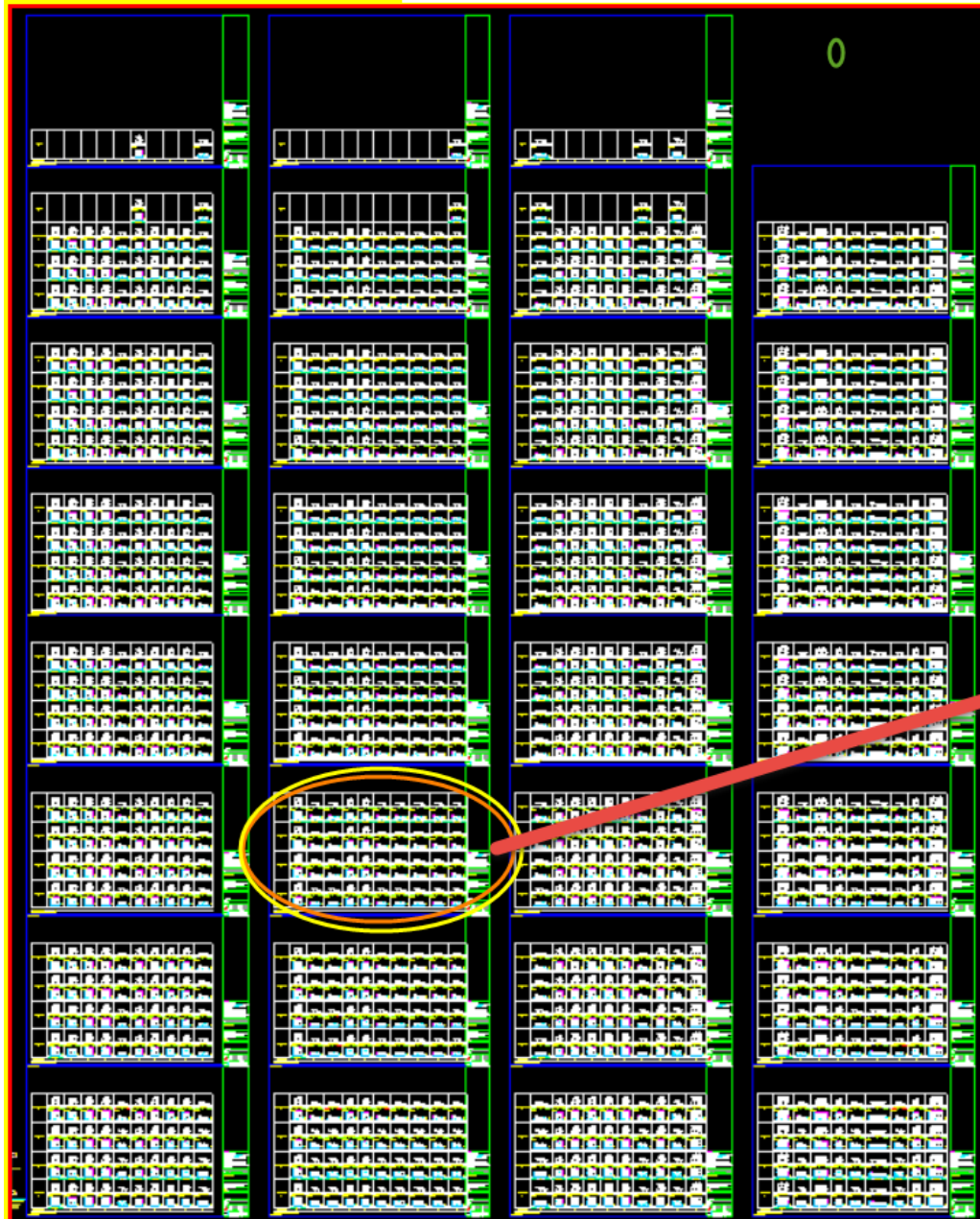
2 Design

3 Cross Sec

4 Edit



## Creating drawings for all columns

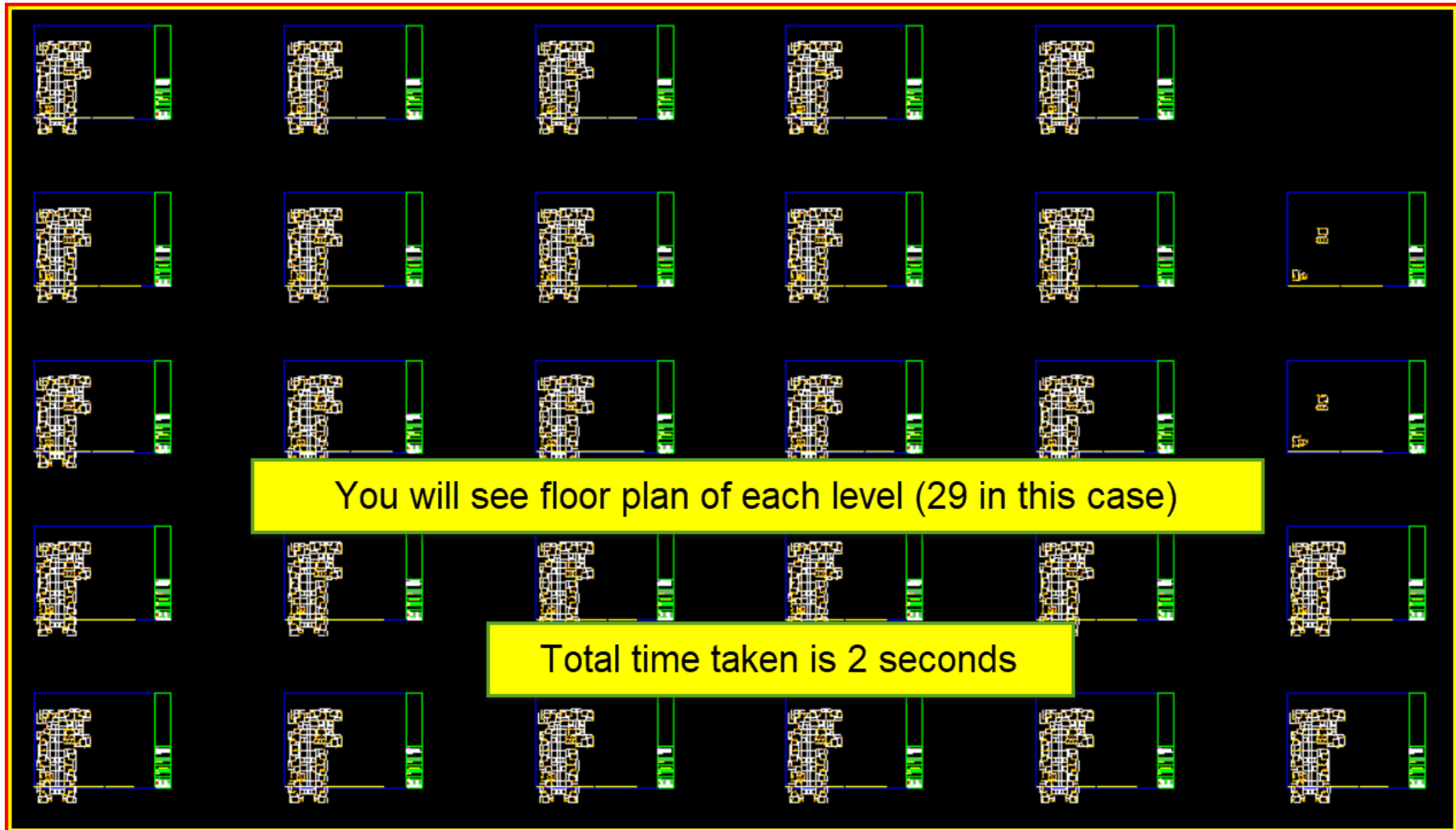


Total Time taken to generate 33 A1 size drawing is 12 Seconds






## Creating layout for each level





# Total quantities

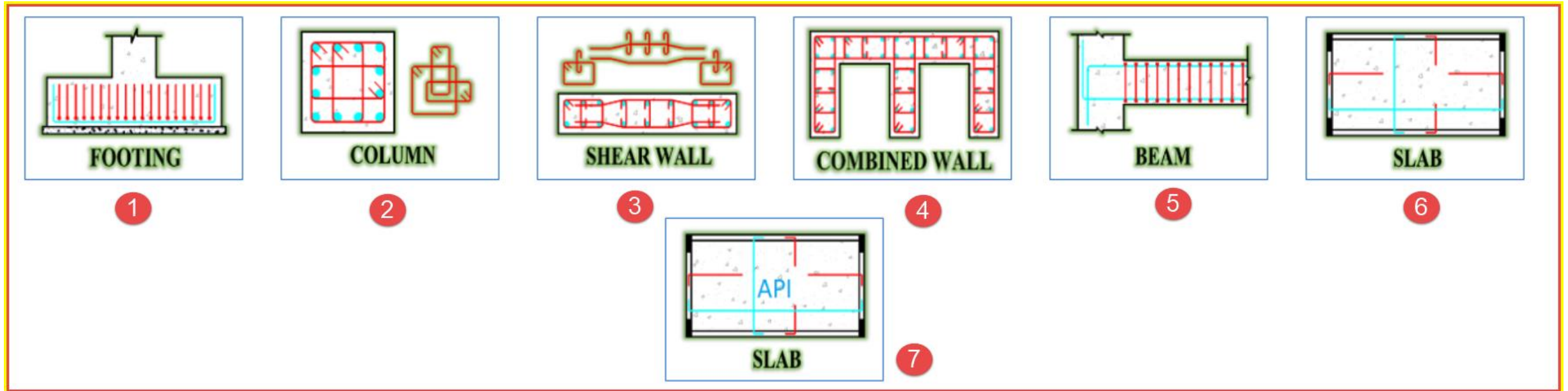


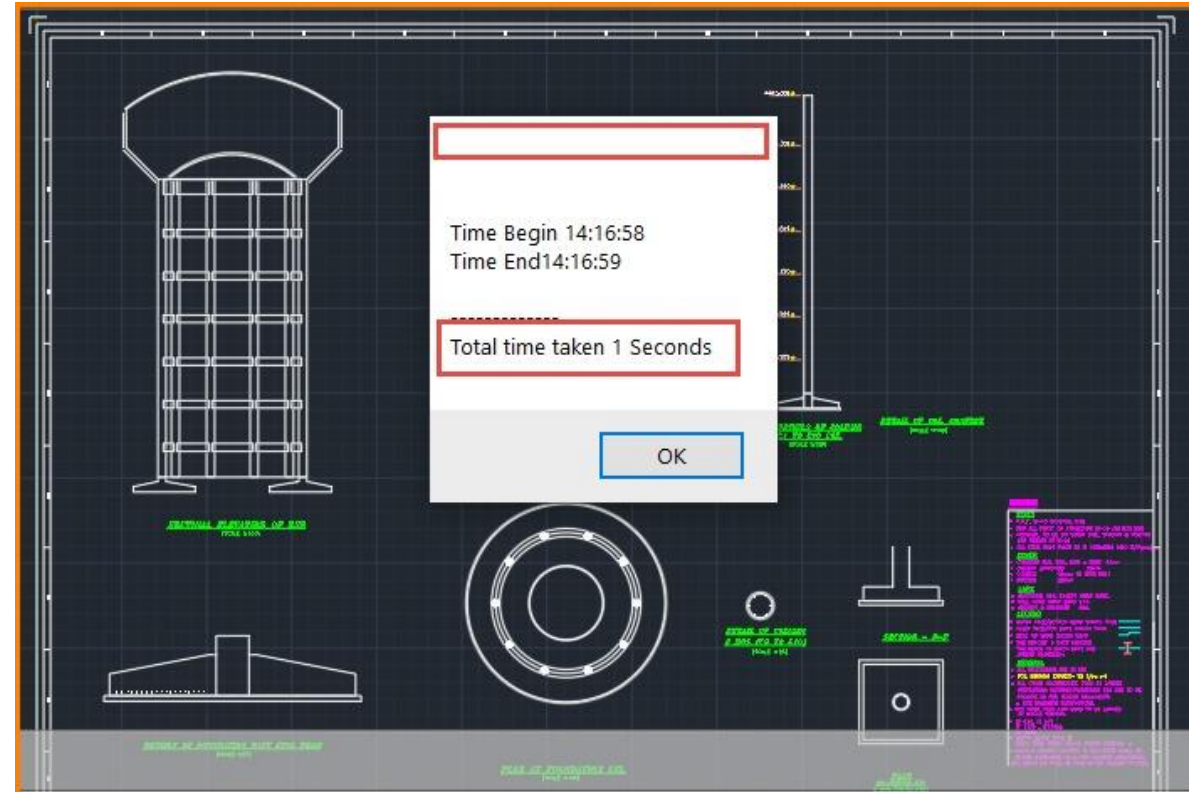
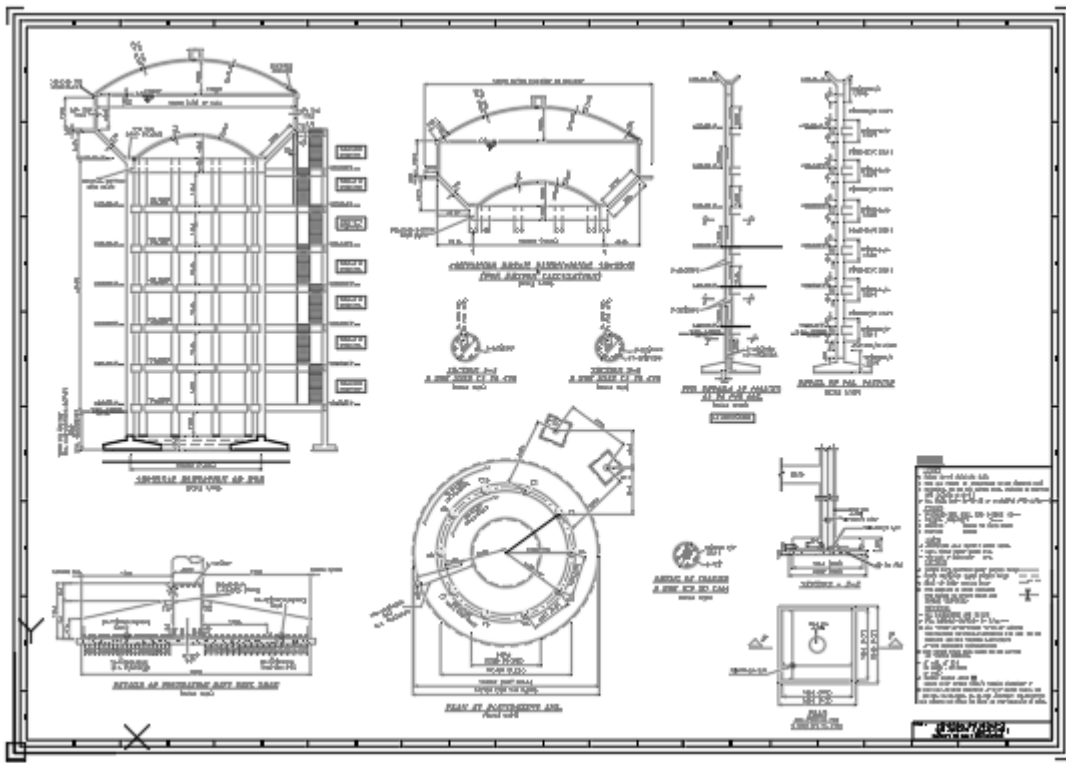
Summary of column quantity (Total, Floor Wise & Column Wise)															
Total Summary															
Concrete Cu.Mt.	Form Work Sq.Mt.	12 Dia Main (KG)	16 Dia Main (KG)	20 Dia Main (KG)	25 Dia Main (KG)	32 Dia Main (KG)	8 Dia Stirrup (KG)	10 Dia Stirrupx (KG)	M30	M35	M40	Total Main Steel Kg	Total stirrup Steel Kg	Total Steel Kg	
1464.973	9081.61	8170.43	64786.08	55692.68	15689.00	7782.38	62043.36	58695.33	480.89	521.18	462.91	152120.57	120738.69	272859.26	

## Table showing quantity for Floor wise

Total Quantity Floor Wise															
LEVEL	Concrete Cu.Mt.	Form Work Sq.Mt.	12 Dia Main (KG)	16 Dia Main (KG)	20 Dia Main (KG)	25 Dia Main (KG)	32 Dia Main (KG)	8 Dia Stirrup (KG)	10 Dia Stirrupx (KG)	M30	M35	M40	Total Main Steel Kg	Total stirrup Steel Kg	
S1 STILT FLOOR	70.371	408.02	55.50	3153.90	3920.23	3898.64	3328.32	1574.75	3885.32	0.00	0.00	70.37	14356.59	5460.07	
S2 PODIUM FLOOR	61.575	357.02	35.30	2294.21	2698.51	1711.58	1508.49	1579.70	3544.05	0.00	0.00	61.58	8248.09	5123.75	
S3 1ST FLOOR	70.371	408.02	30.74	2380.36	3086.16	2935.36	1550.71	1946.85	3530.56	0.00	0.00	70.37	9983.34	5477.42	
S4 2ND FLOOR TYPICAL	52.118	325.62	38.36	1271.80	2833.42	2850.82	929.90	1160.53	3654.15	0.00	0.00	52.12	7924.31	4814.69	
S5 3RD FLOOR	52.118	325.62	63.94	1624.29	2986.87	1998.85	348.71	1148.13	3701.11	0.00	0.00	52.12	7022.66	4849.24	
S6 4TH FLOOR	52.118	325.62	108.70	1926.91	3096.71	884.74	116.24	1357.50	3457.49	0.00	0.00	52.12	6133.29	4815.00	
S7 5TH FLOOR	52.118	325.62	172.63	2322.05	2408.10	491.52	0.00	1654.98	3082.47	0.00	0.00	52.12	5394.29	4737.45	
S8 6TH FLOOR REFUGE	52.118	325.62	193.02	2315.64	2427.83	393.22	0.00	1711.46	2999.43	0.00	0.00	52.12	5329.72	4710.89	
S9 7TH FLOOR	52.118	325.62	193.02	2315.64	2427.83	393.22	0.00	2608.16	1561.18	0.00	52.12	0.00	5329.71	4169.34	
S10 8TH FLOOR	52.118	325.62	311.90	2471.62	1993.59	131.07	0.00	2613.50	1559.85	0.00	52.12	0.00	4908.18	4173.35	

Similarly to column, draftwin works out quantity for all element as shown below





Above drawing used to take about **2 days** to make  
For draft man to make and about 2 hours for engineer  
To check.

After automation time is reduced to **4 seconds**



# LINKING SPREAD SHEET WITH ETABS...

A	B	C	D	E	F	G	H	I	J	K	L
1	<b>LINKING YOUR SPREAD SHEET WITH ETABS</b>										
2	S1										
3											
4											
5	Units			mm							
6	Total thickness of slab D =			200	mm			b	1000	mm	
7	Clear Shorter dim. of pane Lx =			1825	mm			D	200	mm	
8	Clear Longer dim. of pane Ly =			5375	mm			Lex	2000	mm	
9	Choose condition of panel			One short edge discontinuous				Ley	5550	mm	
10	Floor finish load FL			12	kN/m <sup>2</sup>			d	175	mm	
11	Live load LL			2	kN/m <sup>2</sup>			W	19.5	kN/m <sup>2</sup>	
12	Additional load			0.5	kN/m <sup>2</sup>		<b>ONE WAY SLAB</b>	ly/lx	2.775		
13	Dead load DL			5	kN/m <sup>2</sup>		1	Alpha X		(Positive)	
14	Concrete Grade			M30				Alpha Y		(Positive)	
15	Steel Grade			Fe500							
16	<b>Short Span Positive Steel (bottom)</b>					<b>Short Span Negative Steel (top)</b>					<b>Lo</b>
17											
18	M	6.633				M					M
19	1.5*M	9.950				1.5*M					1.5*M
20	pt	0.120	0.076014462			pt					pt
21	Ast req	<b>240.00</b>	mm <sup>2</sup>			Ast req		mm <sup>2</sup>			Ast req
22											
23	Spacing 8 tor		209.46	mm		Spacing 8 tor		mm			Spacing 8 tor
24	Spacing 10 tor		327.08	mm		Spacing 10 tor		mm			Spacing 10 tor
25	Spacing 12 tor		470.83	mm		Spacing 12 tor		mm			Spacing 12 tor
26											
27	<b>Check for Deflection</b>										

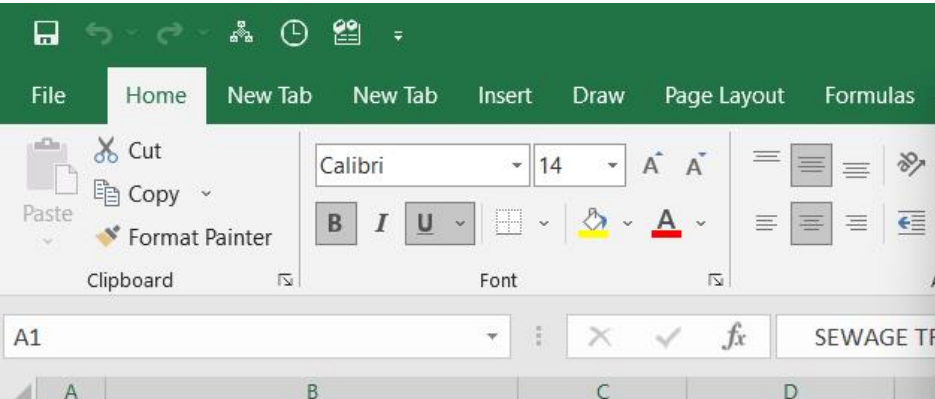
Many consultants have their own spread sheet for designing, but giving data for each load case or each element become cumbersome and time consuming.

For example adjacent spread sheet used to take about 5 minutes. We are in position to link their data cells with ETABS and which can speed up data entry more than 100 times






# DESIGN OF STP (We also offer services to make spread sheet as consultant's requirement)



SPT Design

General Input | Raw Sewege | **Raw Sewege Collection** | Stilling/Bar screen/Oil trap chambers | Equilization tank | Anoxic tank | MBBR Tank and Media | Air & Diffuser calcul



**Peak Flow Duration (hours)**

**Liquid Water Depth (Meter)**

**Depth of Last Invert Level-Entry point into Collection Sump (Meter)**

**SEWAGE TREATMENT PLANT SIZING & CAPACITY CALCULATION**

1. The values in the below given calculations have been arrived on the basis of CPHEEO related criteria and standard objectives.

2. The final values of Sumps/sizes have been changed/moderated to fulfill the geometrical construction, with a view to optimize footprint, while keeping the capacities same or more.


3. The details in this document shall be read in conjunction with relevant specifications.

4. Values in Blue need to be filled by user.

5. Values in Yellow will be calculated automaticall based on standard

Sr No	Parameter	Value	
<b>1. GENERAL INPUT</b>			
	(A) Design Capacity	0.30	MLD
		300.00	Cum/day
	Average Flow rate	12.50	Cum/hr
	Peak Factor	4.00	Cum/hr
	Peak Flow rate	50.00	Cum/hr

General Input | Raw Sewege | Raw Sewege Collection | Stilling/Bar screen/Oil trap chambers | Equilization tank | Anoxic tank | **MBBR Tank and Media** | Air & Diffu



**Carrier (Media) Spec. Surf Area (m2/m3)**

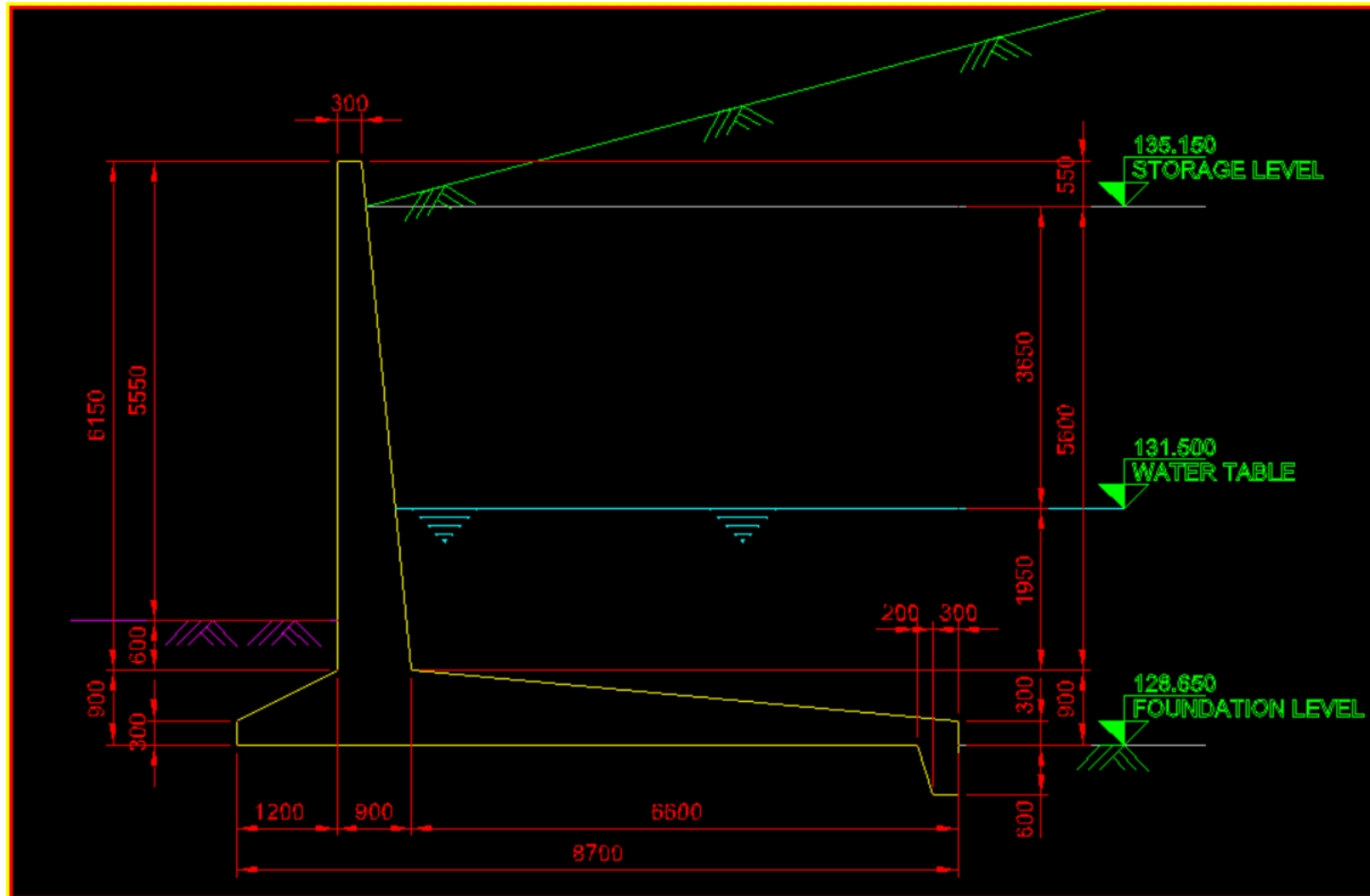
**Design Carrier Fill (%)**

**Design Value of SALR (g/m2/day)**

**HRT (Hyd Retention Time) in Reactor (Hours)**



# Design of retaining wall with calculations, drawing and estimation



# Design of retaining wall with calculations, drawing and BOQ

$$C_a = \frac{(1 \pm \alpha_v) \cos^2(\phi - \lambda - \alpha)}{\cos \lambda \cos^2 \alpha \cos(\delta + \alpha + \lambda)} \left[ \frac{1}{1 + \left\{ \frac{\sin(\phi + \delta) \sin(\phi - \iota - \lambda)}{\cos(\alpha - \iota) \cos(\delta + \alpha + \lambda)} \right\}^{\frac{1}{2}}} \right]$$

For (1- $\alpha_v$ ) case,

$$\lambda = \tan^{-1} \frac{\alpha_h}{1 \pm \alpha_v}$$

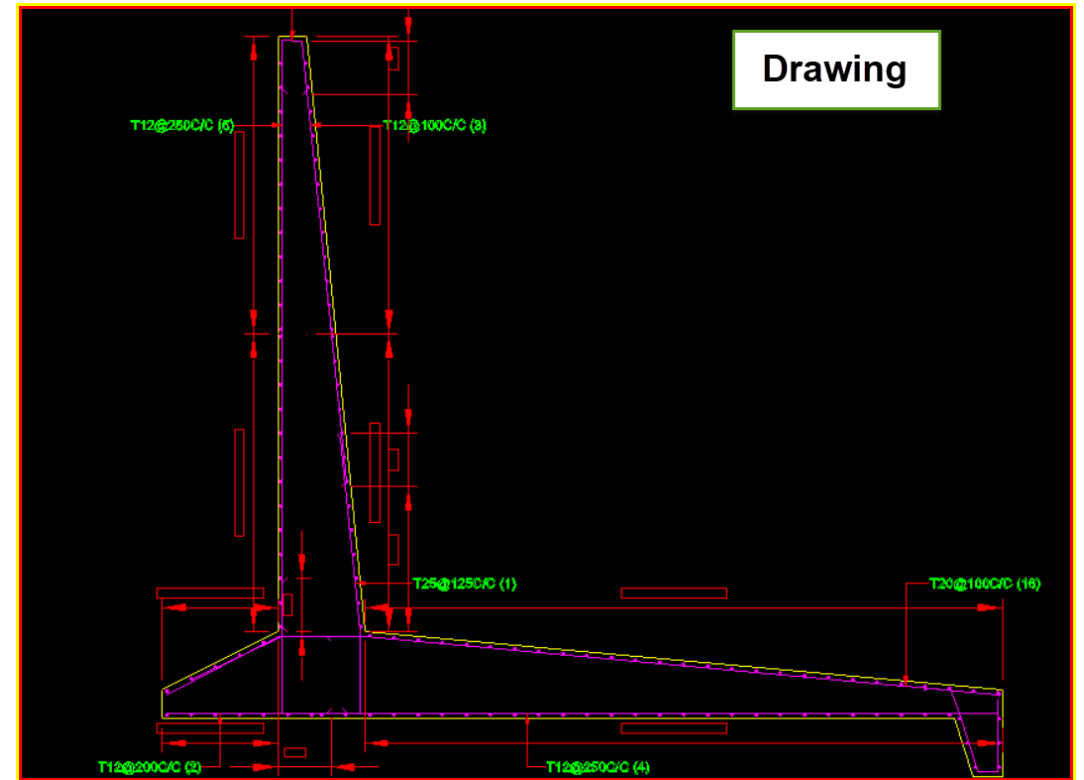
$$C_a = \frac{(1 \pm \alpha_v) \cos^2(\phi - \lambda - \alpha)}{\cos \lambda \cos^2 \alpha \cos(\delta + \alpha + \lambda)} \left[ \frac{1}{1 + \left\{ \frac{\sin(\phi + \delta) \sin(\phi - \iota - \lambda)}{\cos(\alpha - \iota) \cos(\delta + \alpha + \lambda)} \right\}^{\frac{1}{2}}} \right]^2$$

## BILL OF QUANTITIES

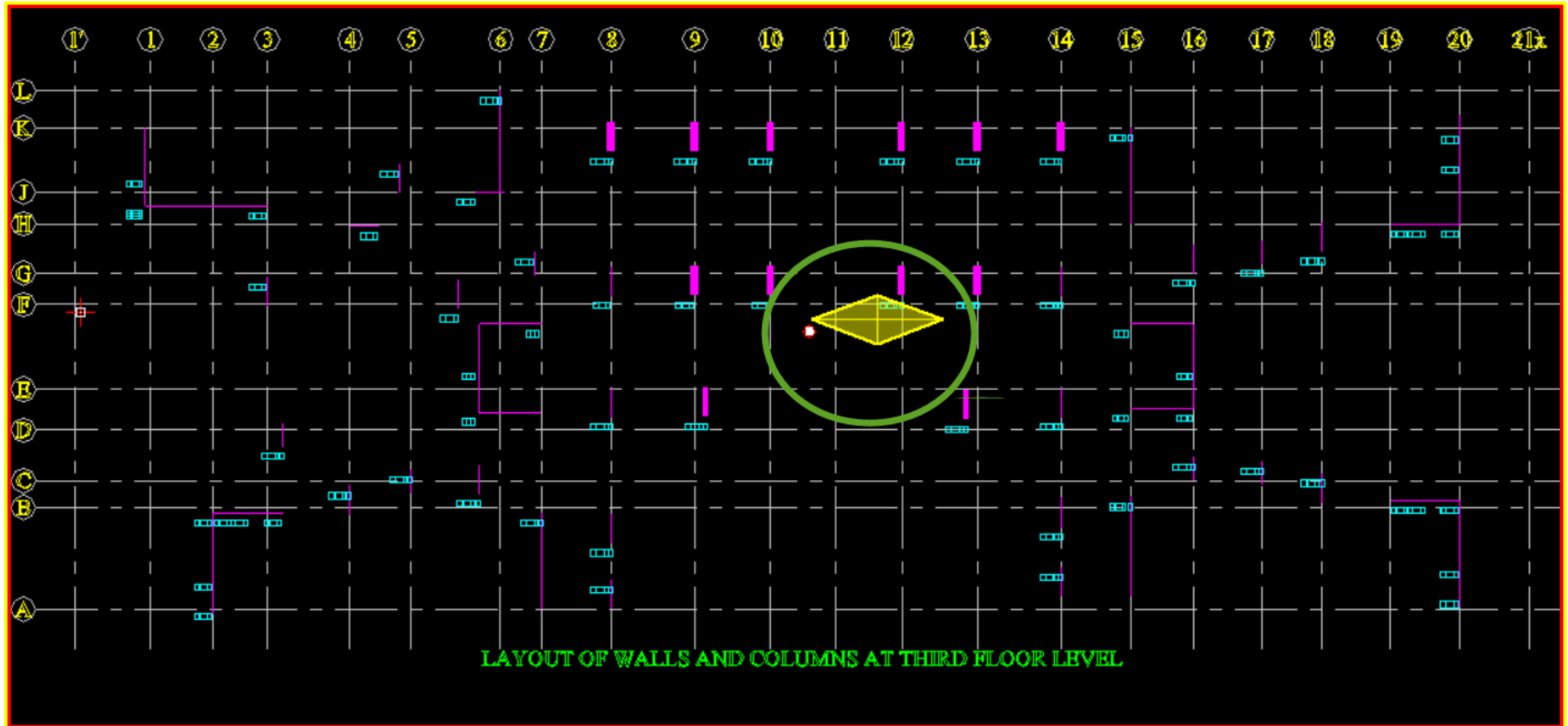
### Concrete Quantities:

**Table 5.1 Concrete Quantity (per m length of wall)**

Sl. No.	Item Description	Concrete (M30)	Form work
		( $m^3$ )	( $m^2$ )
1.	Stem wall	3.69	12.30
2.	Heel slab	3.96	0.30
3.	Toe slab	0.72	0.30
	<b>Total</b>	<b>8.37</b>	<b>12.90</b>



# Wall Planner



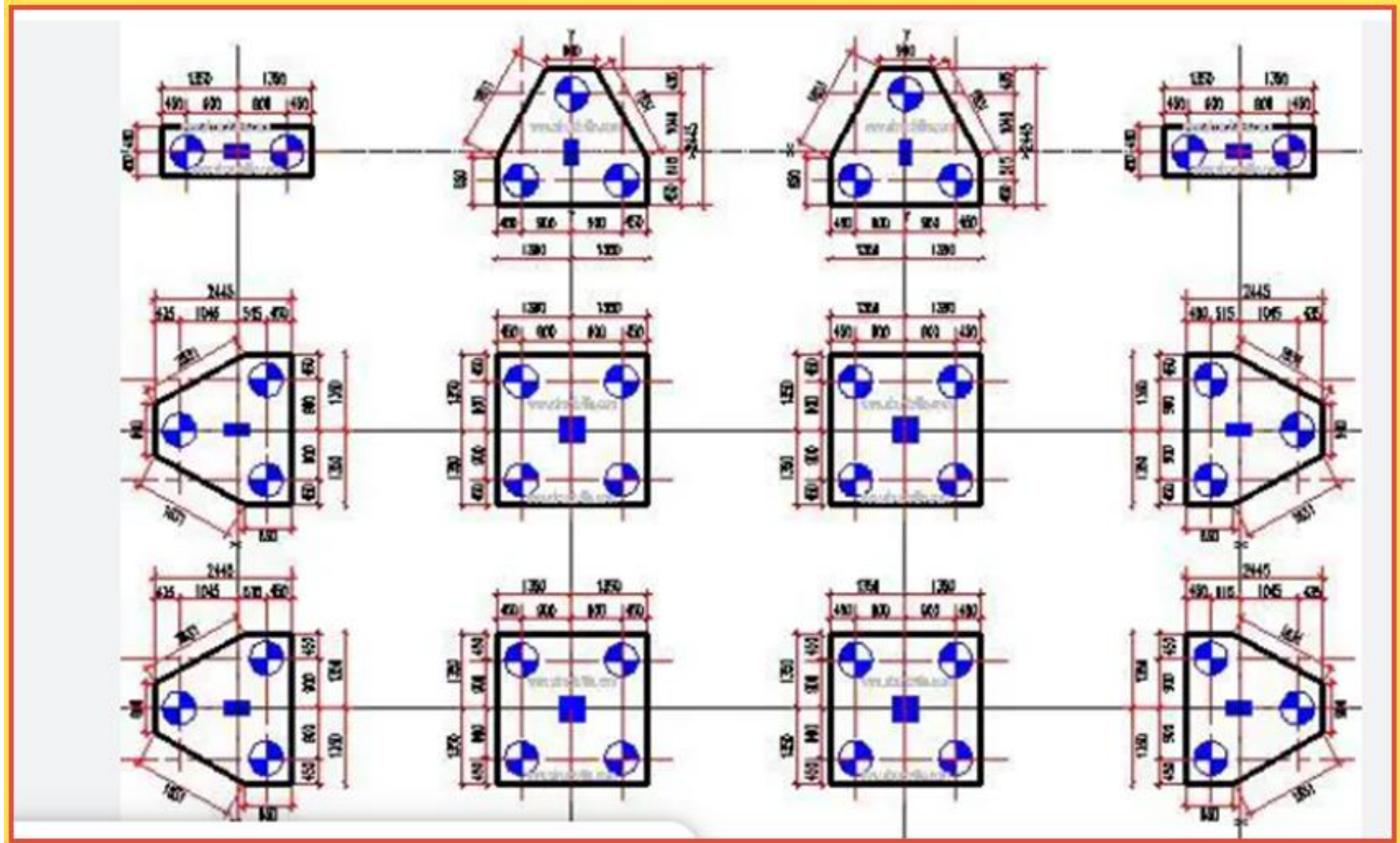
In building design torsion mode is not allowed in first mode. Many a time engineer has to waste lot of times to rearrange shear wall and columns to get rid of torsion mode. With wall planner just after preparation of data, engineer can locate the shear wall and column and graphically make sure that center of mass and geometry are within permissible limit to avoid torsion mode





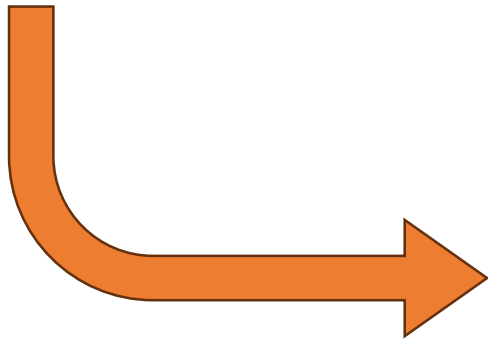


PLACD software reads data from ETABS and works out best possible pile combination based on type of piles and costing given for piles



Creating tables in any cad software is very time consuming procedure. EXPORT **EXCEL TO CAD** software reads data from **EXCEL sheet** and converts into CAD object in **less than 2 Seconds**

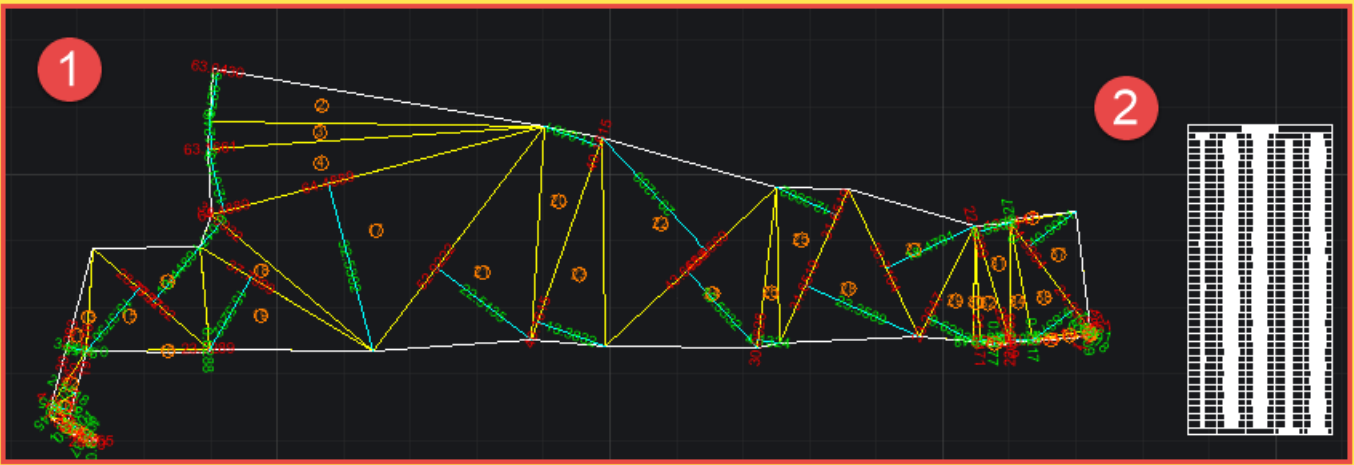
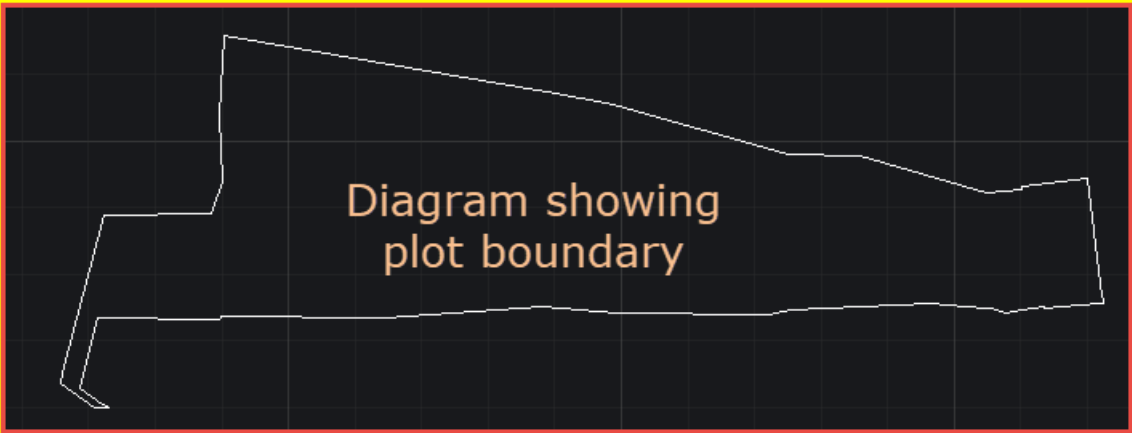
Level	Beam No.	Depth	Width	Span	Top Left	Ast Top Le	Top Mid	Ast Top M	Top Right	Ast Top Rig	Bot Left
01 1ST											
	B61	600	230	4969	'2-16	259	'2-16	259	'2-16	322	'2-16
	B62	600	230	3591	'2-16	281	'2-16	259	'2-16	259	'2-16
	B56	600	230	4969	'2-16/+2-1	509	'2-16	259	'2-16/+2-1	772	'2-16/+2-1
	B57	600	230	3591	'2-16/+2-1	558	'2-16	259	'2-16/+2-1	524	'2-16
	B55	400	150	1350	'2-10	101	'2-10	101	'2-10	101	'2-10
	B50	600	230	4949	'2-20/+2-1	1002	'2-16	259	'2-16	259	'2-16/+2-1
	B47	600	230	4649	'2-20/+2-1	896	'2-20	259	'2-20/+2-2	1130	'2-16/+2-1
	B48	600	230	3221	'2-20/+2-2	662	'2-20	448	'2-20/+2-2	1108	'2-16/+2-1
	B44	400	150	2240	'2-10	101	'2-10	101	'2-10	101	'2-10



Desc	Desc	Desc	Desc	Desc	Desc	Desc	Desc	Desc	Desc	Desc	Desc
Level	Beam No.	Depth	Width	Span	Top Left	Ast Top Left	Top Mid	Ast Top Mid	Top Right	Ast Top Right	Bot Left
01 1ST											
	B61	600	230	4969	'2-16	259	'2-16	259	'2-16	322	'2-16
	B62	600	230	3591	'2-16	281	'2-16	259	'2-16	259	'2-16
	B56	600	230	4969	'2-16/+2-12	509	'2-16	259	'2-16/+2-16	772	'2-16/+2-16
	B57	600	230	3591	'2-16/+2-16	558	'2-16	259	'2-16/+2-12	524	'2-16
	B55	400	150	1350	'2-10	101	'2-10	101	'2-10	101	'2-10
	B50	600	230	4949	'2-20/+2-16	1002	'2-16	259	'2-16	259	'2-16/+2-12
	B47	600	230	4649	'2-20/+2-16	896	'2-20	259	'2-20/+2-20	1130	'2-16/+2-16
	B48	600	230	3221	'2-20/+2-20	662	'2-20	448	'2-20/+2-20	1108	'2-16/+2-16
	B44	400	150	2240	'2-10	101	'2-10	101	'2-10	101	'2-10



All CAD package can give area of any plot. However most of Government agency insist of breaking plot area into number of triangles and ask for summation of area of all triangle. This again takes lot of time. Our software TRIANGULATION breaks irregular polyline into number of triangles and give table showing area in less than 5 seconds



AREA TABLE				
SR.NO	BASE	HEIGHT	AREA	
1	12.3447	0.5527	0.5	3.4113
2	63.0430	9.4270	0.5	309.7603
3	63.1661	5.1246	0.5	161.8507
4	64.4889	12.0113	0.5	387.2986
5	2.6866	0.8106	0.5	1.0888
6	3.6463	1.5837	0.5	2.8965
7	4.2317	1.6845	0.5	3.5641
8	7.9219	1.3416	0.5	5.3141
9	4.7078	0.6601	0.5	1.5186
10	5.1964	3.7035	0.5	9.6223
11	30.4283	3.6095	0.5	54.9160
12	12.0660	2.5518	0.5	15.3951
13	19.2776	0.1155	0.5	1.1129
14	28.7782	13.4489	0.5	193.6173
15	28.7782	15.3730	0.5	221.2040
16	23.0269	0.6268	0.5	5.8426
17	64.4889	32.5392	0.5	1048.9182
18	39.6932	6.0171	0.5	119.4187
19	37.7999	15.5202	0.5	293.3306
20	40.1615	11.0491	0.5	221.8736
21	62.9222	22.5135	0.5	595.7321
22	43.6669	29.1200	0.5	635.7906
23	40.1615	13.3832	0.5	268.7447
24	43.6669	19.5332	0.5	426.4776
25	31.6519	12.3902	0.5	196.0860
26	30.0526	4.1324	0.5	62.1147
27	30.7164	18.4791	0.5	283.8056
28	31.6519	23.3589	0.5	369.6766
29	23.2647	9.6203	0.5	111.9071
30	21.8471	1.1848	0.5	12.9421
31	22.9099	6.6903	0.5	75.4912
32	22.9099	5.4869	0.5	62.8411
33	6.7622	0.7177	0.5	2.4579
34	22.4963	4.1007	0.5	46.0434
35	10.3863	0.2217	0.5	1.1514
36	1.2487	0.6718	0.5	0.3570
37	24.9964	10.9991	0.5	137.4691
38	24.9964	8.8374	0.5	122.5480
39	10.9661	1.2309	0.5	6.7484
40	1.9934	0.5461	0.5	0.3804
Total area			6484.1202	

Total area 6484.1202



**We also provide services to create BBS (Bar bending schedule) and working our quantities for the whole building including structural as well as civil quantities**

### Structural quantities include

- Excavation
- Concrete quantities
- Reinforcement quantities
- Formwork

### Civil quantities include

- Masonry walls
- Doors / windows / opening
- Plaster / painting
- Tiles
- Water Proofing

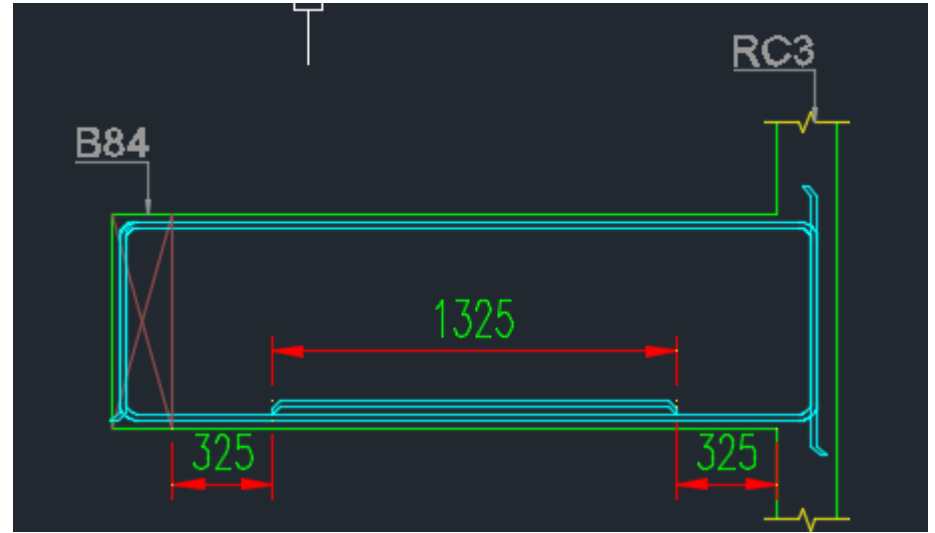
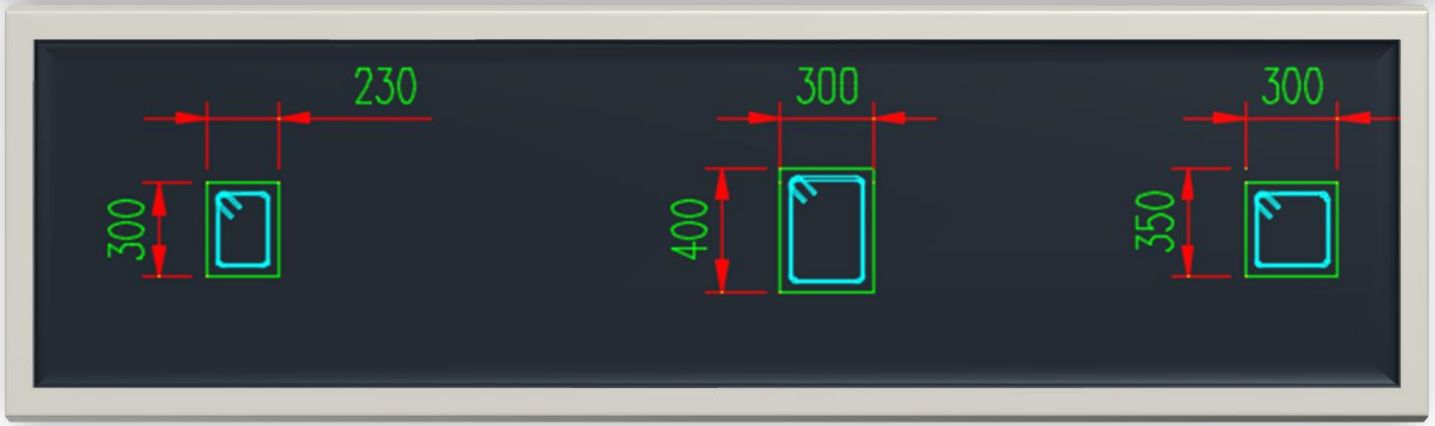
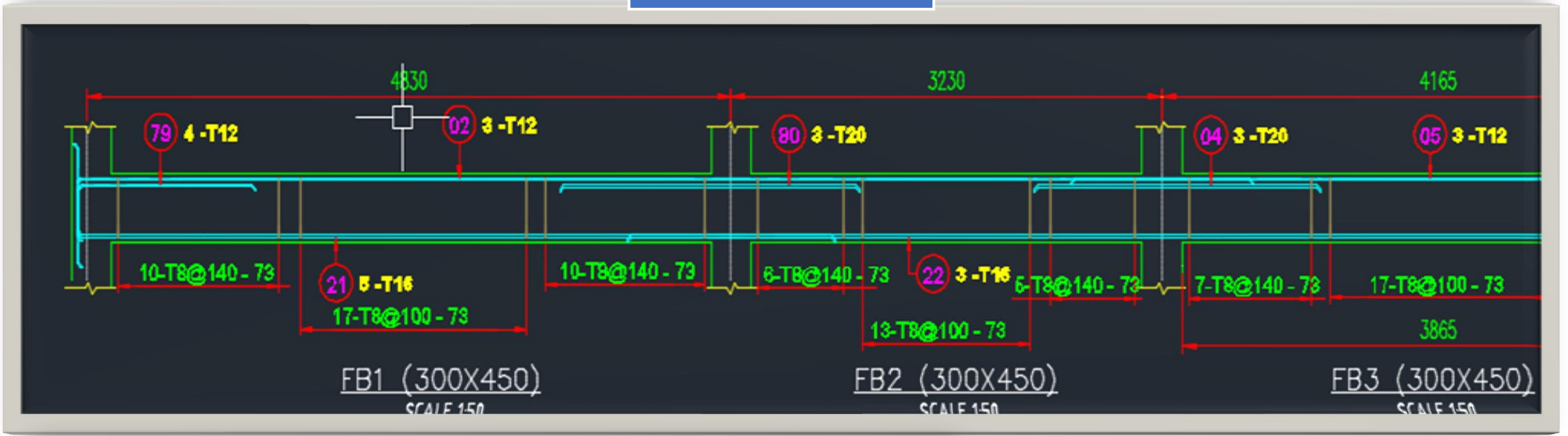
# WHY BBS

## Bar Bending Schedule

- **1) COMPLETE CUT LENGTH OF EACH BAR**
- **2) REDUCES THE WASTE IN STEEL BAR**
- **3) ASSIST IN STOCK MANAGEMENT**
- **4) ASSIST IN PRODUCING BILL**

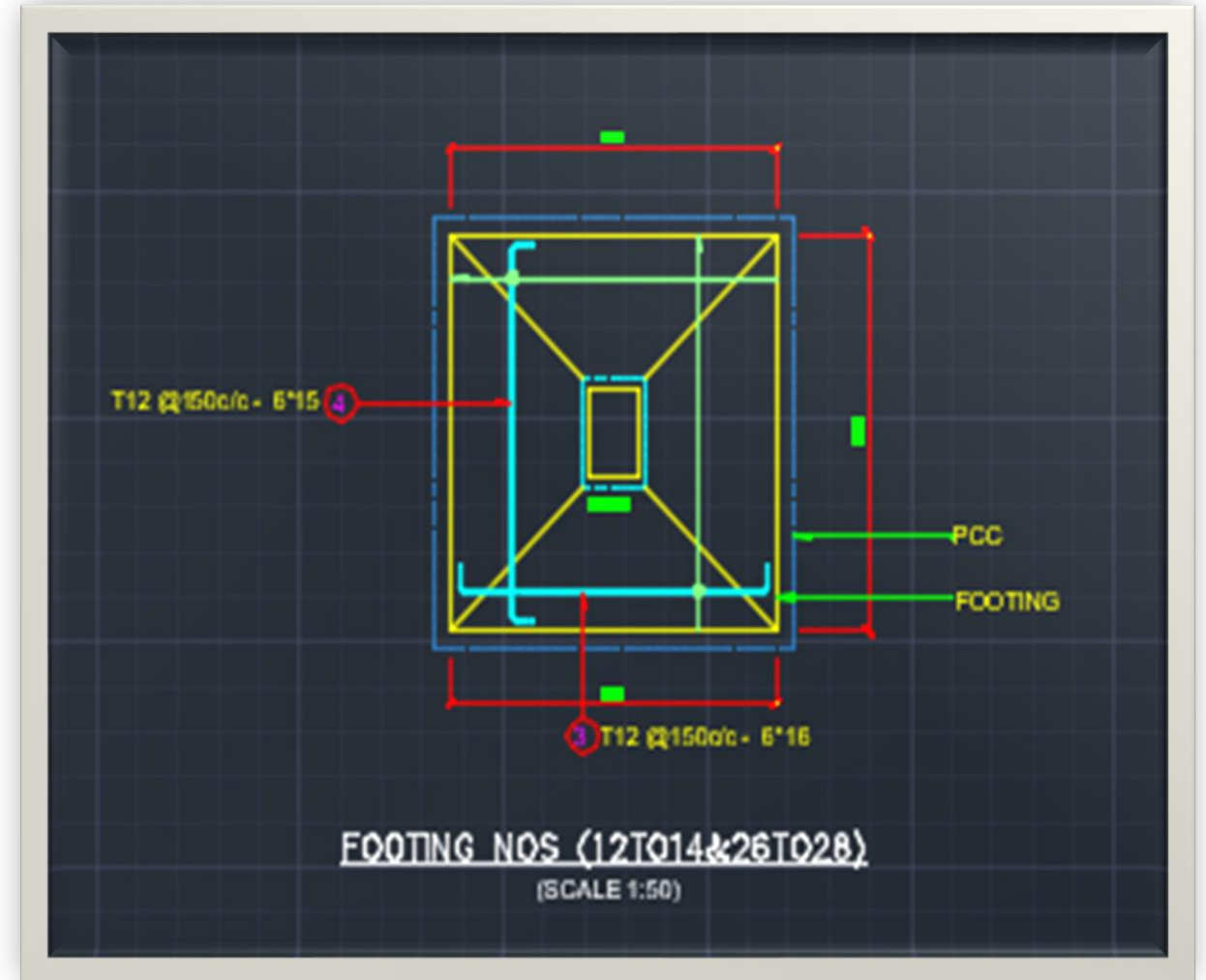
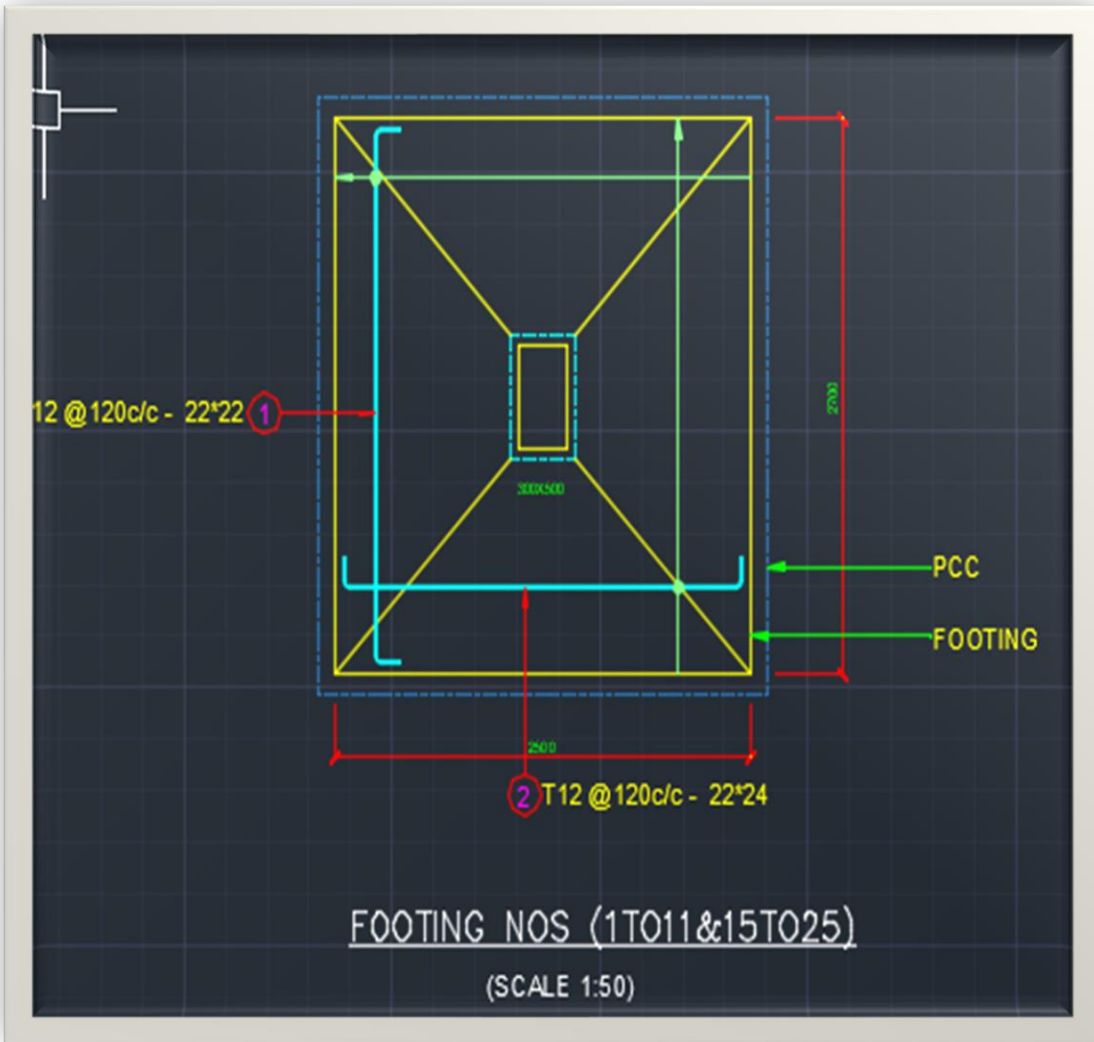


# BEAM BBS





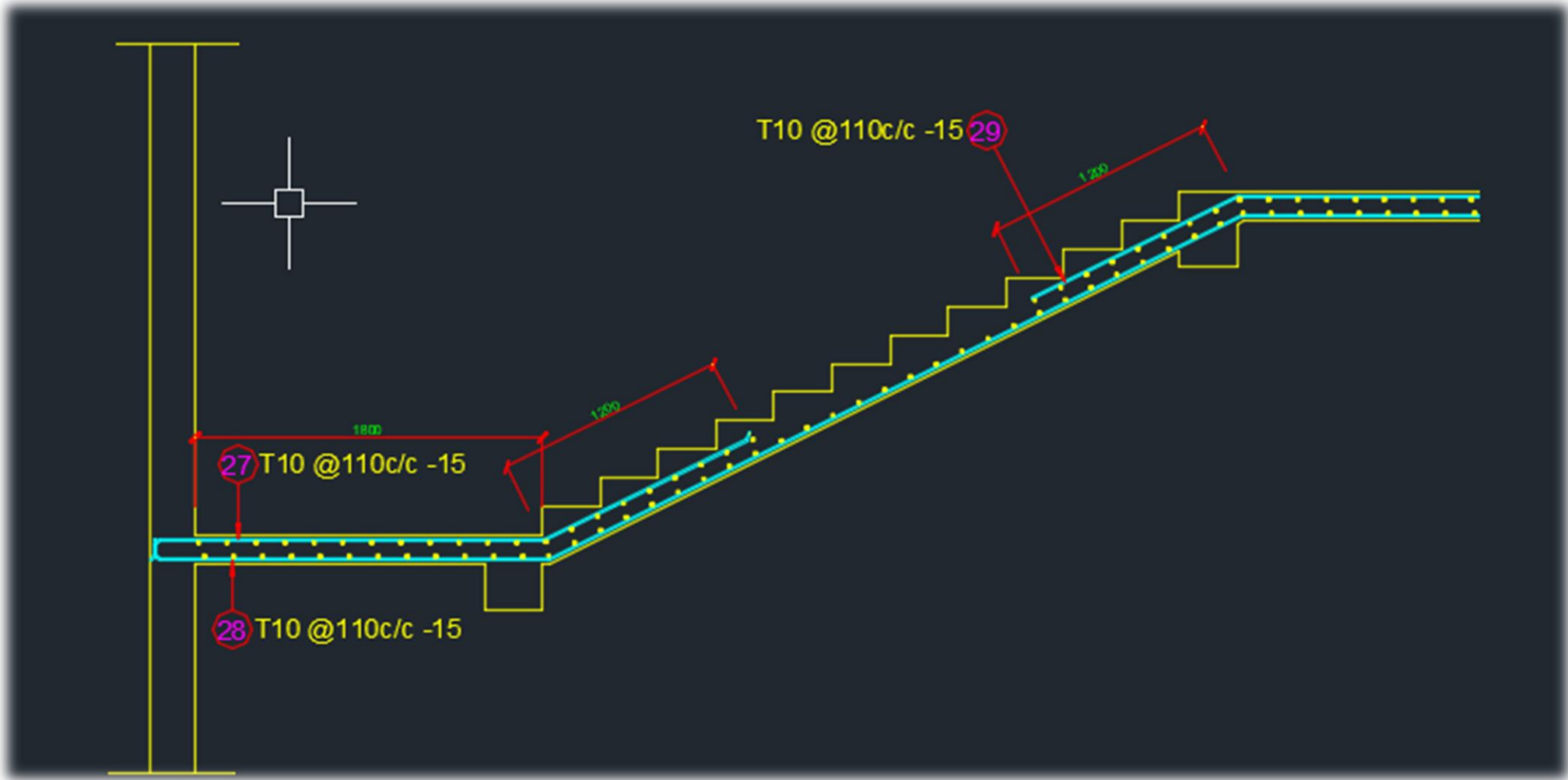
# FOOTING BBS



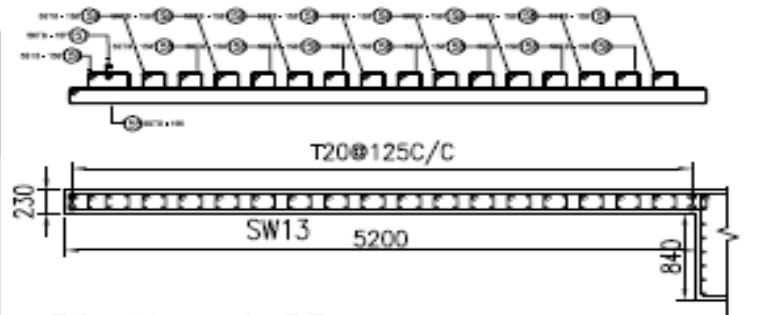




# STAIRCASE BBS

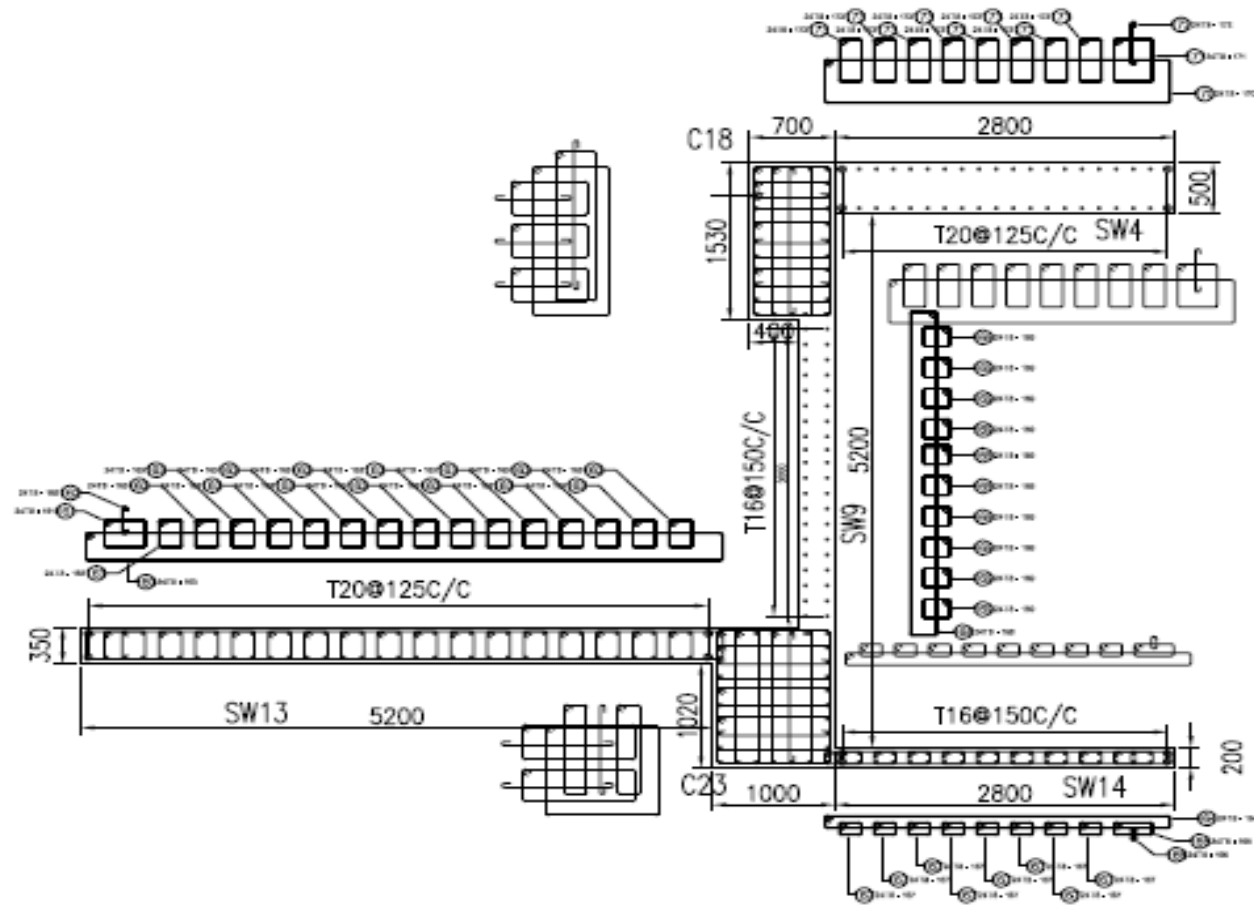


# BBS FOR SHEAR WALL



B2 LEVEL TO P3  
SLAB LEVEL GRADE  
OF CONCRETE-M50

FOUNDATION TOP  
TO B2 LEVEL  
GRADE OF  
CONCRETE-M50

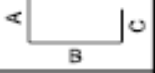
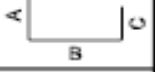
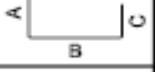
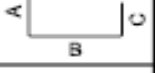


SW4, SW9, SW14, C18, C23



# BAR BENDING SCHEDULE

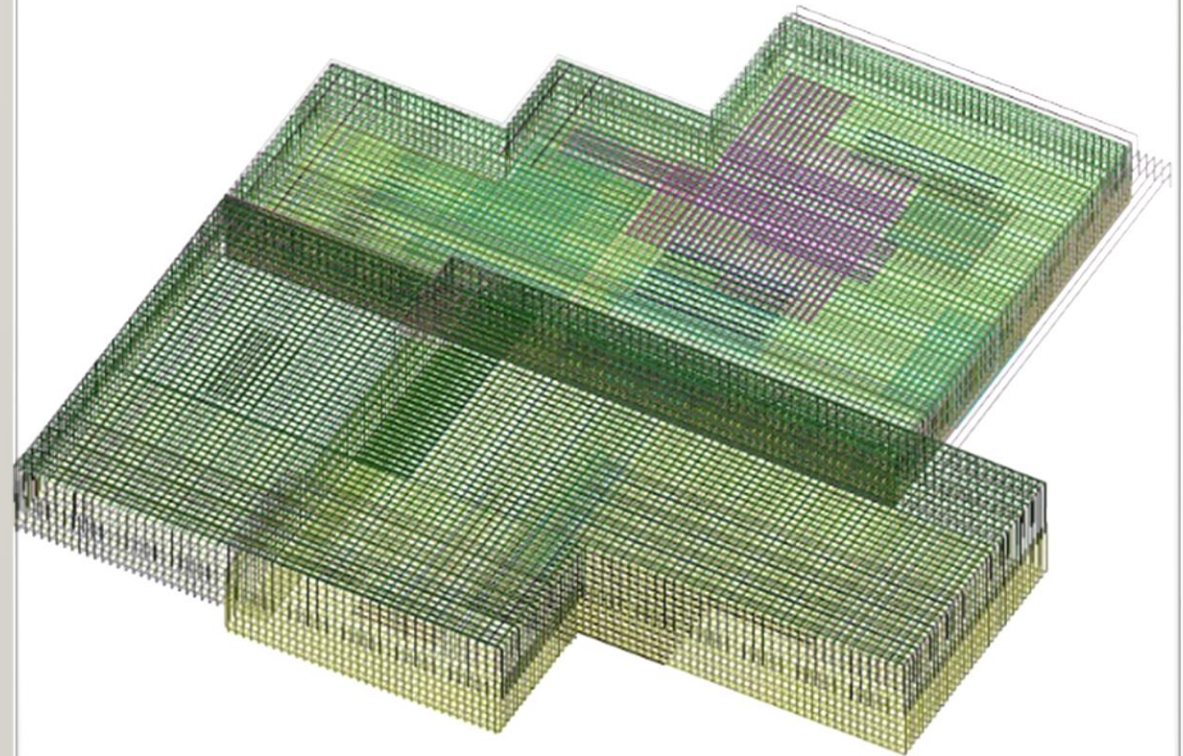
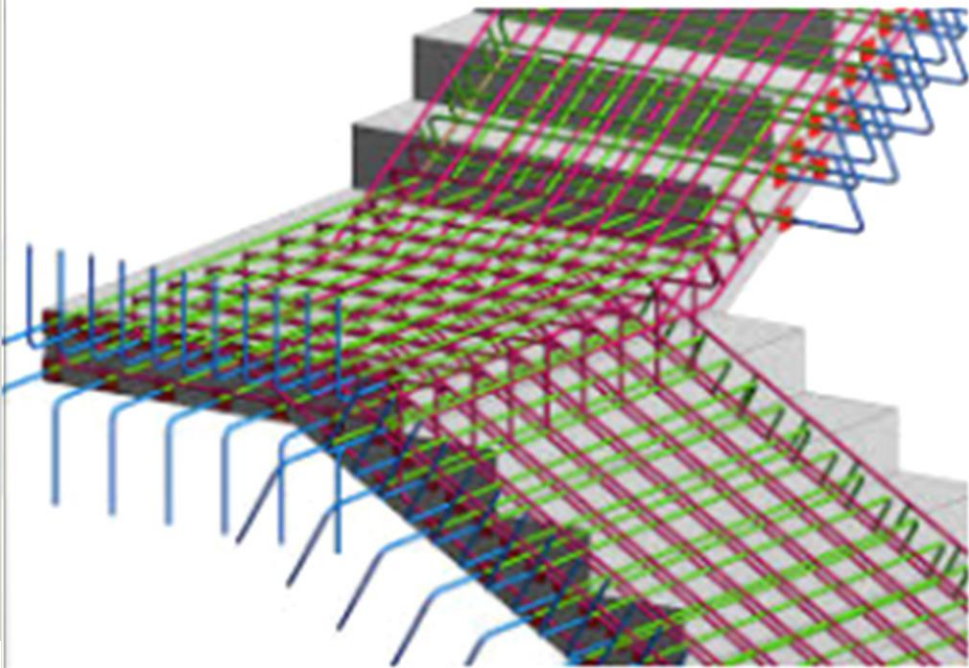
REINFORCEMENT SCHEDULE FOR - FOOTING DETAIL

Bar mark	No. of bars	Diam. In mm	Length In mm	Subtotal (mm)	Subtotal by steel grade and bar diameter (mm)						Symbol (mm)	A (mm)	B (mm)	C (mm)	Mass (kg)	Revision
					Fe500											
					T 8	T 10	T 12	T 16	T 20	T 25						
01	9	16	2466.00	22194				22194				400	1734	400	35.067	
02	13	16	1966.00	25558				25558				400	1234	400	40.382	
03	7	12	2483.00	17381			17381					400	1733	400	15.434	
04	10	12	1983.00	19830			19830					400	1234	400	17.609	

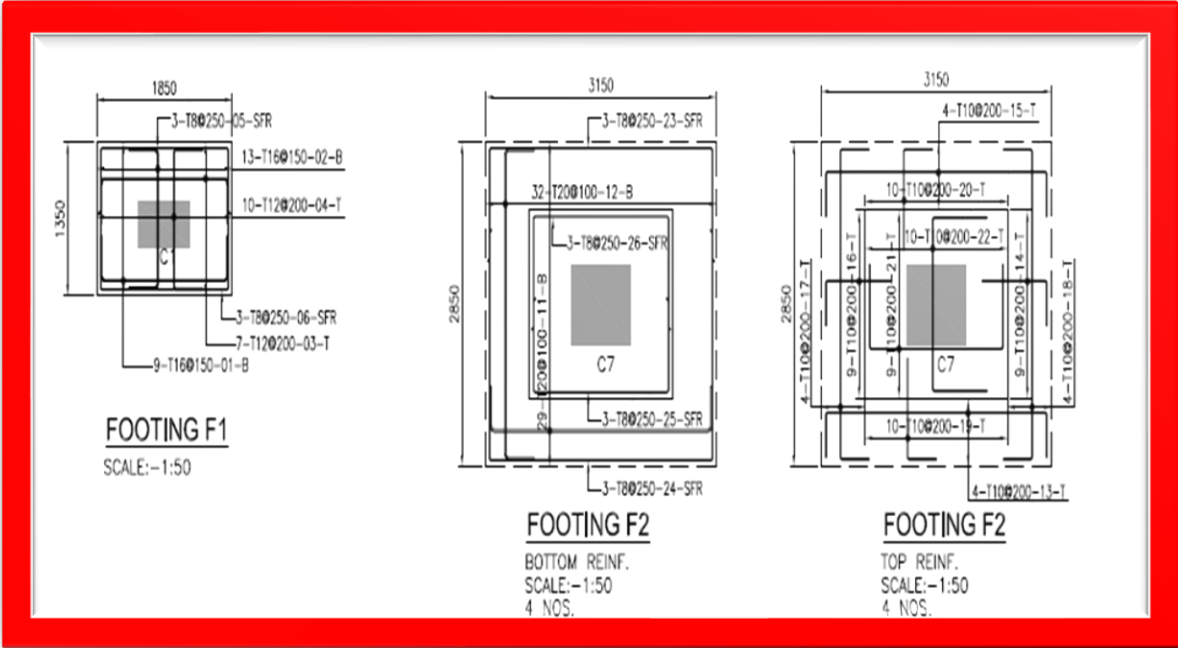
Fe500	T 8	T 10	T 12	T 16	T 20	T 25
Unit weight (kg/m)	0.395	0.617	0.888	1.580	2.470	3.850
Total length (mm)	944436	2508488	37211	47752	876600	1577448
Total weight (kg)	373.05	1547.74	33.04	75.45	2165.20	6073.17
Subtotal: (kg)	10267.658					

# 3D BAR BENDING SCHEDULE

3D Bar bending schedule gives shows bar details in 3D, which gives good idea about congestion of bars

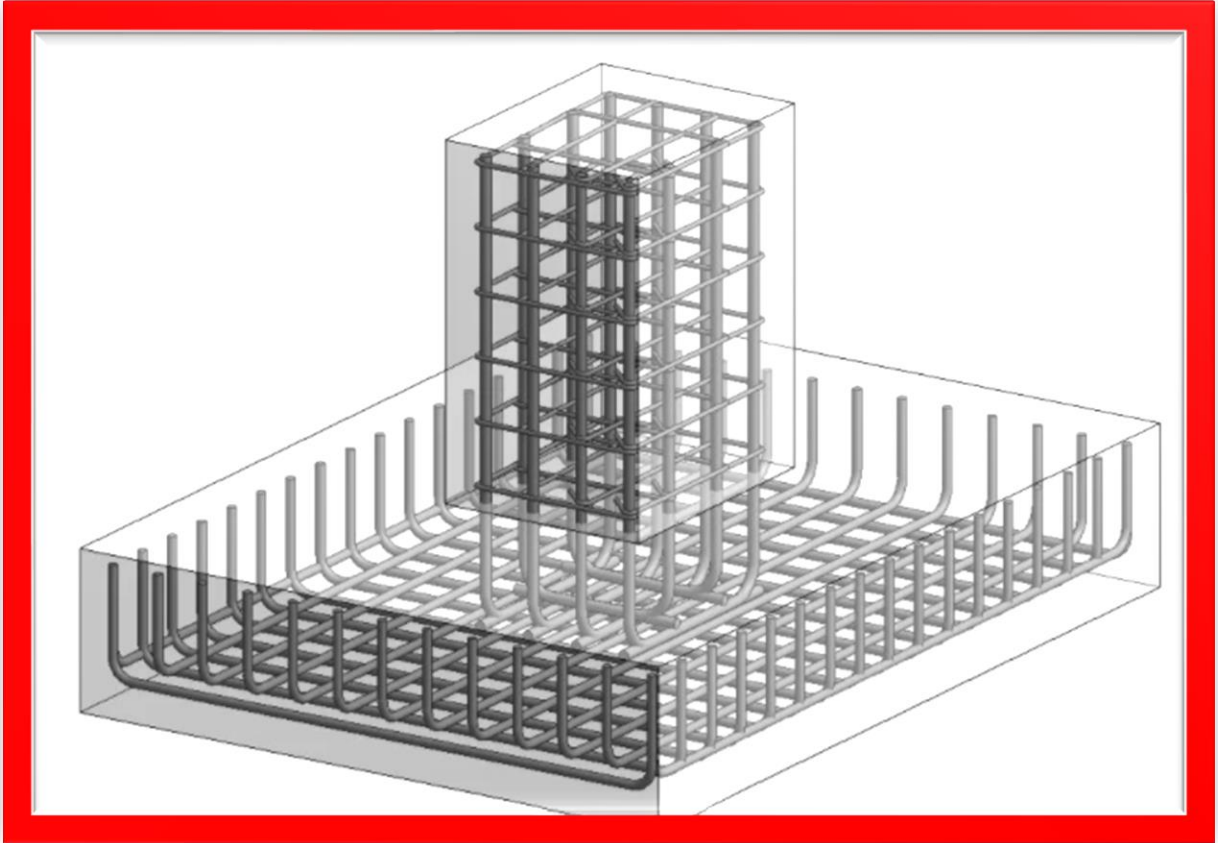


# REBAR OF FOOTING IN 3D



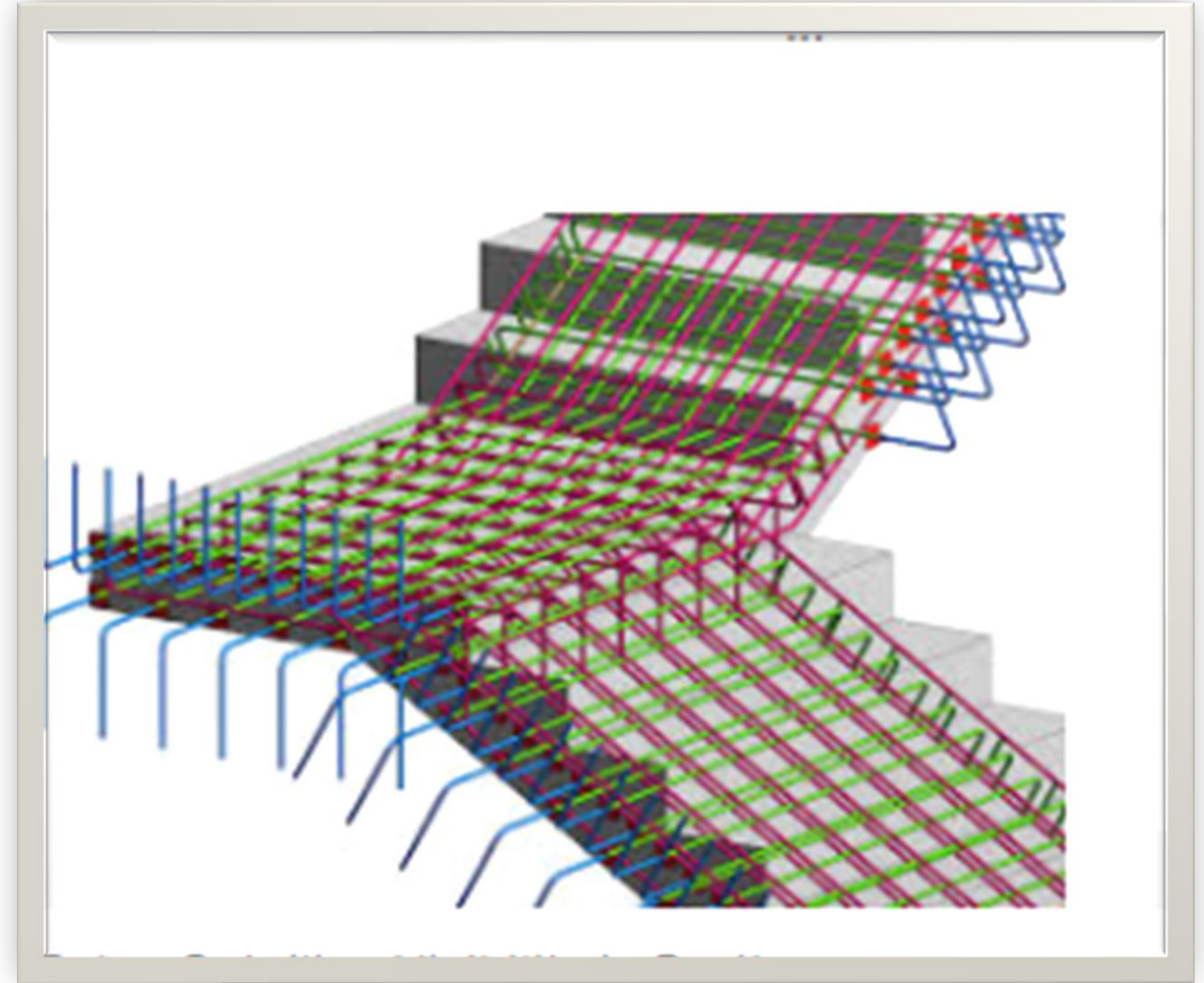
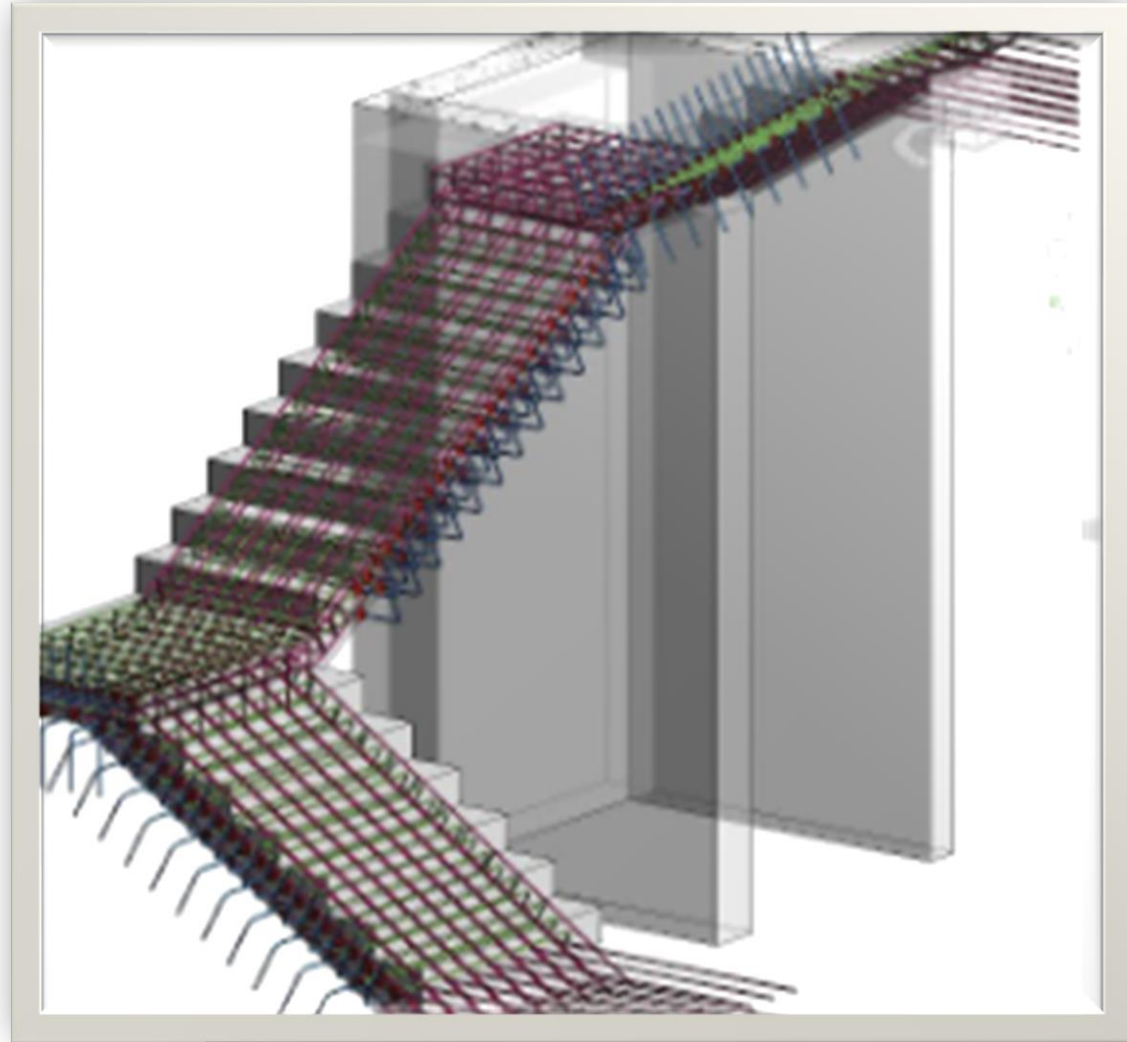
2D View

3D View

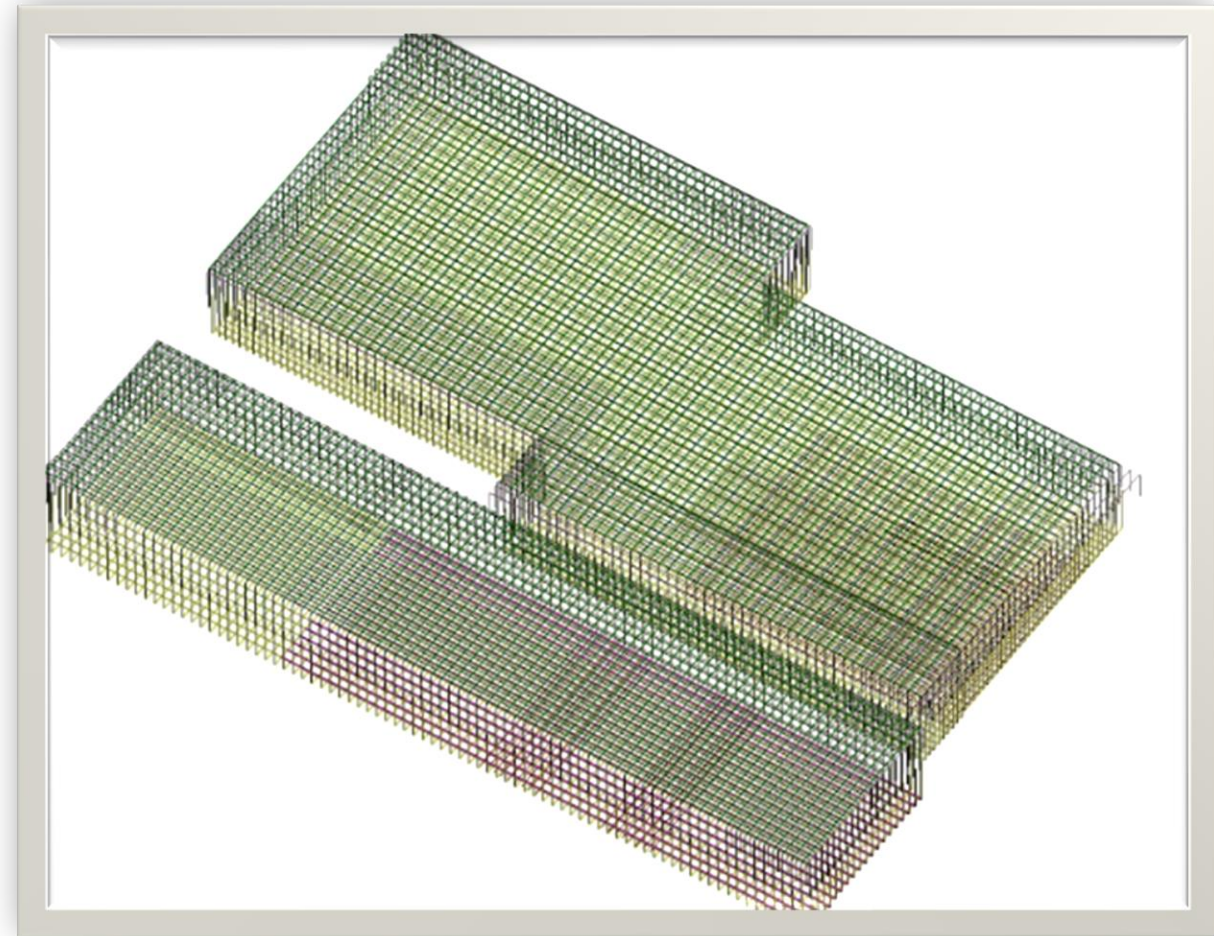
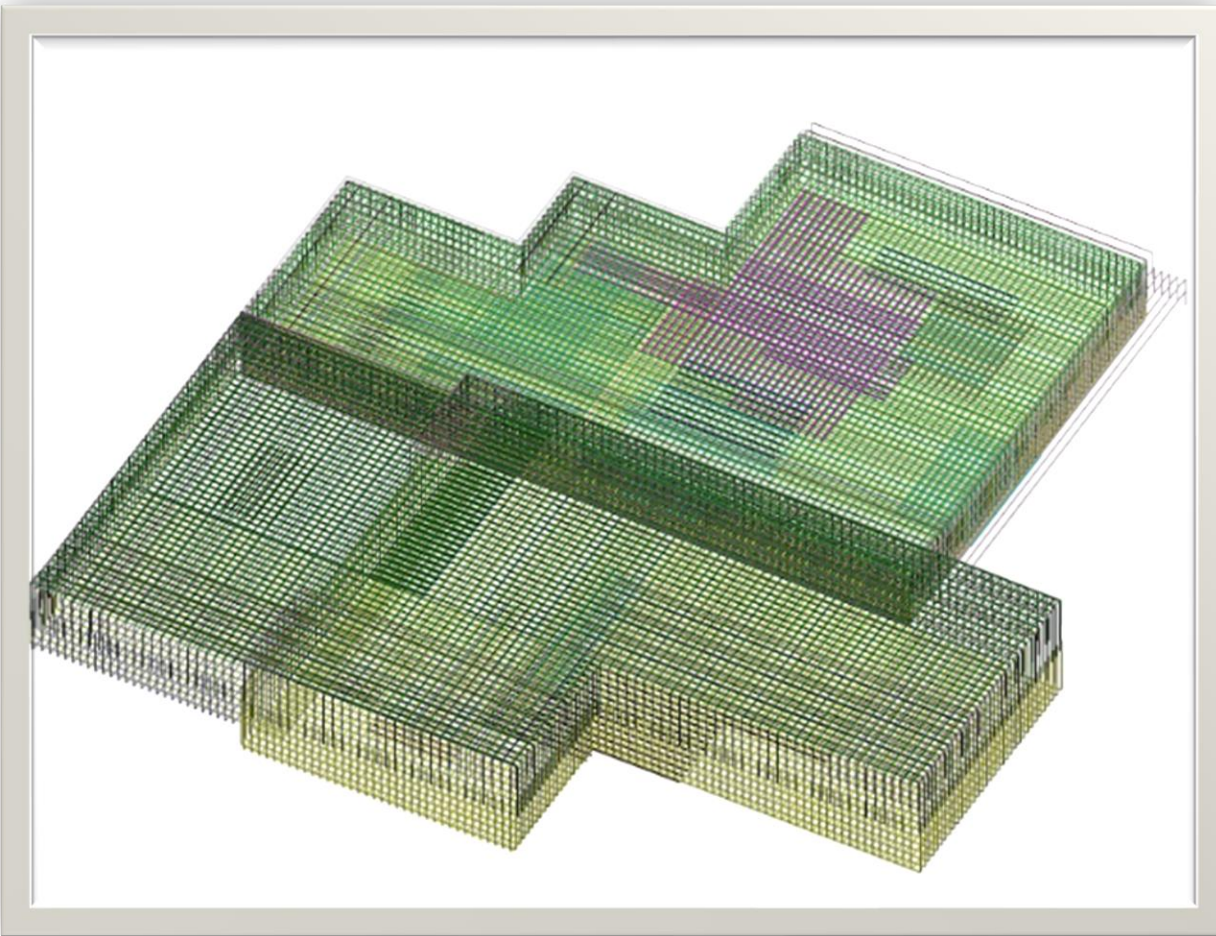




# STAIRCASE BBS (3D)



# SLAB/RAFT REBAR IN 3D





# Institution of Engineers Training Centre Navi Mumbai (Local Centre)





**MGM College of Engineering**



**BHARATI VIDYAPEETH COLLEGE KHARGAR**



**SARASWATI COLLEGE: NAVI MUMBAI**



**A.C. PATIL COLLEGE KHARGAR**



Training at  
various  
engineering  
colleges

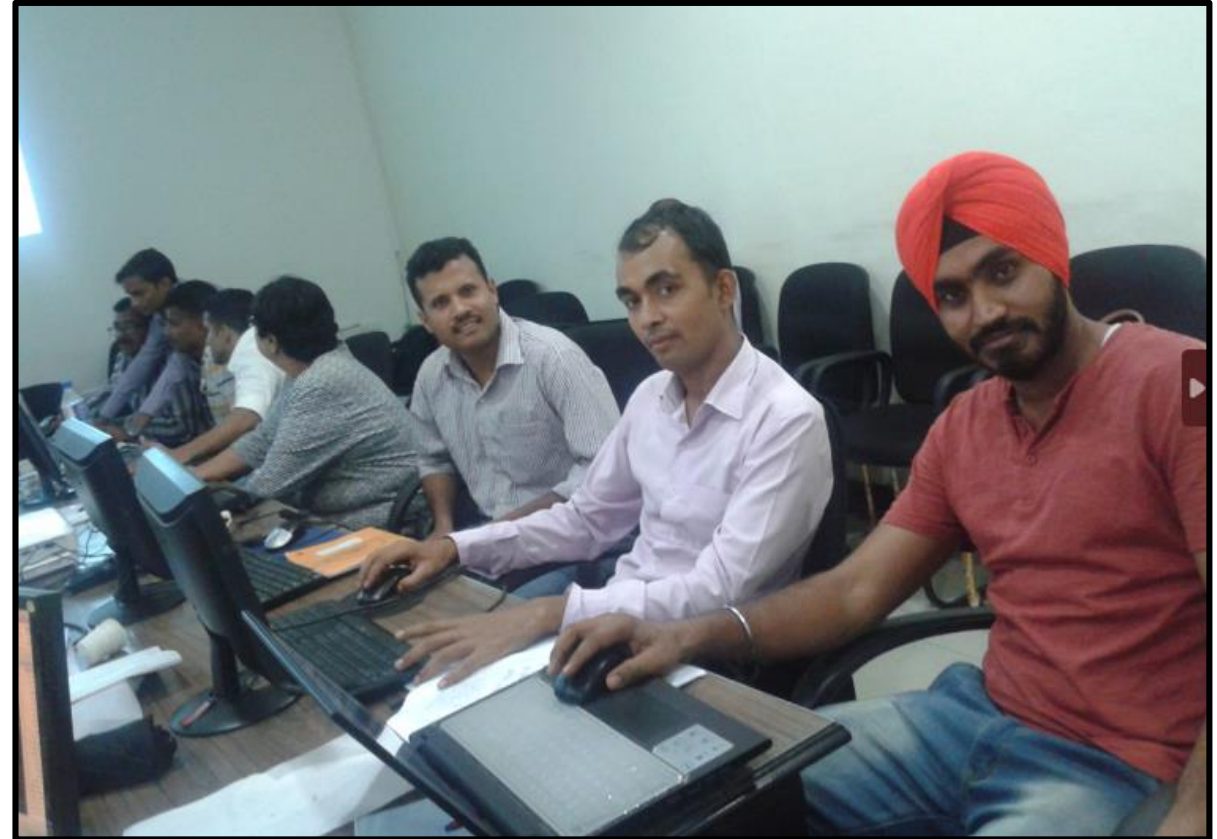
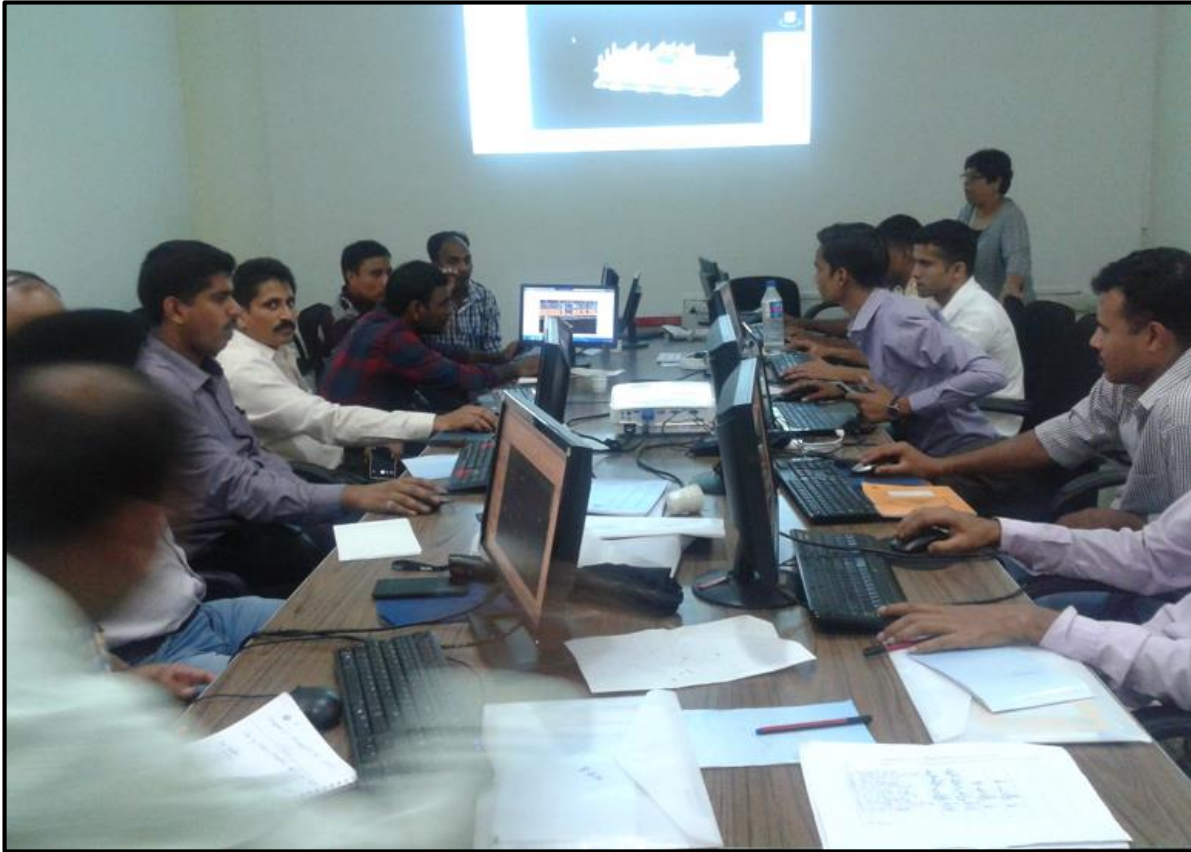


# DRDO DELHI





# TRAINING FOR MILITARY ENGINEERING

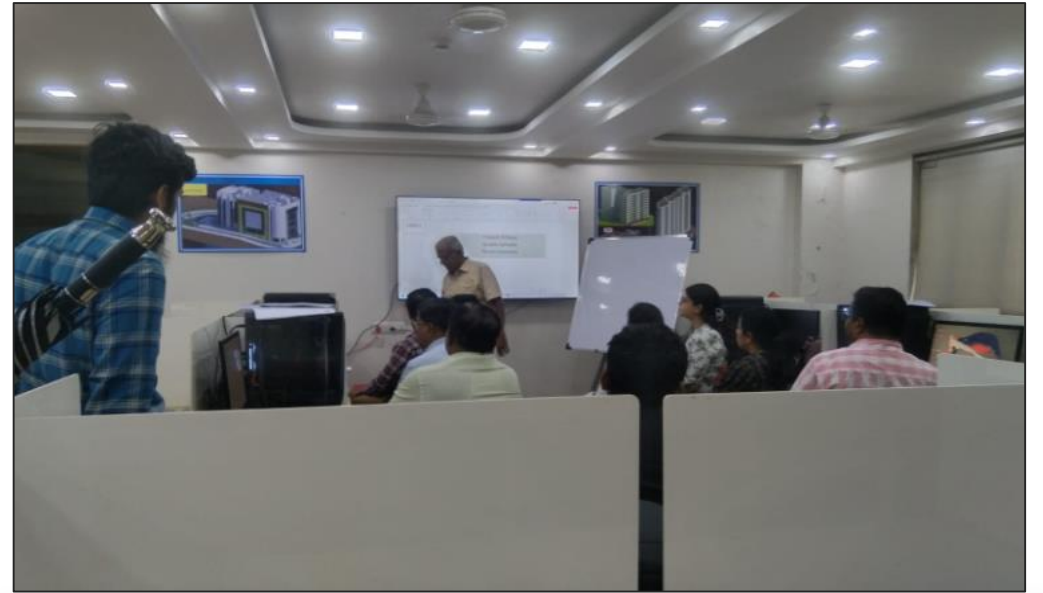


# TRAINING TO DELEGATION FROM BHUTAN





# CIDCO TRAINING FOR ETABS AND BIM



# TRAINING FOR BIM AT KENYA



**STUDENTS TRAINED AT THE INSTITUTION  
NOW HOLDING HIGH SALARY JOBS WITH  
VARIOUS CORPORATES**







NAGESH WAGH  
DUBAI



NILESH  
MAURYA  
STERLING



Parsuram



Nadim  
Dubai



Dhanjay Singh  
Optimal



Pankaj Maurya  
K.G.Kapadia

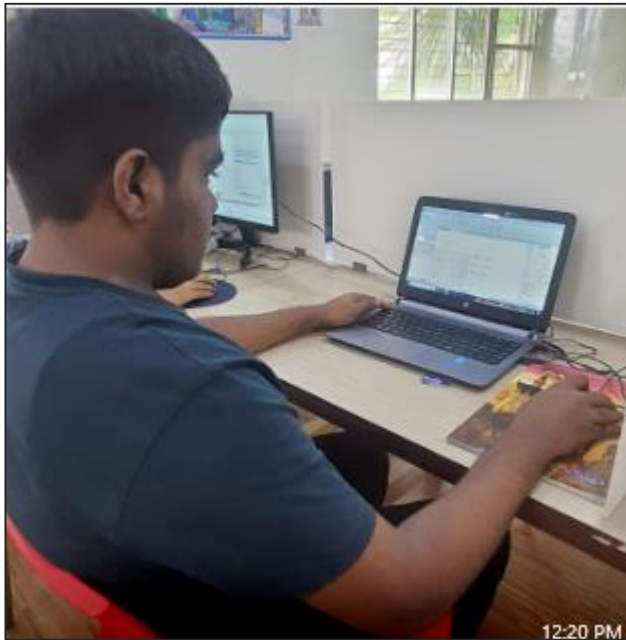


Orchid College  
Sholapur



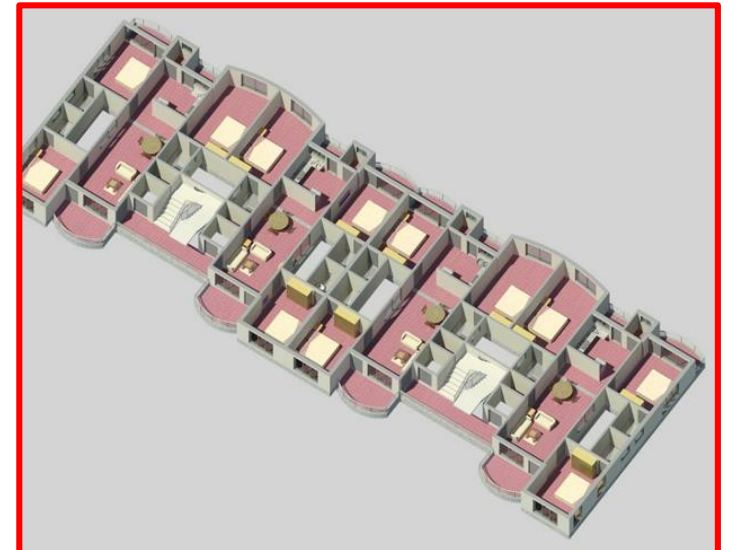


 LinkedIn  
Kamlesh Maurya EngT...





# Projects done by students



# Projects done by students



**Thank You!**

