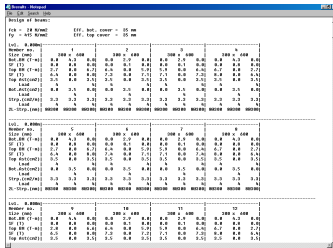


DecaPlot Combo

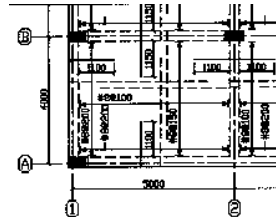
D2D

Design to Drawing
Foundations, Beams,
Columns & Slabs

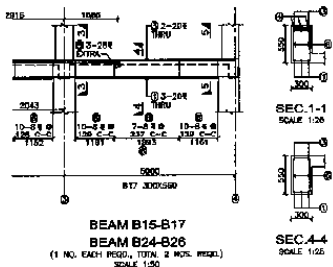
User's Manual



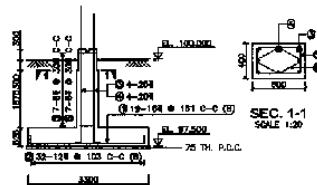
NO.	SECTION	TYPE	UNIT	QTY	UNIT PRICE	TOTAL
1	10-250	10-250	mm	1.00	1000.00	1000.00
2	10-250	10-250	mm	1.00	1000.00	1000.00
3	10-250	10-250	mm	1.00	1000.00	1000.00
4	10-250	10-250	mm	1.00	1000.00	1000.00
5	10-250	10-250	mm	1.00	1000.00	1000.00
6	10-250	10-250	mm	1.00	1000.00	1000.00
7	10-250	10-250	mm	1.00	1000.00	1000.00
8	10-250	10-250	mm	1.00	1000.00	1000.00
9	10-250	10-250	mm	1.00	1000.00	1000.00
10	10-250	10-250	mm	1.00	1000.00	1000.00



R/F PLAN @ EL.3.000
SCALE 1:50



SEC.1-1
SCALE 1:20
SEC.4-4
SCALE 1:20



FND. MKD. F2
(6 NOS. REQD.)
SCALE 1:20

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1. Capabilities of software

DecaPlot Combo software Designs & Prepares Drawing Data for the following:

1. Isolated Rectangular Foundations – Flat (Uniform thick) or Tapered
2. Rectangular Columns
3. Rectangular Beams
4. Slabs

The default design parameters can be set for the whole structure at the beginning. After extracting information from Staad results file, the programs offers micro level control of design parameters i.e. level wise design parameters can also be set for beams & columns, support node wise or load case wise for foundations & level wise or panel wise for slabs.

DecaPlot Combo software generates the slabs data without plate elements being present in Staad results. The edge conditions of slabs are automatically generated. Sunk slabs can also be considered.

The design results are presented in a unique Designer friendly Format in two forms – detailed & summary.

Ductile detailing as per IS:13920 can also be considered.

2. Installation of Hardware Lock

- 1.1 Remove the printer cable from the computer.
- 2.2 Fix the hardware lock on parallel port. Tighten the screws of the lock.
- 3.3 Fix the printer cable on the hardware lock. Tighten the screws of the printer cable.

The installation of Hardware Lock is complete.

3. Installation of software

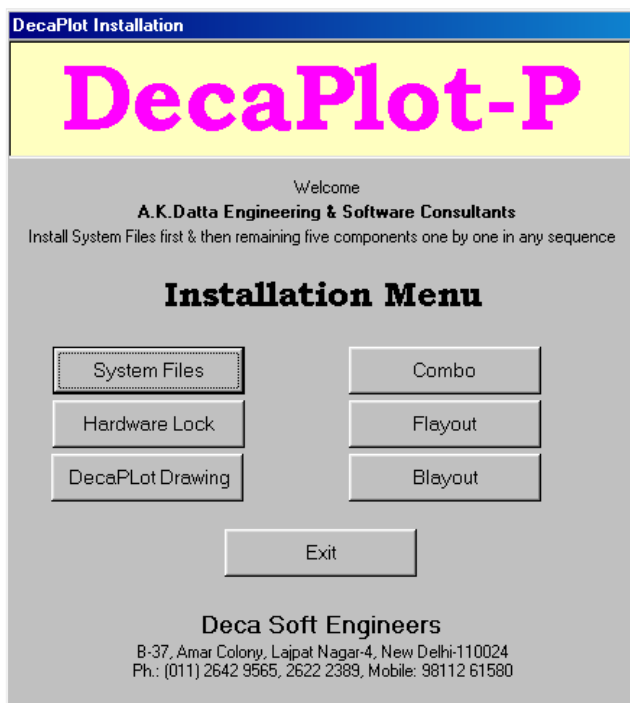
- 3.1 Start windows
- 3.2 Insert the supplied CD in CD drive

The software installation starts automatically.

If the auto-start feature does not work, then follow the procedure given below:

- 3.3 Double click on **My Computer** icon in Desktop
- 3.4 Right click on **CD** icon
- 3.5 Click **Explore**
- 3.6 Double click on **Startup**
- 3.7 Double click on **Setup**

The software installation starts & the following window will appear:



- 3.8 Click System Files first & follow the instructions appearing on the screen.
- 3.9 Instal the remaining components one by one in any sequence by clicking the components & follow the instructions appearing on the screen.
- 3.10 Click Exit

The following window will appear:

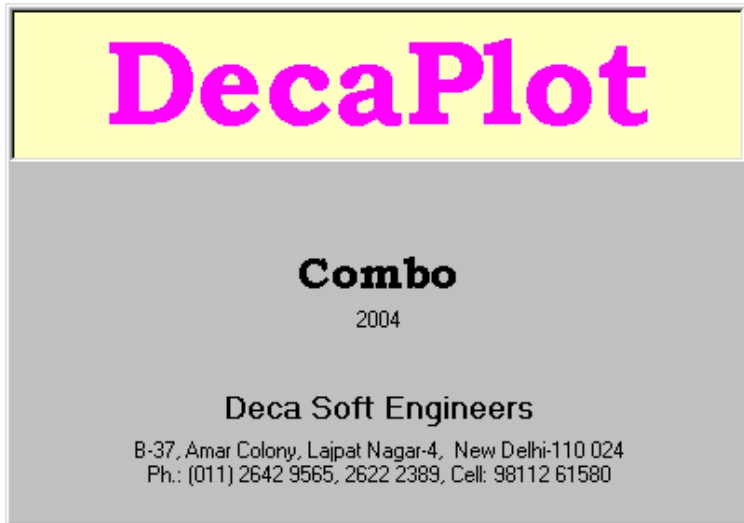


Click **OK** to complete the installation.

The icons will automatically appear in the desktop.

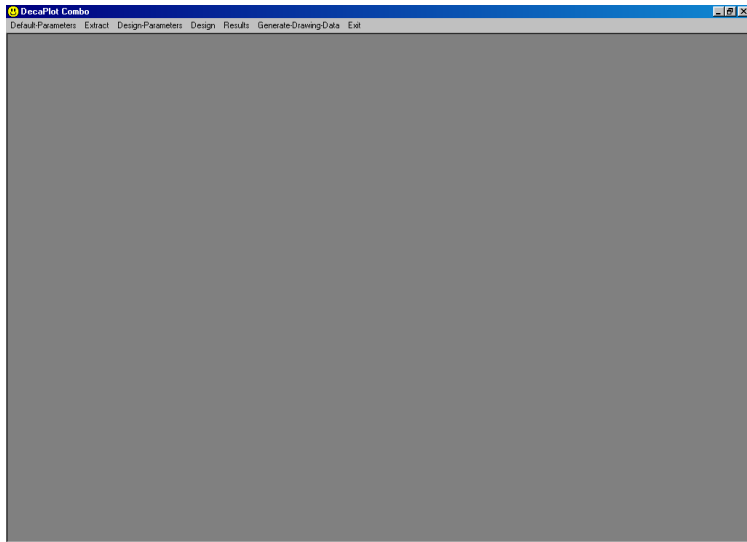
4. Running the software

- 4.1 Start windows
- 4.2 Double click on **Combo** icon in the desktop. The following window will appear



The above window will disappear after few seconds. It will also disappear on mouse click on the message screen or any key press by user.

- 4.3 Then following main window will appear with following menu items – **Default parameters, Extract, Design parameters, Design, Results, Generate Drawing data & Exit.**



These menu items are explained below in detail.

5. Default Parameters

The Default Design Parameters for Foundations, Columns, Beams & slabs for the whole structure can be set. Further micro-level control on design parameters is available under **Design parameters**.

5.1 Foundations

Purpose: To specify default design parameters for foundations.

Foundations Default Parameters		
Parameter	Units	Value
Allowable Net Pressure	T/sq.m	15.0
Density of Soil	T/cu.m	1.800
Natural Ground Level	m	100.000
Finished Ground Level	m	100.0
Bottom of Footing Level	m	98.500
Top of Pedestal Level	m	98.500
Characteristic Concrete Stress (fck)	N/sq.mm	20
Steel Stress (fy)	N/sq.mm	415
Minimum Factor of safety against Overturning	-	2.000
Minimum Factor of Safety against Sliding	-	1.500
Coefficient of Friction between Soil & Concrete	-	.350
Effective Cover to Bottom R/F	mm	50
Effective Cover to Top R/F	mm	50
Water Table Level	m	.000
Saturated Soil Density	T/cu.m	2.200
Minimum Total Thickness of Footing	mm	300
Minimum Edge Thickness of Tapered Footing	mm	150
Flat Portion of Tapered Footing	mm	50

Cancel OK

5.2 Columns

Purpose: To specify default design parameters for columns.

Columns Default Parameters		
Parameter	Units	Value
Characteristic Concrete Stress (f_{ck})	N/sq.mm	20
Steel Stress (f_y)	N/sq.mm	415
Effective Cover to Column R/F	mm	40
Effective Length Factor	mm	1.2
Effective Length Factor for Free Columns	mm	1.5

Cancel OK

5.3 Beams

Purpose: To specify default design parameters for beams.

5.3.1 Design parameters

Purpose: To specify default design parameters for beams.

Beams Default Parameters		
Parameter	Units	Value
Characteristic Concrete Stress (f_{ck})	N/sq.mm	20
Steel Stress (f_y)	N/sq.mm	415
Effective Cover to Bottom R/F	mm	35
Effective Cover to Top R/F	mm	35

Cancel OK

5.3.2 Reinforcement parameters

Purpose: To specify default reinforcement design parameters for beams. Minimum & maximum bar dia. to be used & the maximum number of bars per layer for different beam widths can be specified.

Beams R/F Bars

Minimum & Maximum bar dia.:

Parameter	Units	Value
Minimum bar dia.	mm	12
Maximum bar dia.	mm	40

Max. no. of bars in one layer:

Beam Width (mm)	Max. no. of bars in one layer
Upto 115	2
> 115 to 230	3
> 230 to 250	3
> 250 to 300	4
> 300 to 350	4
> 350 to 400	5
> 400 to 450	5
> 450 to 500	6
> 500 to 550	6
> 550 to 600	7
> 600 to 650	7
> 650 to 700	8
> 700 to 750	8
> 750 to 800	9
> 800 to 850	9
> 850 to 900	10
> 900 to 950	10
> 900 to 1000	11

Cancel

OK

5.4 Slabs

Purpose: To specify default design parameters for beams.

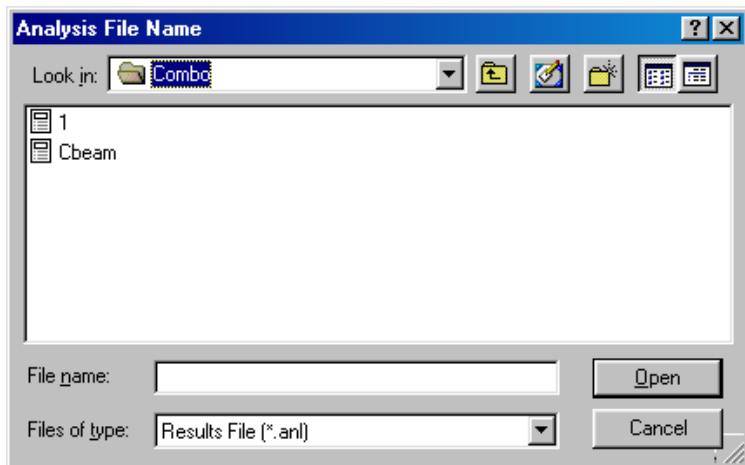
Slabs Default Parameters		
Parameter	Units	Value
Load on Slab (DL+LL)	T/sq.m	1.1
Slab Thickness	mm	110
Characteristic Concrete Stress (fck)	N/sq.mm	20
Steel Stress (fy)	N/sq.mm	415
Effective Cover to R/F	mm	15

Cancel OK

6. *Extract*

6.1 Forces & member Sizes

Purpose: To specify the name of Staad results file from which the information will be extracted for further processing.



7. Design Parameters

This menu offers micro level control of design parameters i.e. level wise design parameters can also be set for beams & columns, support node wise or load case wise for foundations & level wise or panel wise for slabs.

7.1 Foundations

Purpose: To specify the foundation design parameters.

7.1.1 Load Case wise

Purpose: To specify the foundation design parameters as per load case.

Load Case	Tension Permitted	%age Presure Increase	Consider Water Table	Load Factor
4	Yes	0	No	1.5
5	Yes	25	No	1.2
6	Yes	25	No	1.2

Cancel OK

7.1.2 Support wise

Purpose: to specify the foundation design parameters for any support.

Support Node	Restricted Footing Size (m)		Minimum Footing Size (m)		Minimum Depth (mm)	Min. Edge Depth (mm)	Flat Portion (mm)
	Along X	Along Y	Along X	Along Y			
81					300	150	50
82					300	150	50
83					300	150	50
84					300	150	50
85					300	150	50
86					300	150	50
87					300	150	50
88					300	150	50
89					300	150	50
90					300	150	50
91					300	150	50
92					300	150	50
93					300	150	50
94					300	150	50
95					300	150	50
96					300	150	50

Cancel

OK

7.2 Columns Level wise

Purpose: To specify the column design parameters level wise.

Columns - Level wise Design Parameters					
Starting Level	Fck (N/sq.mm)	Fy (N/s.qmm)	Effective Cover(mm)	Effective Length Factor	
				Columns	Free Col.
-3.0000	20	415	40	1.2	1.5
-6.0000	20	415	40	1.2	1.5
-9.0000	20	415	40	1.2	1.5
-12.0000	20	415	40	1.2	1.5

7.3 Beams Level wise

Purpose: To specify the beam design parameters level wise.

Beams - Level wise Design Parameters				
Level	Fck (N/sq.mm)	Fy (N/sq.mm)	Effective Top Cover (mm)	Effective Bottom Cover (mm)
0.0000	20	415	35	35
-3.0000	20	415	35	35
-6.0000	20	415	35	35
-9.0000	20	415	35	35

7.4 Slabs

Purpose: To specify the slab design parameters - level wise or panel wise.

7.4.1 Level wise

Purpose: To specify the slab design parameters level wise.

Level	Load on Slabs DL+LL (T/sq.m)	Slab Thickness (mm)	Characteristic Concrete Stress (fck)	Steel Stress (fy)	Effective Cover (mm)
0.0000	1.1000	110	20	415	15
-3.0000	1.1000	110	20	415	15
-6.0000	1.1000	110	20	415	15
-9.0000	1.1000	110	20	415	15

7.4.2 Panel wise

Purpose: To specify the slab design parameters panel wise.

Slabs - Panel wise

Panel No.	Starting Node	Level	Load DL+LL (T/sq.m)	Thickness (mm)	Sunk Distance (mm)	Delete Panel
1	6	0.0000	1.1000	110		No
2	7	0.0000	1.1000	110		No
3	8	0.0000	1.1000	110		No
4	9	0.0000	1.1000	110		No
5	11	0.0000	1.1000	110		No
6	12	0.0000	1.1000	110		No
7	13	0.0000	1.1000	110		No
8	14	0.0000	1.1000	110		No
9	16	0.0000	1.1000	110		No
10	17	0.0000	1.1000	110		No
11	18	0.0000	1.1000	110		No
12	19	0.0000	1.1000	110		No
13	26	-3.0000	1.1000	110		No
14	27	-3.0000	1.1000	110		No
15	28	-3.0000	1.1000	110		No
16	29	-3.0000	1.1000	110		No

Delete All Panels

☐ No

☐ Yes

Cancel

OK

8. Design

8.1 Design Foundations

Purpose: To design foundations. Both Flat (Uniform thick) & Tapered foundations can be designed.

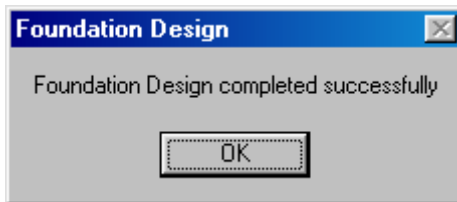
8.1.1 Design Foundations

8.1.1.1 Design Flat Foundation

Purpose: To design Flat (Uniform thick) foundations.

8.1.1.2 Design Tapered Foundation

Purpose: To design Tapered foundations.



8.1.2 Grouping

Purpose: To group the foundations after design as desired by the user.

The foundations will be grouped as indicated in the last column of the table below. The size & r/f adopted for a group will be automatically selected as the maximum of all the foundations having the same group.

Support Node	Footing Size		Depth	Edge Depth	Straight Portion	Pedestal Size		Column Size		Bottom Ast		Top Ast		Group
	Along X	Along Y				Along X	Along Y	Along X	Along Y	Along X	Along Y	Along X	Along Y	
81	2200	2100	300			700	600			9.6	9.2	0.0	0.0	F1
82	2600	2500	400			700	600			10.1	10.5	0.0	0.0	F2
83	2600	2500	400			700	600			9.9	10.0	0.0	0.0	F3
84	2600	2500	400			700	600			10.1	10.5	0.0	0.0	F4
85	2200	2100	300			700	600			9.6	9.2	0.0	0.0	F5
86	2600	2500	375			700	600			11.3	10.7	0.0	0.0	F6
87	2900	2800	450			700	600			12.3	12.3	0.0	0.0	F7
88	3000	2900	450			700	600			12.6	12.6	0.0	0.0	F8
89	2900	2800	450			700	600			12.3	12.3	0.0	0.0	F9
90	2500	2400	375			700	600			10.4	9.9	0.0	0.0	F10
91	2500	2400	375			700	600			10.5	9.9	0.0	0.0	F11
92	3000	2900	475			700	600			12.2	12.2	0.0	0.0	F12
93	2900	2800	450			700	600			12.2	12.2	0.0	0.0	F13
94	2900	2800	450			700	600			12.3	12.3	0.0	0.0	F14
95	2500	2400	375			700	600			10.4	9.9	0.0	0.0	F15
96	2300	2200	300			700	600			10.7	10.0	0.0	0.0	F16

Cancel OK

8.2 Design Columns

Purpose: To design columns.

Column Design

Column Design completed successfully

OK

8.3 Design Beams

Purpose: To design columns.



8.4 Design Slabs

Purpose: To design slabs.

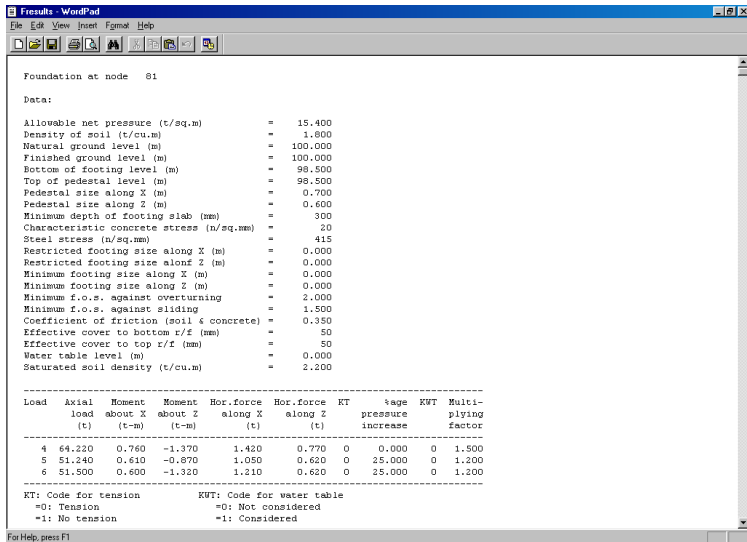


9. Results Menu

9.1 Foundations

9.1.1 Detailed

Purpose: To view/ print the detailed design calculations for foundation design.



Foundation at node 81

Data:

Allowable net pressure (t/sq.m)	=	15.400
Density of soil (t/cu.m)	=	1.800
Natural ground level (m)	=	100.000
Finished ground level (m)	=	100.000
Bottom of footing level (m)	=	98.500
Top of pedestal level (m)	=	98.500
Pedestal size along X (m)	=	0.700
Pedestal size along Z (m)	=	0.600
Minimum depth of footing slab (mm)	=	300
Characteristic concrete stress (n/sq.mm)	=	20
Steel stress (n/sq.mm)	=	415
Restricted footing size along X (m)	=	0.000
Restricted footing size along Z (m)	=	0.000
Minimum footing size along X (m)	=	0.000
Minimum footing size along Z (m)	=	0.000
Minimum f.o.s. against overturning	=	2.000
Minimum f.o.s. against sliding	=	1.500
Coefficient of friction (soil & concrete)	=	0.350
Effective cover to bottom r/f (mm)	=	50
Effective cover to top r/f (mm)	=	50
Water table level (m)	=	0.000
Saturated soil density (t/cu.m)	=	2.200

Load	Axial load about X (t)	Moment about Z (t-m)	Moment about X (t-m)	Hor. force along X (t)	Hor. force along Z (t)	KT	%age pressure increase	KWT	Multi- plying factor
4	64.220	0.760	-1.370	1.420	0.770	0	0.000	0	1.500
5	51.240	0.410	-0.870	1.050	0.620	0	25.000	0	1.200
6	51.900	0.600	-1.320	1.210	0.620	0	25.000	0	1.200

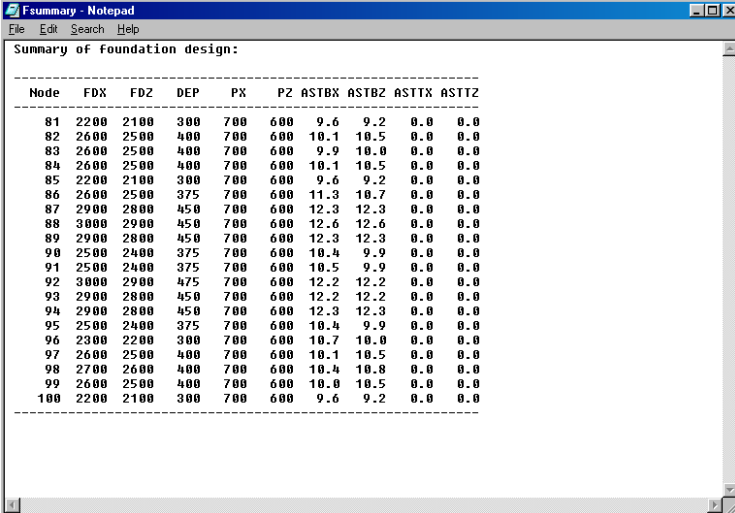
KT: Code for tension
=0: Tension
=1: No tension

KWT: Code for water table
=0: Not considered
=1: Considered

For Help, press F1

9.1.2 Summary

Purpose: To view/ print the summary of design calculations for foundation design.



Summary of foundation design:

Node	FDX	FDZ	DEP	PX	PZ	ASTBX	ASTBZ	ASTTX	ASTTZ
81	2200	2100	300	700	600	9.6	9.2	0.0	0.0
82	2600	2500	400	700	600	10.1	10.5	0.0	0.0
83	2600	2500	400	700	600	9.9	10.0	0.0	0.0
84	2600	2500	400	700	600	10.1	10.5	0.0	0.0
85	2200	2100	300	700	600	9.6	9.2	0.0	0.0
86	2600	2500	375	700	600	11.3	10.7	0.0	0.0
87	2900	2800	450	700	600	12.3	12.3	0.0	0.0
88	3000	2900	450	700	600	12.6	12.6	0.0	0.0
89	2900	2800	450	700	600	12.3	12.3	0.0	0.0
90	2500	2400	375	700	600	10.4	9.9	0.0	0.0
91	2500	2400	375	700	600	10.5	9.9	0.0	0.0
92	3000	2900	475	700	600	12.2	12.2	0.0	0.0
93	2900	2800	450	700	600	12.2	12.2	0.0	0.0
94	2900	2800	450	700	600	12.3	12.3	0.0	0.0
95	2500	2400	375	700	600	10.4	9.9	0.0	0.0
96	2300	2200	300	700	600	10.7	10.0	0.0	0.0
97	2600	2500	400	700	600	10.1	10.5	0.0	0.0
98	2700	2600	400	700	600	10.4	10.8	0.0	0.0
99	2600	2500	400	700	600	10.0	10.5	0.0	0.0
100	2200	2100	300	700	600	9.6	9.2	0.0	0.0

9.2 Columns

9.2.1 Detailed

Purpose: To view/ print the detailed design calculations for column design.

Results - WordPad

File Edit View Insert Format Help

Design of columns:

Member no.	=	125	Short column											
Width along Zm (mm)	=	300	Length about Zm (mm)	=	3000	fck (N/mm ²)	=	20						
Depth along Ym (mm)	=	400	Length about Ym (mm)	=	3000	fy (N/mm ²)	=	415						
Min. e along Zm (mm)	=	20	Eff. l about Zm (mm)	=	3600	Eff. cover (mm)	=	40						
Min. e along Ym (mm)	=	20	Eff. l about Ym (mm)	=	3600	R/f ratio y/z	=	1.455						
Load Node	Axial load (T)	Moment about Ym (T-m)	Moment about Zm (T-m)	Min.ecc. moment about Ym (T-m)	Min.ecc. moment about Zm (T-m)	Design moment about Ym (T-m)	Design moment about Zm (T-m)	Total Ast (cm ²)	%age Ast	Ast along Zm (cm ²)	Ast along Ym (cm ²)			
4 21	12.640	-1.220	-2.010	0.253	0.253	1.220	2.010	9.60	0.80	1.96	2.84			
1	-11.340	-1.690	-2.720	0.227	0.227	1.690	2.720	9.60	0.80	1.96	2.84			
5 21	10.100	-0.970	-1.580	0.202	0.202	0.970	1.580	9.60	0.80	1.96	2.84			
1	-9.060	-1.350	-2.140	0.181	0.181	1.350	2.140	9.60	0.80	1.96	2.84			
6 21	10.120	-0.970	-1.630	0.202	0.202	0.970	1.630	9.60	0.80	1.96	2.84			
1	-9.080	-1.350	-2.210	0.182	0.182	1.350	2.210	9.60	0.80	1.96	2.84			
								Max.	9.60	0.80	1.96	2.84		
=====														
Member no.	=	126	Short column											
Width along Zm (mm)	=	400	Length about Zm (mm)	=	3000	fck (N/mm ²)	=	20						
Depth along Ym (mm)	=	500	Length about Ym (mm)	=	3000	fy (N/mm ²)	=	415						
Min. e along Zm (mm)	=	20	Eff. l about Zm (mm)	=	3600	Eff. cover (mm)	=	40						
Min. e along Ym (mm)	=	22	Eff. l about Ym (mm)	=	3600	R/f ratio y/z	=	1.313						
Load Node	Axial load (T)	Moment about Ym (T-m)	Moment about Zm (T-m)	Min.ecc. moment about Ym (T-m)	Min.ecc. moment about Zm (T-m)	Design moment about Ym (T-m)	Design moment about Zm (T-m)	Total Ast (cm ²)	%age Ast	Ast along Zm (cm ²)	Ast along Ym (cm ²)			
4 41	27.160	-1.470	-2.390	0.543	0.616	1.470	2.390	16.00	0.80	3.46	4.54			
21	-25.000	-1.890	-3.010	0.500	0.567	1.890	3.010	16.00	0.80	3.46	4.54			
5 41	21.690	-1.180	-1.870	0.434	0.492	1.180	1.870	16.00	0.80	3.46	4.54			
1	-19.800	-1.500	-2.250	0.399	0.462	1.500	2.250	16.00	0.80	3.46	4.54			
								Max.	16.00	0.80	3.46	4.54		

For Help, press F1

9.2.2 Summary

Purpose: To view/ print the summary of design calculations for column design.

Csummary - Notepad

File Edit Search Help

Summary of column design:

fck = 20 N/mm² fy = 415 N/mm² Eff. cover = 40 mm

Membr. no.	Starting level (m)	Size along Zm (mm)	Ym (mm)	R/F ratio	Total Ast y/z (cm ²)	%age Ast	Ast along Zm (cm ²)	Ym (cm ²)	Governing load	P (t)	My (t-n)	Mz (t-n)	Myt (t-n)	Mzt (t-n)
125	-3.000	300	400	1.45	9.60	0.80	1.96	2.84	h	12.64	-1.22	-2.01		
126	-6.000	400	500	1.31	16.00	0.80	3.46	4.54	h	27.16	-1.47	-2.39		
127	-9.000	500	600	1.24	24.00	0.80	5.36	6.64	h	43.04	-1.54	-2.63		
128	-12.000	600	700	1.19	33.60	0.80	7.66	9.14	h	59.68	-1.56	-2.87		
129	-3.000	300	400	1.45	9.60	0.80	1.96	2.84	h	21.58	-1.22	0.14		
130	-6.000	400	500	1.31	16.00	0.80	3.46	4.54	h	43.74	-1.47	0.02		
131	-9.000	500	600	1.24	24.00	0.80	5.36	6.64	h	63.72	-2.00	0.00		
132	-12.000	600	700	1.19	0.00	0.00	0.00	0.00	h	0.00	0.00	0.00		
133	-3.000	300	400	1.45	9.60	0.80	1.96	2.84	h	20.46	-1.22	0.00		
134	-6.000	400	500	1.31	16.00	0.80	3.46	4.54	h	42.50	-1.46	0.00		
135	-9.000	500	600	1.24	24.00	0.80	5.36	6.64	h	62.48	-2.00	0.00		
136	-12.000	600	700	1.19	0.00	0.00	0.00	0.00	h	0.00	0.00	0.00		
137	-3.000	300	400	1.45	9.60	0.80	1.96	2.84	h	21.58	-1.22	0.14		
138	-6.000	400	500	1.31	16.00	0.80	3.46	4.54	h	43.75	-1.47	0.02		
139	-9.000	500	600	1.24	24.00	0.80	5.36	6.64	h	63.73	-2.00	0.00		
140	-12.000	600	700	1.19	0.00	0.00	0.00	0.00	h	0.00	0.00	0.00		
141	-3.000	300	400	1.45	9.60	0.80	1.96	2.84	h	12.64	-1.22	2.01		
142	-6.000	400	500	1.31	16.00	0.80	3.46	4.54	h	27.15	-1.46	2.39		
143	-9.000	500	600	1.24	24.00	0.80	5.36	6.64	h	43.02	-1.55	2.63		
144	-12.000	600	700	1.19	33.60	0.80	7.66	9.14	h	59.69	-1.59	2.87		
145	-3.000	300	400	1.45	9.60	0.80	1.96	2.84	h	19.27	0.09	-2.01		
146	-6.000	400	500	1.31	16.00	0.80	3.46	4.54	h	39.55	0.01	-2.36		
147	-9.000	500	600	1.24	24.00	0.80	5.36	6.64	h	60.96	0.37	-2.92		
148	-12.000	600	700	1.19	33.60	0.80	7.66	9.14	h	86.01	0.84	-3.47		
149	-3.000	300	400	1.45	9.60	0.80	1.96	2.84	h	28.25	0.00	0.13		
150	-6.000	400	500	1.31	0.00	0.00	0.00	0.00	h	0.00	0.00	0.00		
151	-9.000	500	600	1.24	0.00	0.00	0.00	0.00	h	0.00	0.00	0.00		
152	-12.000	600	700	1.19	0.00	0.00	0.00	0.00	h	0.00	0.00	0.00		

9.3 Beams

9.3.1 Detailed

Purpose: To view/ print the detailed design calculations for beam design.

Bresouts - Notepad												
File Edit Search Help												
Design of beams:												
fck = 20 N/mm2 Eff. bot. cover = 35 mm												
fy = 415 N/mm2 Eff. top cover = 35 mm												
Lvl. 0.000m	1			2			3			4		
Member no.	300 x 600			300 x 600			300 x 600			300 x 600		
Size (mm)	0.0 4.3 0.0			0.0 2.9 0.0			0.0 2.9 0.0			0.0 4.3 0.0		
Bot. BH (T-m)	0.0 0.8 0.0			0.0 0.1 0.0			0.0 0.1 0.0			0.0 0.8 0.0		
SF (T)	2.7 0.0 6.7			6.4 0.0 5.9			5.9 0.0 6.4			6.7 0.0 2.7		
Top BH (T-m)	6.4 0.0 8.0			7.3 0.0 7.1			7.1 0.0 7.3			8.0 0.0 6.4		
SF (T)	3.5 0.0 3.5			3.5 0.0 3.5			3.5 0.0 3.5			3.5 0.0 3.5		
Top Ast(cn2)	h			h			h			h		
Load	0.0 3.5 0.0			0.0 3.5 0.0			0.0 3.5 0.0			0.0 3.5 0.0		
Bot. Ast(cn2)	h			h			h			h		
Load	3.3 3.3 3.3			3.3 3.3 3.3			3.3 3.3 3.3			3.3 3.3 3.3		
Strp. (cn2/n)	h			h			h			h		
2L-Strp. (mm)	883.00 883.00 883.00			883.00 883.00 883.00			883.00 883.00 883.00			883.00 883.00 883.00		
Lvl. 0.000m	5			6			7			8		
Member no.	300 x 600			300 x 600			300 x 600			300 x 600		
Size (mm)	0.0 4.3 0.0			0.0 2.9 0.0			0.0 2.9 0.0			0.0 4.3 0.0		
Bot. BH (T-m)	0.0 0.8 0.0			0.0 0.1 0.0			0.0 0.1 0.0			0.0 0.8 0.0		
SF (T)	2.7 0.0 6.7			6.4 0.0 5.9			5.9 0.0 6.4			6.7 0.0 2.7		
Top BH (T-m)	6.4 0.0 8.0			7.4 0.0 7.1			7.1 0.0 7.4			8.0 0.0 6.4		
SF (T)	3.5 0.0 3.5			3.5 0.0 3.5			3.5 0.0 3.5			3.5 0.0 3.5		
Top Ast(cn2)	h			h			h			h		
Load	0.0 3.5 0.0			0.0 3.5 0.0			0.0 3.5 0.0			0.0 3.5 0.0		
Bot. Ast(cn2)	h			h			h			h		
Load	3.3 3.3 3.3			3.3 3.3 3.3			3.3 3.3 3.3			3.3 3.3 3.3		
Strp. (cn2/n)	h			h			h			h		
2L-Strp. (mm)	883.00 883.00 883.00			883.00 883.00 883.00			883.00 883.00 883.00			883.00 883.00 883.00		
Lvl. 0.000m	9			10			11			12		
Member no.	300 x 600			300 x 600			300 x 600			300 x 600		
Size (mm)	0.0 4.4 0.0			0.0 2.9 0.0			0.0 2.9 0.0			0.0 4.3 0.0		
Bot. BH (T-m)	0.0 0.8 0.0			0.0 0.1 0.0			0.0 0.1 0.0			0.0 0.8 0.0		
SF (T)	2.8 0.0 6.6			6.4 0.0 5.9			5.9 0.0 6.4			6.7 0.0 2.7		
Top BH (T-m)	6.5 0.0 8.0			7.3 0.0 7.2			7.1 0.0 7.3			8.0 0.0 6.4		
SF (T)	3.5 0.0 3.5			3.5 0.0 3.5			3.5 0.0 3.5			3.5 0.0 3.5		
Top Ast(cn2)	h			h			h			h		

9.3.2 Summary

Purpose: To view/ print the summary of design calculations for beam design.

Dsummary - Notepad File Edit Search Help Design of beams: fck = 20 N/mm2 Eff. bot. cover = 35 mm fy = 415 N/mm2 Eff. top cover = 35 mm												
Lvl. 0.000m												
Member no.	1			2			3			4		
Size (mm)	300 x 600			300 x 600			300 x 600			300 x 600		
Top Ast(cm2)	3.5	0.0	3.5	3.5	0.0	3.5	3.5	0.0	3.5	3.5	0.0	3.5
Bot. Ast(cm2)	0.0	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0
Strp. (cm2/m)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
2L-Strp. (mm)	88300	88300	88300	88300	88300	88300	88300	88300	88300	88300	88300	88300
Lvl. 0.000m												
Member no.	5			6			7			8		
Size (mm)	300 x 600			300 x 600			300 x 600			300 x 600		
Top Ast(cm2)	3.5	0.0	3.5	3.5	0.0	3.5	3.5	0.0	3.5	3.5	0.0	3.5
Bot. Ast(cm2)	0.0	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0
Strp. (cm2/m)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
2L-Strp. (mm)	88300	88300	88300	88300	88300	88300	88300	88300	88300	88300	88300	88300
Lvl. 0.000m												
Member no.	9			10			11			12		
Size (mm)	300 x 600			300 x 600			300 x 600			300 x 600		
Top Ast(cm2)	3.5	0.0	3.5	3.5	0.0	3.5	3.5	0.0	3.5	3.5	0.0	3.5
Bot. Ast(cm2)	0.0	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0
Strp. (cm2/m)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
2L-Strp. (mm)	88300	88300	88300	88300	88300	88300	88300	88300	88300	88300	88300	88300
Lvl. 0.000m												
Member no.	13			14			15			16		
Size (mm)	300 x 600			300 x 600			300 x 600			300 x 600		
Top Ast(cm2)	3.5	0.0	3.5	3.5	0.0	3.5	3.5	0.0	3.5	3.5	0.0	3.5
Bot. Ast(cm2)	0.0	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0
Strp. (cm2/m)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
2L-Strp. (mm)	88300	88300	88300	88300	88300	88300	88300	88300	88300	88300	88300	88300
Lvl. 0.000m												
Member no.	17			18			19					
Size (mm)	300 x 450			300 x 450			300 x 450					
Top Ast(cm2)	2.5	0.0	2.8	2.7	0.0	2.7	2.8	0.0	2.5			

9.4 Slabs

9.4.1 Detailed

Purpose: To view/ print the detailed design calculations for slab design.

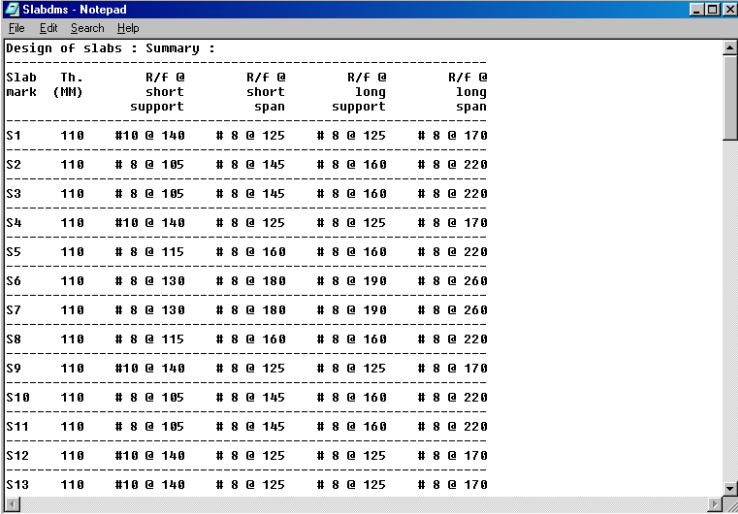
```
Slabdm - Notepad
File Edit Search Help
Design of slabs :
Slab S1 : Two adjacent edges discontinuous
Span along x (MM) = 5000 Span along z (MM) = 4000
Short span Lx(MM) = 4000 Load (T/SQ.M) = 1.100 fck (N/SQ.MM) = 20
Long span Ly (MM) = 5000 Multiplying factor= 1.500 fy (N/SQ.MM) = 415
Total th. (MM) = 110 Span ratio (Ly/Lx)= 1.250 Eff. cover (MM) = 15

-----
Span along Section B.M. Factored K pt Ast R/f details
coeff. B.M.(T-M) (N/MM) (%) (SQ.CM)
Short Support 0.0625 1.650 1.828 0.575 5.47 #10 @ 140
Span 0.0470 1.241 1.375 0.417 3.96 #8 @ 125
Long Support 0.0470 1.241 1.375 0.417 3.96 #8 @ 125
Span 0.0250 0.924 1.024 0.300 2.80 #8 @ 170
-----
Slab S2 : One long edge discontinuous
Span along x (MM) = 5000 Span along z (MM) = 4000
Short span Lx(MM) = 4000 Load (T/SQ.M) = 1.100 fck (N/SQ.MM) = 20
Long span Ly (MM) = 5000 Multiplying factor= 1.500 fy (N/SQ.MM) = 415
Total th. (MM) = 110 Span ratio (Ly/Lx)= 1.250 Eff. cover (MM) = 15

-----
Span along Section B.M. Factored K pt Ast R/f details
coeff. B.M.(T-M) (N/MM) (%) (SQ.CM)
Short Support 0.0545 1.439 1.594 0.492 4.67 #8 @ 105
Span 0.0415 1.096 1.214 0.364 3.46 #8 @ 145
Long Support 0.0370 0.977 1.082 0.321 3.05 #8 @ 160
Span 0.0280 0.739 0.819 0.239 2.27 #8 @ 220
-----
Slab S3 : One long edge discontinuous
Span along x (MM) = 5000 Span along z (MM) = 4000
Short span Lx(MM) = 4000 Load (T/SQ.M) = 1.100 fck (N/SQ.MM) = 20
Long span Ly (MM) = 5000 Multiplying factor= 1.500 fy (N/SQ.MM) = 415
Total th. (MM) = 110 Span ratio (Ly/Lx)= 1.250 Eff. cover (MM) = 15
```

9.4.2 Summary

Purpose: To view/ print the summary of design calculations for slab design.



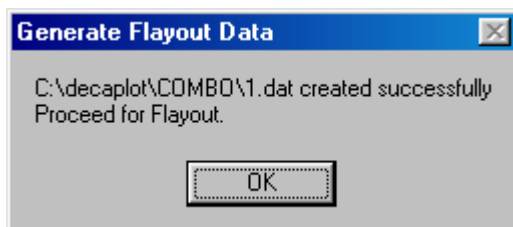
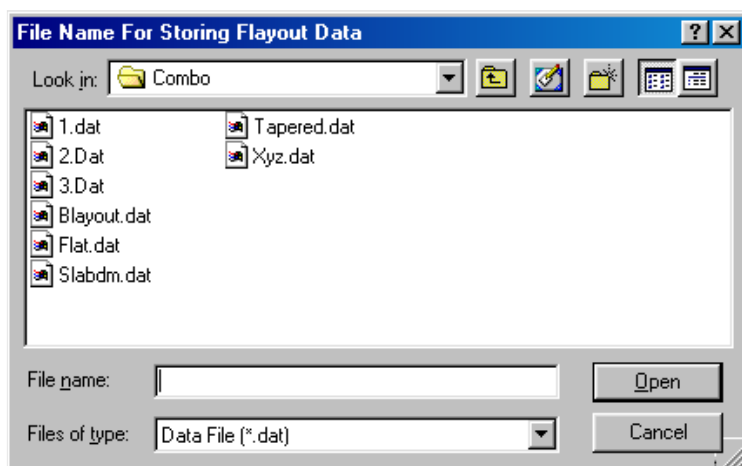
Design of slabs : Summary :

Slab mark	Th. (MM)	R/F @ short support	R/F @ short span	R/F @ long support	R/F @ long span
S1	110	#10 @ 140	# 8 @ 125	# 8 @ 125	# 8 @ 170
S2	110	# 8 @ 105	# 8 @ 145	# 8 @ 160	# 8 @ 220
S3	110	# 8 @ 105	# 8 @ 145	# 8 @ 160	# 8 @ 220
S4	110	#10 @ 140	# 8 @ 125	# 8 @ 125	# 8 @ 170
S5	110	# 8 @ 115	# 8 @ 160	# 8 @ 160	# 8 @ 220
S6	110	# 8 @ 130	# 8 @ 180	# 8 @ 190	# 8 @ 260
S7	110	# 8 @ 130	# 8 @ 180	# 8 @ 190	# 8 @ 260
S8	110	# 8 @ 115	# 8 @ 160	# 8 @ 160	# 8 @ 220
S9	110	#10 @ 140	# 8 @ 125	# 8 @ 125	# 8 @ 170
S10	110	# 8 @ 105	# 8 @ 145	# 8 @ 160	# 8 @ 220
S11	110	# 8 @ 105	# 8 @ 145	# 8 @ 160	# 8 @ 220
S12	110	#10 @ 140	# 8 @ 125	# 8 @ 125	# 8 @ 170
S13	110	#10 @ 140	# 8 @ 125	# 8 @ 125	# 8 @ 170

10. *Generate Drawing Data*

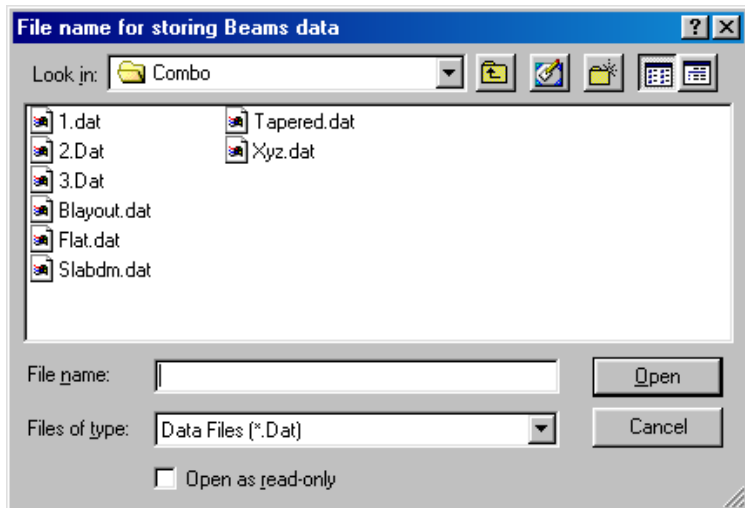
10.1 Foundation Layout & R/F Details

Purpose: To generate the drawing data for foundation layout & r/f details from the design & grouping already done. The file name for storing data is to be specified by the user. This file will be used for Flayout drawing preparation module.

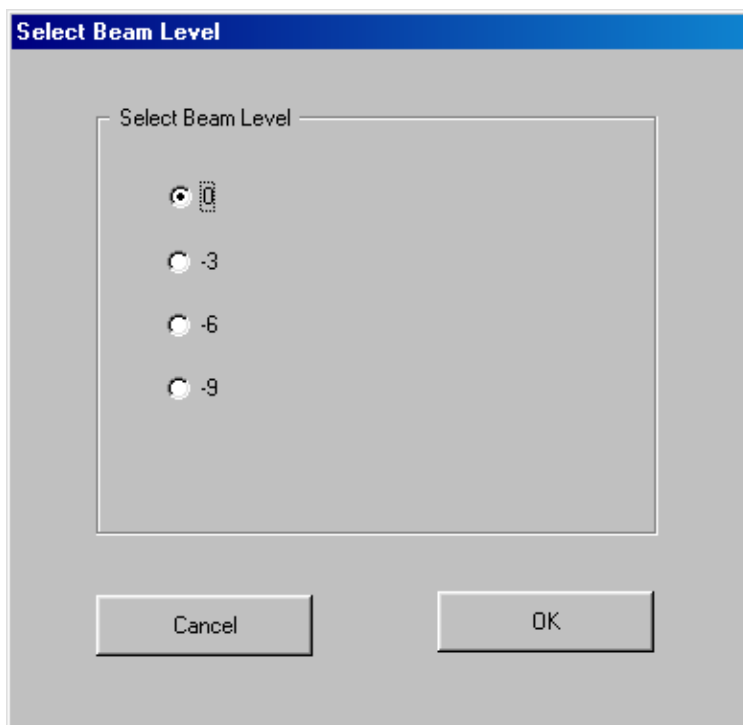


10.2 Beam Layout & R/F Details

Purpose: To generate the drawing data for beam layout & r/f details from the design & grouping already done. The file name for storing data is to be specified by the user. This file will be used for Blayout drawing preparation module.



Next, select the level for which the beam drawing is to be made as shown below.



The dialog box has a blue title bar with the text "Select Beam Level". Inside, there is a group box labeled "Select Beam Level" containing four radio button options: "0", "-3", "-6", and "-9". The "0" option is selected. At the bottom, there are two buttons: "Cancel" and "OK".

Select Beam Level

☒ 0

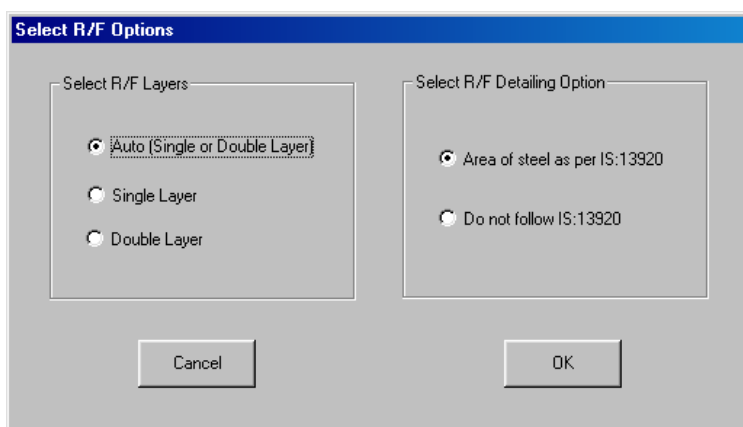
☐ -3

☐ -6

☐ -9

Cancel OK

The r/f options can be specified as below.



The dialog box has a blue title bar with the text "Select R/F Options". It contains two group boxes. The first group box, labeled "Select R/F Layers", has three radio button options: "Auto (Single or Double Layer)", "Single Layer", and "Double Layer". The "Auto (Single or Double Layer)" option is selected. The second group box, labeled "Select R/F Detailing Option", has two radio button options: "Area of steel as per IS:13920" and "Do not follow IS:13920". The "Area of steel as per IS:13920" option is selected. At the bottom, there are two buttons: "Cancel" and "OK".

Select R/F Options

Select R/F Layers

☒ Auto (Single or Double Layer)

☐ Single Layer

☐ Double Layer

Select R/F Detailing Option

☒ Area of steel as per IS:13920

☐ Do not follow IS:13920

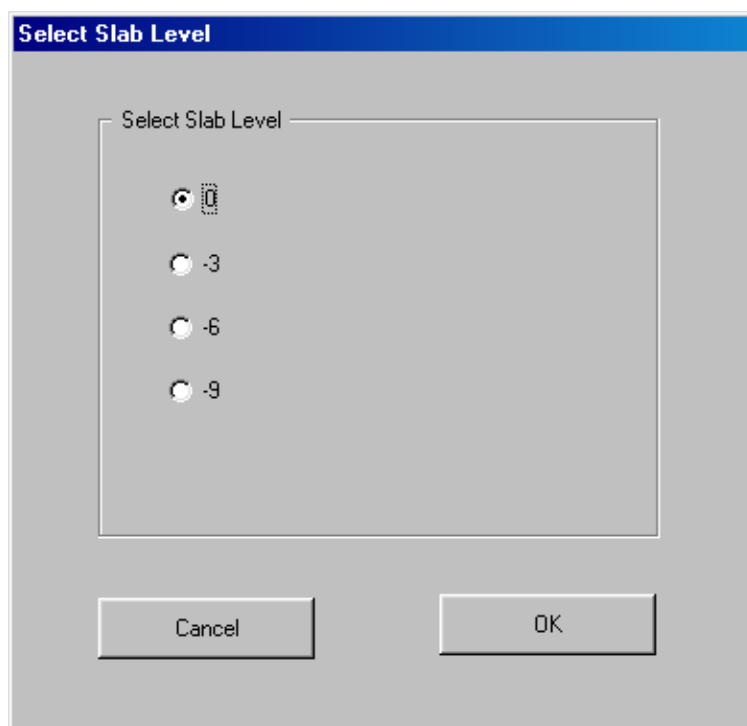
Cancel OK

10.3 Slab Layout & R/F Details

Purpose: To generate the drawing data for slab layout & r/f details from the design already done. The file name for storing data is to be specified by the user. This file will be used for Slab drawing preparation module.



Next select the level for which the beam drawing is to be made as shown below.



11. Exit

Purpose: To exit.