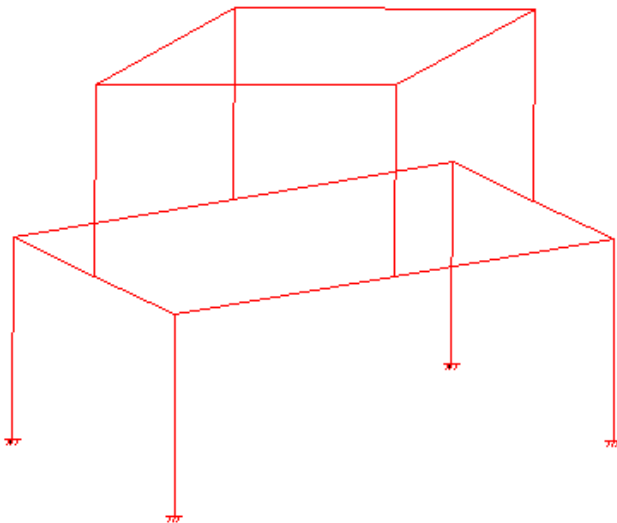


DecaPlot Modeler

Space Frame Data Generator

User's Manual



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1. Capabilities of software

DecaPlot Modeler software prepares accurate Staad space frame data files quickly & easily.

It employs state of the art window based GUI for data generation.

The basic data consists of number & spacing of horizontal & vertical grids along with floor heights.

The units can be Meter or Feet-inches.

The beams & columns can be provided or removed at the click of a mouse. Inclines beams can also be accommodated.

The columns of one floor level are automatically connected with the next top floor level.

Supports at the bottom most level are automatically provided.

The copying of data from one floor to another is a matter of mouse click only.

Even wall loads are calculated automatically for floor heights with deduction made for the depth of beam at next top floor level.

Floor loads for Dead Load & Live Load cases can also be specified for different floors.

The final generated data consists of joint coordinates, member incidences, member properties, constants, supports, dead load case (floor loads & wall loads) & live load case (floor loads).

2. Installation of software

1. Start windows
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. Double click on **My Computer** icon in Desktop

Right click on **CD** icon

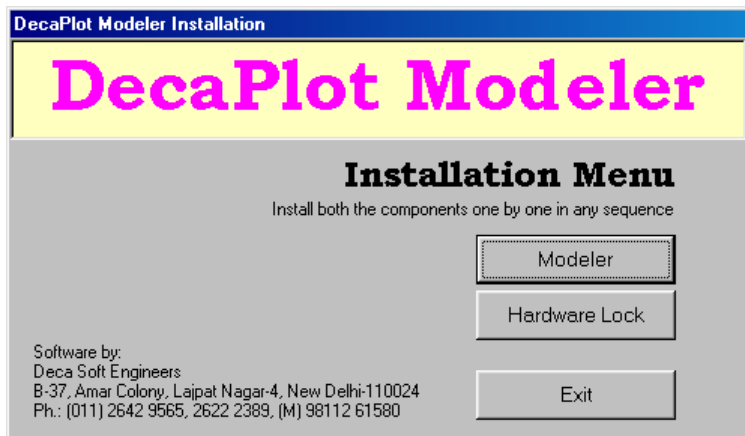
Click **Explore**

Double click on **Startup**

Double click on **Setup**

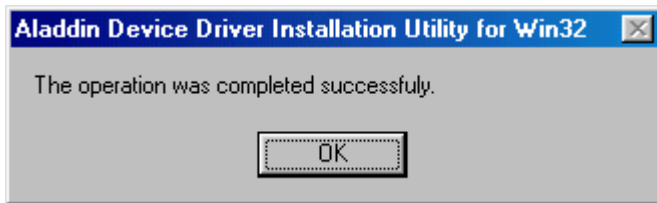
The software installation starts.

The following window will appear:



4. Click **Modeler** & follow the instructions appearing on the screen.
5. Click **Hardware Lock**

6. Click **OK** when the message **The operation was completed successfully** appears.



7. Click **Exit**

The following window will appear:



Click **OK** to complete the installation.

Modeler icon will automatically appear in the desktop.

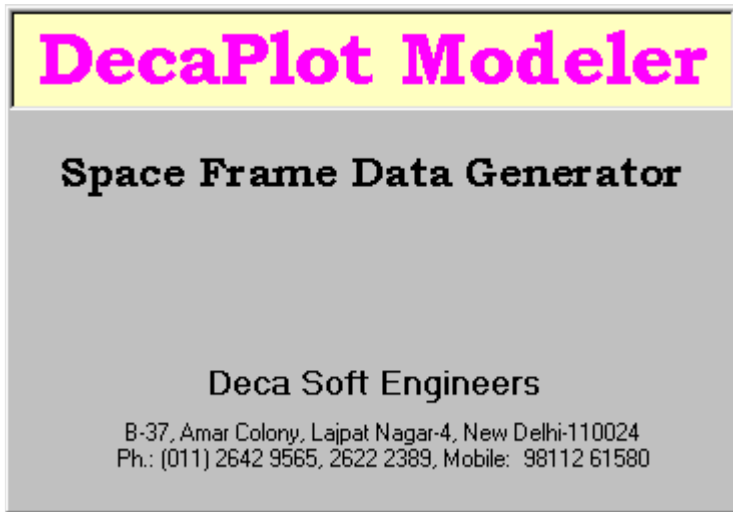
3. Installation of Hardware Lock

1. Remove the printer cable from the computer.
2. Fix the hardware lock on parallel port. Tighten the screws of the lock.
3. Fix the printer cable on the hardware lock. Tighten the screws of the lock.

The installation of Hardware Lock is complete.

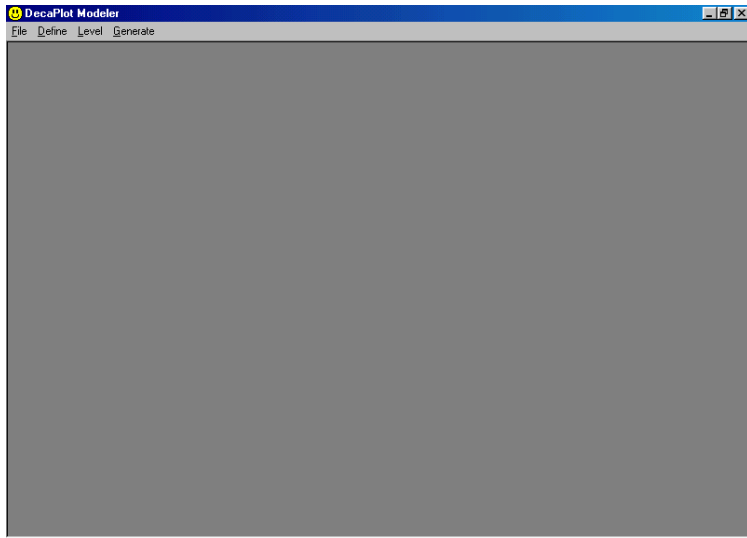
4. Running the software

1. Start windows
2. Double click on **Modeler** 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.

3. Then following main window will appear with four menu items – **File, Define, Level & Generate.**



The four menu items – **File, Define, Level & Generate** are explained in details in the following pages.

5. File Menu

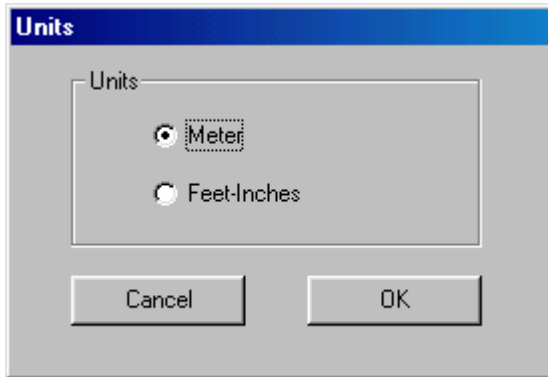
Click menu item **File** to open sub-menu.

1. Click **New** to create a new data file
Or
Click **Open** to edit existing data file
Or
Click **Continue** to continue the last data session
2. Click **Close** when complete data has been given
3. Click **Save** to save the data
4. Click **Save As** to save the data under different file name
5. Click **View** to view the data file on the screen
6. Click **Print** to print the data file on the printer
7. Click **Exit** to exit the program.

6. Define Menu

Click menu item **Define** to open sub-menu.

1. Click **Units** to define unit system.



Select either **Meter** or **Feet-inches**.

Feet-Inches convention:

The values in Feet-inches are as per the convention given below:

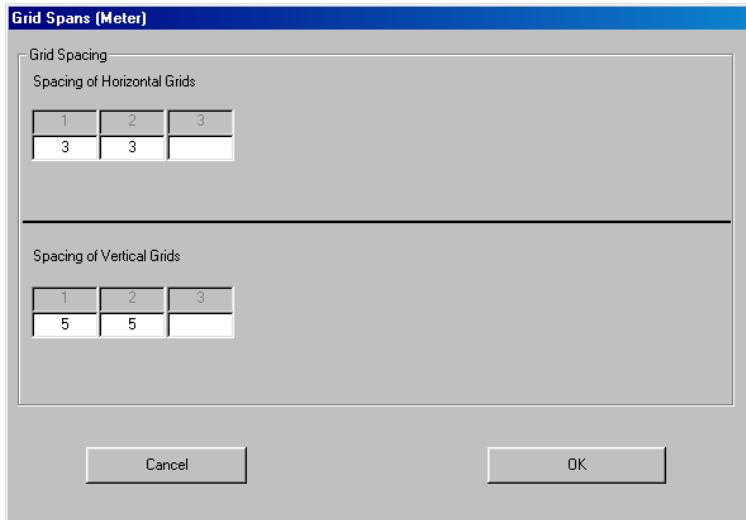
One integer indicates Feet i.e. 6 indicates 6'

Two integers separated by dash indicate feet-inches
i.e. 6-3 indicates 6'-3"

Three integers separated by dashes indicate feet-inches & fractional part as Eight of an inch
i.e. 6-3-3 indicates 6'-3 3/8"

Four integers separated by dashes indicate feet-inches, fractional part & parts to an inch
i.e 6-3-3-7 indicates 6'-3 3/7"

2. Click **Grid Spans** to specify the horizontal & vertical spacing of grids:



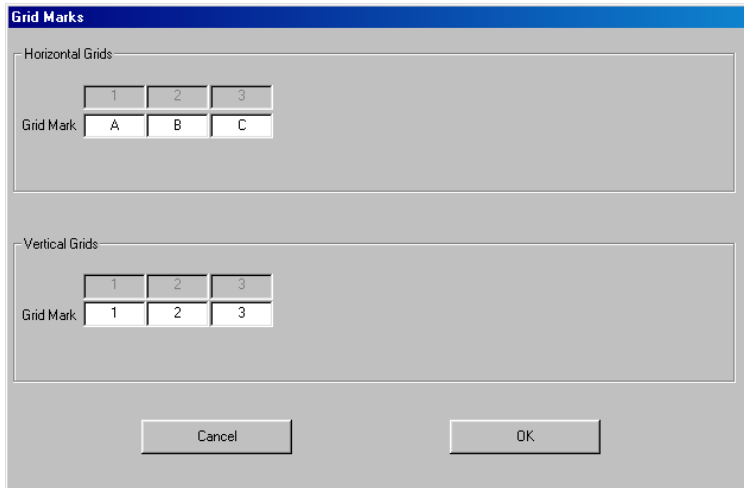
The dialog box titled "Grid Spans (Meter)" contains two sections: "Spacing of Horizontal Grids" and "Spacing of Vertical Grids". Each section has a table with three columns labeled 1, 2, and 3. In the horizontal section, column 1 has a value of 3 and column 2 has a value of 3. In the vertical section, column 1 has a value of 5 and column 2 has a value of 5. At the bottom of the dialog are "Cancel" and "OK" buttons.

1	2	3
3	3	

1	2	3
5	5	

The boxes for giving values are self-expanding & next box will appear automatically when value is given in the current box.

3. Click **Grid Marks** to specify the horizontal & vertical grid marks:



The **Grid Marks** dialog box is shown. It has a title bar with the text "Grid Marks". Inside, there are two sections: "Horizontal Grids" and "Vertical Grids". Each section contains a 2x3 grid of input boxes. The top row of boxes in each section is labeled "1", "2", and "3". The bottom row is labeled "Grid Mark" and contains boxes with the values "A", "B", and "C" for horizontal grids, and "1", "2", and "3" for vertical grids. At the bottom of the dialog are "Cancel" and "OK" buttons.

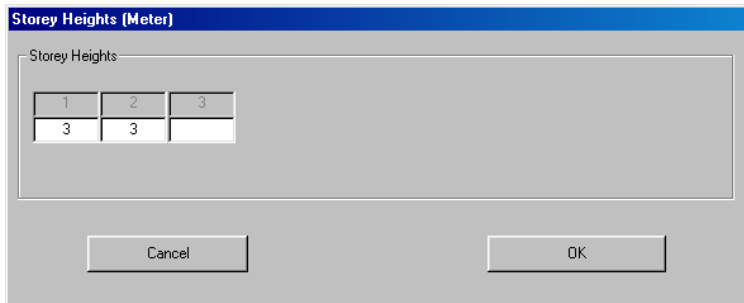
Horizontal Grids			
	1	2	3
Grid Mark	A	B	C

Vertical Grids			
	1	2	3
Grid Mark	1	2	3

Buttons: Cancel, OK

The boxes for giving values are self-expanding & next box will appear automatically when value is given in the current box.

4. Click **Storey Heights** to specify the storey heights.



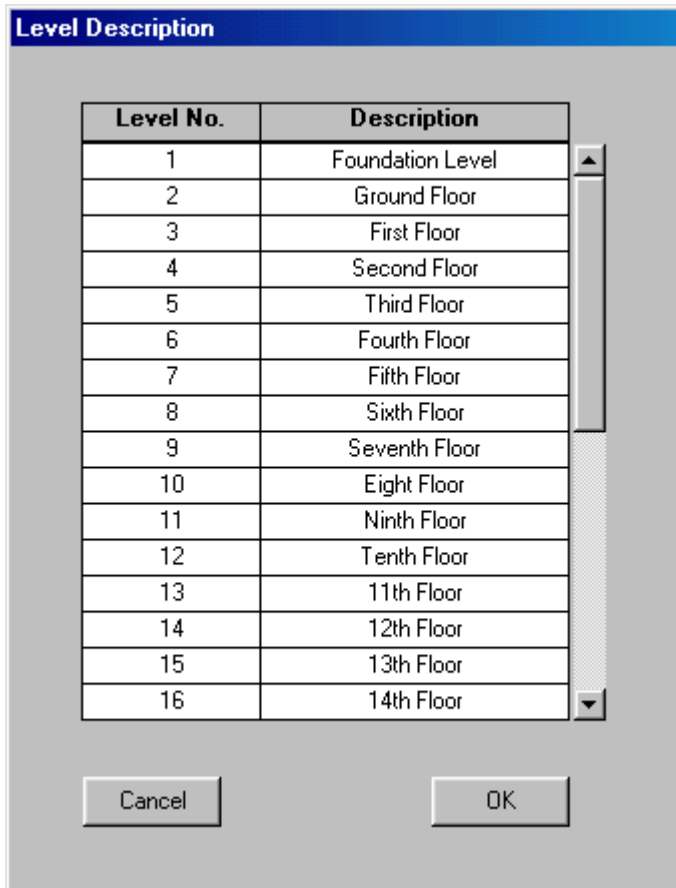
The **Storey Heights (Meter)** dialog box is shown. It has a title bar with the text "Storey Heights (Meter)". Inside, there is a section labeled "Storey Heights" containing a 2x3 grid of input boxes. The top row of boxes is labeled "1", "2", and "3". The bottom row contains boxes with the values "3", "3", and an empty box. At the bottom of the dialog are "Cancel" and "OK" buttons.

Storey Heights		
1	2	3
3	3	

Buttons: Cancel, OK

The boxes for giving values are self-expanding & next box will appear automatically when value is given in the current box.

5. Click **Level Names** to specify the names of different levels.



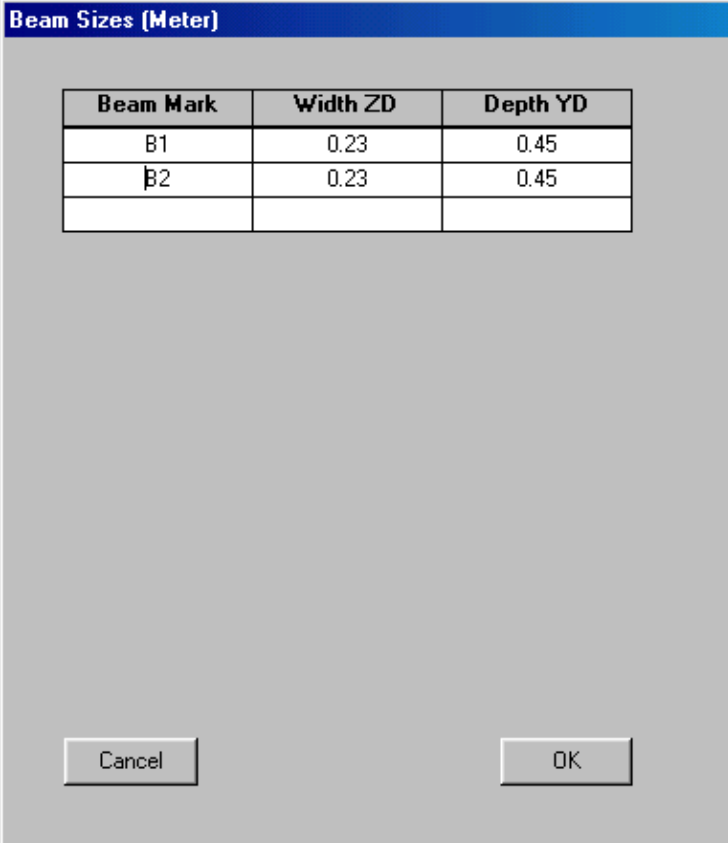
The image shows a dialog box titled "Level Description" with a blue header bar. Inside the dialog is a table with two columns: "Level No." and "Description". The table contains 16 rows, numbered 1 to 16. The descriptions are: Foundation Level, Ground Floor, First Floor, Second Floor, Third Floor, Fourth Floor, Fifth Floor, Sixth Floor, Seventh Floor, Eighth Floor, Ninth Floor, Tenth Floor, 11th Floor, 12th Floor, 13th Floor, and 14th Floor. To the right of the table is a vertical scrollbar. At the bottom of the dialog are two buttons: "Cancel" and "OK".

Level No.	Description
1	Foundation Level
2	Ground Floor
3	First Floor
4	Second Floor
5	Third Floor
6	Fourth Floor
7	Fifth Floor
8	Sixth Floor
9	Seventh Floor
10	Eighth Floor
11	Ninth Floor
12	Tenth Floor
13	11th Floor
14	12th Floor
15	13th Floor
16	14th Floor

These level names will be used in editing & copying floor data & also embedded in the generated space frame data file enabling easy checking.

The rows for giving values are self-expanding & next row will appear automatically when value is given in the current row.

6. Click **Beam Sizes** to specify the beam sizes.



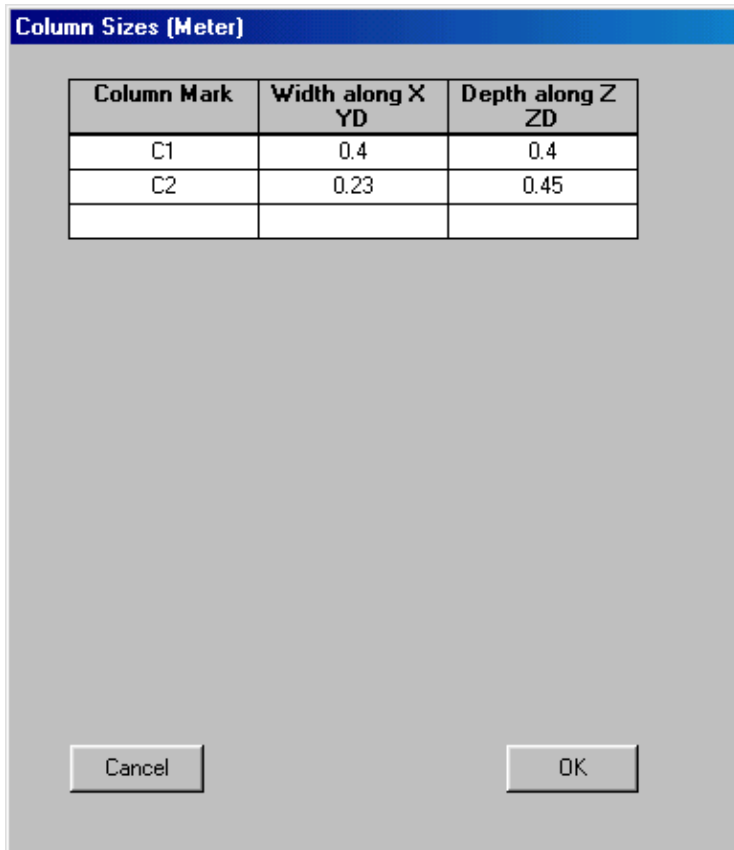
The image shows a software dialog box titled "Beam Sizes (Meter)". It contains a table with three columns: "Beam Mark", "Width ZD", and "Depth YD". The table has three rows, with the first two rows containing data and the third row being empty. Below the table are two buttons: "Cancel" and "OK".

Beam Mark	Width ZD	Depth YD
B1	0.23	0.45
B2	0.23	0.45

The beam sizes are used in member properties.

The rows for giving values are self-expanding & next row will appear automatically when value is given in the current row.

7. Click **Column Sizes** to specify the column sizes.



Column Sizes (Meter)

Column Mark	Width along X YD	Depth along Z ZD
C1	0.4	0.4
C2	0.23	0.45

Cancel OK

The column sizes are used in member properties.

The rows for giving values are self-expanding & next row will appear automatically when value is given in the current row.

8. Click **Floor Loads** to specify the floor loads for dead load & live load cases for different floors.

Floor Loads

Floor	DL (T/SQ.M)	LL (T/SQ.M)
Ground Floor	0.8	0.3
First Floor	0.8	0.3
Second Floor	0.8	0.3
Third Floor		
Fourth Floor		
Fifth Floor		
Sixth Floor		
Seventh Floor		
Eight Floor		
Ninth Floor		
Tenth Floor		
11th Floor		
12th Floor		
13th Floor		
14th Floor		

Cancel

OK

These floor loads are embedded in the generated space frame data file.

9. Click **Wall Details** to specify the thickness & density of wall materials & height of parapet wall.

Wall Details

Wall Type	Thickness (m)	Density (T/Cu.m)
Full (One) Brick Thick	0.23	2.0
Half Brick Thick	0.115	2.0

Parapet Height (m) 1.0

CancelOK

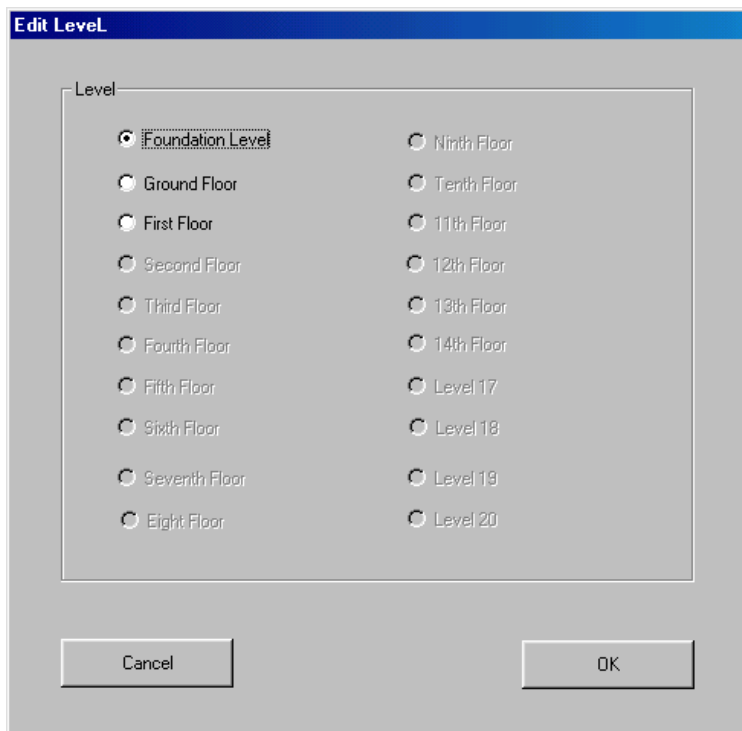
Based on the above parameters, wall loads are automatically calculated for different floors with deduction of beam depth of next floor.

The height of wall on the top most level is taken as the height of parapet.

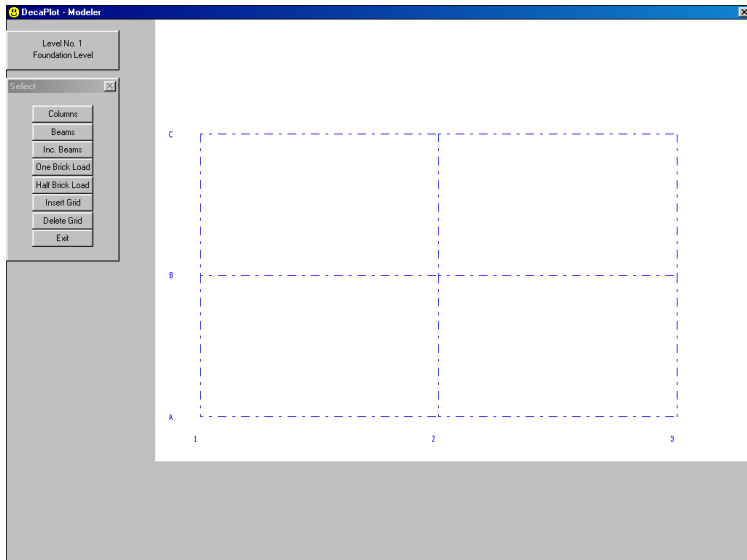
7. Level Menu

Click menu item **Level** to open sub-menu.

1. Click **Edit** to select level for editing.



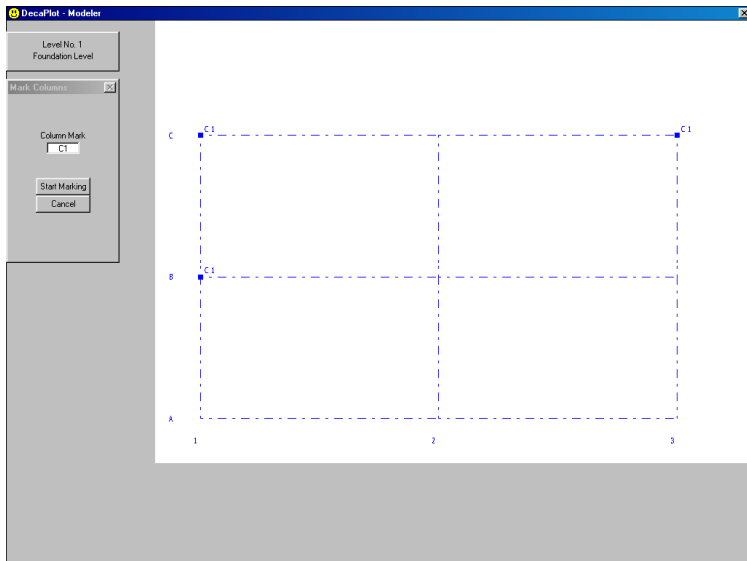
A graphic selection screen showing grids & the grid marks for the selected level will appear on the screen.



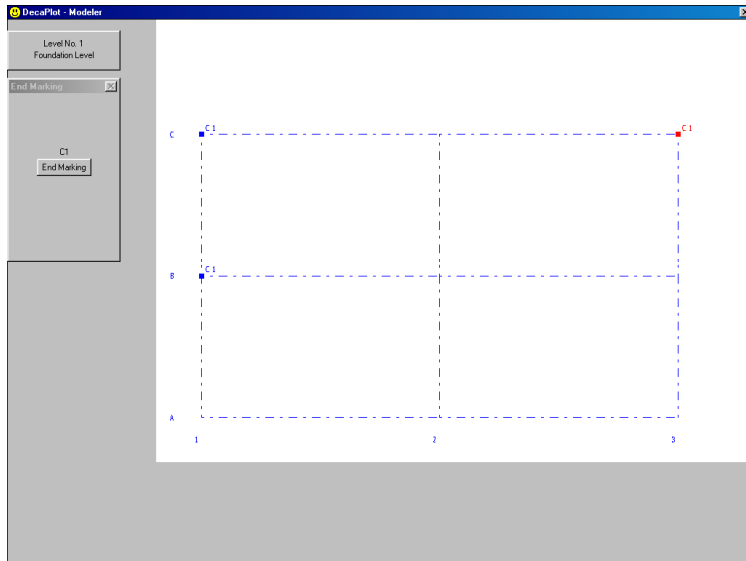
The user can select columns, beams (horizontal & vertical), Inclined beams, one brick or half brick wall load for marking.

Marking columns:

1. Click **Columns** to start marking columns on the graphic selection screen (shown on previous page).
2. Specify column mark & click **Start Marking**.



The following screen will appear:

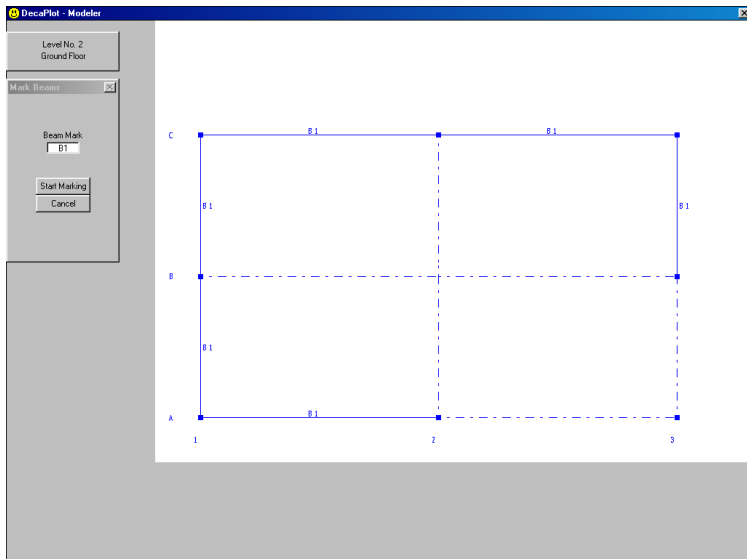


3. Click on or near the intersection of grids where the specified column is to be provided.
4. A red rectangular square along with column mark will appear at that intersection of grids.
5. Move to next intersection where same column mark is to be provided & click again. Repeat this process for all the intersections having same column mark.
6. Click **End Marking** to end column marking.
7. Specify next column mark & repeat the above steps.
8. If a column has been wrongly marked & its color is currently blue, click the same & its color changes to red along with that of column mark. Click the same again & now its color changes to cyan & the column mark disappears indicating the deletion of column.

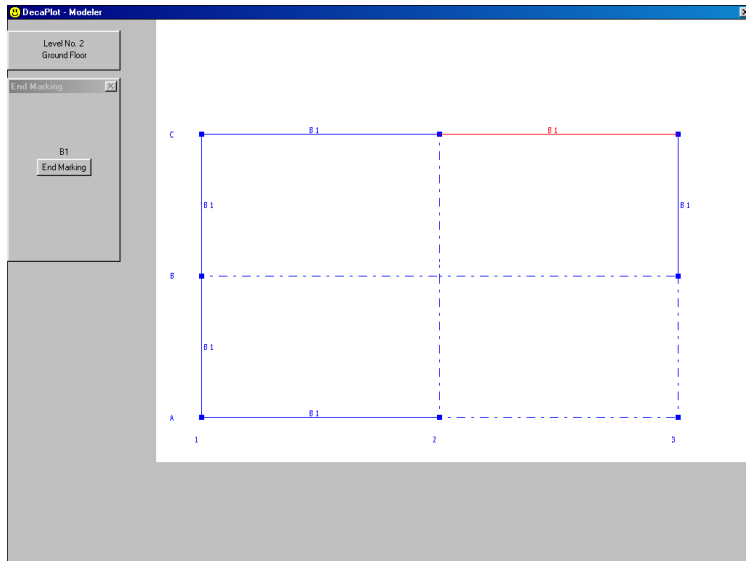
9. If a column has been wrongly marked & its color is currently red, click the same again & now its color changes to cyan & the column mark disappears indicating the deletion of column.
10. Click cancel to return to graphic selection menu.

Marking Beams (horizontal & vertical):

1. Click **Beams** to start marking horizontal & vertical beams.
2. Specify beam mark & click **Start Marking**.



The following screen will appear:

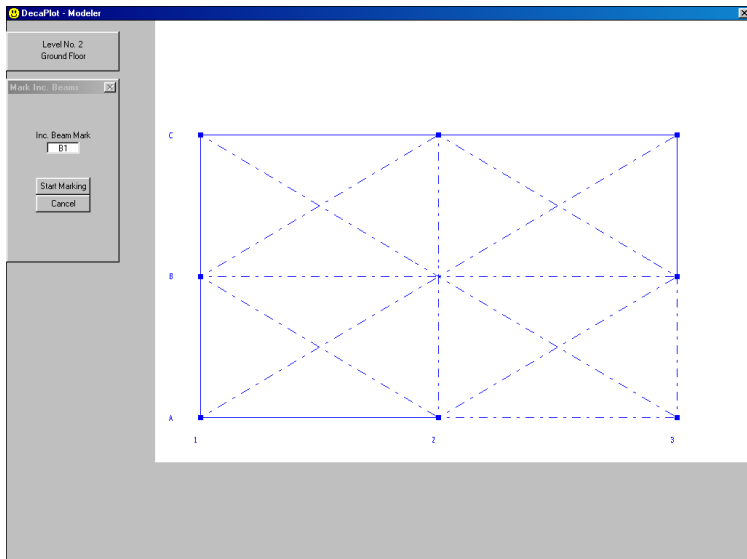


3. Click on or near the grid line where the specified beam is to be provided.
4. The color of the grid line will change to red & beam mark in red will also appear.
5. Move to next grid line where same beam mark is to be provided & click again. Repeat this process for all the grid lines having same beam mark.
6. Click **End Marking** to end beam marking.
7. Specify next beam mark & repeat the above steps.
8. If a beam has been wrongly marked & its color is currently blue, click the same & its color changes to red along with that of its mark. Click the same again & now its color changes to cyan & the beam mark disappears indicating the deletion of beam.

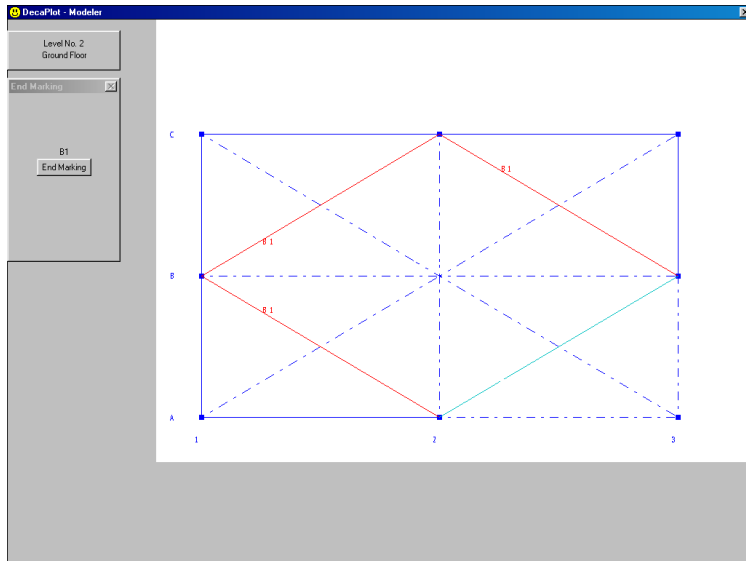
9. If a beam has been wrongly marked & its color is currently red, click the same again & now its color changes to cyan & the beam mark disappears indicating the deletion of beam.
10. Click cancel to return to graphic selection menu.

Marking Inclined Beams:

1. Click **Inc. Beams** to start marking inclined beams.
2. Specify beam mark & click **Start Marking**.



The following screen will appear:

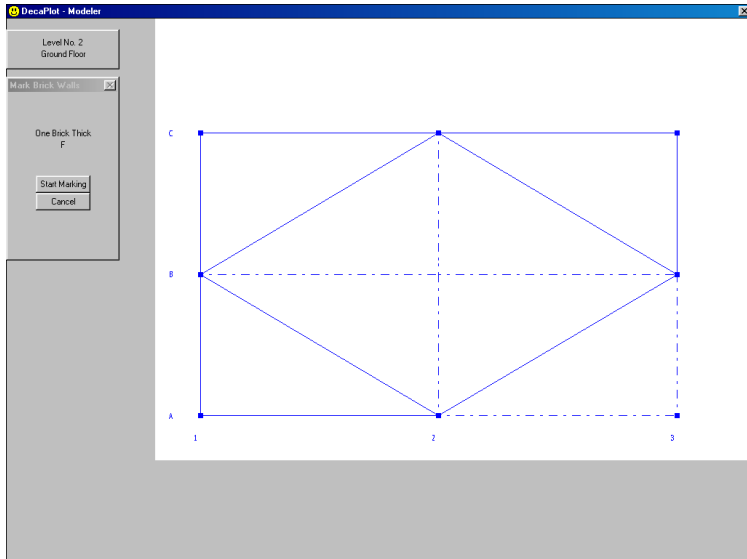


3. Click on or near the inclined line where the specified beam mark is to be provided.
4. The color of the inclined line will change to red & beam mark in red will also appear.
5. Move to next inclined line where same beam is to be provided & click again. Repeat this process for all the grid lines having same beam.
6. Click **End Marking** to end beam marking.
7. Specify next beam mark & repeat the above steps.
8. If a beam has been wrongly marked & its color is currently blue, click the same & its color changes to red along with that of its mark. Click the same again & now its color changes to cyan & the beam mark disappears indicating the deletion of beam.

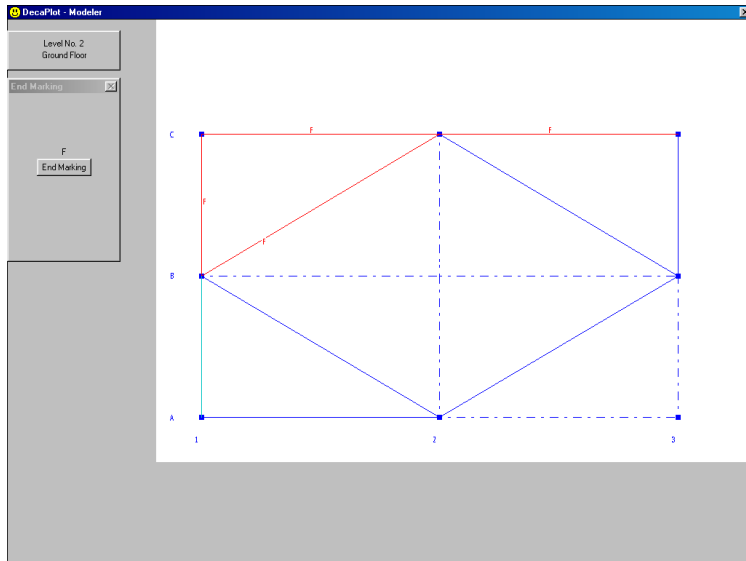
9. If a beam has been wrongly marked & its color is currently red, click the same again & now its color changes to cyan & the beam mark disappears indicating the deletion of beam.
10. Click cancel to return to graphic selection menu.

Marking One Brick Thick Wall Loads:

1. Click **One Brick Thick** to start marking wall loads.
2. Click **Start Marking**.



The following screen will appear:

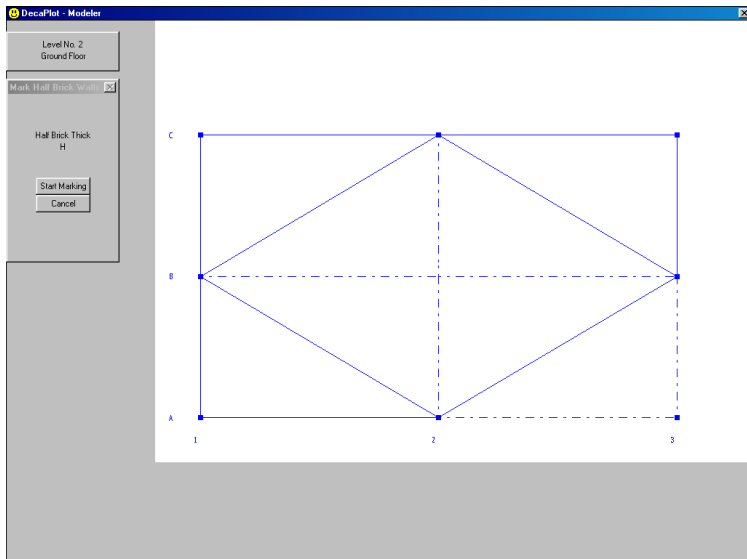


3. Click on or near the beam where the specified wall load is to be applied.
4. The color of the beam will change to red & **F** in red will also appear.
5. Move to next beam where same wall load is to be applied & click again. Repeat this process for all the beams having same wall load.
6. Click **End Marking** to end wall load marking.
7. If a beam has been wrongly marked & its color is currently blue, click the same & its color changes to red along with that of its mark. Click the same again & now its color changes to cyan & the beam mark disappears indicating the deletion of wall load.
8. If a beam has been wrongly marked & its color is currently red, click the same again & now its color changes to cyan & the beam mark disappears indicating the deletion of wall load.

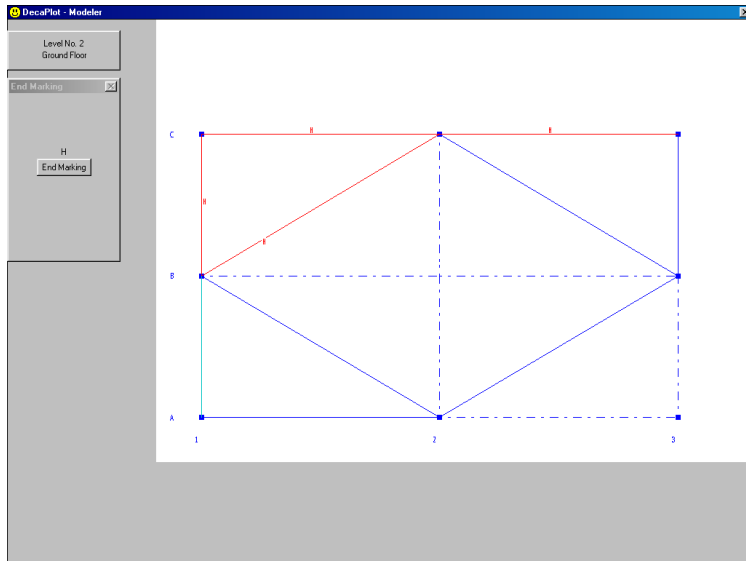
9. Click cancel to return to graphic selection menu.

Marking Half Brick Thick Wall Loads:

1. Click **Half Brick Thick** to start marking wall loads.
2. Click **Start Marking**.



The following screen will appear:

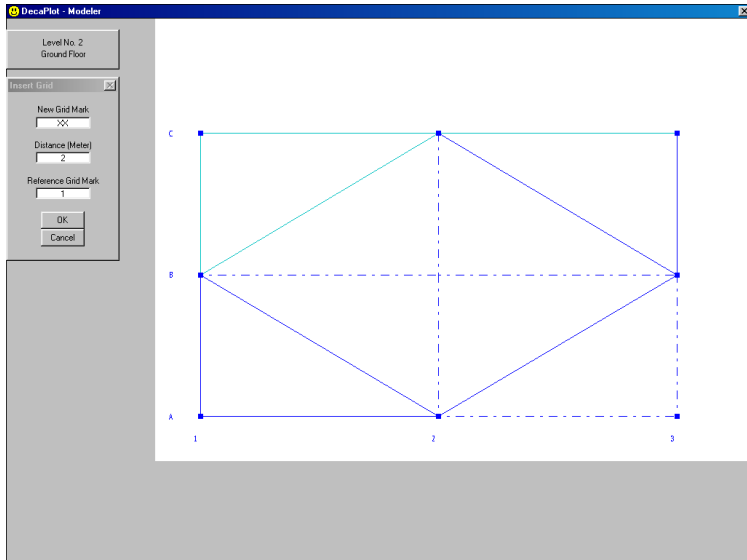


3. Click on or near the beam where the specified wall load is to be applied.
4. The color of the beam will change to red & **H** in red will also appear.
5. Move to next beam where same wall load is to be applied & click again. Repeat this process for all the beams having same wall load.
6. Click **End Marking** to end wall load marking.
7. If a beam has been wrongly marked & its color is currently blue, click the same & its color changes to red along with that of its mark. Click the same again & now its color changes to cyan & the beam mark disappears indicating the deletion of wall load.
8. If a beam has been wrongly marked & its color is currently red, click the same again & now its color changes to cyan & the beam mark disappears indicating the deletion of wall load.

9. Click cancel to return to graphic selection men

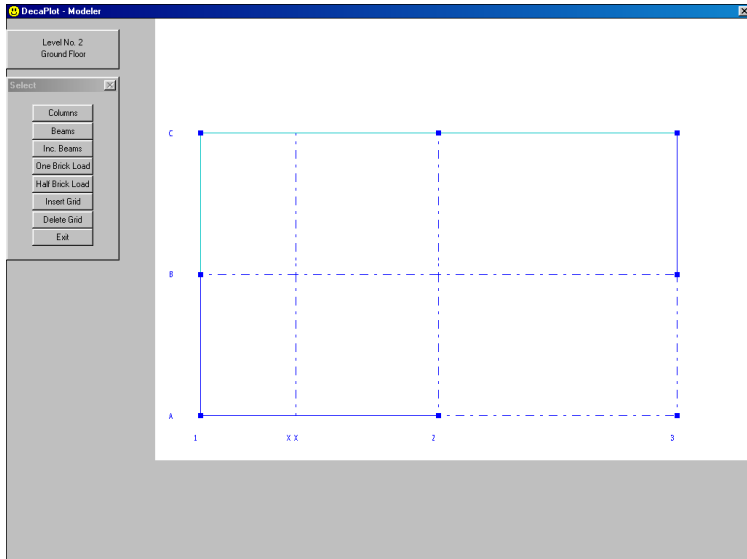
Insert Grid:

1. Click **Insert Grid** to insert a grid.



2. Specify new grid mark, its distance from new grid & reference grid mark & click OK.

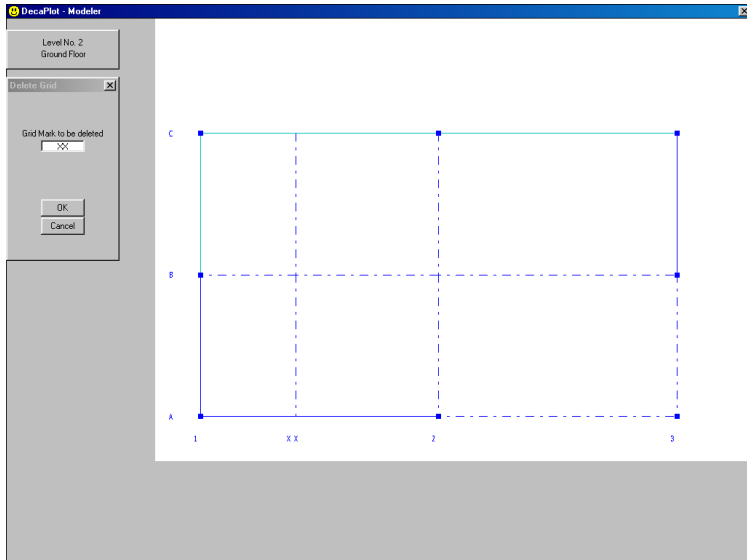
New horizontal or vertical grid will be inserted depending on whether the reference grid marks mentioned was that of a horizontal or vertical grid.



3. Click **Cancel** to return to main menu.

Delete Grid:

1. Click **Delete Grid** to delete a grid.



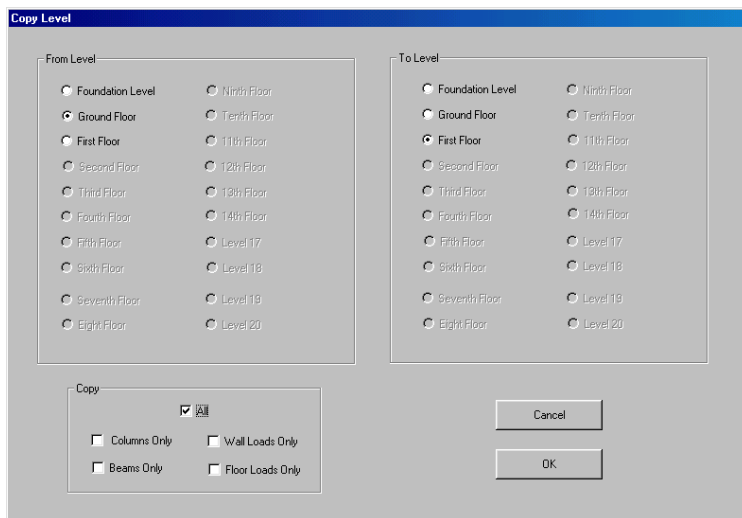
2. Click **OK**.

The specified grid will be deleted. If need arises, the spans can be readjusted by going back to grid spans.

3. Click **Cancel** to return to main menu.

2. Copy:

Click **Copy** to select level for copying.



The 'Copy Level' dialog box is used to select the source and target levels for copying data. It features two columns of radio buttons for 'From Level' and 'To Level', a 'Copy' section with checkboxes for data types, and 'Cancel' and 'OK' buttons.

From Level		To Level	
<input type="radio"/> Foundation Level	<input type="radio"/> Ninth Floor	<input type="radio"/> Foundation Level	<input type="radio"/> Ninth Floor
<input checked="" type="radio"/> Ground Floor	<input type="radio"/> Tenth Floor	<input type="radio"/> Ground Floor	<input type="radio"/> Tenth Floor
<input type="radio"/> First Floor	<input type="radio"/> Eleventh Floor	<input checked="" type="radio"/> First Floor	<input type="radio"/> Eleventh Floor
<input type="radio"/> Second Floor	<input type="radio"/> Twelfth Floor	<input type="radio"/> Second Floor	<input type="radio"/> Twelfth Floor
<input type="radio"/> Third Floor	<input type="radio"/> Thirteenth Floor	<input type="radio"/> Third Floor	<input type="radio"/> Thirteenth Floor
<input type="radio"/> Fourth Floor	<input type="radio"/> Fourteenth Floor	<input type="radio"/> Fourth Floor	<input type="radio"/> Fourteenth Floor
<input type="radio"/> Fifth Floor	<input type="radio"/> Level 17	<input type="radio"/> Fifth Floor	<input type="radio"/> Level 17
<input type="radio"/> Sixth Floor	<input type="radio"/> Level 18	<input type="radio"/> Sixth Floor	<input type="radio"/> Level 18
<input type="radio"/> Seventh Floor	<input type="radio"/> Level 19	<input type="radio"/> Seventh Floor	<input type="radio"/> Level 19
<input type="radio"/> Eighth Floor	<input type="radio"/> Level 20	<input type="radio"/> Eighth Floor	<input type="radio"/> Level 20

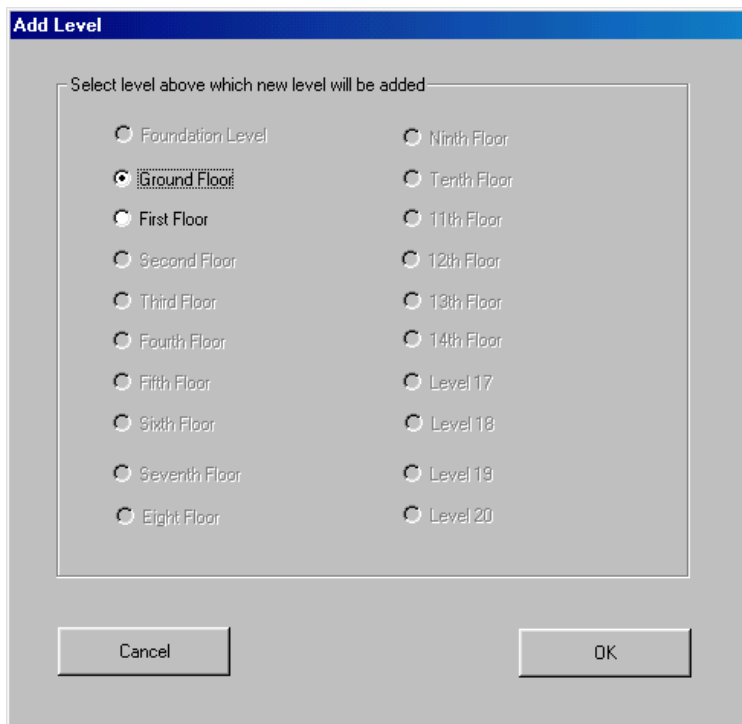
Copy	
<input checked="" type="checkbox"/> All	
<input type="checkbox"/> Columns Only	<input type="checkbox"/> Wall Loads Only
<input type="checkbox"/> Beams Only	<input type="checkbox"/> Floor Loads Only

Buttons: Cancel, OK

Either complete or selective floor data can be copied from one floor to another.

3. Add:

Click **Add** to add a level.



The image shows a software dialog box titled "Add Level". It has a blue header bar with the title. Below the header, there is a text label "Select level above which new level will be added". Under this label, there are two columns of radio button options. The first column lists: Foundation Level, Ground Floor (which is selected and has a dashed border around it), First Floor, Second Floor, Third Floor, Fourth Floor, Fifth Floor, Sixth Floor, Seventh Floor, and Eighth Floor. The second column lists: Ninth Floor, Tenth Floor, 11th Floor, 12th Floor, 13th Floor, 14th Floor, Level 17, Level 18, Level 19, and Level 20. At the bottom of the dialog box, there are two buttons: "Cancel" on the left and "OK" on the right.

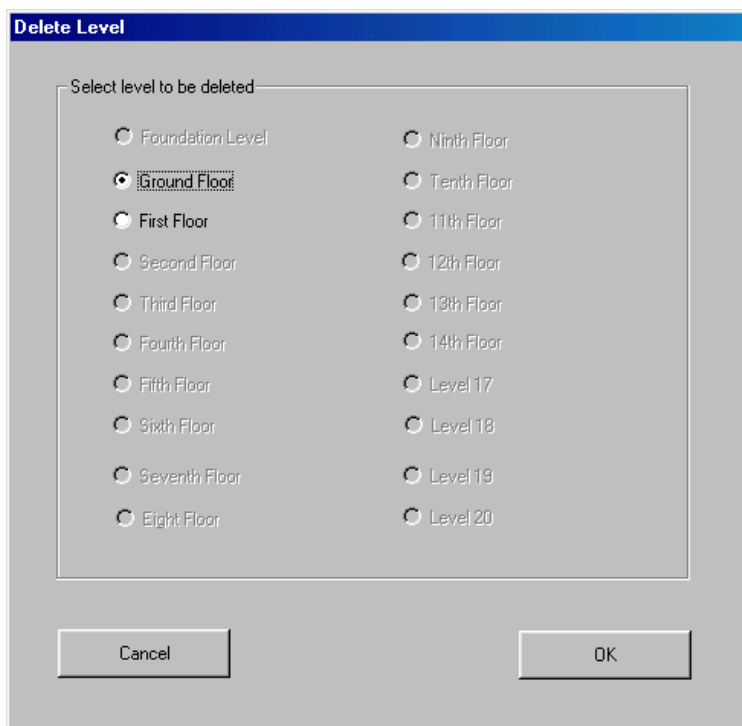
Select level above which new level will be added	
<input type="radio"/> Foundation Level	<input type="radio"/> Ninth Floor
<input checked="" type="radio"/> Ground Floor	<input type="radio"/> Tenth Floor
<input type="radio"/> First Floor	<input type="radio"/> 11th Floor
<input type="radio"/> Second Floor	<input type="radio"/> 12th Floor
<input type="radio"/> Third Floor	<input type="radio"/> 13th Floor
<input type="radio"/> Fourth Floor	<input type="radio"/> 14th Floor
<input type="radio"/> Fifth Floor	<input type="radio"/> Level 17
<input type="radio"/> Sixth Floor	<input type="radio"/> Level 18
<input type="radio"/> Seventh Floor	<input type="radio"/> Level 19
<input type="radio"/> Eighth Floor	<input type="radio"/> Level 20

Cancel OK

A new level is added above the specified level. The height of the floor added is equal to the height of the selected floor. The heights can be changed from the Storey Height of Define Menu.

4. **Delete:**

Click **Delete** to delete a level.



The specified level will be deleted.

8. Generate Menu

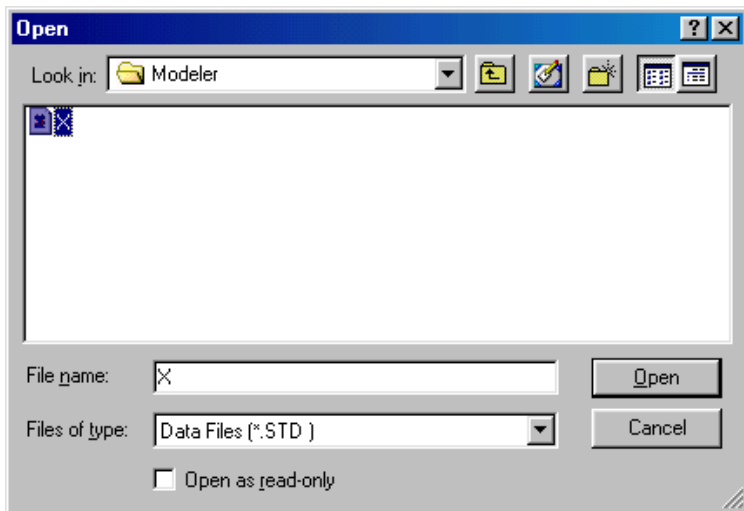
Click menu item **Generate** to open sub-menu.

Two options are available – **Generate Data** & **Generate Data with Seismic**.

Generate Data generates Staad data file for DL, LL & DL+LL.

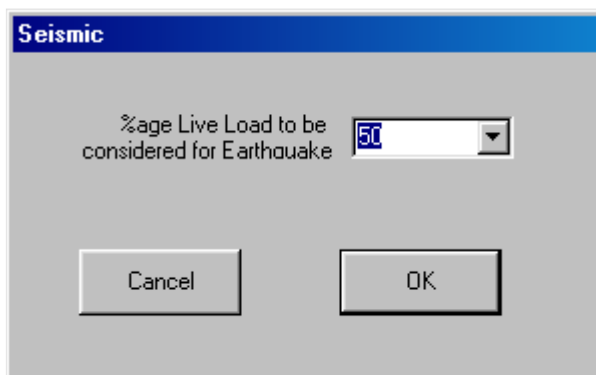
Generate Data with Seismic generates Staad data file for DL, LL & DL+(25 % or 50 %) LL.

1. Click **Generate Data** or **Generate Data with Seismic** to generate space frame data file.
2. Specify the file name for storing space frame data.



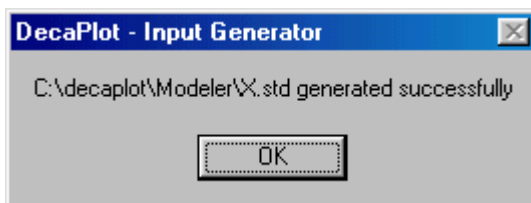
3. Click **Open** after specifying the file name.

4. If **Generate data with Seismic** was clicked, the following screen will appear:



The user can specify the %age of live load to be considered for seismic effects.

5. The following screen will appear after the generation of space frame data file:



6. Click **OK** to exit.
7. Click **Exit** on File menu to close the program.