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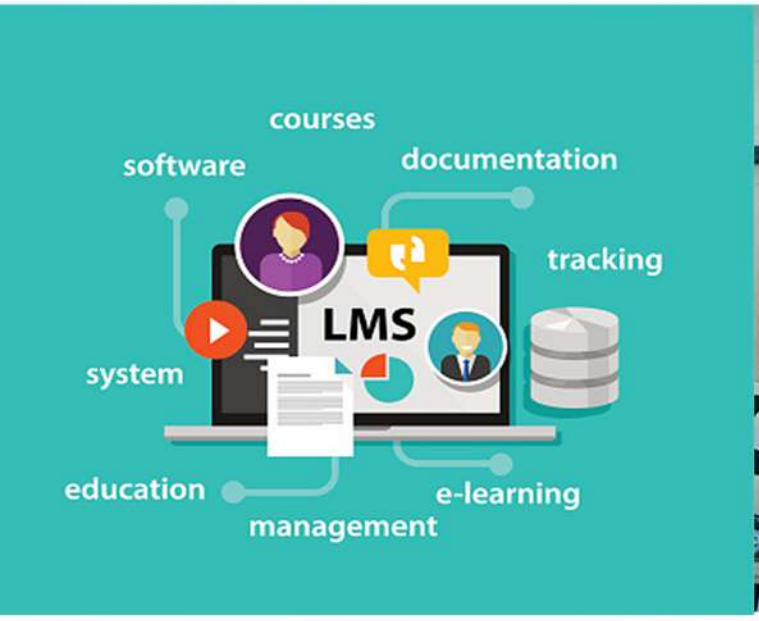

Extended Three-Dimensional Analysis of Building System

ETABS

Edit Tools Part - I

EDIT TOOL-1

Objective

This chapter contains an explanation on Tools in EDIT Menu.
EDIT menu contains various editing tools among those some of the edit tools are as listed below.

Undo and Redo

The **Undo** and **Redo** feature can be used to change model drawing (geometry changes) back to the last time the model was saved. For example, if an object(s) has been drawn, th**e Edit menu > Undo** command can be used to remove the object with a single click. The **Edit menu > Redo** command can then be used immediately to bring the object back.
The Undo and Redo commands work sequentially. If, for example, you have just finished the sixteenth operation since your last save, you can use the Undo feature to undo the sixteenth operation, then the fifteenth operations, and so on. You could not, however, undo only the seventh operation, for example.
The Undo and Redo commands do not work for changes made in some forms.

Cut, Copy and Paste

In general the **Edit menu > Cut, Edit menu > Copy and Edit menu > Paste** commands work similar to the standard cut, copy and paste Windows commands. However some of the behaviour of these commands is specific to ETABS.

- The **Cut, Copy** and **Paste** commands are active only when the currently active window is in plan or plan perspective view.
- The **Cut** command deletes the objects selected at the story level shown in the plan view in the currently active window. When the objects are deleted, all of their assignments are also deleted. The geometry of the objects and their assigned property names are copied to the Windows clipboard. No other assignments to the object besides its property name are copied to the clipboard. The geometry and property names associated with the cut objects can be pasted back into ETABS; they can be copied to a spreadsheet, such as Microsoft Excel, in a text format.
- The **Copy** command copies the geometry of the objects selected at the story level shown in the plan view in the currently active window to the Windows clipboard. The assigned property names associated with those objects are also copied to the Windows clipboard. The geometry and property names associated with the copied objects can be pasted back into ETABS, or they can be copied to a spreadsheet, such as Microsoft Excel, in a text format.
- The **Paste** command copies geometry and property names from the Windows clipboard into your ETABS model on the story level that is shown in plan or plan perspective view in the currently active window. The geometry and property names that are on the Windows clipboard may have been copied to the clipboard from ETABS or from a spreadsheet.

The similar stories feature of ETABS works for pasting objects into ETABS. That is, depending on which of the similar stories features is active, cutting, copying, and pasting can affect one story, all stories, or similar stories.

It is important to note that the Cut and Copy commands only copy the geometry and property name of the selected object to the Windows clipboard. Other assignments (e.g., loads, diaphragms) made to the selected object are not copied using these commands.

Delete

In general, the **Edit menu > Delete** command in ETABS works similar to the standard Windows delete command.

1. Select the object(s) to be deleted
2. Click the **Edit menu > Delete** command to delete the selected object(s) along with all of its assignments (loads, properties, supports, and the like).

Alternatively, select the objects and press the Delete key on the keyboard to accomplish the same thing.

Add to Model -- 2D Structure

Use the **Edit menu > Add to Model from Template > Add 2D Structure** command to access the **Add to Model -- 2D Structure** form. Click one of the buttons to add that type of two-dimensional structure to the open model file.

Note: The template structure is added to the model based on the selected tower and grid system. Thus, it may be necessary to use the **Edit menu > Edit Stories and Grid Systems (or Edit Towers, Stories and Grid Systems) > Add New Grid System** command to specify a grid system before adding the template structure.

- 2D Frame button. Accesses the Add to Model - 2D Frame form.
- 2D Truss button. Accesses the Add to Model - 2D Truss form.
- 2D Wall button. Accesses the Add to Model - 2D Wall form.

Add to Model - 2D Frame Form

Use the **Add to Model -2D Frame** form to specify the 2D frame type, the geometry, section properties, location, and restraints for the 2D structure being added to the open model file.

Note: The template structure is added to the model based on the selected tower and grid system. Thus, it may be necessary to use the **Edit menu > Edit Stories and Grid Systems (or Edit Towers, Stories and Grid Systems) > Add New Grid System** command to specify a grid system before adding the template structure. For this frame type, the grid system may be Cartesian or Cylindrical.

- **2D Frame Type** drop-down list. Select the type of 2D structure to be added: Portal, Braced (Concentric), Braced (Eccentric). The options available on the form differ slightly depending on the type of 2D frame selected.
- **Geometry**
    - **Grid System** drop-down list. Select the grid system to which the new structure is to be appended. See note above.

- **Top Story** and **Bottom Story** drop-down lists. Use these drop-down lists to specify to which stories the structure is to be added.
- **Number of Bay** edit box. Specify the number of bays to be used in the added structure.
- **Bay Width** edit box. Specify the width of the bays to be used in the added structure. All bays will use this width.

- **Section Properties** -- **Columns**, **Beams**, **Braces** drop-down lists. Use these drop-down lists to select previously defined section property definitions for the structural members of the added structure.
- **Restraints at Bottom** options. Specify if restraints should be applied to the bottom of the added structure and if so, if the restraints should be **pinned** or **fixed**.
- **Location in Plan - X Coordinate**, **Y Coordinate**, **Rotation Angle about Z** edit boxes. Use these edit boxes to specify where the added structure is placed relative to the Grid System selected above. The rotation angle is measured counter clockwise about the Z axis.
  - **Pick Two Points to Specify Location**. Click this button and then click on the model shown in the active window to specify the location of the added structure. When this button is clicked the options in the *Location in Plan* area of the form become invalid.
- Click the **Apply** button to add the 2D frame structure as specified on this form. The **Add to Model -2D Frame** form will remain open until the **OK** button is clicked so that additional structural members can be added to the model at a different location or to a different grid system.

Add to Model - 2D Truss Form

Use the **Add to Model -2D Truss** form to specify the 2D truss type, the geometry, section properties, and location, for the 2D structure being added to the open model file.

Note: The template structure is added to the model based on the selected tower and grid system. Thus, it may be necessary to use the **Edit menu > Edit Stories and Grid Systems (or Edit Towers, Stories and Grid Systems) > Add New Grid System** command to specify a grid system before adding the template structure. For this frame type, the grid system may be Cartesian only.

- **2D Truss Type** drop-down list. Select the type of 2D structure to be added: Sloped Truss, Vertical Truss, and Pratt Truss. The options available on the form differ slightly depending on the type of 2D truss selected.
- **Geometry**
  - **Grid System** drop-down list. Select the grid system to which the new structure is to be appended. See note above.
  - **Story** drop-down list. Use this drop-down list to specify to which story the structure is to be added.
  - **Number of Divisions** edit box. Specify the number of divisions to be used in the added structure.
  - **Division Length** edit box. Specify the length of the divisions to be used in the added structure. All divisions will use this length.

  - **Height** edit box. Specify the height of the divisions to be used in the added structure. All divisions will use this height.

  For Pratt Truss structures only -- Specify the **Number of Divisions**, **N1** and **N2**, the **Span Lengths**, **L1** and **L2**, and **Heights**, **H1**, **H2** and **H3**, for the Pratt truss structure..
- **Section Properties** -- **Chords**, **Diagonals**, and for Vertical and Pratt Trusses **Verticals** drop-down lists. Use these drop-down lists to select previously defined section property definitions for the structural members of the added structure.
- **Location in Plan - X Coordinate**, **Y Coordinate**, **Rotation Angle About Z** edit boxes. Use these edit boxes to specify where the added structure is placed relative to the Grid System selected above. The rotation angle is measured counter clockwise about the Z axis.
  - **Pick Two Points to Specify Location**. Click this button and then click on the model shown in the active window to specify the location of the added structure. When this button is clicked the options in the *Location in Plan* area of the form become invalid.
- Click the **Apply** button to add the 2D truss structure as specified on this form. The **Add to Model -2D Truss** form will remain open until the **OK** button is clicked so that additional structural members can be added to the model at a different location or to a different grid system.

Add to Model - 2D Wall Form

Use the **Add to Model -2D Wall** form to specify the 2D wall type, the geometry, and restraints at bottom, section properties, and location, for the 2D structure being added to the open model file.

Note: The template structure is added to the model based on the selected tower and grid system. Thus, it may be necessary to use the **Edit menu > Edit Stories and Grid Systems (or Edit Towers, Stories and Grid Systems) > Add New Grid System** command to specify a grid system before adding the template structure. For this frame type, the grid system may be Cartesian only.

- **2D Wall Type** drop-down list. Specify that the wall structure has openings or it does not. The options available on the form differ slightly depending on the type of 2D wall selected.
- **Geometry**
  - **Grid System** drop-down list. Select the grid system to which the new structure is to be appended. See note above.
  - **Top Story** and **Bottom Story** drop-down lists. Use these drop-down lists to specify to which stories the structure is to be added.
  - **Number of Bay** edit box. Specify the number of bays to be used in the added structure.
  - **Bay Width** edit box. Specify the width of the bays to be used in the added structure. All bays will use this width.

  For the **Wall with Openings** type also specify the **Opening Location**, **L** and **H**, and **Opening Width B** and **Height D**.
- **Restraints at Bottom** options. Specify if restraints should be applied to the bottom of the added structure and if so, if the restraints should be **pinned** or **fixed**.

- **Section Properties** -- **Wall Section** drop-down list. Use this drop-down list to select previously defined wall section property definitions for the added structure.
- **Location in Plan** - **X Coordinate**, **Y Coordinate**, **Rotation Angle About Z** edit boxes. Use these edit boxes to specify where the added structure is placed relative to the Grid System selected above. The rotation angles are measured counter clockwise about the Z axis.
    - **Pick Two Points to Specify Location.** Click this button and then click on the model shown in the active window to specify the location of the added structure. When this button is clicked the options in the *Location in Plan* area of the form become invalid.
- Click the **Apply** button to add the 2D wall structure as specified on this form. The **Add to Model -2D Wall form** will remain open until the **OK** button is clicked so that additional structural members can be added to the model at a different location or to a different grid system.

Edit Stories and Grid Systems

Click the **Edit menu > Edit Stories and Grid Systems** command to display the **Edit Story and Grid System Data** form. Use the form to review/modify story data; add a story to the model; add copy, modify, or delete a grid system; or import data from an AutoCAD (DXF/DWG) file.

- **Modify/Show Story Data** button -- displays the **Story Data** form. Use the form to specify model story data.
- **Quick Add Story** button -- adds a story to the model structure each time the button is clicked; the story will be added to the *Story Data* display area. The height of the added story will match that of the Master Story.
- **Set Story Name to Default** button -- changes the names shown in the Story Data display area to the default naming scheme, assuming that another naming scheme had been implemented previously using the **Story Data** form.
- **Add New Grid System** button -- displays the **Add New Grid System Quick** form. The form can be used to name the grid system, specify if it is Cartesian or Cylindrical, specify a grid labelling scheme, specify the grid system origin and orientation, and specify the grid plan dimensions for the new grid system.
- **Modify/Show Grid System** button -- highlight a grid system in the *Grid Systems* display area and click this button to display the **Grid System Data** form. The form can be used to edit the grid system name, the location of the grid system origin, the stories contained in the grid system, the bubble size and the colour of the grid, as well as the ID, location, visibility, and bubble location for rectangular and general grids. New grid lines can be added to and deleted from the rectangular grid and general grid tables on the **Grid System Data** form. A new rectangular grid system can be defined to replace the grids shown in the Rectangular Grids area by clicking the Quick Start New Rectangular Grids button, which will display the Quick Cartesian Grids form that can be used to specify the grid plan dimensions and labelling in a manner similar to the **Add New Grid System Quick** form.

- **Delete Grid System** button -- deletes the grid system highlighted in the Grid Systems display area.
- **Copy Existing Grid System** button -- displays the **Copy Existing Grid System** form. Use the form to select the grid system to be copied as a basis for creating the new grid system.
- **Import from .DXF/DWG File** button -- displays a form to be used to locate and select the file to be imported as the basis for creating a new grid system.
- **Refresh View** button. Click this button to update the active window with the modifications made on this form.