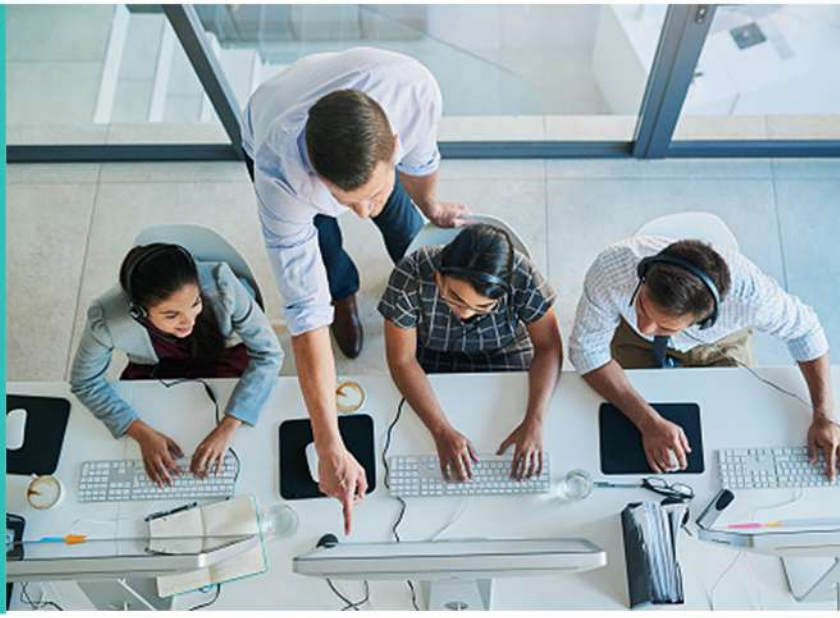
Andhra Pradesh State Skill Development Corporation



Extended Three-Dimensional Analysis of Building System

Methods of Assigning Columns

METHODS OF ASSIGNING COLUMNS

Objective

This chapter describes Methods of Assigning Columns.

To assign columns to grid

Use the **Draw menu > Draw Beam/Column/Brace Objects** command or click one of the five buttons shown in this topic to draw frame objects. When the menu command is used, a menu of five subcommands displays.

1. Set the View. Some drawing tools do not function in some views. The views that can be used with a particular tool are indicated by the parenthetic information in the command name. That is, the **Draw menu > Draw Beam/Column/Brace Objects > Draw Beam/Column/Brace (Plan, Elev, 3D)** command can be used in any view—Plan, Elevation or 3D, while the **Draw menu > Draw Beam/Column/Brace Objects > Quick Draw Beams/Columns (Plan, 3D)** command can be used in a Plan or 3D view only. If a particular button does not appear to function, try changing the View setting.
2. Click the **Draw menu > Draw Beam/Column/Brace Objects** command to display the list of subcommands. Click a subcommand or its associated toolbar button to display the **Properties of Object** form for the selected type of frame object. Use the options on the Properties of Object form to specify properties and control placement of frame objects for efficient integration into the model.

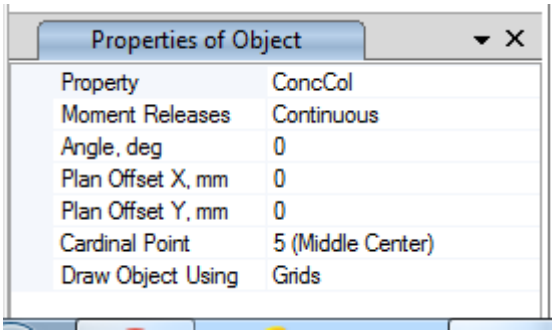


Fig: Properties of Object form

3. When drawing objects, a **Properties of Object** form will display in the lower left-hand corner of the window, below the Model Explorer if the feature is enabled. Use the form to specify the following for the object being drawn:
    - **Property:** It can be changed by clicking on the dropdown list and choosing the required one.
    - **Angle,deg :** Angle of rotation of the column can be specified, it is used to change the orientation of the column
    - **Offsets:** It is used to specify the offset while placing the column.
    - **Cardinal Points:** It is used to change the column placing point i.e... Base point of the frame object.

- For some objects, moment releases, number of beams, spacing, orientation, bracing configuration, and the like.
- For frame objects, options are available to use grids, points, or architectural layers.

To change options in the form, click in the appropriate cell in the right-hand column of the form, and enter the desired value or choose it from the drop-down list.

Move this form to a convenient location by clicking on its title tab and dragging it, or close it by clicking the X in the upper right-hand corner of the tab. To pin it in its original location, double click the title tab.

Draw the specified frame object as follows:

4. Click the **Draw menu > Draw Beam/Column/Brace Objects > Draw Beam/Column/Brace (Plan, Elev, 3D)** command or button.
    a. Left click once at the beginning of the frame (column).
    b. Drag the mouse to the end of the frame and left click again. Note that as the mouse is dragged, a dashed line is visible, indicating the current extent of the frame object.
    c. Left click once on the end point of the frame object to draw another frame object starting from the end of the first object; continue as needed. Double left click or single left click and depress the Enter key on the keyboard to terminate the drawing of the next frame.

When using this command in an elevation view or 3D view, if a frame object is drawn that crosses story levels, ETABS immediately breaks the object at the story levels. For example, if a frame object is drawn that has its top at the 4th story level and its bottom at the 2nd story level, ETABS immediately breaks the object into two objects with the breakpoint at the 3rd story level.

5. Click the **Draw menu > Draw Beam/Column/Brace Objects > Quick Draw Beams/Columns (Plan, Elev, 3D) command** or button.
    a. Click on any grid line (in plan view only) and a beam/column object is drawn on that grid line between the two adjacent intersecting grid lines from the same coordinate/grid system.
    b. Alternatively, depress and hold down the left mouse button. While keeping the left button depressed, drag the mouse to "rubber band" a window around one or more grid line segments. Then release the left mouse button. Beam/frame objects are automatically placed at each grid line segment included in the "rubber band" window. The term grid line segment in this paragraph means that portion of a grid line between the two adjacent intersecting grid lines from the same coordinate/grid system.
6. Click the **Draw menu > Draw Beam/Column/Brace Objects > Quick Draw Columns (Plan, 3D)** command or button.
    a. Left click at any location in a plan view to draw a column (vertical frame object below).
    b. Alternatively, depress and hold down the left mouse button. While keeping the left button depressed, drag the mouse to "rubber band" a window around one or more grid line intersections. Then release the left mouse button. Columns (vertical frame objects below) are automatically placed at each grid line intersection of two

grid lines in the same coordinate/grid system included in the "rubber band" window.

The columns (vertical frame objects) extend from the story level where they were drawn to the story level below, and, of course, also to other story levels if the similar stories feature in the ETABS status bar has been activated.