

Drawing with Precision

Envisioneer has several tools that you can use to ensure your model is drawn with precision and accuracy. These include drawing aids such as *Snaptrack*, *Object Snap* and *Ortho*, as well as the *Commander*, which allows you to enter exact lengths and angles while drawing. Certain elements have options available that can help you position the element precisely. For example, when you insert doors, windows or openings, you can specify an exact distance to offset the element from the end of the wall. This document provides a description of the tools available for precise model building as well as a sample exercise that uses these tools.

Drawing Aids

To help you draw precisely and accurately, there are seven drawing aids located in the lower right corner of the screen.

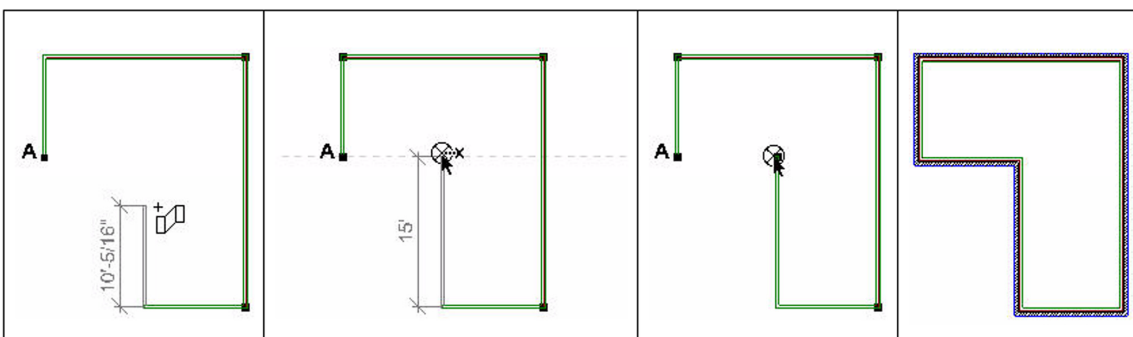
SNAPTRACK GRIDSNAP OBJSNAP ANGLESNAP GRID ORTHO COLLISION

If a button appears grayed out, that particular drawing aid is currently turned off. To turn a drawing aid on, just click the button. The available drawing aids are described below.

SNAPTRACK

SNAPTRACK helps you draw objects at specific angles or positions relative to other objects. When snap tracking is turned on, temporary alignment paths appear that are based on object snap points, such as endpoints and midpoints. Such points are marked with a small, solid square when you move your cursor over their drawing paths. You can acquire points on up to five elements at one time. Alignment paths are horizontal and vertical, and can also be angled if your Angle Snap is turned on.

Let's say in the following example that we want the end of the wall being drawn to be in alignment with point A. When you hover over point A and then stretch your wall towards the drawing path of point A, a horizontal dotted line appears indicating the path of alignment with point A. This makes it easy to select an end point for the wall that is aligned with point A.



Snap tracking can be turned on and off as needed. In order for snap tracking to work, the Object Snap (OBJSNAP) must be enabled. Snap tracking is available in both Model View and Worksheet View.

GRIDSAP and GRID

If the GRIDSAP is turned on, your cursor snaps to an invisible grid when inserting elements. To display a visible grid you can turn on the GRID option. By default, the spacing of the invisible GRIDSAP grid is set to 4' x 4'. You can edit the grid spacing as well as match it to the spacing of the visible GRID if you are using one.

To specify grid settings:

1. Select **Settings > Program Settings**.
2. In the **Program Settings** dialog, click **Drawing Aids** in the left pane.
3. You can edit the X and Y spacing of the invisible GRIDSAP grid in the *Grid Snap* area, and the X and Y spacing of the visible GRID in the *Grid* area. If the visible GRID is turned on, you can match the spacing of the invisible GRIDSAP grid to the spacing of the visible GRID by enabling the **Match Grid** check box in the *Grid Snap* area. Your cursor will then snap to the visible grid.

OBJSNAP

When OBJSNAP is enabled, your cursor snaps to existing elements in your drawing when inserting new elements. For example, if you have a cabinet in your drawing and are inserting another cabinet next to it, hovering your cursor near the existing cabinet will snap the new cabinet to the edge of the existing one.

ORTHO and ANGLESNAP

ORTHO restricts the movement of the cursor to 90-degree increments (right angles). When ANGLESNAP is enabled, your cursor snaps to set degrees of an angle. By default the snap is set to intervals of 15 degrees. You can change the ANGLESNAP interval if you want.

To edit the ANGLESNAP:

1. Select **Settings > Program Settings**.
2. In the **Program Settings** dialog, click **Drawing Aids** in the left pane.
3. In the *Ortho / Angle Snap* area, edit the value in the **Snap Angle** edit box.
4. Click **Apply** and then **OK** to retain the setting.

COLLISION

When COLLISION is enabled, you cannot insert elements where they do not belong or fit. For example, if you are inserting a cabinet on a wall, the COLLISION feature will snap the cabinet to the wall and prevent you from inserting it inside the wall. You can turn COLLISION off if you want to stack elements within the same space.

The Commander

Located near the bottom of the screen just above the status bar, the Commander allows you to enter precise distances and angles when drawing and editing elements.



If you do not see the Commander displayed you can turn it on by selecting **Settings > Program Settings**, and then enabling the **Commander** check box on the Workspace page. Initially the Commander appears grayed out. As you use drawing and editing tools, the Commander becomes active, allowing you to type in exact distances and directions.

DISTANCE and DIRECTION

When you are creating a line-drawn element, such as a wall or fence, or you are using tools such as Move or Stretch, the Commander displays a **Distance** and **Direction** edit box so that you can enter precise values for the length and angle of the element (or move distance and angle). For example, if you have just started drawing wall, you can just type the desired length for the wall and the value will automatically appear in the **Distance** edit box as you type. If you want to specify a precise angle for the wall, press the Tab key to move to the **Direction** edit box and enter the angle there. Pressing ENTER accepts all entered values and completes the wall.

BASE HEIGHT

When you select any Insert tool, the Commander displays a **Base Height** edit box before any points are picked. This allows you to define the element's insertion height if it is something other than the default. By default, most elements insert at the Floor Level defined for the current building location. To view your Building Location settings, select **Settings > Building Locations**.

Cartesian ▾

Base Height 0"

Note: For doors the option displayed is **Height above Floor**, and for windows it is **Head Height**. The insertion height of a window is measured from the top of the window.

Sample Exercise

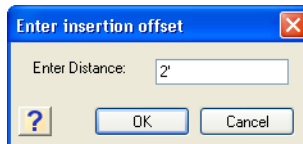
This quick exercise teaches you how to draw walls at precise lengths, insert an opening a specific distance from the end of the wall, use Collision Control and Object Snaps, and move an element a precise distance.

1. Select **File > New**.
2. Make sure that the Commander, ORTHO, OBJSNAP and COLLISION are turned on.
3. Select **Insert > Walls > Walls**.
4. In the catalog panel, select the **2 x 6 Clay Brick Veneer** in the **Brick Veneer** folder (located in the **Exterior Framed** folder).

Note: Notice the **Base Height** option in the Commander as you move your cursor into the drawing area. This lets you define the height at which the base of the wall will sit. We will keep it at 0 for this exercise.

5. Select a start point for the wall in the lower left corner of the drawing area.
6. Without dragging, start moving your cursor away from the start point. As you move your cursor, a dynamic dimension appears around the wall that lets you know how long the wall currently is. The same value is displayed in the Commander's **Distance** edit box. The **Distance** edit box is highlighted blue, allowing you to type a dimension.
7. Type **25'**.
8. Press the **Tab** key on your keyboard. The dynamic dimension attached to the wall becomes locked at 25', and the Commander's **Direction** edit box is now highlighted blue, allowing you to specify an angle for the wall. You can either pull your cursor in the direction you want the wall to go, or type a direction.
9. Type **0** and press ENTER. Specifying a 0-degree direction makes the wall run to the right. The wall is inserted, and a new wall is started at the end of the inserted wall.
10. Right-click and select **Finish** to stop inserting walls. Now let's insert an opening in the wall.

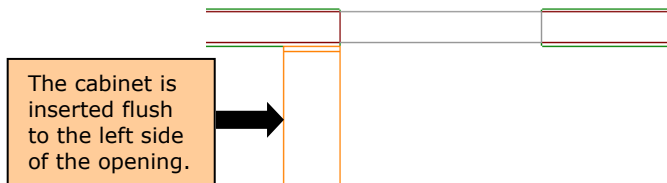
11. Select **View > Zoom and Navigate > Zoom Window**, then click and drag a selection window around the wall to zoom in on it.
12. Select **Insert > Openings**.
13. In the catalog panel, open the **Arched (Doorways)** folder and then the **3' Arched Top Doorway** element.
14. Move your cursor into the drawing area. An opening is attached to your cursor.
15. Right-click and select **Enter insertion offset**.
16. In the **Enter insertion offset** dialog, type **2'** and click **OK**.



17. Position the opening near the right end of the wall. The opening is locked into position exactly 2' from the end of the wall.

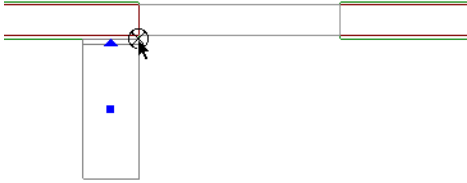


18. Click to insert the opening.
19. Right-click and select **Finish**. Next, let's insert a cabinet in our drawing.
20. Select **Insert > Interiors > Cabinets**.
21. In the catalog panel, select the **10" Base w/ Single Door** element in the **Single Door Base Cabinets** folder.
22. Insert the cabinet so the edge is flush with the left side of the opening. The COLLISION tool snaps it against the wall and into the correct position. With COLLISION turned on you cannot insert the cabinet inside the wall or in front of the opening.



23. Right-click and select **Finish**.
24. Select the cabinet, then right-click and select **Move**. The prompt on the status bar reads *Pick first point*, and your cursor becomes the Move cursor.

25. Hover your cursor over the upper right corner of the cabinet. The Object Snap cursor appears over the corner.



26. Click the corner to select the base point for the move. The prompt on the status bar now reads *Pick second point*. The Commander's **Distance** edit box is also highlighted.
27. Type **2'**. Press the Tab key to move to the **Distance** edit box.
28. Pull your cursor to the left and press ENTER, or type **180** and press ENTER. The cabinet moves to its new position exactly 2' away from the edge of the doorway.

