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Viewing Models

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Positioning the View of Your Model

When you position a view, you're affecting the position and orientation of a camera, not the scene. The scale and position of objects remains constant; only your view of the model changes.

Using the camera controls while in Edit mode switches the application to View mode. What you see in View mode is either flat shaded or textured (if you have applied textures.) While in View mode, you can also use the Pan tool inside the Project Window to move the image.

Canoma has three sets of controls for positioning your view of the model:

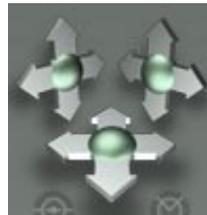
- a **Trackball**, which is useful for small objects directly in front of the photographer
- the **Camera Cross controls**
- **in-view navigation controls**, which are useful for moving around in large environments like interiors or city scenes.

The Trackball lets you adjust the position of the camera, as well as its orientation. Use the Trackball to rotate your model.



Use the Trackball to rotate your model.

The Camera Cross controls let you change the position of the camera along X, Y, and Z axes.



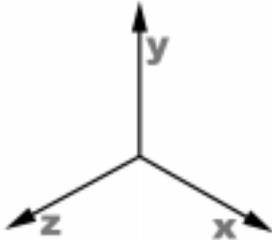
The Camera Cross controls change the position of the camera along X, Y, and Z axes.

Using Canoma Camera Controls

Using the Trackball

The Trackball lets you rotate the camera around its origin point. The Trackball doesn't rotate the model, it just changes the camera's location

(Offset) and orientation (Rotation) relative to your model. In Canoma, coordinates are figured in the following way:



The Canoma X, Y, and Z axes.

To move the camera using the Camera Trackball:

- Drag the mouse over the Camera Trackball control. The view of your model moves in the direction you drag.

Using the Cross Controls

Camera Cross controls let you move the view of your model along specific axes. When you're using these controls, the view does not tilt or rotate from its original position. It only moves up, down, back, or forward.

There are three Camera Cross controls:

X-Y Cross

The X-Y Cross provides control for horizontal and vertical motion. The sphere at the center of the cross lets you move the camera in both the X and Y axis.

This control affects your camera's position (Offset) only, not its orientation (Rotation.)



Use these controls to move the camera along the Y axis.

X-Z Cross

The X-Z Cross provides control for horizontal and depth motion. The sphere at the center of the cross lets you move the camera in both the X and Z axis.

This control affects your camera's position (Offset) only, not its orientation (Rotation.)



Use these controls to move the camera along the X axes.

Y-Z Cross

The Y-Z Cross provides control for vertical and depth motion. The sphere at the center of the cross lets you move the camera in both the Y and X axis.

This control affects your camera's position (Offset) only, not its orientation (Rotation.)



Use these controls to move the camera along the Z axis.

To move the camera in two axes at once:

- Drag the sphere at the center of one of the Camera Cross controls. The cursor becomes a four-way arrow.

The motion of your mouse determines the direction of the camera movement:

X-Y Cross: moving up, down, left, and to the right, moves the camera up, down, left, and to the right.

X-Z Cross: moving up, down, left, and right moves the camera forward, backward, left, and to the right.

Y-Z Cross: moving up, down, left, and right moves the camera up, down, forward, and back.

- Click inside the project window and drag left to turn left in your scene.
- Click inside the project window and drag right to turn right in your scene.
- Cmd/Ctrl + click inside the project window and drag up to move straight up in your scene.
- Cmd/Ctrl + click inside the project window and drag down to move straight down in your scene.
- Cmd/Ctrl + click inside the project window and drag left to slide left in your scene.
- Cmd/Ctrl + click inside the project window and drag right to slide right in your scene.

Using the In-View Navigation Controls

The In-View Navigation Controls are right inside the Project Window and are available in 3D Preview Mode. These controls are useful for moving around in large environments like interiors or city scenes.

Using the In-View Navigation Controls feels like driving a car into your model, with forward and reverse gears. If you press the Cmd/Ctrl key while you click-drag inside the project window, you can slide up, down, left and right. Either way, the speed at which you move depends upon how far you move the mouse from the point where you originally clicked down.

To use the In-View Navigation Controls:

- Click inside the project window and drag up to move straight forward in your scene.
- Click inside the project window and drag down to move straight backward in your scene.

Tip

To get a predictable feel for the In-View Navigation Controls, make the Project Window small, so that the program draws faster and the motion is smoother.

Banking Control

The Banking control sphere rolls your Camera, creating the effect of a tilted horizon.



The Banking Control.

To bank the camera:

- Click the Bank control and drag right or left.

Field of View

The Field of View control sphere acts like a wide-angle lens control. The higher the setting, the wider the field of view for your lens. Canoma's Field of View control automatically adjusts the distance, so that objects in the center stay about the same size.



The Field of View Control.

To increase/decrease the camera's field of view:

- Click the Field of View control and drag up or down.

Zooming and Panning

The more accurately you pin objects, the more accurately Canoma can figure things like: camera location, focal length (zoom), object positions, object orientations, and object dimensions.

Zooming

It is usually helpful to zoom in on what you're pinning, to improve accuracy. In Canoma, there is a difference between moving the camera and using the Zoom tools.

When you move the Camera, you're moving in 3D space. When you use the Pan and Zoom tools, you're transforming a 2D projection of your 3D model. When you use the Zoom tool, you are essentially making the 2D projection larger or smaller, your camera position in 3D space does not change.

To Zoom in:

- 1 Click the Zoom tool in the Toolbar.



The Zoom tool.

- 2 Click inside the Project Window.

Canoma scales the 2D projection of your model larger, creating the illusion of zooming in. The place in the Project Window where you clicked becomes the center around which the image is enlarged. (Remember, your 3D camera position remains unchanged.)

You can also right-click (Win)/option-click (Mac), then drag a rectangle to zoom into a specific area.

To zoom out:

- 1 Click the Zoom tool in the Toolbar.
- 2 Press and hold the Opt/Alt key.

Tips You can always inspect progress in 3D preview mode.

- 3 Click inside the Project Window.
Canoma scales the 2D projection of your model smaller, creating the illusion of zooming out.

To zoom into a specific area:

- 1 Click the Zoom tool in the Toolbar.
- 2 Press and hold the mouse button, as you drag a marquee around an area of your scene.
Canoma centers on the marquee and scales the 2D projection of your model so that the area in the marquee fits your Project Window.

To reset to non-zoomed:

- Double-click inside the Project Window to reset to a non-zoomed view.

Panning

Panning works like zooming. When you use the Panning tool, you are moving a 2D projection of your model right and left, up and down in front of the camera. Your camera position in 3D space does not change.

To pan around your model:

- 1 Click the Pan tool in the Toolbar.



The Pan tool.

- 2 Press and hold the mouse button, as you drag the Pan cursor inside the Project Window, in the direction you want your model to move.

Resetting the Viewpoint

At anytime, you can reset your viewpoint to match that of an underlying photograph.

To reset the camera:

- 1 Open the 2D Image Views palette to display the 2D Images in your project.
- 2 Click on a desired thumbnail in the 2D Image Views palette to reset the camera to the viewpoint of that photo (available in both Wireframe and 3D Preview modes).



Photographs in your Canoma project are displayed in the 2D Images Views palette. Click on the bottom of the palette to open it, then click on the desired photograph to reset the camera to the viewpoint of that photo.

Tip

Resetting the camera can be handy, especially after you zoom in or when you want to edit a wireframe for a different photo.

