

Step-by-Step

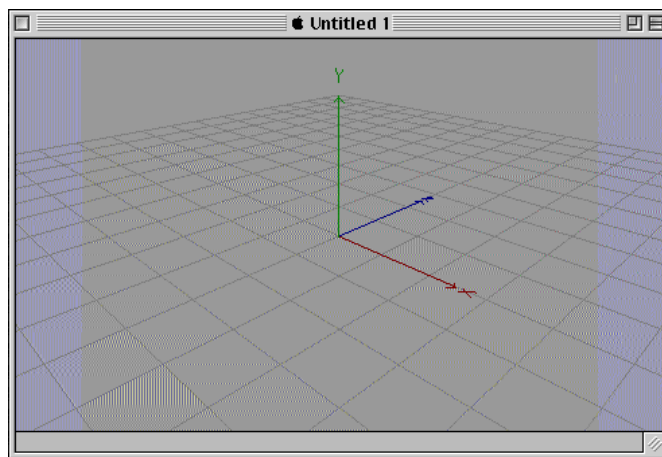
Cinema 4D XL: Getting Started With 3D Graphics

Cinema 4D XL is an integrated 3D modeling, animation, and raytracing program. This Step-by-Step Card introduces you to how to create a scene using the windows and palettes in Cinema 4D XL.

Understanding Cinema 4D XL windows and managers

- 1 Open the Cinema 4D XL application.

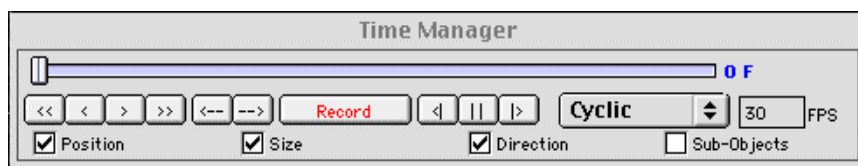
The Editor window is set at default to the 3D or perspective view.



Editor window

Other windows that surround the Editor window allow you to view your scene from many angles while you're working.

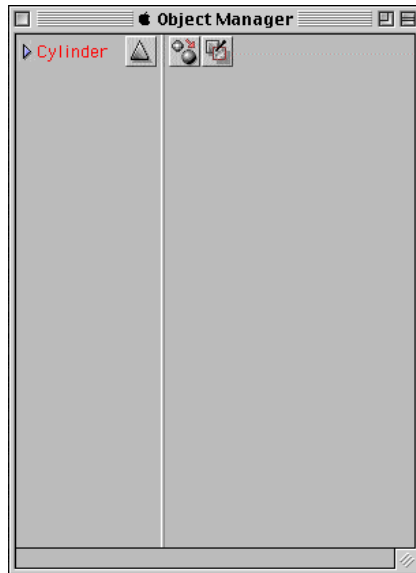
The Time Manager allows you to move through the time of your animation. You can use it to define the position of an object during a specific time and also to play the animation of a scene in the Editor window.



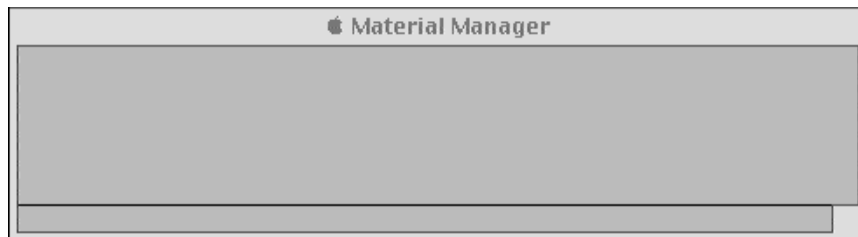
The Coordinates Manager is a universal tool for manipulating and changing the exact numeric definitions of objects in a scene. Position helps you define where the object is located. Focus allows you to use the Scale/Size menu to change the size of objects. Direction allows you to change the rotation of an object.



The Objects Manager keeps all the information about the objects in a scene. To the right of the objects are the modifiers or elements that define or change the object.

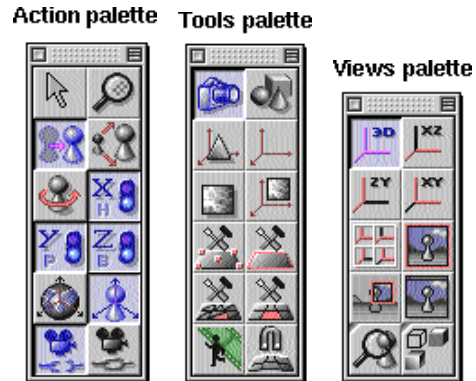


The Material Manager contains all of the material properties you have created for use within your scene.



Understanding the palettes

The palettes are toolbar menus that help you manipulate objects in a scene. These tools are also available from the menu bar menus. These palettes can be customized; tools can be added or removed.

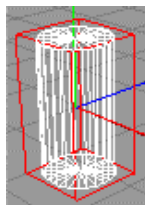


Creating a pillar in the construction window

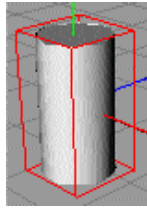
- 1 Choose 3D-Object from the Objects menu, then choose Cylinder from the submenu. In the dialog box that appears, click OK to keep the default settings.



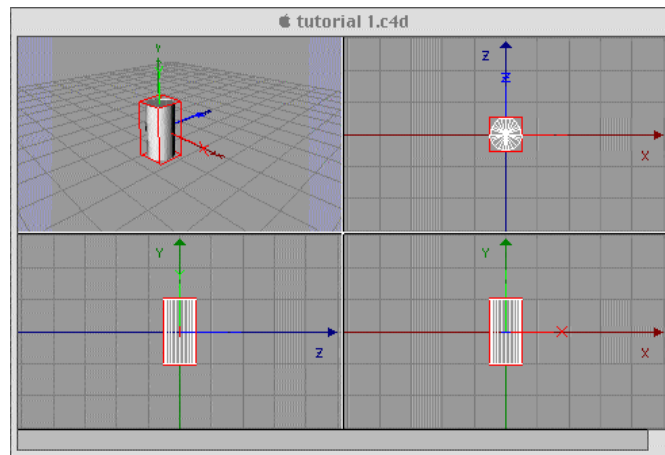
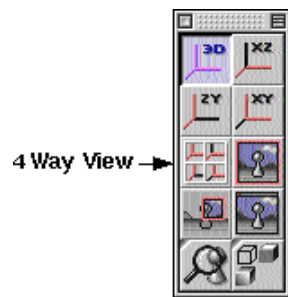
Once the cylinder has been added, a white wireframe and a red box appear around the object to show that it is currently selected.



- 2 Choose Display Mode from the View menu, then choose Gouraud Shading from the submenu to change the way the scene is viewed to Gouraud shading.

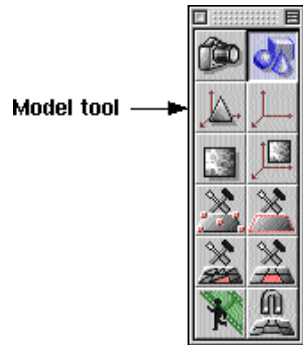


- 3 To move objects accurately in 3D space, you want to change the view to 4-way. In the Views palette, click the 4 Way View button.

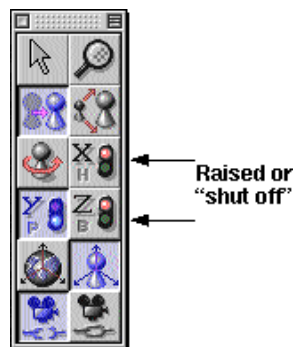


For coordinate and navigation purposes, Y is the vertical axis (up and down), X is the horizontal axis (left to right), and Z is the depth axis (forward and back).

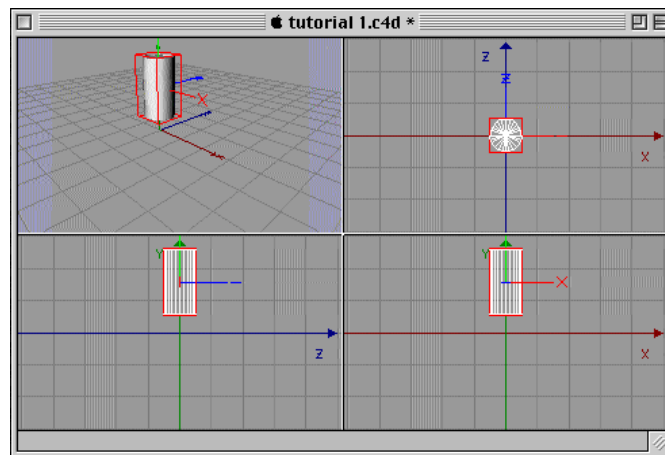
- 4 Select the Model tool button in the Tools palette. This ensures that you move only the cylinder rather than the camera. You want to move the cylinder up so you can make a pillar with a top and a bottom.



- 5 To make sure that you don't move the object on the Z or X axis, select these two axes in the Action palette and lock them. Alternatively, you can toggle these axes on and off by using the keyboard shortcuts, X, Y, and Z. When you select the two buttons, they appear "raised" or "shut off".

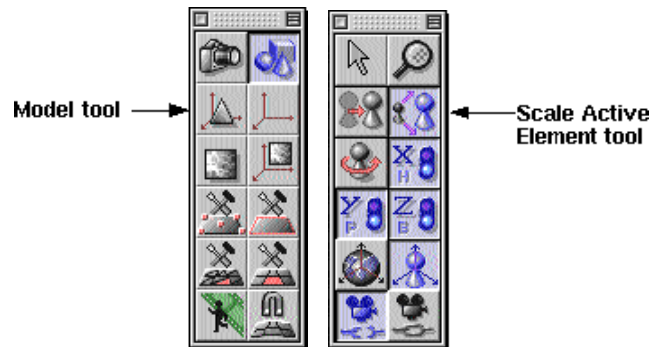


- 6 Select the lower-left corner view of the YZ view quadrant. Position the pointer on the pillar and drag the pillar up so the model is about half a grid block above the X and Z axes.
- 7 Choose Save from the File menu. Name and save your file.



Creating the bases of the pillar

- 1 Choose 3-D Object from the Objects menu, then choose Cube from the submenu. Click OK in the dialog box that appears to keep the default settings. The cube appears large, but you will resize it to match the pillar.
- 2 Make sure that the cube is selected (a red box around it shows that it is selected). If it is not selected, click the name “cube” in the Object Manager list.
- 3 Select the Model tool button in the Tools palette and the Scale Active Element button in the Action palette.

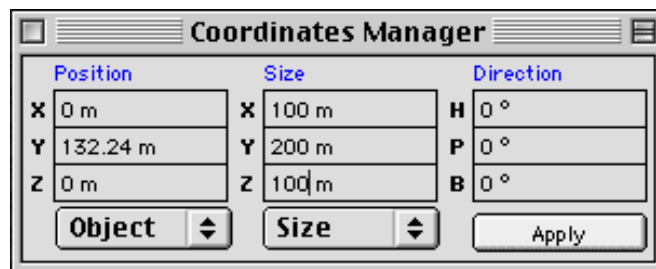


- 4 Lock the X and Z axes buttons again so the scalability will only be on the vertical axis. This will mean that the object is scaled only on the Y axis.
- 5 In the Views palette, click the 3D perspective to take yourself out of the 4-way view.
- 6 Select the cube (with the red box around it) and drag to the left. The image begins to flatten. Continue dragging until the image looks proportional to the pillar.

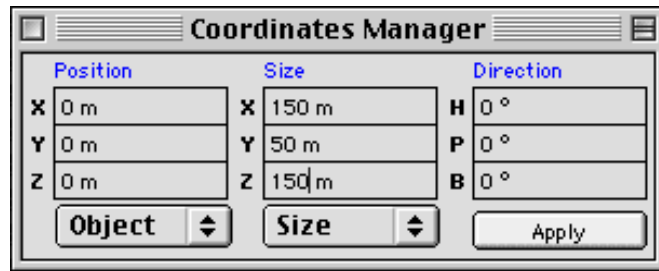
Manually setting the X, Y, Z coordinates

Many times you will want to set the position and size of the objects by adjusting the coordinates in the Coordinates Manager.

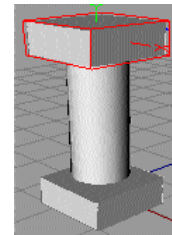
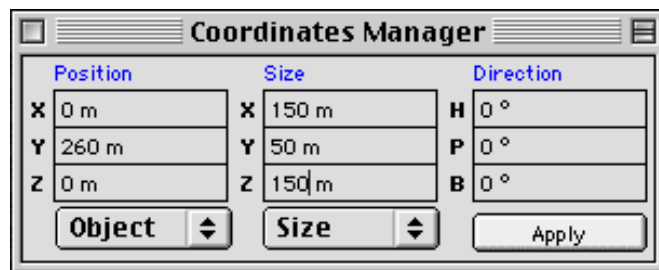
- 1 Select the cylinder and adjust the Coordinates Manager to match the image below, then click Apply.



- 2 Select the cube (the base of the pillar) and adjust the coordinates to match the following image, then click Apply.



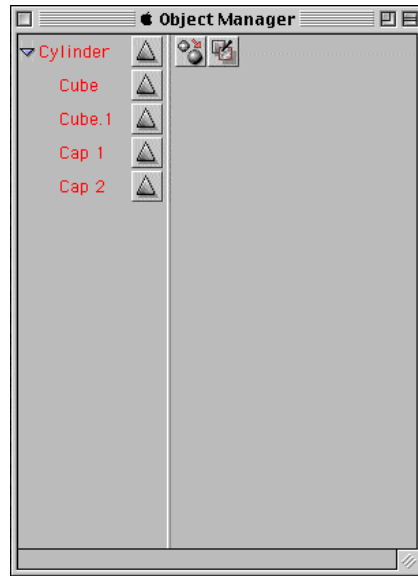
- 3 With the cube or “base” still selected (in red outline), choose Copy from the Edit menu, then choose Paste from the Edit menu. Another cube called “Cube 1” appears in the Object Manager window.
- 4 Select Cube 1 in the Object Manager window by clicking the word Cube 1. When looking in the Editor window, it will appear as if you have selected the original cube but this is only because Cube 1 is pasted on top of the original cube.
- 5 With Cube 1 selected in the Object Manager window, adjust the coordinates in the Coordinates Manager window to match the image below. You now have a pillar with two cubes, one on the top and one on the bottom.



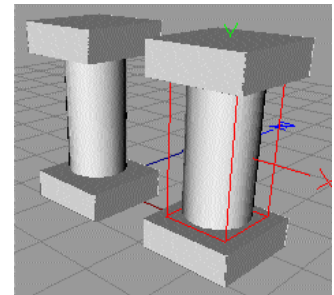
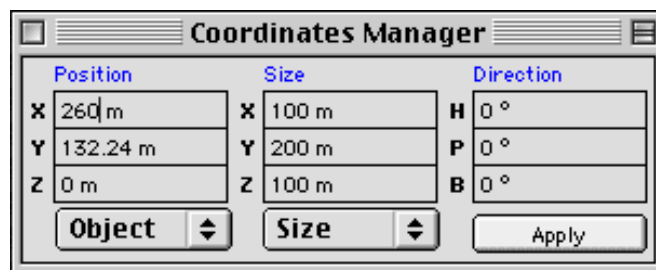
Moving objects for parent/child relationship

- 1 Select the object “Cube” in the Object Manager list and drag it on top of the arrow next to the object “Cylinder.” This makes the cube act like a grouped item with the cylinder. Each time an adjustment is made to the cylinder, it will also affect the cube.

- 2 Drag the Cube 1 to the Cylinder to also make it a child. The cylinder is the “parent” and the cubes are both “child” objects.



- 3 Select “Cylinder “and copy and paste the item. Another name appears in the Object Manager window. The Cylinder 1 is now a duplicate but is sitting on top of the original Cylinder.
- 4 With Cylinder 1 selected in the Object Manager window, adjust the coordinates in the Coordinates Manager window to match the image below. You should now have two cylinders with cubes on the top and bottom.

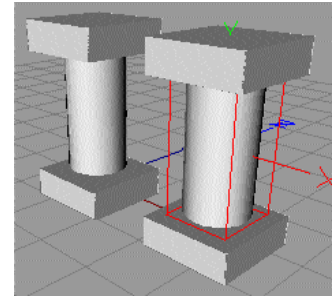
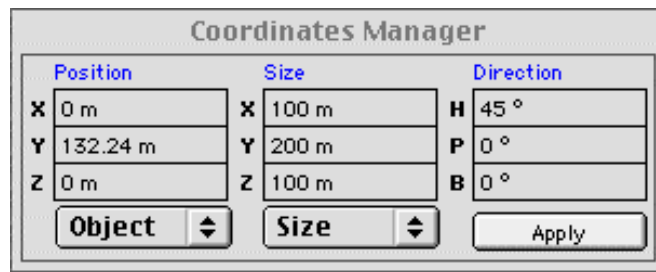


- 5 Save your project.

Rotating the objects

- 1 At this point the pillars are facing off-center (default for 3D perspective). You need to rotate the images to adjust for a 45-degree perspective.

- 2 Select the cylinders and adjust the H Direction angle to 45 degrees. Do this on both objects.



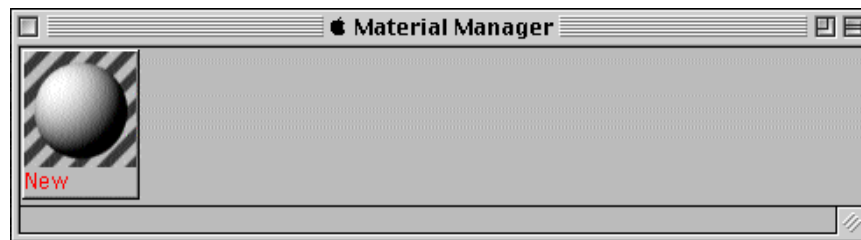
Adding a floor

Although the floor is considered an object, it is known as a “scene object” because it is an infinite plane and because its ability to be rotated, scaled, or manipulated in other ways is limited.

- 1 Choose Scene Object from the Object menu; then choose Floor from the submenu.
- 2 In the dialog box that appears, leave the name as “Floor” and click OK. When adding the floor, it will seem like an actual floor has not been added to the Editor window but it is listed in the Object Manager list.

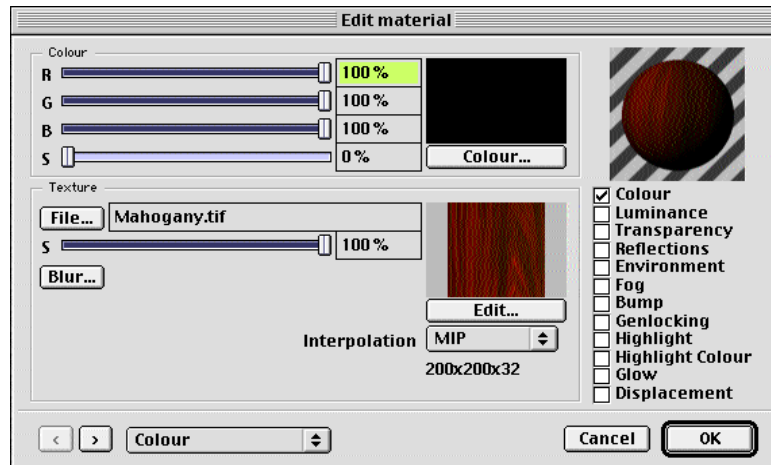
Applying materials

- 1 Select the Material Manager window. If it is not visible, choose Material Manager from the Window menu.

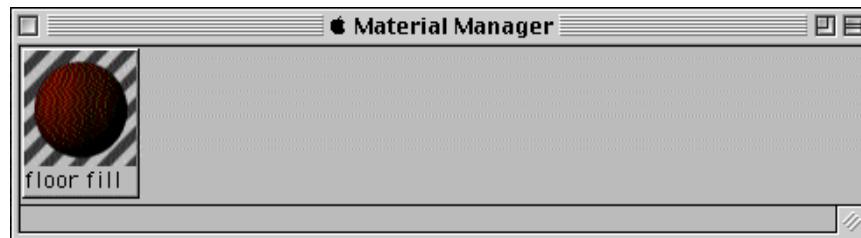


- 2 Choose New Material from the File menu.
- 3 Double-click the gray sphere of the “New” material in the Material Manager. The “Edit material” dialog box appears.

- Click File (located under “Texture”). Navigate to the Cinema 4D folder and select the folder called “Tex.” Open the Basics folder and double-click the “Mahogany.tif” file. After adding mahogany as the texture, slide the “S” value of the Colour to zero. This turns off the color for that channel, giving the texture 100% strength. You can also mix color and texture if you want. Click OK.



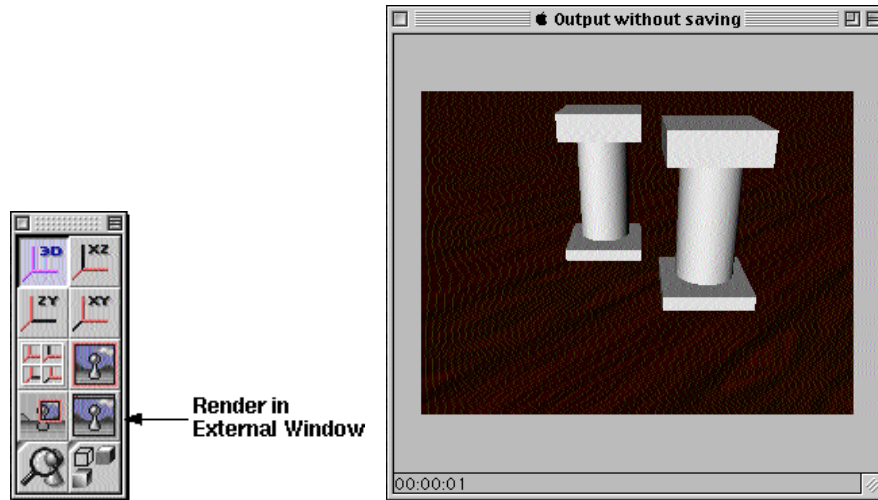
- In the Material Manager window, double-click the title “New” underneath the image. This allows you to rename the texture. Name the texture “floor fill.”



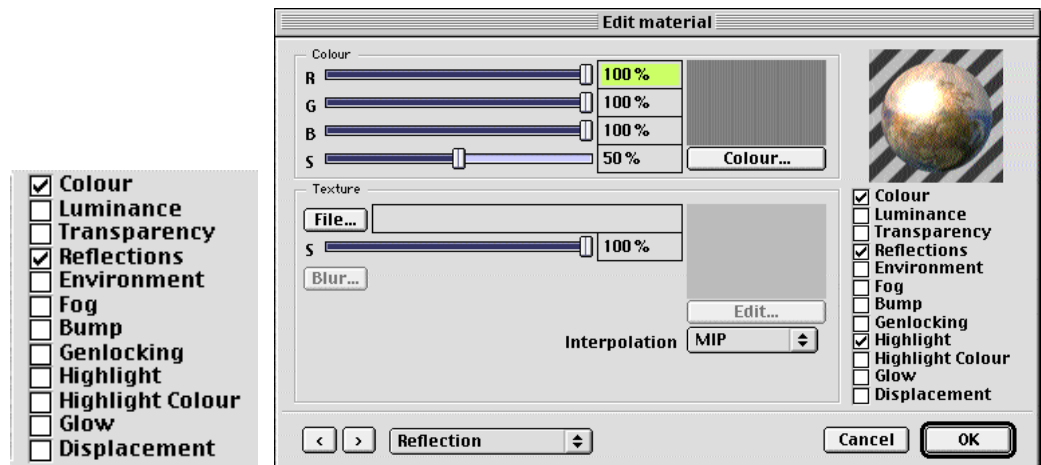
- Select the “floor fill” button in the Material Manager window. Holding down the Shift key, drag the button on top of the “floor” button in the Object Manager window. This applies and tiles the “floor fill” texture to the actual floor. By holding down the Shift key, you are able to apply the texture immediately using the default settings. If you drag and do not hold down the Shift key, you will be prompted with a settings window.

You do not see the grain of the floor because the scene is not yet rendered. However, if you select “View” and “Display Mode” and choose “Show Textures” you can see the textures real-time in the Editor Window.

- 7 Select the “Render in External Window” button to see a quick scene render.

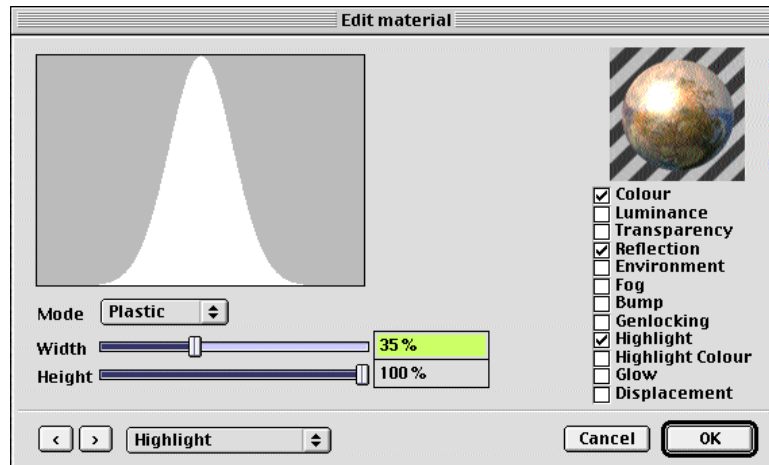


- 8 Select the Material Manager window and create a new material button. (Choose New Material from the File menu.) Name this material “pillar fill.” Click OK. Double-click the “pillar fill” button and add the “Marble08.tif” file to the texture. Slide the Colour Strength (S) down to zero. While the “Edit material” dialog box is displayed, select the Reflections checkbox and then choose Reflection from the pop-up menu near the bottom of the dialog box. Adjust the “S” value in the Colour settings to have a reflective property of approximately 50%.



- 9 Go to the Highlight channel of the material and adjust the highlight to 35% Width and 100% Height. Click OK.

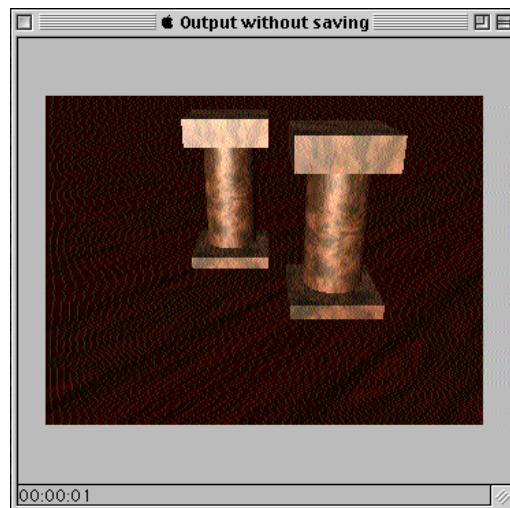
Note: If you have already closed the Pillar Fill window, double-click the “Pillar Fill” button in the Material Manager window. Choose Highlight from the pop-up menu at the bottom of the window.



- 10 Holding down the Shift key, drag the newly named “pillar fill” on top of each of the pillars in the Object Manager window.

- 11 Select the “Render Scene in External Window” button in the Views palette.

The columns seem jagged because this is only a “quick” render without anti-aliasing or reflections turned on.



- 12 Choose Save from the File menu.
- 13 Choose Quit from the File menu, or proceed to the Step-by-Step Card “Adding animation With Cinema 4D XL” to animate the project.