

Microspot Interiors **USER GUIDE**

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Chapter 1

Introduction

Basic information regarding Interiors and technical support details.

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∪ Introduction

Thank you for choosing Microspot Interiors, the affordable, easy to use 3D modeling application for the Apple Macintosh® computer. Designed for novices as well as professionals, Microspot Interiors provides the tools you need to create realistic 3D interior designs.

∪ Entering serial number

The first time you run Interiors you will be asked to enter your serial number

∪ Welcome screen

The welcome screen allows new users to register Microspot Interiors. Registering the product allows you to receive technical support, as well as upgrade and new product information.

- **Never register:** Allows you to skip registration and starting using the Microspot Interiors. The welcome screen will not appear again.
- **Register later:** Allows you to skip registration and starting using the Microspot Interiors. The welcome screen will appear the next time Interior is started.
- **Register now:** Opens your default browser to the Microspot Interiors registration page. The welcome screen will not appear again.

Note: If you would like to register but press the Never register button, please use the help menu item Registration Information. (*see Registration Information on page 3-36 for more information*).

u **Technical Support**

You must register your product in order to receive technical support, as well as upgrade and new product information. Registration information is provide in the help menu or please use the contact information below:

Address: Microspot Limited
Concorde House
10-12 London Road
Maidstone Kent ME16 8QA
England

Phone: 01622-687771; International: + 44-1622-687771

FAX: 01622-690801; International: + 44-1622-690801

Email: support@microspot.co.uk

Web: www.microspot.co.uk

Chapter 2

Tutorial

A brief introduction to some of Interiors's features and tools.

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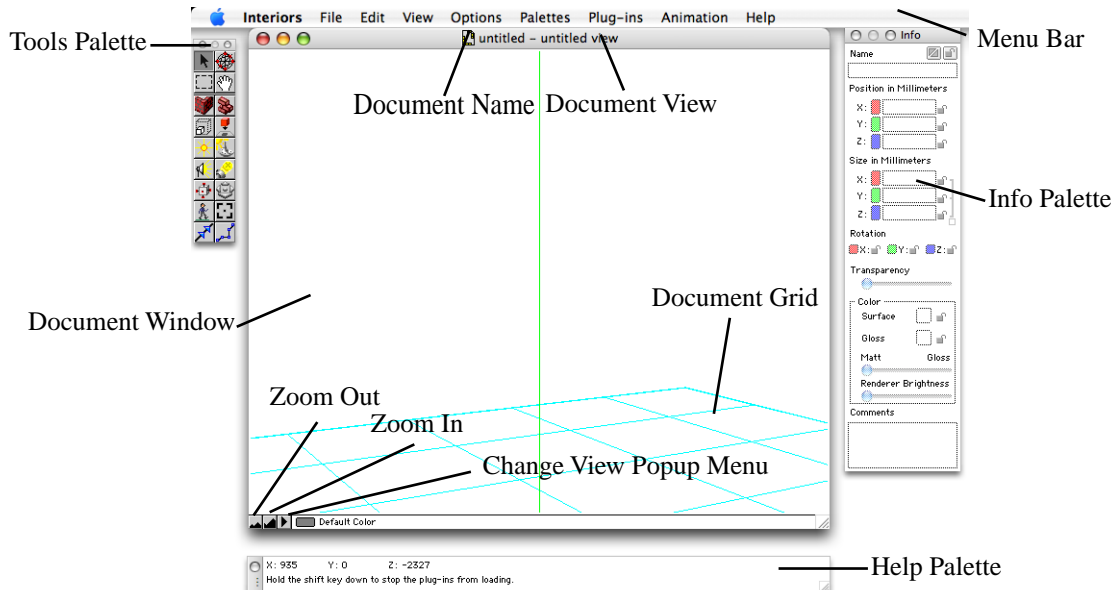
The following tutorial takes you through the process of designing an irregularly shaped room and placing doors, windows, furniture, accessories and lighting objects within it. Colors and textures are then applied to the walls and furniture, and the various light settings are adjusted to create a realistic scene. A final render is then produced and a picture saved and/or printed.

Once you are familiar with the tools and methods discussed here, you can easily use them to design and make-over your own rooms, so interior design is effortless, risk free and fun!

Getting Started

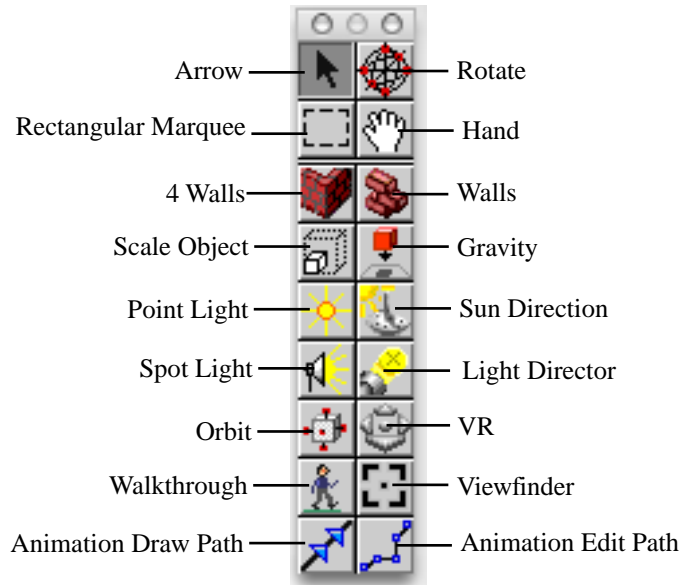
Launch Interiors

Double-click on the Interiors icon to launch the application. A new untitled document will display along with the Tools and Help palettes and the application menu bar:



The Tools Palette

Familiarize yourself with the tools available in the Tools palette. Click on a tool (other than the top four tools) and hold down the mouse button to display the name of that tool. Look at the Help palette for brief advice on using the selected tool.

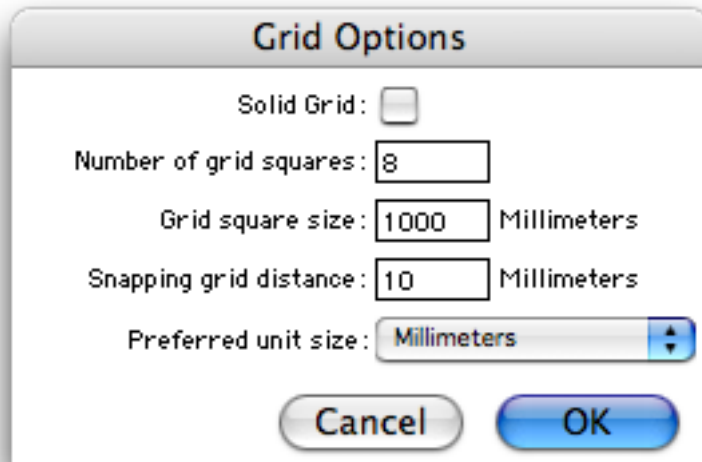


Note: The window view may change and various palettes open according to the tool selected. When you have finished looking at the tools available, select the Arrow tool, close all palettes except for the Tools and Help palettes (by clicking on the palette's top left corner), and select Home View from the Change View submenu in the View menu.

Setting the Grid Options

Before beginning to design your room, you must first specify the drawing environment. Go to the Options menu and ensure that there is a checkmark next to the Metric option. If there is not, select Metric from the menu to specify that metric units of measurement should be used.

Select Grid Options from the Options menu set the Grid Options as shown below and click OK:



Resize the Window

If you wish to change the window size, click on the bottom right corner of the window and, with the mouse button held down, drag to make the window smaller or larger.

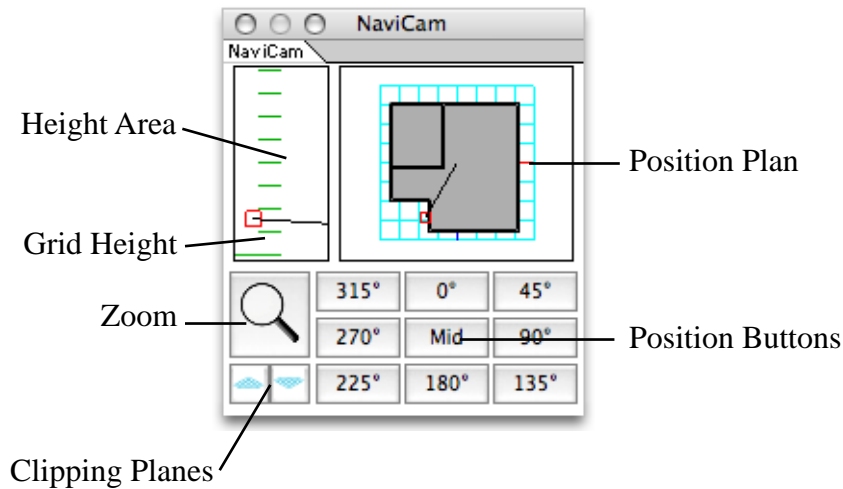
Note: The smaller the window size the faster the view is rendered.

Save the Document.

Select Save from the file menu to save the document. In the dialog that displays, specify a location to save the file and give it the name Tutorial A.

u Navigating

Before we begin constructing the tutorial room, it is useful to get familiar with the NaviCam palette. Select NaviCam palette from the Palettes menu:



The red square displayed in the palette, both in the height area and in the position plan, represents the camera. The line from this square shows the camera view direction and at the end of this line is the look at point or point of interest.

- In the Position Plan, click on the camera square and drag to change the position of the camera. Click on the view direction line and drag to change the view direction.
- In the height area move the camera up and down to change the camera height or move the view direction line to look up and down.
- If necessary, click on the Zoom button and drag up or down to zoom in and out of the scene.

Note: Zooming large amounts can often cause distortion. For large changes move the camera forward or backward to change the view. Keep the NaviCam palette open whilst doing this tutorial so if your view is obstructed you can re-adjust the camera position or viewing angle.

∪ Drawing the Walls of the Room

We are going to draw a double bedroom with bathroom. To draw a rectangular room with just four walls you would use the 4 Walls tool, to draw this less regular room will use the Walls tool:



Set the Wall Options

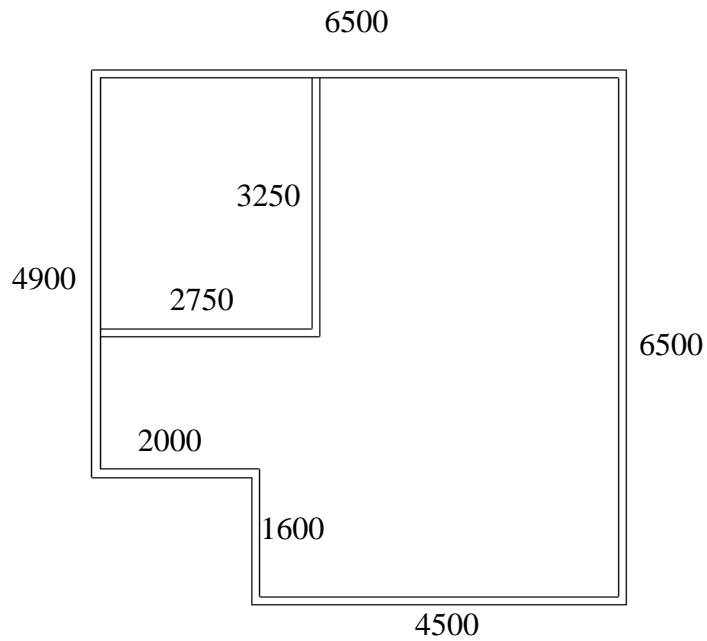
Hold down the Option key (alt) and click on the Walls tool to display the Wall Options dialog. Enter 100 as the Wall thickness and 2300 as the Wall height. These are the default settings that will be used for any walls drawn until these settings are changed. Click OK.



Draw the Walls

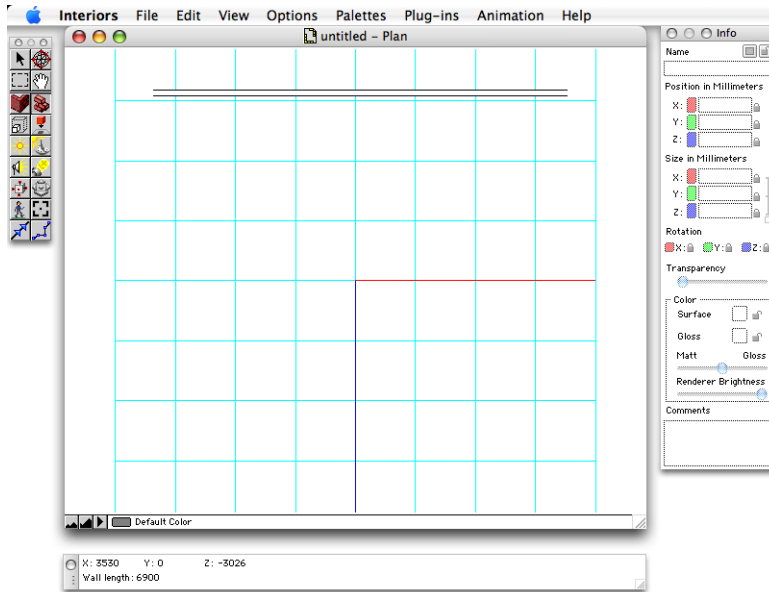
Below is the plan showing the dimensions in millimeters of the room we are going to draw:

Note: We will first draw the exterior walls of the general structure followed by the construction of the bathroom walls.

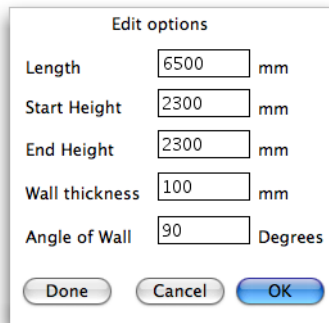


Note: Dimensions are of internal walls.

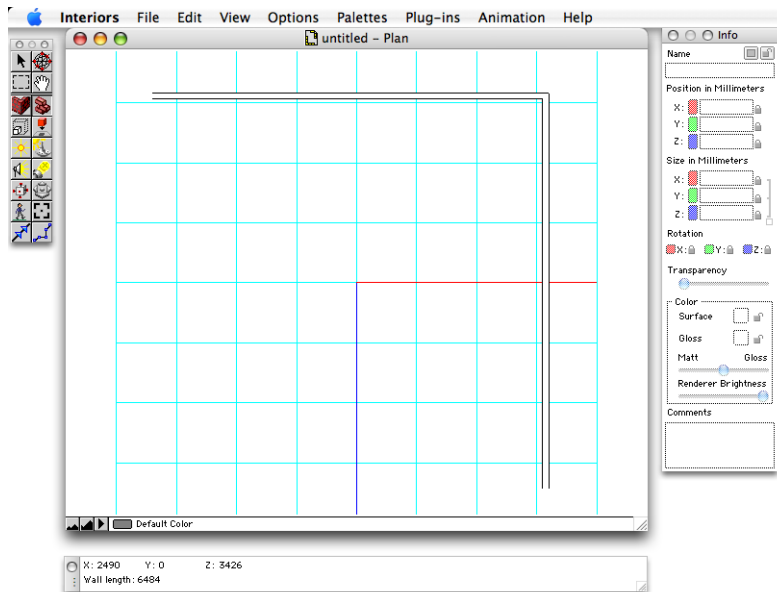
1. Select the Walls tool in the Tools palette. The document view changes to an orthogonal plan view, as this is the easiest view to use when drawing walls.
2. Click towards the top left of the grid then move the cursor towards the right of the grid to draw the north wall.



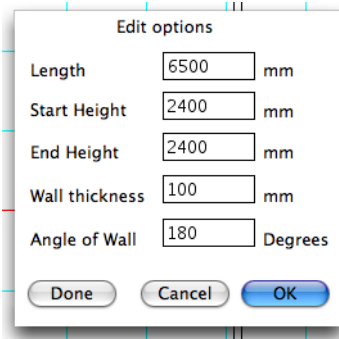
- When the wall is about the right length, click again. The Edit options dialog will display. The height and thickness of the wall are determined by the value you entered in the Wall options earlier. Enter a value of 6500 in the Length field and click OK.



- The first wall is drawn on the grid. Move the cursor towards the bottom to draw the second wall perpendicular to the first wall.



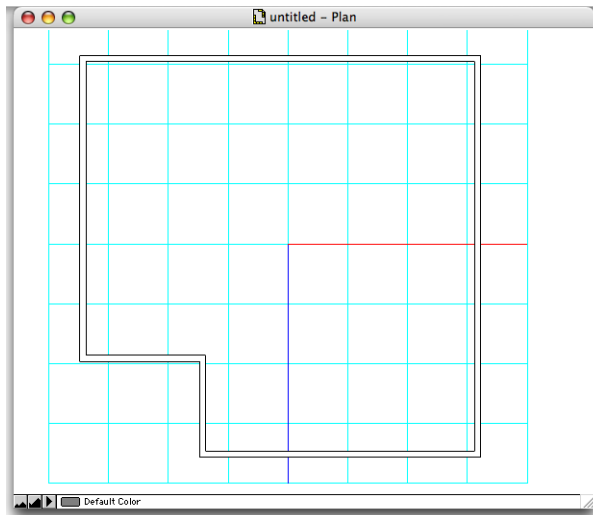
- Click again to mark the approximate position of the end of the second section of the wall. The Edit options dialog displays again. Enter 6500 as the Length and click OK:



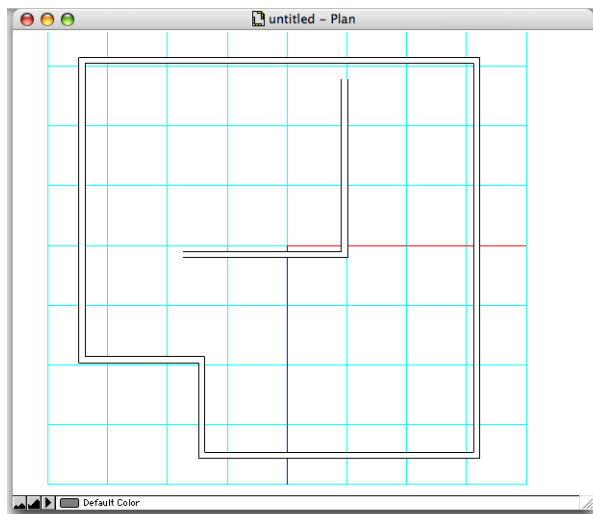
Continue in this way to draw the remaining walls referring to the plan shown at the beginning of this section for the wall measurements.

- If you make an error press the Delete key to undo the last wall section drawn.
- To avoid displaying the Edit Options dialog hold down the Option key (alt) when clicking to mark the end point of a wall

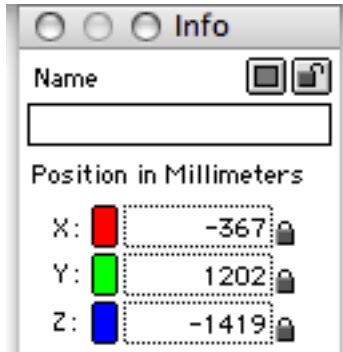
- When you have drawn the final wall click Done in the Edit options dialog. This will now take you to the Home View.



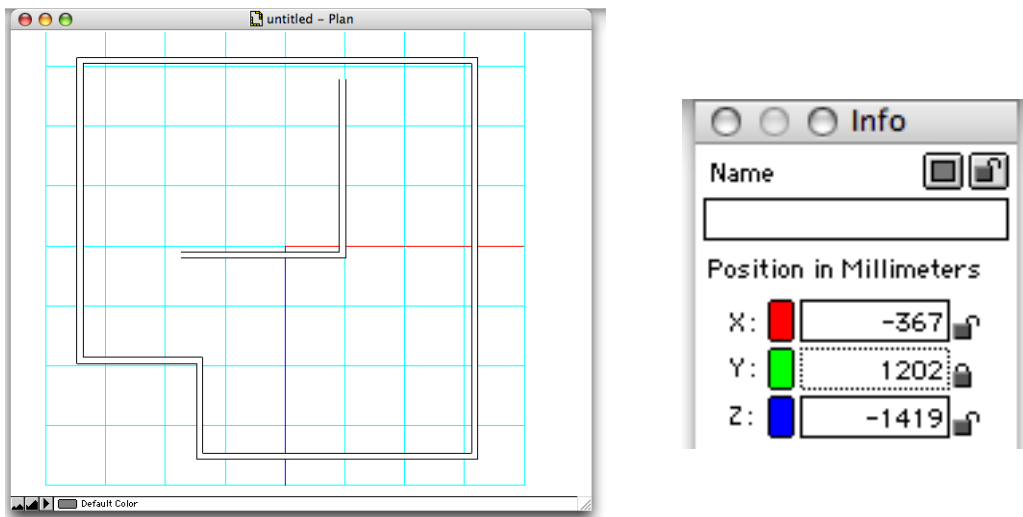
- Using the same Wall tool, we will draw the bathroom walls anywhere on the grid and rearrange the precise position later on.
- Draw the bathroom walls and click Done at the end of the second wall:



9. Once you have finished the construction of the bathroom walls, select Plan View from the view menu. Select the L shaped walls and you will notice on the info palette, the X, Y and Z position are automatically locked:



10. Click on the X and Z padlock to unlock the position of the walls' axis. We can now reposition the unlocked walls to the right position by clicking and dragging them to the correct position:

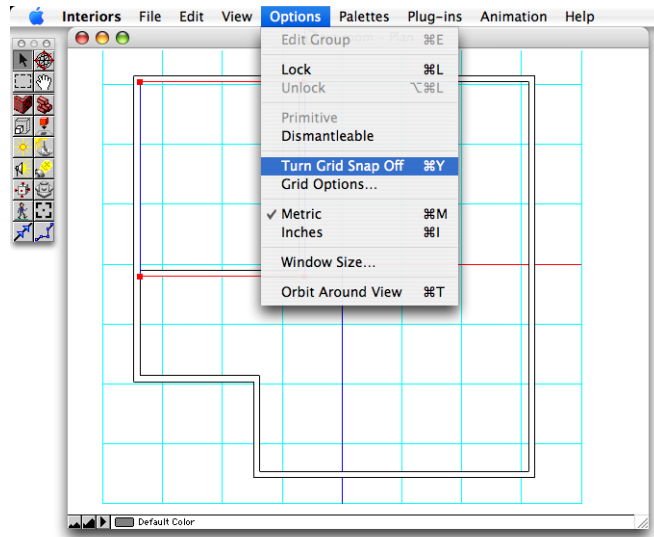


Once the internal walls have been positioned as illustrated in the plan, you can avoid accidentally moving them by locking the X and Z coordinates.

Grid Snapping

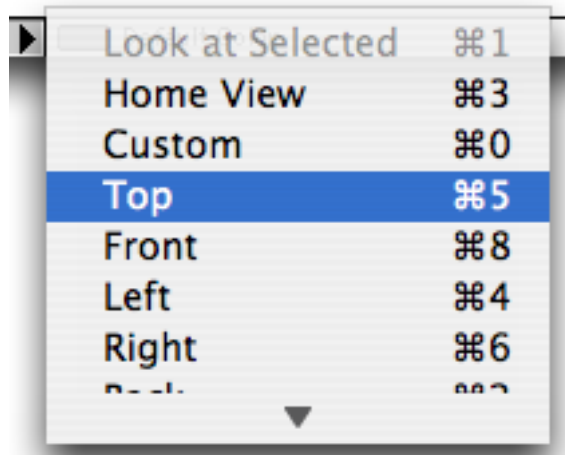
Grid Snapping applies an invisible grid to the document to which object points can snap. The distance between the nodes on this grid are determined by the value entered for the Snapping Grid Distance in the Grid Options dialog.

Grid Snapping is switched on and off in the options menu. This option is automatically turned off when the program begins. As we do not need Grid Snapping in this example, if you have put it on, select it in the Options menu to turn off:



Change to the Top View

Select Top View from the View popup menu at the bottom of the document window, or from the Change View submenu in the View menu, to display a top view of the document:



Rotate the Grid

Select the Rotate tool in the Tools palette, click on the grid and drag while holding down the mouse button. This allows you to rotate the grid so that you can look at the room you have drawn.

Note: Hold down the Shift key when rotating the grid to constrain it to its initial plane.

Return to the Home View by selecting its name in the View popup menu at the bottom of the document window or from the Change View submenu in the View menu.

Save the Document

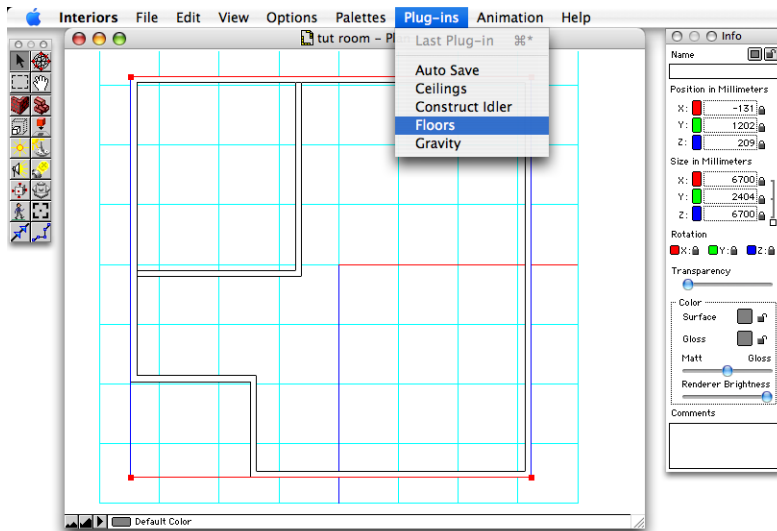
Select Save from the File menu or press Command-S to save the document.

u Add a Floor

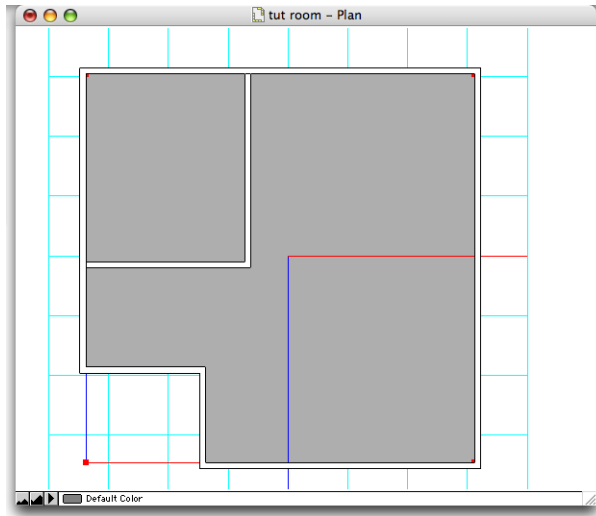
1. With the Arrow or Rotate tool selected click on a wall to select it

Note: When an object is selected it is surrounded by a bounding frame with handles at the points where the bounding lines intersect. (As you are inside the room, the bounding frame may not be visible in this instance.)

2. Choose Floors from the Plug-in menu.



3. A floor will be added to the room:

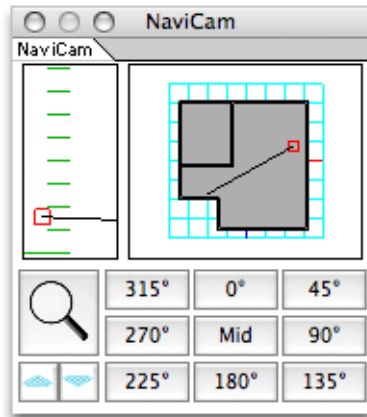


Note: Floors are drawn in such a way that they can only be seen from above. If you rotate the grid and view the room from below, the floor will be invisible, although the floor object is still present.

Save the document.

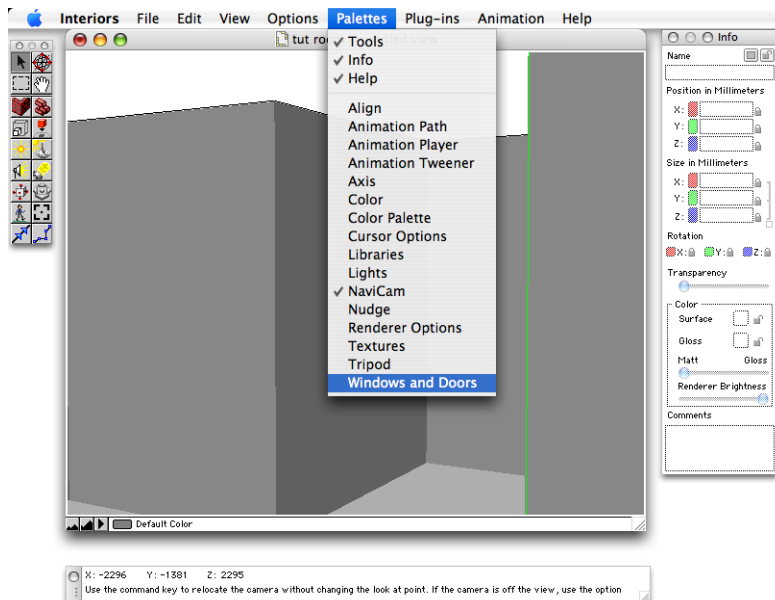
u Add Windows and Doors

Return to home view and use the NaviCam to change the camera position and viewpoint so that you are looking at the bottom left corner of the room:

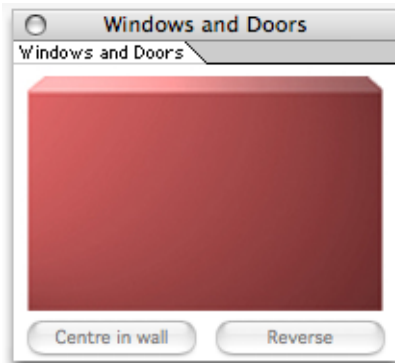


Selecting the Windows and Doors Palette

Bring up the Windows and Doors palette from the Palettes menu.

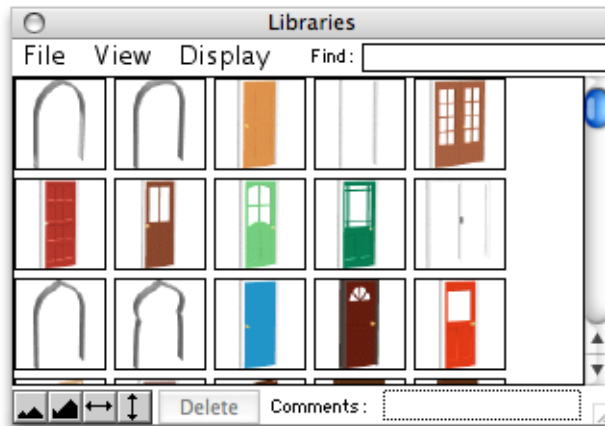


Click on the title bar of a palette and drag, holding down the mouse button, to reposition it.



Adding a Door

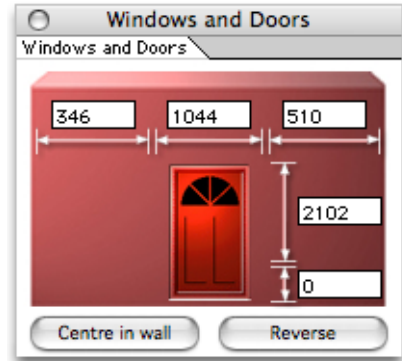
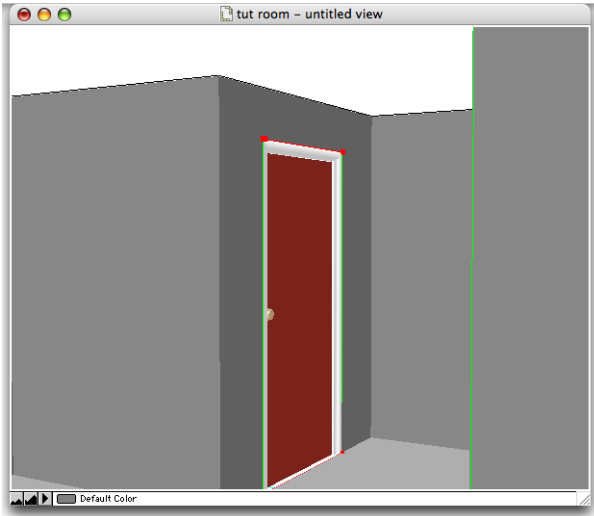
Open the Library Palette from the Palettes menu. Select the Doors library by clicking on the Display menu to view all the libraries. To find a specific object, start typing its name into the Find field at the top right of the palette and watch for the name to appear in the comments field. In this example we will use an embossed red door



The first item with a name starting with e is Embossed Red Door. Embossed Red Door is selected and highlighted by a black frame around its preview icon. The selected item's full name displays in the Comments field at the bottom right of the palette.

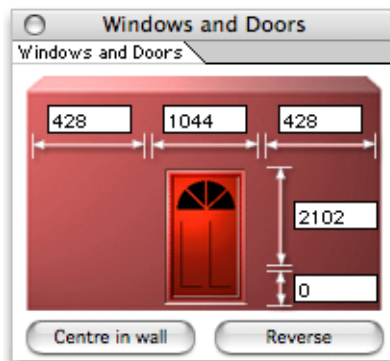
Holding the mouse button down on the selected door, drag it across to the wall in your current view. Release the mouse button to drop the door in the wall. The door will be placed in the wall and the Windows and Doors palette will show its dimensions and position in the wall.

Note: If the Windows and Doors palette is not visible (it may be beneath another palette), display it by selecting its name in the Palettes menu.



Position the Door

With the door still selected, you can edit the position of the door from either end of the wall. In this case we will place the doors in the centre of their walls, by clicking the Centre in wall button in the palette. You will notice the door repositions itself automatically.

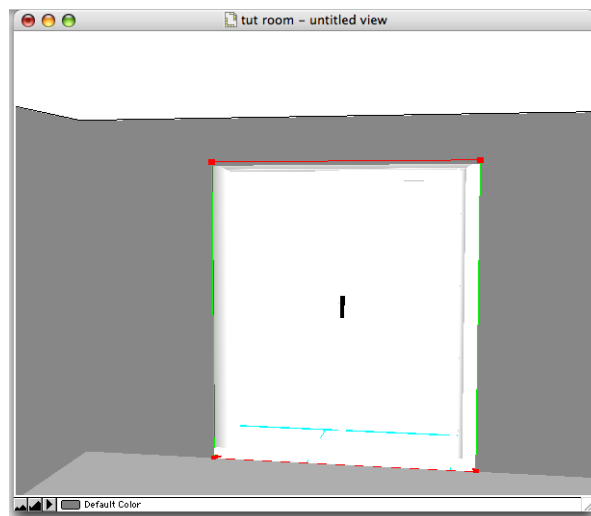


Using the same method, place another door for the smaller room opposite the door we placed earlier, and centre it on the wall.

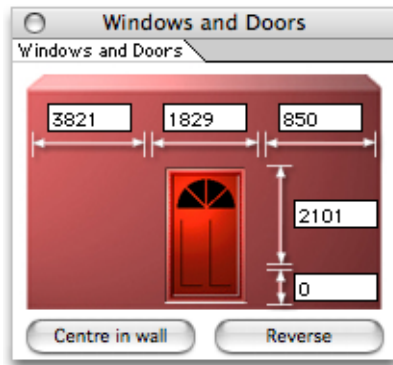


Adding the Patio Door

Use the NaviCam palette to change the view so that you are looking at the north wall. This time we will drag and drop the Patio Door on to this wall.

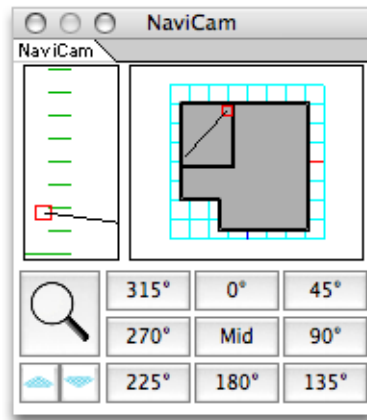


With the door still selected, enter 850 in the field specifying the distance of the door from the right end of the wall. Press the Enter key. Leave the other dimensions at the default or calculated values.

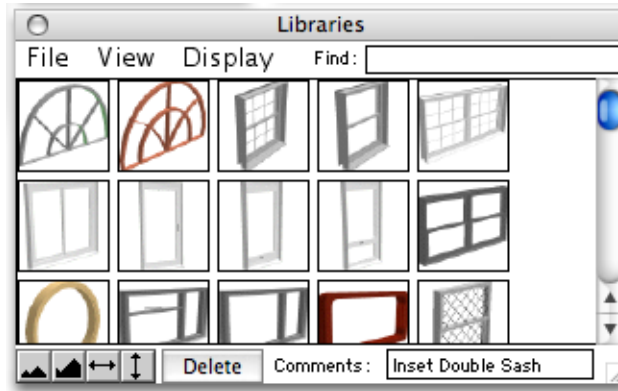


Add a Window

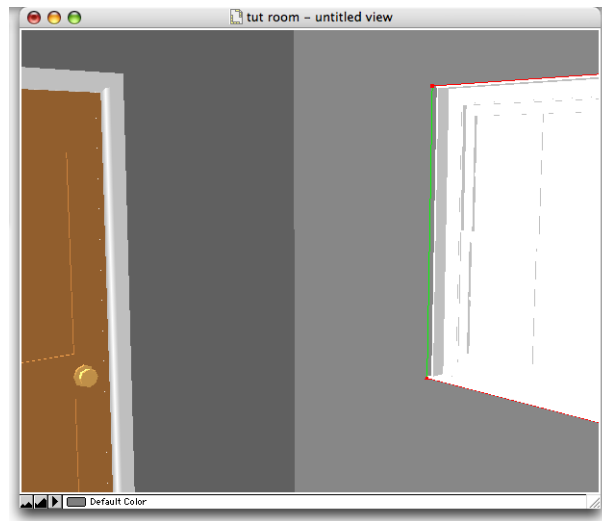
We need to reposition the NaviCam to place the camera inside the smaller room, with a view of the west wall.



Find the Inset Double Sash window:

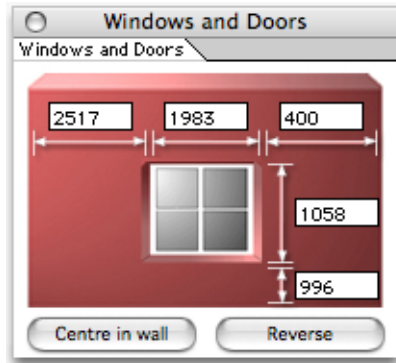


Drag and drop the selected window onto the wall in view. The Windows and Doors palette displays the window's dimension and position information:



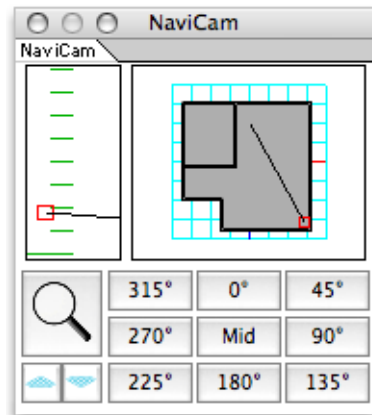
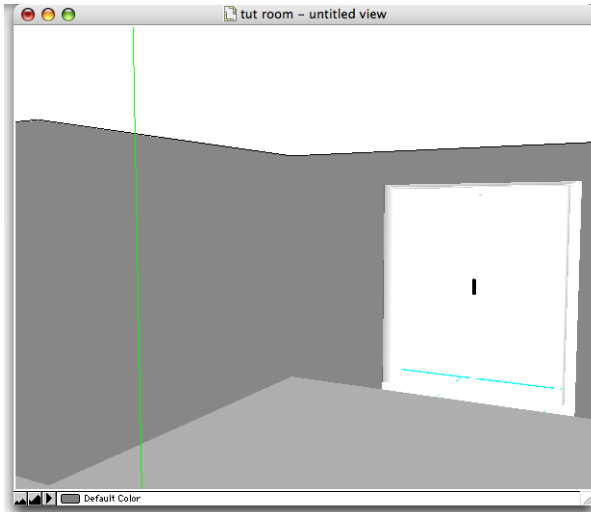
Reposition the window by entering 400 in the field specifying the distance of the window from the right end of the wall. You can adjust the height of the window by entering your desired

height into the bottom right field; in this case we will set it at 996. Press the Enter key after entering the information in each field.

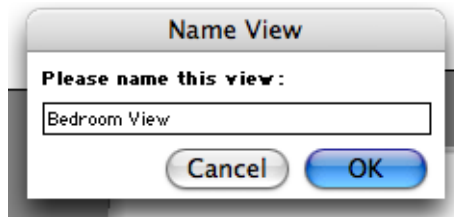


Save a View

Change the view using the NaviCam palette, position the camera at the bottom right corner of the entire room and looking towards the patio door. Click on the button marked with a magnifying glass and drag down to zoom out from the scene if necessary:



Select Name View from the View menu. In the Name View dialog, enter Bedroom View and click OK:

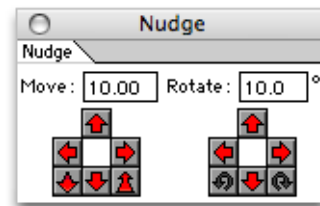
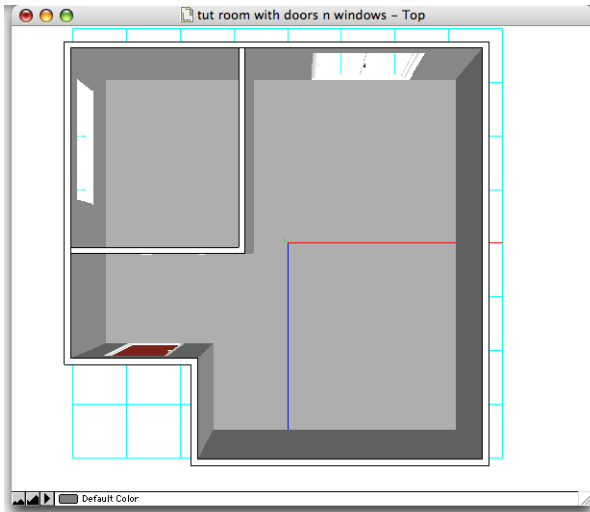


Save the document.

u Add Furniture

The next stage is to furnish your room.

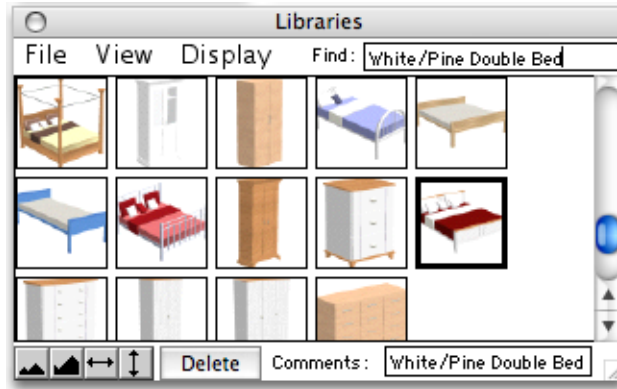
Change your current view to Top View from the View menu and select the Nudge palette from the Palettes menu.



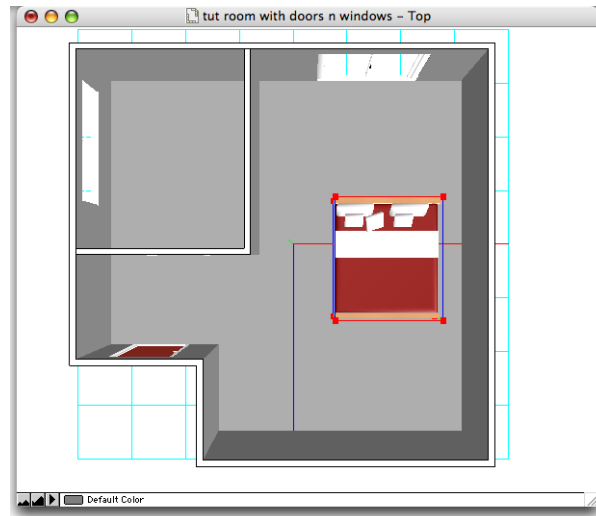
This palette allows you to easily move and rotate items. Reposition the palette on the screen as necessary.

Add a Bed

Select the Bedroom library from the Library palette. This will display all bedroom furnishings available:



Find the White/Pine Double Bed by typing the name in the Find field, and press the Enter key to see the icon highlighted. Click on the bed icon and hold down the mouse button, move the cursor over the floor of the room and when the mouse is over floor release the mouse button to drop the bed onto the floor.



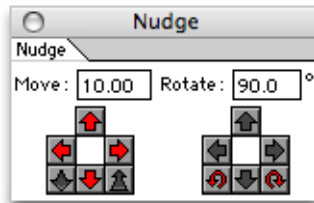
Either select the arrow tool and click and drag on the bed to move it, or use the Nudge palette to move it by a specified amount.

Use the Nudge Palette

Select the bed in the document window.

Enter a value in the move box in the Nudge palette. The units will be millimeters as set for the document at the beginning of the tutorial.

Click on the control buttons to choose direction in which to move the selected object. The directions relates to the current view.



Note: You will not be able to move the bed closer or further away (when looking at a top view) as it is constrained to stay on the floor.

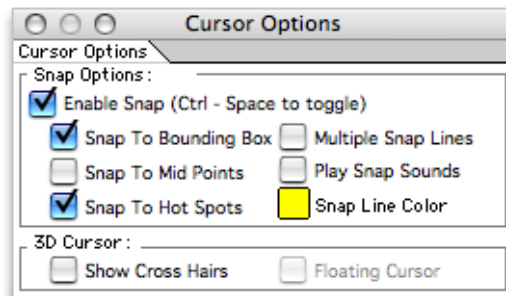
Use the Nudge palette to rotate the bed:

1. Select the bed in the document window.
2. Enter a value of 90° in the Rotate Box in the Nudge palette.
3. Click on the Rotate Clockwise button to rotate the bed so that the headboard is closest to the east wall.

Note: You will not be able to rotate the bed other than clockwise and anti-clockwise (when looking at a top view) as it is constrained to stay parallel to the floor.

Snapping Options

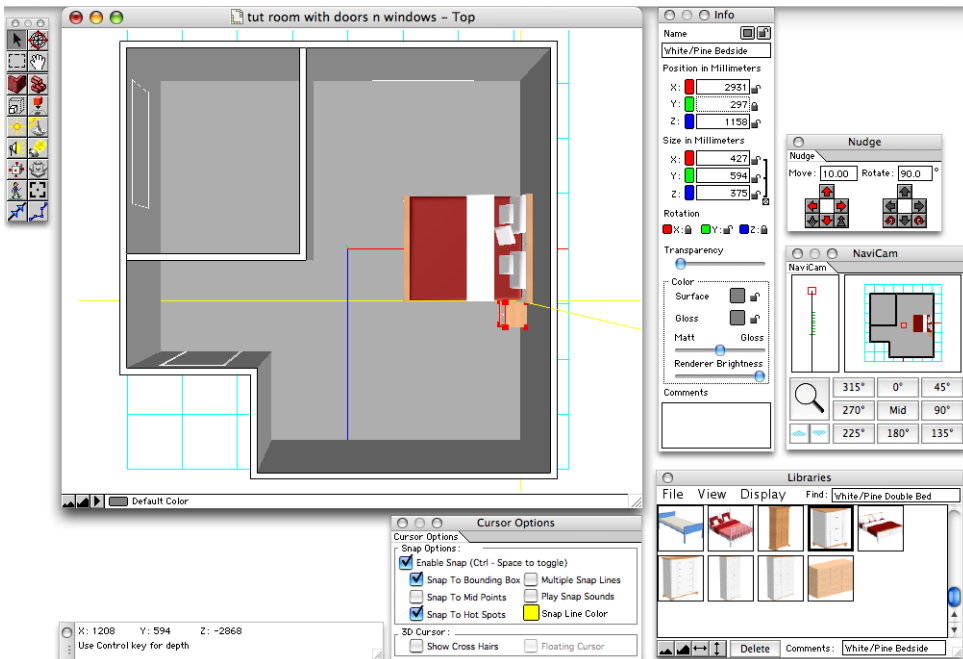
From the Palettes menu, select the Cursor Options palette. Set up the dialog as below then close the palette:



Snapping is the alignment of points with other points. When positioning object snapping lines will display (and sounds may play) when the snapping points of the selected objects are aligned or snapped to the snapping points of the unselected objects.

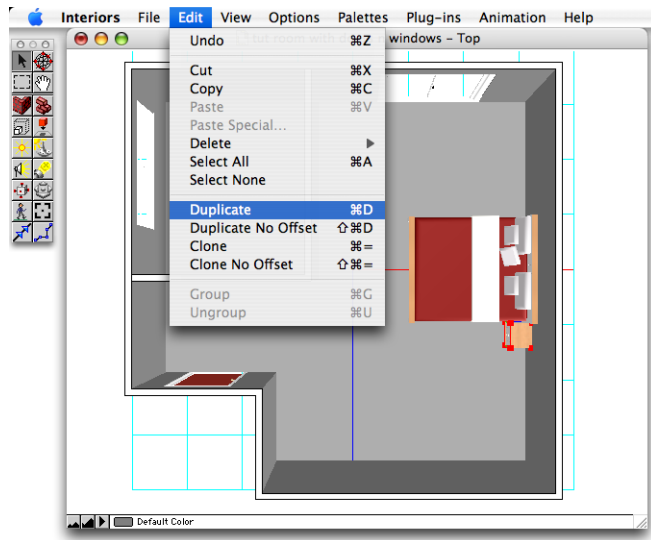
Add a Bedside Table

Using the Find tool in the library palette, search for White/Pine Bedside. As previously described, insert the object into the same room as the bed. Similarly as the bed we need to rotate the bedside table 90° clockwise. Position the bedside table at the bottom right edge of the bed:

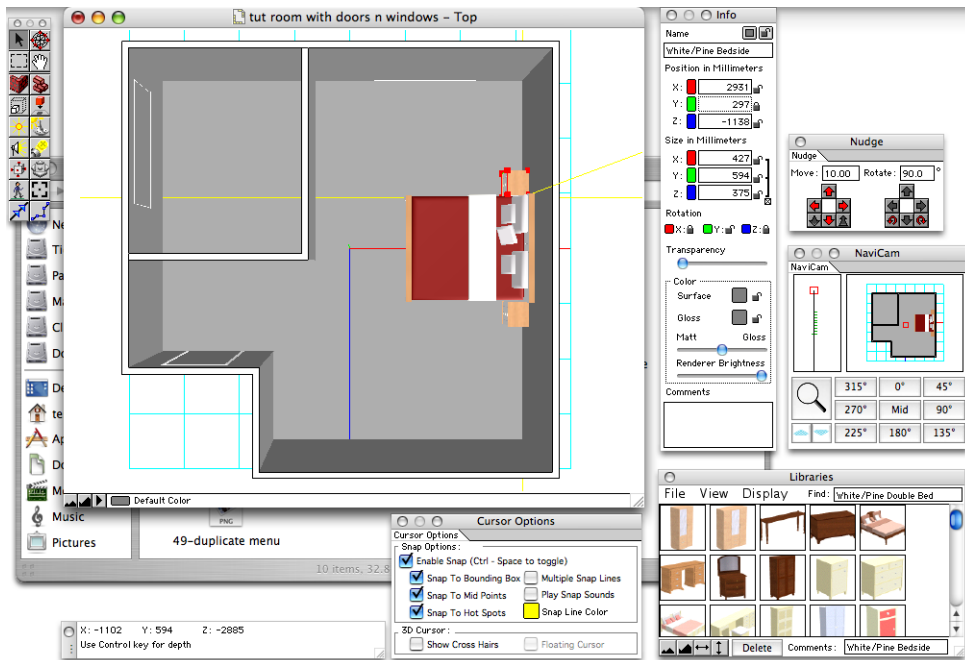


Duplicating Objects

Having the bedside table selected, we can use the Duplicate tool from the Edit Menu.



You will notice the new duplicate object will become selected. Using the arrow tool we can position the bedside table on the opposite side of the bed. You will notice the alignment lines will display to indicate it is aligned with the original bedside chest.



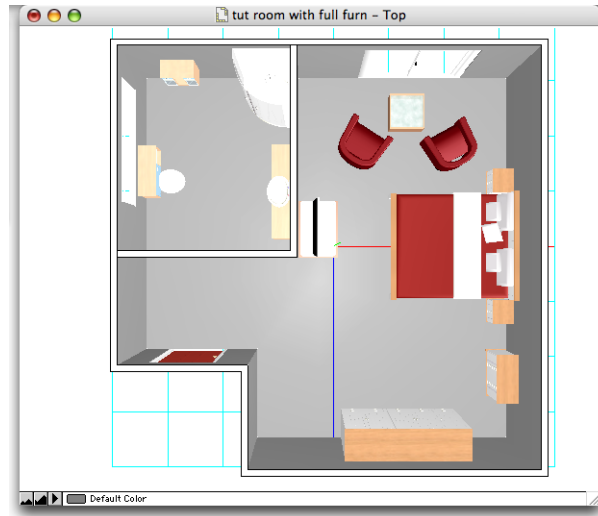
Add the Remaining Furniture

Use methods described above, changing the view turning snapping on and off as necessary, add the following furniture and accessories to the room.

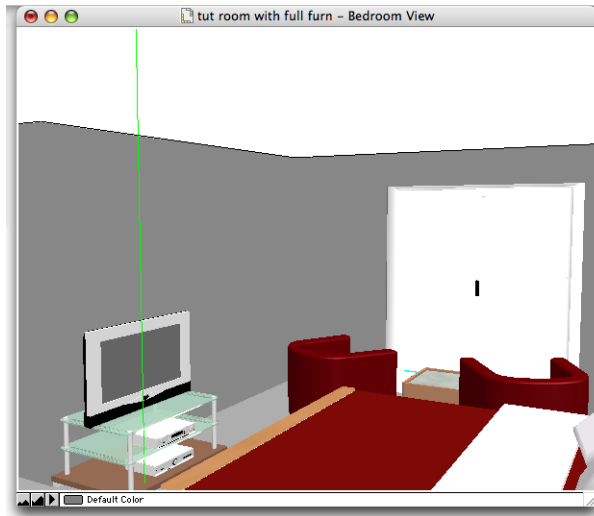
Note: that most items have an orientation assigned to them, so they will be placed in the room the correct way up. Objects will also snap to the surface they are dropped on, so ensure the mouse button is over the correct object before releasing. Resize items as required

- Add a TV & Video Unit on the wall opposite the bed. (Living Room library)
- Place the Waiting Room Table next to the patio door. (Tables library)
- Put two Comfortable Chairs facing the patio door. (Chairs library)
- Add the White/Pine Wardrobe and the White/Pine Small Wardrobe on the opposite wall of the patio door. (Bedroom Library)
- Insert a Corner Shower Round in the top right corner of the bathroom. (Bathroom library)

- Add an Aqua Sink Large and position it on the wall opposite the bathroom window. (Bathroom library)
- On the same wall as the window, add an Aqua Toilet. (Bathroom library)
- On the wall opposite to the bathroom door, add an Aqua Wall Storage. (Bathroom Library)
- And finally place a Mirror Square on the wall above the sink. (Bathroom library)



Select Bedroom View from the View menu to look at the bedroom from within the room:



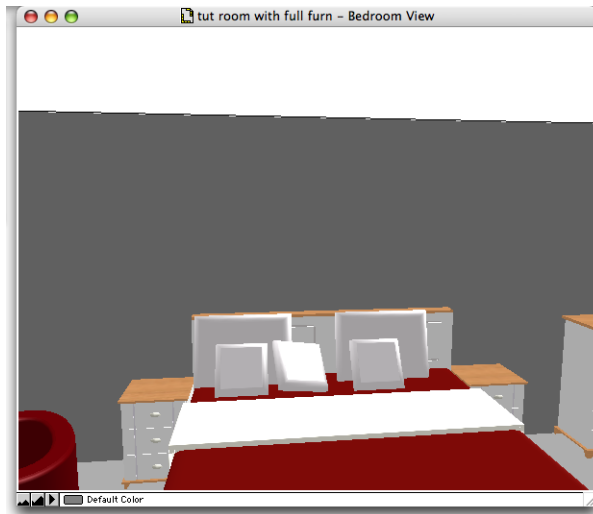
Note: You may need to reposition the camera, with the NaviCam, if the newly fitted wardrobe is obstructing the view.

Save the file.

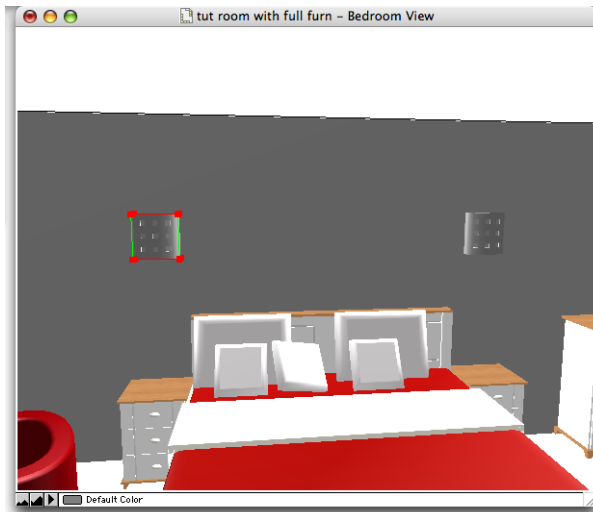
u Lighting

Wall Lights

Use the NaviCam palette to change the view so that you are looking at the right wall and can see the chest drawers on either side of the bed (you may need to click on the Zoom button in the NaviCam palette and drag down to zoom out):



From the Lights library, drag and drop the Square Wall Light on to the wall above each bedside chest.



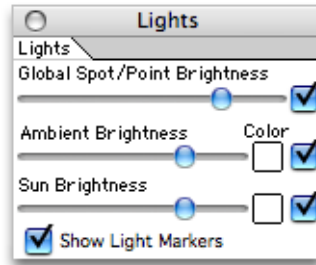
Position the lights so that they are both at the same height from the floor using either the snapping tool or adjusting the height (Y position value: 1600 mm) for each light in the Info palette.

Sun Light

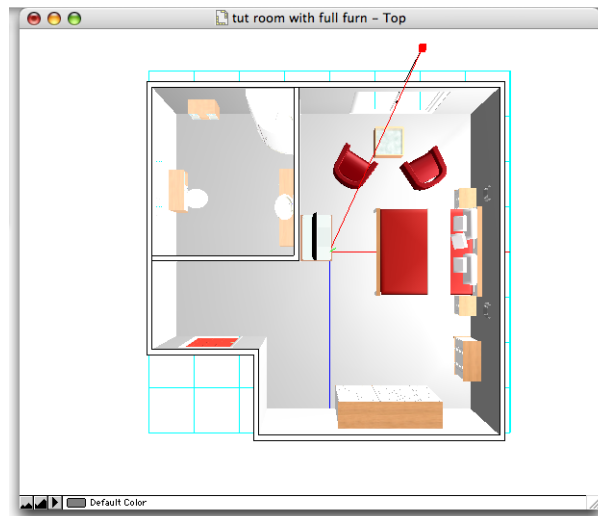
Select the Sun Direction tool in the Tools Palette:



The Lights palette is displayed and the document view changes to a top view:



A red line with a handle at the end of it shows the current sun direction. Click on the handle and drag to adjust the direction of the sunlight:



Lights Palette

You can bring up the Lights palette from the Palettes menu. Experiment with the controls to see how they affect the scene.

Save the document.

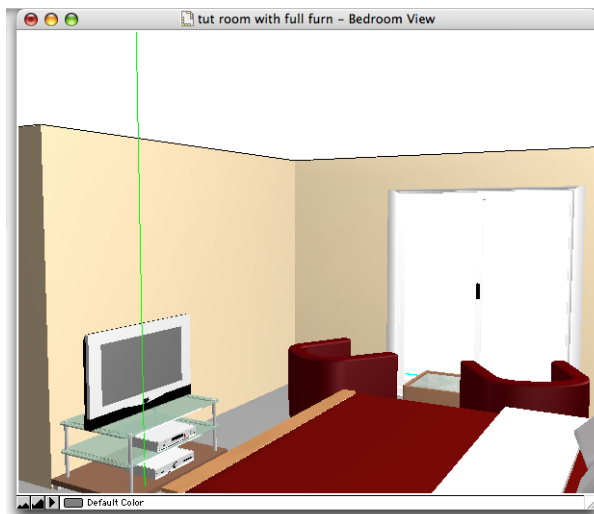
u Colors and Textures

Colors and textures can easily be applied to objects within your room. In this example we will use those provided in the libraries included, but as any picture image can be applied as a texture, you can scan actual paper and fabric samples to use in your interior design.

Add Colors

1. Return to the Bedroom view, open the libraries palette if necessary by selecting its name in the Palette menu.
2. Chose colors from the Display menu to open the Colors library.
3. Click on a suitable color and, holding down the mouse button, drag the cursor over on to a wall. When the mouse is over the wall, release the mouse button to drop the color onto it.

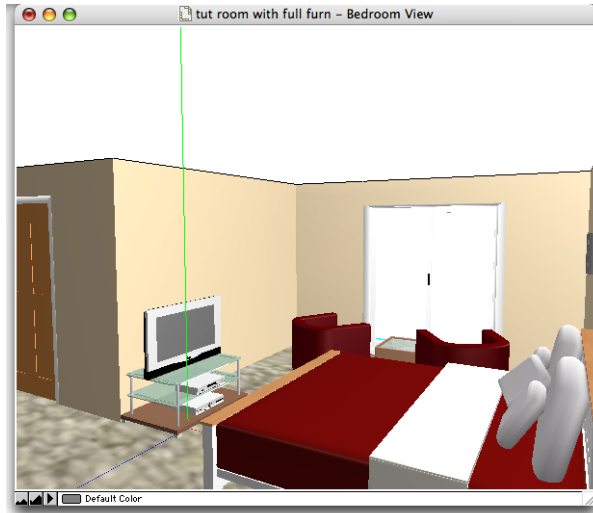
Note: Since the interior L shaped walls were made separate to the first walls we drew; you need to apply the color to both wall sections.



Add Textures

1. Open the Textures Large library.

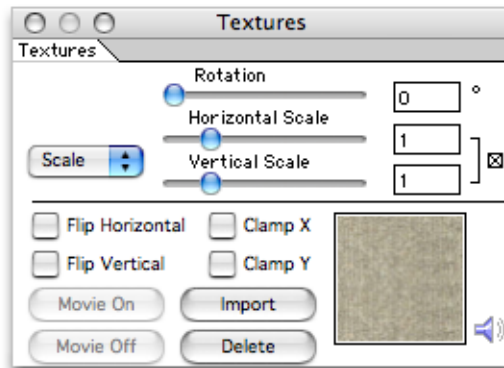
2. In this case we will carpet the flooring. Find Carpet 3 in the library and drag and drop the texture on to the floor as you did with the wall coloring.



Adjusting Textures

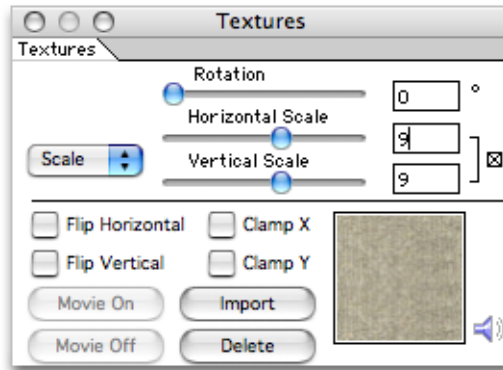
As the texture applied to the floor is much too large, we will adjust it using the Textures palette. This opens automatically when a texture is dragged and dropped onto an object, but can also be opened by selecting its name in the Palettes menu.

1. Select the floor. Its texture is displayed in the Textures palette:

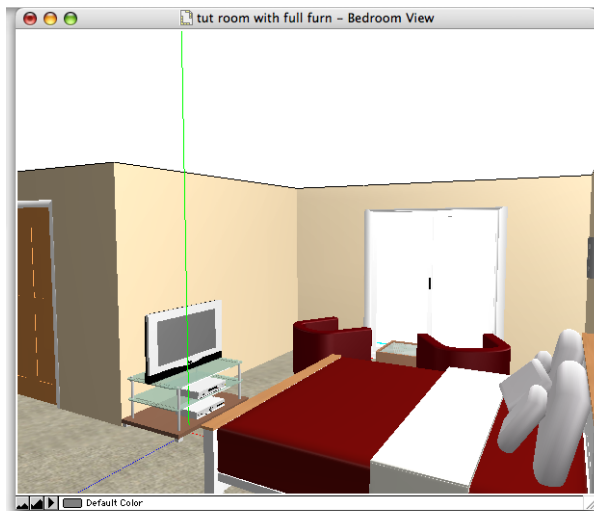


2. Ensure that the Constrain Horizontal and Vertical Scale checkbox is checked on.
3. Click and drag on either the Horizontal Scale or Vertical Scale scrollbar to increase the texture scale to about 9, or enter 9 in the Horizontal Scale or Vertical Scale field.

Note: Hold down the Shift key while dragging on the scroll bar to adjust the scale by whole numbers.



4. The texture on the floor is scaled accordingly:

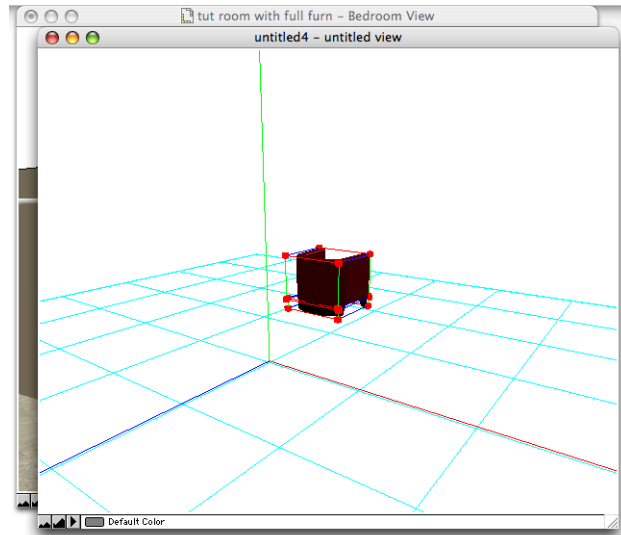


Manipulating Existing Objects

Sometimes you may wish to apply color or texture to just part of an object rather than the whole object. Depending on how the object is constructed, it is usually possible to add color or texture to individual surfaces.

1. Select the Comfortable Chair
2. Select Dismantleable from the Options menu. This allows the object to be broken down into its component parts.

3. Select Edit Group from the Options menu. An editing window opens showing only the chair. You will notice in this case the chair has been divided into the Seat and the Base.
4. Select the chair and choose the Look At Selected from the View menu. This positions the camera so that the chair is in the centre of the view.
5. You can change the camera view of the chair if necessary to gain a better view:



6. Deselect the chair by clicking on the grid and select the seat.
7. You can now drag and drop any texture or color on to the seat.
8. Click on the top left corner of the editing window to close it. The chair remains in its original position within the room, but now displays the new texture/color applied.

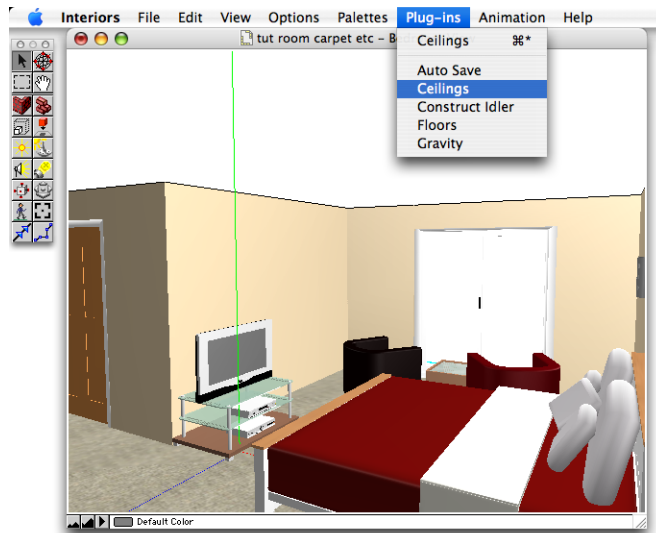
Save the document.

u Add a Ceiling

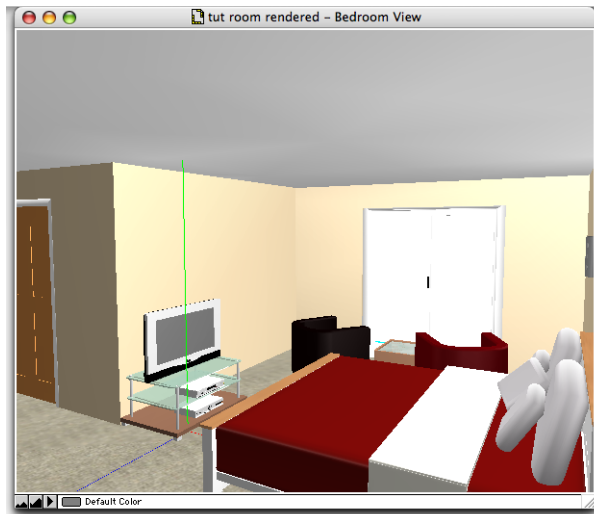
As we have now finished our interior design we can add a ceiling to the room.

1. Click on any of the external walls that were drawn first.

2. Choose Ceilings from the Plug-in menu:



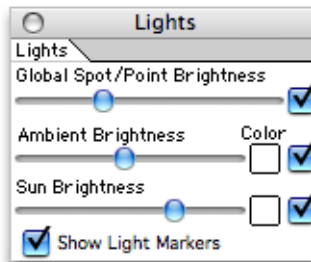
3. A ceiling is added to the room:



Save the document.

u Adjust Lighting

Open the Lights palette if necessary by selecting its name in the Palettes menu.



Adjust the brightness of Spot/Point lights, Ambient light and Sun light, or turn lights off and on to see the effect on your scene.

Set the lighting levels to give the effect you desire for your final render.

To see the effect of lighting on the final render we have included the Microspot Preview Renderer within the Renderer Options palette

1. Open the Renderer Options palette by selecting its name in the palette menu.
2. Select Microspot Preview Renderer from the Renderer pop-up menu.
3. The scene will now be rendered in preview quality.
4. Experiment with the light setting until you reach the desired lighting effect.

u Look Around

Select Interactive in the renderers pop up in the Renderer Options palette, select the VR tool in the Tools palette:



When the VR plug-in is selected, the NaviCam is automatically opened so that you can also use it to make changes to the camera position and view.

Select the Bedroom View from the View menu then click in the document window, hold down the mouse button and drag to look around the room using the following controls:

- To pan the camera (turn it left and right): drag the mouse button left and right.
- To tilt the camera: drag the mouse up and down. The tilt is limited +/- 90°.
- To crab the camera (move it to the left or right): hold down the Command key and drag the mouse left and right.
- To move the camera forwards and backwards: hold down the Command key and drag the mouse up and down.
- To zoom in: hold down the Shift key
- To zoom out: hold down the Control key

As you move, the cursor changes to an arrowhead pointing in the direction you are moving. In all cases, the further you move the mouse from the point first clicked on, the faster the camera will move. Hold down the Option key will decrease the speed at which the camera moves.

Using the VR tool, Orbit tool, Walkthrough tool or NaviCam palette to set the view for your final render.

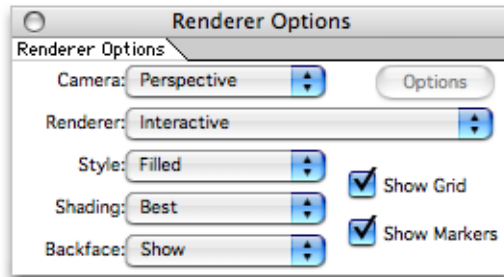
Save the document.

Final Render

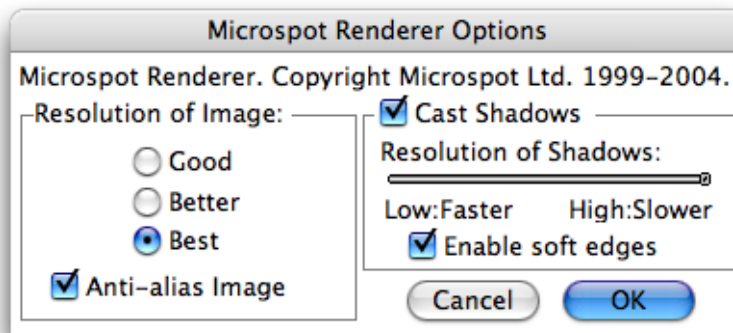
Now that your room is complete and we have chosen a specific view we can produce a high quality render.

1. Open the Render Options palette by selecting its name in the Palettes menu

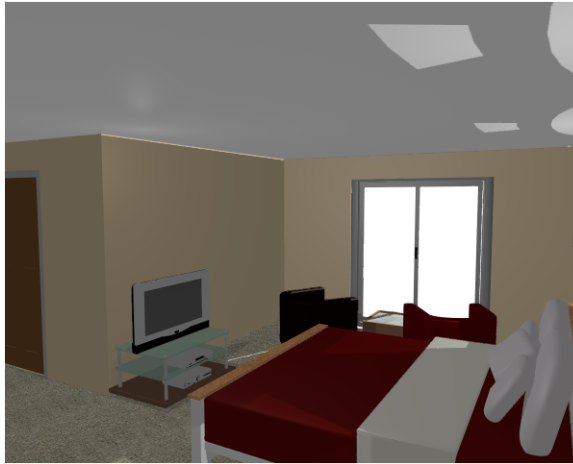
2. Hold down the Option key and select Microspot Renderer from the Renderer popup menu:



3. A dialog displays options available for the Microspot Renderer. Click OK



4. The scene will be rendered at a higher quality. Status information displays in the Help palette.
5. Experiment with the lighting controls in the Lights palette and the Renderer Options to see how they affect the quality and realism of the render produced.



Note: Always reselect the Interactive Renderer in the Renderer pop-up menu in the Renderer Options palette before making any changes to your scene or view.

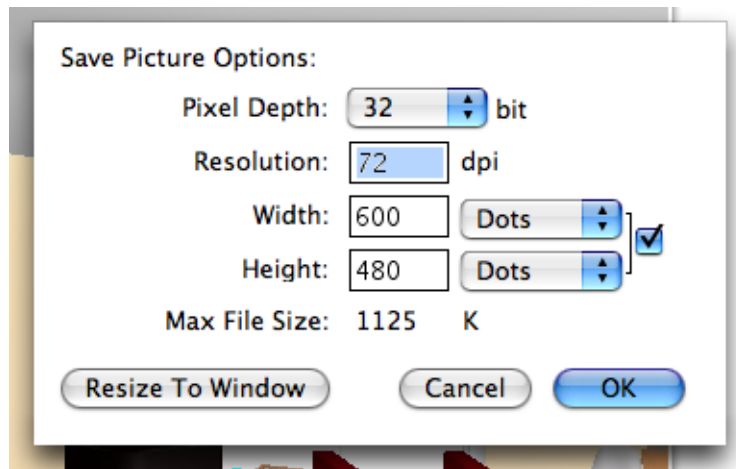
↳ **Export Picture or Print**

Now that the final render has been produced we can export a picture and/or print the window view.

Export Image

The Picture plug-in provides several format options for saving your documents view.

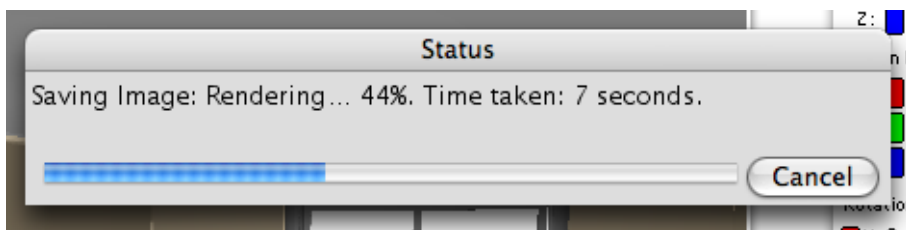
1. Select Picture from the Export submenu. The Save Picture Options dialog displays:



2. Choose the desired pixel depth from the Pixel popup menu
3. Enter a value in dots per inch to specify the resolution at which the picture is to be saved
4. Select Dots, Millimeters or Inches from the Units popup menus (constraining the proportions of the image by checking the check box if necessary), and then enter values for the width and height required.
5. Click on the Resize to Window button to change the resolution back to 72dpi and the width and height of the contents of the document window.

Click OK to accept the options as set. Enter a name and select a location to save the file in the standard Save dialog that display and click Save.

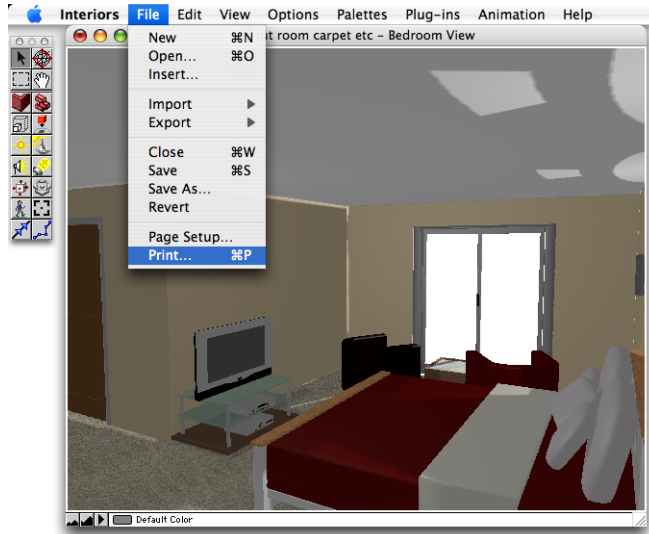
Then a small dialog will show displaying the current progress of the render to file. You may cancel this at any time by clicking on the cancel button



Note: When saving as TIFF output, set the TIFF Options to Millions of Colors or less

Print

To print the document view, select Print from the File menu:



Animation

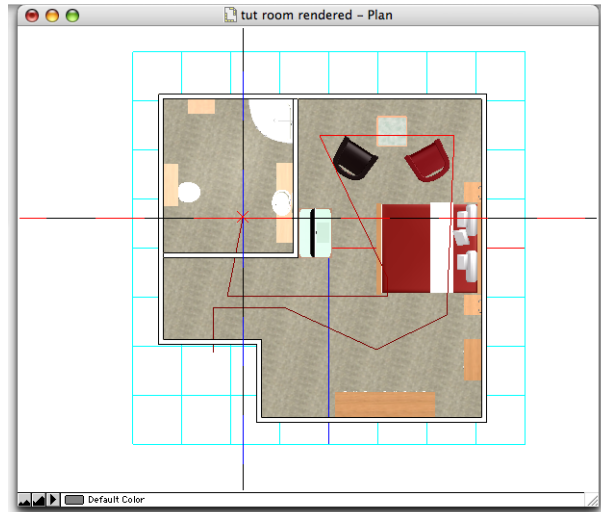
We will now create a fly through animation of the room, and eventually export the animation to a QuickTime movie.

Drawing a Path

By clicking on the Animation Draw Path tool from the Tools palette, the view will automatically shift to a Plan view:



With the first mouse click we will determine the starting position of the path the camera. In this case the camera will start at the front door then turn right into the room and after going round the bedroom. The movie then ends in the bathroom:



To end the path, double click with the mouse on the final position. Once you have finished drawing the path, the view will automatically change to the Bedroom View.

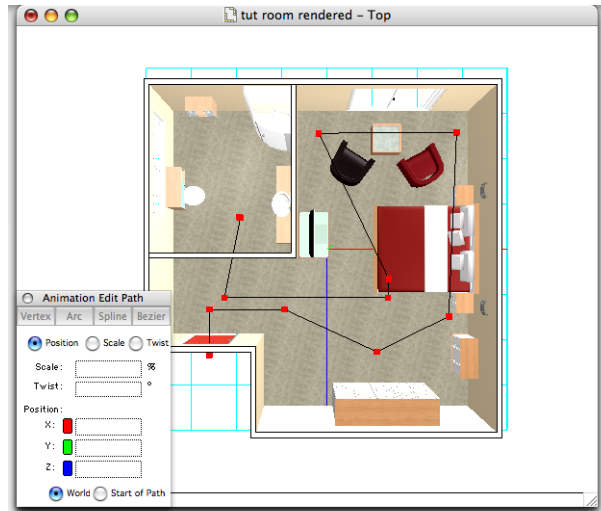
Note: The path tool will automatically be drawn at eye-level height to simulate a walk through effect. This height may be adjusted by option clicking on the Animation Draw Path tool and adjusting the height in the Animation Path Options palette that appears.

Editing a Path

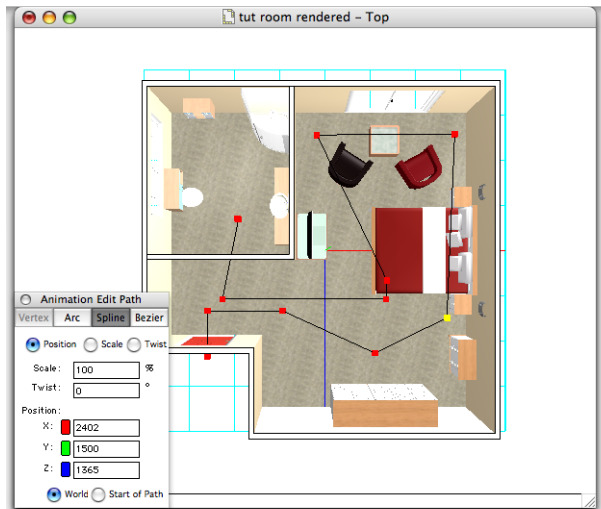
To edit any part of the path you have just drawn, select the Animation Edit Path tool from the Tools menu:



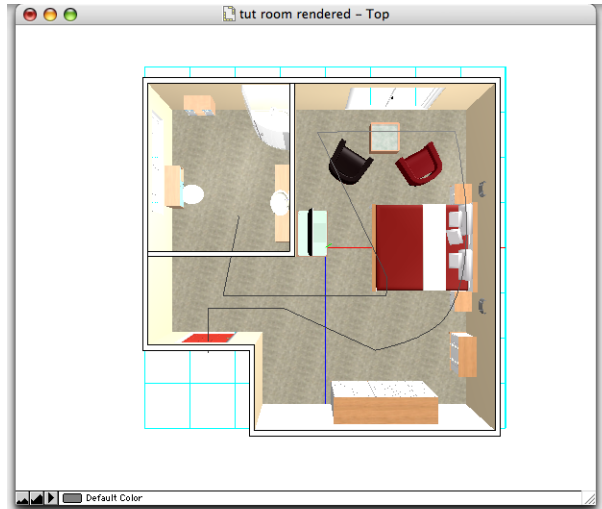
You will notice a new palette will appear to help you amend certain aspects of the path. Change the viewing field to Plan View. Select the path you've just created, you can now use the options on the palette to edit this path.



To create curved corners for the camera to follow we can select a point on the path and choose Spline.



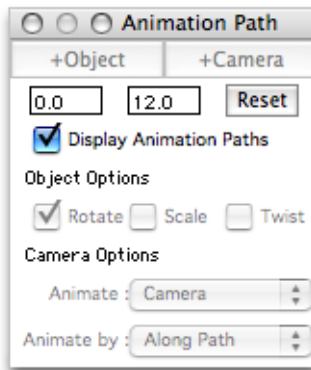
Once the point has been converted to an arc, you can drag the individual point and create different curves to fit in the room better:



Setting Animation Time and Camera

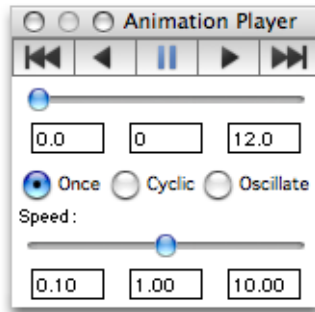
Deselect the path once you have finishing editing it by selecting the arrow tool from the Tools menu. Open the following palettes from the Palette menu.

Animation Path palette:



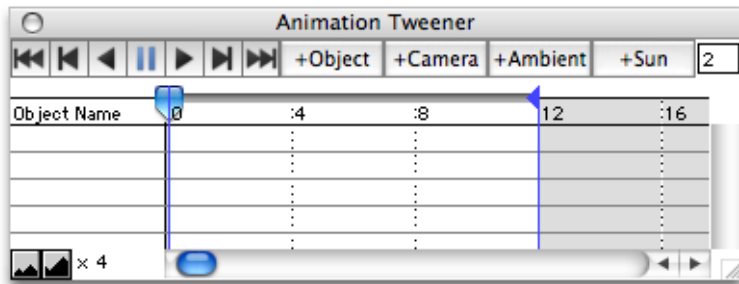
Note: To fully open all the options on this palette, you need to click on the green button to maximize the palette.

Animation Player palette:

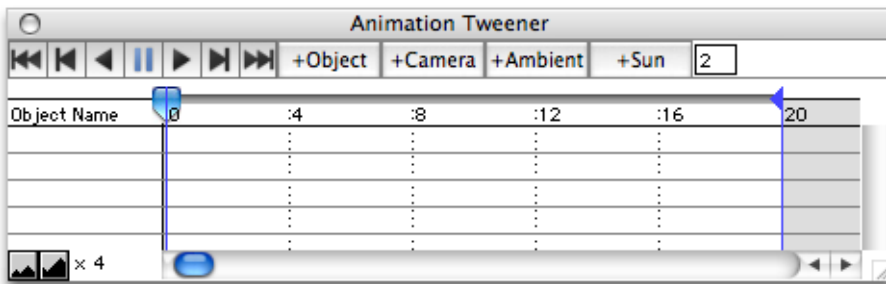


Note: To fully open all the options on this palette, you need to click on the green button to maximize the palette.

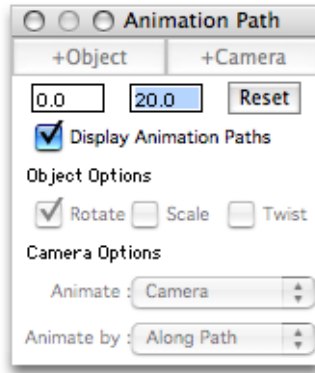
Animation Tweener palette:



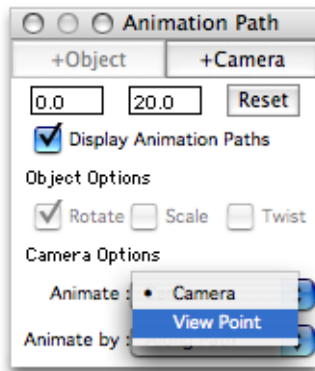
On the Tweener palette you will see a time line signified by starting and ending arrowheads. Open the Animation Tweener wider by clicking and dragging on the bottom right hand corner until 20 seconds shows in the timeline. Click and drag the End arrowhead to the 20 seconds time mark. This has set the animation time to run for 20 seconds:



We must now set the path time on the Animation Path palette to 20 seconds to fit the time frame. Click the Reset button:

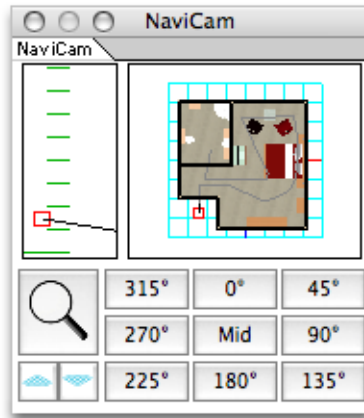


In the same palette, click on the Animate pop up menu to select View Point. This will animate the camera viewpoint to run on the path you have created. Once View Point option is selected, click on the top right tab labelled +Camera button:



Adjusting Camera Viewpoint

Now that the camera has been assigned to the animation path, you can click on the play button in the Animation Tweener or Animation Player palette. You will notice the camera position to be too far out to obtain an inside view of the bedroom. Adjust the camera position on the NaviCam to be closer to the viewpoint:



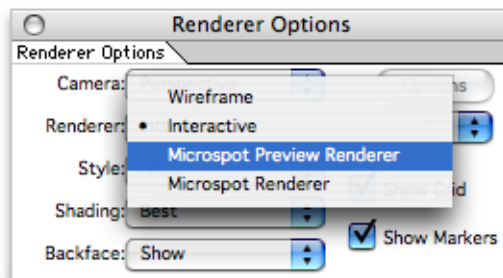
You can also zoom in and out on the NaviCam palette to adjust the view.

Note: Distortion may occur when using the zoom tool.

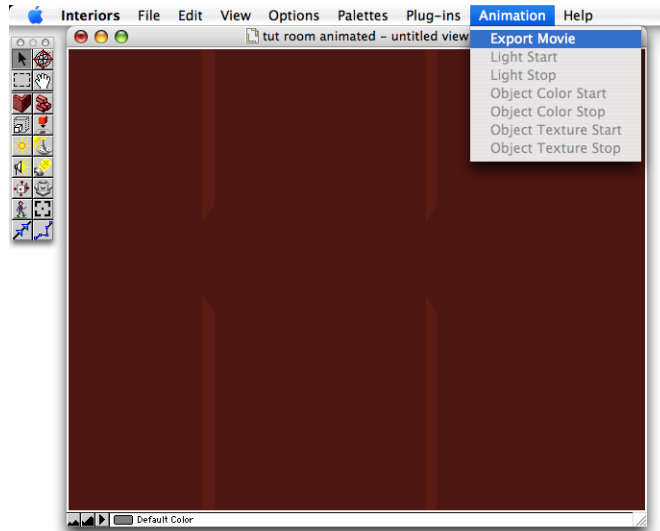
Exporting a Movie

Once you are satisfied with the animation path and camera view, you can export the animation as a QuickTime movie. The movie will be exported with the current Render Options settings. For higher quality graphics use the Microspot Renderer. The higher the Microspot Renderer settings are set the longer the movie will take to export, in this case we will export it in Microspot Preview Renderer.

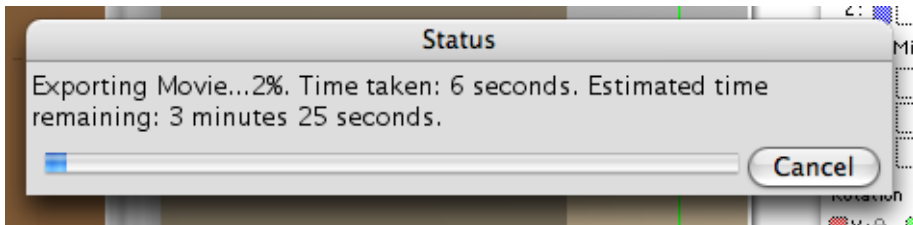
You can now select Microspot Preview Renderer in the Renderer palette pop-up menu:



As the bedroom scene begins to render, select Export Movie from the Animation menu:



A new window will open for you to allocate where you want the file to be saved, Once you have saved the file, a status window will open to inform you on the expected time remaining to export the movie:



Summary

This tutorial should have given you a good idea of the capabilities of Interiors and explained how to use many of the features. Please refer to the reference part of the manual to explore the many more advanced features available.

Chapter 3

Menus

Details of the application's File, Edit, View, Options, Palettes, Plug-in, Animation and Help menus. Command key shortcuts can be used to perform many menu commands. *See Appendix L — Command Key Table on page L-1 for details.*

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INTERIORS MENU

Click on the word Interiors at the top left of the screen to display the Interiors menu. The top three items relate to Interiors:

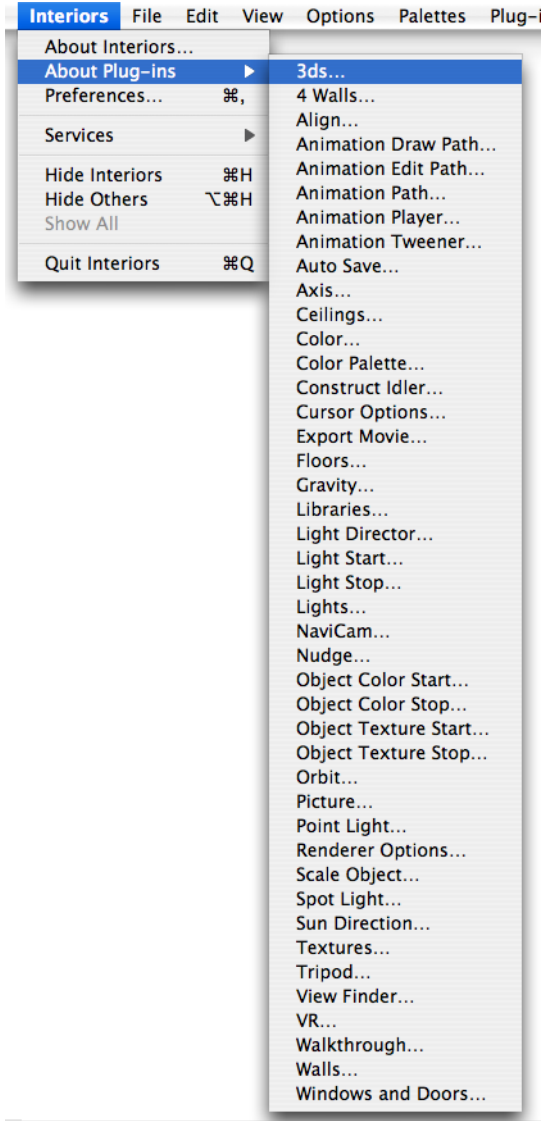
u About Interiors

Select About Interiors to display the About Interiors dialog. This provides information about the version of the application you are running, registration and serial number details.



u About Plug-ins

Select About Plug-ins and hold down the mouse button to display the list of the plug-ins that are currently running:

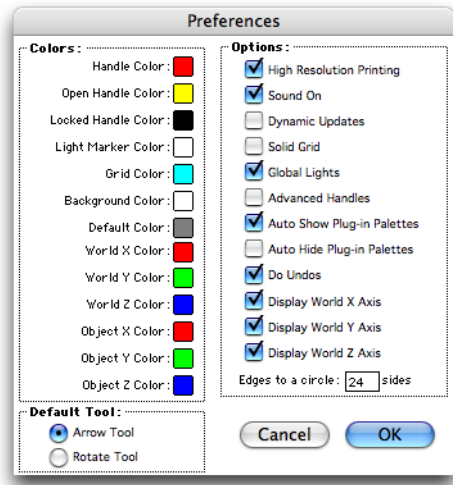


Select a plug-in name from the list to display a dialog containing brief details about the plug-in.



Preferences

Select Preferences to display the Preferences dialog:



Colors

To change color preferences, click on a color square to display the Color Picker. Select a new color and close the Color Picker.

- **Handle Color:** The color of the handles on the bounding frame of a selected object.
- **Open Handle Color:** The color of the handles on the bounding frame of a group of objects when an Editing or Group window is open, and the color of the active handle when an object is being resized.
- **Locked Handle Color:** The color of the handles on the bounding frame of a locked object.
- **Light Marker Color:** The color of the cone or point marking the position of a Spot/Point Light. If this color is set to white, the color of each light marker will be the same as the color of the light.
- **Grid Color:** The color of the grid.
- **Background Color:** The color displayed in the background of a new file.
- **Default Color:** This is the color that displays in the color block in the window toolbar and is used to draw new objects.
- **World X, Y, Z Color:** The colors that are used to draw the respective axis.
- **Object X,Y,Z Color:** The colors that are used to draw the lines of the bounding frame of an object.

Default Tool

Choose either the Arrow or Rotate Tool as the default tool.

Options

- **High Resolution Printing:** Click to print at printer resolution rather than screen resolution.
- **Sound On:** Click to play sounds within the application.
- **Dynamic Updates:** If this option is enabled, all open windows for a particular document will automatically be updated as objects are created or manipulated in the active window and as slider bar controls in palettes are changed. If this option is not enabled, only the active window will be updated as actions are performed. Other open windows will not be updated until the action is complete and when moving slider controls, views will not be updated until the mouse is released.

- **Solid Grid:** Click to specify that the document grid should appear as a solid floor rather than a wire frame grid.
- **Global Lights:** When this check box is enabled, the controls in the Lights palette relate to the document. When it is not enabled, the controls in the Lights palette relate to the active window only.
- **Advanced Handles:** When this option is checked on, the lines of the bounding frame of an object can be clicked on and dragged to resize the object.
- **Auto Show Plug-in Palettes:** When this option is checked on, whenever a plug-in tool is selected in the Tools palette, any plug-in palettes that are associated are opened.
- **Auto Hide Plug-in Palettes:** When this option is checked on, whenever a plug-in tool is selected in the Tools palette, any plug-in palettes currently open are closed. This helps to prevent your work space from becoming too cluttered.
- **Do Undos:** The Do Undos checkbox is used to specify whether or not you wish to be able to use the Undo command. It is checked on by default.
- **Display X, Y, Z World Axis:** These options enable the display of the world axis that are drawn with the origin in the center of the grid.
- **Edges to a Circle:** Enter a value for the number of sides a circle should have. This will affect the appearance of circles, spheres, cylinders, etc. The lower the value, the coarser the curve. The higher the value, the more memory and disk space you will need to display and store the images. The default value is 24.

Note: In version 3.6 Dynamic Tessellation has been added so that objects viewed in the foreground will have the full number of edges but items in the background will have progressively less. This enables faster rendering of objects as they become less obvious in the scene.

U Quit

Quits the application and closes all open files and their associated windows. If any open files have been changed without being saved, a dialog will display asking if you wish to save the changes.

FILE MENU



↳ **New**

Creates a new, untitled document.

If there is a document called Default Stationery Pad located in the same folder as the application, a copy of this document will be opened as an untitled document (a document is tagged as a stationery pad via the Get Info dialog). This allows you to use the same customized settings for each document.

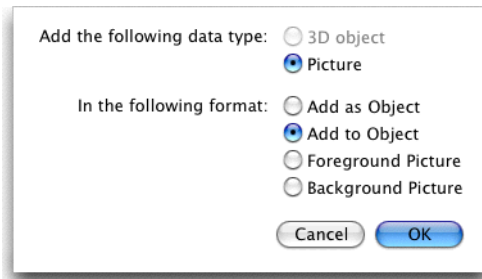
↳ **Open**

Opens an existing Interiors file, or any other file created by a 3DMF-compatible application (Such as Microspot Modeler).

u Insert

Select Insert to input 3DMF or picture files into the documents.

When the standard dialog displays, select a file to insert. The Insert Dialog will display:

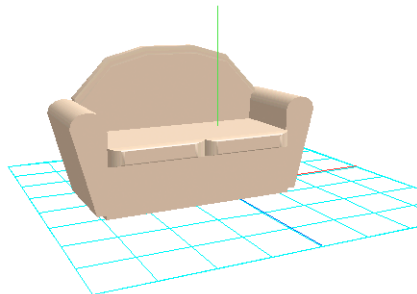


The options available will depend upon the type of file selected, and whether an object was selected when Insert was chosen. The type of file selected will be indicated on the right side of the dialog.

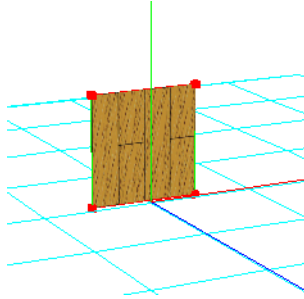
Add as Object

The selected file appears either in the center of the grid or at the last place the mouse was clicked.

- **3DMF file:** Appears as a 3D object, the orientation of which will depend on the information contained in the 3DMF file.

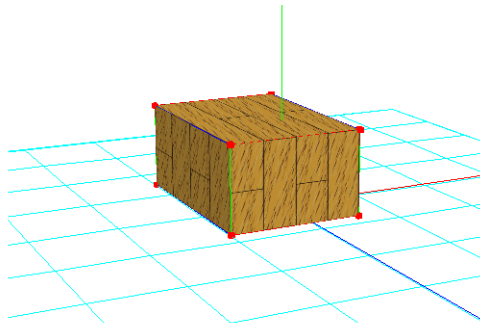


- **Picture file:** The image displays as a rectangle with the same proportions as the original picture. The longest side of the rectangle is equivalent to the length of one side of one grid square and its orientation relates to the grid.



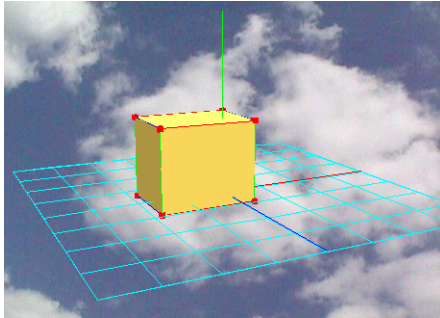
Add to Object

This option is only available if an object was selected in the document before Insert was chosen. The file is converted to a picture (if necessary) and applied to the selected object as a texture. The properties of the selected object will determine how it is applied.



Fore/Background Picture

The file is converted to a picture (if necessary) and placed in the foreground/background where it remains even if the view changes. If the proportions of the image are not the same as the proportions of the window, the image is distorted to fit the window. Its size remains constant relative to the window size.



↳ **Import**

The Import submenu allows you to access Import options. *See Appendix A — Appendix A on page A-1 for more details.*

↳ **Export**

The Export submenu allows you to access Export options. *See Appendix B — Appendix B on page B-1 for more details.*

↳ **Close**

Closes the current document and its associated windows. If the document has not been saved, or if changes have been made to it since it was last saved, an alert will display asking if you want to save the document before closing.

∪ **Save**

The Save option is only available if a document has never been saved, or if changes have been made to it since it was last saved. Using the Save option saves the document in 3D metafile format. If the document has not been saved before, a dialog will display for you to specify the document name and a location to save it.

To save a document as a stationery pad, give it the name Default Stationery Pad. The document will be automatically tagged as a stationery pad.

∪ **Save As**

Choose to save a document (in 3D metafile format) under a different name or in a different location. If you try to save a document in the same location as a document of the same name, an alert will ask if you wish to replace the existing file.

∪ **Revert**

Returns to the last saved version of a document. (This option will only be available if the document has been previously saved.) An alert will display to ask if you are sure you wish to revert.

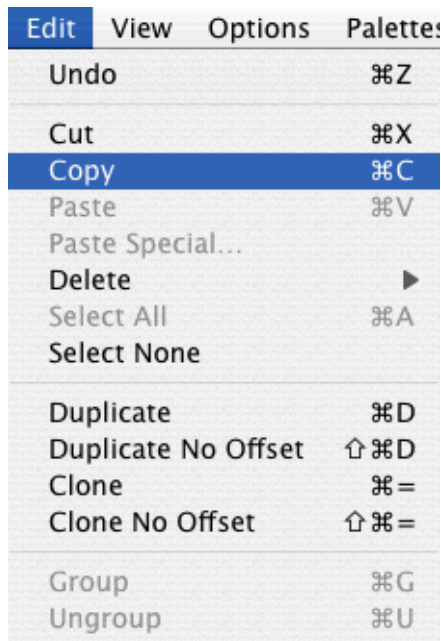
∪ **Page Setup**

Select to display the Page Setup dialog. The options available in the Page Setup dialog will depend on the printer driver you have selected in the Printer Setup Utility.

Print

Select to display the Print dialog. The options available in the Print dialog will depend on the printer driver you have selected in the Printer Setup Utility.

EDIT MENU



Undo

Allows you to undo your last object manipulation. Selections, de-selections, mode changes and view changes are not object manipulations, and therefore cannot be undone.

This option will be disabled if no document is open, if an open document has not been changed since it was last saved, or if Do Undos has been turned off in the Preferences dialog. *See Options on page 3-6 for further details.*

After an object manipulation has been undone, the Undo option will change to Redo. Select Redo to perform the action again.

↳ **Cut**

Removes a selected item from the current document and places it on the clipboard where it remains until replaced by another item cut or copied from the document.

↳ **Copy**

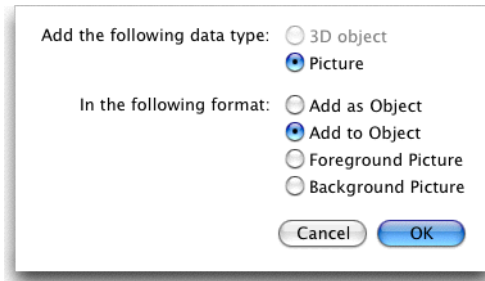
Copies a selected item from the current document and places it on the clipboard where it remains until replaced by another item cut or copied from the document.

↳ **Paste**

Pastes items into the current file either in the center of the grid or at the last place the mouse was clicked. 3DMF or PIC files can be pasted into Interiors documents. 3DMF data are pasted in as 3D objects and PICT files are pasted in as rectangles.

u Paste Special

Paste Special is only available if you have cut or copied items from an application other than Interiors. When you select Paste Special, the following dialog displays:



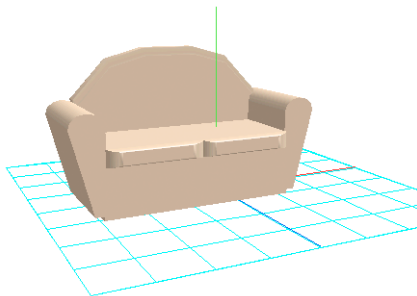
Items cut or copied from other applications can be placed in Interiors documents in a variety of ways, depending on their formats.

The Paste Special options available to you will depend on the type of file selected, and whether an object was selected prior to choosing Paste Special.

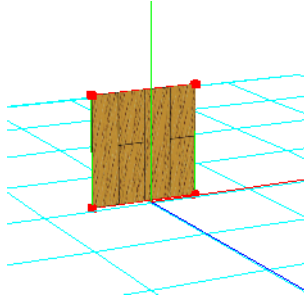
Add as Object

The file will appear either in the center of the grid or at the last place the mouse was clicked.

- **3D Object:** Appears as a 3DMF, the orientation of which depends on the information contained in the 3D object file.



- **Picture:** The image displays as a rectangle with the same proportions as the original picture. The longest side of the rectangle is equivalent to the length of one side of one grid square, and its orientation relates to the grid.

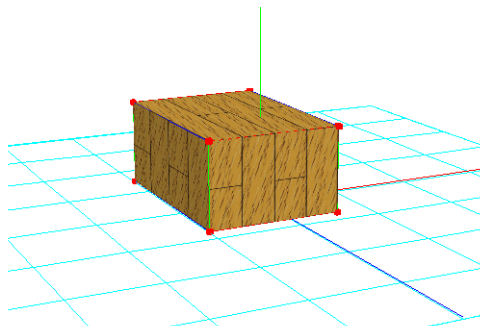


Add to Object

This option is only available if an object was selected in the document prior to choosing Paste Special.

Available for:

- **3D object:** The file is converted to a picture and applied to the selected object as a texture. The properties of the selected object will determine how it is applied.
- **Picture:** The file is applied to the selected object as a texture. The properties of the selected object will determine how it is applied.



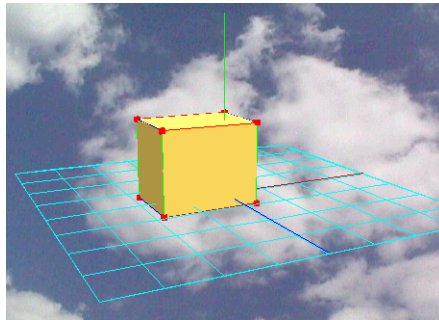
Fore/Background Picture

The file is converted to a picture (if necessary) and displayed in the document foreground/background where it remains even if the view changes. If the proportions of the image are not

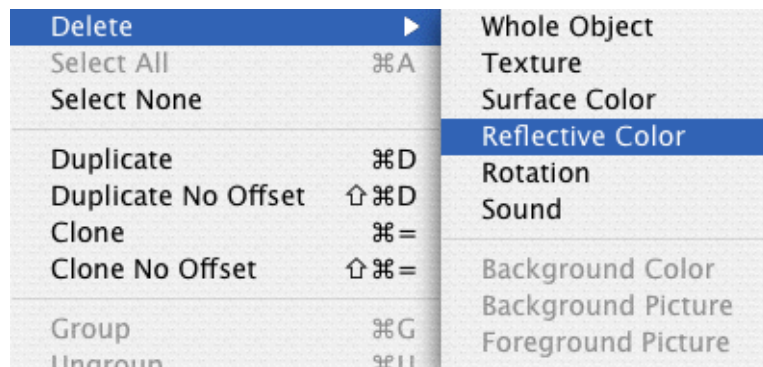
the same as the proportions of the window, the image is distorted to fit the window. Its size remains constant, relative to the window size.

Available for:

- 3D object
- Picture



⌘ Delete



Use the Delete command to remove items or attributes. The six options in the top part of the popup menu are only available if an item is selected within the document before Delete is chosen.

An entire object can also be deleted from a file by dragging and dropping it into the trash can. The last three options in the Delete menu allow you to remove the document's background color, background picture and foreground picture.

↳ **Select All**

Selects all of the objects in the current window.

↳ **Select None**

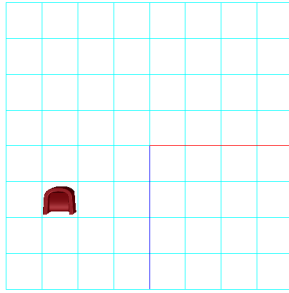
Deselects all of the selected items in the current window.

↳ **Duplicate and Clone**

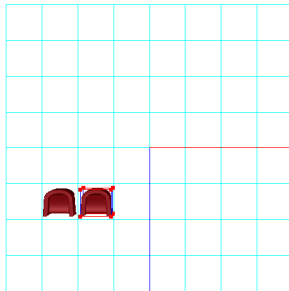
The Duplicate and Clone operations appear identical, however, when an object is duplicated, the duplicate is created as an entirely separate item and is unrelated to the original. When an object is cloned, the clones share the same basic geometry and surface attributes as the original. This means that if the geometry, color, transparency etc. of the original is changed, any clones will also be changed, and if a clone is changed, other clones and the original will be changed. The link relates to the basic geometry and surface attributes only. Changes in size, position and rotation will not be reflected by the clones.

The Clone command can be very useful in certain situations as due to their shared attributes, clones use less memory than duplicates, and changes can be made quickly to several cloned objects at once.

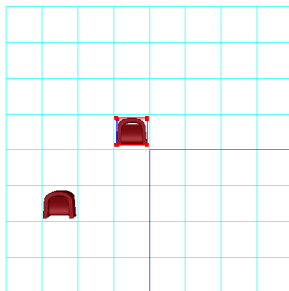
1. Select an item or group of items and choose Duplicate/Clone.



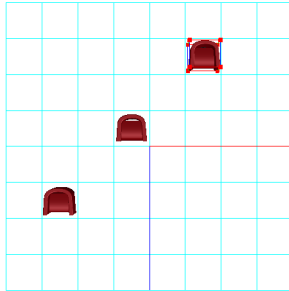
2. A duplicate/clone of the selected item or group of items is placed one grid square to the right of the original:



3. Move the duplicate/clone and choose Duplicate/Clone again.



4. The second duplicate/clone will be positioned in the same position relative to the first duplicate/clone, as the first duplicate/clone was to the original:



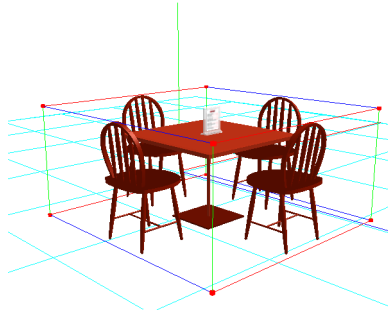
Any rotations that are applied after the first duplication are also applied to subsequent duplicated items. This is useful for drawing items like spiral staircases.

Hold down the Shift key when using the Duplicate/Clone option to avoid applying any offset.

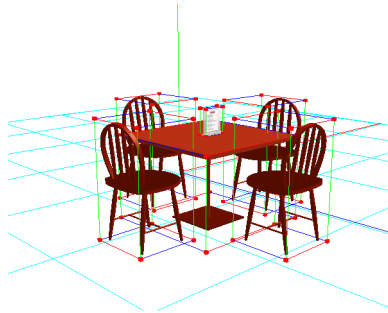
o Group

Groups two or more objects and allows them to be manipulated as a single object.

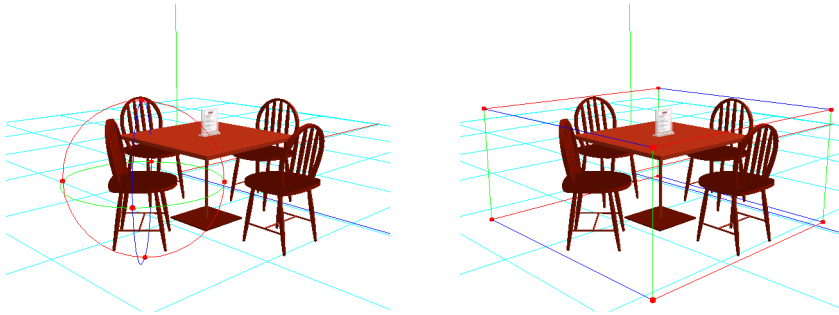
1. Select the desired items, then choose Group. Grouped items will be surrounded by a bounding rectangle or sphere depending on whether the arrow or rotate tool was used to select them:



2. Double-click on the group or choose Edit Group from the Options menu to open a new window containing only the items within the group:



3. Manipulate these items individually, then close the window to view your changes in the original document:



While a Group window is open, the handles of the bounding rectangle or sphere around the original grouped items will change color. This indicates that the objects are selected, and the Group window is open. The color of the handles is set in the Preferences dialog. *See Colors on page 3-6 for further details.*

If the grouped objects have been placed in further groups, the Group window will contain grouped objects. Double-clicking on these groups will open additional windows showing the contents of their respective groups.

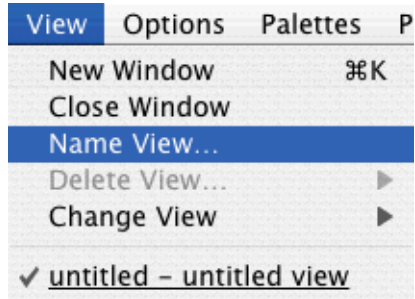
If a group of objects is flagged as Primitive, it is not possible to edit the items within the group by double-clicking on the group or choosing Edit Item from the Options menu. The group must be flagged as Dismantleable before the individual items can be edited.

U Ungroup

Un-groups selected items so that members of a group can be selected individually. Note that this option only un-groups one level at a time.

If a group is flagged as Primitive, the Ungroup option will be grayed out in the Edit menu, and will not be selectable. The group must be flagged as Dismantleable before it can be ungrouped.

VIEW MENU



↳ **New Window**

Opens a new window for the current document. The new window displays the same view as the original window, and is offset from it.

↳ **Close Window**

Closes the current window. If this is the last open window for a document, the document will also be closed.

u Name View

Saves the current view. Enter a name for the view in the dialog that displays:



You cannot use the names of the standard views included in the program. If you specify a name that has already been used to save a nonstandard view, an alert displays asking if you want to name your view.

u Delete View

Deletes a saved view. This option is only available when new views have been created and saved (standard program views cannot be deleted).

1. Select Delete View and a submenu lists the views that may be deleted:

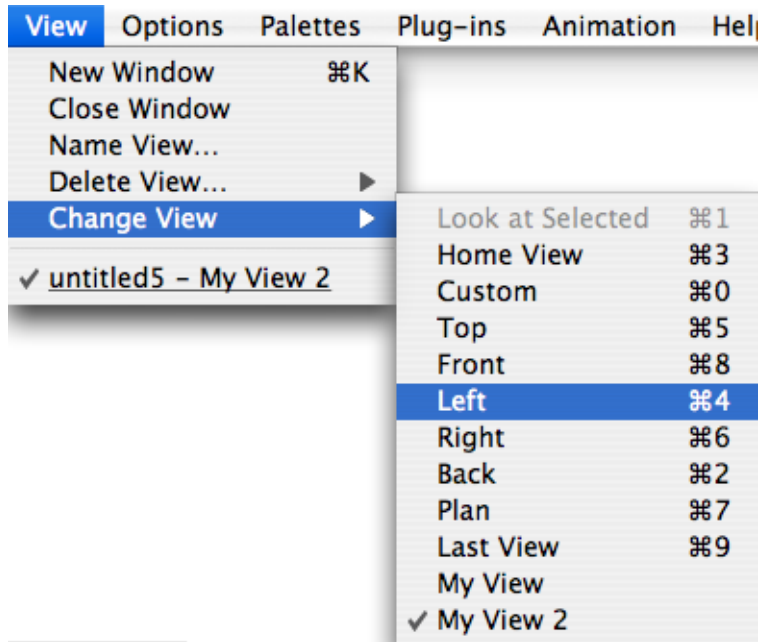


2. Select the name of the view to delete from the submenu and the view will be deleted.
3. If you do not select a view from the submenu, the delete view dialog displays showing the views that can be deleted
4. Select the view to delete and click OK.

Note: If a document window was displaying a view that has now been deleted, the window will remain open as an untitled view.

Change View

Click on Change View to display a popup menu which lists the available views (including any that you have saved). The view in the current window will be indicated by a check mark. Move the cursor down the list to select the desired view:

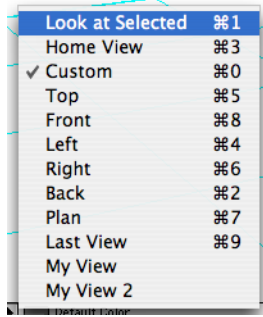


The current window will change to reflect your choice. If a standard view has been changed, hold down the Option key and select the name of the standard view to reset it to the default standard view.

The view displayed can also be changed via the Command key shortcuts shown in the Change View popup menu above, or through the popup menu in the Window controls. *See View on page 4-30 for further details..*

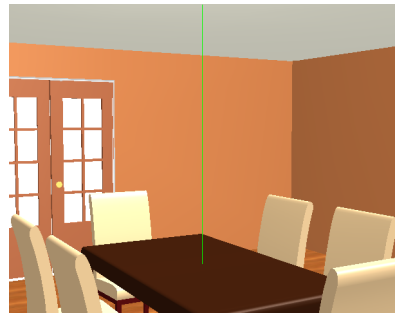
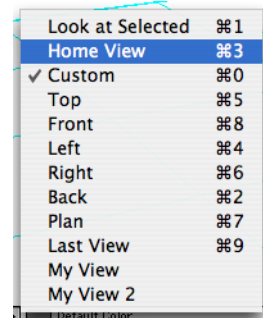
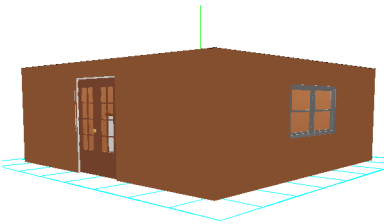
Look at Selected

Displays a selected object in the center of the window:



Home View

Returns the camera to its initial position (the view displayed when a new file is opened):

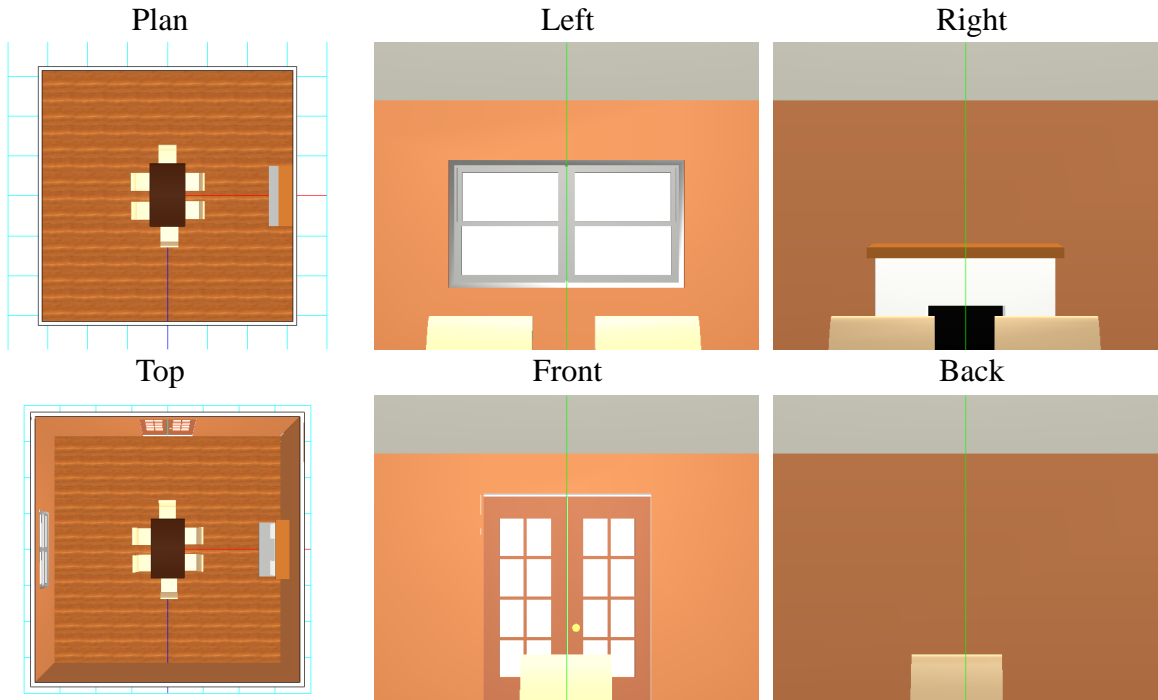


Custom

Any nonstandard view, or any view that has not been saved is a Custom view.

Plan, Top, Front, Left, Right and Back

The six standard views that allow you to display the file from the sides, top and a plan view:



Last View

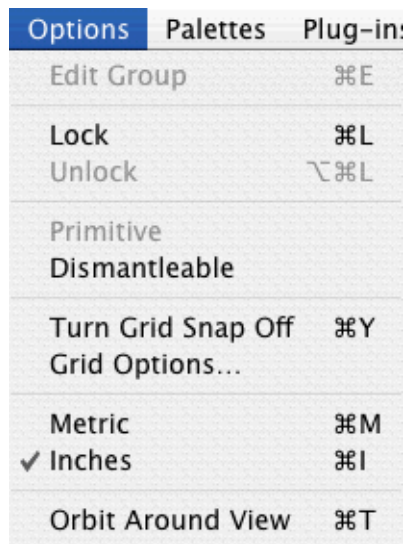
The view that was displayed in the window immediately prior to the current view.

u Open Documents

At the bottom of the view menu is a list of the documents and views that are currently open. The active window has a check mark to the left of its name. Documents that have been changed since they were saved are underlined. Select a document/window name from the list to make it the active window:



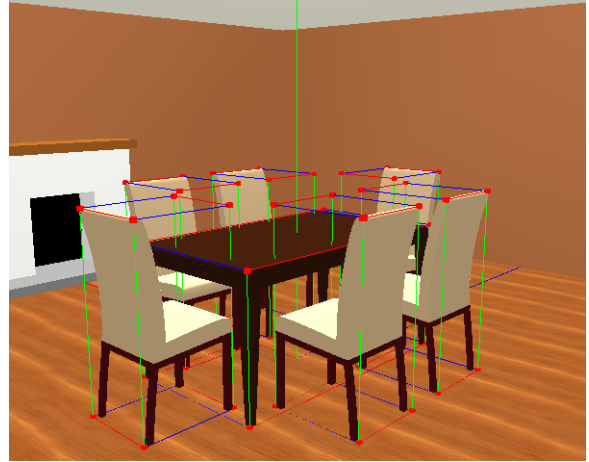
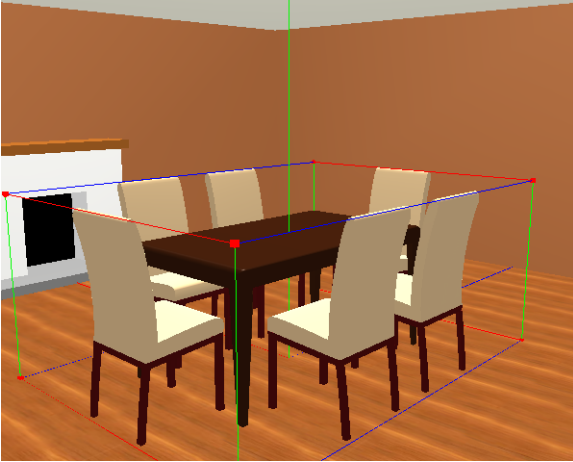
OPTIONS MENU



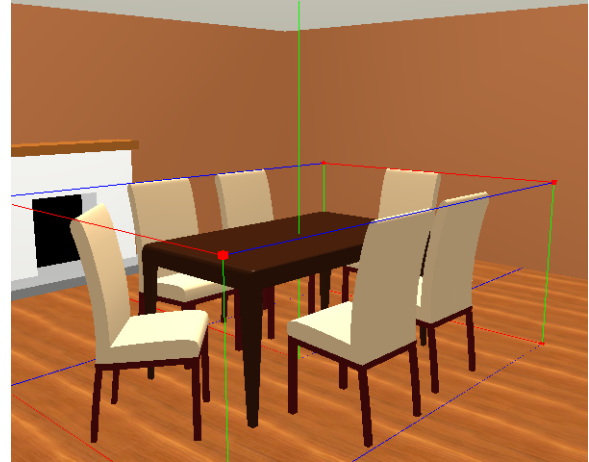
u **Edit Group**

Select to edit individual objects within a group.

Double-click on the group, or select the group and choose Edit Group from the Options menu, to display a new window which contains only the items in the group.



The items can now be edited individually. As you edit the individual items, the group remains locked in the original file window, although it will be updated to reflect any changes you make.



Hold down the Option key when closing an editing window, and all editing windows for that file will be closed.

Items and groups can be flagged as Primitive or Dismantleable. If the selected group has been flagged as Primitive, Edit Group will be grayed out and will not be selectable. Flag the group as Dismantleable to edit it.

↳ **Lock**

Protects a selected object or group from being changed. A locked object can be grouped with other objects, but cannot be moved, resized or changed. If you group a locked object with other objects, the entire group will be locked.

If you place the cursor over a locked object, a padlock displays next to it.

An object or group can also be locked by selecting it and clicking on the large open padlock icon in the top right corner of the Info Palette. *See Lock on page 4-18 for further details.*

↳ **Unlock**

Select a locked object or group and choose Unlock to remove the protection against changes. An object or group can also be unlocked by selecting it and clicking on the large closed padlock icon in the top right corner of the Info Palette. *See Lock on page 4-18 for further details.*

↳ **Primitive**

Specifies that an item or group should be treated as a basic geometry. A basic geometry cannot be un-grouped, so individual surfaces or items cannot be edited.

↳ **Dismantleable**

Specify that an item or group can be broken down into its component parts. This will allow you to ungroup an item or items and edit individual components as separate items.

u Grid Snap

Grid Snap applies an invisible grid to the document to which object points can snap. It is enabled by default to make it easier to align objects. The distances between the nodes on this grid are determined by the value entered for the Snapping Grid Distance in the Grid Options dialog.

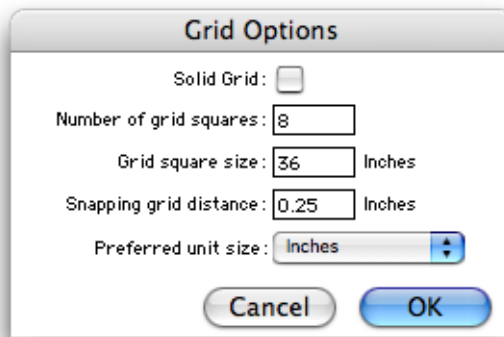
When Grid Snap is enabled and a new item is drawn, the cursor is positioned on the closest snapping grid intersection. As the object is drawn, the object's handles snap to the snapping grid's intersection points. As an object is resized, the object's handles are positioned on snapping grid intersection points. When an item is moved, its center point will snap to the snapping grid intersection points.

If Grid Snap was disabled when an object was randomly positioned in the file, the item will be moved or resized in increments of the snapping grid distance when Grid Snap is enabled.

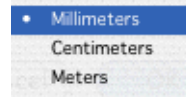
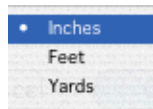
Reselect the Grid Snap option in the Options menu to turn this option off.

u Grid Options

Choose Grid Options to display the Grid Options dialog:



- **Solid grid:** When this check box is enabled the documents grid will appear as a solid floor rather than a wire frame.
- **Number of grid squares:** This value relates to the visible grid. Enter a value to specify the number of grid squares that should make up one side of the grid.
- **Grid square size:** This value relates to the visible grid. Enter a value to specify the length of one side of one grid square.
- **Snapping grid distance:** This value defines the invisible snapping grid. Enter a value for the length of one side of one snapping grid square. Typically, you will want to give the snapping grid distance a value that is a fraction or multiple of one document grid square.
- **Preferred unit size:** This option allows you to select a unit size.



The entries in the popup menu are determined by whether metric or inches has been selected in the Options menu as discussed below.

u **Metric**

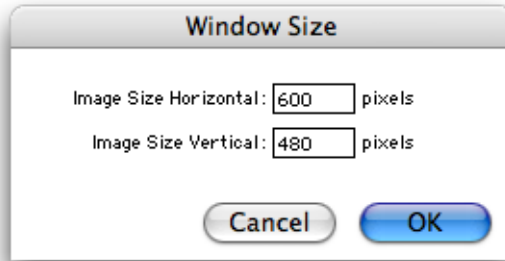
Select this option to use metric units of measurement. The grid size, position coordinates and dimensions will all be calculated using metric units.

u **Inches**

Select this option to use inches, feet or yards as the units of measurement. The grid size, position coordinates and dimensions will all be calculated using inches, feet or yards.

u **Window Size**

Set the size of the current drawing window in screen dimensions.



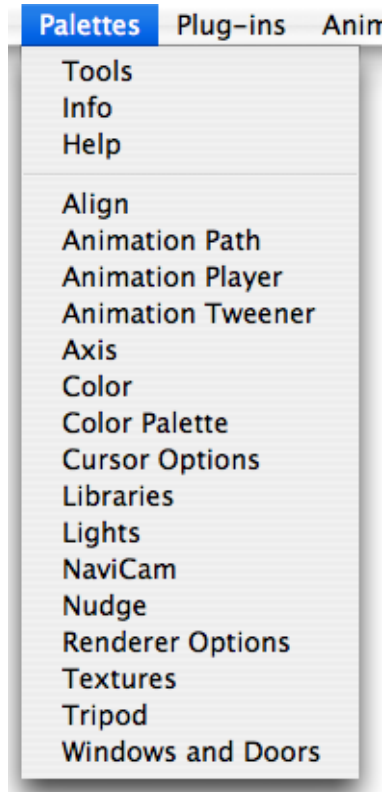
Note: Pixels are a measure of dot on screen, with a pixel representing a single dot.

u **Orbit Around View**

Select Orbit Around View to rotate the camera around the point at the center of the current view. Click anywhere in the window to stop the rotation.

PALETTES MENU

Click on Palettes in the application menu bar to display a list of available palettes. Select the palette name from the list to open it.

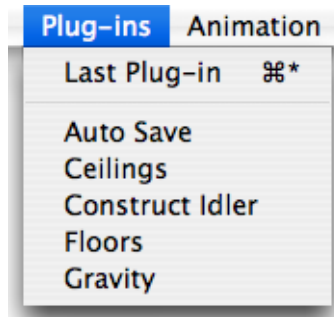


When a palette is currently open, a tick will appear next to it in the palette menu. If it has been docked with another tab, but is currently not visible, a diamond will appear next to it in the menu.

See Chapter 4 — Tools Palette on page 4-4 for details of the Tools, Info and Help palettes, and Appendix D — Plug-in Palettes on page D-1 for details of plug-in palettes.

PLUG-IN MENU

Click on Plug-ins in the application menu bar to display a list of available plug-ins.

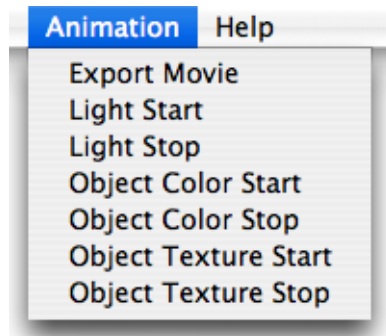


Select the plug-in name from the list to open it.

See Appendix C — for details of the plug-ins accessed from the Plug-ins menu.

ANIMATION MENU

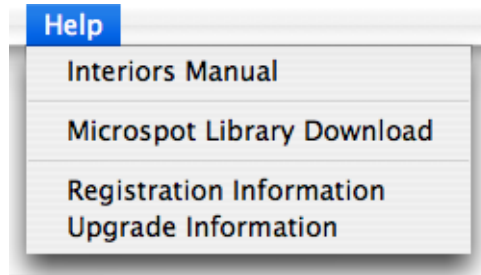
Click on Animation in the application menu bar to display a list of animation plug-ins.



Select the animation plug-in name from the list to open it.

See Appendix C — for details of the plug-ins accessed from the Plug-ins menu.

HELP MENU



↳ **Interiors Manual**

Select this option to launch and display the Microspot Interiors User Guide.

↳ **Microspot Library Download**

Select Microspot Library Download to go to the Microspot Download web page to download the latest libraries and updates.

↳ **Registration Information**

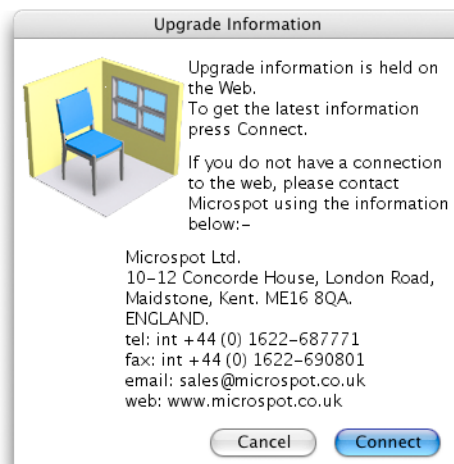
Select Registration Information to register your product via the Microspot web page. The Register Information dialog displays:

Click on the Connect button in the dialog to go to the web page.



Upgrade Information

Select Upgrade Information to obtain product upgrade information (if any) from the Microspot web page. The Upgrade Information dialog displays:



Click on the Connect button in the dialog to go to the web page or alternatively, contact Microspot via telephone, fax or email for upgrade information.

Chapter 4

Palettes

The Tools, Info and Help palettes are the standard palettes included in the application. All other palettes are plug-in palettes that are loaded when the application is launched.

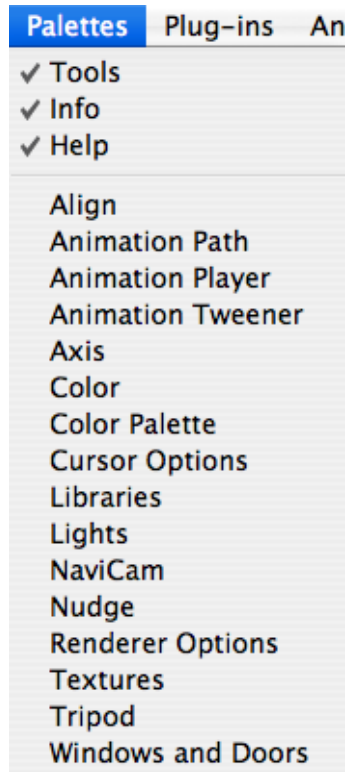
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INTRODUCTION

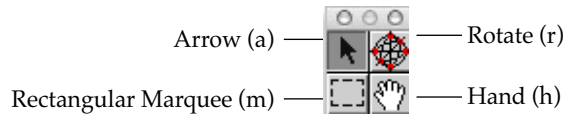
To open a palette, select its name from the Palettes menu. The Palettes menu lists of all the available palettes.



The status and position of palettes is remembered each time the application is closed. Close a palette by clicking on the top left corner of the palette window.

Tools Palette

The tools built-in to the application Tools palette are the Arrow, Rotate, Rectangular Marquee and Hand tools.



The rest of the tools are plug-ins that are loaded when the application is launched

Select the tool to use by clicking on its icon in the Tools palette. After a tool has been used, the currently selected tool reverts to being the Arrow tool, unless the default tool is changed in the Preferences dialog. *See Preferences on page 3-5 for further details.* You can, however, double-click on any tool to lock it in so that it will not change after you use it, but will remain selected.

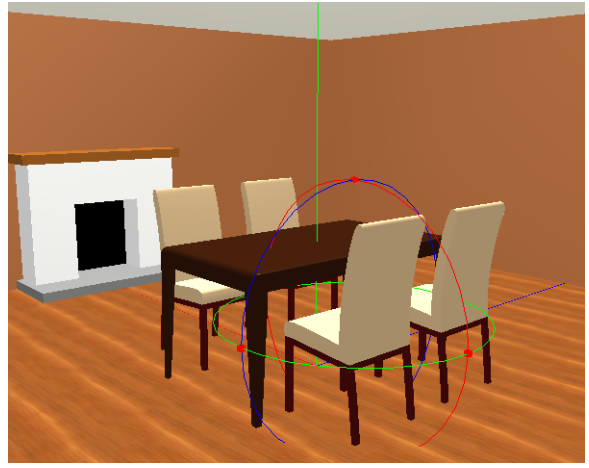
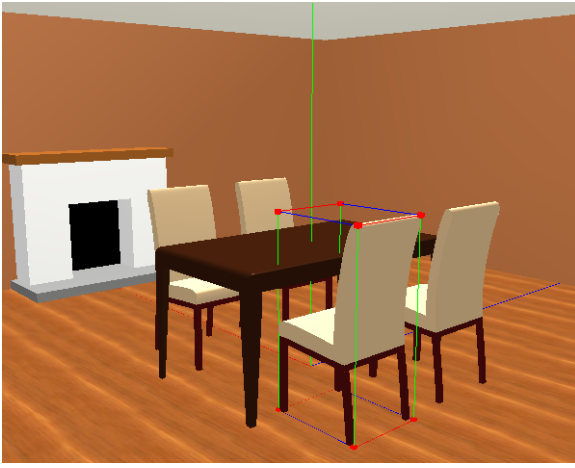


Both the Arrow and Rotation tools can be used for selecting and moving objects. You can also click and drag on the grid with either tool to move the entire scene in the window.

Note: Objects may be locked to prevent them being moved or rotated in one or more directions, or to prevent them being resized.

Select

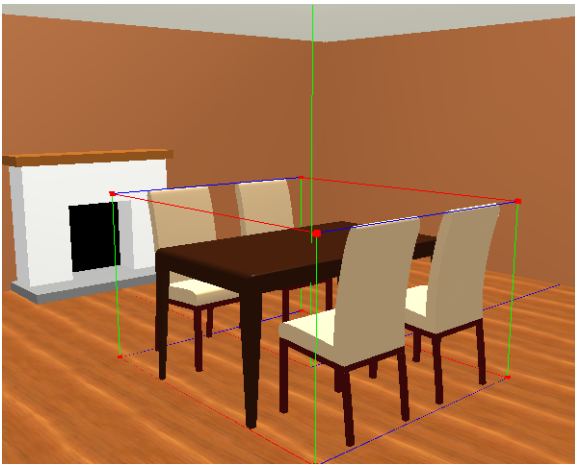
When an object is selected, it is surrounded by a bounding frame with handles at the points where the bounding lines intersect:



To temporarily hide an object's bounding frame, hold down the Option key and click on the arrow or rotate tool. The item is still selected, but the bounding frame and handles do not display. To re-display, click on the arrow or rotate tool again.

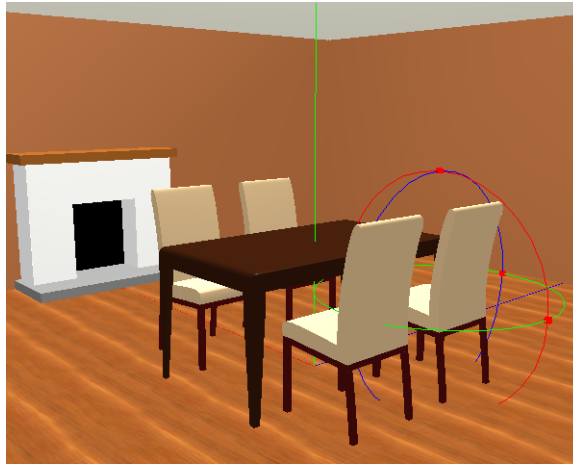
To add objects to a selection, hold down the Shift key and click on the additional objects. To deselect one object in a selection, hold down the Shift key and click on the object. If you click on an object that is part of a group, the entire group will be selected and the bounding frame will surround all of the items in the group.

Double-click on a group of objects to open a new window in which the grouped items can be edited:



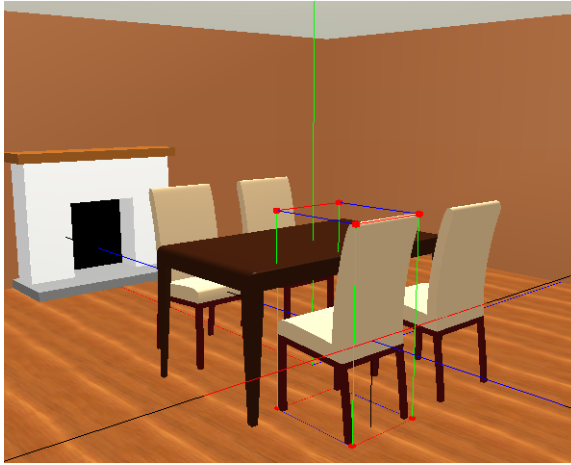
When you close this editing window, any changes you have made will be reflected in the original document window. You can also edit a group by selecting it and choosing Edit Item from the Options menu. *See Edit Group on page 3-28 for further details.*

Hold down the Command key and click the mouse to select an object that is behind another object. Initially, the foremost object will be selected. The second time you click the mouse, the next object back will be selected, and so on:



Move

To move an object, click on it, hold down the mouse button, and drag. Release the mouse button to place the object in its new location. Hold down the Control key and drag up or down to move the object closer or further away. If you hold down the Shift key, lines will display showing the X, Y and Z axes, and movement will be constrained to these axes:



Objects can also be moved by entering coordinate values in the Info Palette.

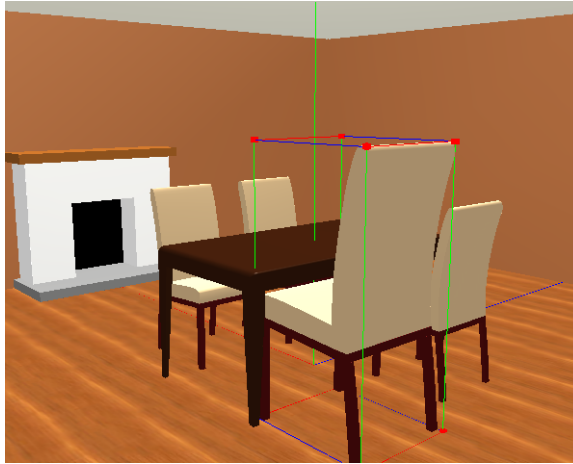
u  **Select/Move/Scale**

Note: Objects may be locked to prevent them being moved or rotated in one or more directions, or to prevent them being resized.

Select an object with the Arrow tool, it will display surrounded by a bounding frame with handles at the corners.

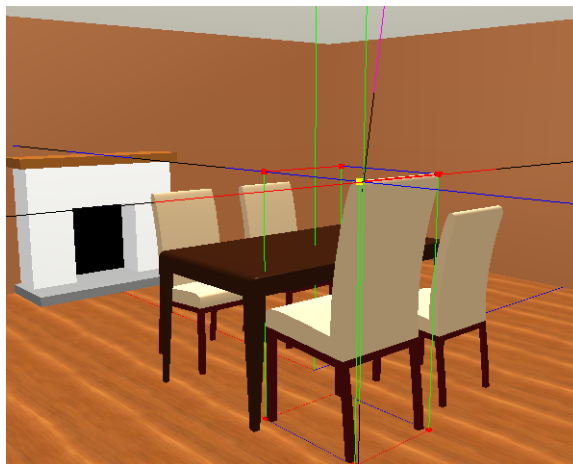
As an alternative to clicking and dragging, you can move an object using the arrow keys by selecting the object and pressing the desired arrow key to move it one pixel. If you hold down the arrow key, the object will move one pixel at a time until it has moved six pixels. It will then begin to move at an accelerated rate. To move objects closer or further away, hold down the Control key while using the up and down arrow keys.

To change the size of an object, move the cursor over one of the handles of the bounding frame. When the cursor changes to a white arrow, click the mouse and drag. The shape or size of the object will change to reflect your actions:

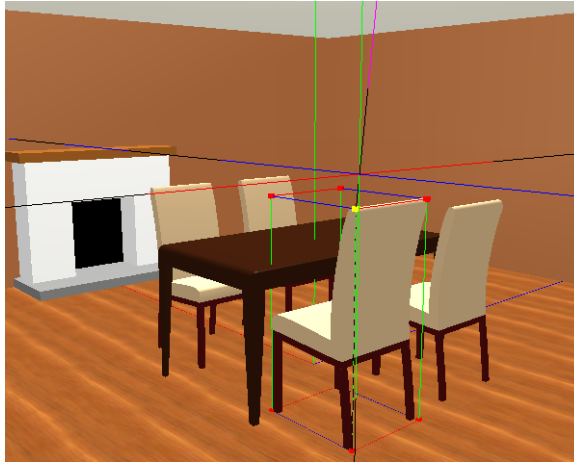


Note: If the Advanced Handles preference is checked on in the Preferences dialog, the lines of the bounding frame of an object can also be clicked on and dragged to resize the object.

Hold down the Shift key when resizing an object to constrain movement to the X, Y, or Z axes or to maintain the objects proportions. Four constraining lines are displayed. The red line represents the X-axis; the green line the Y-axis; and the blue line the Z-axis. The pink line represents the line along which the object will retain its current proportions:



If, after resizing the object, you hold down the Option and Shift keys and resize the object a second time, the pink line will move to a position which allows you to constrain the object to the proportions it was originally drawn with:



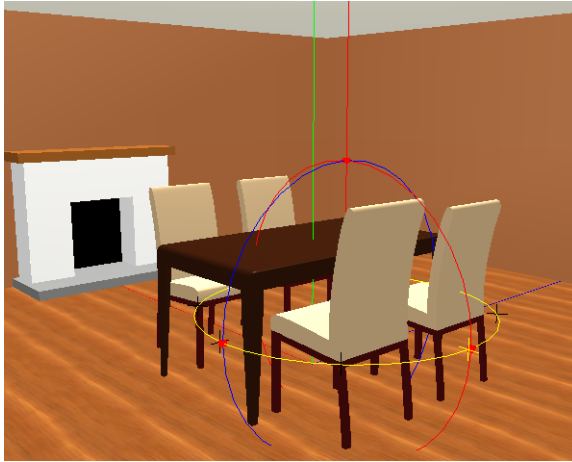
Objects can also be resized via the controls in the Info Palette.

u  **Select/Move/Rotate**

Note: Objects may be locked to prevent them being moved or rotated in one or more directions, or to prevent them being resized.

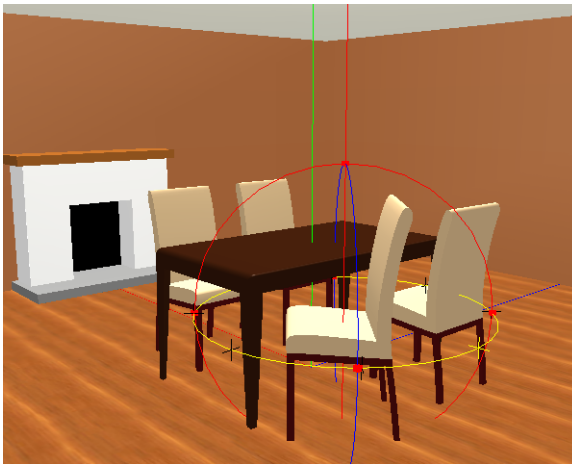
When an object is selected with the Rotate tool, it displays surrounded by a bounding sphere with six handles.

To rotate the object, move the cursor over one of the widgets of the bounding frame. When the cursor changes to a white arrow, click the mouse and drag. The object will rotate to reflect your actions:



Note: holding down the Shift key while rotating an object using the handles, constrains the rotation to 90° .

To rotate the object, in one axis only, move the cursor over one of the lines of the bounding frame. When the cursor changes to a white arrow, pointing right, click the mouse and drag. The object will rotate to reflect your actions in one axis only:



Note: holding down the Shift key while rotating an object using the rotation rings, constrains the rotation to 45° .

You can also use the arrow keys to rotate objects. If you hold down the arrow key, the object will rotate in 1° increments for 6° , then accelerate to 10° steps. If you hold down the Shift key

while using the arrow keys, you can rotate objects in 45° increments. To tilt an object, hold down the Control key and use the left and right arrow keys.

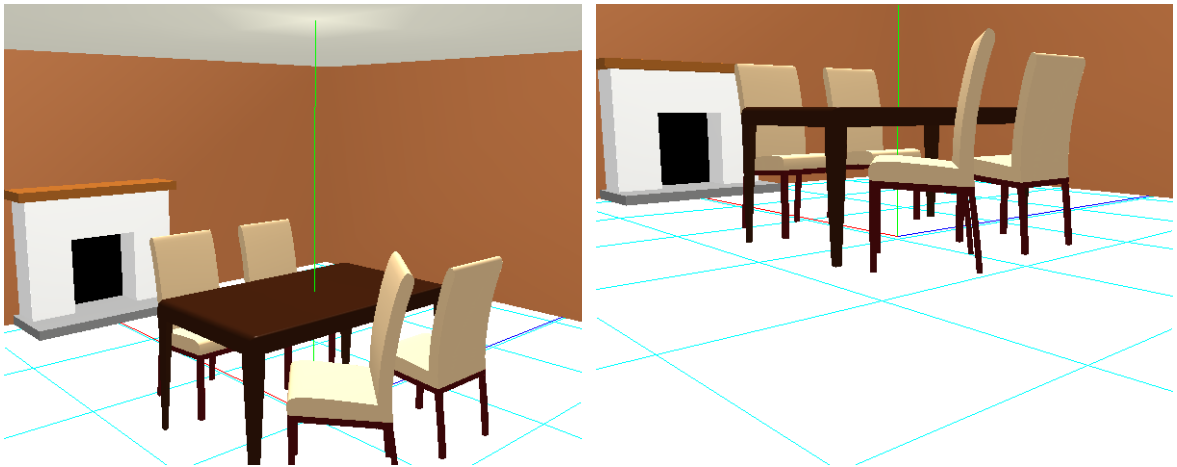
The arrow keys can also be used to move and rotate the camera when nothing is selected in the document window. The camera will either move or rotate depending on which tool is currently selected. Use the control key to move the camera in the Z dimension.

↳ **Manipulating The Grid**

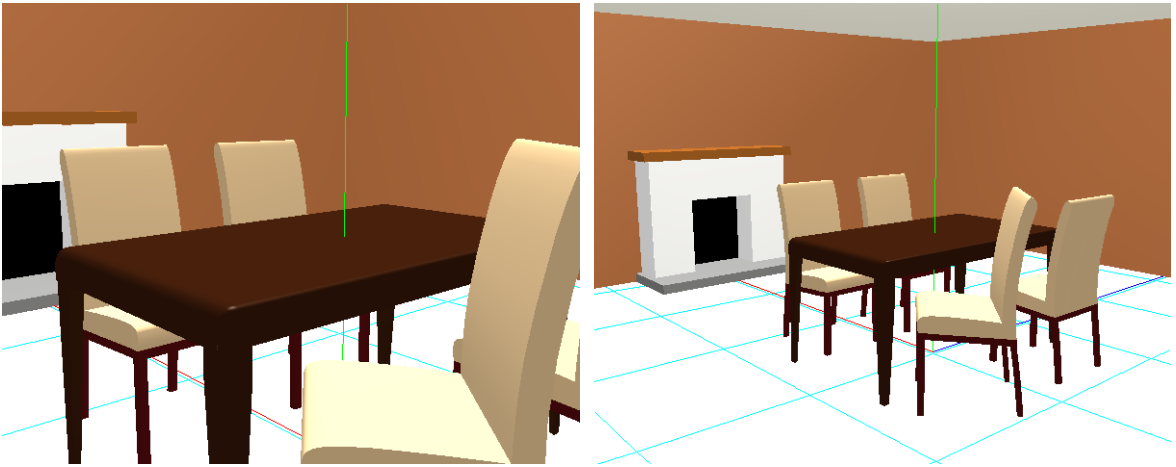
The Arrow and Rotate tools can be used to move and rotate the grid, as well as objects, to easily manipulate your view of a document.

Moving The Grid

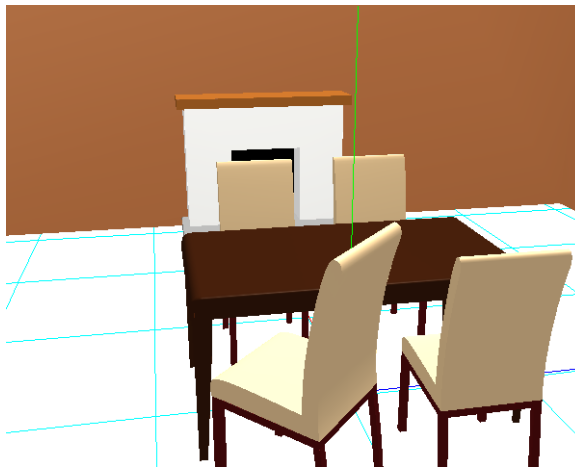
Select the Arrow tool and move the cursor over the grid. Hold down the mouse button, the cursor changes to an open hand. Move the cursor up, down, left or right. The grid will move to reflect your actions:



Hold down the Control key and move the mouse up and down to move the grid closer and further away:



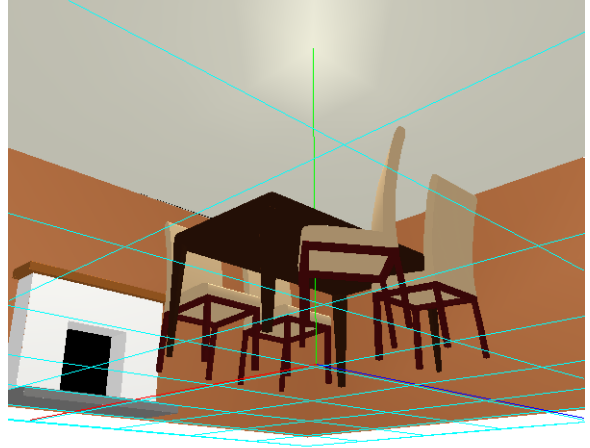
Hold down the Shift key when moving the grid to display, and constrain movement to, the X, Y and Z axes:



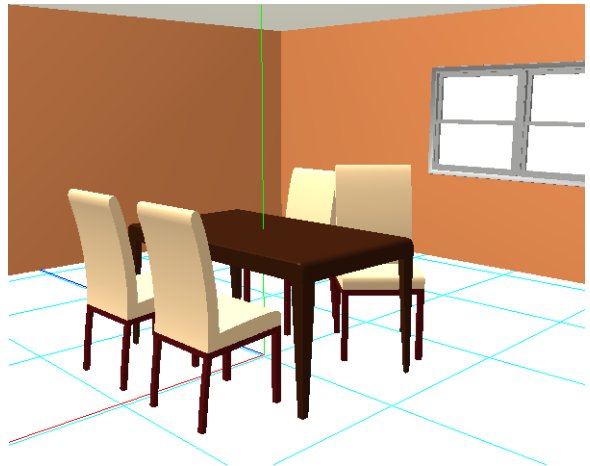
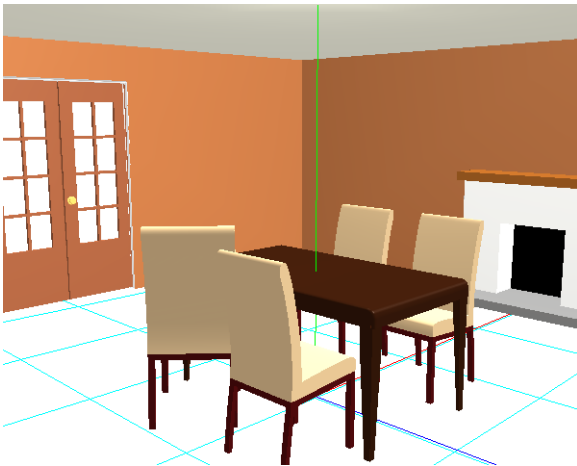
Additionally, you can hold down the command key to rotate the grid, whilst the arrow tool is selected.

Rotating The Grid

Select the Rotate tool and move the cursor over the grid. Hold down the mouse button, the cursor changes to an open hand. Move the mouse up, down, left or right. The grid moves to reflect your actions:



Hold down the Shift key while rotating the grid to constrain it to its initial plane. It can then only be rotated in that plane:



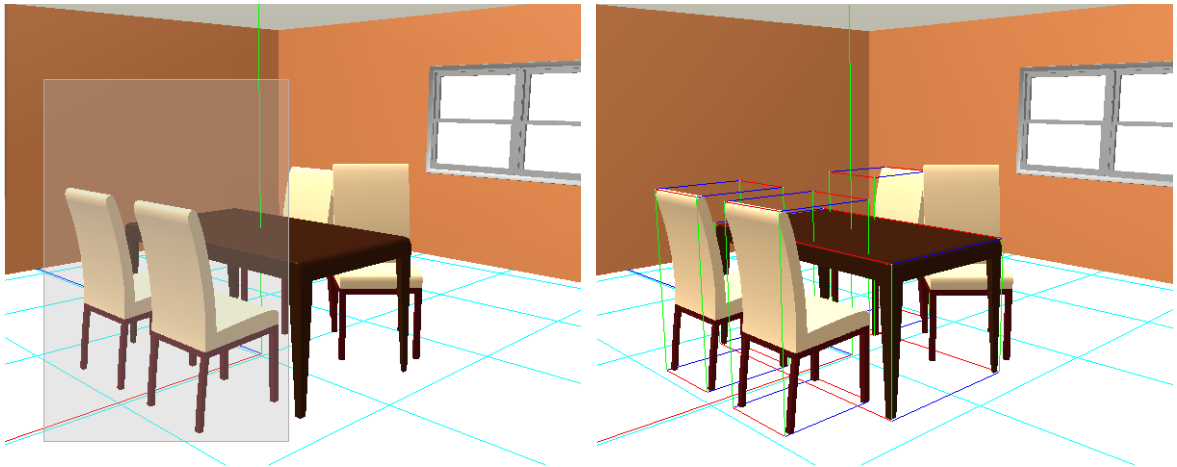
Holding the command key down before grabbing the grid will allow you to switch between rotating or moving the grid.

v



Rectangular Marquee

Select the Rectangular Marquee tool, hold down the mouse and drag out a rectangle to select one or several objects. (Note that if any part of an object is inside the marquee, that object will also be selected.)



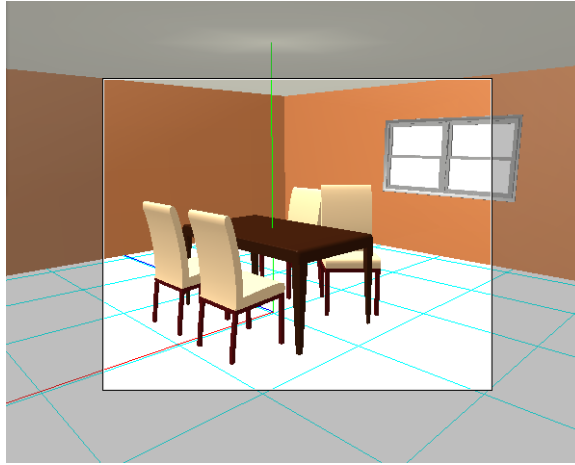
To add objects to a selection, hold down the Shift key and drag a rectangle around the desired objects. To deselect items, hold down the Shift key and drag a rectangle around selected items. You can also add or remove items from a selection by clicking on them with a Selection tool while holding down the Shift key.

v

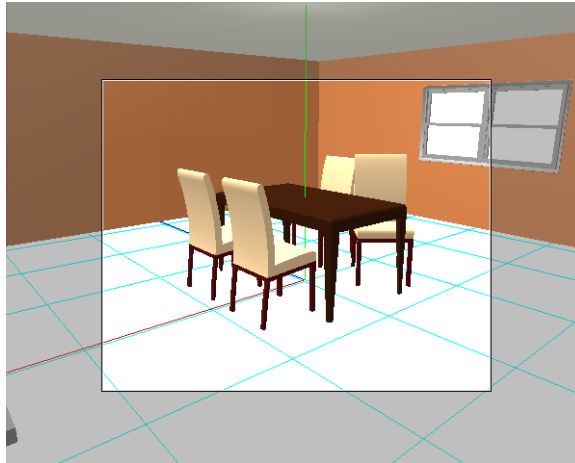


Hand

Use the Hand tool to change the view of the document by altering the position of the camera. When you select the Hand tool, a frame will appear around the contents of the window. The cursor will change type near the corners of the frame:



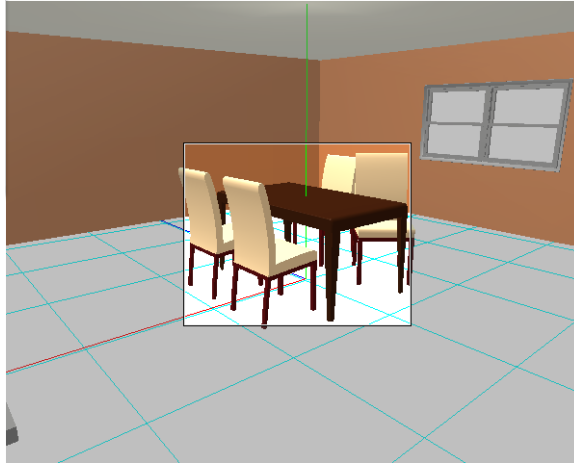
You can either position the view within the frame, or position the frame around the view. To position the view, click outside the frame and drag the mouse. To position the frame, click inside the frame and drag the mouse:



If you are in an elevation or orthogonal view, move the mouse left and right to crab, or up and down to change the camera height.

If you are in a perspective or user defined view, move the mouse left and right to pan the camera, or up and down to tilt the camera. Hold down the Option key and move left and right to crab, up and down to change the height.

To zoom in on an object (note that you are not actually moving the camera, but rather narrowing the focus), click on one of the frame corners and drag it in towards the center of the window:



When you select another tool, the window changes to show the view you have chosen:

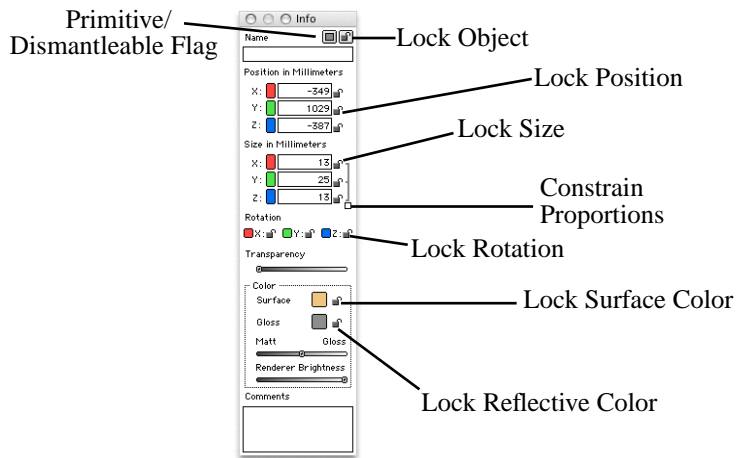


INFO PALETTE

The Info palette displays information about, and provides controls for you to adjust, the characteristics of a selected object or light.

Select Info from the Palettes menu to display the Info Palette. When it is first opened, all of the Info palette will be visible. To reduce the palette click on the button on the right in the top left corner of the palette. To extend the window, click again.

Note: The controls in the Info Palette will vary depending on whether you have selected a 3D object or a spot/point light in the document window:



u Name

The Name box provides a space to enter a name for an object or group of objects. This name will be displayed whenever the object or group is selected.

∪   **Primitive/Dismantleable**

This option is only available when an item or group is selected. A Primitive item cannot be ungrouped into component items. Click on the button to toggle between Primitive and Dismantleable. The solid square button represents the Primitive state and the split button the Dismantleable state. An object can also be specified to be Primitive or Dismantleable by selecting Primitive or Dismantleable from the Options menu. *See Primitive on page 3-30 and Dismantleable on page 3-30 for further details.*

∪   **Lock**

To lock a selected object or group of objects, click on the padlock icon in the top right corner of the Info palette, or select Lock from the Options menu. *See Lock on page 3-30 for further details.* This will prevent the object or group from being moved or changed. To unlock an object, click on the Padlock icon a second time, or select Unlock from the Options menu. *See Unlock on page 3-30 for further details.*

∪ **Position**

The figures displayed in the X,Y and Z Position boxes are the grid coordinates of the center of the selected object's bounding rectangle. If you select items that are grouped together, the coordinates displayed will relate to the group. If you select more than one item and the items are not grouped, no coordinates will display.

To precisely position an object, type in values for the X, Y and Z coordinates, then press Enter. The object will move to reflect your entries.

Lock Position

The padlocks next to the position boxes are used to lock the position of an object. The lock options work the same for groups of objects as for single objects.

Click on the padlock next to the X position coordinate. It will close, which means the object is in a fixed position on the X axis (in relation to the grid), but can still be moved in the Y and Z axes. Any or all coordinates can be constrained. If an object's position is constrained on all three axes, it cannot be moved. However, you can still change the object's size (unless it has also been constrained).

Size

The size boxes display the X,Y and Z dimensions of an object's bounding rectangle. If you select items that are grouped together, the dimensions displayed will relate to the group's bounding rectangle. If you select more than one item and the items are not grouped, no dimensions will display. To precisely resize an object, type in values for the X, Y and Z dimensions, then press Enter. The object will be resized to reflect your entries.

Note: Information about the object's size will be grayed out if you have selected a light as light objects have a constant size which cannot be changed.

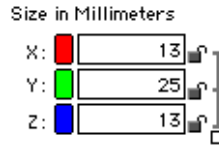
Lock Size

The padlocks next to the size boxes are used to lock the size of an object. The lock options work the same for groups of objects as for single objects.

Click on the padlocks by the size dimensions to constrain an object's size. Click on a closed padlock to open it and un-constrain an object's size. Any or all size dimensions can be constrained. If all are constrained, the size cannot be changed. If just one dimension is constrained, you can change the other dimensions.

Constrain Proportions

The Proportional Constrain checkbox to the bottom right of the dimension fields allows you to constrain the proportions of an object. Select an item and click on the checkbox to turn on Proportional Constrain.



The item can now be resized or moved, but will always maintain its current proportions.

Rotation

Lock Rotation

Below the size controls are additional padlocks for the X, Y, and Z axes that are used to constrain the rotation of an object.

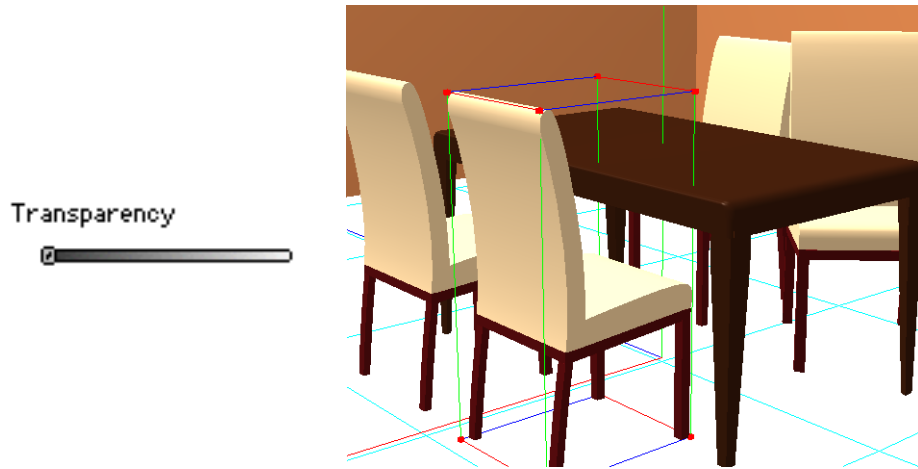
Click on the padlock relating to the X axis. It will close, indicating that the object cannot be rotated around the X axis (in relation to the grid), although it can still be rotated in the Y and Z axes. The rotation of the object can be constrained in any or all of the axes. The X Y and Z axes are determined by the orientation of the object.

Transparency/Brightness

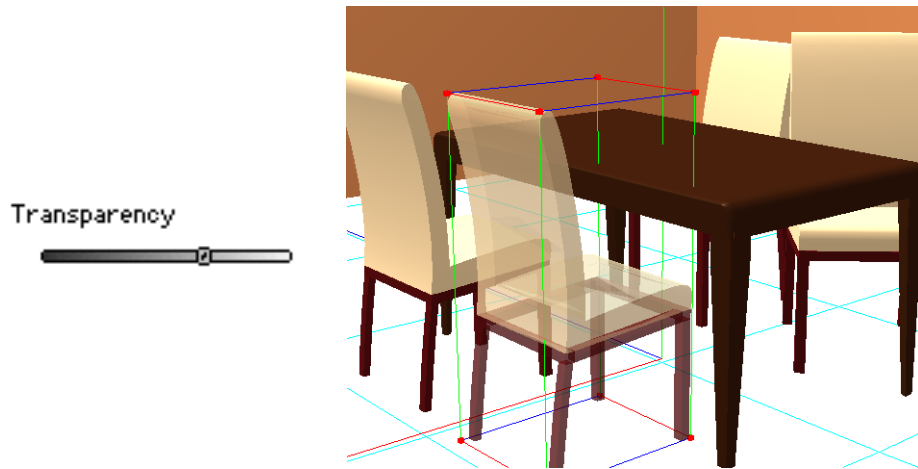
Transparency

Select an object and use the Transparency slider control to adjust its transparency.

- When the transparency slider is to the left of the bar, the selected object is opaque:

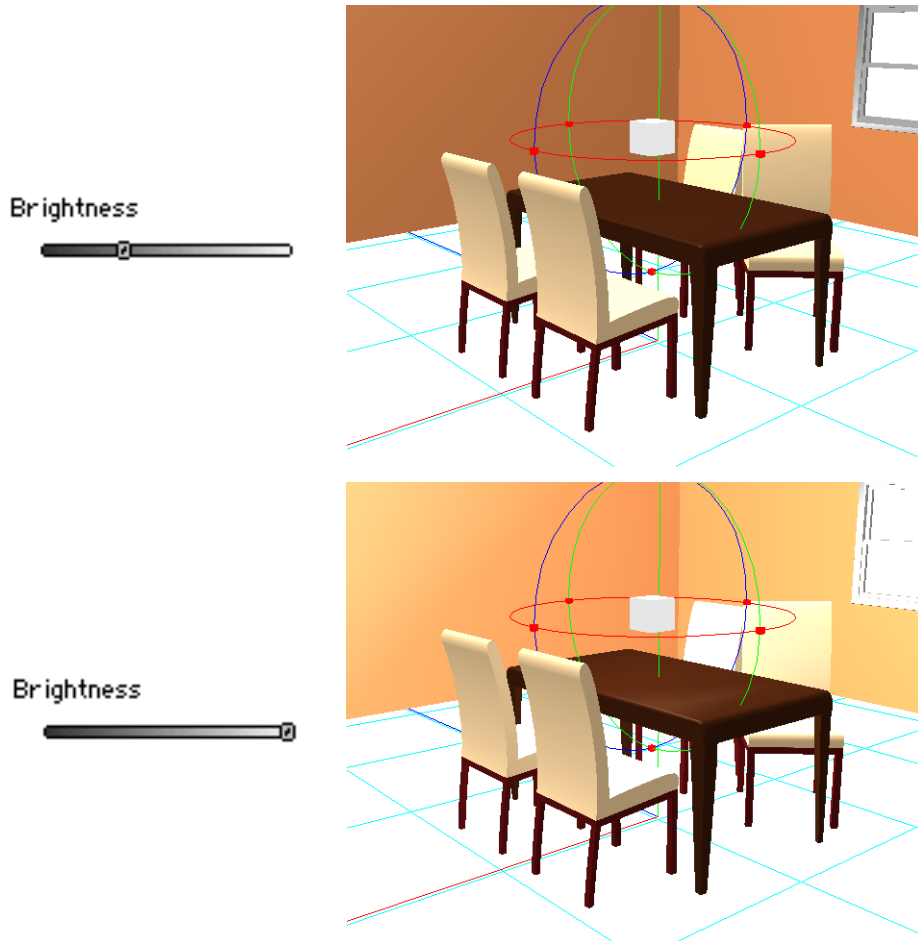


As the slider is moved along the bar, the object becomes more transparent:



Brightness

If a light is selected, the first slider control relates to the brightness of the light it emits:



Color

Surface

The Surface color box shows the color of the selected object.

To change the color of the object, click on the Surface color box to display the Color Picker. Select a color and close the dialog. The color you have chosen will be displayed as the Surface color and applied to the selected object.

If a light is selected the Spot Light color box or Point Light color box is the color of the light emitted by the light object. The light marker color will also change to this color. If the light marker color was changed by use of the Preferences dialog the light marker will stay the preference color value. *See Colors on page 3-6 for further details.* Colors can also be dragged and dropped onto the spot or point light color box.

Gloss

The Gloss color box shows the reflective color of the selected object. If light is shining on an object (sun light or spot/point lights), the part of the object that shines displays the gloss color. This will only be visible if you have selected the Best Shading option for the interactive renderer, or the Microspot Renderer via the Renderer Options palette. *See Renderer Options on page D-31 for more details.* This option is not available for lights.

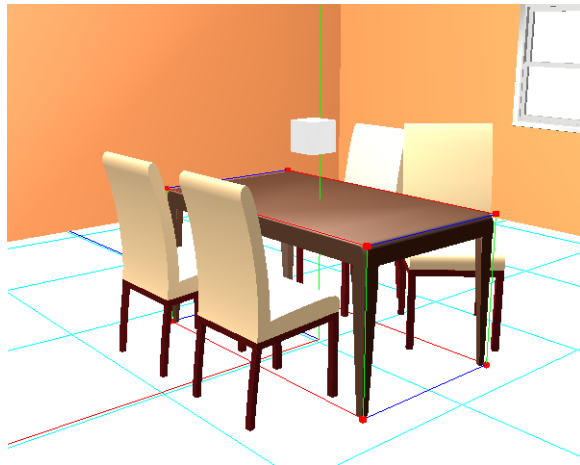
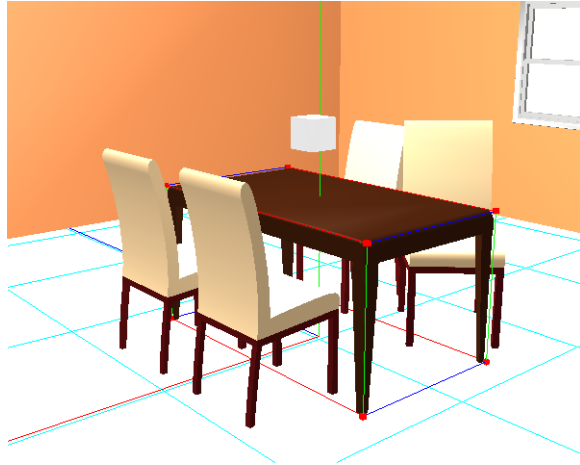
To change the reflective color of the object, click on the Gloss color box to display the Color Picker. Select a color and close the dialog. The color you have chosen will be displayed in the Gloss color box. Colors can also be dragged and dropped onto the Gloss color box.

Lock Color

The padlock next to the color boxes is used to protect the color values of an object.

Matt - Gloss

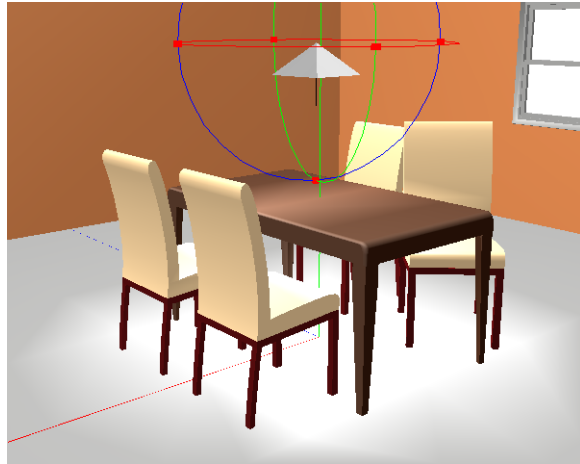
If an object is selected, the second slider control relates to its amount of gloss or shininess an object has. Use the slider control to adjust the degree of gloss or shine you place on an object. The Matt- Gloss value is affected by the amount of directional light on an object:



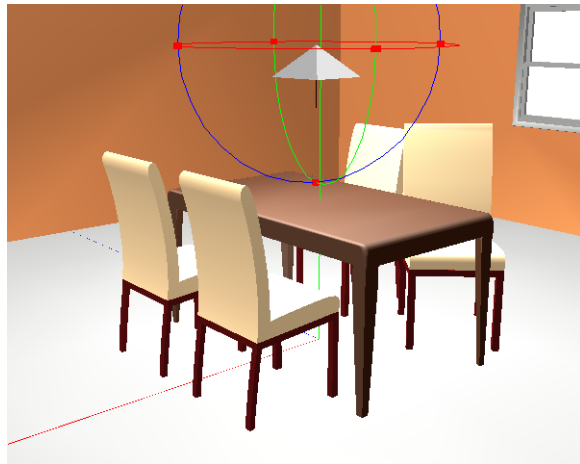
Spread

If a spot light is selected, the second slider control allows you to adjust the lens angle of the light and narrow or widen the beam. Note that this option is not available for point lights:

Spread



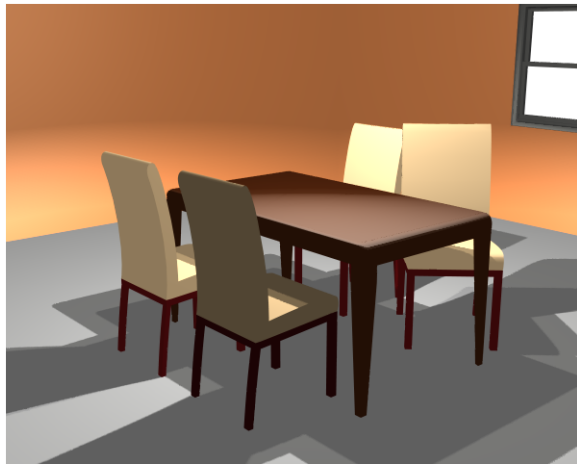
Spread



Renderer Brightness

If an object is selected, the Renderer Brightness slider control allows you to adjust its reflectivity, which is the amount of ambient light the object reflects. This will only be visible if you have selected the Microspot Renderer via the Renderer Options palette. *See [Renderer Options](#) on page D-31 for more details.:*

Renderer Brightness

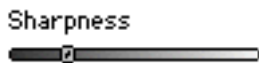


Renderer Brightness



Sharpness

If a spot light is selected, the third slider control allows you to adjust the sharpness of the light. Move the slider control to sharpen or un-sharpen the focus of the light. Note that this option is not available for point lights:



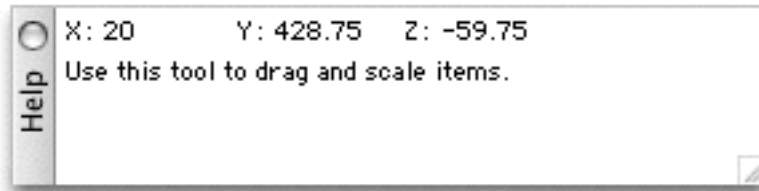
Comments

The Comments box provides a space to enter details about an object or group of objects (such as a description). These comments will be displayed whenever the object or group is selected.

THE HELP PALETTE

The Help palette displays coordinate values that show the position of the cursor and help messages or information relevant to the tool selected, cursor position or rendering status (if a non-interactive renderer is being used).

Select Help from the Palettes menu to display the Help palette:



To resize the Help palette, click on the resize box in the bottom right corner of the palette and, holding down the mouse button, drag to resize the palette. Release the mouse button when the palette reaches the desired size.

WINDOW CONTROLS

The Window controls are displayed at the bottom of each window:



Selecting an option affects only that window, regardless of how many other views are open.

Zoom Out

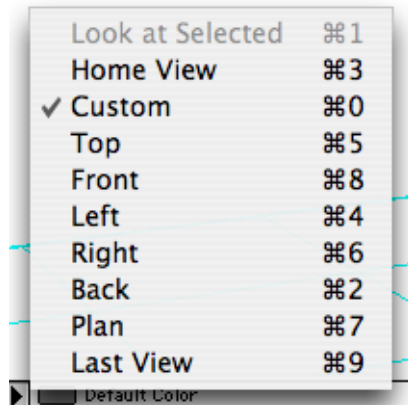
Use the Zoom Out button to widen the focus of the camera's view and make objects appear to be farther away. Position the cursor over the Zoom Out icon and click once to zoom out slightly. Click and hold the mouse button down to continue zooming out.

Zoom In

Use the Zoom In button to narrow the focus of the camera's view and make objects appear to be closer. Position the cursor over the icon and click once to zoom in slightly. Click and hold the mouse button down to continue zooming in.

View

Use the View popup menu to select a different view, including any view that you have saved. When you select a view option, the window will change to display your selection:

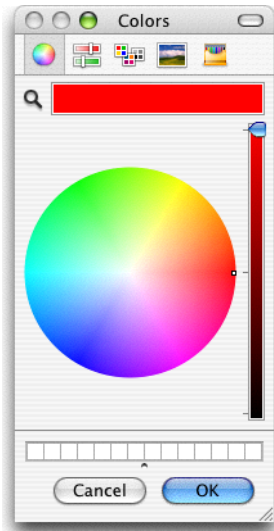


The Command key options and View menu can also be used to choose a view. *See Change View on page 3-25 for further details.*

Default Color

The color displayed in the color block at the bottom right of the window toolbar is the currently selected color. Any new items created (except lights and markers) will automatically be this color, even if you are working in wire frame mode.

To change the default color, click on the color block and select a new color from the Color Picker:



To change an object's color, click on the color block and drag the color over the object. It will be highlighted by a bounding frame to show that it is selected. Release the mouse button to apply the color to the object. You can also select an object, then go to the Color Picker and select a new color to automatically apply that color.

Window Resize

To change the size of the window you are working in, click on the Resize Window icon. Hold down the mouse and drag to resize the window.

Appendix A

Import Plug-ins

Import plug-ins are accessed via the Import submenu in the File menu.

Table of Contents

Introduction	A-2
3ds	A-2

u Introduction

Open the File menu and select Import. A submenu lists the installed Import options:



u 3ds

The 3ds plug-in imports 3ds formatted files into an Interiors document.

1. Select 3ds from the Import submenu in the File menu.
2. Select the file to import from the dialog that displays.
3. The selected file will then be imported into the current Interiors document as a 3DMF object.
4. The size of the object will depend on your current grid size.

Appendix B

Export Plug-ins

Export plug-ins are accessed via the Export option in the File menu.

Table of Contents

Introduction	B-2
Picture	B-2

Introduction

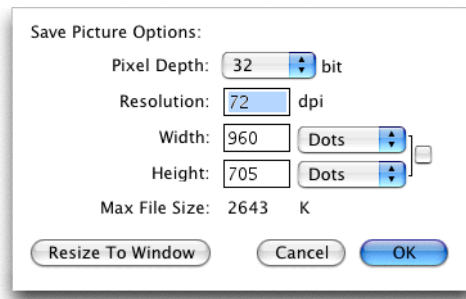
Open the file menu and select Export. A submenu lists the installed Export options:



Picture

The Picture plug-in provides several format options for saving your document view.

1. Select Picture from the Export submenu. The Save Picture Options dialog displays:

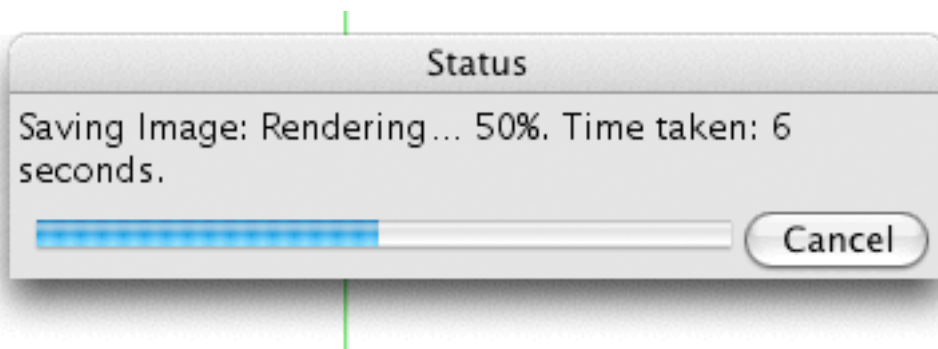


2. Choose the desired pixel depth from the Pixel popup menu.
3. Enter a value in dots per inch to specify the resolution at which the picture is to be saved.
4. Select Dots, Millimeters or Inches from the units popup menus (constraining the proportions of the image by checking the checkbox if necessary), then enter values for the width and height required.

5. Click on the Resize to Window button to change the resolution back to 72 dpi and the width and height to the width and height of the contents of the document window.

Click OK to accept the options as set. Enter a name and select a location to save the file in the standard Save dialog that displays and click Save.

Then a small dialog will show, displaying the current progress of the render to file. You may cancel this at any time by clicking on the cancel button.



Appendix C

Menu Command Plug-ins

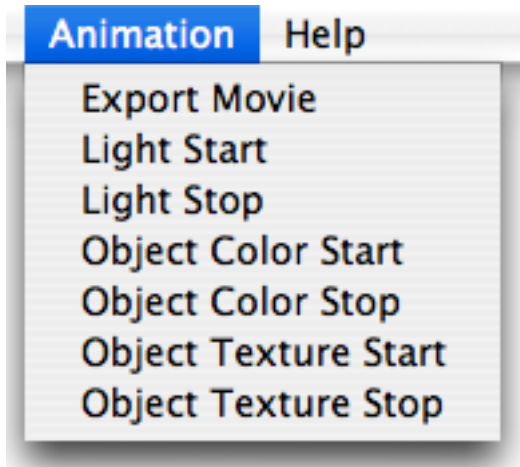
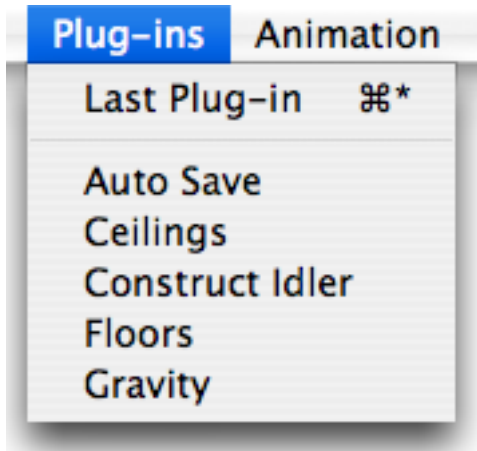
Menu command plug-ins are accessed via the Plug-in menu or Animation menu.

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∪ Introduction

Select Plug-ins or Animation from the menu bar.



A list of available menu command will displays. Select the name from the list to use that feature. Hold down the Option key and select the name to display any options that are available.

The first time the Plug-in menu is selected, the top item in the menu, Last Plug-in, will be grayed out. After selecting a menu command, the top item will then be the name of the menu command selected. This can be chosen by selecting the top item or typing Command - *.

PLUG-INS MENU

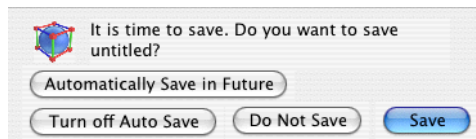
↳ Auto Save

Select Auto Save to turn on the Auto Save feature. A dialog displays for you to enter a value for the Auto Save period.



Enter a value in minutes and click OK. A check mark will display next to the plug-in name to show that Auto Save is on.

After the specified period, a dialog displays warning that it is time to save. The dialog offers the opportunity to turn Auto Save off, to close the dialog without saving, to automatically save in future, or to save the document. To make this dialog disappear, but still save, just click on Automatically Save in Future.

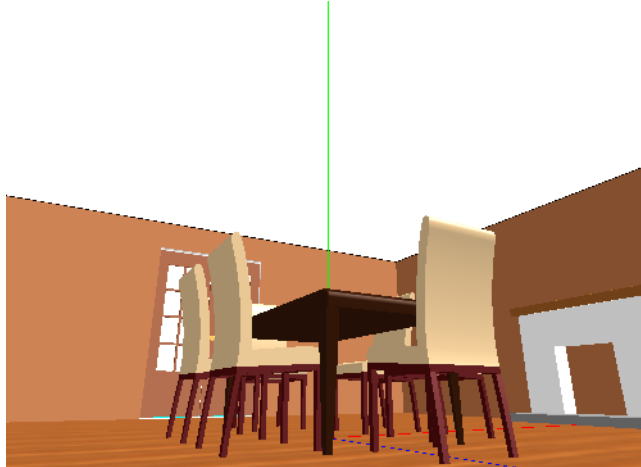


To turn Auto Save off, select the plug-in name again from the plug-in menu.

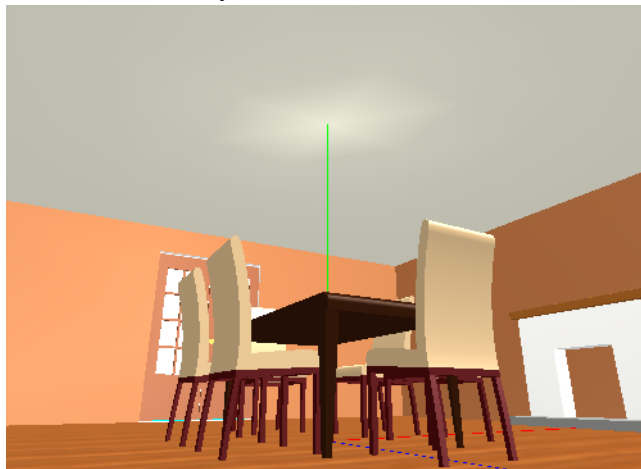
u Ceilings

The Ceilings plug-in is used to quickly add ceilings to selected objects drawn with the 4 Walls or the Walls drawing tools.

1. Draw some walls using the 4 Walls or the Walls drawing tool:



2. Select the wall and choose Ceilings from the Plug-in menu.
3. A ceiling will then automatically be added to the document.



Note: Ceilings are designed in such a way that they can only be seen if viewed from below.

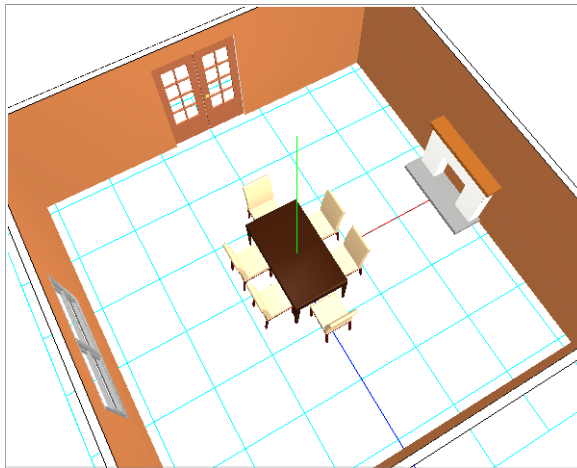
∪ **Construct Idler**

The Construct Idler plug-in is available as both a menu command plug-in and as an idler plug-in. *See Construct Idler on page E-2 for details.*

∪ **Floors**

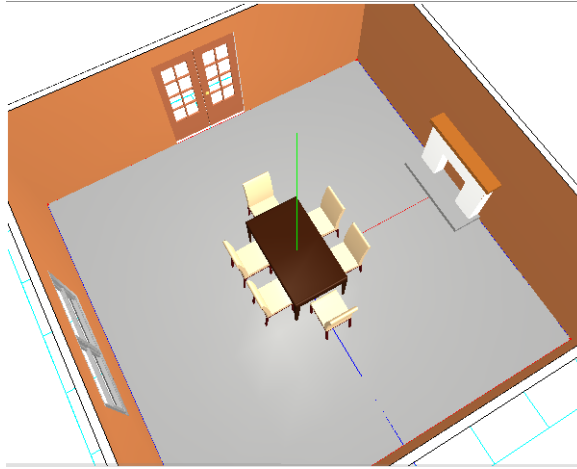
The Floors plug-in is used to quickly add floors to selected objects drawn with the 4 Walls or the Walls drawing tools.

1. Draw some walls using the 4 Walls or the Walls drawing tool:



2. Select the walls and choose Floors from the Plug-in menu.

3. A floor will automatically be added to the walls.



Note: Floors are designed in such a way that they can only be seen if viewed from above.

v **Gravity**

The Gravity plug-in is available as both a menu command plug-in and as a plug-in modifier.
See Gravity on page H-6 for details.

ANIMATION MENU

↳ **Export Movie**

The Export Movie plug-in saves the current animation as a Quicktime movie.

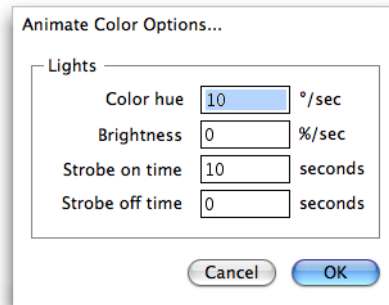
1. Select Export Movie plug-in from the Animation menu
2. A standard Save dialog displays.
3. Enter a name and select a location to save the movie.
4. The animation will then be recorded frame by frame by the current renderer.

↳ **Light Start**

The Light Start plug-in is used to animate the color and brightness of a light or group of lights.

To animate the color or brightness of a light, first select the light. The Light Start menu command will then highlight if a light is selected. By selecting the menu command the light is now tagged to allow the lights color and brightness to animate when the current scene is animating.

To set the Animate Color options, hold down the Option key and select the Light Start menu command. The Animate Color Options dialog will display:



- **Color Hue:** Enter a value in the hue field to specify the number of degrees around the color wheel to move each second to select the colors to apply. The default is 10.
- **Brightness:** Enter a value between 0 and 360 to specify the percentage change in brightness of the color per second. Each second the brightness of the color will change by that set percentage value, cycling around to get darker, brighter and darker again. The default is 0.
- **Strobe on time:** Enter a value in seconds for the length of time the light should stay on.
- **Strobe off time:** Enter a value in seconds for the length of time the light should stay off.

Click OK to enter the options. They will remain as set until changed.

∪ **Light Stop**

The Light Stop plug-in is used to stop the animation of a light or group of lights.

To stop an animating light, first select the light. The Light Stop menu command will then highlight if the light selected has a light animation. By selecting the menu command the light is then untagged causing the light to stop animating when the current scene is animating.

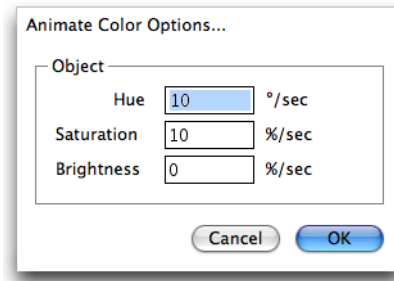
Light Stop has no options or options dialog.

∪ **Object Color Start**

The Object Color Start plug-in is used to animate the color applied to an object or group of objects.

To animate the color of an object, first select the object. The Object Color Start menu command will then highlight, selecting the menu command will tag the object to allow the color to animate when the current scene is animating.

To set the Animate Color options, hold down the Options key and select the Object Color Start menu command. The Animate Color Options dialog will display:



- **Hue:** Enter a figure in the hue field to specify the number of degrees around the color wheel to move each second to select the colors to apply. The default is 10.
- **Saturation:** Enter a value between 0 and 360 to specify the percentage change in saturation of the color per second. Each second the saturation of the color will change by the percentage value set. The default is 10 but to stop this effect set the value to 0.
- **Brightness:** Enter a value between 0 and 360 to specify the percentage change in brightness of the color per second. Each second the brightness of the color will change by the percentage value set. Cycling around getting darker, brighter and darker again. The default is 0 which has no effect on the color brightness.

Click OK to enter the options. They will remain as set until changed.

u Object Color Stop

The object Color Stop plug-in is used to stop the animation of the color applied to an object.

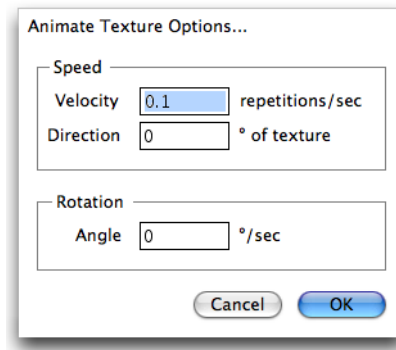
To stop a color animating on an object, first select the object. The object Color Stop menu command will then highlight if the object or object in a group selected has an animated color. By selecting the menu command the object is then untagged causing the color to stop animating when the current scene is animating.

u Object Texture Start

The Object Texture Start plug-in is used to animate a texture applied to an object.

To animate a texture on an object, first select the object. The Object Texture Start menu command will then highlight if an object is selected and has a texture to animate. By selecting the menu command the object is now tagged to allow the object's texture to animate when the current scene is animating.

To set the Animate Texture options, hold down the Option key and select the Object Texture Start menu command. The Animate Texture Options dialog will display:



- **Velocity:** Enter a figure in the Velocity field to specify how many times the applied texture should move around the object per second. The default is 0.1
- **Direction:** To change the direction in which the texture moves, enter a value between 0 and 360 in the Direction field. If set at 90 degrees the texture will move from top to bottom, 180 degrees from left to right, 270 degrees from bottom to top, and so on. The default is 0 degrees.
- **Rotation:** Enter a value between 0 and 360 in this field to start the texture rotating. Each second the texture will rotate by the amount specified. The default value is 0 degrees.

Click OK to enter the options. They will then remain as set until changed.

u **Object Texture Stop**

The Object Texture Stop plug-in is used to stop the animation of a texture applied to an object.

To stop a texture animating on an object, first select the object. The Object Texture Stop menu command will then highlight if the object selected has an animated texture. By selecting the menu command the object is then untagged causing the texture to stop animating when the current scene is animating.

Object Texture Stop has no options or options dialog.

Appendix D

Plug-in Palettes

Plug-in palettes are accessed via the Palettes menu. Select the palette name from the list to open it.

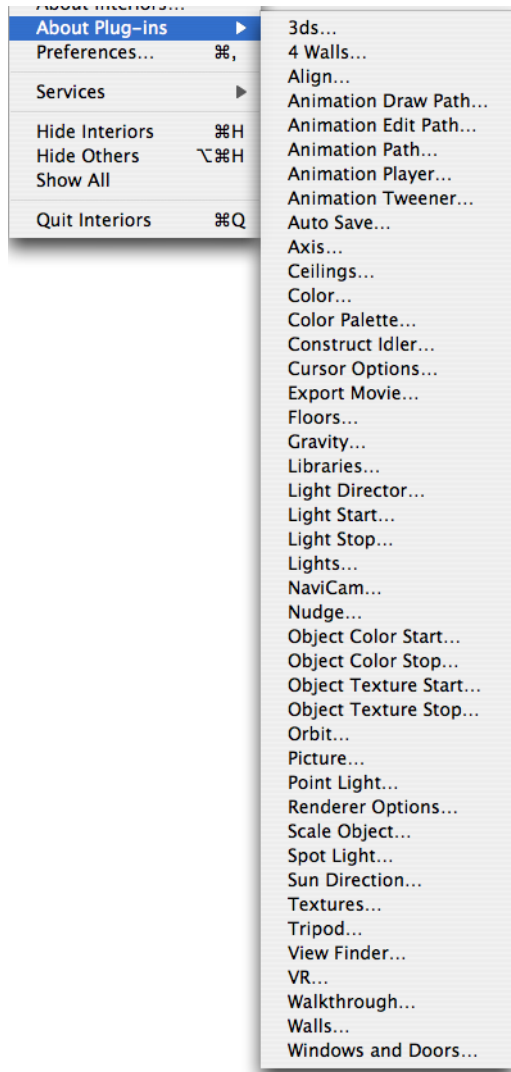
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Introduction

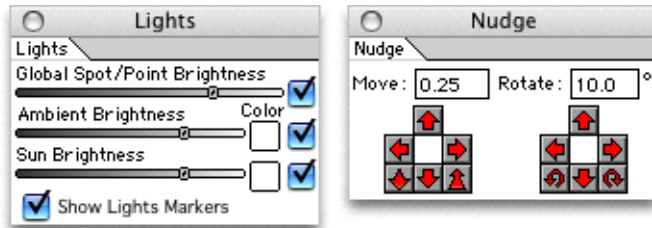
Click on Palettes in the application menu bar to display a list of available palettes. Select the palette name from the list to open it.



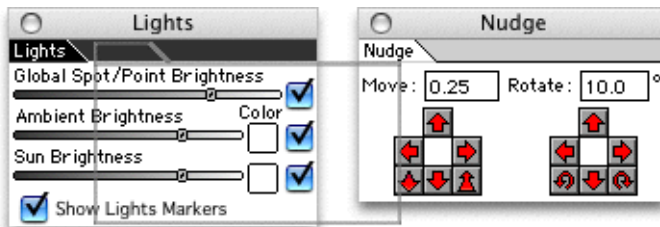
The Tools, Info and Help palettes are not plug-in palettes but are part of the core application. *See Chapter 4 — Palettes on page 4-1 for details.*

Tabbed palettes

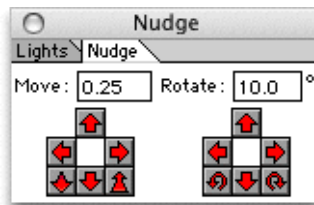
When a palette is opened it displays in a window with the palette name on a tab at the top of the palette.



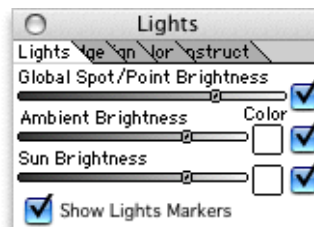
Tabbed palettes can be stacked together by simply clicking on the palette tab and dragging the palette onto the tab area of another tab palette:



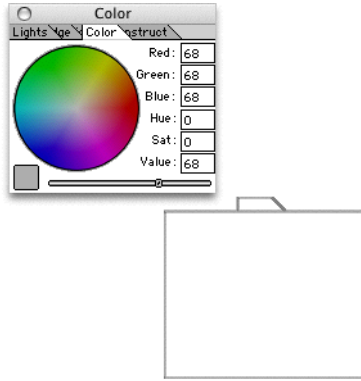
Both palettes then appear in the same palette. To access a palette click on its tab.



Any number of tabbed palettes can be stacked together, although in practice you may wish to limit this to the number of tabs that are visible in a palette.



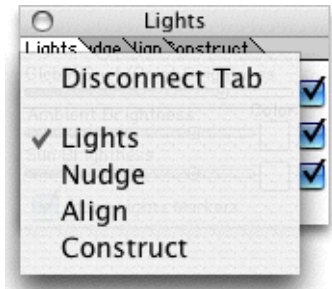
To remove a tabbed palette from a stack, click on the palette tab and drag the palette onto the desktop.



The palette will appear on its own, while the other palettes remain stacked together.



Click on a palette tab and hold down the mouse button to display the tab menu. This provides an alternate method of selecting other palettes or of disconnecting a palette from the stack.



u Align

The Align palette is used to align objects in any or all of the X, Y and Z axes.

1. Select Align from the Palettes menu to display the Align palette:



2. Select two or more objects in the document window then click on the buttons in the Align palette to specify how the objects should be aligned in the X, Y and Z axes.

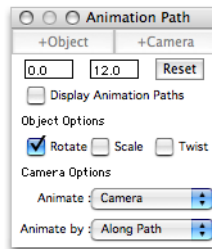
If one or more of the selected items are locked, they will not be moved, but other selected items will be aligned with the locked items. Locked items are treated as a single object for alignment purposes.

The line of alignment relates to the object that is in the most extreme position in the relevant direction. For example, when choosing align right in the X-axis, the line of alignment is defined as the right edge of the bounding frame of the object furthest to the right.

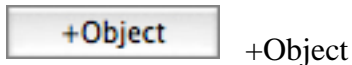
Animation Path

The Animation Path palette is used to move an object or the camera along a specified path, over a set time. To use the Animation Path palette you will first need to create an Animation Path with the Animation Draw Path Tool.

Select Animation Path from the Palettes menu to display the Animation Path palette:

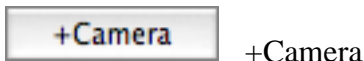


Animation Path Controls



+Object

The +Object button will enable when both an object and an animation path are selected. Clicking this button will cause the object have tween points added in the Animation Tweener palette. These points will correspond to the Animation Path selected.



+Camera

The +Camera button will enable when an animation path is selected. Clicking this button will cause the camera to have tween points added in the Animation Tweener palette. These points will correspond to the Animation Path selected.



Start Time

The value displayed in the Start Time field is the Animation Path initial value in seconds. Enter a value and press the Return, Enter or Tab key to change the Start Time value.

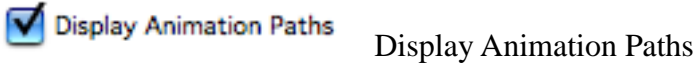


End Time

The value displayed in the End Time Field is the Animation Path final value in seconds. Enter a value and press the Return, Enter or Tab key to change the End Time value.

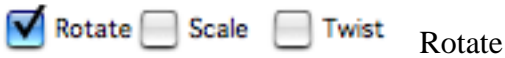


The reset button when clicked will change the start and end time value to the current documents animation values.



Controls the visibility of an Animation Paths in the current document.

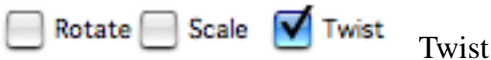
Object Options



The object is rotated as it moves along the path so that it maintains its original orientation in relation to the path.



If the Animation Path has been scaled at any point using the Animation Edit Path tool, the object will also be scaled at that point.



If the Animation Path section has been rotated at any point using the Animation Edit path tool, the object will also be rotated around the path at that point.

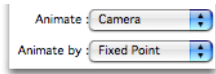
Camera Options

Note: To view the effect of the following different camera options open the NaviCam palette the animation is running.

Animate Camera

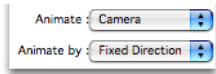


The camera is moved along the path.



Fixed Point

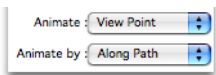
The camera is moved along the path with a fixed view point.



Fixed Direction

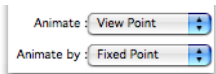
The camera is moved along the path with its view point in a fixed direction.

Animate View Point



Along Path

The camera's view point is moved along the path with the camera following behind.



Fixed Point

The view point is moved along the path while the camera is in a fixed position.



Fixed Direction

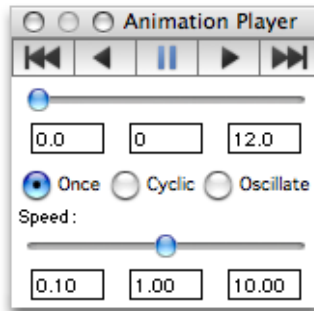
The view point is moved along the path while the camera follows behind at a fixed distance and fixed to a set direction.

Note: The object or camera is not linked to the path in any way. If the Animation Path is edited, the animation for the camera will not be changed. To update an animation of an object or camera along a new path just click the appropriate button and the new animation will replace the old animation.

u Animation Player

The Animation Player palette is used to control the display of animation in the document.

Select Animation Player from the Palettes menu to display the Animation Player palette:



AnimationPlayerControls



Move To Start

Click on the Move to Start button to move to the beginning of the timeline. 0/0 will be displayed in the Time field, and slider on the timeline bar will display at the left end of the bar.



Play Backward

Click on the Play Backward button to play an animation in reverse direction.



Pause

Click on the Pause button to pause an animation playing.



Play Forward

Click on the Play Forward button to play an animation.



Move to End

Clicking on the Move to End button to move to the end of the timeline. The value set in the Duration field will be displayed in the Time field, and the slider on the timeline bar will display at the right end of the bar.



Timeline Bar

The slider bar represents the timeline for the animation. Click on the slider, hold down the mouse button and drag the slider right or left to move to a different position on the timeline.

Start Time

The value displayed in the Start Time field is the animation's start position in seconds. Enter a value and press the Return, Enter or Tab key to change the Start Time value.

Current Time

The value displayed in the Current Time field is the animation's current position in seconds. Enter a value and press the Return, Enter or Tab key to change the Current Time value.

End Time

The value displayed in the End Time field is the animation's current position in seconds. Enter a value and press the Return, Enter or Tab key to change the EndTime value.

Once Cyclic Oscillate Once

Click on the Once radio button to specify that an animation should run once through to the end then stop.

Once Cyclic Oscillate Cyclic

Click on the Cyclic radio button to specify that an animation should play constantly, running through to the end then returning to the start to play again.

Once Cyclic Oscillate Oscillate

Click on the Oscillate radio button to specify that an animation should play constantly, running through to the end, playing backward from the end to the start, and playing again.

 Speed Bar

The slider bar represents the speed for the animation. Click on the slider, hold down the mouse button and drag the slider left or right to move to a different speed of animation. The center point always represents normal speed.

0.10 1.00 10.00

Minimum Speed

The value displayed in the Minimum Speed field is the animation's slowest possible frame progression in seconds. Enter a value and press the Return, Enter or Tab key to change the minimum speed value.

0.10 1.00 10.00

Current Speed

The value displayed in the Current Speed field is the animation's current frame progression in seconds. Enter a value and press the Return, Enter or Tab key to change the minimum speed value.

0.10 1.00 10.00

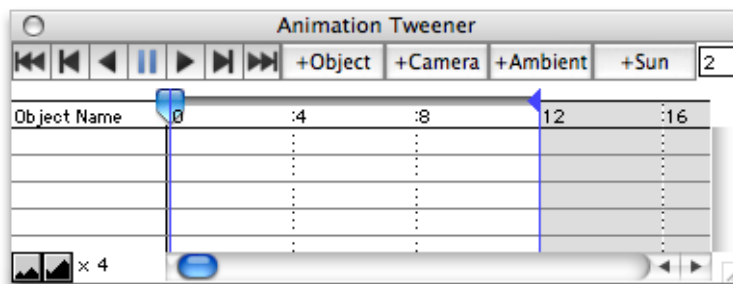
Maximum Speed

The value displayed in the Maximum Speed field is the animation's fastest possible frame progression in seconds. Enter a value and press the Return, Enter or Tab key to change the minimum speed value.

Animation Tweener

The Animation Tweener palette is used to specify the position, size and rotation of the object or the position, direction, zoom factor and view type of the camera at a specific time. The specified position is called a tween point, the positions between the set tween points are calculated by the computer.

Select Animation Tweener from the Palettes menu to display the Animation Tweener palette:



Animation Tweener Controls



Move To Start

Clicked on the Move to Start button to move to the beginning of the timeline. 0.0 will be displayed in the Time field, and the slider on the timeline bar will display at the left end of the bar.



Move to Previous Tween

Click on the Move to Previous Tween button to move the timeline to the previous tween time point in the current animation.



Play Backward

Click on the Play Backward button to play the current animation in reverse direction.



Pause

Click on the Pause button to pause the current animation.



Play Forward

Click on the Play Forward button to play the current animation.



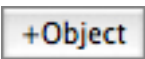
Move to Next Tween

Click on the Move to Next Tween button to move the timeline to the next tween time point in the current animation.



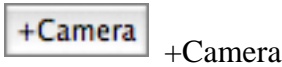
Move to End

Click on the Move to End button to move to the end of the timeline. The value set in the Duration field will be displayed in the Time field, the slider on the timeline bar will display at the right end of the bar.

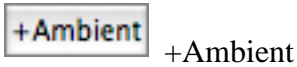


+Object

Use the +Object button to add a tweenpoint for an object. This specifies the position, size and rotation of the selected object at a particular time.



Use the +Camera button to add a tween point for the current camera. This specifies the position, direction, zoom factor and camera type at a particular time.



Use the +Ambient button to add a tween point for the current ambient light levels. This specifies the brightness, color and if it is on or off at a particular time.



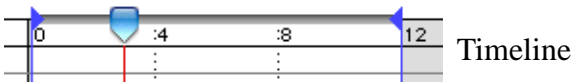
Use the +Sun button to add a tween point for the sunlight. This specifies the position, brightness, color and if it is on or off at a particular time.

Note: To delete a tween point, select the desired triangle marker and press the Delete key.



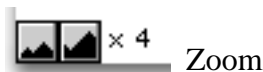
The Tween increment time value specifies the time in seconds the timeline will move forward after a tween point has been added.

Note: Holding down the Option key stops the timeline moving forward.



In the lower part of the Animation Tweener palette a table displays the list of objects with tween points which are displayed in the Object Name column. Objects can be selected in the document window by selecting an Object name in the list and vice versa.

The time in seconds is displayed in the first line of the table, and the current animation time is marked with a blue thumb at the top of the table and a vertical red line. To move the current animation time

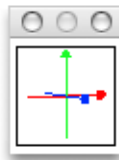


Using the zoom controls at the bottom left of the palette to zoom in and out on the table, displaying a longer or shorter section of the timeline.

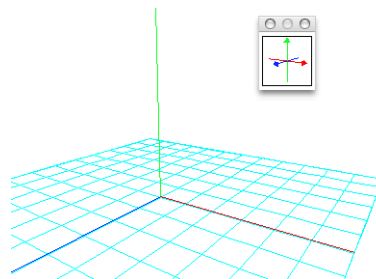
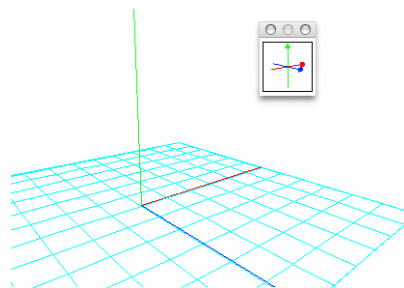
o **Axis**

The Axis palette is used to display the current orientation of the front window's camera.

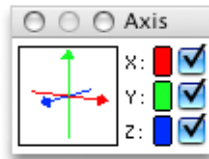
Select Axis from the Palettes menu to display the Axis palette:



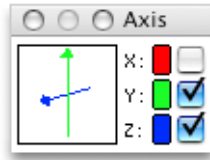
Select the Rotate tool in the Tool palette, click on the document grid and, holding down the mouse button, drag to rotate the grid. Notice that the positions of the axes in the Axis palette are updated to reflect the new orientation of the grid.



Click on the palette's zoom button to extend the Axis palette:



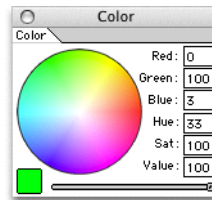
The axes are listed and the color of each axis shown. Next to the axis name is a checkbox that is used to display or hide the axis. Checking the check boxes on or off to specify which axes should be displayed in the palette.



u Color

The Color plug-in displays a color picker, so that an object's color or the default color can be changed easily.

1. Select Color from the Palette menu to display the Color palette:



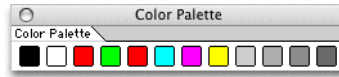
2. To change the color of an object, several objects, or a group, make a selection in the document window. If nothing is selected, the default color will be changed.
3. Choose a color from the Color palette by clicking on the color wheel and/or adjusting the brightness slider bar and values for Red, Green, Blue, Hue, Saturation and Value.
4. Click on the current color button to display the system color picker(s) if necessary.

Note: Colors can be dragged to and from the current color button.

u Color Palette

The Color Palette plug-in provides a repository for 12 colors.

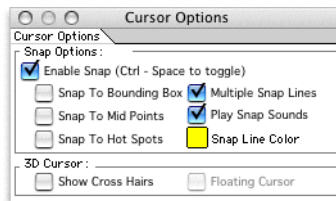
1. Select Color Palette from the Palette menu to display the Color Palette:



2. To use a color in the Color Palette, drag and drop it onto an object, the background, grid or color box in the Info Palette, or select an object in the document window and click on a color in the Color Palette.
3. To change a color in the Color Palette, drag and drop a new color over an existing one, or, when nothing is selected in the document, click on a color to open the color picker and choose a new color.

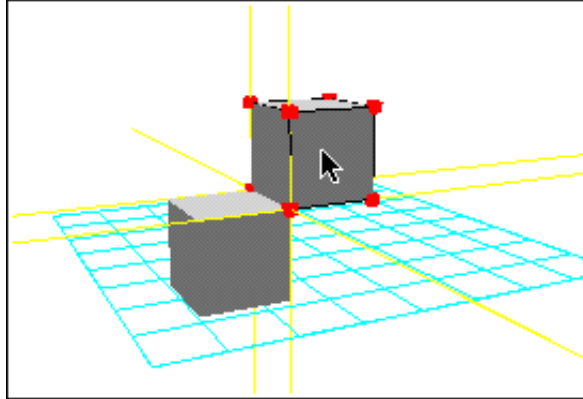
u Cursor Options

The Cursor Options palette allows you to control the alignment and positioning of objects with other objects, and the display and positioning of the cursor. Select Cursor Options from the Palettes menu to display the palette. Click on the shrink/expand button at the top right of the palette to show or hide the lower section.



Snapping Options

Snapping is the alignment of points with other points. When positioning objects, snap lines will display and a sound will play when the snap points of the selected objects are aligned to the snap points of unselected objects.



- **Enable Snap:** Click on this check box to turn the Snapping features on or off. Alternatively hold down the Control key and press the space bar to switch Snapping on or off.
- **Snap to Bounding Box:** Click on this check box to activate the eight corners of each object's bounding box as Snapping points.
- **Snap to Mid Points:** Click on this check box to activate the mid points of each object's bounding box as Snapping points, i.e. The points half way between the eight corner points of the bounding box.
- **Snap to Hot Spots:** Click on this checkbox to specify that an object's Hot Spots should be activated as Snapping points. Hot Spots are points in addition to the corners and mid points of an object's bounding box. These are automatically added to wall objects and can be added to door and window objects. Hot Spots are added to wall objects at the top and bottom of the wall at each corner. When placing doors and windows in a document, the Windows and Doors palette includes a check box allowing you to choose whether to add Hot Spots or not. If added, Hot Spots are positioned at the points where the window or door intersects with the wall.
- **Multiple Snap Lines:** If this option is checked on, snap lines will display for all current alignments. If checked off, snap lines will display only for the first alignment found in each axis.
- **Play Snap Sounds:** Check this option on to play sounds according to the snapping status of objects being positioned. Three different sounds play in the following circumstances:

If a point is aligned with, but not snapped to, another point.

If a point is snapped to another point.

If a point is no longer aligned with or snapped to another point.

- **Snap Line Color:** Click on this box to display the Color Picker and select the color used to display the snapping lines.

3D Cursor

- **Show Cross Hairs:** Check this option to display cross hairs showing the position of the cursor in the document in 3D space.
- **Floating Cursor:** The cursor defines a position and an orientation for entering new objects, and usually snaps to the surface of any object below the cursor arrow. Check this option to specify that the cursor should not snap to the surface of any object below it, and should not orientate itself in relation to that surface.

Libraries

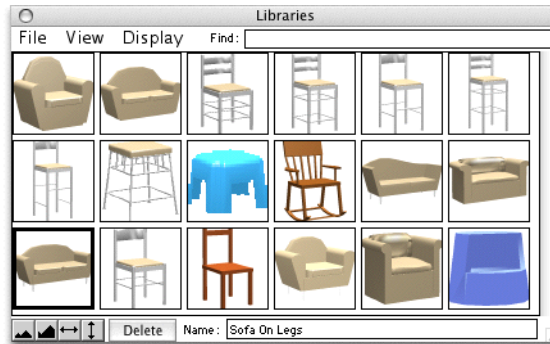
The Libraries palette displays libraries of furniture items, doors, windows, textures, colors etc. that can be used in your 3D scene.

Select Libraries from the Palette menu. The first time the Libraries palette opens, it opens all the default libraries of the program. Every time after this the Library palette retains the list of the libraries selected:



Selecting Library Items

When you click on an item that is stored in a library it will be outlined with a black rectangle to show it is selected:



Storing Data

3DMF, PICT, and data in various other image formats can be stored in libraries. Interiors includes several libraries of furniture and accessory items, doors and windows, colors and textures, but you can also use the Libraries palette to store your own items. To do this drag and drop objects/groups of objects from Interiors into a library. You can also visit the Microspot website to download more libraries, *See Microspot Library Download on page 3-36.*

Naming Items

Items are displayed in a library in the order in which they were entered.

If an item has a name attached to it, this name is displayed in the Name field at the bottom of the palette when the item is selected. Unnamed items will display as untitled.

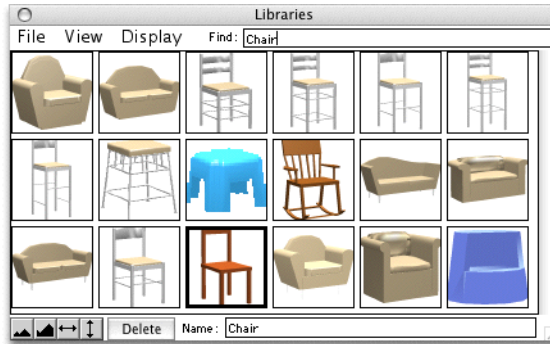
To name or rename an item, select its icon and enter a name in the Name field. Press the Enter or Return key, select another object or click on an empty space in the library and the item will be updated with its new name.

Retrieving Data

To retrieve data from a library, drag and drop an item directly into your Interiors document.

Find

Library items can be searched for by name. Enter text into the Find field at the top right of the Libraries palette. The first item found that matches the entered text will be selected:

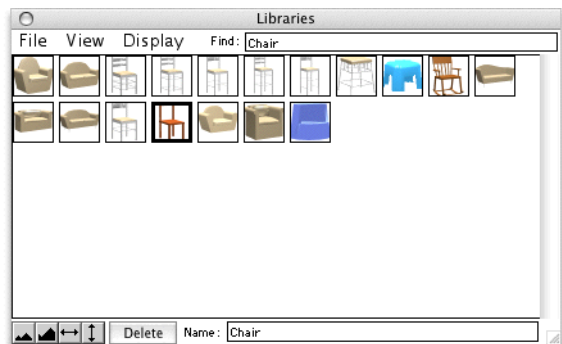
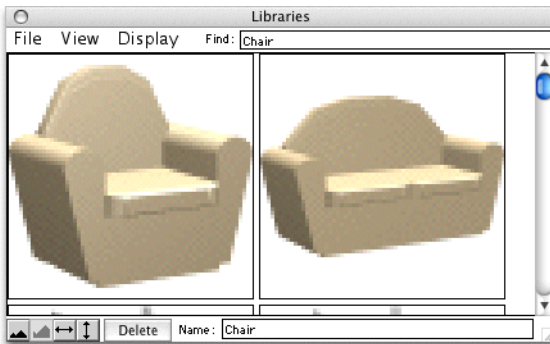


Note: The Libraries palette searches for names that match or start with the name you enter.

Window Controls

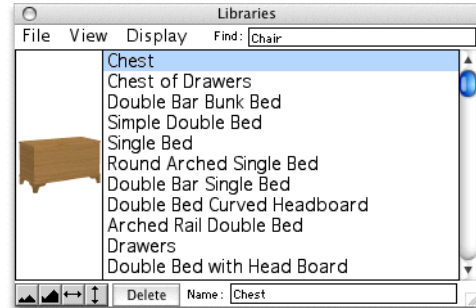
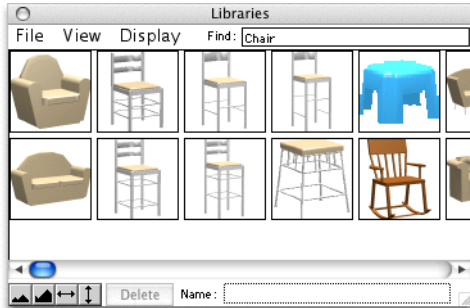
Zoom In/Out

The Zoom controls at the bottom left of the palette can be used to increase/decrease the size of the palettes contents:

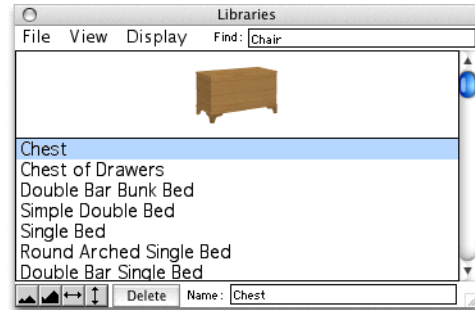
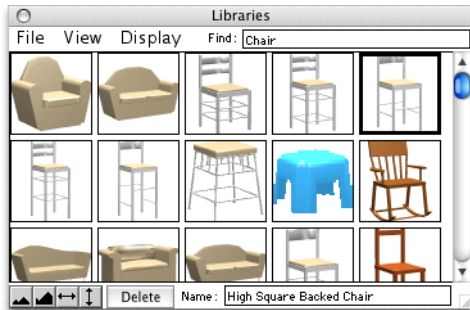


Horizontal/Vertical Arrows

- **Horizontal Arrow:** In the By Icon view, click on this button to display the Libraries palette with a horizontal scroll bar. In the By List view, click on this button to display the preview to the left of the item list:



- **Vertical Arrow:** In the By Icon view, click on this button to display the Libraries palette with a vertical scroll bar. In the By List view, click on this button to display the preview above the item list:

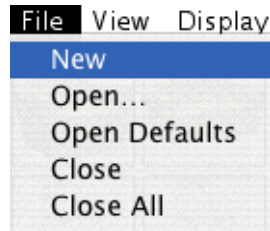


Delete Button

- **Delete:** The Delete button removes the current selected library item:

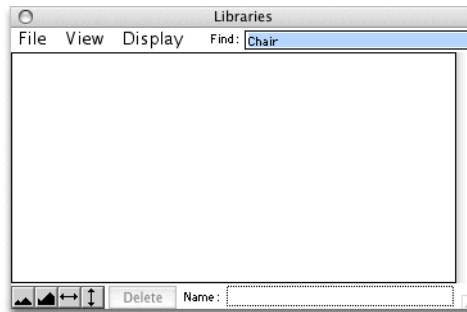
Menus

File Menu



New

Select New to open a new library. The standard dialog will display, allowing you to enter a name for the new library and specify a location to save it. A new, empty library will display in the Libraries palette:



Open

Select Open to open an existing library. A standard Open dialog will display for you to select the library to open. The selected library will display in the Libraries palette.

Open Defaults

On selecting Open Defaults all the programs existing default libraries will be displayed in the Libraries palette.

Close

Choose to close the current library. The Libraries palette save the library file whenever you add data, so you do not need to save any changes. The Libraries palette will remain open and will display the contents of any other open libraries.

Close All

Choose to close all open libraries. The Libraries palette will remain open but will be empty.

View Menu



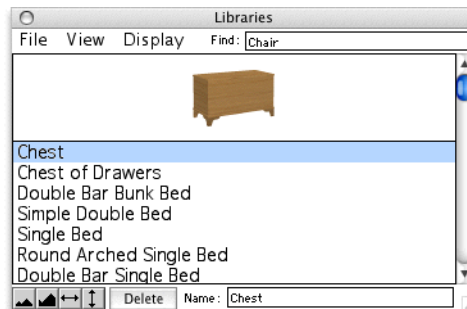
By Icon

Select By Icon from the View menu to display picture previews of a library's contents. Although the items' names will not be displayed, you may still search for items by name using the Find field at the top right of the Libraries palette.

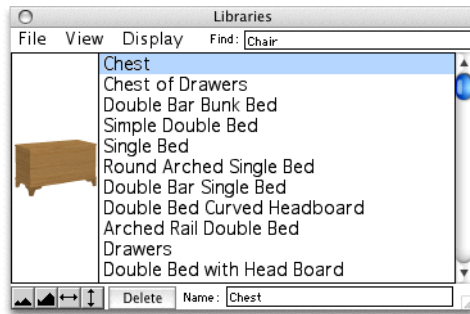
By List

Select By List from the View menu to list a library's contents by name. When By List is selected you can also choose whether to see a preview of an item when it is selected in the list.

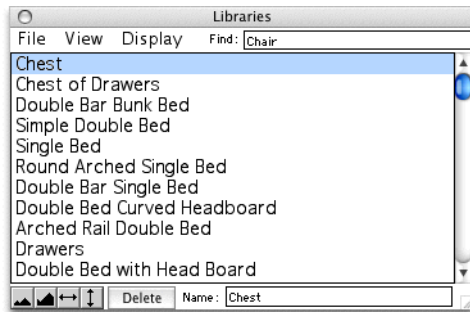
- Preview above: The preview is displayed above the list:



- Preview to left: The preview is displayed to the left of the list:



- No preview: No preview of selected items is displayed:

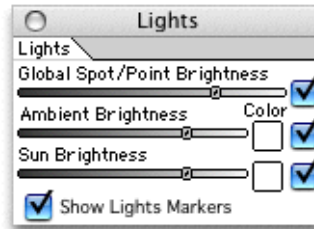


Display Menu

The display menu lists all the libraries currently open. Select a library's name from the list to display it or choose Show All to display the contents of all the open libraries in the order in which they were opened.

u Lights

The Lights Palette is used to control the various lighting features available in the application. Select Lights from the Palettes menu to display the palette:



Note: The Preferences dialog, accessed from the Edit Menu, contains a check box for Global Lights. If the Global Lights control is turned on, any changes made via the Lights palette will affect the whole document. If the Global Lights control is turned off, making changes in the Lights palette will affect only the current window. *See Preferences on page 3-5 for further details.*

Spot/Point Brightness

Lights are placed in documents by dragging and dropping light objects or furniture items including lights into the document. When a light is placed in a document, its color, brightness, spread and sharpness can be adjusted via controls in the Info Palette. *See Info Palette on page 4-17 for further details.*

- To manipulate all point or spot lights at once, use the Spot/Point Brightness slider control in the Lights Palette.
- Use the checkbox to the right of the slider bar to turn all the point or spot lights on or off.

Ambient Brightness

Ambient light is the equivalent of daylight. It is a diffused light that has no specific point of origin and casts no shadows.

- Use the Ambient Brightness slider bar to adjust the brightness of the ambient light.
- Click on the color box to display the Color Picker and select a color for the ambient light, or drag a color onto the color box.

- Use the checkbox to the right of the color box to turn ambient light on or off.

Sun Brightness

By default, sunlight shines from the South East at an angle of 45°. The direction of the sunlight can be adjusted using the Sun Direction plug-in. *See Sun Direction on page H-9 for further details.* Sunlight will affect your view of an object, and some surfaces will reflect more light than others.

- Use the Sun Brightness slider bar to adjust the brightness of the sunlight
- Click on the color box to display the Color Picker and select a color for the sunlight, or drag a color onto the color box.
- Use the checkbox to the right of the color box to turn sunlight on or off.

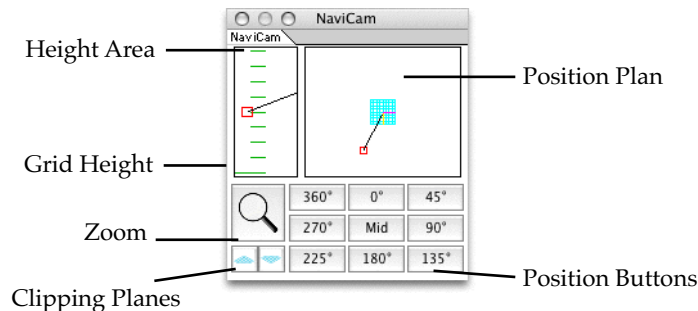
Show Lights Markers

Use this checkbox to specify whether Point and Spot Light Markers should be hidden or displayed. The effects of the lights will be apparent regardless. Non-interactive renderers (such as the Microspot Renderer) will not display light objects whether they are hidden or not. *See Appendix I — Microspot Plug-in Renderers on page I-1 for more details.*

u NaviCam

The NaviCam palette provides a way of controlling the camera position and view.

Select NaviCam from the Palette menu to display the NaviCam palette.



The red square displayed in the palette, both in the height area and in the position plan, represents the camera. The line from this square shows the camera view direction and at the end of this line is the look at point or point of interest.

Height

Use the controls in the Height Area to adjust the position of the camera, or point of interest, in the Y dimension.

The long green line in the Height Area represents the grid height. The lines above it represent height as determined by the size of the grid and each grid square.

- Click on the camera square and move it up or down to change the camera height while maintaining the point of interest.
- Click on the view direction line (or anywhere in the Height Area except the camera square) and drag up or down to change the height of the point of interest without changing the camera height. This is the same as tilting the camera.
- Hold down the Option key, click anywhere in the Height Area and drag up or down to adjust the height of the camera and move the point of interest relative to the camera height.

If the camera is moved out of the height range shown, the display will be rescaled so that the camera square can still be seen. When the camera is moved back into range, the display will be rescaled again.

Position

Use the controls in the Position Plan to adjust the position of the camera or the point of interest in the X and Z dimensions.

The Position Plan displays an image of the 3D scene in plan view.

- Click on the camera square and drag to change the position of the camera while maintaining the point of interest.
- Click on the view direction line (or anywhere in the Position Plan except the camera square) and drag to change the position of the point of interest without moving the camera position. This is the same as turning the camera.
- Hold down the Option key, click anywhere in the Position Plan and drag to move the camera and move the point of interest relative to the camera position. This is the same as the step and crab movements of the camera.

If the camera is moved out of the plan shown, the display will be rescaled so that the camera square can still be seen. When the camera is moved back into range, the display will be rescaled again.

Zoom

Click on the Zoom button and drag up or down to zoom in or out on the scene.

Clipping Planes

The Clipping Plane controls are used to adjust the camera's front (Hither) and back (Yon) clipping planes.

Although the clipping planes themselves are invisible, the effect they have on objects in the document can be seen. The front (Hither) and back (Yon) clipping planes can be set so that you view only a section of the document. Any objects or parts of the objects closer to the camera than the front (Hither) clipping plane, or further from the camera than the back (Yon) clipping plane, will not be visible.

Hither Clipping

Click on the Hither Clipping button and drag up to move the front (Hither) clipping plane further away from the camera or down to move the front (Hither) clipping plane towards the camera.

Yon Clipping

Click on the Yon Clipping button and drag up to move the back (Yon) clipping plane further away from the camera or down to move the back (Yon) clipping plane towards the camera.

Position Buttons

Use the position buttons to move either the camera or the point of interest to predefined positions.

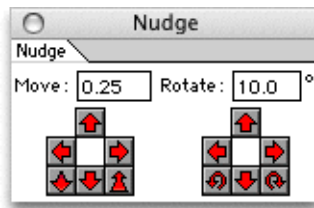
- Click on the position buttons to move the camera while maintaining the point of interest. 0° moves the camera to directly behind the point of interest, 90° to the right, 180° directly in front of, 270° to the left, and so on.

- Hold down the Option key and click on the position buttons to move the point of interest while maintaining the camera position. 0° moves the point of interest to directly behind the camera, 90° to the right, 180° directly in front of, 270° to the left, and so on.
- Click on the ‘Mid’ button to move both the camera and the point of interest to predetermined locations. The point of interest is positioned at the centre of the grid. The camera is placed half way between the centre and the side of the grid, directly in front of the point of interest. The camera will be at approximately eye height and tilted down slightly.

U Nudge

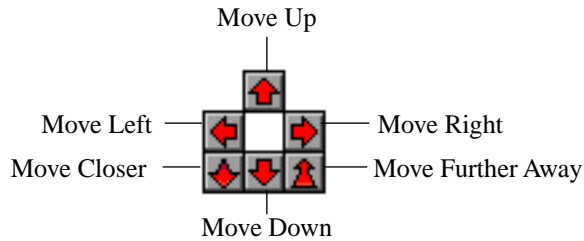
Use the Nudge palette to move or rotate an object by a specified amount.

Select Nudge from the Palettes menu to display the Nudge palette:



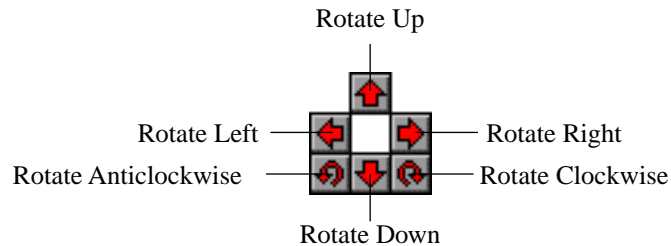
Move

1. Select an object in the document window.
2. Enter a value in the Move box in the Nudge palette. The units used will depend on those set for the document in the Options menu.
3. Click on the control buttons to choose the direction in which to move the selected object. The direction relates to the current view.



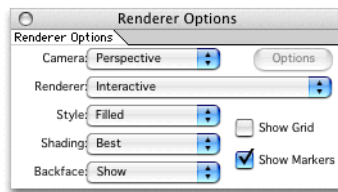
Rotate

1. Select an object in the document window.
2. Enter a value in degrees in the Rotate box in the Nudge palette.
3. Click on the control buttons to choose the direction in which to rotate the selected object. The direction relates to the current view.



Render Options

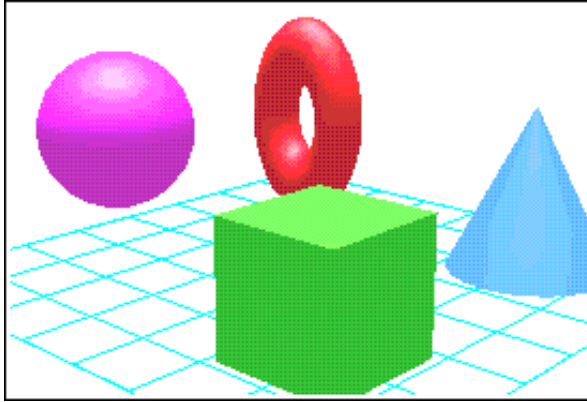
The Renderer Options plug-in palette is used to control the way that the document is displayed. Choose Render Options from the Palettes menu to open the palette:



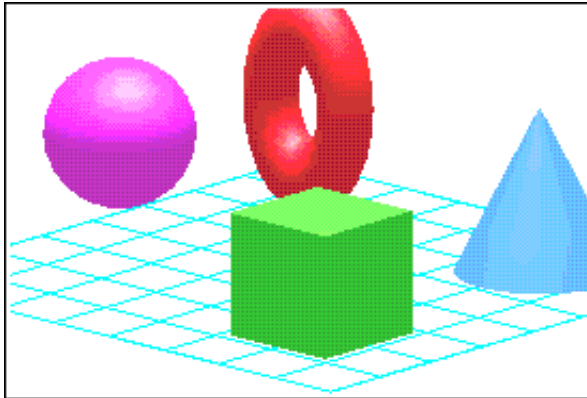
Camera

Select Perspective or Orthographic from the Camera pop-up menu.

- **Perspective:** Objects are displayed in perspective mode to give the illusion of depth. Parallel lines are drawn so that if extended, they would converge at a given point:



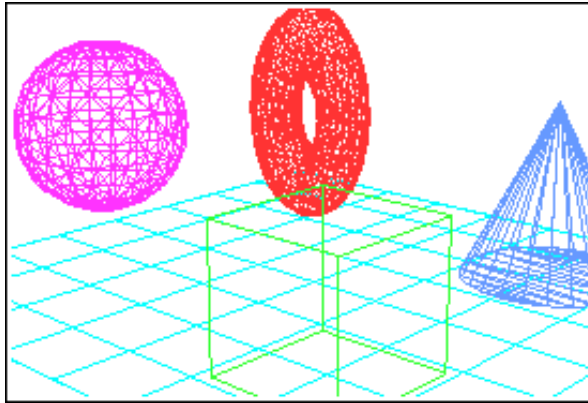
- **Orthographic:** Objects are displayed in Orthographic mode. Parallel lines remain parallel, regardless of the distance they are supposed to be from the camera:



Renderer

Click on the Renderer popup menu to display any available renderers.

- **Wire Frame:** The surfaces of objects are not filled; only the edges of the surfaces are displayed:



- **Interactive:** Objects in the document are rendered using the programs interactive renderer.
- **Microspot Preview Renderer:** The scene is rendered using the Microspot non-interactive renderer to produce a fast preview render of the scene with lighting and shadows. *See Appendix I — Microspot Plug-in Renderers on page I-1 for more details.*
- **Microspot Renderer:** The scene is rendered using the Microspot non-interactive renderer to produce a high quality final render. *See Appendix I — Microspot Plug-in Renderers on page I-1 for more details.*

Renderer Options

To the right of the Renderer popup menu is a button for Renderer Options. This is only active if a non-interactive renderer is installed and selected. Click on the button to display any available options for the currently selected non-interactive renderer.

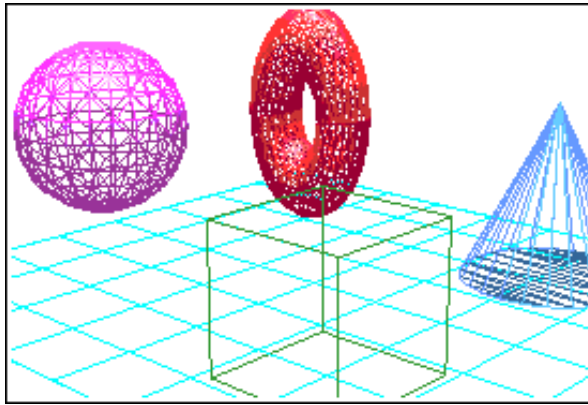
Note: Holding the Option key down while selecting the renderer will also display any options available.

Style

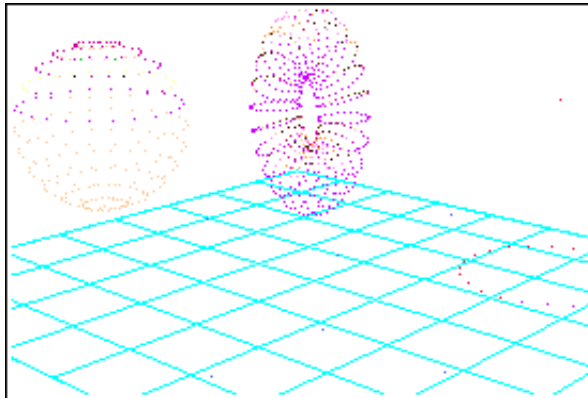
The Style pop-up menu is not available when the Wire Frame renderer is selected. Select one of the following options from the menu:

- **Filled:** All surfaces are filled and rendered. Objects appear to be solid.

- **Edges:** Only the edges of objects are rendered. This is different from Wire Frame mode in that lines are rendered according to the orientation of the object and any light sources, rather than the lines being displayed as one solid color:



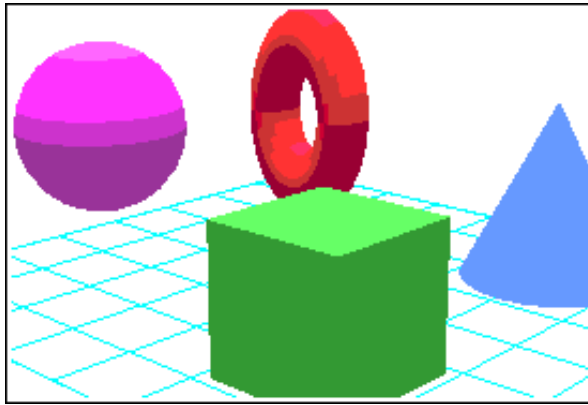
- **Points:** Only the vertex points of objects are rendered. Points are rendered according to the orientation of the object and any light sources:



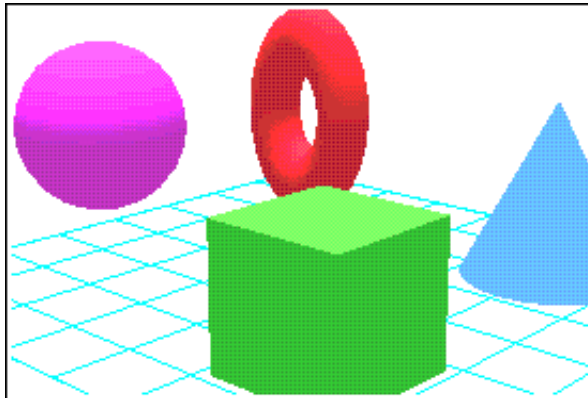
Shading

Select Plain, Smooth or Best from the Shading pop-up menu.

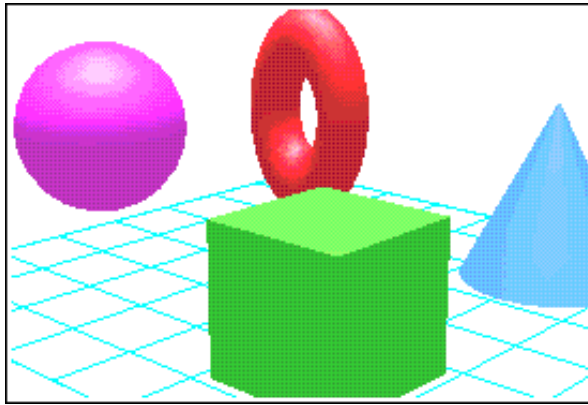
- **Plain:** Surfaces are filled but not smoothed and steps of color can be seen within some objects. Shading is applied according to the angle of the surface and any light sources that will affect the object:



- **Smooth:** Surfaces are filled and smoothed. Shading is applied according to the angle of the surface and any light sources that will affect the object:



- **Best:** Surfaces are filled and smoothed. Shading is applied according to the angle of the surface and any light sources that will affect the object. This option also displays the reflections of any lights:

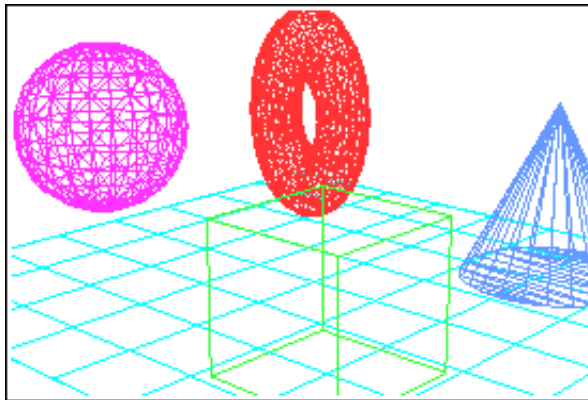


Backface

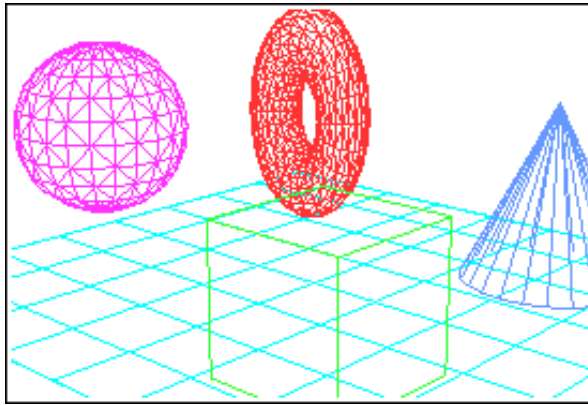
The backface of an object is the side that faces away from the camera.

Select Show, Remove or Flip from the pop-up menu.

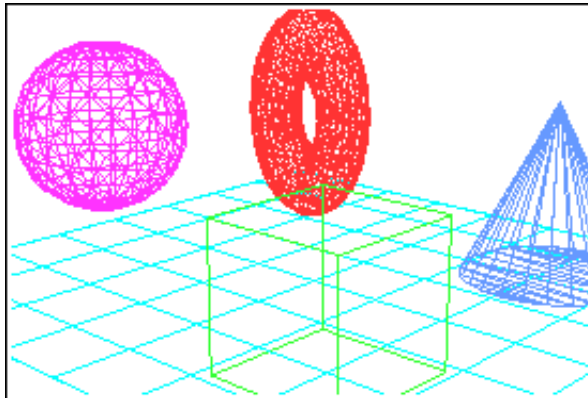
- **Show:** Select this option to show the backface of an object. This will not make any visible difference if the object surfaces are filled, but if you are viewing the objects in wire frame mode, you will be able to see the wire frame on the backface of the object:



- **Remove:** Select this option to hide the backface of an object. This will not make any difference if the object surfaces are filled, but if you are viewing an object in wire frame mode, its backface will not be displayed:



- **Flip:** The Flip option flips the backface so that the outside surface is now on the inside. This does not affect the shape of the object, but may alter the way it is rendered:



Show Grid

Documents are automatically displayed with a grid to help you design and position objects in 3D. When this option is enabled, the grid will be displayed. Uncheck this option to hide the grid.

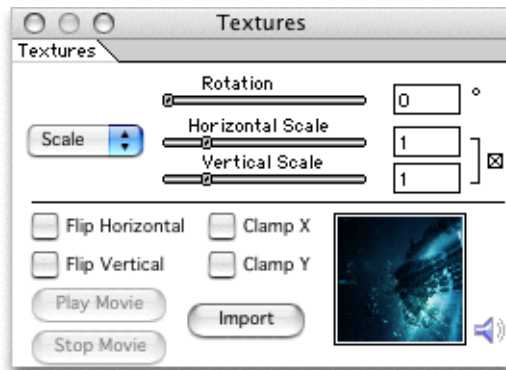
Show Markers

When text and sound markers are placed in a document, you can choose whether or not to display them. Check the Show Markers option to display markers, or leave it unchecked to hide markers. There is no marker tool in Interiors

u Textures

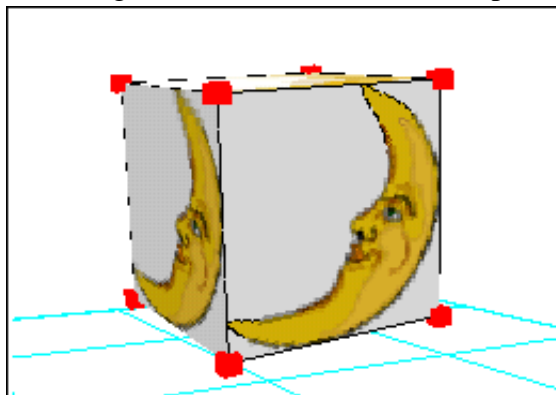
Use the Textures Palette to manipulate a texture applied to an object.

Select Textures from the Palettes menu to display the Textures palette:



The contents of the palette will be grayed out unless an object with a texture applied to it is selected.

When a texture is applied to an object it is scaled/stretched to fit once on each surface. The texture can then be manipulated using the controls in the Textures palette.



Textures Palette Options

- **Rotation:** Enter a value between 0 and 359.9 in the rotation field and press the Return, Enter or Tab key or use the rotation slider to adjust the degree of rotation of the texture applied to the object.

- **Offset:** Select Offset from the pop-up menu and the two slider bars to the right of the pop-up menu will relate to horizontal and vertical offset. The values for horizontal and vertical offset can be linked by clicking on the constrain box to the right of the slider bars.

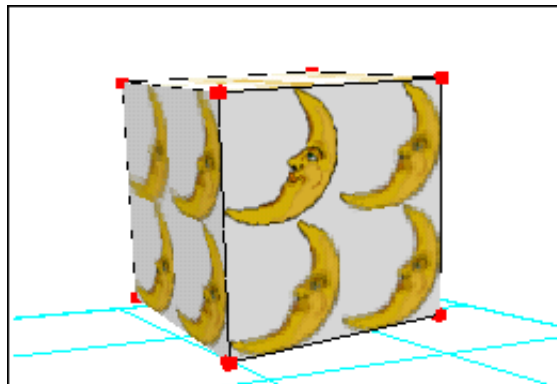
Horizontal Offset: Enter a value between 0 and 1 in the Horizontal Offset field and press the Return, Enter or Tab key or use the slider bar to move the texture across the object in a horizontal direction.

Vertical Offset: Enter a value between 0 and 1 in the Vertical Offset field and press the Return, Enter or Tab key or use the slider bar to move the texture across the object in a vertical direction.

- **Scale:** Select Scale from the pop-up menu and the two slider bars to the right of the pop-up menu relate to horizontal and vertical scale. The values for horizontal and vertical scale can be linked by clicking on the constrain box at the right of the slider bars.

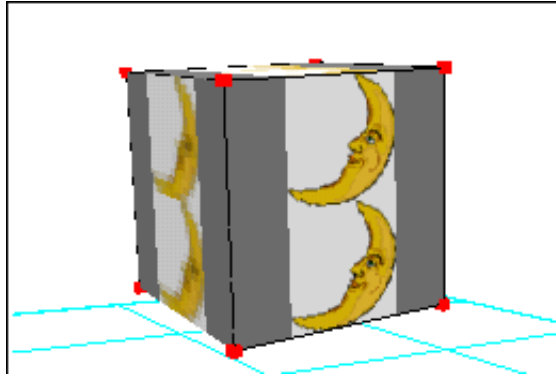
Horizontal Scale: Enter a value between 0 and 25 in the Horizontal Scale field and press the Return, Enter or Tab key, or use the slider bar to change the horizontal scale of the texture on the object.

Vertical Scale: Enter a value between 0 and 25 in the Vertical Scale field and press the Return, Enter or Tab key or use the slider bar to change the vertical scale of the texture on the object.

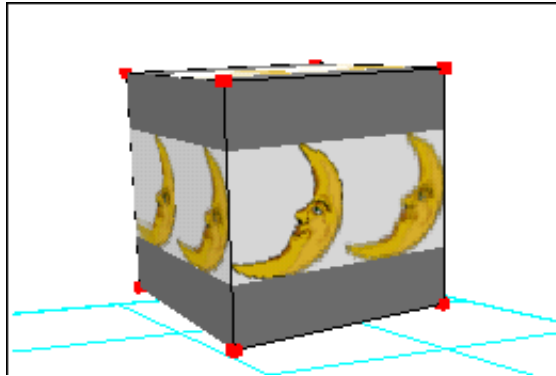


- **Flip Horizontal:** Check the Flip Horizontal check box to flip the texture applied to the object around the horizontal axis.
- **Flip Vertical:** Check the Flip Vertical check box to flip the texture applied to the object around the vertical axis.

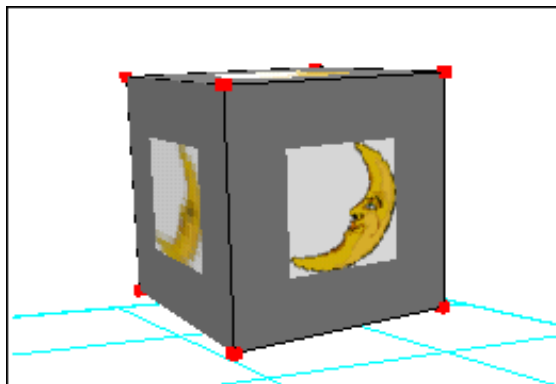
- **Clamp X:** Check the Clamp X check box to prevent the texture being repeated in the X-axis. The texture offset can then be adjusted to position the strip of texture on the surface.



- **Clamp Y:** Check the Clamp Y check box to prevent the texture being repeated in the Y-axis. The texture offset can then be adjusted to position the strip of texture on the surface.



- If the texture is clamped in both the X and Y axes it is not repeated in either direction. The texture can then be scaled and positioned on the surface as desired.

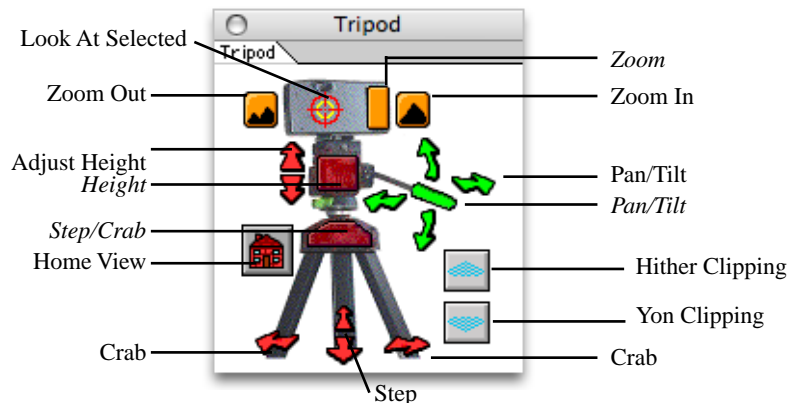


- **Play Movie:** This option is only available if a movie has been applied to an object as a texture. Click on the Play Movie button to start the movie playing. Note: the movie will only play if animation is turned on and is not paused. If animation has been turned off or paused via the Animation Player palette (*see Animation Path on page D-7*) the movie will not play until animation is turned on again.
- **Stop Movie:** This option is only available if a movie has been applied to an object as a texture. Click on the Stop Movie button to stop the movie playing.
- **Import:** Click on the Import button to display a standard dialog that allows you to select a PICT, TIFF, JPEG, GIF, PICT clipping or movie file to import as a texture or else just drag and drop directly onto objects in the document window, as long as the Textures palette plug-in is loaded.
- **Sound:** Use the Sound control to change the volume of the sound of any movie applied as a texture on a selected object. Click on the sound icon and a pop-up menu displays. Select the level of sound required.

v Tripod

The Tripod palette provides an alternate method to the NaviCam palette for a way of changing the view in the current document window.

Select Tripod from the Palettes menu to display the palette:



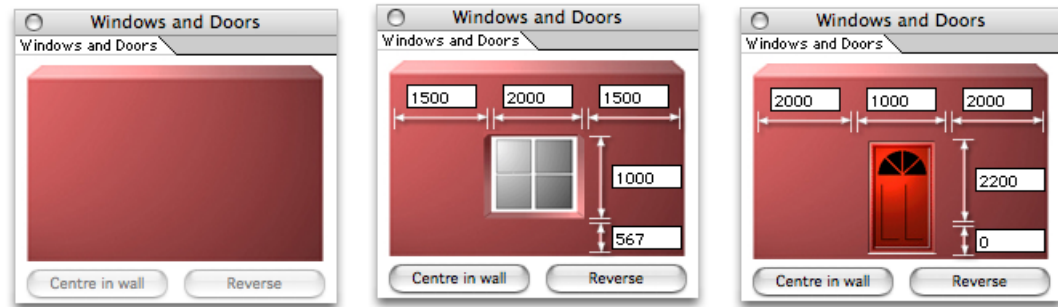
The Tripod palette displays a graphic of a camera on a tripod. A variety of buttons provide controls for manipulating the camera, the above dialog shows how those controls are used. In most cases click on the button to perform the relevant action. When using those buttons marked with *italic text*, click on the button and drag to perform the desired action.

- **Look At Selected:** Select an object in the document and click on the Look At Selected button to position the camera to centre the selected object in its view.
- **Zoom:** is used to narrow or widen the focus of the camera lens
- **Height:** The Height controls are used to change the height of the camera.
- **Pan/Tilt:** The Pan/Tilt controls are used to change the camera's angle by turning it left and right or tilting it up and down.
- **Step/Crab:** The Step/Crab controls are used to move the camera closer, further away, left, and right.
- **Home View:** Click on the Home View button to return the camera to its initial position (the view displayed when a new file is opened).
- **Hither Clipping:** Click on the Hither Clipping button and drag up to move the front (Hither) clipping plane further away from the camera or down to move the front (Hither) clipping plane towards the camera.
- **Yon Clipping:** Click on the Yon Clipping button and drag up to move the back (Yon) clipping plane further away from the camera or down to move the back (Yon) clipping plane towards the camera.

Note: Although the clipping planes themselves are invisible, the effect they have on objects in the document can be seen. The front (Hither) and back (Yon) clipping planes can be set so that you view only a section of the document. Any objects or parts of the objects closer to the camera than the front (Hither) clipping plane, or further from the camera than the back (Yon) clipping plane, will not be visible.

u Windows and Doors

The Windows and Doors palette is used to accurately position windows and doors in a wall. Open the Windows and Doors palette by selecting its name from the Palettes menu, and select a window or door item in the document.



- **Centre in wall:** Click on this button to centre a window or door in the wall. Doors will be positioned in the centre of the length of wall but will remain on the grid, windows will be positioned centrally in both dimensions.
- **Reverse:** Click on this button to mirror a window or door about the vertical axis. Note that this does not actually rotate the item, just changes its appearance.
- **Measurements:** The dimensions of the window/door, the length of the wall on either side of the window/door and the height of the window/door above the grid displays in fields in the palette. Type in new values to change these measurements as required. When you click in a field to enter/revise values, a black arrow shows which dimension that value refers to.

Appendix E

Idler Plug-ins

Idler plug-ins have no interface and run constantly in the background when loaded.

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Construct Idler D-2

u Construct Idler

The Construct Idler has two functions:

- **Performing CSG (Constructive Solid Geometry) Boolean calculations.** CSG operations allow one geometry to cut into another — enabling you to see into a room through a window for example. The calculation is performed each time an object with a CSG attribute is changed, and may take a few seconds depending on the complexity of the document. The objects must have the appropriate CSG attributes applied to them, by using a plug-in that allows CSG attributes to be applied to objects, or by using library items that already have CSG attributes applied. Door and window library items supplied with the application, and walls drawn with the wall drawing tools, include the correct CSG attributes.
- **Automatically simplifying objects as rendering speed decreases.** When the Construct Idler is checked on in the Plug-in menu and rendering speed falls below 4 renders per second, the plug-in starts to simplify the objects in the scene that contain the most triangles, by turning them into cubes. This allows you to continue to edit a complex document in real time, even on one of the slower computers. Any selected items, windows and doors are not affected by this process. Items are re-drawn in full once the editing action is complete.

Appendix F

Plug-in Tools

Individual plug-in tools are discussed in *Appendix G — Plug-in Geometries* and *Appendix H — Plug-in Modifiers*. This appendix provides information relevant to both types of plug-in tool.

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Introduction	F-2
Configuring The Tools Palette	F-2
Tool Options	F-3

∪ Introduction

Plug-in tools are either plug-in geometries or plug-in modifiers. *See Appendix G — Plug-in Geometries on page G-1 and Appendix H — Plug-in Modifiers on page H-1 for details of individual plug-ins.* When loaded, plug-in tools appear in the Tools palette and can be positioned in the palette by the user as discussed below.

∪ Configuring The Tools Palette

When Interiors is launched with all the plug-ins loaded, the plug-ins are placed in the Tools palette in a default order.



The Tools palette is configurable, so you can move tools around to position them in the location or group that is most convenient or logical for you.

Configure the Tools palette in the following way:

- Click on a tool and hold down the mouse button to display a pop-up menu showing the other tools in the stack (if any). Select the name of a tool in the pop-up menu to select the tool and bring it to the top of the stack.
- To move a tool, hold down the Command key, click on the tool and drag it to a new location.
- Drop a tool onto another tool to stack them together.

- Drop a tool onto the four selection tools at the top of the palette to separate it from a group of stacked tools and add it to the top of the tool palette as an individual tool.

u **Tool Options**

To open a dialog showing any options available for a tool, use either of the following methods:

- Hold down the Option key and select the tool in the Tools Palette.
- Click on the tool in the Tools palette and hold down the mouse button. Select the same tool from the pop-up menu that displays.

Note: There are no options available for the Arrow, Rotate, Rectangular Marquee and Hand tools.

Appendix G

Plug-in Geometries

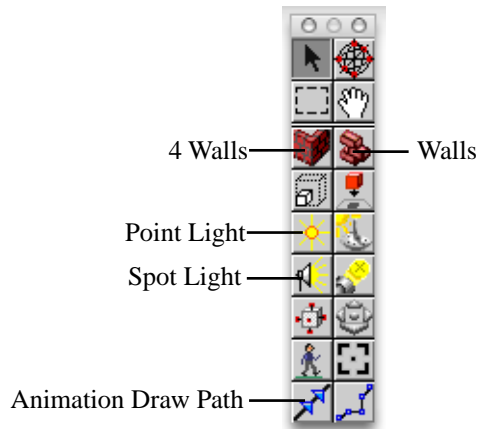
Plug-in Geometries are plug-in tools that are used to create objects. When installed they are located in the Tools palette.

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Introduction	G-2
4 Walls	G-3
Animation Draw Path	G-5
Point Light	G-7
Spot Light	G-8
Walls	G-10

u Introduction

When loaded, Plug-in Geometries appear in the Tools palette. The position of each plug-in within the Tools palette will depend on how the user has configured the palette. *See Configuring The Tools Palette on page F-2 for more details.* The default arrangement is shown below.

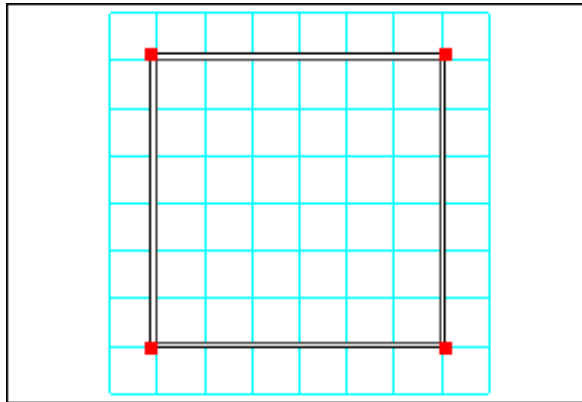


Select the plug-in tool to use by clicking on the icon of that tool in the Tools palette.

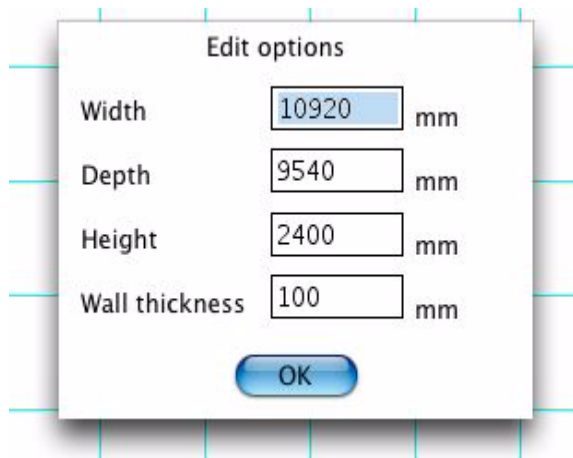


The 4 Walls plug-in is used to draw a regular, four-walled room. Walls are always drawn perpendicular to the grid and resting on the grid.

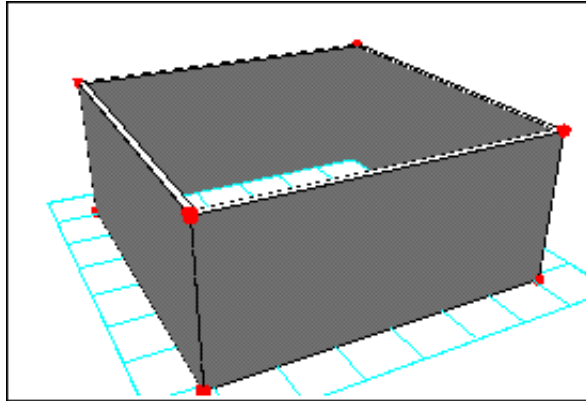
1. Select the 4 Walls plug-in from the Tools palette. The view will change to show an orthogonal, top view.
2. Click on the grid and, holding down the mouse button, drag to draw 4 walls:



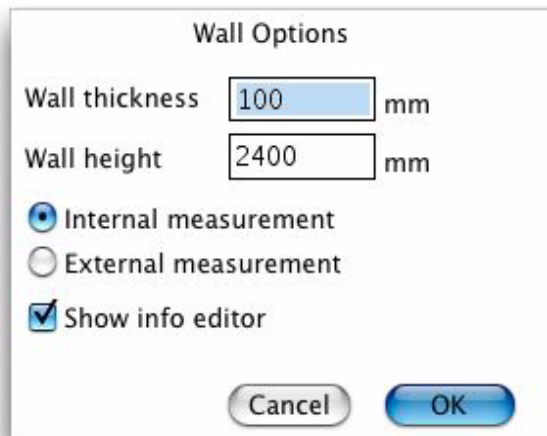
3. Release the mouse button and the Edit options dialog displays:



4. If necessary, enter values in the Width, Depth, Height and Wall thickness fields to specify the width and depth of the room, the height of the walls and the wall thickness.
5. Click OK. The view will change back to the previous view, and the walls will display at the dimensions specified. If the walls are the first items drawn, the room will be automatically centred on the grid.



To change the default settings for the 4 Walls plug-in, hold down the Option key and select the 4 Walls tool. The Wall Options dialog displays:



- **Wall thickness:** Enter a value to specify the default thickness for walls.
- **Wall height:** Enter a value to specify the default height for walls.

- **Internal measurement:** Click on the Internal measurement radio button to specify that values entered in the Entry options dialog (the dialog that displays after walls are drawn) relate to the measurements of the internal walls.
- **External measurement:** Click on the External measurement radio button to specify that values entered in the Entry options dialog (the dialog that displays after walls are drawn) relate to the measurements of the external walls.
- **Show info editor:** Check the Show info editor check box to specify that the Entry options dialog should appear after walls are drawn. Uncheck this check box if you do not want this dialog to display.

Note: The size, position and rotation of the walls are locked on entry. If you unlock the walls using the controls in the Info palette, the width and depth of the room, the height of the walls and the rotation of the room can be adjusted using the Info palette or the Arrow tool, but the wall thickness will be scaled proportionally. *See Info Palette on page 4-17 for more information.*

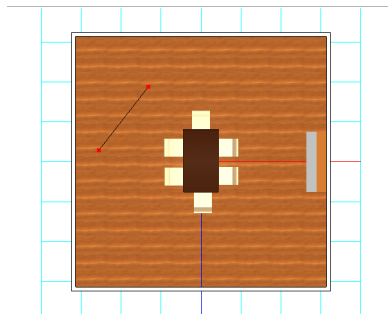
v



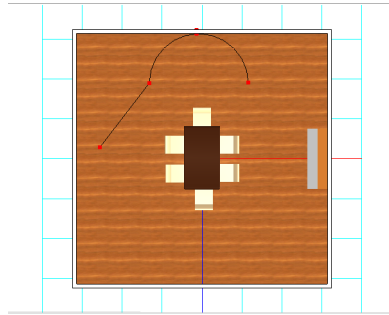
Animation Draw Path

The Animation Draw Path plug-in is used to draw animation path geometries.

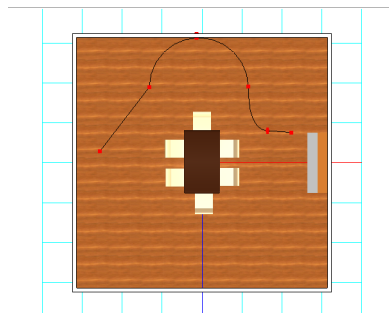
Select the Animation Draw Path tool, position the cursor where you want to begin drawing, click the mouse button to place a vertex point, move the cursor to a new point and click again. To finish the line, double click.



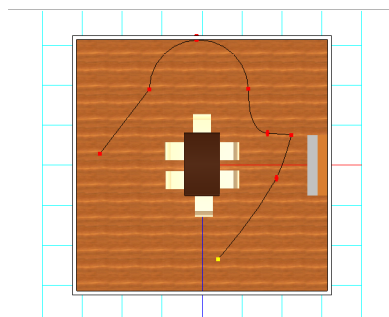
To draw an arc, hold down the Option key and click at the point that will represent the center of a circle. Release the Option key and mouse button and move the cursor ready to place the next point. The arc will display. Click to place the next point at the end of the arc:



To draw a Bezier curve, click and drag the cursor:



To draw a spline curve, hold down the Option key and click and drag the cursor:

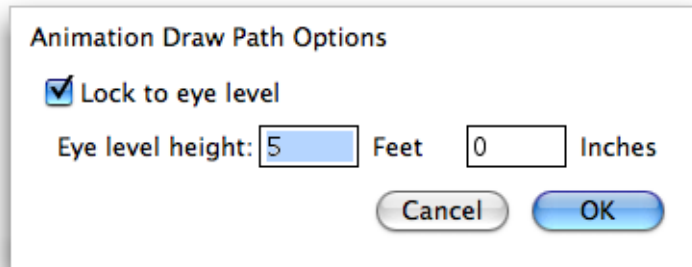


- To delete the last point placed use the Delete key.
- To complete an Animation Path double click.

- To constrain the path to the X, Y, or Z axis hold down the Shift key.
- To move in the Z dimension, hold down the Control key.

To change the default settings for eye level height and locking for the Animation Draw Path plug-in:

1. Hold down the Option key and select the Animation Draw Path tool to display the Animation Draw Path Options.



2. Select the Lock to eye level checkbox to control if an Animation Path geometry will be locked to the X-Z dimension at the value of eye level height.
3. Enter a value in the Eye level height field(s) to specify the position in Y coordinates at which the Animation Path geometries will be drawn.

u  **Point Light**

Use the Point Light plug-in to place point lights in your Interiors document. Point lights radiate light in all directions.

Note: Light objects are visible by default. If you have turned off the Show Light Markers option in the Lights palette, the light objects will not be displayed. *See Lights on page D-26 for more details.*

Select the Point Light tool in the Tools palette and click in the document window. The light is placed at the point clicked.

A point light is displayed as a small cube and when selected has a bounding sphere. Point lights cannot be resized, but can be moved and rotated like other objects. Note that rotating a point light will not have any effect on the lighting in the document.

Hold down the Command key when placing a point light and, if the scene is rendered using a Microspot renderer that draws shadows, that particular light will not cast any shadows.

Hold down the Option key when placing a point light and a light with a negative brightness value will be placed in the document. The negative brightness value can be adjusted using the Brightness slider in the Info palette as usual. To adjust a light with a negative brightness value so that it has a positive brightness value, set the brightness to 0 in the Info palette, then adjust brightness as for an ordinary point light.

The Info Palette is used to specify the color and brightness of a selected point light. *See Info Palette on page 4-17 for further details.*

The color of the point light sphere is set in the Preferences dialog. If the color chosen is white (default) light markers take on the color of light they represent. *See Preferences on page 3-5 for further details.*

v



Spot Light

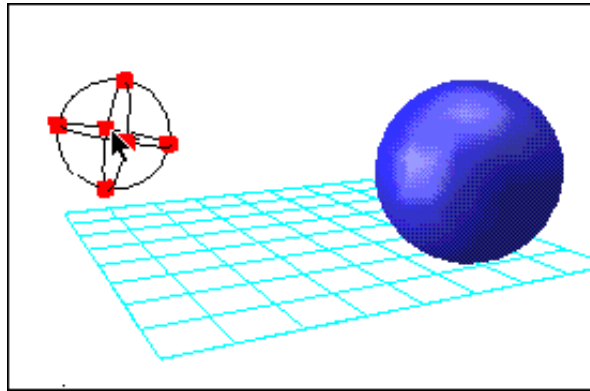
Use the Spot Light plug-in to place spot lights in your Interiors document. Spot lights have a directional shade around them which can be rotated to direct light in a specific direction.

Note: Light objects are visible by default. If you have turned off the Show Lights option in the Lights palette, the light objects will not be displayed. *See Lights on page D-26 for more details.*

Select the Spot Light tool in the Tools palette.

- **To place a spot light at a specific position in the document:** move the cursor to that point, click and release the mouse button.
- **To direct the light as you place it in the document:** click on the point you wish the spot light to shine and drag the light into position before releasing the mouse button. Hold down the

Shift key when dragging the light to constrain it to an axis perpendicular to the surface clicked on.



A spot light is displayed as an open, four sided pyramid with a short black line to indicates the direction the light is pointing. When a light is selected it displays with a bounding sphere. Spot lights cannot be resized, but can be moved and rotated like other objects.

Hold down the Command key when placing a spot light and, if the scene is rendered using a Microspot renderer that draws shadows, that particular light will not cast any shadows.

Hold down the Option key when placing a spot light and a light with a negative brightness value will be placed in the document. The negative brightness value can be adjusted using the Brightness slider in the Info palette as usual. To adjust a light with a negative brightness value so that it has a positive brightness value, set the brightness to 0 in the Info palette, then adjust brightness as for an ordinary point light.

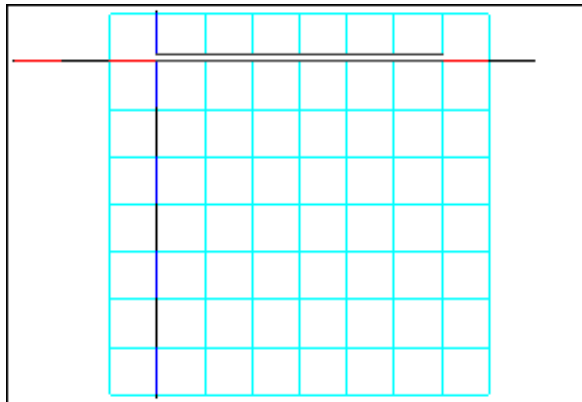
The Info Palette is used to specify the color, brightness, spread and sharpness of a selected spot light. The Spread control adjusts the lens angle, while the Sharpness control adjusts the focus. *See Info Palette on page 4-17 for further details.*

The color of the spot light pyramid is set in the Preferences dialog. If the color chosen is white (default) light markers take on the color of light they represent. *See Preferences on page 3-5 for further details.*



The Walls plug-in is used to create rooms other than those with four regular walls. Walls are drawn vertical to the grid and resting on the grid.

1. Select the Walls plug-in from the Tools palette. The view will change to show an orthogonal, top view.
2. Click in the document at the point you wish to start drawing a wall. Holding down the mouse button, drag along one of the constrainer lines that display to draw the wall.



Note: Walls are drawn at multiples of 45 degree angles by default. Holding down the Control key allows unconstrained angled walls.

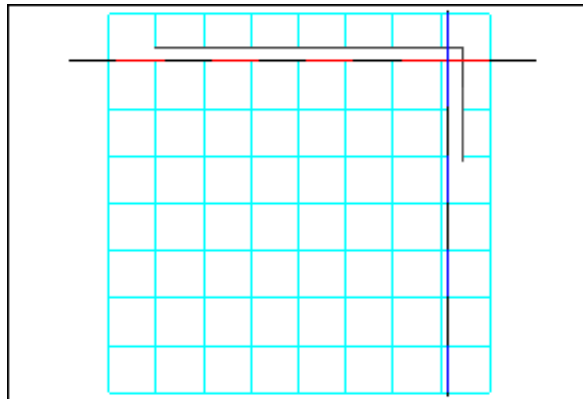
3. Click at the point you want the wall to end. The Edit options dialog displays:

Dialog box titled "Edit options" with the following fields and values:

Length	15	Feet	0	Inches
Start Height	8	Feet	0	Inches
End Height	8	Feet	0	Inches
Wall thickness	0	Feet	4	Inches
Angle of Wall	90	Degrees		

Buttons: Done, Cancel, OK

- If you have drawn the wall to exactly the correct length, and the default settings for the height and thickness of the wall are correct, click OK.
 - To change any of the wall's dimensions, enter new values in the Length, Start Height, End Height, Wall Thickness or Angle of Wall fields and click OK.
 - If this is the last wall to be drawn click on the Done button.
 - To enter the wall again, click the cancel button.
 - To prevent this dialog from displaying, hold the Option key down when clicking on the point you want the wall to end.
4. After closing the Edit options dialog, draw the next wall by dragging along one of the constrainer lines displayed:



- Click at the point you want the wall to end. The Edit options dialog will display again.

Edit options

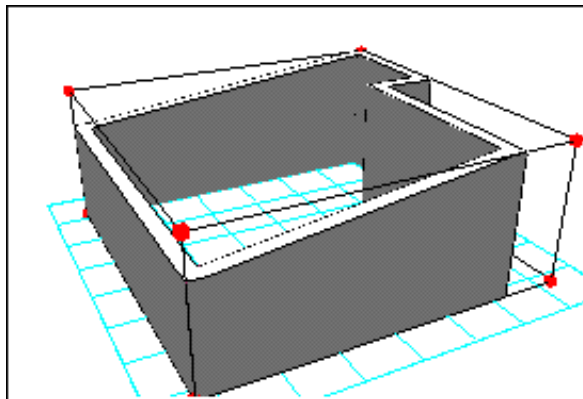
Length	<input type="text" value="15"/>	Feet	<input type="text" value="0"/>	Inches
Start Height	<input type="text" value="8"/>	Feet	<input type="text" value="0"/>	Inches
End Height	<input type="text" value="8"/>	Feet	<input type="text" value="0"/>	Inches
Wall thickness	<input type="text" value="0"/>	Feet	<input type="text" value="4"/>	Inches
Angle of Wall	<input type="text" value="180"/>	Degrees		

- Continue drawing further walls in the same way, adjusting the height, thickness and angle of the walls as required.

While creating walls, if the cursor is aligned with another wall corner, an alignment line will display showing the alignment, and the cursor will change to a hollow cross.

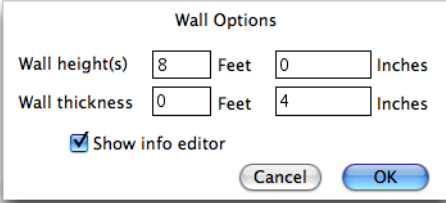
Press the delete key at any time while entering walls to delete the wall currently being entered. The cursor will move back to the previously entered wall.

- When the last wall is drawn, click on the Done button in the Edit options dialog. The view will revert to the previous view and the walls will display as specified. If the walls are the first items drawn, the room will be automatically centred on the grid.



To change the default settings for wall height and thickness for the Walls plug-in:

1. Hold down the Option key and select the Walls tool to display the Wall Options dialog.



The image shows a dialog box titled "Wall Options". It contains two rows of input fields. The first row is labeled "Wall height(s)" and has two input boxes: one for "Feet" containing the value "8" and one for "Inches" containing the value "0". The second row is labeled "Wall thickness" and has two input boxes: one for "Feet" containing the value "0" and one for "Inches" containing the value "4". Below these fields is a checkbox labeled "Show info editor" which is checked. At the bottom of the dialog are two buttons: "Cancel" and "OK".

2. Enter a value in the Wall thickness field to specify the default thickness for walls.
3. Enter a value in the Wall height(s) field to specify the default height of the walls.

Appendix H

Plug-in Modifiers

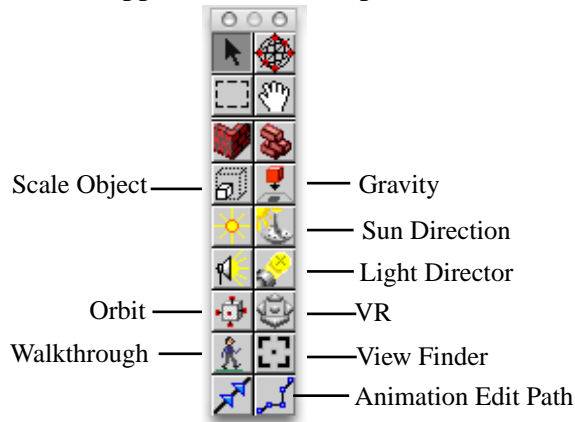
Plug-in Modifiers are plug-in tools that are used to modify objects or the scene in some way. When installed they are located in the Tools palette.

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Gravity	H-6
Light Director	H-7
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Sun Direction	H-9
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VR	H-10
Walkthrough	H-12

∪ Introduction

When loaded, plug-in modifiers appear in the Tools palette as shown below.

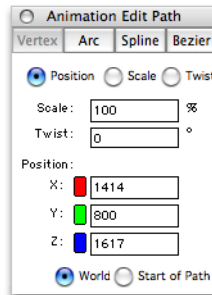


∪ Animation Edit Path

The Animation Edit Path plug-in is used to edit the path of an animation path and can also be used to scale and rotate sections of an Animation Path at specific points on its path.

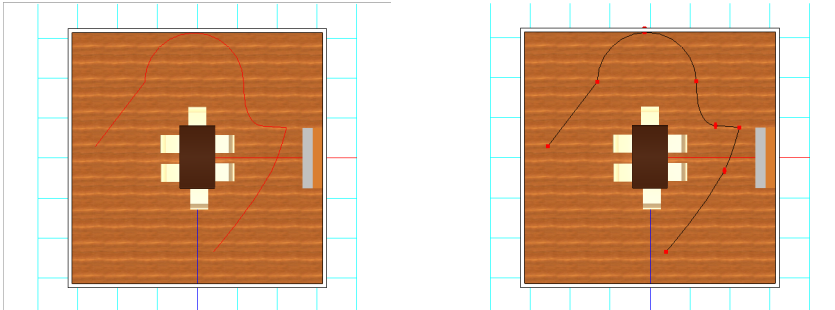
The Animation Edit Path Dialog

To display the Animation Edit Path dialog, click on the Animation Edit Path tool in the Tool palette.



Selecting an Animation Path to edit

With the Animation Edit Path tool selected, click on an animation path in the document window. The selected path will display as a black line with handles at the ends and on the curves.



Types Of Point

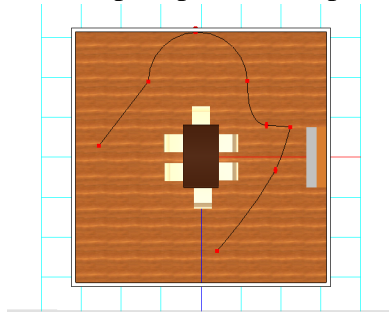
- **Vertex:** A standard point used to define the beginning or end of a straight section of a path or line.
- **Arc:** A point on a section of a circle defined as the center point on the arc between two vertex points.
- **Spline:** A point on a curve. The curve is defined automatically and cannot be edited except by adjusting the points at either side of the spline point.
- **Bezier:** A point on a curve. Two Bezier handles allow the curve to be adjusted.

Vertex point handles display as squares, Bezier and spline point handles as diamonds, and arc point handles as spheres.

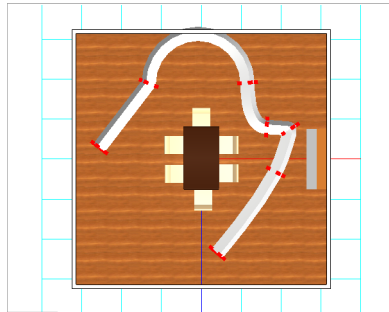
Viewing Manipulations

The Position, Scale or Twist radio buttons allow you to determine how the path will be manipulated when selected with the Animation Edit Path tool.

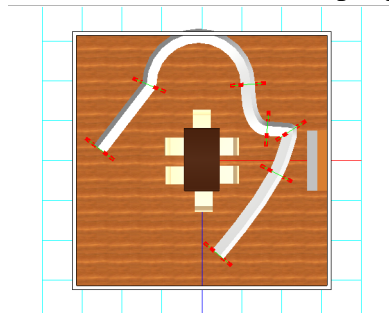
- **Position:** If this option is chosen, path points manipulated.



- **Scale:** If this option is chosen, the amount of scale per point is manipulated.



- **Twist:** If this option is chosen, the amount of twist per point is manipulated.



Selecting Points

Click on a handle to select it.

- A Vertex, Arc or Spline point will change color.
- A Bezier point will change color but has two additional handles to adjust the Bezier curve.

To select additional points, hold down the Shift key and click on another point. To deselect points, hold down the Shift key and click on a selected point.

Manipulating Points

- **Vertex, Arc, Spline:** Click and drag on the point to move it. Adjust the scale or twist of the section at that point by selecting the scale or twist radio button on the Animation Edit Path dialog.
- **Bezier:** Click and drag on the point to move it. Adjust the scale or twist of the section at that point by selecting the scale or twist radio button on the Animation Edit path dialog. Click and drag on the Bezier handles to adjust the curve. Hold down the Option key and click and drag on the Bezier point or Bezier handles to break the Bezier curve.

Moving Points On The Path

To move a path handle of any type, click on it and drag.

- Select the Position radio button in the Animation Edit Path dialog.
- Click on the handle of the point on the animation path you wish to move.
- Drag the path handle to the new position.
- Use the Control key to change the axis used.

To move a point by precise values, click on the Relative to Path or Relative to World radio button in the Edit Path dialog and enter values in the x, y and z fields.

- **Relative to Path:** The selected point is moved to the values entered relative to the point of the start of the path.
- **Relative to World:** The selected point is moved to the values entered relative to the grid.

Adding Points To A Path

To add a point to a path, select two contiguous points on the path by clicking on the line between them, or by holding down the Shift key and clicking on a second point. Click on the

Vertex, Arc, Spline or Bezier button in the Animation Edit Path dialog. A point of the specified type will be added between the two points originally selected.

Alternatively, hold down the Option key, click on the path or an existing handle and drag to place a new Vertex point.

Note: An arc point can only be added between two vertex points.

Changing Points

To change a point to a different type, select the point then click on the Vertex, Arc, Spline or Bezier button in the Animation Edit Path dialog. The point will change to the type selected.

Note: An arc point can only be added between two vertex points.

v



Gravity

The Gravity plug-in is used to place objects on the grid.

Select the Gravity tool from the Tools palette. As the cursor is moved over the document window it will change to a downward arrow. The active point is at the tip of the arrow. Click on an object and it will be moved so that its lowest point is placed on the grid.

If an object has been locked by clicking on the padlock icon in the top right corner of the Info palette, or by selecting Lock from the Options menu, you will not be able to use the Gravity tool to drop the object to the grid.

If the object position is locked only in the Y-axis, the Gravity tool will over-ride this restraint and can be used to drop the object to the grid. If you have several objects selected, some of which may be locked in the Y-axis, hold down the Shift key when using the Gravity tool to prevent these locked objects from being dropped to the grid.

u



Light Director

The Light Director plug-in is used to direct one or more spot lights in a particular direction.

Select the light(s) to direct, then select the Light Director tool in the Tools palette. In the document window, click at the place you want the lights to point. The light(s) will be rotated to point at the place specified.

Lights can also be selected using the Light Director tool by selecting the tool and clicking on a light. Hold down the Shift key and click on additional lights to increase the selection. Hold down the Shift key and click on a selected light to remove it from the selection.

u



Orbit

The orbit plug-in is used to move the camera around a selected object.

Select the Orbit tool from the Tool palette. Move the cursor over the document window and it will change to a black diamond.

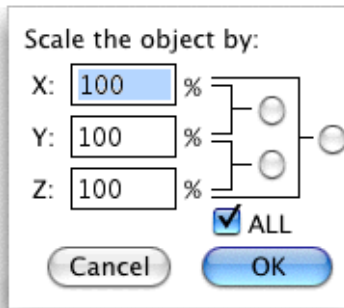
- **Click on an object:** drag the mouse left, right, up, or down and the view will orbit around the center of the object's bounding frame.
- **Click on the grid:** drag the mouse left, right, up, or down, and the view will orbit around the center of the grid.
- **Click in an empty area of the document window:** drag the mouse left, right, up, or down, and the camera will orbit around the center of the grid.

In all cases, the further you move the mouse from the point where you first clicked, the faster the view will move. Use of the option key will slow this rate of movement.



The Scale plug-in is used to easily scale selected objects by percentage values.

1. Select the Scale Object tool from the Tool palette. The Scale Object dialog displays:

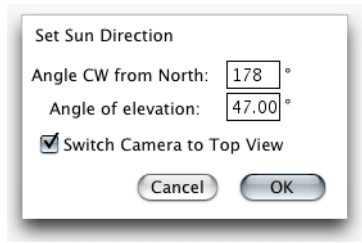


2. To maintain an object's proportions, ensure that the ALL checkbox remains checked on.
3. To scale an object without maintaining its proportions, uncheck the All checkbox. Enter a value in percentage to scale the object in each of the x, y and z dimensions.
4. Click OK, and the object selected will be scaled by the specified value(s).



The Sun Direction plug-in is used to adjust the direction the sun light shines in.

The Sun Direction plug-in has the following options, displayed by selecting the Sun Direction plug-in with the Option key pressed.

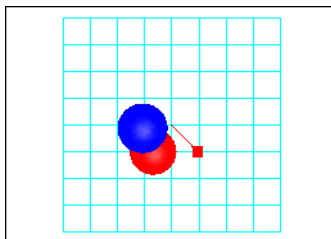


The Option dialog box allows you to enter values for both the angle of elevation of the sun, and its position angle referenced from the clockwise direction, relative to the north.

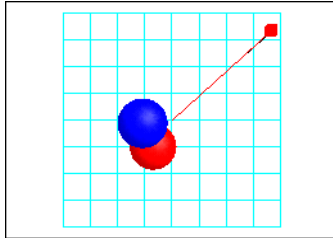
When the Sun Direction plug-in is selected, and the Auto Show Plug-in Palettes preference is enabled, the Lights palette is automatically opened so that you can make any necessary changes to the way the scene is lit. *See Lights on page D-26 for more details.*

To adjust the position of the sun manually

1. Select the Sun Direction tool from the Tools palette.
2. The document window changes to Top view.
3. The current direction the sunlight is shining in is depicted as a red line with a handle at the end:



4. Click on the handle and holding down the mouse button drag to change the position of the source of the sun light.



5. Hold down the Control key as you drag to move the position of the source of the sun light closer or further away.
6. Movement of the sun direction line can be constrained to the X, Y and Z axes by holding down the Shift key.
7. Release the mouse button to drop the handle at its new location.

Note: The red direction line will not be visible with either the Microspot Preview Renderer or the Microspot Renderer.

u  **View Finder**

The View Finder tool allows you to click anywhere in the document to change the camera orientation to have that point at the center of the view.

u  **VR**

The VR plug-in is used to pan and tilt the camera using control mechanisms similar to those found in QuickTime™ VR.

When the VR plug-in is selected, the NaviCam palette is automatically opened so that you can use it to make changes to the camera position and view. *See NaviCam on page D-27 for more details.*

Select the VR tool from the Tools palette and click in your document window.

- To pan the camera (turn it left and right): hold down the mouse button and drag the mouse left and right.
- To tilt the camera: hold down the mouse button and drag the mouse up and down. The tilt is limited to +/- 90°.
- To crab the camera (move it to the left or right): hold down the mouse button and the Command key and drag the mouse left and right.
- To move the camera forwards and backwards: hold down the mouse button and the Command key and drag the mouse up and down.
- To zoom in: hold down the Shift key.
- To zoom out: hold down the Control key.

As you move, the cursor changes to an arrow head pointing in the direction you are moving. In all cases, the further you move the mouse from the point first clicked on, the faster the camera will move. Use of the option key will slow this rate of movement.

Alternatively, select the VR tool and use the arrow keys to move the camera:

- To pan the camera (turn it left and right): use the left and right arrow keys.
- To tilt the camera: use the up and down arrow keys. The tilt is limited to +/- 90°.
- To crab the camera (move it to the left or right): hold down the Command key and use the left and right arrow keys.
- To move the camera forwards and backwards: hold down the Command key and use the up and down arrow keys.

v



Walkthrough

The Walkthrough plug-in is used to walk the camera through a scene.

Select the Walkthrough tool from the Tool palette. Click in your Interiors document window and the cursor will change to a black diamond. Drag the mouse to the left and right to move in those directions, or up to move forwards and down to move backwards. Use the left and right arrow keys to crab (move side to side), and the up and down arrow keys to tilt the camera.

As you move, the cursor changes to a black arrow head pointing in the direction you are moving. In all cases, the further you move the mouse from the point first clicked on, the faster the camera will move.

Use of the option key will slow the rate of movement.

Appendix I

Microspot Plug-in Renderers

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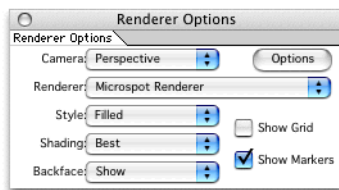
u Introduction

The Microspot Renderer provides the following features in addition to those provided by Interactive renderer: transparency; shadows; pixel level lighting calculations; image anti-aliasing. These features allow you to render a high quality, more realistic 3D scene — in particular the pixel level lighting calculations give more accurate representations of how lighting affects surfaces.

The Microspot Preview Renderer is a limited version of the Microspot Renderer. The Microspot Preview Renderer allows a fast display of a scene rendered with Shadows and Soft edges.

u Selecting Microspot Renderers

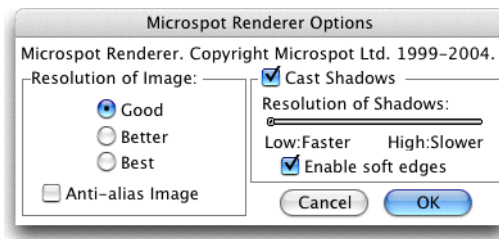
The Microspot Renderer is accessed via the Renderer Options palette. Select Renderer Options from the Palettes menu to display this palette. Click on the Renderers pop-up menu, the Microspot Renderer and the Microspot Preview Renderer.



u **Renderer Options**

To change the Microspot Renderer options in Interiors select the Options button in the upper right corner of the palette or hold down the Option key when selecting the Microspot Renderer.

Renderer Options Dialog



The dialog provides controls to turn shadows on or off, adjust the resolution of the shadows, soften the edges of the shadows and choose how much an image is anti-aliased. Click OK when you have set the rendering options you want to render the scene.

Shadows

On/Off

The Microspot Renderer and the Microspot Preview Renderer both create realistic shadows. The Microspot Render has the option of not creating shadows when rendering.

Resolution

Increasing the sharpness of the shadows that are created

Soft Edges

Turning on soft edges will soften the edges of the shadows, creating a more realistic shadow effect.

Anti-alias Image

Use the anti-alias image checkbox to turn anti-aliasing on or off for the image. If image anti-aliasing is turned off, the whole image is rendered at the same resolution. If image anti-aliasing is turned on, the edges of objects in the image are softened. Select the quality of render via the Good, Better and Best radio buttons.

Anti-alias Image is Off

- **Good:** The image will be rendered at 72 dpi. A typical 640 x 480 render will require 2.5 Mb of RAM as an image buffer.
- **Better:** The image will be rendered at 144 dpi. A typical 640 x 480 render will require 10 Mb of RAM as an image buffer.
- **Best:** The image will be rendered at 288 dpi. A typical 640 x 480 render will require 40 Mb of RAM as an image buffer.

Anti-alias Image is On

- **Good:** The image will be rendered at 72 dpi, with soft edges at 288 dpi. A typical 640 x 480 render will require 2.5 Mb of RAM as an image buffer.
- **Better:** The image will be rendered at 72 dpi, with soft edges at 1152 dpi. A typical 640 x 480 render will require 2.5 Mb of RAM as an image buffer.
- **Best:** The image will be rendered at 144 dpi, with soft edges at 1152 dpi. A typical 640 x 480 render will require 10 Mb of RAM as an image buffer.

Appendix J

Drag and Drop

This section discusses dragging and dropping colors, 3D objects, text, TIFF, JPEG, GIF and Movie files to and from Interiors documents.

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DRAG OUTPUT

You can drag a color from the Window control panel, Lights Palette or Info Palette to:

- A 3D object in Interiors
- Another Lights Palette or Info Palette color or any other palette that includes color buttons.
- The Finder Desktop or a Folder window
- The Finder Trash Can
- An Interiors Library file
- A PICT-compatible, Drag & Drop aware application

You can drag a 3D object or an entire scene (by holding down the Option key and clicking on the background) to:

- Another view of the same file in Interiors
- The window of a different file in Interiors
- A 3DMF-compatible, Drag & Drop aware application
- A PICT-compatible, Drag & Drop aware application
- The Finder Desktop or a Folder window
- The Finder Trash Can (to delete the object)
- A Interiors Library file

COPY

When you copy selected items from an Interiors document, the following types of data are put on the Clipboard:

- A PICT of the selected items which is the same size as the front window
- A 3DMF as a single grouped item.

DRAG INPUT

Drag a PICT file from the Finder to:

- A 3D object to create a texture of the picture wrapped around the object
- The document window to make a background picture
- The document window to make a foreground picture (hold down the Control key when dropping the file)
- The grid to make a rectangle with a texture of the picture

Drag a text file from the Finder to:

- A 3D object to create a texture of the text wrapped around the object
- The background to make a background picture of the text

Drag a TIFF, JPEG GIF or Movie file from the Finder to:

- A 3D object to create a texture of the picture wrapped around the object.

Drag a 3DMF file from the Finder to:

- A Interiors document (to import it)

Drag a clippings file of the following type from the Finder:

- A PICT clipping (See Drag a PICT file from the Finder)
- 3DMF clipping (See Drag a 3DMF file from the Finder)

Drag an Interiors color clipping file (created by dragging a color from a color button into the Finder) from the Finder to:

- A 3D object to change its color
- The background to change its color
- The Default Color button, to change the default color, as well as any selected items
- The Lights Palette to change the color of the appropriate light
- The Info Palette to change the color of the selected object/light
- Any other palette that includes color button.

NOTES

- To drag and drop locked items out of an Interiors document window, hold down the Option key.
- Holding down the Control key as you drag and drop an item onto an object or group ungroups the object or group and places the item on just one surface of the object, or on one item in the group.
- Hold down the Option key as you drag a 3D object to leave a duplicate in the same place as the original.

Appendix K

Plug-in Directory

Lists the application's plug-ins by name, provides details of the plug-in's type and status, and offers a brief description of its use.

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#	Name	Type	Use the plug-in to...
1	3ds	Import	open 3ds formatted files into 3DMF files.
2	4 Walls	Geometry	Create a regular 4 walled room.
3	Align	Palette	Align objects in any or all of the X, Y, and Z axes.
4	Animation Draw Path	Geometry	Create animation paths.
5	Animation Edit Path	Modifier	Edit the position, scale or rotation of an animation path.
6	Animation Path	Palette	Animate an object, a light or the camera along a predefined path.
7	Animation Player	Palette	Control the animation of the current document.
8	Animation Tweener	Palette	Set and edit tween points for objects, the camera, the ambient light or the sun light.
9	Autosave	Menu Command	Display an alert to save document at specified intervals.
10	Axis	Palette	Display the current orientation of the front window.
11	Ceiling	Menu Command	Add a ceiling to selected walls.
12	Color	Palette	Display a color picker to dynamically change an objects color.
13	Color Palette	Palette	A repository for 12 colors.
14	Construct Idler	Idler	Perform boolean calculations and automatically simplifies objects.
15	Cursor Options	Palette	Align, snap and cursor display controls.

#	Name	Type	Use the plug-in to...
16	Export Movie	Menu Command	Export a QuickTime movie of the current animation.
17	Floors	Menu Command	Add a floor to selected walls.
18	Gravity	Menu Command & Modifier	Moves objects onto the grid.
19	Libraries	Palette	Store and retrieve hundreds of furniture and accessories items.
20	Light Director	Modifier	Direct one or more spot lights to point at one place.
21	Light Start	Menu Command	Animate a light object color and brightness.
22	Light Stop	Menu Command	Stops a light object animating.
23	Lights	Palette	Control the documents lighting values.
24	NaviCam	Palette	Control the camera position and view.
25	Nudge	Palette	Move or rotate an object by a specified amount.
26	Object Color Start	Menu Command	Animate the color of an object.
27	Object Color Stop	Menu Command	Stop an objects color animating.
28	Object Texture Start	Menu Command	Animate the texture applied to an object.
29	Object Texture Stop	Menu Command	Stop an objects texture animating.
30	Orbit	Modifier	Orbit the camera around a selected object or point.
31	Picture	Export	Save the document view as an image.
32	Point Lights	Geometry	Place a point light.

#	Name	Type	Use the plug-in to...
33	Renderer Options	Palette	Change the way the document is displayed.
34	Scale Object	Modifier	Scale selected objects by percentage values.
35	Spot Light	Geometry	Place a spot lights in the document.
36	Sun Direction	Modifier	Adjust the direction the sunlight shines.
37	Textures	Palette	Import and manipulate a texture or movie texture applied to an object.
38	Tripod	Palette	Control the camera view based on a real tripod.
39	View Finder	Modifier	Point the camera at an object or point clicked.
40	VR	Modifier	Pan and tilt the camera.
41	Walkthrough	Modifier	Walks the camera through a scene.
42	Walls	Geometry	Create walls one by one.
43	Windows & Doors	Palette	Controls the placement of windows and doors in walls.

Appendix L

Command Key Table

Command key shortcuts can be used to perform many actions. The following table lists those key combinations.

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COMMAND KEY TABLE

Action	Command Key
File Menu	
New	Command N
Open	Command O
Close	Command W
Save	Command S
Print	Command P
Quit	Command Q
Edit Menu	
Undo/Redo	Command Z / F1
Cut	Command X / F2
Copy	Command C / F3
Paste	Command V / F4
Delete Whole Object	Backspace / Delete
Select All	Command A
Duplicate	Command D
Duplicate No Offset	Command Shift D
Clone	Command =
Clone No Offset	Command Shift =
Group	Command G
Ungroup	Command U
View Menu	
New Window	Command K
Look At Selected	Command 1

Action	Command Key
Home View	Command 3 / Home
Custom (View)	Command 0
Top (View)	Command 5
Front (View)	Command 8
Left (View)	Command 4
Right (View)	Command 6
Back (View)	Command 2
Plan (View)	Command 7
Last View	Command 9 / End
Options Menu	
Edit Item	Command E
Lock	Command L
Unlock	Command Shift L
Grid Snap	Command Y
Metric	Command M
Inches	Command I
Orbit Around View	Command T
Plug-in Menu	
Last Plug-in	Command *
Help Menu	
Online Manual	Help