Contents

Welcome to LayOut

LayOut for Microsoft Windows is a collection of tools that make it easy to create design presentations from your Google SketchUp Pro 6 models. LayOut combines functionality from page, layout, CAD, and presentation software.

Using this Guide

Familiarity with computer basics is all you need to use LayOut. Continue with the [Learning LayOut](#) section of this guide for assistance with learning LayOut.

Technical Support

LayOut users can request installation and configuration help using email through the SketchUp Help Center (your SketchUp serial number will be required).

Please include the following with your email:

- A copy of the LayOut file you are creating

- A list of your computer system's resources (CPU type, RAM, video card details, and the exact release of your operating system, such as Windows XP Professional with Service Pack 2)

- A detailed description of your question or issue

Learning LayOut

As with any software tool, there is a minimum level of learning you must do to attain proficiency with LayOut. The following information can help you learn how to use LayOut.

Video Tutorials

Google has created several video tutorials to facilitate learning of the LayOut tools and drawing procedures. View these tutorials through the View Tutorials menu item in the Help Menu (Help > View Tutorials). You must be connected to the Internet to access these tutorials.

Online User's Guide

This online user's guide contains a Concepts section for users who are new to LayOut. This section is meant to be read sequentially before using LayOut for the first time. You must be connected to the Internet to access this guide.

> **Note -** A PDF version of the User's Guide is available at sketchup.google.com.

Menus

Many LayOut tools and commands are accessible from the tool buttons and drop-down menus. Examine LayOut's menus to become familiar with the breadth of features.

Instructor

Enable the Instructor (Window > Instructor) to display information related to the currently selected tool.

Quick Reference Card

The LayOut Quick Reference Card, available in the LayOut Help Menu and on the sketchup.google.com, contains a list of all of toolbar tools and their modifier keys. Examine the LayOut Quick Reference card to become familiar with using LayOut's tools. View the quick reference card the Quick Reference menu item in the Help Menu (Help > Quick Reference).

The Status Bar

The Status Bar, located at the bottom of the LayOut presentation area, displays tips for the active tool, including special functions accessible using keyboard shortcuts. Watch the status bar while you are working in LayOut to discover advanced capabilities of each of the LayOut tools.

User Forum

The LayOut forums are a great way to contact others in the LayOut user community. These forums provide a unique environment for you to obtain help, suggest new features, offer advice, and share your presentations. Visit the LayOut user forums by clicking on the LayOut Community menu item in the Help Menu (Help > LayOut Community). You must be connected to the Internet to access the user forums.

LayOut Training

Google provides training courses for users who want extra assistance with LayOut from the experts at Google. Visit http://www.sketchup.com/training to see a list of training courses available in your area.

Concepts

This section of the user's guide covers the LayOut concepts used throughout this guide and the LayOut community. This section was written primarily for users who are new to LayOut.
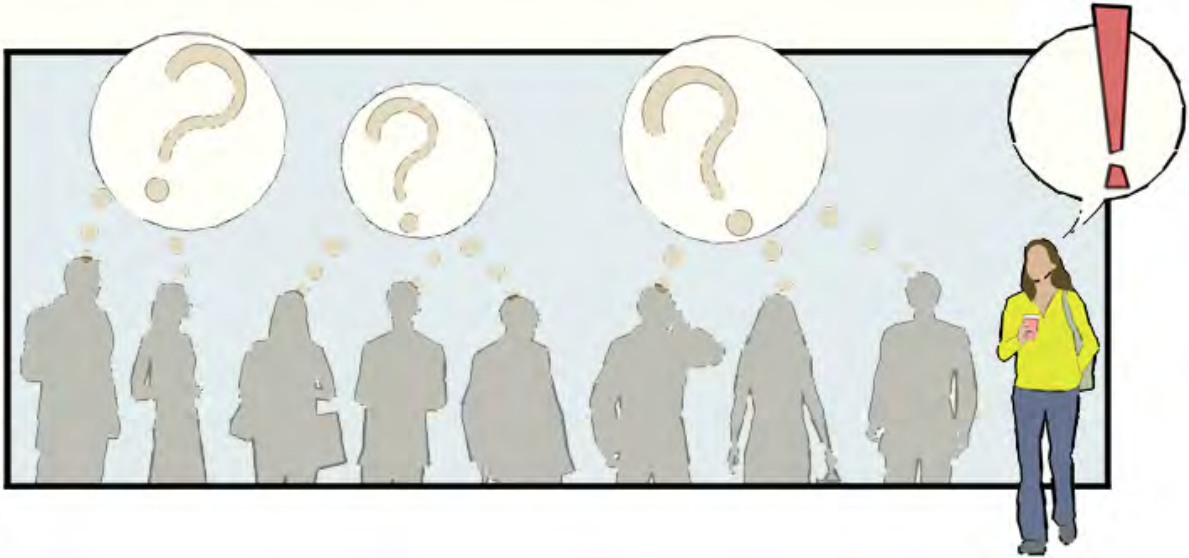
This section is organized into the following topics:

- Presenting With LayOut - Introduces you to the basic concepts involved in creating a presentation with LayOut.

- Organizing Your Presentation - Introduces you to LayOut mechanisms for organizing entities in your model and in LayOut.

- Special Effects - Discusses some special techniques you can use to create visually pleasing presentations.

Presenting With LayOut

LayOut presentations are comprised of one or more *pages* which are the software equivalent of pages in a book or slides in a presentation (depending on whether you are doing on-screen or a paper-based presentation).

Each page can have any combination of *entities* such as lines, images, SketchUp models, text, and *groups.*

Introduction to Entities

Creating a LayOut presentation is as simple as combining entities, such as text, images, and SketchUp models, on a page either by importing and placing the entities or creating the entities from scratch. A full list of LayOut entities follows.

| Name	Notes
SketchUp Model	SketchUp Model entities are 3 dimensional models (.SKP files) that are inserted into you presentation. SketchUp models can be inserted orbited, and positioned within any LayOut presentation. LayOut maintains a link back to the original SketchUp file allowing you to keep your LayOut presentations updated with each SketchUp model update.
Image	Image entities are raster (pixel-based) images, such as JPEG images, that are imported into your presentation.
Group	Groups are entities that contain other entities
Curve	
Freehand	
Arc	
Pie	
Rectangle	There are three type: normal rectangle, rounded rectangle, bulged rectangle, and lozenge.
Circle	There are two types of circles: a normal circle and an ellipse.
Polygon	
Text	Text annotations help to describe other items in your presentation, such as the details found in a SketchUp model.
Label	A Label is similar to text, but contains an line pointing to a specific spot in the presentation.

Introduction to Shapes

Entities are often combined to create shapes (or are shapes by themselves). For example, you can draw several connected line to create the shape of a star. Shapes have a *fill* or inside color and a *stroke (*line or *edge* style).

The LayOut Coordinate Systems

LayOut uses a 2D coordinate system to identify where entities reside on a page. This 2D coordinate system has two axes: X and Y. The X axis represents positions on the screen starting from the left-most border of the *presentation area* (the area where you create your presentation) and moving to the right. The Y axis is represents positions on the starting from the top-most border of the drawing area and moving down. X and Y locations are displayed in the *Value Control Box* (VCB) at the bottom of the presentat ion area as you move your drawing tools around the screen. For example,the VCB will display (2",1") when the cursor is 2 inches to the right of the left border (2 inches along the X axis) and 1 inch down from the top border (1 inch down the Y axis).
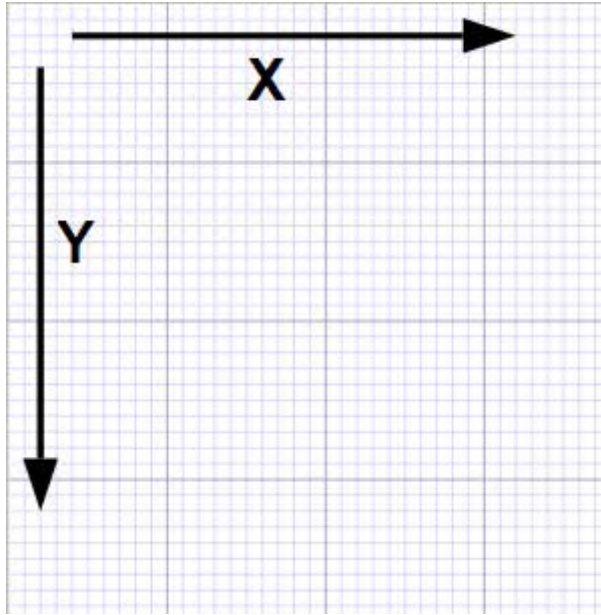
The term *origin*, is used to define the place where all of axes lines start or originate. The origin (0,0) in LayOut is at upper left-hand corner of each page.

Following the Inference Engine

LayOut has an invisible *inference engine* to help you draw and place entities accurately. The inference engine locates or infers points from other points on the page, such as the center of a circle, the midpoint of a line, a point on an edge, and so on. As entities are drawn or moved on a page, they snap to these points on other entities on the page.

LayOut notifies you of these points by using color indicators and tool tips, which are on-screen messages indicating the location of the cursor as you draw an entity.

Organizing Your Presentation

LayOut contains a mechanism for organizing entities within a presentation, called *layers*. LayOut also contains a mechanism, called a *scrapbook,* for storing and organizing libraries of models, image, shapes, text, and styles that you want to use in all of your presentations.

Layers

A page can have multiple layers. A layer is essentially an container containing any combination of entities, usually entities of the same type, such as all images in your presentation.

By default, all entities in a presentation are placed on the *Default layer*. However, you can create more layers and move entities to these layers. For example, you might have all of your inserted images on one layer, all hand drawn shapes on another layer, all of your text on another layer, and all of your SketchUp models on third layer. Then, depending on the type of presentation you are preparing, you can temporarily toggle the visibility of a layer (hiding the entities in that layer, such as all text).

Layers can also be locked which prohibits you from editing the entities in a layer.

Master Layer

A special layer, called a *master layer*, contains any entities that you want to appear in all of the pages in your document. For example, your master layer might be where you put a title block (a block of information, usually found on architectural presentations, containing the architects name, client's name, project name, and so on) or a watermark image indicating the state of the presentation, such as "Approved." The concept of a master layer in LayOut is similar to the concept of a *master page* in page-layout applications.

The Scrapbook

Any entity or group of entities in a LayOut presentation can be saved in a Scrapbook file. A Scrapbook file is a LayOut file (.layout file) of pre-created entities, such as a library of title blocks, logos, models, text, images, or symbols. These entities can be used in two ways: they can be dragged into your LayOut presentation or their style can be sampled and applied to current entities in your LayOut presentation.

Styles

All entities have *style* that can be applied to other entities within your LayOut presentation. Examples of styles include the fill within a rectangle, the stroke (line color, width, end styles) of a line, or the shape of a font . If the entity is a SketchUp model, style refers to the rendering options on the model, such as shadow state and face and edge rendering styles. See the SketchUp User's Guide for further information on shadow and face and edge rendering styles.

If you have a of model in your Scrapbook file, you can sample the SketchUp model's style (such as line style) and apply that style to other models in your presentation. Or, if you have a Scrapbook file that contains several color swatches (rectangles with particular fills and stroke settings), you can sample those swatches and apply their fills and stroke settings to other entities in your presentation.

Special Effects

Create *clipping masks* to create special effects in your presentation.

Clipping Masks

Entities, such as ellipses or rectangles, can be used as clipping masks. Clipping masks are used to "mask out" portions of the model, image, or other entities, underneath the mask. For example, if you place an ellipse over an inserted image and use the ellipse as a clipping mask, only the portion of the image within the ellipse will be shown. Clipping masks are a great mechanism for presenting only the most important features on a page.
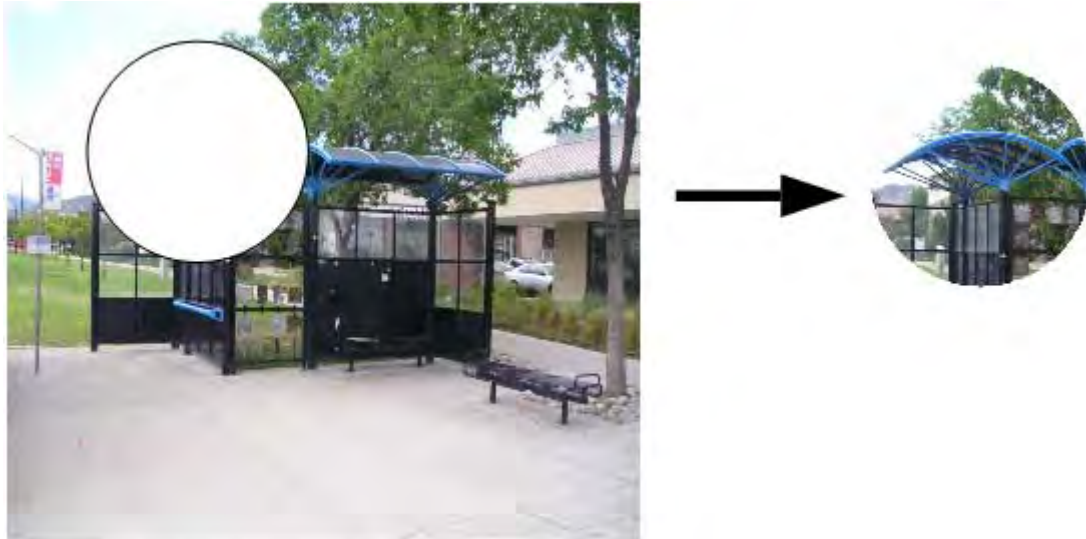
The LayOut User Interface

This section of the user's guide covers the LayOut user interface, including menus, toolbars, dialog boxes, and the presentation area.
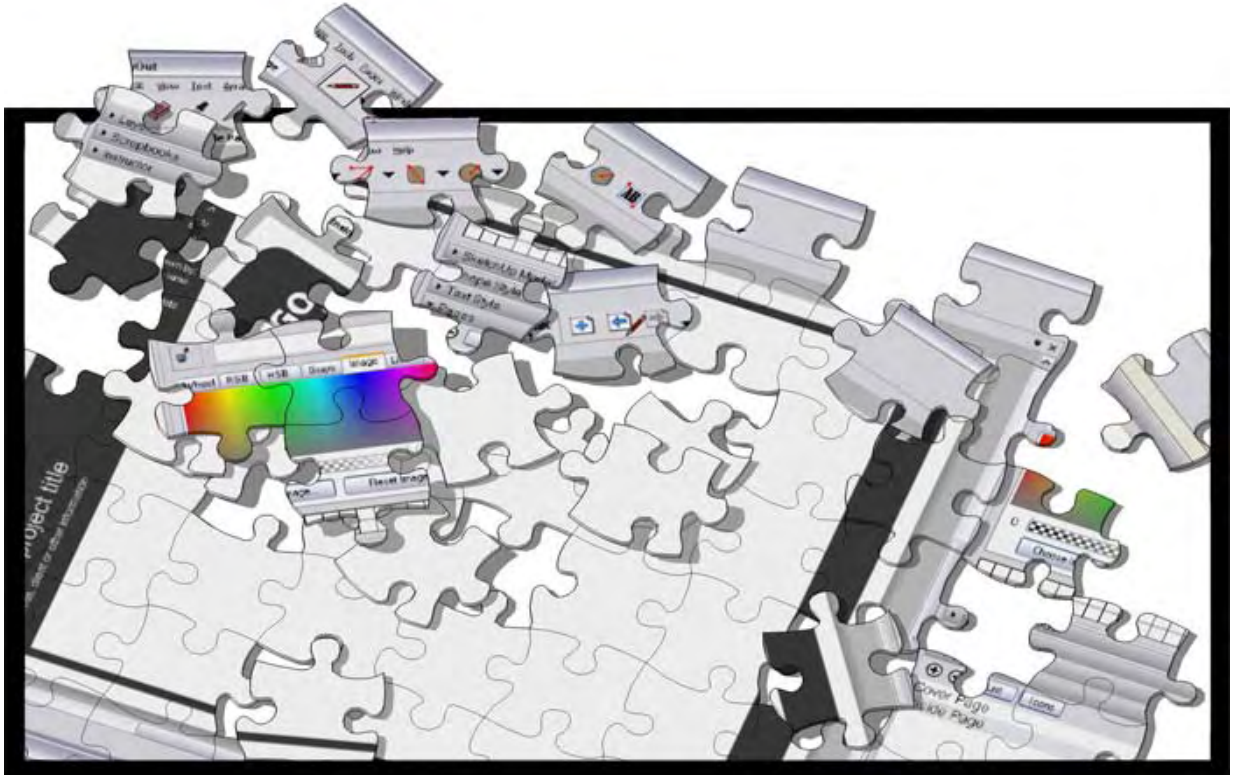
Introduction to the LayOut Interface

The LayOut user interface is designed to be simple and easy to use. The main parts of the LayOut user interface are the title bar, the menus, the toolbar, the presentation area, the status bar, and the value control box.
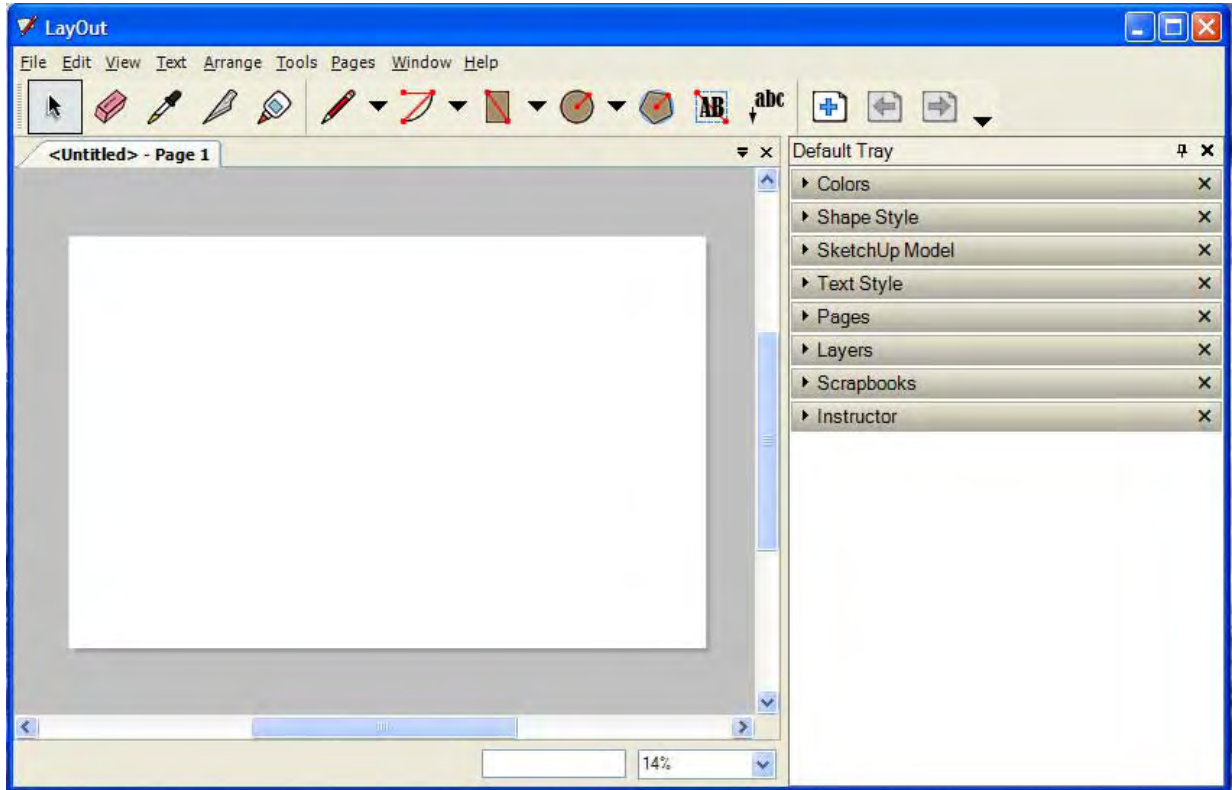
Title Bar

The title bar (at the top of LayOut) contains the standard Microsoft Windows controls (close, minimize, and maximize) on the right, and the name of the currently opened file.

A blank drawing area appears when you start LayOut and the name of the currently opened file is "Untitled" in the presentation tab, indicating that you have not yet saved your work.

Menus

The majority of LayOut tools, commands, and settings are available within the menus. The menus that appear by default are: File, Edit,View, Format, Arrange, Tools, Pages, Window, Help.

Toolbar

The Toolbarcontains a default set of tools and controls. Controls can be added to the toolbars below the menus using the View > Customize Toolbar menu item.

Undocking a Toolbar

Toolbars can be undocked. Click and hold on the toolbar grip (on the left-side of the toolbar) to undock and reposition the toolbar.
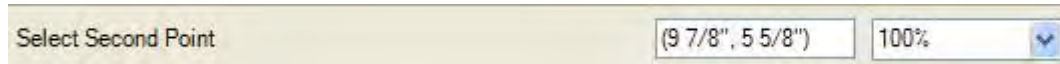
Presentation Area

The *presentation area* is the rectangular area below the toolbar where you create your presentation.

Note - You can have multiple presentations open at the same time. Each will appear under its own tab below the toolbar.

Status Bar

The status bar is the long gray rectangular area at the bottom of the drawing area.

The left side of the status bar displays useful tips for the currently used tool, including special functions accessible using keyboard shortcuts. Watch the status bar to discover advanced capabilities of each of the LayOut tools.

Note - Use the resize handle to make the drawing area larger so you can see the entire message in the status bar.

Value Control Box (VCB)

The value control box (VCB) is located on the right side of the status bar and contains coordinates for elements on a page. The coordinates 0,0 represents the upper-left corner of each page.You can also enter values into the VCB to manipulate entities while they are drawn, such as the number of sides in a polygon.

Zoom List

A list of pre-defined zoom values appears to the right o VCB. Click on one of these zoom values to zoom into your presentation a pre-defined amount.

File Menu

The File menu contains items that relate to LayOut presentation files, including commands to create, open, save, print, import, and export presentation files.

New

Use the New menu item to create a blank presentation area and begin a new LayOut presentation. LayOut will use the settings in the template file to define the initial presentation state.

Open

Use the Open menu item to launch the Open dialog box, allowing you to open a previously saved LayOut file.

Close

Use the Close menu item to close the active presentation window. This action is the same as clicking on the close button in your drawing's title bar. You will be prompted to save your changes if the presentation in the active drawing window has not been saved recently.

Save

Use the Save menu item to save the currently active LayOut presentation to your file system. When you close an unsaved document, or attempt to quit LayOut with unsaved open documents, LayOut will prompt you to save your work before continuing.

Save As

Use the Save As menu item to open the Save As dialog box which defaults to the current document's folder. You can use this dialog box to save the current drawing as a new document. This file can be assigned a new name, a new location, and a previous version of LayOut. The new file will becomes the current file in the drawing window.

Save As Template

Use the Save As Template menu item to save the current presentation as a template to your templates directory. The template will contain everything that currently appears in your presentation, including all entities, pages, and so on. To save a template:

1. Select File > Save As Template. The Save As Template dialog box appears.

2. Navigate to the directory where you want to save your template. You can save your template in the My Templates or subordinate folder.

3. Type the name of your template in the Template Name field.

4. Click the OK button. Your template is saved.

You can find your template by clicking on the Templates Tab when creating a new presentation.

Save As Scrapbook

Use the Save As Scrapbook menu item to save the current presentation as a scrapbook to your scrapbooks directory. The scrapbook will contain everything that currently appears in your presentation, including all entities, pages, and so on. To save a scrapbook:

1. Select File > Save As Scrapbook. The Save As Scrapbook dialog box appears.

2. Navigate to the directory where you want to save your template. You can save your template in the My Scrapbooks or subordinate folder.

3. Type the name of your template in the Scrapbook Name field.

4. Click the OK button. Your scrapbook is saved.

You can find your template by navigating to it in the Template manager.

Revert to Saved

Use the Revert to Saved menu item to revert your current document to its last saved state.

Insert

The Insert menu item is used to launch the Open dialog box, allowing you to insert a model, image, or text file into your presentation.

Export PDF

Use the Export PDF menu item to export your LayOut presentation as a PDF file.

Document Setup

Use the Document Setup menu item to configure properties for your entire presentation. Refer to the Document Setup section for further information.

Page Setup

Use the Page Setup menu item to access the page setup dialog box. This dialog box is used to select and configure printer and page properties to use for printing.

Print Preview

Use the Print Preview menu item to preview your presentation as it will appear on paper (using the print setup settings).

Print

Use the Print menu item to open the standard Print dialog box. This dialog box enables you to print the current presentation in LayOut's presentation area to the currently selected printer.

Exit

Use the Exit menu item to close the current file and the LayOut application window. LayOut will notify you to save your file if it has not been saved since the last change.

Edit Menu

The Edit menu contains items allowing you to perform editing functions on LayOut presentation. These menu items include those for creating and editing groups , layer operations, and standard cut, copy, paste commands.

Undo

Use the Undo menu item to undo the last drawing or editing commands performed. LayOut allows you to undo all operations you have performed, one at a time, to the state at which you saved your file. The number of possible sequential Undo commands is limited to 100 steps.

Note - Undo will undo any operation that creates or modifies geometry, but it does not undo changes to your point of view. Use the Previous menu item under the Camera menu to undo a point of view change.

Redo

Use the Redo menu item to return the last undo to its previous state.

Cut

Use the Cut menu item to remove the selected items from your presentation and places them in the clipboard. The contents of the clipboard can then be inserted back into any open LayOut document by using the Paste menu item.

Use cut, copy, and paste to move entities between open LayOut windows. Contents of the clipboard will remain on the clipboard until replaced with other content using an additional Cut or a Copy command.

Copy

Use the Copy menu item to copy the selected items to the clipboard without deleting the items from the presentation. The contents of the clipboard can then be inserted back into any open LayOut document by using the Paste menu item.

 Use cut, copy, and paste to move entities between open LayOut windows. Contents of the clipboard will remain on the clipboard until replaced with other content using an additional Cut or a Copy command.

Paste

Use the Paste menu item to copy the contents of the clipboard into the current LayOut document. The pasted items will be attached to and placed by the point of the cursor, allowing you to position the new geometry when it is pasted. Click to set the pasted items in place.

Use cut, copy, and paste to move items between open LayOut windows. Contents of the clipboard will remain on the clipboard until replaced with other content using an additional Cut or a Copy command.

Copy Style

Use the Copy Style menu item to copy the style of the currently selected entity into memory. You must select an entity before you can copy a style.

Paste Style

Use the Past Style menu item to apply a style from memory to the currently selected entity. You must copy a style before you can paste a style.

Duplicate

Use the Duplicate menu item to duplicate the currently selected entities.

Delete

Use the Delete menu item to remove the currently selected entities from your presentation.

Select All

Use the Select All menu item to select all selectable entities in the presentation. Hidden entities, any items on a hidden layer, or geometry that is clipped away using a section plane cannot be selected with the Select All menu item.

Select None

Use the Select None menu item to clear the selection set, deselecting any currently selected items in the presentation.

Move to Current Layer

Use the Move to Current Layer menu item to move the currently selected entities to the current layer.

Make Clipping Mask

Use the Make Clipping Mask menu item to create a clipping mask from two selected entities. See Creating a Clipping Mask for further information.

Release Clipping Mask

Use the Release Clipping Mask menu item to undo the creation of a clipping mask (returning the entities to their original form).

Group

The Group menu item creates a group entity from the selected entities.

Ungroup

Use the Ungroup menu item to divide the group back into its original entities.

Preferences

Use to Preferences menu item to open LayOut's application Preferences for setting various global settings for the program.

View Menu

The View menu contains menu items that alter the display of entities within your presentation.

Toolbars

The Toolbars submenu contains items for displaying and manipulating toolbars.

Main Toolbar

Select the Main Toolbar menu item to show/hide the main toolbar.

Customize

Select the customize menu item to customize or create a new toolbar. Refer to Customizing a Toolbar or Creating Customized Toolbars for further information.

Restore Default Workplace

Select the Restore Default Workplace menu item to restore LayOut to its default user interface settings.

Show/Hide Grid

Use the Show/Hide Grid menu item to display or hide a grid, to help with the positioning of entities, within the presentation area.

Pan

Use the Pan menu item to invoke a Pan Tool for

Zoom

Use the Zoom menu item to invoke the Zoom Tool to zoom in or out from your presentation. To zoom:

1. Select View > Zoom. The cursor changes to a magnifying glass.

2. Click and hold anywhere in the drawing area.

3. Drag the cursor up to zoom in (closer to the presentation) and down to zoom out (farther from presentation)

Zoom In

Use the Zoom In menu item to zoom in (closer to the presentation) by 20 percent .

Zoom Out

Use the Zoom Out menu item to zoom out (farther from the presentation) by 20 percent .

Actual Size

Use the Actual Size menu item to return the presentation area to its actual, 100%, size.

Zoom to Fit

Use the Zoom to Fit menu item to adjust the presentation area to fit inside the entire screen.

Full Screen

Use the Full Screen menu item to display your presentation in full-screen presentation mode. See [Full Screen Presentations](#) for further information.

Text Menu

The Text menu contains items for altering formats in your model.

Bold

Use the Bold menu item to apply a bold text style to the currently selected text entities.

Italic

Use the Italic menu item to apply an italic text style to the currently selected text entities.

Underline

Use the Underline menu item to apply an underline text style to the currently selected text entities.

Strikethrough

Use the Strikethrough menu item to apply a line through the middle of your text.

Align Left

Use the Align Left menu item to move the text to the left-most position within its text box.

Align Center

Use the Align Center menu item to center the currently selected text within its text box.

Align Right

Use the Align Right menu item to move the text to the right-most position within its text box.

Bigger

Use the Bigger menu item to increase the size of the currently selected text by one point.

Smaller

Use the Smaller menu item to decrease the size of the currently selected text by one point.

The Ligature submenu contains menu items to display two or more letters as a unit.

Baseline

The Baseline submenu contains menu items to adjust the vertical placement of text.

Use Default

Use the Use Default menu item to return text to the default baseline setting (no vertical adjustment).

Superscript

Use the Subscript menu item to place the currently selected text above the height of other text in the same line.

Subscript

Use the Subscript menu item to place the currently selected text below the height of other text in the same line.

Spacing

The Spacing submenu contains menu items to adjust the spacing between lines of text.

Single

Use the Single menu item to apply single spacing between lines of text.

1.5

Use the 1.5 menu item to apply single-and-a-half spacing between lines of text.

Double

Use the Double menu item to apply double spacing between lines of text.

Custom

Select the Custom menu item to display the Text Spacing dialog box. Select the Fixed radio button to enter a fixed number of points to apply between lines of text. Enter the number of points in the before box to identify the number of points to apply before each paragraph of text. Enter the number of points in the after box to identify the number of points to apply after each paragraph of text.

Arrange Menu

Entities can be side-by-side, or on top of each other, on a page. The Arrange menu contains items allowing you to arrange entities in the presentation area.

Bring to Front

Use the Bring to Front menu item to move the currently selected entities to the top on a page (before all other entities).

Bring Forward

Use the Bring Forward menu item to move the currently selected entities closer to the top on a page.

Send Backward

Use the Send Backward menu item to move the currently selected entities farther from the top on a page.

Send to Back

Use the Send to Back menu item to move the currently selected entities to the bottom on a page (behind all other entities).

Align

The Align sub-menu contains menu items for aligning entities. You must select two or more entities before using these menu items.

Left

Select the Left menu item to align all of the currently selected entities to the left-most entity in the selection set.

Right

Select the Right menu item to align all of the currently selected entities to the right-most entity in the selection set.

Top

Select the Top menu item to align all of the currently selected entities to the top-most entity in the selection set.

Bottom

Select the Bottom menu item to align all of the currently selected entities to the bottom-most entity in the selection set.

Vertically

Select the Vertically menu item to align all of the currently selected entities in a vertical column.

Horizontally

Select the Horizontally menu item to align all of the currently selected entities in a horizontal row.

Space

The Space sub-menu contains menu items for spacing entities evenly. You must select three or more entities before using these menu items.

Horizontally

Select the Horizontally menu item to space, horizontally, all of the currently selected entities evenly in the selection box.

Vertically

Select the Vertically menu item to space, vertically, all of the currently selected entities evenly in the selection box.

Center

The Center sub-menu contains menu items for centering entities on the page. You must select three or more entities before using these menu items.

Vertically on Page

Select the Vertically on Page menu item to center all of the currently selected entities vertically on the page.

Horizontally on Page

Select the Horizontally on Page menu item to center all of the currently selected entities horizontally on the page.

Flip

The Flip sub-menu contains menu items for flipping entities on the page.

Left to Right

Select the Left to Right menu item to flip an entity such that the part of the entity facing to left on the screen now faces to the right.

Top to Bottom

Select the Top to Bottom menu item to flip an entity such that the part of the entity facing to up on the screen now faces down.

Object Snap

Select the Object Snap menu item to snap entities to other entities in the drawing area.

Grid Snap

Select the Grid Snap menu item to snap entities to grid lines in the drawing area.

Tools Menu

The Tools menu provides access to all of the tools in LayOut. This menu represents one of three mechanisms for accessing these tools (additional mechanisms are the Toolbars and keyboard shortcuts).

Select

Use the Select menu item to invoke the Select Tool allowing you to select entities to modify.

Erase

Use the Erase menu item to invoke the Eraser Tool allowing you to erase entities.

Style

Use the Style menu item to invoke the Style Tool allowing you to sample and apply styles.

Split

Use the Split menu item to invoke the Split Tool allowing you to create a split between two overlapping shapes at the point where they overlap.

Join

Use the Join menu item to invoke the Join Tool allow you to join the overlapping lines of two shapes to create one shape.

Lines

The Lines sub-menu contains tools for drawing lines.

Line

Use the Line menu item to invoke the Line Tool allowing you to draw straight lines.

Curve

Use the Curve menu item to invoke the Curve Tool allowing you to draw curves.

Freehand

Use the Freehand menu item to invoke the Freehand Tool allowing you to draw freehand sketches.

Arcs

The Arcs sub-menu contains tools for drawing arcs.

Arc

Use the Radius Angle menu item to create an arc about a center point.

2 Point Arc

Use the 2 Point Arc menu item to create an arc from a starting and end point.

3 Point Arc

Use the 3 Point Arc menu item to create an arc about a pivot point.

Pie

Use the Pie menu item to create an arc about a center point. Lines will be drawn from the center point to the start and end of the arc to form a pie-like shape.

Rectangles

The Rectangles sub-menu contains tools for drawing Rectangles.

Rectangle

Use the Rectangle menu item to invoke the [Rectangle Tool](#) allowing you to create standard rectangles with square corners.

Rounded

Use the Rounded menu item to invoke the [Rounded Rectangle Tool](#) allowing you to created rectangles with rounded corners.

Lozenge

Use the Lozenge menu item to invoke the [Lozenge Tool](#) allowing you to create rectangles with rounded corners and sides.

Bulged

Use the Bulged menu item to invoke the [Bulged Tool](#) allowing you to create rectangles with square corners and rounded sides.

Circles

The Circles sub-menu contains tools for drawing circles and ellipses.

Circle

Use the Circle menu item to invoke the [Circle Tool](#) allowing you to create circles.

Ellipse

Use the Ellipse menu item to invoke the [Ellipse Tool](#) allowing you to create ellipses (ovals).

Polygon

Use the Polygon menu item to invoke the [Polygon Tool](#) allowing you to create multi-sided polygons.

Text

Use the Text menu item to invoke the [Text Tool](#) allowing you to write text.

Label

Use the Label menu item to invoke the [Label Tool](#) allowing you to create textual labels.

Pages Menu

The Pages menu contains items for working with individual pages in your presentation.

Add

Use the Add menu item to add a page to the presentation.

Duplicate

Use the Duplicate menu item to duplicate the current page in the presentation.

Delete

Use the Delete menu item to delete the current page from the presentation.

Previous

Use the Previous menu item to navigate to the previous page in the presentation.

Next

Use the Next menu item to navigate to the next page in the presentation.

Window Menu

The Window menu contains model settings and managers for your presentations. Model settings are dialog boxes with settings that affect the presentation, such as color and style. Managers are dialog boxes that manage a collection of something within your presentation such as pages, layers, and shapes.

Show/Hide Tray

Select the Show/Hide Tray menu item to display or hide the tray.

Colors

Select the Colors menu item to display the Colors settings dialog box.

Shape Style

Select the Shape Style menu item to display the Shape Style settings dialog box.

SketchUp Model

Select the SketchUp Model menu item to display the SketchUp Model settings dialog box.

Text Style

Select the Text Style menu item to display the Text Style settings dialog box.

Pages

Select the Pages menu item to display the Page Manager dialog box.

Layers

Select the Layers menu item to display the Layers Manager dialog box.

Scrapbooks

Select the Scrapbooks menu item to display the Scrapbook Manager dialog box.

Instructor

Select the Instructor menu item to display the Instructor dialog box. The Instructor dialog box provides help with the currently active tool.

Note - Uncheck the checkbox next to any of the previously mentioned menu items to remove the corresponding dialog box from the default dialog box tray.

New Tray

Select the New Tray menu item to create another dialog box tray on the right-side of the presentation area. Use this option only if you want different trays containing different combinations of settings and manager dialog boxes.

Note - The contents of the Window menu change when you add a new dialog box tray. The Colors, Shape Style, SketchUp Model, Text Style,

Pages, Layers, Scrapbooks, and Instructor menu items become sub-menu items under a new Default Tray sub-menu. There will also be a new sub-menu representing the new tray that you added.

New Window For <Untitled>

Select the New Window For <Untitled> menu item to create a new presentation using the current template.

(Open Documents)

The (Open Documents) menu items represent a dynamically generated list of all your open LayOut files . Select the file you want to activate from this menu to switch between files.

Help Menu

The Help menu contains items relating to receiving help with the product. These items include the LayOut on-line user's guide, a quick reference card, and video tutorials.

LayOut Help

The LayOut Help menu item opens LayOut's online user's guide. The user's guide contains reference information for LayOut.

Online Help Center

The LayOut Web Site menu item invokes your default web browser and connects you to the [Online Help Center](). The web site contains LayOut support forums, additional training information, and access to new software releases.

Tip of the Day

The Tip of the Day menu item invokes the Tip of the Day dialog box containing useful information to help you learn SketchUp.

Quick Reference Card

The Quick Reference Cardmenu item is used to display LayOut's Quick reference card in your default PDF viewer.

Check for Update

The Check For Update menu item checks to see if you have the most current version of SketchUp. You will be prompted to download the current version if your version is out-of-date. A Internet connection is required to use this feature.

SketchUp Community

The SketchUp Community menu item launches a the SketchUp user's forum in your default web browser.

Send a Suggestion

The Send a Suggestion menu item launches the Google SketchUp Help Center in your default web browser. This web site will prompt you to fill out suggestion form to be submitted to Google. This form contains fields for your name, email, and a comment related to one of the following categories: bug report, feature request, comment, training question.

Video Tutorials

The View Tutorials menu item launches the Video Tutorials portion of the LayOut web site. Select this command to open your default web browser and connect to the LayOut online video tutorials.

About LayOut

The About LayOut menu item activates the About LayOut dialog box. This dialog box provides information about your LayOut version and license.

Toolbars

LayOut's toolbar contains a variety of tools and operations to help you create your presentation.

The Default Toolbar

The Default Toolbar contains all of the tools and menu items necessary for a new user to become acquainted with LayOut. These tools are the Select Tool, Eraser Tool, Style Tool, Split Tool, Join Tool, Line Tools, Arc Tools, Rectangle Tools, Circle Tools, Polygon Tool, Text Tool, and Label Tool. The default toolbar also contains the Add Page command, Previous command, Next command, and Toolbar Options arrow.

Customizing a Toolbar

You can add or remove tools and commands from any toolbar.

Adding a Tool or Command to a Toolbar

To add a tool or command to a toolbar:

1. Select the View > Toolbars > Customize menu item. The Customize dialog box appears. See The Customize Dialog Box for further information.

2. Click on the Command tab. The Commands panel is displayed. This panel contains a list of tool and commands categories as well as all tools and commands in each category.

3. Click and hold on a tool or command name in the list of tools and commands.

4. Drag the tool or command name to the desired position on the toolbar. An insertion cursor should appear.

5. Release the mouse button to place the tool or command on the toolbar.

   Note - You can also click the toolbar options arrow on the toolbar to add or remove buttons from a toolbar or display the Customize dialog.

Removing a Tool or Command from a Toolbar

To remove a tool or command from a toolbar:

1. Select the View > Toolbars > Customize menu item. The Customize dialog box appears. See The Customize Dialog Box for further information.

2. Click and hold on a tool or command name in toolbar.

3. Drag the tool or command name anywhere outside of the toolbar.

4. Release the mouse button to remove the tool or command from the toolbar.

   Note - You can also click the toolbar options arrow on the toolbar to add or remove buttons from a toolbar or display the Customize dialog.

Moving a Tool or Command on a Toolbar

To move a tool or command on a toolbar:

1. Select the View > Toolbars > Customize menu item. The Customize dialog box appears. See The Customize Dialog Box for further information.

2.   Click and hold on a tool or command name in toolbar.

3.   Drag the tool or command name to the desired position on the toolbar. An insertion cursor should appear.

4.   Release the mouse button to reposition the tool or command on the toolbar.

Creating Customized Toolbars

You can create your own customized toolbars. To create a customized toolbar:

1.   Select the View > Toolbars > Customize menu item. The Customize dialog box appears. See The Customize Dialog Box for further information.

2.   Click on the New button. The New Toolbar dialog box appears.

3.   Type a toolbar name in the Toolbar name field.

4.   Select a location for the toolbar from the Location drop-down list.

5.   Click the OK button. An empty toolbar will appear at the chosen location.

6.   Click on the Command tab. The Commands panel is displayed. This panel contains a list of tool and commands categories as well as all tools and commands in each category.

7.   Click and hold on a tool or command name in the list of tools and commands.

8.   Drag the tool or command name to the desired position on the toolbar. An insertion cursor should appear.

9.   Release the mouse button to place the tool or command on the toolbar.

Note - You can also click the toolbar options arrow on the toolbar to add or remove buttons from a toolbar or display the Customize dialog.

The Customize Dialog Box

The Customize dialog box contains options for creating and customizing toolbars.

Toolbars Tab

The Toolbars tab contains controls for activating, creating, renaming, deleting, and resetting toolbars.

Toolbars : The toolbars list contains all toolbars in LayOut. Check the checkbox to show the corresponding toolbar. Uncheck the checkbox to hide the corresponding toolbar.

New: Click the New button to add a new toolbar. Refer to Creating Customized Toolbars for further information.

Rename: Click the Rename button to rename the currently selected toolbar. Enter a new toolbar name in the Toolbar name field and click the OK button.

Delete: Click the Delete button to delete the currently selected toolbar.

Reset: Click the Reset button to remove all of the customizations made to the currently selected toolbar.

Commands Tab

The Commands tab contains tools and commands that can be added to your toolbar. Refer to Adding a Tool or Command to a Toolbar for further information.

The Options tab contains various options for personalizing your toolbars.

Always Show Full Menus: Check the Always show full menus checkbox to display all menu items when you click on a menu heading.

Show Full Menus After a Short Delay: Check the Show full menus after a short delay checkbox to display all menu items after a short delay.

Large Icons on Menus: Check the Large Icons on Menus to increase the size of the icons on the menu.

Large Icons on Toolbars: Check the Large Icons on Toolbars to increase the size of the icons on the toolbars.

List Font Names in their Font: Check the List font names in their font checkbox to

Show ScreenTips on Toolbars: Check the Show ScreenTips on Toolbars to display a ToolTip when the cursor is over a toolbar icon.

Show Shortcut Keys in ScreenTips: Check the Show Shortcut Keys in ScreenTips to display the shortcut key as part of a ToolTip.

Floating Toolbar Fade Delay: Click on up or down arrows to increase or decrease the toolbar fade delay accordingly. The fade delay applies to toolbar that has been undocked or moved away from its default location in LayOut.

Menu Animations: Select a menu animation to apply an animation effect to menus when you select a menu.

Context Menus

Menu items also appear in special *context menus* which are menus whose contents vary depending on the context in which they are invoked (usually on one or more entities in the drawing area). The following image shows a context menu for a Face entity.
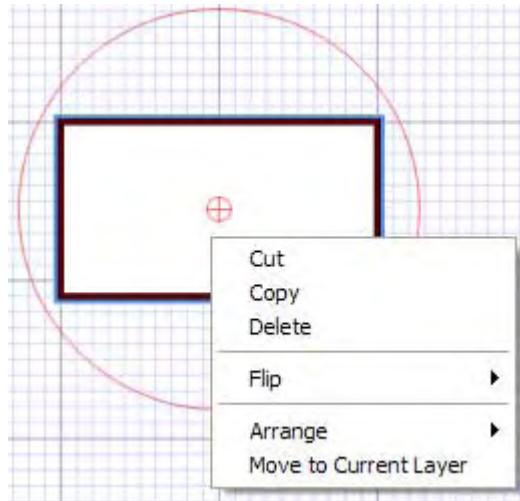
Context Clicking

Context menus are invoked by selecting one or more entities and clicking the right mouse button. This operation is referred to as a *context-click*.

Detailed information on the context menu for each entity appears in the Entities section of this user's guide.

Dialog Box Trays

Dialog box trays are used to hold settings and manager dialog boxes. LayOut comes with one default tray containing all of the settings and managers in LayOut (under the Window menu).

Manipulating Dialog Boxes in a Dialog Box Tray

A dialog box tray refers to a series of dialog boxes snapped together at their bottom and top edges such that they form a stack. The following image contains a dialog box stack with Layers dialog box opened in the middle.

You can manipulate the dialog box tray and dialog boxes in a tray in the following ways:

- Move the entire dialog box tray by clicking, holding, and moving the dialog box tray's title bar.

- Double-click on any dialog box's title bar to minimize or maximize a dialog box within the stack.

- Move a dialog box up or down by clicking, holding, and moving the dialog box up or down in the tray.

- Click on the close icon to remove the dialog box from the dialog box tray. Or, uncheck the checkbox next to the corresponding dialog box in the Window menu to remove the dialog box from the tray.

Resizing The Dialog Box Tray

The cursor changes to a resize handle cursor when you hover the cursor over a corner or side of the dialog box tray. Click, hold, and move to resize the dialog box tray.

Creating a New Dialog Box Tray

You can create additional trays containing just the settings and managers you use most often. To create a customized dialog box tray:

1. Select Window > New Inspector Tray

2. Type the name of the new tray in the Name field.

3. Check the checkboxes next to the dialog boxes you want to appear in the tray.

4. Click the Add button. The new dialog box tray is added to the Window menu.

The Window menu no longer displays the dialog boxes for the default dialog box tray. Instead, the Window menu will have a sub-menu for the default dialog box tray and for each dialog box tray you create. This submenu contains menu items representing each dialog box in the tray.

Deleting a Dialog Box Tray

You can delete any dialog box tray that you create. Select Window > `dialog box tray name` > Delete Tray to delete the dialog box tray .

Renaming a Dialog Box Tray

You can rename any dialog box tray, including the default dialog box tray. To rename a dialog box tray:

1. Select Window > `dialog box tray name` > Rename Tray. The Rename Inspector Tray dialog box is displayed.

2. Type a new name in the Name field.

3. Click on the Rename button. The dialog box tray is renamed.

Inference

LayOut features a sophisticated a geometric analysis engine, called the inference engine, allowing you to easily align entities on the presentation area. This engine also helps you draw very accurately by inferring points from other points as you draw while also providing you with visual cues.

Inference Cues

The inference engine uses ToolTip cues, appearing automatically while working on the model, to identify significant points in your presentation. These cues make complex inference combinations clear to you as you draw

Additionally, the inference engine uses specific colors to indicate its type of inference.

Inference Types

There are two main types of inferences: point and linear. LayOut often combines inferences together to form a complex inference.

Point Inference

A point inference is based on an exact point of your cursor in your model.

On Point The green On Point inference identifies the end of a entity.

Midpoint: The cyan Midpoint inference indicates the middle point on a line.

Intersection: The black Intersection inference indicates an exact point where a line, arc, or curve, intersects another line, arc, or curve.

On Shape: The blue On Face inference identifies a point which lies on a shape.

On Line: The red On Edge inference identifies a point that lies along a line.

On Curve: The red On Curve inference identifies a point that lies long an arc or bezier curve.

Linear Inference

A linear inference snaps along a line or direction in space. In addition to a ToolTip, a linear inference sometimes displays a temporary dotted line while you draw.

On Axis: The On Axis inference indicates a linear alignment to one of the drawing axes. The solid line is drawn in the color associated with the corresponding axis (red or green).

From Point: The From Point inference indicates a linear alignment from a point along the Drawing Axes directions. The dotted line is drawn in the color associated with the corresponding axis (red or green).

Perpendicular: The Perpendicular magenta line indicates perpendicular alignment to a line.

Parallel: The Parallel magenta line indicates a parallel alignment to a line.

Encouraging an Inference

At times, the inference you need may not come up immediately or LayOut might choose alignments with the wrong geometry. In these cases, you can increase the chances of a particular alignment by temporarily keeping your mouse cursor stationary over the particular location that you want LayOut to infer from. When the ToolTips appears, LayOut will briefly prioritize that alignment as you continue drawing. For example, to encourage LayOut to create a line to match another, parallel, line (such as when drawing the third line of a rectangle):

1. Create the first two lines of a rectangle with the first line being parallel to the red axes.

2. Click on the start point of the third line and move the line tool as though you were creating the third line parallel to first line. As you begin to move the line tool, the line should appear in red.

3. Move the line tool to the approximate location where the end of the third line should appear. A dotted line, with the color of the corresponding axes (green) will follow the line tool to indicate you are directly inline with the start point of the first line.

4. Click when the line you are drawing is indicated by an axes color (red) and is directly perpendicular to the green dotted line.

Tools

This section of the user's guide covers the tools within LayOut. Tools in this section are covered in the order they appear within the Tools menu.
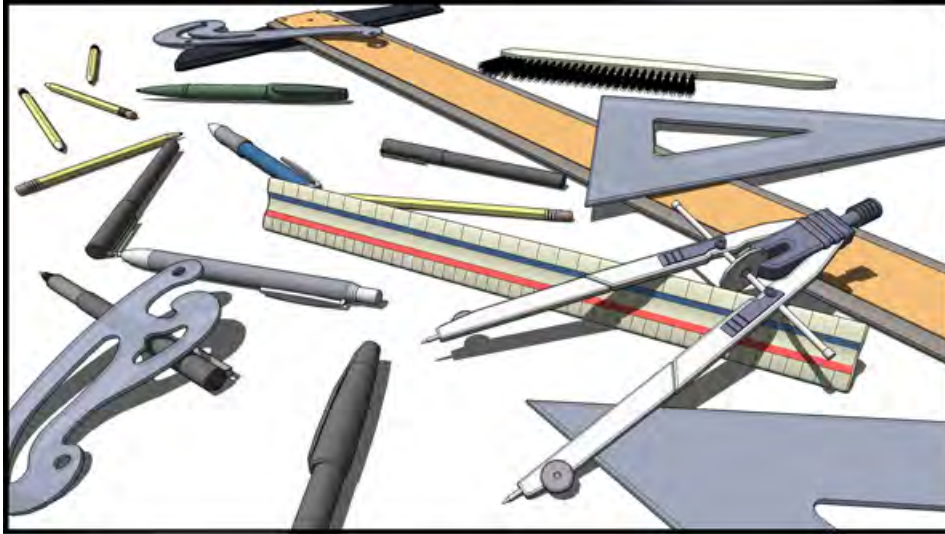
Select Tool

The Select Tool is used to specify the select and modify entities. The entities that are included in a selection are referred to as the *selection set*.

Once entities are selected, the y can be moved, resized, or rotated using the Select Tool. Activate the Select Tool from either the [toolbar](#) or the [Tools menu](#).

Selecting a Single Entity

LayOut allows you to make both single-entity and multiple-entity selections. To select a single entity:

1.   Select the Select Tool. The cursor changes to an arrow.

2.   Click on an entity. The selected entity is highlighted in blue and bounded by a red rectangular bounding box and rotation circle.

Selecting Multiple Entities

Multiple-entity selections are useful when you want to perform a single operation on several entities (the selection set). Multiple-entity selections use an expandable *selection box* to surround the entities you want in the selection set. To select multiple entities:

1.   Select the Select Tool. The cursor will change to an arrow.

2.   Click and hold the mouse button a short distance away from the entities you want to select to establish the selection starting point.

Clicking to the right-side and dragging to the left, called a *crossing selection*, selects any elements within the selection rectangle, including those that are only partially contained in the rectangle. The following images show a right-to-left selection selecting all four entities, though only two are completely within the bounds of the selection box.
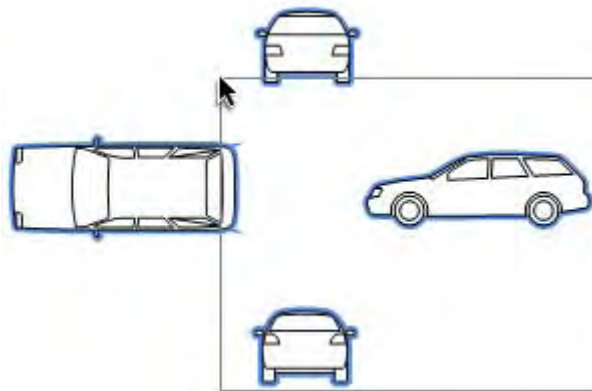
Clicking to the left-side of the entities and dragging right, called a *window selection*, selects only those elements completely within the selection rectangle. The following image shows a left-to-right selection selecting two entities because only two entities (the left and top cars) are completely within the bounds of the selection box.
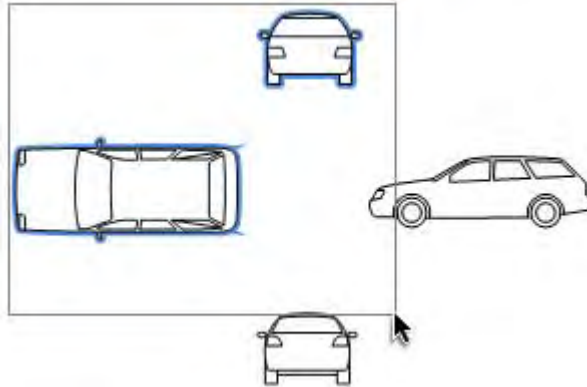
1. Drag the mouse to the opposite corner of the selection starting point.

2. Release the mouse button when all of the elements are either partially included (left-to-right selection) or fully included (right-to-left selection) in the selection box.

Moving Entities

Use the Select tool to move entities on a page. To move an entity:

1. Select the Select Tool. The cursor changes to an arrow.

2. Click on an entity. The selected entity is highlighted in blue and bounded by a red rectangular bounding box and rotation circle.

3. Move the cursor over the entity until the move icon appears.

4. Click and hold the mouse button to begin the move operation.

5. Move the cursor to move the entity. The selected entity will follow the cursor.

6. Release the mouse button at the destination point to finish the move operation.

Rotating Entities

Use the Select tool to rotate entities on a page. To rotate an entity:

1. Select the Select Tool. The cursor changes to an arrow.

2. Click on an entity. The selected entity is highlighted in blue and bounded by a red rectangular bounding box and rotation circle.

3. Move the cursor over the red rotation circle until the rotate icon appears.

4. Click and hold the mouse button to begin the rotate operation.

5. Move the cursor around the red rotation circle. The angle of rotation appears in the VCB.

6. Release the mouse button to finish the rotate operation.

Moving the Center of Rotation

Shapes are rotated about a center. This center, called the *center of rotation*, defaults to the center of the shape and is identified by a small red circle. Move the center of rotation to rotate the shape around another specific point on the page (a point other than the center of the shape itself). To move the center of rotation:

1. Select the Select Tool. The cursor changes to an arrow.

2. Click on an entity. The selected entity is highlighted in blue and bounded by a red rectangular bounding box and rotation circle.

3. Move the cursor over the small circle in the middle of the bounding box (the center of rotation). The move center of rotation icon appears.

4. Click and hold the mouse button to begin the move operation.

5. Move the cursor to move the center of rotation. The small and large red circles follow.

6. Release the mouse button at the destination point to place the center of rotation at a new point on the page.

Note - Return the center of rotation to a the center of a shape by moving it to the center of the shape. The small circle will snap to the center of the shape to help you identify the default center of rotation.

Scaling Entities

Shapes can be scaled using the resize grips on the bounding box. To scale an entity:

1. Select the Select Tool. The cursor changes to an arrow.

2. Click on an entity. The selected entity is highlighted in blue and bounded by a red rectangular bounding box and rotation circle.

3. Move the cursor over a edge or corner on the red rectangular bounding box. The edge or corner will become a bold red color.

4. Click and hold the mouse button to begin the scale operation.

5. Move the cursor to scale the entity.

6. Release the mouse button to finish the scale operation.

Maintaining Aspect Ratio While Scaling
Press and hold the Shift key while scaling an entity to retain the aspect ratio of the entity.

Create a Scaled Copy
Press and hold the Ctrl key while scaling to create a scaled copy of the original entity.

Scaling About the Center

Press and hold the Alt key while scaling to scale about the center of the entity.

Eraser Tool

Use the Eraser Tool to erase entities. Activate the Eraser Tool from either the toolbar or the Tools menu.

Erasing Entities

As mentioned previously, the Eraser Tool is used to erase entities in the presentation area. To erase entities:

1. Select the Eraser Tool. The cursor changes to an eraser with a small crosshair.

2. Click on an entity to erase it.

3. (alternatively) Hold down the mouse button and drag the cursor over several entities.

4. (alternatively) Release the mouse button to delete the entities.

    If you accidentally select geometry you do not wish to delete, press the ESC key to cancel the erase operation before it deletes your selection.

    Tip - Try erasing entities slowly if you continuously skip over entities you want to erase.

    Tip - It is usually faster to erase a large number of entities by selecting the entities with the **Select Tool** and pressing the Delete key on your keyboard. You can also delete selected items by selecting Erase from the Edit menu.

    Tip - Select the Edit > Undo menu item to undo any erased entities.

✎ Style Tool

The Style Tool is used to sample and apply styles to entities. Activate the Style Tool from either the [toolbar](#) or the [Tools menu](#).

Sampling and Applying Styles

To sample and apply a style:

1. Select the Style Tool. The cursor changes to an eye dropper.

5. Click on any entity in the presentation area or scrapbook to sample its style. The cursor changes to a paint bucket. Certain styles can be sampled from certain entities. Certain entities can only receive certain styles. See the Entity Styles Compatibility for more information.

3. Move your mouse over the entity where you want to apply the style.

2. Click again to apply the style to the entity.

Note - Press the ESC key at any point during the operation to start over.

Entity Styles Compatibility

Fill and Stroke combinations of any shape, image, text box, or model can be applied to another shape, image, text box, or model. The fill of a model is applied on top of the model's background . The stroke is applied to a shapes edge or image, text box's or model's bounding box. You cannot sample and apply fill and stroke independently.

✎ Split Tool

Use the Split Tool to create a split between two overlapping shapes at the point where they overlap (or to split individual lines). Use the Split Tool and Join Tool to create unique complex shapes. Activate the Split Tool from either the toolbar or the Tools menu.

Note - See Creating Complex Shapes for further information on using the Split and Join tools.

Splitting Two Shapes

To create a split at the intersection of two overlapping shapes:

1. Select the Split Tool.

4. Click on one of the intersections between the first and section shape (where their edges overlap). Intersections are identified by a black square and the "Intersection" tooltip. The shape will briefly highlight in blue.
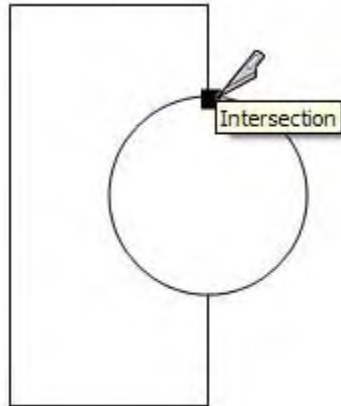
3. Click on another intersection between the first and second shape. The shape will briefly highlight in blue. If there are only two intersections between the shapes, the shapes will be split and a new shape, composed of the intersecting edges of the two intersecting shapes, is created. You can move the shapes apart to see this new shape.
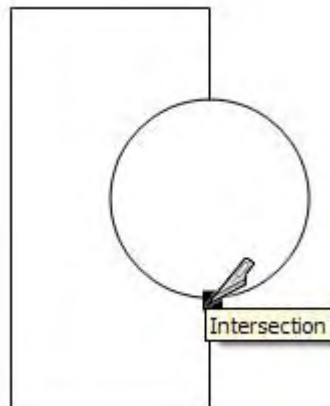
4. (optional) Repeat step 3 for additional intersections between the first and second shape (if there are more than two points on the two shapes where the shapes intersect).

Note - Press the ESC key at any point during the operation to start over.

Splitting a Line or Edge

You can use the Split Tool to split any line or edge in your presentation. To split a line or edge:

1. Select the Split Tool.

5. Move the cursor over any line or edge. A red triangle appears.
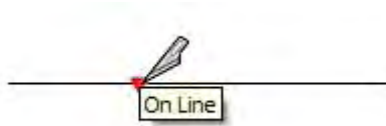
3. Click to split the line.

✐ Join Tool

Use the Join Tool to join shapes where lines share a vertex. Use the Split Tool and Join Tool to create unique complex shapes. Activate the Join Tool from either the toolbar or the Tools menu.

Note - See Creating Complex Shapes for further information on using the Split and Join tools.

Joining Two Shapes

To join two shapes:

1. Select the Join Tool. The cursor changes to a glue bottle.

4. Click on the first shape. The shape will highlight in blue. Notice that the arc shape and rectangle shape do not have edges where they are to be joined.

Note - The two shapes can only join when there are no sides where they are to be joined. For example, you cannot overlap two rectangles and join them. Instead, you must first split them at the points where they overlap and then perform the join operation.
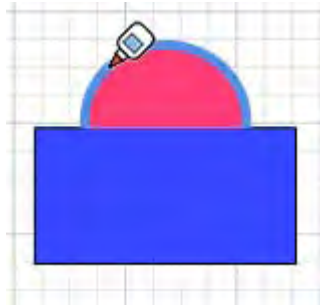
3. Click on the second shape. The shape will briefly highlight in blue. The two shapes will now be joined. The second shape will inherit the fill color of the first shape.

Note - Press the ESC key at any point during the operation to start over.

✏ Line Tools

Use the
Line Tools to draw straight lines (Line Tool), curves (Curve Tool), or freehand lines (Freehand Tool). Activate the Line Tools from either the toolbar or the Tools menu.

This topic covers using the Line Tool. Refer to the Curve Tool and Freehand Tool topics for further information about those tools.

Drawing a Straight Line

To draw a Line:

1. Select the Line Tool. The cursor changes to a pencil.

4. Click to set the starting point of your line.

> **Note -** Press the ESC key at any point during the operation to start over.

3. Move the mouse in the direction you want to make a line.

4. Click a second time on the endpoint of your line. This ending point can also be the starting point of another line.
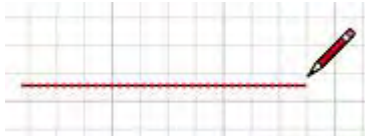
> **Tip -** Alternately, you can click and hold the mouse button to set the starting point of the line, and drag outward without releasing the button to set the length. Release the mouse button to complete the line.

Creating an Exact Duplicate of a Line

Double-click after creating a line to create an additional line the exact length of the first line. If you double click right after creating a line, the second line will be added to the first line (creating one long line with two equal segments). However, if you create a line then press the Esc key and then double-click to create another, independent line, it will be the same length as the first line.

Locking a Line Horizontally or Vertically

Press and hold the Shift key while drawing a line to lock the line to the red or green axis.

Drawing a Closed Shape

The Line Tool will remain at the ending point of every line you create. This end point is automatically treated as a starting point for another line. You can create another line by moving the cursor and clicking again from this starting point. To draw a closed shape:

1. Select the Line Tool. The cursor changes to a pencil.

5. Click to set the starting point of your line.

> **Note -** Press the ESC key at any point during the operation to start over.

3. Move the mouse in the direction you want to make a line.

2. Click a second time on the endpoint of your line. This ending point is the starting point of another line.

3. Move the mouse in another direction. The current fill color will fill in the shape as you draw.

5. Click a third time to set the distance of the second line.

4. Move the mouse to the starting point of the first line.

5. Click a fourth time to set the distance of the third line and create a closed triangular shape.
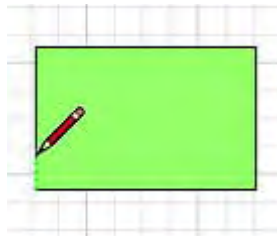
Modifying a Shape

You can modify a shape created with the Line Tool by moving lines or vertexes where lines meet. To modify a shape created with the Line Tool:

1. Select the Select Tool. The cursor changes to an arrow.

6. Click and hold the mouse button while the cursor is on an edge or vertex of the shape. Modifiable edges highlight in red. Vertex grips appear as a green circle.

7. Move the mouse cursor to modify the shape.

8. Release the mouse button to finish modifying the shape.

Specifying Exact Line Values

The VCB displays the length of your line while you are drawing lines. You can also specify an line length value using the VCB.

Creating a Line of a Specific Length

Specify a line length in the VCB by typing in the desired length after placing the starting point of the line and pressing the Enter or Return key. LayOut will use the current document units setting if you only type in a numerical value. You can also specify either Imperial (1") or Metric (1cm) units at any time, regardless the model units setting.

Creating a Line Using Absolute Coordinates

You can use absolute coordinates to enter a precise dimension. Put parentheses around numbers in the VCB to indicate absolute coordinates. For example, typing (0,0), pressing the Enter key, and then entering (2,2), and pressing Enter key will create a line starting at the origin and extending to 2,2. This feature is useful to create entities in exact locations in your presentation.

Note - Typing comma separated values without parentheses results in distances relative to a starting point. For example, typing typing (3,3), pressing the Enter key, and then entering 5,5, and pressing Enter key will create a rectangle starting at the 3,3 and extending to 8,8.

Drawing Lines by Inference

The Line Tool uses LayOut's sophisticated geometric inference engine to help you accurately draw and place lines. The inference decisions, made by the inference engine, are displayed in the drawing area as inference lines and inference points. These lines and points show precise alignment between the line you are drawing and the geometry of your model. Refer to the inference engine topic for additional information.

🖊 Freehand Tool

The Freehand Tool allows you to draw irregular shapes. Activate the Freehand Tool from either the toolbar or the Tools menu.

Drawing Irregular Shapes

To draw an irregular shape:

1. Select the Freehand Tool. The cursor will change to a pencil with a freehand curve.

2. Click and hold to place the starting point of your irregular shape.

3. Drag the cursor to draw. The current fill color will fill in the shape as you draw.

4. Release the mouse button to stop drawing.
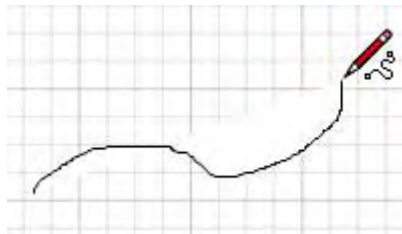
5. End your line at point where you started drawing to draw a closed shape with the Freehand Tool.

Ͱ Curve Tool

Use the Curve Tool to create curve entities. A curve is created by manipulating a handle, or end point of the curve to alter the curve's shape. Activate the Curve Tool from either the toolbar or the Tools menu.

Drawing a Curve

To draw a curve:

1.   Select the Curve Tool. The cursor changes to a pencil with a curve.

   6.   Click to set the starting point of your curve.

   7.   Move the cursor to the ending point of the curve.

   8.   Click and hold the mouse button.

   9.   Move the cursor away from the ending point of the curve. A handle will extend from the ending point.
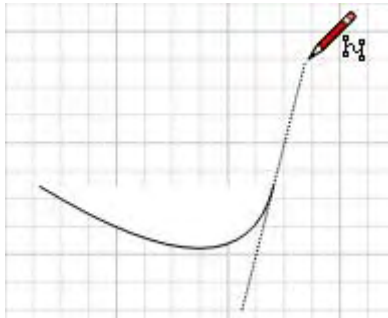
   6.   Move the cursor clock wise or counter-clockwise to set the bulge of the curve.

2.   Release the mouse button to finish creating the curve. A new curve is started at the ending point of your previous curve.

Note - Press the ESC key at any point during the operation to start over.

Arc Tools

There are four Arc Tools in LayOut. Each Arc Tool is used to create Arc entities using a different series of mouse movements. Activate the Arc Tools from either the toolbar or the Tools menu.

Creating an Arc About a Center Point

Use the Arc menu item to create an arc about a center point. To create an arc about a center point:

1. Select the Arc Tool. The cursor changes to a pencil with an arc.

7. Click to establish a center point. A small circle appears.

8. Move the cursor away from the center point.

9. Click again to establish the starting point of the arc.

10. Move the cursor in a clockwise or counter-clockwise direction to draw the arc.

11. Click again to finish the drawing operation.

> **Note -** Press the ESC key at any point during the operation to start over.

Creating an Arc Using a Pivot Point

Use the 3 Point Arc menu item to create an arc about a pivot point. To create an arc about a pivot point:

1. Select the 3 Point Arc Tool. The cursor changes to a pencil with an arc.

2. Click to establish a starting point of the arc.

3. Move the cursor away from the starting point.

4. Click again to establish a pivot point. A small X appears.

5. Move the cursor away from the X. An arc is drawn.

6. Click again once the arc is at the desired size. The arc is drawn.

> **Note -** Press the ESC key at any point during the operation to start over

Creating an Arc From a Starting and Ending Point

Use the 2 Point Arc menu item to create an arc by establishing a start point, an end point and then a bulge. To create an arc from a start point, end point, and bulge:

1. Select the 2 Point Arc Tool. The cursor changes to a pencil with an arc.

2. Click to place the starting point of your arc.

3. Move the cursor to the ending point of your chord.

4. Click to place the ending point of your arc. A straight line is created.

5. Move your cursor perpendicular to the straight line to adjust the bulge distance. A straight line will extend perpendicular from the straight line.

6. Click to set the bulge distance.

 Note - Press the ESC key at any point during the operation to start over.

Creating a Pie Piece

Use the Pie menu item to form a shape of a piece of pie. To create a piece of pie:

1. Select the Pie Tool. The cursor changes to a pencil with an arc.

2. Click to establish a center point. A small circle appears.

3. Move the cursor away from the center point.

4. Click again to establish the starting point of the arc.

5. Move the cursor in a clockwise or counter-clockwise direction to draw the arc.

6. Click again to finish the drawing operation.

 Note - Press the ESC key at any point during the operation to start over.

Rectangle Tools

There are four Rectangle Tools in LayOut. Each Rectangle Tool is used to create a different type of rectangle. Each tool works in exactly alike. Activate the Rectangle Tools from either the toolbar or the Tools menu.

Drawing a Rectangle, Rounded Rectangle, Lozenge, or Bulged Rectangle

To draw a rectangle:

1. Select any rectangle tool. The cursor changes to a pencil with a rectangle.

2. Click to set the starting point of the rectangle.

3. Move the cursor diagonally from the starting point to expand the rectangle.

4. Click again to set the second corner point of the rectangle.

> **Note -** Press the ESC key at any point during the operation to start over.

> **Tip -** Press the up or down arrows while creating your rectangle to round or square-up the edges of your rectangle. This function does not work in the Lozenge Tool.

Creating an Exact Duplicate of a Rectangle

Double-click after creating a rectangle create an exact duplicate of that rectangle. The rectangle is created at the location of the cursor.

Constraining the Rectangle to a Square

Press and hold the Shift key while in the Rectangle Tool to constrain the rectangle to a square.

Sizing the Rectangle From Center

Press and hold the Ctrl key to size a rectangle from the center.

Specifying Exact Rectangular Values

You can specify exact dimensions of your rectangle by typing them in the VCB after the starting point is established. Type the width and then height, separated by a comma, to specify the exact dimension of your rectangle (using the current units). For example, type '2,1' and press Enter to create a rectangle that is 2 inches high by 1 inch wide (if your units are set to inches).

Creating a Rectangle Using Absolute Coordinates

You can use absolute coordinates to enter a precise dimension. Put parentheses around numbers in the VCB to indicate absolute coordinates. For example, typing (0,0), pressing the Enter key, and then entering (2,2), and pressing the Enter key will create a rectangle starting at the origin and extending to 2,2. This feature is useful to create entities in exact locations in your presentation.

Creating a Rectangle Using Relative Coordinates

Typing comma separated values without parentheses results in distances relative to a starting point. For example, typing (3,3), pressing the Enter key, and then entering 5,5, and pressing Enter key will create a rectangle starting at the 3,3 and extending to 8,8.

Drawing Rectangles by Inference

The Rectangle Tool uses LayOut's sophisticated geometric inference engine to help you accurately draw and place rectangles. The inference decisions, made by the inference engine, are displayed in the presentation area as inference lines and inference points. These lines and points show precise alignment between the rectangle you are drawing and the geometry of your model.

For example, if you move your mouse over an endpoint of an existing edge and then move away in the direction of an axis, a dotted Inference Line with a From Point ToolTip will appear.

Circle Tools

There are two circle tools in LayOut: one for creating ellipses and one for creating circles. Activate the circle tools from the toolbar or the Tools menu.

Drawing a Circle

Use the Circle Tool to draw circles. To draw a circle:

1. Select the Circle Tool. The cursor changes to a pencil with a circle.

5. Click to place the starting point of the circle

6. Move the cursor away from the starting point to define the radius of your circle.
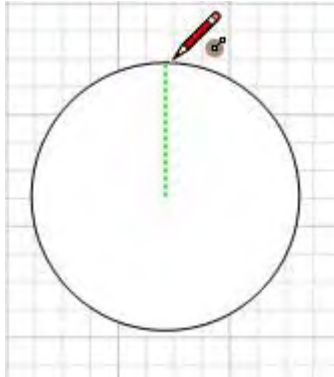
Note - Press the ESC key at any point during the operation to start over.

5. Click again to finish the circle.

Tip - You can also click and hold the mouse button to set the starting point of the circle, and drag outward without releasing the button to set the radius. Release the mouse button to complete the circle.

Creating an Exact Duplicate of a Circle

Double-click after creating a circle to create an exact duplicate of that circle. The circle is created at the location of the cursor.

Drawing a Ellipse

Use the Ellipse Tool to draw ellipses. To draw a ellipse:

1. Select the Ellipse Tool. The cursor changes to a pencil with an ellipse.

6. Click to place the starting point of the ellipse.

7. Move the cursor away from the starting point to define the shape of your ellipse.
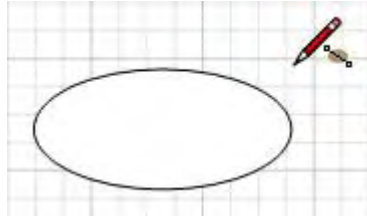
Note - Press the ESC key at any point during the operation to start over.

4.   Click again to finish the ellipse.

Tip - You can also click and hold the mouse button to set the starting point of the ellipse, and drag outward without releasing the button to set the radius. Release the mouse button to complete the ellipse.

Constraining an Ellipse to a Circle

Press and hold the shift key to constrain the ellipse to a circle.

Creating an Exact Duplicate of an Ellipse

Double-click after creating an ellipse to create an exact duplicate of that ellipse. The ellipse is created at the location of the cursor.

Specifying Exact Polygon Values

The VCB displays coordinates while you are drawing circles or ellipses. You can also specify circle or ellipse values manually using the VCB.

Creating a Circle Using Absolute Coordinates

You can use absolute coordinates to enter a precise dimension. Put parentheses around numbers in the VCB to indicate absolute coordinates. For example, typing (3,3), pressing the Enter key, and then entering (1,1), and pressing the Enter key will create a circle or ellipse starting at the 3,3 and extending its radius to touch the point at location 1,1. This feature is useful to create entities in exact locations in your presentation.

Creating a Circle Using Relative Coordinates

Typing comma separated values without parentheses results in distances relative to a starting point. For example, typing (3,3), pressing the Enter key, and then entering 2,2, and pressing Enter key will create a circle or ellipse starting at the 3,3 and extending such that the radius will touch the point at location 5,5.

Polygon Tool

Use the Polygon Tool to draw regular polygon entities. Activate the Polygon Tools from either the [toolbar](#) or the .

Drawing a Polygon

To create an polygon:

1. Select the Polygon Tool. The cursor changes to a pencil with a polygon.

5. Click to place the center point of the polygon.

> **Note -** The Polygon Tool defaults to five-sided polygon. Refer to [Specifying the Number of Polygon Sides](#) topic for information on how to change the number of polygon sides

3. Move the cursor away from the center point to define the radius of your polygon.
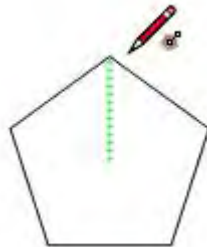
4. Click again to finish the polygon. Alternately, you can click once to set the center of the polygon, and drag outward without releasing the button to set the radius. Release the mouse button to complete the polygon.

> **Note -** Press the ESC key at any point during the operation to start over.

> **Tip -** Press the up or down arrow while creating your polygon to increase or decrease the number of sides.

Creating an Exact Duplicate of a Polygon

Double-click after creating a polygon to create an exact duplicate of that polygon.

Locking a Polygon Horizontally or Vertically

Press and hold the Shift key while drawing a polygon to lock an edge of the polygon to the horizontal or vertical axis.

Specifying Exact Polygon Values

The VCB displays coordinates while you are drawing polygons. You can also specify polygon values manually using the VCB.

Creating a Polygon Using Absolute Coordinates

You can use absolute coordinates to enter a precise dimension. Put parentheses around numbers in the VCB to indicate absolute coordinates. For example, typing (3,3), pressing the Enter key, and then entering (1,1), and pressing the Enter key will create a circle or ellipse

starting at the 3,3 and extending its radius to touch the point at location 1,1. This feature is useful to create entities in exact locations in your presentation.

Creating a Polygon Using Relative Coordinates

Typing comma separated values without parentheses results in distances relative to a starting point. For example, typing (3,3), pressing the Enter key, and then entering 2,2, and pressing Enter key will create a polygon starting at the 3,3 and extending such that the radius will touch the point at location 5,5.

Specifying the Number of Polygon Sides

Specify the number of sides for your Polygon prior to establishing the starting point by typing the side value, followed by an s, in the VCB and pressing Enter. For example, 8s results in an 8 sided polygon or octagon.

Text Tool

The Text Tool is used to insert text into your presentation. Activate the Text Tool from either the [toolbar](#) or the [Tools menu](#).

Creating Text

To create text:

1. Select the Text Tool. The cursor changes to a text prompt.

5. Click to place the starting point of the text box.

6. Move the mouse left or right from starting point to define the width of the text box. Dragging right will create left-justified text, dragging left will create right-justified text. A single-line text box is created with an insertion point.

> **Note -** Press the ESC key at any point during the operation to start over.

4. Type text. Text will fill the width of the text box. The text box's length will grow if the text exceeds one line.

2. Click outside of the text box to finish creating the text.

Editing Text

Double-click on text, with the Select Tool active, to edit the text.

Text Settings

Text is created using the settings found in the [Text Style dialog box](#).

Label Tool

The Label Tool is used to insert a *leader,* an arrow pointing to a specific spot in your a presentation, with text into your presentation. Activate the Label Tool from either the toolbar or the Tools menu.

Creating Labels

To create a label:

1. Select the Label Tool. The cursor changes to an arrow with the letters "abc."

5. Click to place the starting point of the leader.

6. Move the mouse from starting point to define the length of the leader.

Note - Press the ESC key at any point during the operation to start over.

4. Click again to create a text box.

2. Type text. Text will fill the width of the text box. The text box's length will grow as needed.

3. Click outside of the text box to finish creating the label.

Editing Label Text

Double-click on text box, with the Select Tool active, to edit the label text.

Editing Label Leader

The label leader is a line with an arrowhead. Therefore the label leader can be edited just as any other graphical entity. Click on the label leader, with the Select Tool active, to edit the label leader.

Text Settings

Label text is created using the settings found in the Text Style dialog box.

View Tools

This section of the user's guide covers the view tools within LayOut. View tools are those tools used view the presentation area. Tools in this section are covered in the order they appear within the View menu.

✍ Pan Tool

Use the Pan Tool to move your view vertically and horizontally. Activate the Pan Tool from either the [toolbar](#) or the [View menu](#).

Panning the View

The Pan Tool performs a pan operation. To pan using the Pan Tool:

1. Select the Pan Tool. The cursor changes to a hand.

5. Click anywhere in the drawing area.

6. Move the cursor in any direction to pan.

Panning While in Another Tool (3-Button Mouse)

Press and hold the middle mouse button (scroll wheel) to activate the Pan Tool.

Zoom Tool

Use the Zoom Tool to move the camera (your view) in or out. Activate the Zoom Tool from either the toolbar or the View menu.

Zooming In and Zooming Out of your Presentation

To zoom in and out using the Zoom Tool:

1. Select the Zoom Tool. The cursor changes to a magnifying glass with a plus and minus sign.

2. Click and hold anywhere in the presentation area.

3. Drag the cursor up to zoom in (closer to the presentation) and down to zoom out (farther from the presentation).

Zooming With a Scroll Wheel Mouse

Rolling wheel forward on a scroll wheel mouse zooms in on your model. Rolling the wheel backward on a scroll wheel mouse zooms out from your presentation.

Note - The cursor position determines the center of zoom when using the scroll wheel whereas the center of the screen determines the center of zoom when zooming using the left mouse button.

Model Settings and Managers

This section of the user's guide covers the various settings and manager dialog boxes within LayOut. These dialog boxes include Colors, and Pagea dialog boxes.

Each dialog box in this section is covered in the order they appear within the Window menu (for the exception of the Document Setup dialog box, which is in the File menu, and Preferences, which is in the View menu).

Document Setup Dialog Box

The Document Setup dialog box is used to configure a number of different settings specific to your current LayOut presentation. Activate the Document Setup dialog box from the [File menu](#).

The Document Setup dialog box contains several panels, including the Paper panel for setting paper size.

General

Use the General panel of the Document Setup dialog box to identify the author and write a description for your presentation. Type the author's name in the Author field. Type the description in the Description field.

Grid

Use the Grid panel of the Document Setup dialog box to display and manipulate the grid in the presentation area.

Major Grid

Check the Major Grid checkbox to show thickened (major) lines at a specific interval in the grid. Type the interval for thickened lines in the text box. Finally,click on the color swatch to change the color using the [Colors dialog box](#).

Minor Grid

Check theMinor Grid checkbox to show thin (minor) lines at a specific interval in the grid. Type the interval for thin lines in the text box. Finally,click on the color swatch to change the color using the [Colors dialog box](#).

Clip Grid to Page Margins

Check the Clip to marginsClip Grid to Page Margins checkbox to clip the grid at the margins (margins appear without grid).

Paper

Use the Paper panel of the Document Setup dialog box to configure the presentation area (size and margins). The presentation area size corresponds directly to the size of paper you will print on.

Paper

Use the Paper portion of the Paper panel to configure the size of the presentation area.

Width: Type the desired width of the presentation area in the Width field.

Height: Type the desired height of the presentation area in the Height field.

Color: Click on the Color swatch to activate the Colors dialog box. Click on a new color in the Colors dialog to change the color of the presentation area background.

Print Paper: Check the Print Paper

Paper Drop-Down List: Select a standard presentation area size (paper size) from the Paper drop-down list.

Portrait/Landscape: Check the Portrait or Landscape radio buttons to change the orientation of the presentation area.

DP I: Select the DPI (dots per inch) to change the onscreen and printed resolution of your SketchUp models.

Margins

Use the Margins portion of the Paper panel to configure the margins of the presentation area.

Left: Type the desired left margin size for the presentation area in Left field.

Right: Type the desired right margin size for the presentation area in Left field.

Top: Type the desired top margin size for the presentation area in Left field.

Bottom: Type the desired bottom margin size for the presentation area in Left field.

Show Margins: Check the Show Margins checkbox to display margin lines in the presentation area.

Print Margins: Check the Print Margins checkbox to print margin lines.

Color: Click on the Color swatch to activate the Colors dialog box. Click on a new color in the Colors dialog to change the color of the margin lines.

References

Use the References panel of the Document Setup dialog box to view and configure all referenced files in your LayOut document.

Reference Table

The reference table contains the path and file name, status, and insertion date for each referenced file. The Staus refers to whether the file is "Current" or "Out of Date" meaning that the file has been edited elsewhere and needs to be updated in LayOut.

Reference Buttons

Use the reference buttons to manipulate connections between files embedded your LayOut file (images, SketchUp files, and so on) and their corresponding files in the file system.

Update: Select a referenced file and click on the Update button to update a file whose status is "Out of Date."

Relink: Select a referenced file and click on the Relink button to establish a new link to a file on your file system.

Unlink: Select a referenced file and click on the Unlink button to unlink a referenced file from the file on the file system. This operation unlinks the copy of the reference file (stored in your LayOut file) from the original file on the file system. Therefore, changes to the original file on the file system will not be reflected in an unlinked file in your LayOut file. You can Relink the referenced to a file on your file system to re-establish a link.

Edit: Select a referenced file and click on the Edit button to edit the referenced file in its native application. For example, if you select a referenced SketchUp file and click on Edit, the referenced file appears in SketchUp for editing.

Purge Unused: Click on Purge Unused to remove any entries in the Reference Table that no longer appear in the presentation area (because you manually erased the image, SketchUp file, and so on, from the presentation area).

Units

Use the Units panel of the Document Setup dialog box to configure the units used for lengths in LayOut.

Format

Select Fractional or Decimal from the first Format drop-down list. Select the unit type from the second Format drop-down list.

Precision

Click on the Precision drop-down menu to set the precision for displaying units. Fractional unit precision can be set from 1" to 1/64". Decimal unit precision can be set in numbers of decimal places beyond zero for any of these units. SketchUp users working in Metric should use the decimal unit setting.

Application Preferences Dialog Box

LayOut's application preferences are used to set various global behaviors for LayOut. Activate the Preferences from the [View menu](#) .

Backup/Autosave

Use the Backup/Autosave panel of the LayOut Preferences dialog box to configure backup preferences.

Backup

Check the Active checkbox to automatically create a backup file whenever you save a presentation. The backup file is the previously saved version of the file. This file will be saved to the same folder as the presentation file. The backup file will be named `<filename>.laybak where <filename>` is the name of your LayOut file.

Autosave

Check the Active checkbox to automatically save changes to your presentation into a temporary file at specific time interval. This temporary file is available on the file system should LayOut abnormally exit. Type the auto-save interval, in minutes, into the minutes field.

Folders

Use the Folders panel of the LayOut Preferences dialog box to identify locations for templates and scrapbooks.

Remove

Select a folder and click the Remove button to remove the folder from the folders list.

Add

Click on the Add button to add a new path and folder to the folders list. The Browse for Folder dialog box appears. Navigate to the folder you want to add, or click the Make New Folder button to add a new folder.

Scales

Use the Scales panel of the LayOut Preferences dialog box to create scales that apply to models in your presentation area.

Available Model Scales

The Scales panel contains various scales that can be applied to models that appear in your presentation. Select the scale you want to use in the [SketchUp Model dialog box](#).

Add Custom Scale

To add a custom scale:

1. Type a value in the Paper text-entry box.

2. Select a unit type from the Paper drop-down list.

3. Type a value in the Model text-entry box.

4. Select a unit type from the Model drop-down list.

5. Click on the Add Custom Scale button. The newly added custom scale appears

Shortcuts

Use the Shortcuts panel of the LayOut Preferences dialog box to configure keyboard shortcuts for menu items in LayOut.

Filter

Type a word in the Filter box to quickly list only those menu items with the word.

Shortcuts Text Entry Box

Add keyboard shortcuts using the shortcuts text-entry box (at the bottom of the panel). To add a keyboard shortcut:

1. Select a command in the Commands list. The command is highlighted.

2. Type the desired keyboard shortcut in the shortcuts text entry box (at the bottom of the panel). You can type a combination of letters, the Shift key, Ctrl key, and Alt/Option keys. For example, press the Ctrl key and press the C key to create a keyboard shortcut of Ctrl+C. Or, just press the C key to create a keyboard shortcut of C.

3. Press the Plus button. The keyboard shortcut appears in the Shortcut column next to the selected command in the Commands list.

Startup

Use the Startup panel of the LayOut Preferences dialog box to identify actions LayOut should perform when started.

On New File

Check the Prompt for template radio button if you want LayOut to prompt you to choose a template each time you run LayOut. Check the Use radio button to select a specific template to use every time you run the LayOut.

On Startup

Check the Restore Files Open During Close

Colors

The Colors dialog box contains a variety of different color controls that combine to give you an incredibly versatile tool for experimenting with color in your LayOut presentations

Activate the Colors dialog box by clicking on any color swatch in the user interface (such as in the Shape Style dialog box), or by selecting Window > Colors.

Colors Dialog Box

The Colors dialog box contains controls for experimenting with color in your LayOut presentations.
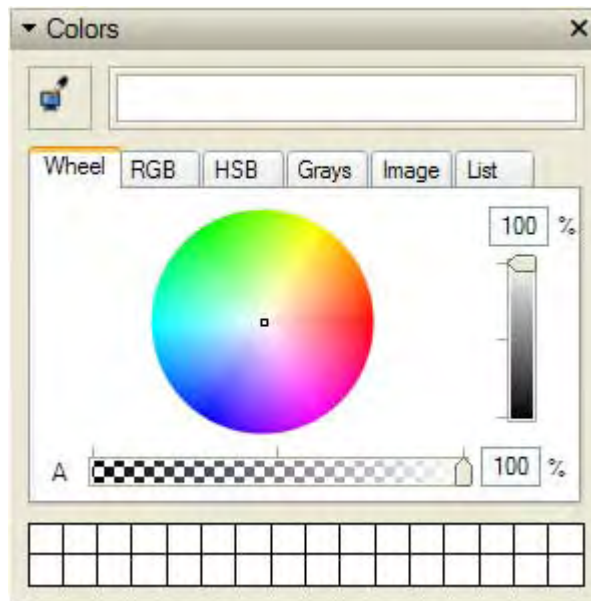
Screen Picker Tool

The Screen Picker Tool, represented as an eye dropper, is used to choose a color from any element currently visible on your screen. To select a color using the Screen Picker Tool:

1. Click on the eye dropper icon to activate the Screen Picker Tool. The cursor changes into a large eye dropper.

2. Move the cursor around the screen until you are color you want to use appears in the color well.

3. Click the mouse button to place the color in the active color well.

Active Color Well

The active color well is next to the Screen Picker Tool and contains the current color selection. You can drag and drop color swatches from this color well onto any shapes in your presentation (to apply the color as a fill) or into any other visible color well.

The contents of the active color well are maintained as you switch between color pickers, allowing you to use different pickers to create your colors.

Color Picker Tabs

Click on a color picker tab to navigate to a specific color picker. Refer to Color Pickers for further information on each color picker.

Color Picker Controls

The color picker controls, below the color picker tabs, differ for each Color Picker. See the Color Pickers section of this topic for additional information.

User Palette

Use the user palette, below the color pickers, to store any of 32 user-defined colors. To use the user palette:

- Drag and drop a color or texture swatch from any visible color well, including the active color well, and drop it over a user pallet well to add a color to the user palette.

2. Drag an drop a new swatch in the place of another color swatch to replace a swatch in the user palette.

3. Drag and drop an empty swatch onto a color to remove a color from the user palette.

Note - The colors in the User Palette are saved in LayOut and can be used between multiple work sessions.

Color Pickers

LayOut contains five color pickers used to select color.

Color Wheel Picker

The color wheel arranges color hue radially around the wheel, with the highest saturation at the outer edge of the wheel. To change the brightness of the color, slide the value slider to the right of the wheel up or down.

To use the Color Wheel picker, select the color you want by clicking your mouse over that color in the wheel. You can also click and drag the cursor around the Color Wheel to quickly browse through many different colors which will dynamically appear in the Active Color Well.

Use the opacity slider (below the Color Wheel picker) to adjust the opacity level. Type an opacity value in the text field to the right of the slider if you prefer to set opacity levels more precisely.

RGB (Red, Green & Blue) Picker

The RGB picker allows you to select colors from the RGB color range. RGB colors are traditionally used when modeling color on a computer screen and represent the closest approximation of the actual range of colors recognizable by the human eye. RGB has a wide color gamut and is one of the most effective color spaces to use in SketchUp.

Drag the sliders left and right for each of the component colors (red, green and blue) to create the color that you want.

You can type in exact numerical values for red, green or blue in the value boxes to the right of the sliders if you want to precisely match a color that you have specified elsewhere.

Use the opacity slider (below the red, green, and blue sliders) to adjust the opacity level. Type an opacity value in the text field to the right of the slider if you prefer to set opacity levels more precisely.

HSB (Hue, Saturation, and Brightness) Picker

The HSB pickerallows you to pick colors from the HSB color range. HSB often gives you a more intuitive color model for selecting desaturated colors.

Adjust the sliders for hue, saturation and brightness until you see the color you want in the active color well.

Sometimes it is easier to mix desaturated colors using the HSB picker in conjunction with one of the other color pickers. Switch to another color picker to make your rough color selection, then switch back to the HSB picker to fine tune your color.

Use the opacity slider(below the hue, saturation, and brightness slider) to adjust the opacity level. Type an opacity value in the text field to the right of the slider if you prefer to set opacity levels more precisely.

Grays

Adjust the Gray slider until you see the color you want in the active color well. Alternatively, you can select a color by typing a percent gray value directly in the text box to the right of the slider.

Adjust the Alpha slider until you see the transparency you want in the active color well. Alternatively, you can select a transparency value by typing a percent value directly in the text box to the right of the slider.

Image Picker

The Image picker allows you to load an image file into the color picker and select colors from anywhere in that image. The Image Palettes picker has a spectrum image loaded as a default. To load and select a color from an image:

1.   Click on the Choose Image button.

•   Locate your image in the Open dialog box.

•   Click the Open button. Your image appears in the Image picker.

•   Click and drag your cursor around the image until the color you want is in the color well.

Use the opacity slider (below the image in the Image picker) to adjust the opacity level. Type an opacity value in the text field to the right of the slider if you prefer to set opacity levels more precisely.

List Picker

The List picker contains a list of common colors. Click on a color to place it in the active color well.

Shape Style

The Shape Style dialog box is used to adjust the fill and stroke for entities shapes in your presentation.

Applying Fill and Stroke

LayOut defaults to a black stroke (line) and white fill, for all entities and shapes, by default. To change the fill and stroke used for all new entities:

1. Check the Fill and Stroke checkboxes to ensure that Fill and Stroke are applied for all newly created entities and shapes.

2. Click on the color swatch under the Fill checkbox. The Colors dialog box is opened.

3. Select a color for the fill. Refer to the Colors dialog box for information on how to change the colors.

4. Click on the color swatch under the Stroke checkbox. The Colors dialog box is opened.

5.   Select a color for the fill. Refer to the Colors dialog box for information on how to change the colors.

6. (optional)Modify the stroke settings. Refer to Stroke settings for further information.

Modifying Fill and Stroke

To modify fill and stroke:

1. Ensure that the Fill and Stroke checkboxes are checked in the Shape Style dialog box.

2. Select an entity or shape. The entity or shape is highlighted.

3. Click on the color swatch under the Fill checkbox. The Colors dialog box is opened.

4. Select a color for the fill. Refer to the Colors dialog box for information on how to change the colors.

5. Click on the color swatch under the Stroke checkbox. The Colors dialog box is opened.

6. Select a color for the fill. Refer to the Colors dialog box for information on how to change the colors.

7. (optional)Modify the stroke settings. Refer to Stroke settings for further information.

Stroke Settings

The Stroke portion of the Shape Style dialog box contains several settings for lines.

Start

Select the starting point type from the Start drop-down list. Move the slider, under the Start drop-down list, to the right to increase the size of the current start point type.

End

Select the ending point type from the End drop-down list. Move the slider, under the End drop-down list, to the right to increase the size of the current end point type.

Weight

Select the weight, in points, of the line from the Weight drop-down list to change the thickness of lines.

Dashes

Select the line pattern from the Dashes drop-down list.

Endcap

Select the endcap type from the Endcap drop-down list to change the style of the ends of your line. The encap type is only applicable for single that do not have an starting or ending point type.

 Note - You might have to zoom in or increase the weight of your line to recognize changes in endcap settings.

Corners

Select the corner type from the Corners drop-down list to change the style of the corners of your shape.

 Note - You might have to zoom in or increase the weight of your shape to recognize changes in corner settings.

SketchUp Model

The SketchUp Model dialog box contains various settings that apply to the currently selected SketchUp model.
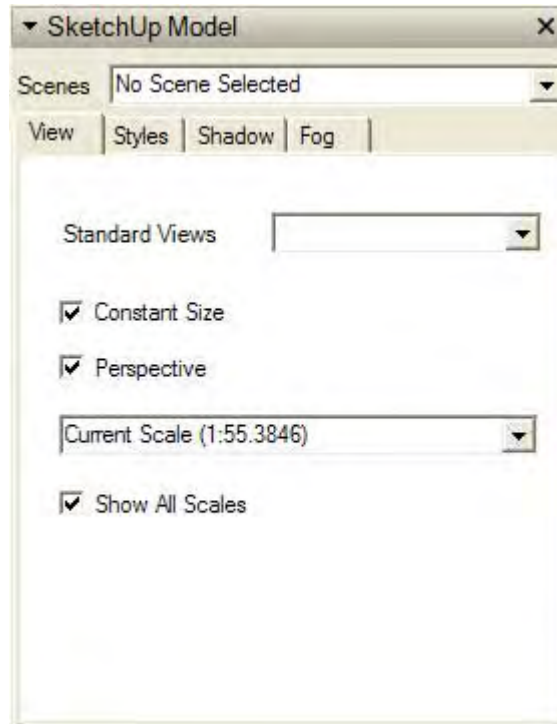
View Tab

The View tab contains standard view settings options for the currently selected SketchUp Model. Refer to the Standard Views topic in the SketchUp User's Guide for further information on these options.

Constant Size

Check the Constant Size checkbox to force your models to maintain a constant size when scaling their bounding box. Uncheck the Constant Size checkbox to scale your model while scaling the bounding box.

Perspective

Check the Perspective checkbox to enter a paraline projection. Refer to the SketchUp User's Guide for further information on perspective and paraline projections.

Scale Drop-Down List

Select a scale from the scale drop-down list to change the scale of the currently selected SketchUp model. Click on the Add Custom Scale list item to add a custom scale to the list. Refer to the Scale panel in the LayOut Preferences topic for information on adding additional scales,

Show All Scales

Check the Show All Scales checkbox to show all scales available in the LayOut preferences in the scales drop-down list.

Styles Tab

The Styles tab contains display settings options for the currently selected SketchUp model. Refer to the Styles topic in the SketchUp User's Guide for further information on these options.

Shadow Tab

The Shadow tab contains shadow settings options for the currently selected SketchUp model. Refer to the Shadows topic in the SketchUp User's Guide for further information on these options.

Fog Tab

The Fog tab contains fog settings options for the currently selected SketchUp model. Refer to the Fog topic in the SketchUp User's Guide for further information on these options.

Text Style

The Text Style dialog box is used to configure the text styles that you use in your presentation.
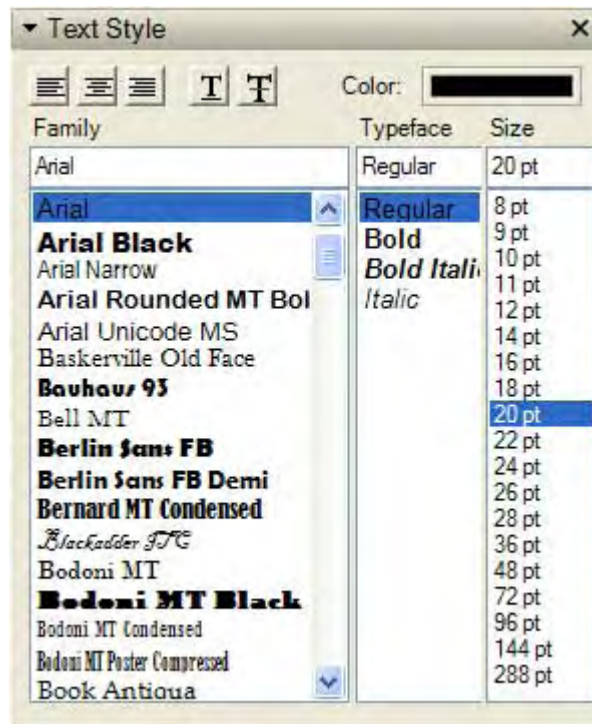
Setting Text Style

You can set your text style for all text entities using the Text Style dialog box. To set your text style:

1. Select a font in the Family list.

2. Select font style in the Typeface list.

3. Select a size in the Size list.

4. (optional) Modify other text settings. Refer to the Text Style dialog box for further information.

5. Create text using either the Text Tool or Label Tool. Text will be created using the settings in the Text Style dialog box. Refer to the Text Tool or Label Tool for further information.

Modifying Text Style for Existing Text

You can modify the style of any existing text in your presentation. To modify text style for existing text:

1. Select the text you wan to modify in the presentation area.

2. Open the Text Style dialog box (Window > Text Style). The Text Style dialog box is displayed.

3. Modify the text settings. The new text settings are applied to the currently selected text.

The Text Style Dialog Box

The Text Style dialog box contains controls for manipulating the style of text in your presentation. All settings in the Text Style dialog box can apply to the currently selected text or any text created in the future..

Alignment

Click on the left, center, or right alignment button to align a text to the left, center or right-side of the text box.

Underline

Click on the Underline button to place an line under text.

Strikethrough

Click on the Strikethrough button to place an line through text.

Color

Click on the color swatch to change the color for text. Refer to the Colors dialog box for further information.

Family

Select a font from the Family listto use that font when writing text.

Typeface

Select a font style from the Typeface list to use when writing text. Font styles are normal (no style), bold, italic, and bold italic.

Size

Select a size from the Size list to use when writing text. Sizes are in points.

Page Manager

The Pages dialog box (also called the Page Manager) is used to control the various features of LayOut Pages. Activate the Pages dialog box from the Window menu.
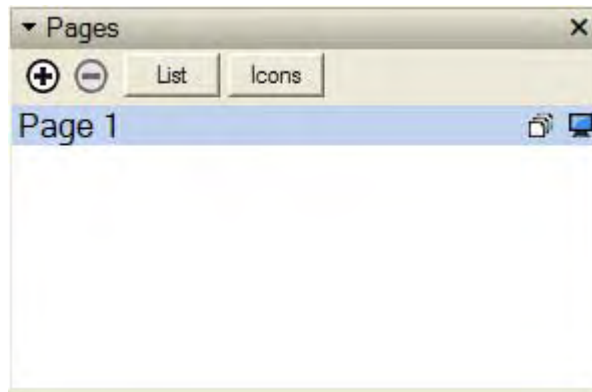
The Page Manger contains a list of all of the pages for the model. Pages in this list are displayed in the order in which they will be displayed when running a full-screen presentation or printing a presentation.

Pages Dialog Box

The Pages dialog box contains controls for manipulating pages in your presentation.

Add Button

The Add button is used to add a new page to the current file. To add a page:

1. Click on the Add button. A new page, with a default page name is added to the list of pages. A new, blank page, appears in the presentation area.

2. (optional) Double-click on the page name to rename the page.

Delete Button

The Delete button is used to delete a page from the current file. Select the page in the list of pages and click the delete button to delete the page.

List Button

Click on the List button to list pages in the Page Manager.

Icons Button

Click on the Icons button to show icon representations of each page in the Page Manager.

Name

The Name field is used to name the currently active page.

Toggle the Visibility of the Master Layers Button

Click the Toggle the visibilities of the master layers button to hide the master layer on the currently selected page.

Include in Presentation Button

Click the Include in Presentation button to omit the currently selected page from a presentation.

Layers

The Layers dialog box (also called the Layers Manager) is used to create and manage layers in your presentation. Activate the Layers dialog box from the Window menu.
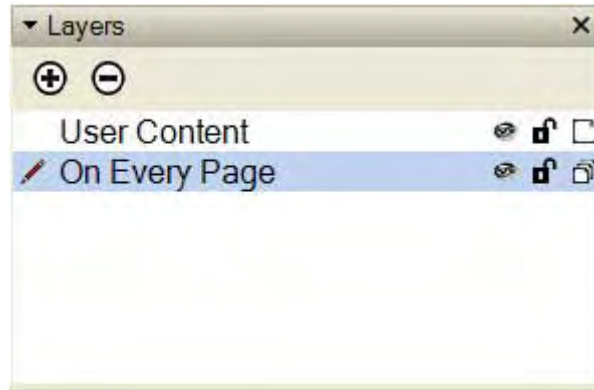
The Layers Manager displays all the layers and their associated visibility in the presentation. Every presentation has one layer, called "Default," which will be visible the first time you activate the Layers dialog box.

Creating a Layer

To create a new layer:

1. Open the Layers dialog box.

2. Click on the plus icon. A new layer is listed in the Layer Manager.

3. Double-click on the new layer's name.

4. Type a name for the layer. For example, you might create a layer to contain all of the text in your presentation so you can easily hide the text. Call this layer "Text."

5. Press the Enter key.

Moving Entities Between Layers

To move entities from one layer to another:

1. Open the Layers dialog box.

2. Click on the layer you want to contain the entities. This layer will become the active layer.

3. Select the Select Tool. The cursor changes to an arrow.

4. Select one or more entities. The selected entities are highlighted in blue.

5. Right-click on these entities. The context menu for the entities is displayed.

6. Select the Move to Current Layer menu item. The entities are now assigned to the currently active layer.

Creating a Master (Shared) Layer

To create a master layer:

1. Open the Layers dialog box.

2. Click on the plus icon. A new layer is listed in the Layer Manager.

3. Double-click on the new layer's name.

4. Type a name for the layer. For example, you might create a master layer to contain a title block appearing on every page . Call this layer "Title Block."

5. Press the Enter key.

6. Click on the Share icon (control whether a layer is shared across all pages). The Make Shared Layer dialog displays.

7. Select the Use the contents of the current Page option.

8. Click the Apply button.

Layers Dialog Box

The Layers dialog box contains controls to create and navigate among layers in your presentation.

Add

The Add icon is used to add additional layers. Click the add icon to add a layer, enter the layer name (or press Enter or return to accept the default name).

Delete

The delete icon is used to delete a layer. Select a layer and click the delete icon to delete a layer. You will be prompted to move entities on the deleted layer to another layer (the default or current layer) if there are entities unique to that layer.

Name

The Name column lists all the layers, by name, in the presentation. The current layer is the layer with the radio button checked. Check the radio button next to another layer to make the layer active. Double-click on the name of a layer to edit the name of the layer.

> **Note -** You can press and hold the Shift key while clicking on two or more layer names to select several layers at once. You can also click and drag a layer name to move that layer in the list of layers.

Visible

Toggle the visibility of a layer by clicking on the visibility icon.

Lock

Toggle the lock status of a layer by clicking on the lock icon. Entities in a locked layer cannot be manipulated.

Share

Click on the Share icon to share the contents of that layer across all pages.

Scrapbooks

The Scrapbooks dialog box (also called the Scrapbook Manager) is a manager for all of the shapes and styles you want to store and reuse between your different presentation. The scrapbook can hold any content you create, from title blocks to drawings, and any styles such as colors and line thickness. Scrapbook files are just layout files saved to a specific scrapbook directory.
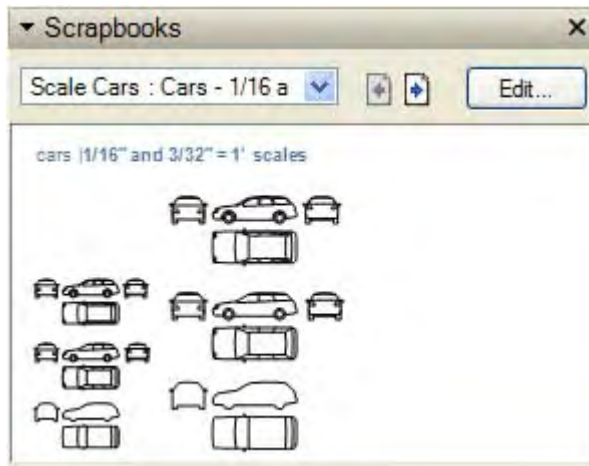
Adding Items to the Scrapbook

Anything you create in the presentation area can be added to the scrapbook. To create a scrapbook file:

1. Create your item you want to save in the scrapbook.

2. Select File > Save as Scrapbook. The new scrapbook content will appear in the Scrapbooks list in the Scrapbook dialog box.

Applying Styles From the Scrapbook

You can apply styles applied to entities in a scrapbook files to entities in your presentation area. To apply a style:

1. Click on the Style Tool. The cursor changes to an eyedropper.

2. Click on the entity, in your scrapbook file, whose style you want to sample. The cursor changes to a paint bucket.

3. Click on the entity in the presentation to apply the style to the entity. The entity will adopt the style.

 Note - Certain styles can only be applied to certain entities.

Using Entities in the Scrapbook

Drag any entity from the scrapbook into your presentation area to use that entity in your presentation.

Editing a Scrapbook

Edit a scrapbook file just as you edit any other LayOut file. To edit a scrapbook file:

1. Select the scrapbook you want to edit from the drop-down list in the Scrapbooks dialog box. A small version of the scrapbook appears in the Scrapbooks dialog box.

2. Click on the Edit button. The Scrapbook file appears in the presentation area.

    Note - The first page of the scrapbook file will display if there are more than one page. Use the forward button on the toolbar to advance to the scrapbook page you want to edit.

3. Make edits for your file.

2. Select File > Save to save edits to your scrapbook file. These edits are reflected in the scrapbook in the Scrapbooks dialog box.

Scrapbook Dialog Box

The Scrapbook dialog box contains controls to navigate among your scrapbook files.

Scrapbook List

Click on the scrapbook drop-down list and select a scrapbook to display in the scrapbook dialog box.

Next Page

Click the Next Page button to advance to the next page in a scrapbook file.

Previous Page

Click the Previous Page button to navigate to the previous page in a scrapbook file.

Edit

Click on the Edit button to edit the current scrapbook file in the presentation area.

Instructor

The Instructor dialog box displays information related to the currently selected tool. Click on a tool in the toolbar or menu to view information about that tool in the instructor. Click on links in the instructor to navigate to sections in the online LayOut User's Guide.
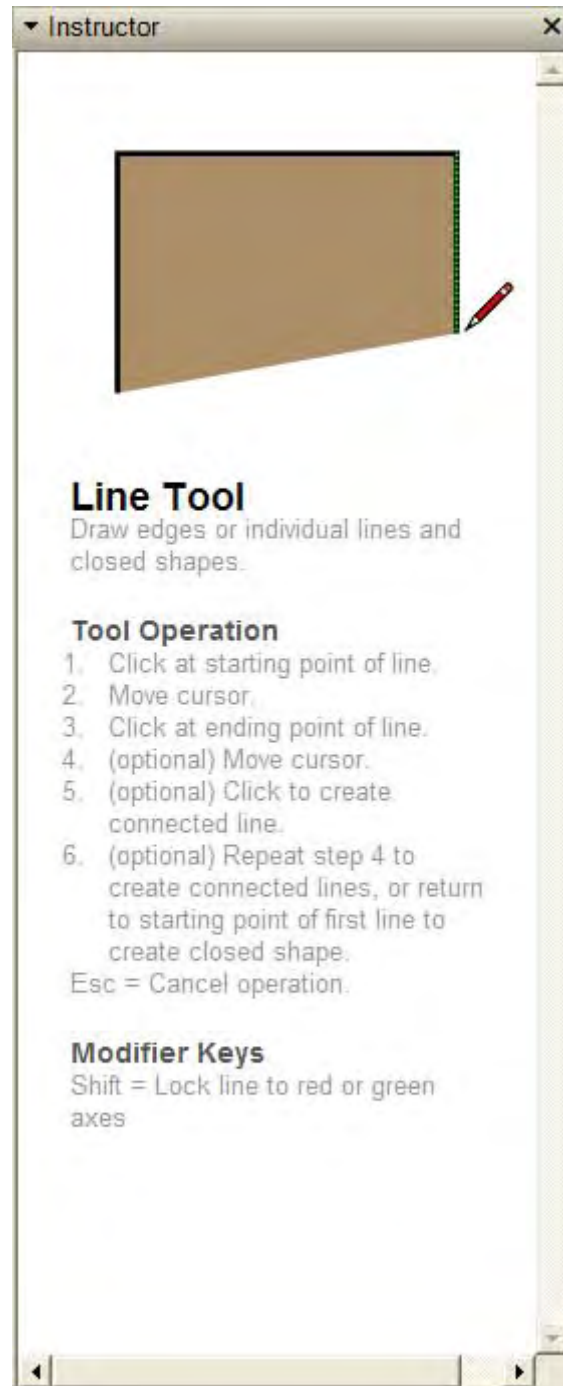
Entities

This section of the user's guide covers the creation and manipulation of three unique entities used in LayOut:groups, images, and model.These entities are unique from other entities, such as a line, in that they are not created by a tool but either inserted or, in the case of a Group entity, formed as part of an operation.

Group Entities

Groups are entities that can hold other entities. Groups are commonly used to combine several entities as a single entity for the purposes of performing a quick operation with the combination (such as a copy). Use the Group menu item from the Edit menu to create a group from the currently selected entities.

Creating a Group

Groups are useful for combining entities to perform a quick operation such as copy or move operations. To create a group:

1. Select the Select Tool. The will change to an arrow.

4. Click and hold the mouse button a short distance away from the entities you want to select to start a selection box.

5. Drag the mouse to the opposite corner of the selection starting point.

6. Release the mouse button when all of the elements are either partially included (left-to-right selection) or fully included (right-to-left selection) in the selection box.
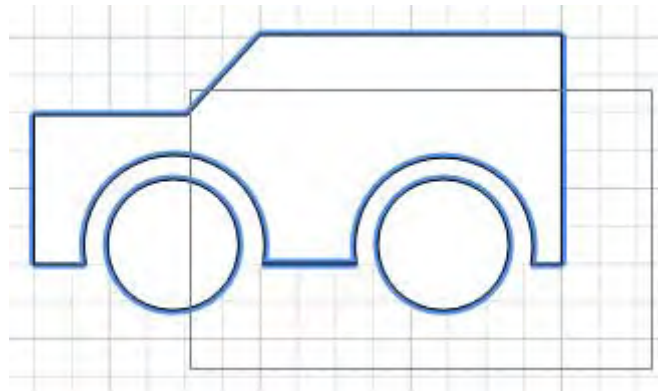
5. Select Edit > Group menu item. Alternatively, context click on the currently selected entities and select Group from the context menu. The entities you selected appears grouped within a highlighted bounding box.
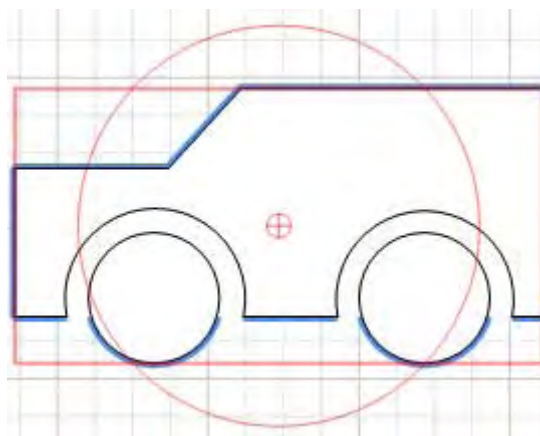
Note - You can make group hierarchies by grouping other Group entities within a group.

Ungrouping a Group

You can ungroup a Group entity to break it back into its original entities. To ungroup a group:

1. Select the Select Tool. The cursor will change to an arrow.

6. Select the group you want to ungroup.

7. Select Edit > Ungroup menu item. Alternatively, context click on the currently selected group and select Ungroup from the context menu. The Group will be split back into its entities.

Image Entities

Image entities can be moved, rotated and scaled. They can also be stretched horizontally or vertically, but they cannot be made non-rectangular. Insert Images using the Insert menu item in the File menu.

Image Formats

LayOut supports the following formats for import as an Image Object: JPEG, TGA, BMP, and TIFF. Some formats may be more appropriate than others for certain types of images and applications.

Image Proportions

By default, Images retain the proportions of the file from which they are derived. Use the Select tool to alter the image's proportions after it is inserted.

Minimizing Image Sizes

Inserted image files are embedded in your LayOut presentation allowing you to send your LayOut files to others without having to supply additional files. LayOut files can quickly grow to large sizes if they have a lot of images. Use these tips to keep file size small:

- Use only enough resolution as you need you need from your image. High resolution images will quickly grow your LayOut file size.

2. Use compressed image file formats such as JPEG and PNG.

Model Entities

Model entities are SketchUp model files that are linked to your presentation file.

Editing Model Point of View, Rendering or Active Page

You can modify a Model entity's point of view, rendering (display settings,display style, shadows), and active page within LayOut. To modify a model's point of view, rendering, or active page within LayOut:

1. Double-click on the 2D representation of the model. You are placed within a Model entity edit session. SketchUp's Orbit tool is active.

- Context-click to display the context-menu and modify the model's point of view, rendering, and active page. Refer to the SketchUp user's guide for information on any of the features found under these context-menus.

- Use a three-button mouse to orbit, pan, and zoom on your model.

- Click outside of the model to exit the Model entity edit session.

Context Menu Items

Access context menu items by context clicking on an entity. All of the context menu items for all entities in LayOut follow:

Arrange

Entities can be side-by-side, or on top of each other, on a page.The Arrange sub-menu contains items allowing you to arrange entities in the presentation area.

Bring to Front: Use the Bring to Front menu item to move the currently selected entities to the top on a page (before all other entities).

Bring Forward: Use the Bring Forward menu item to move the currently selected entities closer to the top on a page.

Send Backward: Use the Send Backward menu item to move the currently selected entities farther from the top on a page.

Send to Back: Use the Send to Back menu item to move the currently selected entities to the bottom on a page (behind all other entities).

Cut

Use the Cut menu item to remove the selected elements from your presentation and places them in the clipboard. The contents of the clipboard can then be inserted back into any open LayOut document by using the Paste menu item.

Contents of the clipboard will remain on the clipboard until replaced with other content using an additional Cut or a Copy command.

Copy

Use the Copy menu item to copy the selected items to the clipboard without deleting the items from the presentation. The contents of the clipboard can then be inserted back into any open LayOut document by using the Paste menu item.

Delete

Use the Delete menu item to remove the currently selected entities from your presentation.

Edit 3D View

Use the Edit 3D View menu item to edit the currently selected Model entity.

Flip

The Flip sub-menu contains items to flip your entities, creating a mirror image of the original position of the entities.

Top to Bottom: Select the Top to Bottom menu item to flip an item such that the top becomes the bottom and the bottom becomes the top.

Left to Right: Select the Left to Right menu item to flip an item such that the left becomes the right and the right becomes the left.

Group

The Group menu item creates a group entity from the selected entities.

Open with Image Editor

Use the Open with Image Editor menu item to edit the currently selected Image entity. The changes to model will be reflected in LayOut after the image file is saved in your image editor.

Open with SketchUp

Use the Open with SketchUp menu item to edit the currently selected Model entity. The changes to model will be reflected in LayOut after the model file is saved in SketchUp.

Move to Current Layer

Use the Move to Current Layer to move the currently selected entity to the current layer.

Paste

Use the Paste menu item to copy the contents of the clipboard into the current LayOut document. The pasted objects will be attached to and placed by the point of the cursor, allowing you to position the new geometry when it is pasted. Click to set the pasted items in place.

Perspective

Select the Perspective menu item to enter a perspective projection. Refer to the SketchUp User's Guide for information on perspective and parallel projections.

Scales

Select a scale from the scale drop-down list to change the scale of the currently selected SketchUp model. Refer to the Scale panel in the LayOut Preferences topic for information on adding additional scales,

Scenes

The Scenes submenu lists all of the scenes in the model file. Select the scene you would like to display from the submenu.

Shadows

The Shadows menu item activates shadows.

Standard Views

The Standard Views submenu provides access to standard views: Top, Bottom, Front, Right, Back, Left, and Isometric. Selecting any of these model views will immediately set your active drawing window to that view.

Styles

The Styles submenu lists all of the styles in model file. Select the style you would like to use from the submenu.

UnGroup

Use the Ungroup menu item to divide the group back into its original entities.

Update

Use the Update menu item to update the current selected model with an updated version.

Input and Output

This section of the user's guide covers the various mechanisms for inputting items, such as graphic images, into your LayOut file and outputting or presenting your model once it is finished.

The items in this section are divided into the following categories:

- Importers and Exporters
2. Presentations
3. Printing

The majority of the items in this section are found in the File menu.

Raster Image Import

LayOut allows you to import raster images, including JPEG and BMP, for placement within your presentation. Import an image using the Insert menu item in the File menu.

Importing Image Files

To import a image file:

1. Select the File > Insert menu item. The Open dialog box is displayed.

- Select "Raster Image" from the Files of Type drop-down list.

- Locate the image you want to import

- Click the OK button to import the image. The image will appear in the presentation area. The Select tool is active.

- (optional) Adjust the image using the Select tool (move, rotate, and so on).

 Note - Alternately, drag-and-drop the file from the File Explorer directly into your presentation area.

Model Import

LayOut allows you to import 3D SketchUp models for placement within your presentation. Import a model using the Insert menu item in the File menu.

Importing Model Files

To import a model file:

1. Select the File > Insert menu item. The Open dialog box is displayed.

2. Select "SketchUp" from the Files of Type drop-down list.

3. Locate the SketchUp file you want to import

4. Click the OK button to import the model. A 2 dimensional representation of the model will appear in the presentation area. The Select tool is active.

5. (optional) Adjust the image of the model using the select tool (move, rotate, and so on) or double-click on the image to manipulate the model itself (orbit, display styles, and so on). See Editing Model Point of View, Rendering or Active Page for further information.

> **Note -** The model will have a transparent background if you do not have a sky or ground color chosen in SketchUp.

Text Import

LayOut allows you to import plain and Rich Text Format (RTF) text for placement within your presentation. Import text using the Insert menu item in the File menu.

Importing Text Files

To import text:

1. Select the File > Insert menu item from the File menu. The Open dialog box is displayed.

2. Select "Plain Text" or "RTF" from the Files of Type drop-down list.

2. Locate the text file you want to import

3. Click the OK button to import the text. The text will appear in the presentation area. The Select tool is active.

4. (optional) Adjust the text using the select tool (move, rotate, and so on).

PDF Export

LayOut allows you to export your presentations as PDF files. Export a file using the menu item in the File menu.

Exporting a PDF File

To export a PDF graphics file:

1.   Select the File > Export PDF menu item. The Export 2D Graphic dialog box is displayed.

3.   Enter a file name for the exported file in the File name field.

4.   Select the PDF from the Export type drop-down list.

5.   Click the Save button. The PDF Export Options dialog box is displayed.

6.   Click the Export button.

PDF Export Options Dialog Box

The Export Options dialog box contains options for exporting PDF files.

Export File

Type the location and name of the pdf file to save in the Export File field.

Pages

Use the options in the Pages panel of the Export Options dialog box to identify pages to export.

Page Range: Click on the All radio button to export all pages in your presentation. Click on the From radio button to select a range of pages to export. Type a number in the first field to represent the starting page number to export. Type another number in the second field to represent the ending page number to export.

Resolution

Select the resolution from the Render SketchUp Models at drop-down list to identify the resolution to render models in your PDF file.

Layers

Check the Create PDF Layers from LayOut Layers to create layers in your PDF layers from each of the layers in your LayOut file.

Full-Screen Presentations

LayOut allows you to execute a full-screen presentation. Use the Full Screen menu item within the [View menu](#) to execute a full-screen presentation.

Delivering a Full-Screen Presentation

Use the keyboard or mouse to change pages during a full-screen presentation. To deliver a full-screen presentation:

1. Select the View > Full Screen menu item from View menu. LayOut enters full-screen presentation mode. You are placed in the Freehand tool so you can draw annotations during your presentation.

7. Use the keyboard or mouse to change pages during a full screen presentation.

    a. (keyboard) Press the right-arrow key to advance to the next page or the left-arrow key to return to the previous page.

       (three-button mouse) Click the left mouse button to advance to the next page or the right mouse button to return to the previous page.

       (one-button mouse) Click the mouse button to advance to the next page.

3. (optional) Use the Freehand tool to draw annotations on your presentation.

2. Press the ESC key to exit out of full-screen presentation mode. (optional) You will be prompted to save your annotations when you exit full-screen presentation mode.

3. (optional) Click the Yes button to save your annotations as a freehand curves in your presentation.

Printing

LayOut allows you to print your presentations using any Windows-compatible printing device. Printing is a three-step process:

1. UseFile > Print Setup to select the paper size for your printer.

    Use File > Print Preview. to preview your output.

    Use File > Print to print your presentation.

The Print Setup Dialog Box

Use the Print Setup dialog box to select and configure your page size, orientation, and margins. Select File > Print Setup to invoke the Print Setup dialog box.

Paper

Use the Paper section of the Print Setup dialog box to select the paper size used for your output.

Size: The Size drop-down list contains different paper sizes that are supported by your printer. Select the paper size that you want to use from this list.

Source: The Source drop-down list contains different trays in your printer. Select the tray that contains the paper you want to use.

Orientation

The Orientation section is used to select the orientation (landscape or portrait) for your output.

Margins

The Margins section is used to define the margin, in inches, on the top, bottom, left, and right side of the printed page.

The Print Preview Dialog Box

Use the Print Preview dialog box to preview your presentation as though it were to appear on the printed page.

Printer Icon

Click on the printer icon to display the Print dialog box.

Magnifying Glass Icon

Click on the magnifying glass icon to zoom in on or out from the page.

Page Layout Icons

Click a Page Layout icon to adjust the number of pages in the presentation to be printed on one piece of paper.

Close Button

Click the Close button to close the Print Preview dialog box.

Page Field

Click on the up and down arrows, or type in a number in the Page field, to navigate to a specific page in your presentation.

The Print Dialog Box

Use the Print dialog box to print your LayOut presentation. Select File > Print to invoke the Print dialog box.

The Print dialog box contains several printing options to consider when printing a LayOut presentation.

Printer

Use the Printer section of the Print dialog box to select a specific printer and configure printer settings. Select the printer to use from the Name drop-down list. Click on the Properties button to configure the printer for printing (the properties dialog box is different for each printer-type).

Print Range

Use the Print Range section of the Print dialog specify the range of pages in your presentation to print. Click the All radio button to print your entire presentation. Click the Pages radio button, type the starting page in the from field and the ending page in the to field, to specify a specific range of pages to print. Finally, Click the Selection radio button to only print the currently active page.

Copies

Use the Copies section of the Print dialog box to select the number of copies to print Click the collate button if you want each copy to be collate (instead of printing several page ones, then several page twos, and so on).

Technical Info

This section of the documentation contains additional detailed information about various aspects of LayOut.
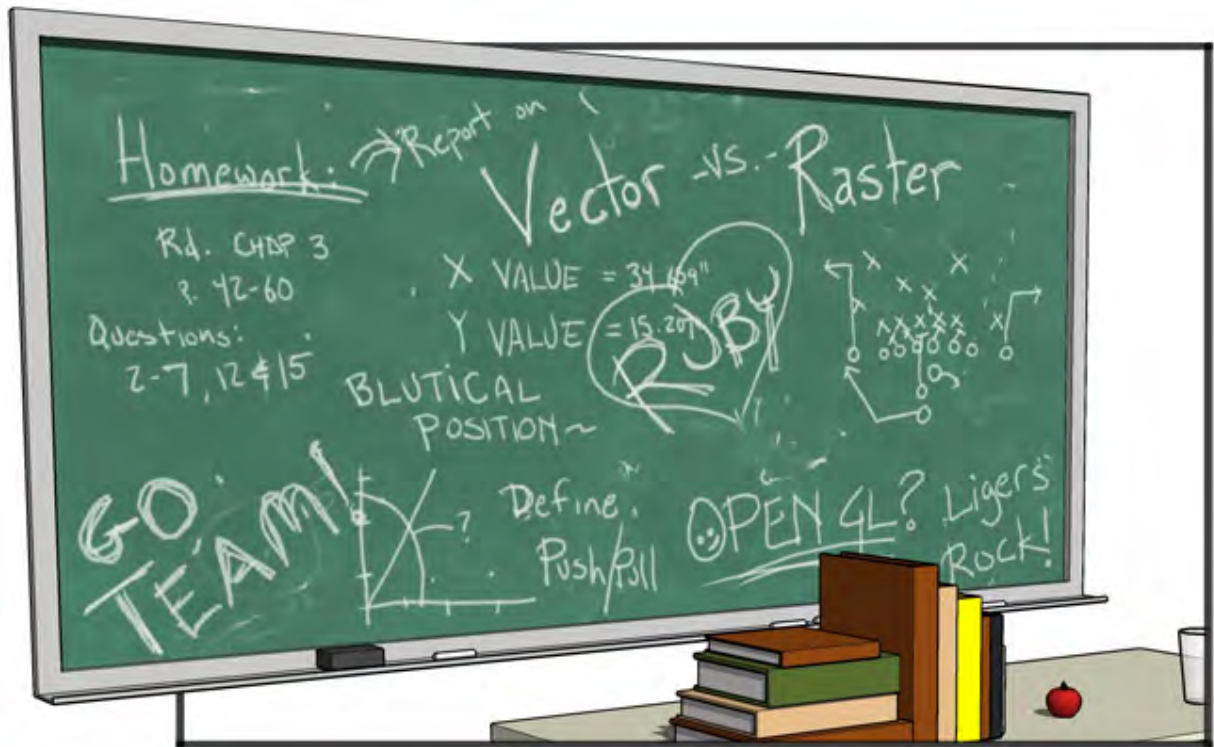
Raster File Formats

Raster images are made up of individual square colored pixels that, when combined, form some image. LayOut supports several different raster image formats, each of which has its own particular advantages and should be selected depending on the task you want to perform.

JPEG (Joint Photographic Experts Group)

JPEG image files enjoy wide support across many applications, computer platforms, and digital cameras. The most prominent feature of JPEG is its compression scheme, which can reduce file size to a fraction of other formats. This compression scheme makes the JPEG format particularly useful for sending images, such as digital photographs, using email or for viewing on the world wide web.

Tip - Consider using JPEG if your image contains lots of textured areas or fine detail

JPEG compression works so well because it analyzes an image, divides it into blocks, and then discards the information which the human eye does not readily perceive. However, This high level of compression yields a lower image quality and therefore, sometimes resulting in blocky patterns of color referred to as *artifacts.* JPEG images are referred to as *lossy* because data is actually lost during the compression process and an uncompressed JPEG file will never be identical to the original file.
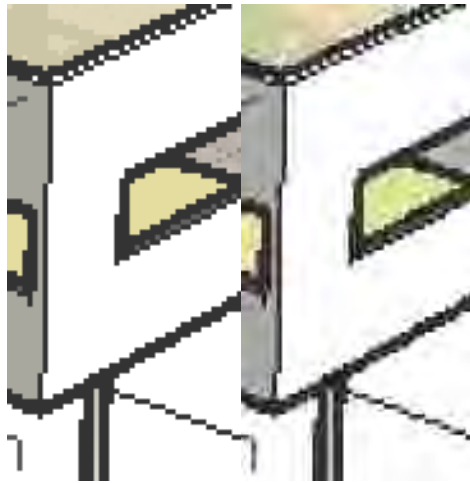
The previous image shows the artifacts resulting from JPEG compression (in the right-most portion of the image).

Fortunately, you can adjust the amount of JPEG compression to suit your needs using the File > Export > 2D Graphic Options > Image Quality slider bar.

Tip - Resaving a JPEG image multiple times can result in compounded artifacts. Work with original raster images in a non-lossy format, such as PNG, before saving to JPEG for final output.

PNG (Portable Network Graphics)

The PNG format was developed for transferring images efficiently over the world wide web without data loss. Like JPEG, PNG does use compression, but it is a non-lossy variety that is free from artifacts.

Tip - Consider using PNG for models that have large areas of solid, uniform, colors (such as non-textured LayOut models).

TIFF (Tagged Image File Format)

The TIFF file format is often used to exchanged files between applications and computer platforms (Mac and Personal Computers). There are a large number of variations to the TIFF format available, and therefore TIFF might not be as universally accessible as other formats such as PNG and JPEG. LayOut supports as wide a range of TIFF formats as possible, and you should test compatibility with other applications before exporting to TIFF file. 1-bit raster files, or TIFF files with gif encoding, are not compatible with LayOut.

Also, while formats such as PNG and JPEG are viewable by any web browser and can therefore be sent to virtually any other person with good chance of success, TIFF files may require additional software to be viewed on some systems. TIFF is primarily used for high-resolution printing from desktop publishing applications.

Note - LayOut does not support TIFF files at 1 bit per pixel. Images compressed using RLE will expand to uncompressed sizes once imported into SketchUp.

BMP (Bitmap)

The BMP file format was created for Microsoft Windows operating systems primarily as the format used for the Microsoft Windows clipboard and for viewing (especially as wallpaper). BMP does not use compression. Therefore, BMP can be useful for creating temporary files to be further modified in other applications. However, BMP tends to create very large files that are not suitable for archive, web, and email use.

TGA (Truevision Advanced Raster Graphics Adapter or Targa)

TGA files were developed by AT&T for use with Truevision video boards, which brought high resolution and full color capability to early computers. Today, all personal computers have graphics capabilities that easily surpass the early Targa boards. Nonetheless, the TGA format remains in use today for its combination of non-lossy compression, stability, and alpha channel support.

Epix

Epix is the native format of Piranesi which is an architectural painting application designed to work with images generated from 3D models. See Piranesi Epix Export for more information.

OpenGL

Applications with 3D functionality, such as LayOut, require abundant system resources. Aside from having a fast CPU and large amounts of RAM, your graphics card and graphic card drivers must be 100% OpenGL compliant.

What is OpenGL?

OpenGL is the industry-standard, used in numerous software applications and games, to draw 3D geometry. Most Microsoft Windows and Mac OS X operating systems come with a software-based OpenGL driver. However, these drivers rely heavily on the CPU to perform the rendering calculations of OpenGL (a task that is not done efficiently by most CPUs).

Many graphics card manufacturers have also built cards that support the OpenGL standard. These cards perform the rendering calculations using a specialized chip called the Graphics Processing Unit or GPU (instead of relying on the CPU). These chips significantly enhance OpenGL performance upward of 3000 percent. This performance enhancement is known as Hardware Acceleration.

Enabling Hardware Acceleration

SketchUp will can take advantage of hardware acceleration if your computer has a 100% OpenGL compatible video card.

Tip - If the Use Hardware Acceleration option is not available in LayOut, verify that the control panel settings for your video card's device driver has hardware acceleration enabled.

Unfortunately, only some 3D drivers in the consumer video card market are 100% OpenGL compatible and can use this feature (though many cards claim to be 100% OpenGL compatible). Most 3d drivers are designed for games, and are often not tested using other 3D programs. Consequently, incompatibility problems can occur requiring a fix from the video card manufacturer. Disable this option if you are having problems with the 3D rendering of your models or if your video card is not 100% OpenGL compatible and does not support hardware acceleration.

Note - Hardware Acceleration might only be available on your system for certain resolutions and color depths. Check the system settings for your graphics card to see if it supports hardware acceleration (using the Control Panel on Microsoft Windows).

Note - Google strongly recommends that you set your display colors to a 32 bit color depth (using Control panel > Display Properties) to assure that your SketchUp model will render accurately when using hardware acceleration.

Google cannot control the quality of the OpenGL driver on your computer system. Video card device drivers are proprietary and are maintained solely by the manufacturer of the video card in your system. Therefore, Google cannot guarantee that LayOut will work with hardware acceleration on your system.

Compatibility Issues

OpenGL incompatibility is a significant system configuration issue leading to problems with LayOut. Difficulties with LayOut tools, performance, and rendering (such as mysterious

graphics appearing on your screen) are usually the result of a video card not fully supporting OpenGL (despite claims by the manufacturer), an out-of-date video card driver, or incompatibility with 32-bit color depth. A temporary solution is to disable hardware acceleration in LayOut while troubleshooting the problem.

Caution - Consult the Graphics Card Compatibility section of the Readme file (included with LayOut) for additional details regarding compatibility issues for specific graphics cards.

Common Symptoms of Sub-Standard OpenGL Cards

Following are several symptoms of incompatible OpenGL video card.

Streaking or dark artifacts when using face-casting shadows.

Some OpenGL drivers contain a bug related to face-casting shadows. Update your device driver if you see streaking or dark mysterious graphics appearing on the screen when using face-casting shadows.

LayOut crashes

Many 3D video card cards and drivers are designed for video games, but are not 100% OpenGL compatible (despite manufacturer claims) and only contains a subset of the features needed for other 3D applications. These noncompatible cards and drivers can cause LayOut and other 3D applications to crash.

When selecting faces, the reverse faces are picked.

This is a common OpenGL bug to which we have found a work-around. The work-around may be enabled by selecting "Correct Reversed Picking Driver Bug" in the OpenGL tab of the Preferences Dialog. This is recommended over disabling 3D Hardware Acceleration.

Missing axes, all lines visible and dashed, and strange texture colors (blue bricks) in 16 bit mode.

The device drivers for the ATI Rage Mobility (commonly used on laptops) are not 100% OpenGL compatible. Use software rendering by turning off hardware acceleration to solve this problem..

Rolling Image Objects

Some video cards chips do not support large or high resolution Image Objects. Try reducing the size of the image you are trying to import.

Caution - Consult the Graphics Card Compatibility section of the release file (included with LayOut) for additional details regarding compatibility issues for specific graphics cards.

Bug Splat

BugSplat (www.bugsplatsoftware.com) is a 3rd party software application that is integrated in LayOut for Microsoft Windows 2000 and XP to help improve the quality of the product. BugSplat helps Google troubleshoot unrecoverable LayOut errors or *crashes*. BugSplat provides a mechanism for Microsoft Windows users to send information about all crashes to Google for troubleshooting.

How Does it Work?

In the rare event that LayOut crashes you will see a dialog, similar to Microsoft Window's crash report dialog. This dialog will give you the option to send us the information regarding the crash. Here is what is collected if you decide to send us the information:

- Your version of the LayOut executable.

4. Your language setting, such as English.

5. A "stack trace" of the bug allowing us to see the exact line of code where LayOut crashed.

6. A list of LayOut code dependencies.

7. (optional) Your name and email address.

8. (optional) A description of what you were doing before the crash.

> **Note -** If you happen to look at the BugSplat Software website, you will see a security statement that is aimed at assuring clients of BugSplat - in this case Google – that the information on our crashes (e.g., how many we have, and so on) will be protected. The above information is all that we are collecting.

Loading An Offline Crash Report

If a crash occurs when you are not connected to the Internet, BugSplat displays a dialog box indicating that a zip file has been created on your local hard drive. This dialog box will also indicate the name and location of the zip file (normally AtLastCrashMMDDYY_HHMMSS.zip in your Windows temporary directory). Go to http://www.bugsplatsoftware.com/post/post_form.php and follow the instructions on the Web page to send this file to BugSplat Software when you reconnect to the Internet. Or email the zip file to Google directly to support@sketchup.com.

LayOut File Format

LayOut files are compressed files containing all of the files needed for your presentation. A compressed LayOut file contains an XML file with links to all of the resources (images, text files, models) that are referenced in your presentation. A compressed LayOut file also contains the files that are referenced by the XML file (the images, text files, and models).

Extracting Files from a LayOut File

You can extract any of the original files referenced in your presentation from the compressed LayOut file. To extract a file referenced in a presentation:

1. Load your presentation.

2. Context-click on the referenced text, image, or SketchUp model in your presentation.

3. Select Open with Text Editor, Open with Image Editor, or Open with SketchUp respectively. The referenced content will appear in its application of origin.

4. Save the referenced content into a new file. A copy of the original file is saved.

Common Tasks

This section of the user's guide addresses common tasks that new users ask about as they are learning LayOut.

Creating a Complex Shape

You can use the Split and Join Tools to create complex or irregular shapes. To create a complex shape:

Draw the shapes that will be combined to create your complex shape, such as an oval with two pie pieces. Notice that the tips of the pie pieces are hidden behind the oval.
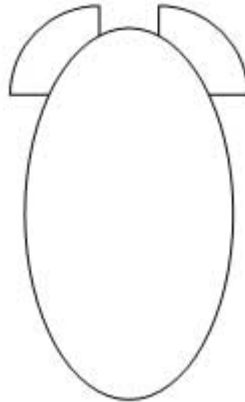
1. Select the Split Tool. The cursor changes to a scalpel.

- Click on each vertex where the shapes overlap to split the shapes.

3. Remove any unneeded pieces. The following picture shows the unneeded pieces removed. There are actually four pieces on the right-hand portion of the following image: two arcs segments from the oval and two pie points from the pieces of pie.
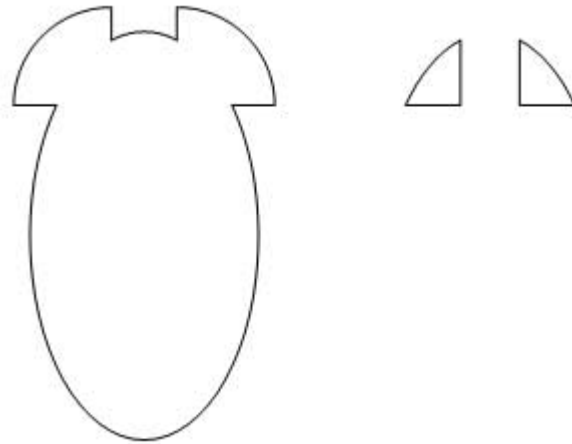
Notice that the two pie pieces are still separate shapes from the oval.
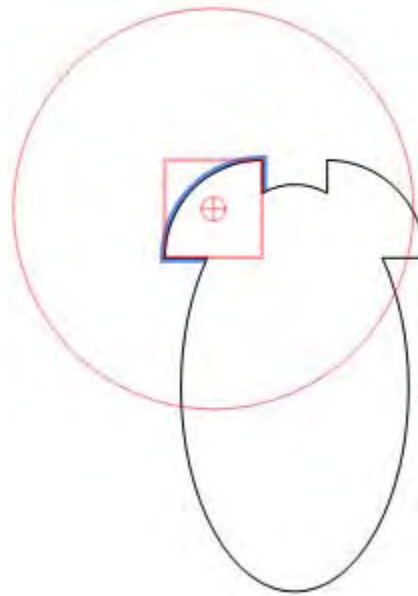
4. Select the Join Tool. The cursor changes to a glue bottle.

2. Click on each line segment in the shape. The oval and pie pieces will join to create one shape.
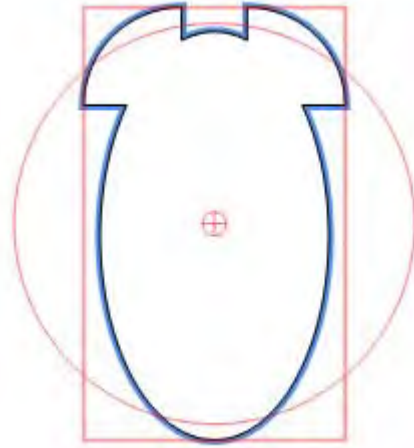
Creating a Clipping Mask

You can mask out a portion of a model, image, or text by creating a clipping mask or shape that represents the portion of the mode or image you want to see in your presentation. To create a clipping mask:

1. Place a shape over an image or model.

1. Select both the shape and the image or model.
5. Context-click. The context menu is displayed.
6. Select the Create Clip Mask menu item. A clipping mask is created.

Glossary

A

Application Window - The entire application window for LayOut. The Drawing Window contains menus, toolbars, the status bar, and the Drawing Area. See also Drawing Area.

C

CAD - See Computer Assisted Design

Chord Length - The distance between the starting point and the ending point of an Arc.

Clipping Mask - The use of a shape to "mask out" portions of the model, image, or other entities, underneath the shape.

Computer Aided Design - Software used for precision design. CAD is traditionally rigid and is often used for creating construction documents from which you would create the actual item you are designing.

Context Menu - A menu of menu items or commands available in a particular context, such as when a line or component is selected.

Crossing Selection - Refers to using the Select Tool and clicking to the right-side of entities and dragging to the left to select entities.

D

Default Layer - The layer in a presentation on which all entities are initially placed.

Dialog Stack - Dialog boxes arranged such that they form a stack.

Drawing Tool - A software tool used to create shapes from scratch.

E

Edge - An edge is a line that borders some closed shape such as a rectangle.

Entity - The smallest graphical building blocks in LayOut. Entities are combined to create presentations.

F

Fill - Inside color of a shape.

G

Group - See Group entity.

Group entity - An entity that contains other entities. Groups are commonly used to combine several entities into a single entity for the purposes of performing a quick operation, such as a copy and paste.

I

Inference - The identification of relationships between entities in the drawing area. These relationships are identified and pointed out to the user by the inferencing engine and can be used as references for drawing in 3D space.

Inference Engine - Functionality built into LayOut to locate or infer points from other points in your model, such as the center of a circle, the midpoint of a line, a line that is perpendicular

to the ground plane, a point on a face, a point on an edge, and so on. The Inference Engine notifies you of these points by using both color indicators and on-screen messages indicating the location of the cursor as you draw an entity. For example, LayOut displays the string ?From Point? when the line you are drawing is in plane with another point.

L

Layer - Layers are used to control the visibility of geometry within large models. A LayOut layer is an attribute with a name, such as "Layer0," "Layer9," or "Chairs." Elements can be assigned different layers.

Layer Manager - A dialog box used to apply and manage layers in your model

LayOut Presentation - A presentation of your SketchUp designs.

M

Manager - A dialog box used to store and manipulate a specific aspect of LayOut functionality such as pages, components, or materials.

Master Layer - A special layer that contains any entities that you want to appear in all of the pages in your document.

Master Page - A page-layout term referring to a page that contains entities that you want to appear in all of the pages in your document. LayOut uses master layers instead of master pages.

Modal Dialog Box - A dialog box that temporarily prohibits the user's interaction with the application. Modal dialog boxes usually require the user to perform some action prior to returning to normal application use.

Model - The contents of a LayOut file. See also component.

Modeless Dialog Box - A dialog box that does not prohibit the user's interaction with the application. See also Modal Dialog Box.

Move Point - The point where you click on the entity with the Move Tool.

O

Origin - The point where the Drawing Axes start or originate.

P

Page - Similar to a slide in presentation software, a page consists of your model and a series of page-specific settings, such as a specific point of view, shadow, display setting, and section cut. Pages can be combined to form TourGuide presentations in LayOut.

Presentation Area - The area where you create your presentation.

S

Scrapbook - A mechanism for storing and organizing libraries of models, image, shapes, text, and styles that you want to use in all of your presentations

Shape - A closed series of entities, such as lines forming a box shape or freehand lines forming an irregular shape.

Stroke - Line or edge style (color, thickness, and so on).

Style - Refers to the rendering options on the shape or model. For shape, style refers to the fill within a rectangle, the stroke (line color, width, end styles) of a line, or the shape of a font

. If the entity is a SketchUp model, style refers to the rendering options on the model, such as shadow state and face and edge rendering styles.

V

Value Control Box (VCB) - The VCB displays dimensional information while you draw. You can also enter values into the VCB to manipulate the selected entity.

W

Window Selection - Refers to using the Select Tool and clicking to the left-side of entities and dragging to the right to select entities.

Index