

Turbo**FLOORPLAN**[®]

User's Guide



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Part 1

The Basics

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Chapter 1

Welcome

Congratulations on purchasing *TurboFLOORPLAN*!

TurboFLOORPLAN (*TFP*) is for anyone who wants to design, renovate, decorate or landscape a home. This high-quality, multi-functional tool is easy to use and delivers the results you want — completely and accurately. *TFP*'s automated features give you the freedom to be creative and bring your ideas to life, without much work at all.

Whether you are just playing around with different design ideas, or preparing drawings for a building or landscaping professional, *TFP* makes it fun and easy.

Depending on the *TFP* product you have, possible uses include:

- Home design
- Floor plans
- Interior design
- Exterior design
- Remodeling
- 3D visualization/animation
- Photorealistic rendering
- Landscaping
- Budget and materials list
- Working drawings

About this Guide

The *TurboFLOORPLAN User's Guide* covers basic concepts and procedures for the following products:

- TurboFLOORPLAN Home & Landscape Pro
- TurboFLOORPLAN Home Designer
- TurboFLOORPLAN Landscape & Deck

The guide does not cover every possible topic. However, you can find detailed information on just about anything in the online help (press F1, or select **Help > Program Help**).

Since the guide is designed for use with a number of *TFP* products, some topics may not apply to your particular product. In the case where a topic applies to a specific product only, it will be clearly noted with the topic.

Take a few minutes now to familiarize yourself with the guide's content and layout so that you can find the information you need when you are working on your project.

Installing the Program

For installation instructions, please refer to the **Quick Start Guide** attached to the inside cover of the DVD case.

Where Do I Start?

Not sure how to get started? We highly recommend going through the **Quick Start Guide** attached to the inside cover of the DVD case. It contains a tutorial and valuable information that will get you up and running very quickly.

Starting a New Project

If you are using *TFP Home & Landscape Pro* or *TFP Home Designer*, the House Builder Wizard launches every time you start the program or start a new project. The House Builder Wizard can help you build a home automatically (see page 43). If you would prefer to draw from scratch, just click Cancel in the House Builder Wizard.

If the program is already running, you can start a new project by selecting **File > New**.

Viewing Sample Projects

To give you an idea of the things you can do with *TFP*, you may want to view some sample projects. These projects are located in the program's Samples directory.

To view sample projects:

1. Select **File > Open Samples**.
2. In the **Open** dialog, select the project you would like to view, then click **Open**.

Adjusting Your Display Settings

You can control program performance by ensuring your Windows® display settings are set correctly.

To adjust your display settings:

1. From the Windows **Start** menu, select **Settings > Control Panel**.
2. In the Control Panel window, double-click **Display**.
3. In the **Display Properties** dialog, select the **Settings** tab.
4. From the Color drop box, select **True Color (32 bit)**.
Note: If 32-bit is unavailable, select 24-bit.
5. In the Screen area section, move the slider to display at least 1024 x 768 pixels.
6. Click **OK**.

Online Help

TFP includes a comprehensive online help system that includes all of the information found in this User's Guide, plus much more. You can browse through all help topics, or get help for a specific element, tool or dialog while you are designing.

To access the online help file:

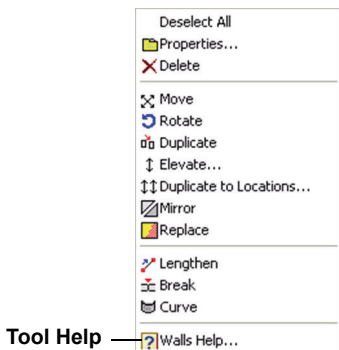
- Select **Help > Program Help**, or
- Press **F1**, or
- Click the Program Help button on the Standard toolbar



To get help for a specific part of your drawing:

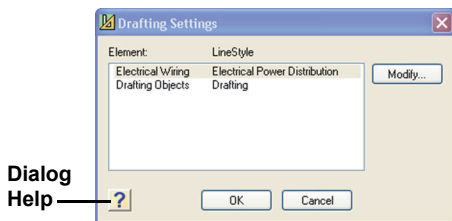
1. Select the element you want help with.
2. Right-click and select the Tool Help option for that element (e.g. Walls Help). Help for the element is displayed.

You can also access the Tool Help from the **Edit > Modify Elements** menu.



To get help in a dialog:

1. Click the Dialog Help button in the dialog. A window is displayed that describes the content of the dialog.



Glossary of Terms

You can instantly access a glossary of technical and construction terms from the Help menu.

To view the Glossary of Terms:

1. Select **Help > Glossary of Terms**.

Getting the Answers You Need

Searchable Help

Select Program Help from the program's Help menu. If you have questions about a particular topic and you can not find it in User's Guide, you can search for it in the onscreen help.

FREE Installation Assistance

FREE installation assistance is available by calling (505) 248-9999.

Technical Support

Free Support on Demand is available online at <http://www.turbofloorplan.com/support>.

It includes FAQ's, Product Updates and a searchable Knowledge Base.

Email Support on Demand

\$4.95 per incident and requires completion of the form at http://www.turbofloorplan.com/support/support_email.html.

An incident is defined as one question and one solution, regardless of how long it may take to resolve the issue. All major credit cards accepted.

Phone Support on Demand

\$9.95 per incident at (505) 248-9999. An incident is defined as one question and one solution, regardless of how long it may take to resolve the issue. All major credit cards accepted.

Customer Service and Sales

For all non-technical, pre-sales and upgrade information visit us online at <http://www.turbofloorplan.com> or contact a sales associate at 1+800 833-8082.

Chapter 2

Building Locations

When you insert a building element in your drawing, such as a wall, door or window, it is inserted on the current building location. It is important to define your building locations before inserting building elements, since locations are the key to organizing elements and inserting them at the correct height in your model.

If you are drawing from scratch, the program's default drawing templates have three pre-defined building locations: Foundation, Ground Floor, and Second Floor. You can change the settings for existing building locations as well as add and delete locations.

If you use the House Builder Wizard to start your project, your main building locations are set up for you when you run the House Builder Wizard.

This chapter describes how to define your building locations, and identify the current building location when adding building elements to your design.

Note: Most landscaping elements are inserted on the terrain and not on a building location. The exceptions are decks, and exterior furnishings and accessories inserted with the "Insert on Location" option.

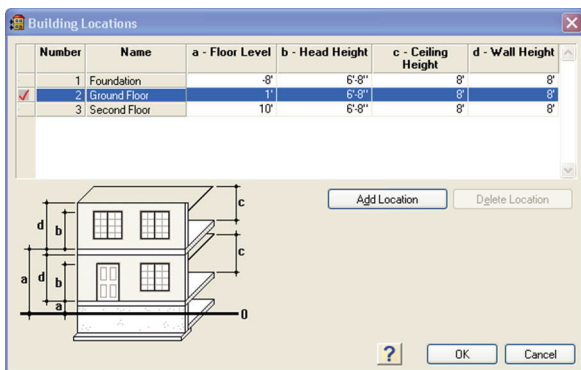
Defining Building Locations

When you define building locations, you are basically doing two things:

- setting the wall height for each floor (level) in your model
- specifying where each floor is positioned relative to the ground (zero)

To view building location settings:

1. Select **Settings > Building Locations**, or click the Building Locations button on the View Control toolbar.



Below is a brief description of each building location property.

Number. A reference number for the location.

Name. The location's name (e.g. Ground Floor).

Floor Level. Height of floor base above ground level (0).

Head Height. Height of tops of windows and wall openings relative to the floor level.

Ceiling Height. Height of underside of ceiling surface relative to the floor level.

Wall Height. Physical height of the walls on the location.

By default, if you are drawing from scratch, the Foundation location has a Floor Level of -8', meaning the base of the foundation is positioned 8' below ground level. (In other words, it is a full basement.) The Wall Height of the Foundation location is 8'. Therefore, the top of the foundation wall will be situated at ground level.

By default, the Ground Floor and Second Floor locations each have their Wall Height set to 8'. The Floor Level of the Ground Floor is set to 1'. This means that the floor will be situated 1' above the ground. To handle the 1' gap between the Ground Floor and Foundation, the exterior faces of the walls on the Ground Floor are dropped 1'.

To change the properties of a building location:

1. In the **Building Locations** dialog, click on the property you want to change. You can change location names or any of the numerical settings.
2. Type the value you want.
3. Press **Enter**.

To add a new building location:

1. In the **Building Locations** dialog, click the Add Location button. A new location is added to the bottom of the list.
Note: By default the new location will adopt the numerical settings of the currently selected location.
2. Specify the location's properties. To specify a property, click on the current value, type the new value, then press **Enter**.

Note: When you add a location to your list, it does not become the current location unless you select it in the list or edit its properties.

To delete a building location:

1. In the **Building Locations** dialog, click on one of the location's fields to make it the current location.
2. Click **Delete Location**.

Note: You cannot delete a location if it contains any elements. Also, you cannot delete a location if it is the only one in the list.

Current Building Location

Before inserting a building element in your drawing you should make sure that the building location you want to insert the element on is the *current* building location.

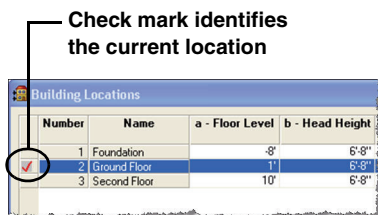
To make a building location current:

- Click on the building locations drop box on the View Control toolbar and select the desired location.



or

- In the **Building Locations** dialog, click in the far left field of the location you want to make current. A check mark indicates the location is now current.



Tip: When a building location is current, elements on other locations are still visible, but dimmed. This can help you position elements on the current location.

Chapter 3

Drawing & Editing Basics

Everything is point-and-click in *TFP*, making it extremely simple to use and leaving you free to be as creative as you like. All elements are intelligent and know what they are in relation to other elements. For example, a door can only be inserted in a wall. *TFP* automatically displays dimensions as you draw, making it even easier to create accurate drawings right from the start.

While working on your project, you will probably want to edit it as you go. You can select elements by clicking on them, or by drawing a selection window around them.

This chapter describes the basics of inserting elements, and selecting them for editing.

Inserting Elements

When you select a tool from the **Insert** menu or one of the insertion toolbars, you are in Insertion mode. To insert an element, you select it in the catalog panel, then click in your drawing area.

Many elements can be inserted with a single mouse click. *Single-click* elements include doors, windows, stairs, columns, cabinets, furniture, appliances, light fixtures, electrical

elements, plumbing fixtures, and plants. *Line-drawn* elements, like walls, railings, edging and fences, require that you select two points to define the element's start point and end point. The points you pick determine the element's length and angle. *Area-drawn* elements, such as pads, fills and plateaus, are drawn by picking a series of points to define their outline.

In many cases, on-screen dimensions are displayed as you draw, making it easy to create line-drawn and area-drawn elements at the correct length or size, and insert elements like doors and windows precisely where you want them in a wall.

Once you insert an element in your drawing area, you can:

- Continue inserting the same element
- Select a different element in the catalog to insert
- Right-click and select **Finish** to end the command and return to Selection mode

Tip: When an Insert tool is active, double-clicking inserts the element and finishes the command at the same time. Note, however, that double-clicking after you've already inserted an element will, in most cases, insert another element.

Tip: If you are in Selection mode, you can insert any element currently accessible in the catalog by simply selecting the element in the catalog, then moving your pointer into the drawing area.

Going into Selection Mode for Editing

When you have finished using an insertion tool, either by double-clicking or selecting **Finish** from the right-click menu, you automatically go into Selection mode. When in Selection mode, you can select elements in your drawing area and edit them.

You can also go into Selection mode by clicking the Select/Edit button on any insertion toolbar, or by selecting **Select/Edit** from the **Edit** menu.



Selecting Elements for Editing

When in Selection Mode, you can select elements for editing. You can select individual elements, a group of elements, or all elements.

When an element is selected, it is highlighted in a different color (usually light green). One or more handles are also displayed on the element.

When you are in 3D view, all elements on all locations are selectable. When you are in 2D plan view, only elements on the current building location are selectable by default.

If you are having trouble selecting the element you want, you may want to use the View Filter to make other elements non-selectable. This makes selection of the element much easier. See *Using the View Filter* on page 36.

Note: Automatic floors cannot be selected in 2D. They can only be selected in 3D.

To select a single element:

1. Click on the element.

To select multiple elements by clicking:

1. Click the first element you want to select.
2. Hold down the **Shift** key and click on the rest of the elements you want to select. The most recent selection is green and prior selections are blue.

To select a group of elements by creating a selection window:

1. Going from either left to right, or right to left, drag a selection window around the elements you want to select. Any elements touching the selection window will be selected (they do not need to be totally enclosed).

To select all elements on the current location:

1. Select **Edit > Select All**.

To re-select the elements you last selected:

1. Select **Edit > Select Previous**.

Deselecting Elements

When you select elements, you can remove individual elements from your selection set. You can also deselect everything that is currently selected.

To deselect individual elements:

1. Hold down your **Shift** key.
2. Click the element you want to deselect.

To deselect everything in your selection set:

1. Select **Edit > Deselect All**, or right-click in the drawing area and select **Deselect All**, or simply click in a blank spot somewhere else in the drawing area.

Accessing Edit Tools

Most elements can be moved once they are selected by simply clicking and dragging them. Some can also be stretched or rotated. You can access a full menu of edit tools by right-clicking in the drawing area, or by selecting **Edit > Modify Elements**.

Menus vary depending on the element selected. Typical tools are Properties, Move, Rotate, Duplicate, and Delete. If two types of elements are selected (such as a floor and a wall), only tools that are common to both element types are available.

Each chapter includes editing instructions specific to the contents of that chapter. For information about general editing, see *Editing Elements* on page 231.

Part 2

Controlling the View

2D and 3D Viewing

page 17

View Filter

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Chapter 4

2D and 3D Viewing

TFP offers a variety of options for viewing your design in 2D and 3D.

When you begin working, your design is displayed in 2D plan view. You can use the 2D Designer's View tool to instantly view a rendered version of your 2D plan. When working in 2D view, you can magnify or reduce the view using the Zoom Realtime tool. You can also magnify a selected area using the Zoom Window tool. The Zoom to Fit tool magnifies your design so it fills the drawing area, creating the largest view possible. The Pan tool lets you pan the view in any direction by simply clicking and dragging.

You can instantly switch to 3D view by choosing one of the pre-defined 3D Camera Views — 3D Perspective or 3D Overview — as well as create new views to suit your needs.

Selecting the Stereo Vision tool while wearing a pair of 3D glasses adds the perception of depth to a 3D view, making it seem like every detail is popping out at you.

By default a sky background is displayed, but you can select a different one if you want.

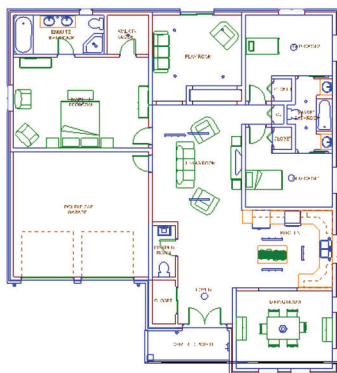
You can view instant elevations of your design, as well as create cross-sections.

In 2D plan view, your drawing is displayed in Wireframe mode by default. In 3D view, it is displayed in Rendered mode. You can switch to other display modes such as Hidden Line and Patterned at any time.

This chapter describes all basic 2D and 3D viewing features. For information about moving around in 3D, see page 273. For information about 3D Real View rendering, see page 277. For information about creating animations, see page 289.

Viewing the 2D Plan

When you start a drawing, the default view is a 2D plan view, which is a flat, overhead view. 2D plan view is ideal for creating a floor plan.



To display your model in 2D plan view:

- Select **View > 2D Plan View**, or
- Click the 2D Plan View button on the View Control toolbar, or
- Right-click in the drawing area and select **2D Plan View**

2D

By default, all locations are visible at the same time. However, any locations other than the current location are dimmed. You can control which elements and locations are displayed by using the View Filter (see *Using the View Filter* on page 36).

While in 2D plan view you can zoom in and out, and pan your drawing.

Viewing a 2D Designer's View

By default, your design is displayed in a wireframe 2D plan view. You can use the 2D Designer's View tool to quickly display a rendered version of the 2D plan view. In a rendered view, materials such as concrete, roof shingles and carpet are applied to the elements and terrain, creating a more realistic view.



To view a 2D Designer's View:

1. Select **View > 2D Designer's View**, or click the 2D Designer's View button on the View Control toolbar.



Note: If you want to be able to see inside the model, you can use the View Filter to hide elements like the roof or ceilings. See *Using the View Filter* on page 36.

Displaying 3D Camera Views

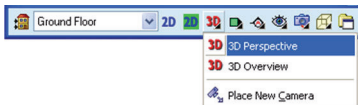
A camera view is a 3D perspective view. In a perspective view, the scale of an element decreases according to its distance from the viewer, creating a more real-world view.



There are two pre-defined camera views for your convenience: 3D Perspective and 3D Overview. The 3D Perspective lets you view your design from a Southwest viewpoint. The 3D Overview looks at your design from an elevated position, creating an overhead view. You can change each 3D view by editing camera properties, as well as create new views.

To view a 3D camera view:

1. Select **View > 3D Camera Views**, then select the camera view you want to display. Or, click the 3D Camera Views button on the View Control toolbar and select the camera view to display.




You can change the view interactively by changing the settings or camera/target positions in the Camera Properties panel on the right side of the screen.

Note: By default, 3D views are displayed in Rendered mode. For information about changing the display mode, see *Changing the Display Mode* on page 31.

Creating a New 3D Camera View

You can create a new 3D camera view by placing a new camera in your 2D plan view. Once you've inserted the camera, you specify the camera angle and viewing field angle by rotating and clicking your mouse.

To create a new 3D camera view:

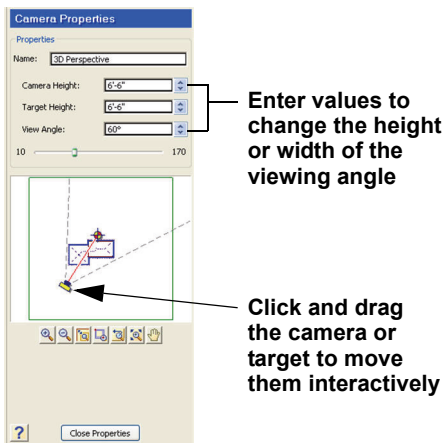
1. While in 2D plan view, select **View > 3D Camera Views > Place New Camera**, or click the 3D Camera Views button on the View Control toolbar and select **Place New Camera**. A camera is attached to your cursor, ready to be inserted. 
2. Click to insert the camera where you want it.
3. Move your cursor in the direction you want to view. Moving the cursor back and forth changes the camera angle.
4. Once you have the desired direction and angle in place, click to select a location for the target.

Once you've defined the position and angle of your camera, the 3D view is instantly displayed.

The view will appear on your 3D Camera Views menu and toolbar flyouts for easy access. (By default, the first view you create is called Camera1).

Changing a 3D Camera View

You can change a 3D camera view using the Camera Properties panel that appears when you switch to a 3D camera view.

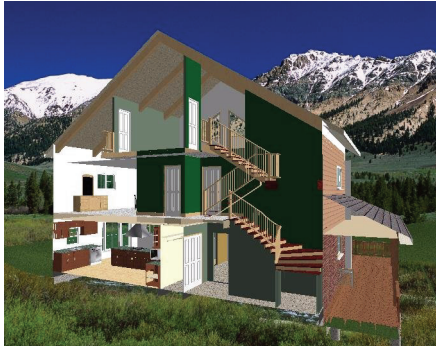


The position of the camera determines the point you are viewing your design from while in a 3D camera view. By moving your camera you can change your viewpoint.


Creating Dynamic Cutaway Views

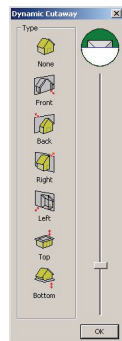
Home & Landscape Pro only

The Dynamic Cutaway tool lets you strip away a portion of your 3D model so that you can see inside it. By sliding a selected clipping plane back and forth, you essentially create a moving cross-section of your design.



To create a dynamic cutaway view:

1. Go into 3D view.
2. Select **View > Cutaway View**, or click the Dynamic Cutaway button on the View Control toolbar. 
3. In the **Dynamic Cutaway** dialog, click on the clipping plane you would like to use. For example, if you want to strip away the front of your house, click on *Front*.
4. Click and drag the slider in the **Dynamic Cutaway** dialog to move the clipping plane back and forth. As you move the clipping plane, your design is stripped away.
5. To change the angle of the clipping plane, click and drag inside the dialog's clipping plane graphic to rotate the clipping plane.



6. When you have created the desired view, click **OK**. Note that the 3D view will remain a cutaway view once you close the Dynamic Cutaway dialog. If you want to return to the original view, click on *None* in the **Dynamic Cutaway** dialog before clicking **OK**.

Displaying a 3D Stereo View



Home & Landscape Pro and Home Designer only

Selecting the Stereo Vision tool while wearing a pair of 3D glasses adds the perception of depth to a 3D view, making it seem like every detail is popping out at you. This is a great way to really step into your model and get a true feel for it.

To display a 3D stereo view:

1. Display a 3D view.
2. Select **View > Stereo Vision > Stereo Vision On/Off**.
3. Put on a pair of 3D glasses. You can use any pair of anaglyphic (red/cyan) glasses.

Tip: Stereo vision works when viewing still images as well as when you are navigating through a 3D scene.

Selecting a Background for 3D Views

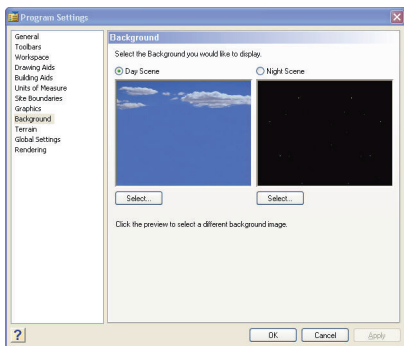
By default, a sky image is displayed behind your model when you are in a 3D view. You can select a different image to display, including custom bitmaps that you have imported, or switch to a night scene.

To select a background for the view:

1. Select **Settings > Program Settings** or click the Program Settings button on the Settings toolbar.



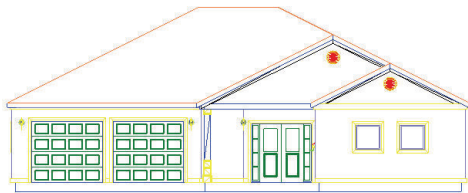
2. In the **Program Settings** dialog, select **Background** in the left column.



3. Select either the Day Scene or Night Scene radio button. You would want to switch to a night scene if you are doing a nighttime 3D Real View™ rendering of your model.
4. Click the **Select** button below the current background preview to access the **Materials** dialog.
5. In the **Materials** dialog, select a background from the materials list.
6. Click **OK** in the **Materials** dialog.
7. Click **OK** in the **Program Settings** dialog.

Viewing Elevations

Elevations are 2D views that show a particular side of your house (front, rear, left or right) as if you were looking at it face on. While in an elevation view you can zoom in and out as well as change the display type.



Sample Elevation

To view an elevation:

1. Select **View > Elevation Views**, or click the Elevation Views button on the View Control toolbar.
2. From the flyout, select the elevation you want to view (Front, Back, Right or Left).



Creating a Section View


You can cut through any portion of your model to create a section view. Section views are a great way to see the interior features of your model that you are not able to see from the outside.

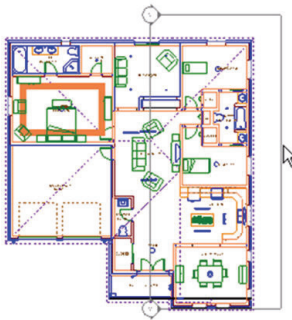


Sample Section

To create a section view, you draw a section line through your model in 2D plan view, then click to define the view direction and depth.

To create a section view:

1. Make sure you are in 2D plan view.
2. Select **View > Section Views > Create New Section**, or click the Section Views button on the View Control toolbar and select **Create New Section**. 
3. Select two points to draw a line that cuts through your model. This is the line you will be viewing from.
4. Move your cursor in the direction you want to view. The more you move away from the section line, the deeper your view becomes. Once the bounding box is the desired distance and direction from the section line, click to finish.




Once you've defined the section mark, the resulting section view is instantly displayed. It is also added to the Section Views menu and toolbar flyouts for easy access. (By default, the first view you create is called Section1.)

When you are in section view, the Section Properties panel is displayed on the right side of the screen. You can use this panel to interactively adjust the section and its settings.

Zooming In

The Zoom In tool magnifies the entire view in increments. Zooming is possible in both 2D and 3D view.

To zoom in:


1. Select **View > Zoom and Navigate > Zoom In**, or click the Zoom In button on the Zoom and Navigate toolbar. 
2. To zoom in more, select the Zoom In tool repeatedly until the view is sufficiently magnified.

See Also: *Zooming in Realtime* on page 28.

Zooming Out

The Zoom Out tool reduces the size of the current view in increments.

To zoom out:


1. Select **View > Zoom and Navigate > Zoom Out**, or click the Zoom Out button on the Zoom and Navigate toolbar. 
2. To zoom out more, select the Zoom Out tool repeatedly until the desired zoom level is achieved.

See Also: *Zooming in Realtime* on page 28.

Zooming in Realtime

The Zoom Realtime tool continuously magnifies or shrinks the view as you click and drag with your mouse. You can zoom in and out in 2D plan view or any 3D view.

To zoom in and out:

1. Select **View > Zoom and Navigate > Zoom Realtime**, or click the Zoom Realtime button on the Zoom and Navigate toolbar. 
2. To zoom in, click and drag toward the top of the screen. To zoom out, click and drag toward the bottom of the screen.

3. When the view is the desired size, release your mouse button.

Tip: You can also zoom in and out using the scroll button on your mouse.

Zooming With a Scroll Wheel Mouse

If you have a mouse with a scroll wheel, you can zoom in and out in real time by rolling the wheel. The position of your mouse pointer determines the center of zoom.


To zoom with a scroll wheel mouse:

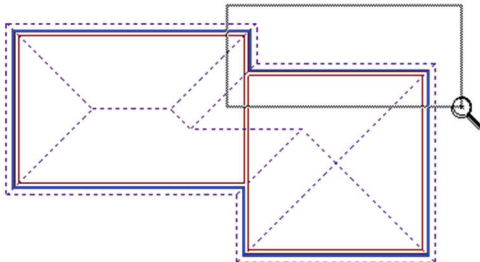
1. Position your pointer over the center of the area you want to zoom.
2. To zoom in, roll the wheel forward.
3. To zoom out, roll the wheel backward.

Zooming a Selected Area

Using the Zoom Window tool you can magnify a particular area of your design by drawing a selection window around it.

To zoom a selected area:

1. Select **View > Zoom and Navigate > Zoom Window**, or click the Zoom Window button on the Zoom and Navigate toolbar. Your cursor becomes a magnifying glass. 
2. Click and drag a selection window around the area you want to magnify.



Note: The Zoom Window tool is not available in 3D camera views.

Zooming to Fit the Drawing Area

The Zoom to Fit tool instantly extends your drawing to the edges of the drawing area. This ensures your entire drawing is visible at the most maximized view possible, and makes full use of the drawing area.

To zoom the drawing to fit the drawing area:

1. Select **View > Zoom and Navigate > Zoom to Fit**, or click the Zoom to Fit button on the Zoom and Navigate toolbar.



Note that the terrain is considered part of your drawing. If you want to zoom your model to fit the drawing area, you need to turn the terrain off before using Zoom to Fit.

Note: The Zoom to Fit tool is not available in 3D camera views.

Panning Across a Drawing

Using the Pan tool you can move the current view of your design to bring a particular part of your design into view. This is especially useful when the area you want to view is currently not visible because you have zoomed in on your drawing.

To pan the current view:

1. Select **View > Zoom and Navigate > Pan**, or click the Pan button on the Zoom and Navigate toolbar.
2. Click in the drawing.
3. Hold your mouse button down.
4. Drag the view in the direction you want to pan.
5. Release the mouse button.



Note: The Pan tool is not available in 3D camera views.

Zooming Back to the Previous View

If you have used a zoom or pan tool, you can use the Zoom Previous tool to instantly return the view to its previous state.

To zoom back to the previous view:

1. Select **View > Zoom and Navigate > Zoom Previous**, or click the Zoom Previous button on the Zoom and Navigate toolbar.

**Changing the Display Mode**

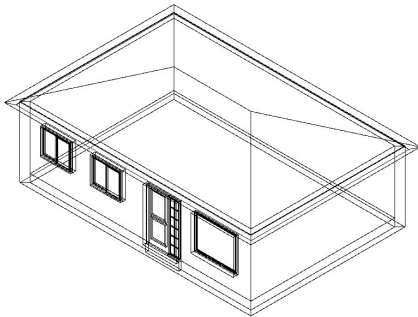
By default, your design is displayed in Wireframe mode when you are in 2D plan view. When you switch to a 3D view, the default display mode is Rendered mode. There are five display modes you can choose from.

To change the display mode:

1. Select **View > Display Mode**, or click the Display Mode button on the View Control toolbar.
2. Select the desired display mode.

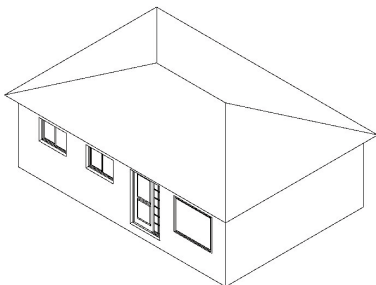
**Wireframe**

Each line in your design is visible, creating a “see-through” view. It is available for both 2D and 3D views.



Hidden Line

In a hidden line view, all lines that you would normally not see are removed from the view, creating an opaque view.



Rendered

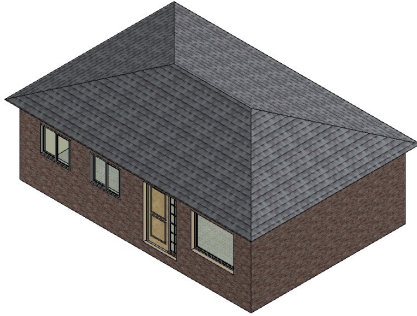
In Rendered display mode, textures and colors are applied to the elements and terrain, creating a very realistic view.



Note: The Rendered display mode should not be confused with a 3D Real View.

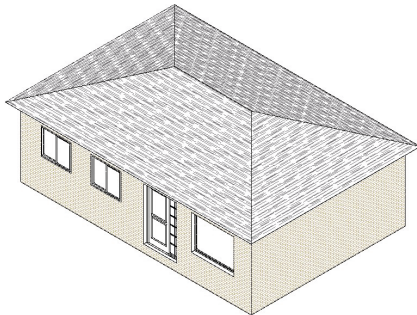
Rendered Outline

In the Rendered Outline display mode, textures and colors are applied to the elements and terrain, and surface edges are outlined in a single, dark line for increased surface definition.



Patterned

In Patterned display mode, patterns of lines (hatching) are applied to the surfaces of elements. Patterns are part of a material's definition. Therefore, the materials applied to your elements determine what patterns you will see.



Displaying Framing



Home & Landscape Pro and Home Designer only

Walls, floors, ceilings and roofs have a framing configuration assigned to them in their properties. You can instantly view your house frame using the Display Framing tool, then return to a regular view of your model at any time.

To display framing:

1. Select **View > Framing Visibility > Display Framing**.

Note: Framing cannot be selected for editing. It is available for viewing purposes only.

To return to a non-framed view:

1. Select **View > Framing Visibility > Display All But Framing**.

Chapter 5

View Filter

The unique View Filter lets you control which elements or locations are displayed at any given time. For example, you may want to hide your roof and ceilings to be able to see inside the model. It also lets you make selected elements non-selectable, which is sometimes necessary when trying to select a particular element in your drawing, like a floor or ceiling.

You can filter:

- an entire location, or multiple locations
- elements on a specific location or multiple locations
- elements on the terrain
- notation objects such as text and dimensions

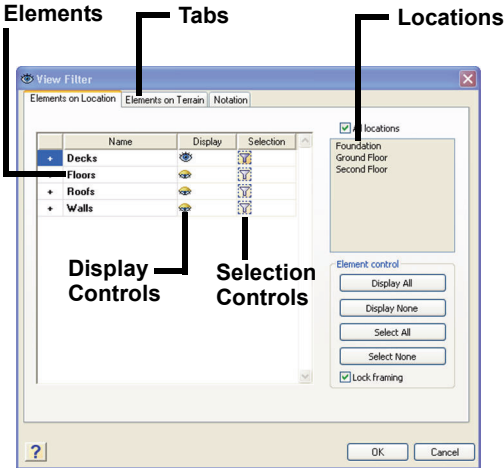
Note: Using the View Filter to control the visibility of elements does not delete the elements from your drawing. It just hides them from view.

Using the View Filter

You can use the View Filter at any time to control the visibility or selectability of elements and locations.

To access the View Filter:

1. Select **View > View Filters > View Filter** or click the View Filter button on the View Control toolbar.



The **View Filter** dialog contains three tabs: Elements on Location, Elements on Terrain, and Notation.

The Elements on Location tab lists all the elements in your model that are associated with building locations. Many elements in the list can be expanded to display a list of sub-components for precise view control. You can display or hide elements on all locations, or specific locations.

The Elements on Terrain tab lists the terrain and any landscaping elements in your drawing that are associated with the terrain.

The Notation tab contains text, dimensions, drafting objects, project trace images, and electrical wiring.

The icons in the *Display* column indicate whether or not an element is currently displayed. Clicking an icon toggles the icon to the opposite state (on or off).



Element is turned on



Element is turned off



On the Elements on Location tab, this icon indicates that some of an element's components are turned on, and some are turned off.

Clicking **Display All** turns on all elements displayed on the current tab. Clicking **Display None** turns off all elements displayed on the current tab. On the Elements on Location tab, these buttons affect elements on the currently selected location(s).

If the **Lock Framing** check box is enabled, the visibility of wall, roof, floor and ceiling framing remains locked in its current state regardless of any element filtering you do.

The icons in the *Selection* column indicate whether or not an element is currently selectable. Clicking an icon toggles the icon to the opposite state (selectable or non-selectable).



Element is selectable



Element is not selectable



On the Elements on Location tab, this icon indicates that some of an element's components are selectable, and some are not.


Clicking **Select All** makes all elements on the current tab selectable. Clicking **Select None** turns off selectability for all elements displayed on the current tab. On the Elements on Location tab, these buttons affect elements on the currently selected location(s).

Note: Framing cannot be selected.

Filtering Elements

You can use the View Filter to display or hide selected element types on all or selected building locations, or to control whether or not they can be selected.

To filter elements:

1. Select **View > View Filter** or click the View Filter button on the View Control toolbar. 
2. In the **View Filter** dialog, select the tab containing the element that you want to filter.
3. If you are on the Elements on Location tab, elements on all locations are displayed. To control the elements on a specific location, disable the **All Locations** check box, then select the location where you want to do the filtering. You can Ctrl+click to select multiple locations if you want.
4. If you want to filter specific element components, click the element's plus sign (+) to display a list of components. For example, the Walls element can have components such as wall surfaces, trim, wall framing, doors and windows. Each component has its own display icon.
5. To turn an element on or off, click the element's eye icon in the *Display* column to toggle it on or off.



Element or component is turned on



Element or component is turned off

6. To display or hide all elements currently shown in the element list, click **Display All** or **Display None**.
7. To control an element's selectability, click the element's filter icon in the *Selection* column to toggle it on or off.



Element is selectable



Element is not selectable


8. To control the selectability of all elements currently shown in the element list, click **Select All** or **Select None**.

9. Once you've selected what you want to filter, click **OK**.

Filtering Building Locations

You can turn individual locations on or off, or control whether or not elements on those locations can be selected.

To filter entire locations:

1. Select **View > View Filter** or click the View Filter button on the View Control toolbar. 
2. In the **View Filter** dialog, select the Elements on Location tab.
3. Disable the **All Locations** check box.
4. In the locations list, select the location that you want to filter. You can Ctrl+click to select multiple locations if you want.
5. Click **Display All** or **Display None** to turn all the elements on the selected location on or off.
6. Click **Select All** or **Select None** to make all elements on the selected location selectable or non-selectable.
7. If the **Lock Framing** check box is enabled, the visibility of all wall, roof, floor and ceiling framing remains locked in its current state. For example, if *Wall Framing* is locked in a visible state, *Wall Framing* will remain visible even if you turn off the *Walls* element, or click the **Display None** button.
8. Click **OK**.

Part 3

Building Your Home

House Builder Wizard	page 43
Walls	page 49
Columns & Footings	page 55
Doors, Windows & Openings	page 59
Floors & Ceilings	page 67
Stairs, Ramps & Railings	page 75
Roofs	page 81

Chapter 6

House Builder Wizard



Home & Landscape Pro and Home Designer only

The first question many people ask when they sit down with a new piece of software is, “Where do I start”? The House Builder Wizard is the perfect way to start a project, because it builds a house for you instantly! All you need to do is specify how many stories you want to create, select a general house shape, define the building dimensions, then select the general style for the walls, roof, floors and foundation. In a few mouse clicks, you’ll have a basic structure that you can edit and add to.

Once your basic model is built you can add things like interior walls, doors, windows, stairs and furnishings.

If you would prefer to start your project from scratch, see the Walls chapter on page 49.

Using the House Builder Wizard



Home & Landscape Pro and Home Designer only

The House Builder Wizard is a handy, easy-to-use tool that instantly builds a basic house for you based on factors that you specify while stepping through the Wizard. These factors include:

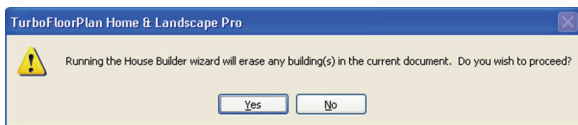
- number of floors
- wall height
- foundation type
- building shape
- building dimensions
- garage type and size
- materials used for walls, roof, floors, etc.

The resulting house includes exterior walls, footings and foundation walls (or concrete slab), a roof, and a floor.

Once the house has been created in your drawing area, you can edit all aspects of it and add to it to suit your needs.

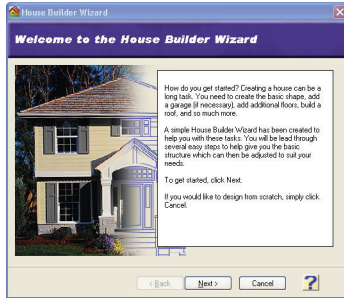
To use the House Builder Wizard:

1. If the House Builder Wizard is not currently running, select **Tools > Design Wizards > House Builder**. The following dialog appears:

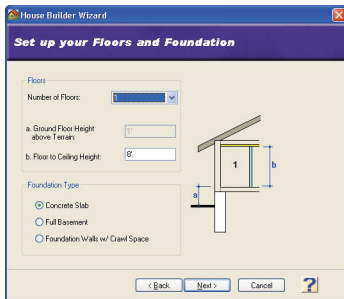


Note: Running the House Builder Wizard will delete all existing building elements in the current project. It will not, however, remove the terrain or any landscaping elements you have inserted.

- Click **Yes** in the warning dialog. The House Builder Wizard launches.

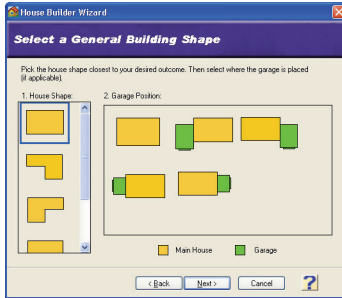


- On the **House Builder** screen, click **Next**.

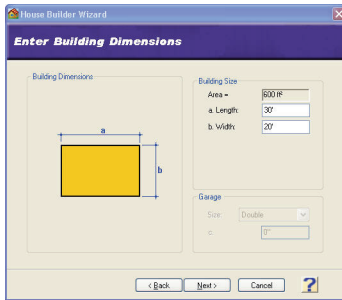


- From the **Number of Floors** drop box, select the number of floors you would like the house to have (not including the basement level).
- In the **Floor to Ceiling Height** edit box, type the desired wall height for each floor level.
- In the **Foundation Type** area, select the type of foundation you want to create. Choose from Concrete Slab, Full Basement, or Foundation Walls w/ Crawl Space.
- If you selected the Full Basement or Foundation Walls w/ Crawl Space, specify the elevation of the ground floor relative to the ground in the **Ground Floor Height above Terrain** edit box.

8. Click **Next**.



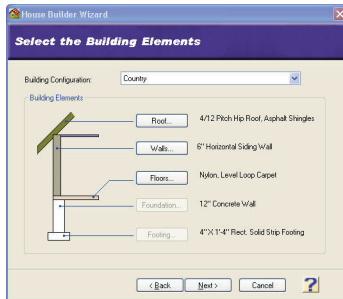
9. Select the general house shape by clicking one of the graphics in the *House Shape* pane.
10. Once you've selected a house shape, make a selection in the *Garage Position* pane to specify where you want to put the garage. If you don't want a garage, select the first option.
11. Click **Next**.



12. In the *Building Size* area, specify the desired dimensions for the house by entering values in the edit boxes. The edit box labels correspond to the labels on the image in the left pane.
13. In the *Garage* area, select either Single, Double or Triple from the **Type** drop box. Then, using the dimensioned

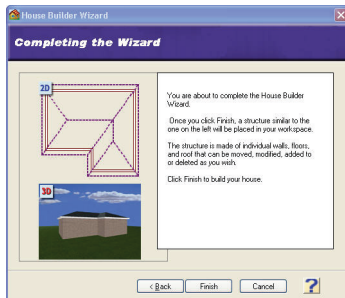
graphic as an aid, specify the desired offset of the garage from the exterior wall corner.

14. Click **Next**.



15. From the **Building Configuration** drop box, select the general style for your home (contemporary, country or traditional). The pre-set material selections for the elements in your house are displayed in the lower pane. You can select different materials if you want — just click the button of the element you want to change and make a selection from the catalog.

16. Click **Next**.



17. Click **Finish** to build the house.

Disabling the Automatic Launch of the House Builder Wizard

If you do not want the House Builder Wizard to launch automatically every time you start the program or a new project, you can turn off the automatic launch. A new blank project will be opened instead.

To disable the automatic launch of the House Builder Wizard:

1. Select **Settings > Program Settings** or click the Program Settings button on the Settings toolbar.
2. In the **Program Settings** dialog, uncheck the **Launch wizard when starting new project** check box.
3. Click **OK**.

Walls

Drawing walls is easy — just point and click. *TFP* automatically displays dimensions as you draw, and connects corners for you. If the Object Snap is turned on, which by default it is, interior walls snap to other existing walls and create clean intersections with them.

Once inserted, any wall can be moved, rotated, lengthened, shortened, broken, curved or deleted. This lets you create the exact wall layout that you want.

The catalog contains exterior, interior and foundation wall types. Once your walls are drawn, you can add paint, wallpaper, baseboards and other types of trim to them for a truly customized look. Walls also have a framing configuration in their properties which you can customize if you want.

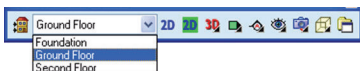
Drawing Walls

You can draw walls by simply pointing and clicking with your mouse. A floor is automatically inserted when you create a closed wall layout. You can change the properties of the floor after it has been inserted if you want.

Walls are drawn on center in *TFP*, so keep this mind when you are drawing your walls as this has an effect on the measurements of your layout.

To draw walls:

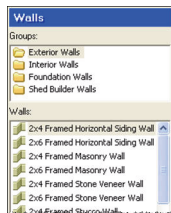
1. From the location drop box on the View Control toolbar, select the location where you want to draw walls.



2. Select **Insert > Walls**, or click the Walls button on the Building toolbar. If you are using *Landscape & Deck*, select **Insert > Building > Walls**.



3. In the catalog, select the wall type you want to insert.
4. Select a start point for the first wall.
5. Without dragging, move your pointer in the direction that you want your wall to run. Its length is shown as you draw the wall.



Note: By default, drawing is constrained to 15° angles. To release this constraint, turn off your Angle Snap.

6. When the wall is the length you want, click to set its endpoint.

- To add another wall to the one you have just drawn, move the mouse in the direction that you want the new wall to run. When it is the right length, click to set its endpoint.



- When the wall layout is complete, right-click and select **Finish**.

To move a wall:

- Click on the wall to select it.
- Hover your pointer over the wall's center grip to display the Move cursor.
- Click and drag the wall to where you want it, then release your mouse button.



To resize a wall layout by moving a wall:

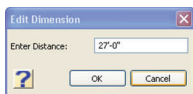
- Select the exterior wall you want to move. All attached walls will stretch along with it when you move it.
- Hover your pointer over the center grip to display the Move cursor.
- Click and drag the wall to resize the wall layout, then release your mouse button.



To resize a wall layout by editing its dimensions:

- Select one of the exterior walls. If you want to stretch the layout left or right, select a vertical wall. If you want to stretch the layout up or down, select a horizontal wall. Dimensions are displayed on the wall layout.

- Click the dimension you want to edit. The **Edit Dimension** dialog appears.



- Enter the new value in the **Enter Distance** edit box, then press **Enter** or click **OK**. The walls update automatically.

To remove the wall layout:

- Click on one of the walls, then Shift+click to select the remaining walls.
- Press the **Delete** key on your keyboard, or right-click and select **Delete**, or select **Edit > Modify Elements > Delete**.

Adding a Story


Once you have created walls on the ground floor, adding more levels to your design is easy. You can draw the layout just like you did to create the ground floor, or you can use the Duplicate to Locations tool to copy the ground floor exterior walls to the second floor location.

To create a new story by drawing the walls:

- Make sure the current location is the Second Floor location, or whatever location you have set up for the story you are creating.



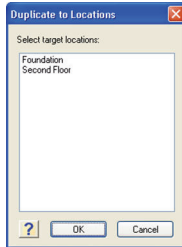
Walls and other elements on the ground floor are still visible but dimmed so that you can trace over them or use them as a reference when drawing your second floor walls.

- Select **Insert > Walls**, or click the Walls button on the Building toolbar. If you are using *Landscape & Deck*, select **Insert > Building > Walls**. 
- In the catalog, select the wall type you want to insert.

4. Draw the walls.
5. Right-click and select **Finish**.

To create a new story by duplicating walls on the ground floor:

1. Make sure the current location is the Ground Floor, or whatever location that contains the walls to copy.
2. Click one of the walls to copy, then Shift+click to select the remaining walls.
3. Right-click and select **Duplicate to Locations**, or select **Edit > Modify Elements > Duplicate to Locations**.
4. In the **Duplicate to Locations** dialog, select the Second Floor (or whatever location you are copying to).



5. Click **OK**. The walls are copied, and you now have a new story.

Note: When you copy a closed wall layout, a floor with the default material is automatically created on the location you are copying to.

Replacing Walls

You can easily replace a wall or multiple walls with another type using the Replace tool. For example, you may want to switch from siding to brick, or vice versa.

To replace walls:

1. Click on the wall to replace. You can add more walls to your selection set by holding down your Shift key and clicking on the walls to add.

2. Right-click and select **Replace**.
3. In the **Catalog Access** dialog, select the replacement wall type, then click **OK**. The walls are instantly replaced.

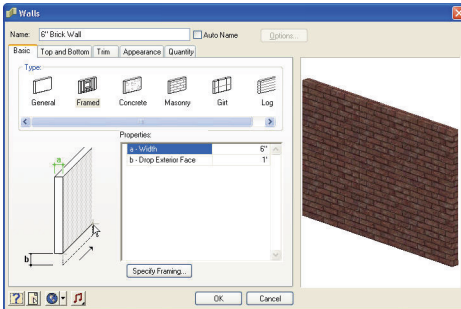
Tip: You can also use the Materials Paintbrush in 3D view to apply different materials and finishes to walls. See *Applying Materials and Colors with the Materials Paintbrush* on page 241.

Editing the Properties of a Wall

Walls have many properties that you can edit to suit your needs. These include size, top and bottom shaping, trim, and materials.

To edit the properties of a wall:

1. Click on the wall to select it.
2. Right-click and select **Properties**.
3. Edit the properties in the **Walls** dialog as desired. Refer to the online help for more information.



Chapter 8

Columns & Footings

A structure's support system is an extremely important consideration during all phases of a design project. Support elements carry the load of walls, floors and other bearing elements in your model, and can also be a factor in the interior design of your home. *TFP* provides the tools to accurately place footings and columns in your design.

You can automatically attach strip footings to selected walls. You can also automatically insert mono (pad) footings beneath columns.

Columns come in a variety of shapes and sizes, and are inserted with point-and-click simplicity. You can customize them on the fly to achieve the precise result you want.

This chapter covers the insertion and editing of strip footings, mono footings, and columns.

Attaching Strip Footings to Walls



Home & Landscape Pro and Home Designer only

Since foundation walls bear the weight of exterior walls above them, you need to insert footings beneath the foundation walls to transfer support for the vertical load.

Strip footings are easy to insert — just click on a wall and a footing is automatically inserted underneath the wall.

Footings automatically shape themselves to the bottom of walls, so if your wall bottoms are curved or stepped, your footings will be curved or stepped also.

To insert strip footings under walls:

1. Select **Insert > Footings > Strip Footings Attached to Walls**, or click the Footings button on the Building toolbar and select **Strip Footings Attached to Walls**.



2. In the catalog panel, select the footing you want to insert. Typically you would choose one that is wider than the wall you are attaching it to.



3. Click on the wall you want to attach the footing to. The footing is inserted automatically. In plan view, strip footings are usually shown using a dashed line.

4. Continue inserting footings underneath each exterior foundation wall.
5. Right-click and select **Finish**.

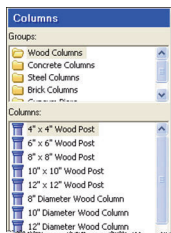
Inserting Columns

Typically, any bearing members in your basement require support. For example, if you have a W-type I-beam in your basement, it may be supported by steel posts at each end. Columns are an important consideration when designing your basement, especially if you intend to finish it.

When inserting columns, you can choose from a variety of wood, concrete, steel, brick and gypsum columns in various shapes and sizes.

To insert a column:

1. Select **Insert > Columns**, or click the Columns button on the Building toolbar. If you are using *Landscape & Deck*, select **Insert > Building > Columns**.
2. In the catalog panel, select the column you want to insert.
3. Position the column where you want it, then click to insert it.
4. Right-click and select **Finish** from the shortcut menu.
5. Click **OK**.



Attaching Mono Footings to Columns



Home & Landscape Pro and Home Designer only

Since support columns in your basement bear loads at a concentrated point, the load should be transferred to a proper footing.

Using the Mono Footings Attached to Columns tool you can insert a single pad footing beneath a selected column. All you have to do is select the column.

To insert a footing under a column:

1. Select **Insert > Footings > Mono Footings Attached to Columns**, or click the Footings button on the Building toolbar and select **Mono Footings Attached to Columns**.



- In the catalog panel, select the footing you want to insert. Typically you would choose one that is wider than the column you are attaching it to.
- Click on the column you want to attach the footing to. The footing is inserted automatically.
- Right-click and select **Finish**.



Chapter 9

Doors, Windows & Openings

Once you've drawn walls, you can insert a variety of doors, windows and openings in them to create the exact design you want.

Like all elements in *TFP*, doors, windows and openings are intelligent. They know that they can only be inserted in walls. As soon as your pointer gets close to a wall, the element snaps into place. All you have to do is position it where you want it along the wall, then click to insert it. Dimensions are displayed as you are positioning the element so you can get the precise placement you want.


Even though doors, windows and openings automatically become associated with the walls they are inserted in, you can edit them independently if you want.

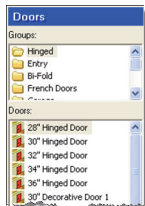
Inserting Doors

The catalog contains a wide variety of doors for you to insert, including hinged, bi-fold, pocket, sliding glass and garage doors. You can point and click to insert a door anywhere inside a wall, automatically center the door in the wall, or offset the door a specific distance from the end of the wall.

Doors are inserted at floor level. You can raise or lower a door after you have inserted it if you need to.

To insert a door:

1. Make sure the location you want to insert doors on is the current location in the building locations drop box.
2. Select **Insert > Doors**, or click the Doors button on the Building toolbar. If you are using *Landscape & Deck*, select **Insert > Building > Doors**. 
3. In the catalog, select the door that you want to insert.
4. If you want the door to be automatically centered on the wall, right-click and select **Center on wall**. Go to step 6.
5. If you want to offset the door a specific distance from the end of the wall, right-click and select **Enter insertion offset**.



Enter the offset distance in the **Enter insertion offset** dialog, then click **OK**.



6. Position the door in the receiving wall. If you are using an insertion offset, position the door close to the end you want to offset it from. The door will snap inside the wall. Dimensions are displayed that show you the distance on either side of the door.

7. With your door positioned where you want it, click to insert it.
8. Right-click and select **Finish**.

Inserting Windows


You can insert a wide variety of windows including fixed, casement, double casement, hopper, awning, sliding, double-hung, single-hung, bay, bow and louvered windows.

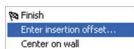
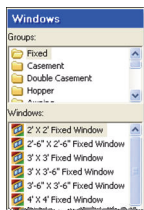
You can point and click to insert a window anywhere in a wall, automatically center the window on the wall, or offset the window a specific distance from the end of the wall.

Windows are inserted at the Head Height defined for the building location you insert the window on. You can raise or lower a window after you have inserted it if you need to.

Note: If you want to insert a skylight, see *Inserting Skylights* on page 88.

To insert a window:

1. Make sure the location you want to insert windows on is the current location in the building locations drop box.
2. Select **Insert > Windows**, or click the Windows button on the Building toolbar. If you are using *Landscape & Deck*, select **Insert > Building > Windows**. 
3. In the catalog, select the window you want to insert.
4. If you want the window to be automatically centered on the wall, right-click and select **Center on wall**. Go to step 6.
5. If you want to offset the window a specific distance from the end of the wall, right-click and select **Enter insertion offset**.



Enter the offset distance in the **Enter insertion offset** dialog, then click **OK**.



6. Position the window in the receiving wall. If you are using an insertion offset, position the window close to the end you want to offset it from. The window will snap inside the wall. Dimensions are displayed that show you the distance on either side of the window.
7. With your window positioned where you want it, click to insert it.
8. Right-click and select **Finish**.

Inserting Wall Openings

An opening is a cutout in a wall of a specific shape, width and height. Openings can be rectangular, round, arched, octagonal or trapezoidal.

You can point and click to insert an opening anywhere in a wall, automatically center the opening on the wall, or offset the opening a specific distance from the end of the wall.

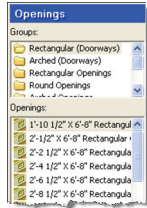
Openings are inserted at the Head Height defined for the building location you insert the opening on. You can raise or lower an opening after you have inserted it if you need to.

To insert an opening:

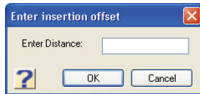
1. Make sure the location you want to insert openings on is the current location in the building locations drop box.
2. Select **Insert > Openings**, or click the Openings button on the Building toolbar. If you are using *Landscape & Deck*, select **Insert > Building > Openings**.



3. In the catalog, select the opening you want to insert.
4. If you want the opening to be automatically centered on the wall, right-click and select **Center on wall**. Go to step 6.
5. If you want to offset the opening a specific distance from the end of the wall, right-click and select **Enter insertion offset**.



Enter the offset distance in the **Enter insertion offset** dialog, then click **OK**.



6. Position the opening in the receiving wall. If you are using an insertion offset, position the opening close to the end you want to offset it from. The opening will snap inside the wall. Dimensions are displayed that show you the distance on either side of the opening.
7. With your opening positioned where you want it, click to insert it.
8. Right-click and select **Finish**.

Moving a Door, Window or Opening

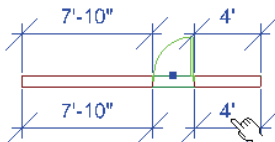
You can move a door, window or opening by clicking and dragging it inside the wall, or by editing the dynamic dimensions on either side of it.

To move the element by clicking and dragging:

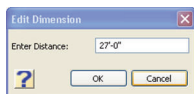
1. Click on the door, window or opening to select it.
2. Click and drag the element to move it, then release your mouse button.

To move the element by editing dimensions:

1. Click on the door, window or opening. Dimensions appear on either side of the element.
2. Click on the dimension that you want to edit.



3. In the **Edit Dimension** dialog, enter the new value, then press **Enter** or click **OK**. The door position updates automatically.



Flipping a Door Swing

Use the Flip Swing tool to flip only the swing of a door. The door will be hinged on the opposite side, but it will still open in the same direction, either in or out.

To flip a door swing:

1. Click the door to select it.
2. Right-click in the drawing area and select **Flip Swing**, or select **Edit > Modify Elements > Flip Swing**.

Flipping a Door, Window or Opening

Use the Flip Opening tool to flip a door, window or opening around in the wall. In the case of a door that swings into a room, for example, this would make it swing out instead.

To flip a door, window or opening:

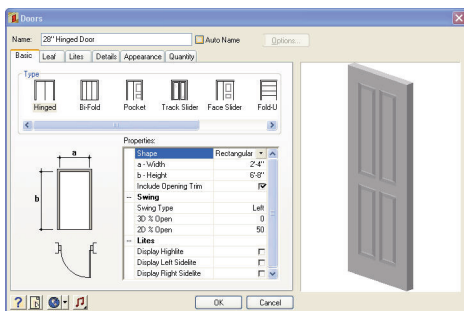
1. Click the door to select it.
2. Right-click in the drawing area and select **Flip Opening**, or select **Edit > Modify Elements > Flip Opening**.

Editing the Properties of a Door, Window or Opening

You can customize doors, windows and openings by editing their properties. Properties include size, shape, composition and appearance.

To edit the properties of a door, window or opening:

1. Click on the element to select it.
2. Right-click and select **Properties**.
3. Edit the properties in the properties dialog as desired. Refer to the online help for more information.



Chapter 10

Floors & Ceilings

A floor is inserted automatically when you connect three or more walls to create a closed wall layout. When you insert interior walls, the floor is split as new rooms are created. If you want different flooring types in different rooms, you can use the Materials Paintbrush to quickly apply different types of carpet, tiles, wood flooring, vinyl flooring, linoleum, or concrete to individual floors.

You can disable automatic floor insertion if you want. There are three additional floor tools for quick and precise floor insertion: Floor by Room, Floor by Perimeter, and Floor by Picking Points.

You can point and click to insert ceilings using one of the handy Ceiling tools: Ceiling by Room, Ceiling by Perimeter, and Ceiling by Picking Points. Any ceiling surface can easily be made into a tray or cathedral ceiling by simply editing the ceiling's properties.

You can create openings in floors and ceilings if you need to.

How Floors are Created

A floor is automatically inserted throughout your model when you connect three or more walls to create a closed exterior wall layout.

When you draw interior walls, the floor is split into individual floors as new rooms are created provided the room's walls are all connected. You can also manually split automatic floors using the Room Division tool.

If you have deleted a floor, or would like to insert a custom floor, you can use the Floor by Room, Floor by Perimeter, or Floor by Picking Points tool to quickly create the floor you want.

Automatic floors cannot be selected in 2D plan view. They can only be selected in 3D view. The only exception are floor edges that have been defined using the Room Division tool. Such edges are marked with a dashed line in 2D view, and can be moved if necessary. Floors created with one of the floor tools are selectable in both 2D and 3D.

Floors are directly associated with the walls that contain them. If you stretch your wall layout, the floor stretches with it. If you open up your wall layout by deleting a wall, the floor will be deleted if it is an automatic floor.

Inserting a Floor Throughout a Building Location



Home & Landscape Pro only

The Floor by Perimeter tool detects the perimeter walls on the current building location and inserts a floor of your choice throughout the entire location. This option is ideal if you have deleted your automatic floor and would like to create floors as quickly as possible throughout your model. It is also the perfect choice if you do not need different floors in each room.

To insert a floor throughout a building location:

1. Make sure the building location that you want to insert the floor on is the current location.

2. Select **Insert > Floors > Floor by Perimeter**, or click the Floors button on the Building toolbar and select **Floor by Perimeter**.
3. In the catalog, select the floor type you want to insert.
4. Click anywhere inside the model. The floor is automatically inserted.



Note: The Floor by Perimeter tool does not take interior walls into account. Only one large floor surface is created. If you would prefer individual floors in each room, use the Floor by Room tool.

Inserting a Floor in a Room

Home & Landscape Pro only

Using the Floor by Room tool you can just click inside a room to automatically insert a floor of your choice in that room.

To insert a floor in a room:

1. Select **Insert > Floors > Floor by Room**, or click the Floors button on the Building toolbar and select **Floor by Room**.
2. In the catalog, select the floor type you want to insert.
3. Click inside the room you want to add the floor to. The floor is automatically inserted.




Cutting an Opening in an Automatic Floor

Home & Landscape Pro and Home Designer only

You can insert an opening of any shape and size in an automatic floor by defining the area to be cut out, then deleting it. You may need to do this to accommodate a staircase.

Note: If you want to insert an opening in a floor that was created with a Floor tool, see *Cutting an Opening in a Manually Inserted Floor* on page 70.

To insert an opening in an automatic floor:

1. Select **Insert > Room Division**, or click the Room Division button on the Building toolbar. 
2. Select points to define the outline of the opening, ensuring the outline forms a closed shape.
3. Right-click and select **Finish**. An outline is created on the floor surface. You can stretch, move and curve the outline if necessary to get the exact size and shape you want.
4. Go into 3D view and make sure the floor is visible in the view.
5. Click inside the outline you drew. The outline is selected.
6. Press the **Delete** key on your keyboard, or right-click and select **Delete**, or select **Edit > Modify Elements > Delete**.

Cutting an Opening in a Manually Inserted Floor



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If you have used the Floor by Room, Floor by Perimeter or Floor by Picking Points tool to create a floor, you can use the Cut Opening tool on the floor's right-click menu to create an opening in it of any shape or size.

To create an opening in a manually inserted floor:

1. Select the floor surface.
2. Right-click and select **Cut Opening**.
3. Select a start point for the opening, then continue selecting points to define the size and shape of the opening. Note that you do not have to select the start point again to finish the outline — the last point picked is always connected to the start point.
4. Right-click and select **Finish**.


Inserting a Ceiling Throughout a Building Location

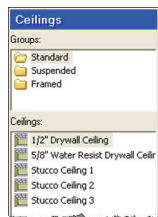


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The Ceiling by Perimeter tool detects the perimeter walls on the current building location and inserts a ceiling of your choice throughout the entire location. This option is ideal if you would like to create ceilings as quickly as possible throughout your model and do not have a need for different ceilings in each room.

To instantly add a ceiling to the entire perimeter of a location:

1. Make sure the location you want to insert the ceiling on is the current location in the building locations drop box.
2. Select **Insert > Ceilings > Ceiling by Perimeter**, or click the Ceilings button on the Building toolbar and select **Ceiling by Perimeter**. 
3. In the catalog, select the ceiling type you want to insert.
4. Click anywhere inside the perimeter of the model. The ceiling is added automatically.
5. Right-click and select **Finish** from the shortcut menu.



Note: The Ceiling by Perimeter tool does not take interior walls into account. Only one large ceiling surface is created. If you would prefer individual ceilings in each room, use the Ceiling by Room tool.


Inserting a Ceiling in a Room



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The Ceiling by Room option inserts a ceiling inside the perimeter of a room provided all the walls are connected. Adding ceilings by room allows you to have different ceiling types in different rooms.

To insert a ceiling inside a room:

1. Make sure the location you want to insert the ceiling on is the current location in the building locations drop box.
2. Select **Insert > Ceilings > Ceiling by Room**, or click the Ceilings button on the Building toolbar and select **Ceiling by Room**. 
3. In the catalog, select the ceiling type you want to insert.
4. Click inside the room that you want to add the ceiling to. The ceiling is added automatically. (If you want, you can continue adding ceilings to other rooms.)
5. Right-click and select **Finish** from the shortcut menu.

Creating a Cathedral Ceiling



Home & Landscape Pro and Home Designer only

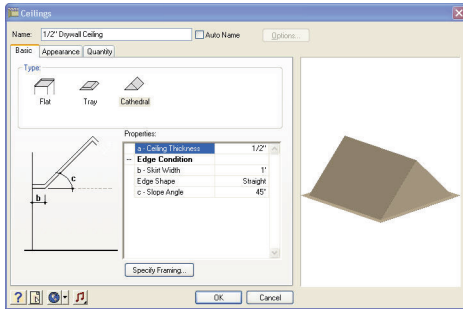
A cathedral ceiling is a high, vaulted, open ceiling that can be arched or slant upward to a point.

You can create a cathedral ceiling by changing a ceiling's type to Cathedral in its properties, then defining the ceiling's edge conditions.

To create a cathedral ceiling:

1. If one is not present, create a regular flat ceiling in the room that you want to have a cathedral ceiling.
2. Select the ceiling.
3. Right-click and select **Properties**.

4. In the **Ceilings** dialog, click the **Cathedral** option in the *Type* area.



5. Click the **Skirt Width** option, then specify the distance from the edge of the ceiling at which you want the ceiling to start sloping upward. If you want the ceiling to start sloping directly from the outer edges, specify a value of 0.
6. Click the **Edge Shape** option, then select either *Straight*, *Gable* or *Arched* to define the shape of the ceiling's sloping edges.

Straight. Creates straight edges that can be angled.

Gable. Creates straight edges and leaves one side open so that the ceiling can fit up against a wall.

Arched. Creates curved edges.

7. If you selected the *Straight* edge shape, specify the desired angle for the sloping edges in the **Slope Angle** edit box.
8. If you selected the *Arched* edge shape, specify the following values:

Start Angle. The angle of the start of the curve, measured from the base of the ceiling to the center of the starting curve. Choose a value from 1° to 90°.

End Angle. The angle of the upper portion of the curve, measured from the center of the ending curve to the top of the ceiling's peak.

Radius. The distance from the base of the ceiling to the center of the curved edge.

Vert. Distance. The distance from the base of the ceiling to the peak.

9. Click **OK**.

Note: If you are creating a cathedral ceiling, you need to make sure your roof is steep enough to accommodate the ceiling. Otherwise, the ceiling will go through the roof.

Cutting Openings in Ceilings

You can create an opening in a ceiling using the Cut Opening tool. You create the opening by picking points to define its size and shape.

To insert an opening in a ceiling:

1. Select the ceiling by clicking on one of its edges.
2. Right-click and select **Cut Opening**, or select **Edit > Modify Elements > Cut Opening**.
3. Select a start point for the opening.
4. Continue selecting points to define the opening. As you select points, the opening is created. The last point picked is always connected back to the start point to form a closed shape, so you don't have to select the start point again.
5. Right-click and select **Finish**.

Chapter 11

Stairs, Ramps & Railings

If your design has more than one floor, you'll want to insert a staircase. The catalog contains a variety of stair and ramp styles, including straight, spiral, fold-back, L-shaped and L-winder. There are even stairs specifically for decks and porches. You can edit the composition and dimensions of each component in your staircase to create the exact look you want.

Stairs and ramps are inserted as solid objects with point-and-click simplicity. Just select the staircase or ramp you want to insert in the catalog, then click to insert it in your model.

The catalog also contains an excellent selection of railing types. A railing can be just a handrail, or a balustrade with posts, top/bottom rails and newels. You can insert railings on a staircase automatically. You can choose to put it on both sides, the left side, the right side, or the center. You can also draw a horizontal railing by picking points.

Note: For information about deck stairs and railings, see *Decks & Patios* on page 159.

Inserting Stairs and Ramps

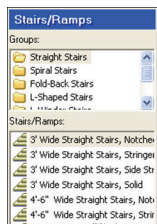


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You can insert a staircase or ramp with a single mouse click. If you place the staircase near a wall, the staircase will automatically snap to the wall. Once you have inserted a staircase, you can edit its size, style and geometry.

To insert a staircase or ramp:

1. In the building locations drop box, select the location where you want to insert the base of the staircase.
2. Select **Insert > Stairs/Ramps**, or click the Stairs/Ramps button on the Building toolbar.
3. In the catalog, select the staircase or ramp you want to insert.
4. Position the staircase and click to insert it.
5. Right-click and select **Finish**.



Tip: You may need to cut an opening in the floor to accommodate the staircase. See *Cutting an Opening in an Automatic Floor* on page 69.

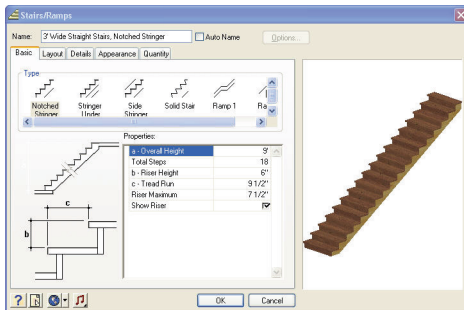
Editing the Properties of Stairs and Ramps

You can edit the properties of a staircase or ramp to suit your needs. You can edit its dimensions, height, width, number of steps, layout, details, appearance, and much more.

To edit the properties of a staircase or ramp:

1. Click on the staircase or ramp to select it.

2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.



Inserting Railings on Staircases and Ramps

 **Home & Landscape Pro and Home Designer only**


A railing can be just a handrail, or a balustrade with posts, top/bottom rails and newels. You can insert railings on both sides of a staircase or ramp automatically. Or you can very easily draw one on the left side, the right side, or the center.

To insert railings on both sides of a staircase or ramp automatically:


1. Select **Insert > Railings > Railings on Stairs Automatically**, or click the Railings button on the Building toolbar and select **Railings on Stairs Automatically**.
2. In the catalog, select the railing type you want to insert.
3. Click on the staircase. The railings are inserted automatically on both sides.
4. Right-click and select **Finish**.




To insert a railing on the right side of a staircase or ramp:

1. Select **Insert > Railings > Railing on Stair Right**, or click the Railings button on the Building toolbar and select **Railing on Stair Right**. 
2. In the catalog, select the railing type you want to insert.
3. Select a point anywhere along the bottom of the staircase (or along the tread where you want the bottom of the railing to sit) to define the level of the railing's bottom post. Your cursor will snap to the right side of the staircase as you start to draw the railing.
4. Select a point anywhere along the top of the staircase (or along the tread where you want the top of the railing to sit) to define the level of the railing's top post.
5. Right-click and select **Finish**.

To insert a railing on the left side of a staircase or ramp:

1. Select **Insert > Railings > Railing on Stair Left**, or click the Railings button on the Building toolbar and select **Railing on Stair Left**. 
2. In the catalog, select the railing type you want to insert.
3. Select a point anywhere along the bottom of the staircase (or along the tread where you want the bottom of the railing to sit) to define the level of the railing's bottom post. Your cursor will snap to the left side of the staircase as you start to draw the railing.
4. Select a point anywhere along the top of the staircase (or along the tread where you want the top of the railing to sit) to define the level of the railing's top post.
5. Right-click and select **Finish**.

To insert a railing along the center of a staircase or ramp:

1. Select **Insert > Railings > Railing on Stair Center**, or click the Railings button on the Building toolbar and select **Railing on Stair Center**. 
2. In the catalog, select the railing type you want to insert.
3. Select a point anywhere along the bottom of the staircase (or along the tread where you want the bottom of the

railing to sit) to define the level of the railing's bottom post. Your cursor will snap to the center of the staircase as you start to draw the railing.

4. Select a point anywhere along the top of the staircase (or along the tread where you want the top of the railing to sit) to define the level of the railing's top post.
5. Right-click and select **Finish**.


Inserting a Horizontal Railing

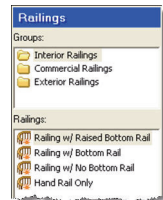


Home & Landscape Pro and Home Designer only

You can use the Railing by Picking Points tool to create a horizontal railing anywhere in your model. You may, for example, want to create a railing around a stairwell, or insert a railing to separate two rooms in your house. You create the railing by picking the start point and end point of the railing. Each point you pick serves as a main post point.

To insert a railing along a floor:

1. Make sure the building location that you want to insert the railing on is current.
2. Select **Insert > Railings > Railings by Picking Points**, or click the Railings button on the Building toolbar and select **Railings by Picking Points**. 
3. In the catalog, select the railing type you want to insert.
4. Select the start point for the railing.
5. Select an end point for the railing. You can continue adding sections to the railing if you want.
6. Right-click and select **Finish**.

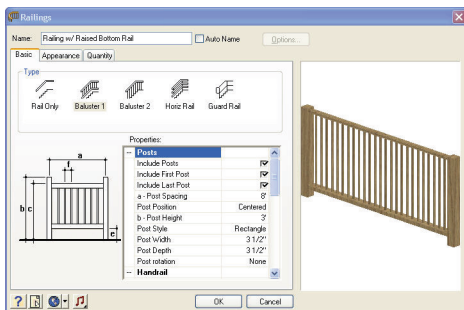


Editing Railing Properties

When editing a railing, you can choose a different railing type as well as control the dimensions and settings of posts, rails and newels.

To edit railing properties:

1. Click on the railing to select it. If the railing has multiple segments, use Shift+click to select the remaining segments.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.



3. Edit the properties as desired. Refer to the online help for more detailed information.

Chapter

12

Roofs

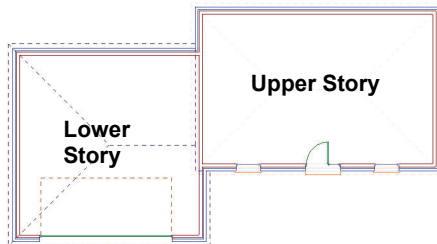
To complete your structural model, you want to insert a roof over it. The design of your roof can be a major factor in the overall look and feel of your home. Inserting a roof is incredibly simple. Just click inside your model and the roof is inserted.

Roofs are inserted by location. Therefore, if you have a two-story house, each story may require its own roof if the levels are split. The great thing about roofs is that you can edit each roof edge individually to achieve the precise geometry, dimensions and appearance you want. This means that virtually any roof configuration is possible, including multiple pitch, multiple plate height roofs. And with a wide selection of roof styles to choose from, including hip, gable, mansard and arched, you can be as creative as you want.

To give your roof design that extra edge, you can add things like dormers, skylights and openings, all of which are completely customizable to suit your needs.


Inserting an Automatic Roof

You can use the Roof by Perimeter tool to automatically insert a roof over the perimeter wall layout of a selected building location. If you have a two-story home where the ground floor wall layout is different than the upper story wall layout, and you want each story to have its own roof, you will need to insert a roof on each location.



By default, the roof is inserted directly on top of the walls of the current building location. You can edit the support height as well as change the roof's style and dimensions after it has been inserted.

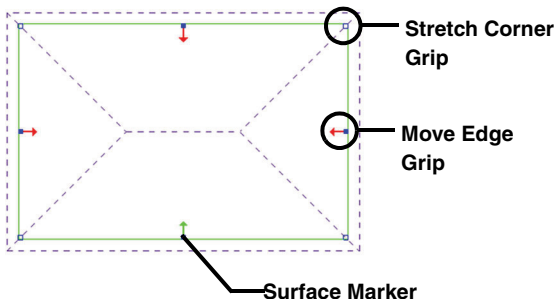
To insert a roof over an entire wall layout:

1. Make sure the current location is the location containing the walls you want to insert the roof over.
2. Select **Insert > Roofs > Roof by Perimeter**, or click the Roofs button on the Building toolbar and select **Roof by Perimeter**. If you are using *Landscape & Deck*, select **Insert > Building > Roof by Perimeter**. 
3. In the catalog, select the roof type you want to insert. Note that the catalog does not contain gable roofs. If you want to create a gable roof, insert a hip roof first, then convert it to a gable. (See *Converting a Hip Roof to a Gable Roof* on page 84.)
4. Click inside the wall perimeter. The roof is inserted automatically.

**Selecting a Roof for Editing**

You can select a roof by clicking on one of its edges. When you select a roof, the entire roof is selected, and a number of different grips and markers appear on the roof.

General editing tools like Move and Rotate will affect the roof as a whole. By clicking and dragging the solid blue grips at the center of each edge you can move an edge to effectively stretch the roof. By clicking and dragging the hollow blue grips at the corners, you can stretch the corners of the roof to reshape it.



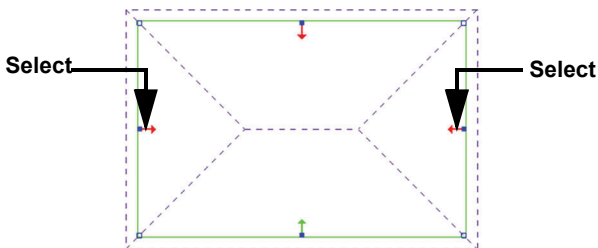
The red and green arrows are surface markers. The green arrow indicates the currently selected surface. Changes to most properties, such as the roof type, slope, and overhang distance, affect only the currently selected surface (which is marked by the green arrow). You can make additional surfaces current by simply clicking on the red arrows to change them to green. This lets you apply changes to multiple surfaces simultaneously.

Converting a Hip Roof to a Gable Roof

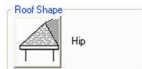
To convert a hip roof to a gable roof, you need to select two hip ends, then select the gable roof type in the roof properties.

To convert a hip roof to a gable roof:

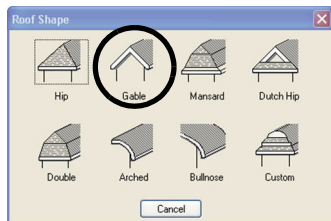
1. Click on the roof edge of one of the ends you want to convert. The roof is selected, and arrows appear on each roof surface edge. The arrow on the roof edge you selected should be green to indicate that it is the currently selected roof surface.
2. Click on the arrow on the opposite roof edge. That arrow turns green also. Both hip ends are now selected.



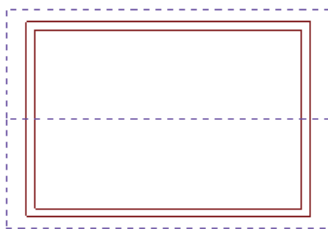
3. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
4. In the **Roofs** dialog, click the Hip button in the *Roof Shape* area of the Basic page.



- In the **Roof Shape** dialog, click the Gable graphic.



- Click **OK** in the **Roofs** dialog. The roof is converted.



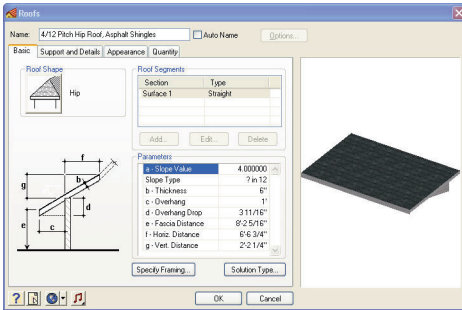
Editing the Properties of a Roof

When you edit the properties of a roof, the changes are applied to the currently selected roof surface. You can edit multiple roof surfaces simultaneously if you want. Each surface in a roof can have different settings. You can edit properties such as shape, slope and overhang, as well as framing, fascia, soffit and gable end settings.

To edit the properties of a roof:

- Click on the edge of the surface whose properties you want to edit. The arrow marker on that edge should be green. To select additional surfaces to edit, simply click their arrows to change them from red to green. All surfaces with green arrows will receive the changes.

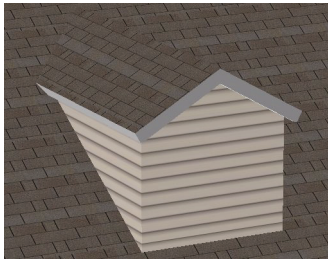
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.



3. Edit the properties as desired. For more detailed information, see the online help.

Inserting Dormers

A dormer is a small structure that projects from a roof slope. Dormers are often used to extend the usable floor area of a second story that is under a moderate to steeply pitched roof. They can be quite effective in opening up cramped rooms under the roof. A typical dormer consists of a roof and three walls. One of the most common dormer types is the gable dormer, characterized by the front gable in the roof.



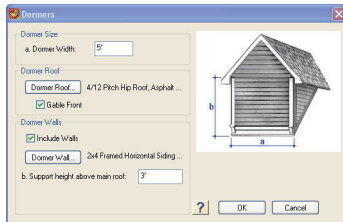
You can also create a dormer without walls. In this case the dormer roof sits on top of the main roof. Its purpose is usually to add character to an otherwise plain roof or to make your roof design more complex. For example, you can insert a

dormer roof on your main roof and stretch it to create a porch roof or gable extension.

Dormers are easy to insert - just point and click. You can control the dormer's width, roof type, wall type, and wall height.

To create a dormer:

1. In the building locations drop box, select the location containing the roof you want to add the dormer to.
2. Select **Insert > Roofs > Dormer Roof**, or click the Roofs button on the Building toolbar and select **Dormer Roof**. If you are using *Landscape & Deck*, select **Insert > Building > Dormer Roof**.



3. In the **Dormers** dialog, specify the desired width for the dormer in the **Dormer Width** edit box.
4. Click the **Dormer Roof** button, then select the desired roof type for the dormer. By default, the roof will have a gable front, regardless of the roof type. If you do not want it to have a gable front, uncheck the **Gable Front** check box.
5. If you want your dormer to have walls, check the **Include Walls** check box. Then, click the **Dormer Wall** button and select the desired wall type from the catalog. If you do not want your dormer to have walls, disable the **Include Walls** check box.

Note that dormer walls extend only to the surface of the main roof. As well, an opening is cut in the main roof surface to open the dormer up to the space below.

6. In the **Support height above main roof** edit box, type the height of the dormer's front wall, not including the raked

portion between the two roof slopes. You can use this option even if you are not inserting walls to control the position of the bottom of the dormer roof.

- Click **OK**. The dormer's wall footprint is attached to your cursor.
- Position the dormer where you want it, then click to insert it. In most cases you would place the front dormer wall directly on top of the exterior wall.
- Right-click and select **Finish**.

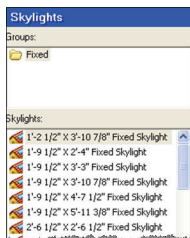
Note: If you can't seem to insert the dormer, it means that the dormer is too large for the surface you are inserting it on. You may want to try decreasing the wall height before inserting it.

Inserting Skylights

You can insert a skylight in your roof with point-and-click simplicity. The catalog contains a long list of skylights in a variety of sizes.

To insert a skylight:

- Select **Insert > Roofs > Skylights**, or click the Roofs button on the Building toolbar and select Skylights. If you are using *Landscape & Deck*, select **Insert > Building > Skylights**.
- In the catalog, select the skylight you want to insert.
- Position the skylight on the roof.
- Click to insert the skylight.
- Right-click and select **Finish**.



Part 4

Designing the Interior

Kitchen Builder Wizard	page 91
Cabinets	page 97
Appliances	page 101
Interior Furniture, Electronics & Accessories	page 105
Interior Equipment	page 109

Chapter 13

Kitchen Builder Wizard



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The Kitchen Builder Wizard creates a kitchen for you in a few easy steps. All you have to do is select the general shape and layout you want. Then, just point and click to insert all of your cupboards and appliances in one shot. It couldn't be easier! Once you've inserted the kitchen you can move things around and edit individual elements to create a look that's customized to your taste and needs.



Creating a Kitchen with the Kitchen Builder Wizard

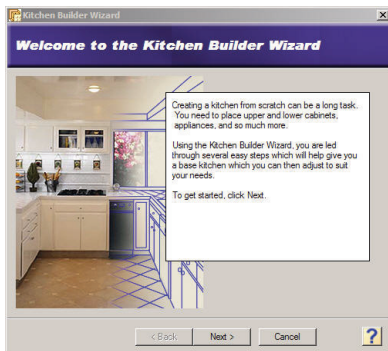


Home & Landscape Pro and Home Designer only

Using the Kitchen Builder Wizard you can quickly create a kitchen layout that includes upper and lower cabinets, a sink, refrigerator and stove. There are a number of layouts and styles to choose from.

To create a kitchen with the Kitchen Builder Wizard:

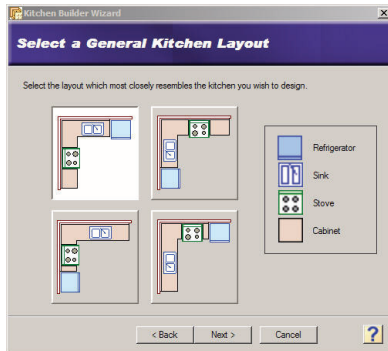
1. Select **Tools > Design Wizards > Kitchen Builder**.



2. Click **Next**.

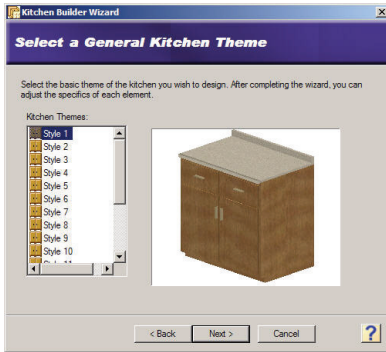


3. Click on the general style of kitchen you want — L-Shape, Galley or U-Shape.
4. Click **Next**.



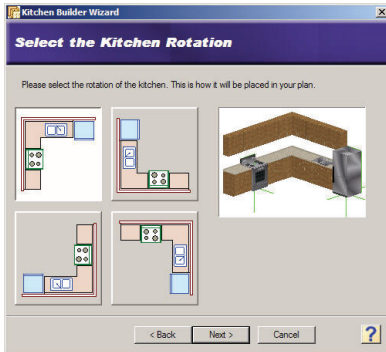
5. Select the layout that most closely resembles the layout you want. Remember that you can move and edit things later.

6. Click Next.



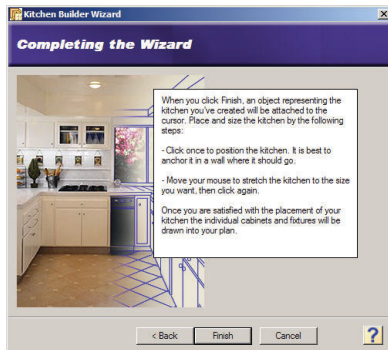
7. Select a general style for your kitchen. The selection you make mainly determines the materials and colors used for the cupboards and countertops.

8. Click Next.

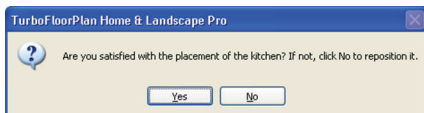


9. Select the desired rotation for the kitchen layout by clicking the appropriate graphic. This is how it will be attached to your cursor prior to insertion.

10. Click **Next**.



11. Click **Finish**. The kitchen configuration is attached to your cursor.
12. Position the kitchen layout in your kitchen area. It will automatically snap to the walls when you get close to them. Click to anchor the kitchen elements. Dynamic dimensions are displayed to show you the size of the layout.
13. If you want you can stretch the layout by simply moving your pointer in the direction you want to stretch.
14. Once the dimensions are correct, click to finish the insertion.



15. Click **Yes** to finish the task. If you click **No** you can reposition and reinsert the kitchen.

Chapter 14

Cabinets



Home & Landscape Pro and Home Designer only

Cabinets are essential for storage and can also contribute to the overall look and feel of a room. The catalog contains a huge selection of cabinet types, styles and sizes, all customizable to suit your taste and needs.

Cabinet types include base cabinets, corner cabinets, upper cabinets, islands, pantry cabinets and bathroom vanities.

You can insert cabinets in any room in your house with just a click of your mouse. Cabinets are designed to snap to walls and other cabinets, making insertion even easier.

Inserting Cabinets



Home & Landscape Pro and Home Designer only

You can insert a wide variety of cabinets in your design by simply pointing and clicking with your mouse. Cabinets automatically snap to walls and other elements when you get close to them provided Collision Control is turned on.

To insert a cabinet:

1. Select **Insert > Interiors > Cabinets**, or click the Cabinets button on the Interiors toolbar.
2. In the catalog, select the cabinet you want to insert.
3. Position the cabinet where you want it, then click to insert it.
4. Right-click and select **Finish**.



Moving a Cabinet

You can move individual or multiple cabinets by clicking and dragging them.

To move cabinets:

Select the cabinet you want to move. If you want to move multiple cabinets, use Shift+click to select the additional cabinets.

Hover your pointer over the cabinet's center grip to display the Move cursor.

Click and drag to move the cabinet.

When the cabinet is where you want it, release your mouse button.

Editing Cabinet Properties

Cabinet properties include cabinet type, size, and leaf style, as well as settings for the counter, shelves, toe space and hardware.



To edit cabinet properties:

1. Click on the cabinet to select it.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. Edit the properties as desired. For more detailed information, see the online help.

Inserting a Sink into a Cabinet**Home & Landscape Pro and Home Designer only**

You can insert a kitchen or bathroom sink into a cabinet that you have inserted in your drawing by simply pointing and clicking. The sink automatically snaps itself into place at the center of the cabinet top.

To insert a sink into a cabinet:

1. Select **Insert > Interiors > Plumbing Fixtures**, or click the Plumbing Fixtures button on the Interiors toolbar.
2. In the catalog, select the Sinks category, then select the sink you want to insert.
3. Position the fixture inside the cabinet, then click to insert it.
4. Right-click and select **Finish**.



Chapter 15

Appliances



Home & Landscape Pro and Home Designer only

Most home plans usually show the location of appliances in the kitchen and laundry room. Inserting appliances in your project can obviously enhance the design of a room, and can also help identify where electrical outlets are needed.

The catalog offers an excellent selection of kitchen and laundry appliances, including refrigerators, dishwashers, ovens, ranges, washers, dryers — even toasters. And of course, just like everything else, you can customize appliances to create the exact look you want.

Inserting appliances is easy — just point and click. Most major appliances are set to snap to walls and other elements when you get close to them.

Inserting Appliances



Home & Landscape Pro and Home Designer only

You can insert a wide variety of kitchen and laundry appliances in your design by simply pointing and clicking with your mouse. Appliances automatically snap to walls and other elements when you get close to them provided Collision Control is turned on.

To insert an appliance:

1. Select **Insert > Interiors > Appliances**, or click the Appliances button on the Interiors toolbar.
2. In the catalog, select the appliance you want to insert.
3. Position the appliance where you want it, then click to insert it.
4. Right-click and select **Finish**.



Note: If you are inserting a built-in oven, just position it where you want it in the wall and it will snap into place correctly with only the oven door and controls protruding from the wall.

Moving Appliances

You can move individual appliances by clicking and dragging them.

To move an appliance:


1. Select the appliance you want to move.
2. Hover your pointer over the appliance's center grip to display the Move cursor.
3. Click and drag to move the appliance.
4. When the appliance is where you want it, release your mouse button.



Rotating Appliances

You can rotate appliances by clicking and dragging them.

To rotate an appliance:

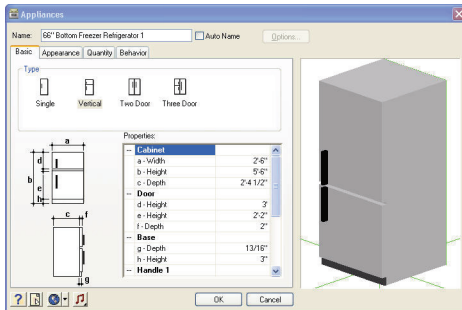
1. Select the appliance you want to rotate.
2. Hover your pointer over the triangular grip to display the Rotate cursor. 
3. Click and drag to rotate the appliance.
4. When the appliance is at the desired rotation, release your mouse button.

Editing Appliance Properties

You can edit the height, width and depth of most appliances. Some appliances have additional properties that define their size and style.

To edit appliance properties:

1. Click on the appliance to select it.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. Edit the properties as desired. For more detailed information, see the online help.



Chapter 16

Interior Furniture, Electronics & Accessories



Home & Landscape Pro and Home Designer only

Once you've got your cabinets and appliances in place, you can start with furnishing and decorating your home. The catalog contains so many different types of furniture, electronics and decorative accessories, the possibilities are endless. And with easy, point-and-click insertion, you can play around with different design ideas and quickly decorate every room of your home, just the way you want it.

Note: For information about inserting exterior furnishings, see *Exterior Furniture* on page 195 and *Exterior Accessories* on page 209.

Inserting Interior Furniture



Home & Landscape Pro and Home Designer only

The catalog contains a variety of furnishings for every room in your home — everything from beds to CD stands. Furnishings automatically snap to walls and other elements when you get close to them provided Collision Control is turned on.

To insert furniture:

1. Select **Insert > Interiors > Interior Furniture**, or click the Interior Furniture button on the Interiors toolbar.
2. In the catalog, select the element you want to insert.
3. Position the element where you want it, then click to insert it.
4. Right-click and select **Finish**.



Inserting Electronics



Home & Landscape Pro and Home Designer only

Electronics include televisions, computers, clocks and telephones.

To insert electronics:

1. Select **Insert > Interiors > Electronics**, or click the Electronics button on the Interiors toolbar.



2. In the catalog, select the element you want to insert.
3. Position the element where you want it, then click to insert it.
4. Right-click and select **Finish**.



Inserting Interior Accessories

 **Home & Landscape Pro and Home Designer only**

Accessories are those small, personal touches that really pull a room together. They are things like curtains, blinds, towel racks, shower curtains, medicine cabinets, plates, bowls, cups, mirrors and pictures.

To insert accessories:

1. Select **Insert > Interiors > Interior Accessories**, or click the Interior Accessories button on the Interiors toolbar.
2. In the catalog, select the element you want to insert.
3. Position the element where you want it, then click to insert it.
4. Right-click and select **Finish**.



Moving Furnishing Elements

You can move furniture, electronics and accessories by clicking and dragging them.

To move an element:


1. Select the element you want to move.
2. Hover your pointer over the element's center grip to display the Move cursor.
3. Click and drag to move the element.
4. When the element is where you want it, release your mouse button.



Rotating Furnishing Elements

You can rotate furniture, electronics and accessories by clicking and dragging them.

To rotate an element:

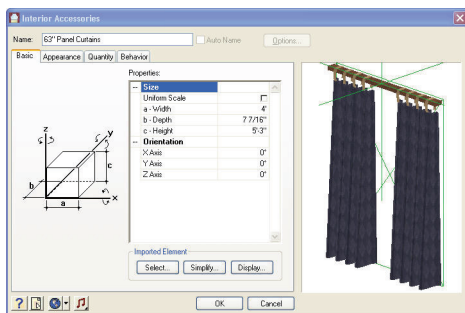
1. Select the element you want to rotate.
2. Hover your pointer over the triangular grip to display the Rotate cursor. 
3. Click and drag to rotate the element.
4. When the element is at the desired rotation, release your mouse button.

Editing the Properties of Furnishing Elements

You can edit the height, width and depth of most furnishing elements. Some elements have additional properties that define their size and style.

To edit the size of furnishing elements:

1. Click on the element whose properties you want to edit.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. Edit the properties as desired. For more detailed information, see the online help.



Chapter 17

Interior Equipment



Home & Landscape Pro and Home Designer only

TFP offers a variety of elements that can make your home more functional and enjoyable, such as exercise equipment, satellite dishes, and garbage disposal equipment. All can be inserted with a simple mouse click.

Note: For information about inserting exterior equipment and structures, see *Exterior Structures* on page 199.

Inserting Equipment

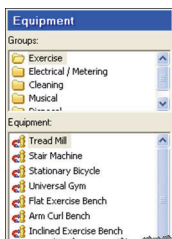


Home & Landscape Pro and Home Designer only

The catalog contains a wide range of functional equipment, including exercise equipment, central vac units, utility boxes and meters, satellite dishes, and garbage disposal units.

To insert equipment:

1. Select **Insert > Interiors > Equipment**, or click the Equipment button on the Interiors toolbar.
2. In the catalog, select the element you want to insert.
3. Position the element where you want it, then click to insert it.
4. Right-click and select **Finish**.



Moving Equipment

You can move equipment by clicking and dragging it.

To move equipment:

1. Select the element you want to move.
2. Hover your pointer over the element's center grip to display the Move cursor.
3. Click and drag to move the element.
4. When the element is where you want it, release your mouse button.



Rotating Equipment

You can rotate equipment by clicking and dragging it while in rotation mode.

To rotate an element:

1. Select the element you want to rotate.
2. Hover your pointer over the triangular grip to display the Rotate cursor.



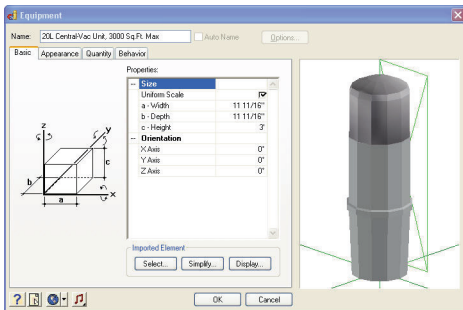
3. Click and drag to rotate the element.
4. When the element is at the desired rotation, release your mouse button.

Editing the Properties of Equipment

You can edit the height, width and depth of most equipment elements.

To edit the size of equipment elements:

1. Click on the element whose properties you want to edit.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. Edit the properties as desired. For more detailed information, see the online help.



Part 5

Utilities

Interior Lighting	page 115
Electrical	page 121
Plumbing	page 127
HVAC	page 131

Chapter 18

Interior Lighting



Home & Landscape Pro and Home Designer only

Interior lighting can drastically change the look and atmosphere of a room. Light fixtures also play an important part when you create interior 3D Real View™ renderings. *TFP* provides an excellent selection of ceiling lights, wall lights, track lights, recessed lights and lamps for you to insert. You can change their bulbs for different lighting effects, and even turn them on and off!

Lights are inserted at a logical height in your plan depending on their type, making accurate placement easy. Also, ceiling lights snap to ceilings, and wall lights snap to walls. Just point and click!

If working in Rendered or Rendered Outline display mode, real-time lighting effects are displayed as you insert light fixtures in your design, allowing you to see how much light will be produced.

Note: For information about exterior lighting, see page 203.

Inserting Interior Light Fixtures



Home & Landscape Pro and Home Designer only

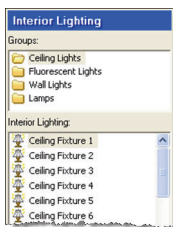
You can insert a variety of light fixtures in your design. Interior light fixtures include ceiling lights, wall lights, track lighting, recessed lights, and lamps.

Each lighting fixture has a light source in its property definition, such as an incandescent light bulb. Lights are particularly important if you plan to create a 3D Real View™ of your model (page 277), since the program uses light to calculate and create the rendered view.

With the exception of lamps, light fixtures are set to snap to either ceilings or walls depending on what kind of fixture they are.

To insert a light fixture:

1. Select **Insert > Interiors > Interior Lighting**, or click the Interior Lighting button on the Interiors toolbar.
2. In the catalog, select the light fixture you want to insert.
3. Position the light where you want it, then click to insert it.
4. Right-click and select **Finish**.



Tip: If you switch to Rendered or Rendered Outline display mode, you can see instant lighting effects as you position and insert light fixtures.

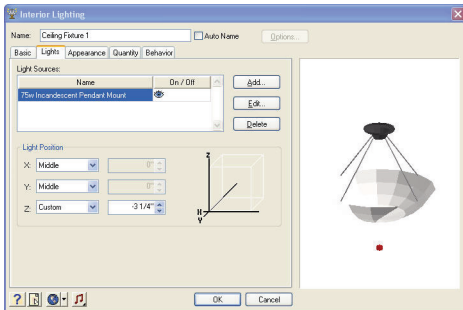
Editing a Light Fixture's Light Source

A light source is a type of light bulb. You can edit a light fixture's light source to achieve a different lighting effect. For example, you can select a bulb with a softer glow, or a bulb with a different wattage or color.

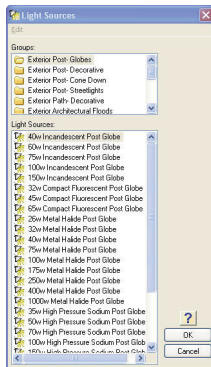
To edit a light fixture's light source:

1. Select the light fixture whose properties you want to edit.

- Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
- Select the *Lights* tab.



- To replace the currently selected light source with another type, click **Edit**, then select a light source from the **Light Sources** dialog. To add a light source to the fixture, click **Add**, then select a light source from the **Light Sources** dialog.



Tip: You can double-click a light source in the library and edit its *Scale* (intensity) and *Color*.

- To delete a light source from the light fixture, click **Delete**.

6. To edit the position of the light source in relation to the light fixture, specify the X, Y and Z coordinates in the *Light Position* area. Coordinates are measured from the bottom center of the fixture. The small red box in the preview window indicates the current position of the light source. Changing the **X** value moves the light source left or right. Selecting *Middle* positions the light in the center of the fixture, and selecting *Minimum* or *Maximum* positions it on the left or right side. If you select *Custom* you can enter a specific value in the adjacent edit box which is relative to the center position. For example, entering **-3** moves the light source 3" left from the center. Changing the **Y** value moves the light source forward or backward. Selecting *Minimum* brings the light source all the way forward, and selecting *Maximum* moves it to the back of the fixture. Changing the **Z** value moves the light source up or down. Selecting *Minimum* positions the light source at the bottom of the fixture, while selecting *Maximum* positions it at the top of the fixture.
7. Once you've specified the properties, click **OK**.

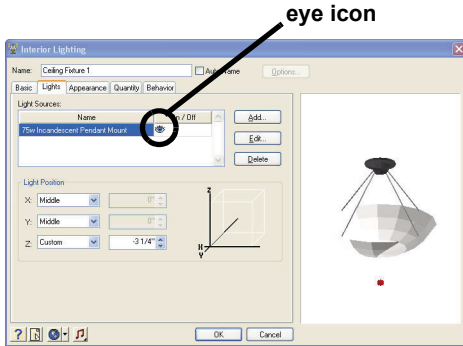
Turning a Light On or Off

By default, lights are on when you insert them. You can virtually turn a light off by disabling its light source.

To turn a light on or off:

1. Select the light fixture you want to turn on or off.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.

3. Select the *Lights* tab.



4. To turn the light on or off, click the eye icon next to the light source name.
5. Click **OK**.

Chapter 19

Electrical



Home & Landscape Pro and Home Designer only

It is easy to insert electrical outlets, switches, thermostats and smoke detectors in your plan — just point and click. Electrical elements automatically snap to walls and are inserted at a logical height depending on their type, making it easy to place them accurately.

Once you've inserted electrical elements you may want to draw wiring in your 2D plan. All it takes is a few clicks of the mouse.

Inserting Outlets and Switches

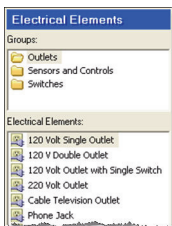


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You can insert electrical outlets and light switches in your plan with a single mouse click. The backs of these elements automatically snap to walls and are inserted at a logical height on the wall, making accurate placement effortless. You can move, raise and lower these elements after you have inserted them.

To insert outlets and switches:

1. Select **Insert > Interiors > Electrical > Electrical Elements**, or click the Electrical button on the Interiors toolbar and select **Electrical Elements**.
2. In the catalog, select the element you want to insert.
3. Position the element where you want it, then click to insert it.
4. Right-click and select **Finish**.



Inserting Thermostats and Smoke Detectors



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To insert a thermostat or smoke detector, all you need to do is point and click. Thermostats are set to automatically snap to walls and are inserted at a default height of 5'. Smoke detectors insert a default height of 8'. You can move, raise or lower thermostats and smoke detectors after you have inserted them.

To insert thermostats and smoke detectors:

1. Select **Insert > Interiors > Electrical > Electrical Elements**, or click the Electrical button on the Interiors toolbar and select **Electrical Elements**.



2. In the catalog, select the Sensors and Controls category, then select the element you want to insert.
3. Position the element where you want it, then click to insert it.
4. Right-click and select **Finish**.

Raising or Lowering an Electrical Element

You can raise or lower an outlet, switch, thermostat or smoke detector using the Elevate tool.

To raise or lower an electrical element:

1. Select the element whose elevation you want to edit.
2. Right-click and select **Elevate**, or select **Edit > Modify Elements > Elevate**. The value shown in the **Elevate** dialog is the current elevation of the element.
3. In the **Elevate** dialog, specify the desired elevation of the bottom of the element above the floor.
4. Click **OK**.

Tip: You can also change an element's elevation by changing the **Distance above current location or terrain** variable on the element's Behavior property page.

Moving an Electrical Element

You can move outlets, switches, thermostats and smoke detectors in plan view by simply clicking and dragging them.

To move an element:

1. Select the element you want to move.
2. Hover your pointer over the element's center grip to display the Move cursor.
3. Click and drag to move the element.
4. When the element is where you want it, release your mouse button.

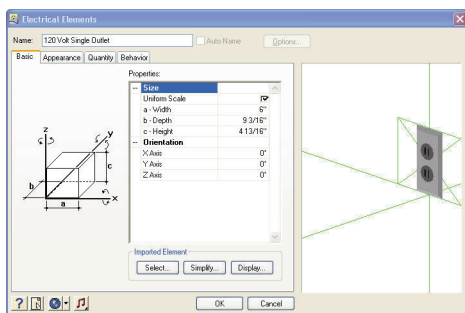


Editing the Properties of an Electrical Element

You can edit the height, width and depth of most electrical elements. Some elements have additional dimensions for individual components in the element.

To edit the size of an electrical element:

1. Select the element whose size you want to edit.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.



3. Edit the properties as desired.
4. Click **OK**.

Inserting Electrical Wiring

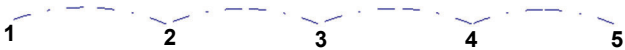


Home & Landscape Pro and Home Designer only

Once you've inserted electrical elements, you can use the Wiring tool to indicate the location of electrical wiring in your 2D plan. By default, wiring lines have arched segments and use a dashed linestyle. You can stretch and reshape individual segments after you've inserted the line. You can also edit the linestyle. Wiring is only visible in 2D plan view.

To add electrical wiring:

1. Select **Insert > Interiors > Electrical > Wiring**, or click the Electrical button on the Interiors toolbar and select **Wiring**.
2. Select a start point for the wiring line.
3. Select the next point for the wiring line. An arched line segment is created between the two points.



4. Continue selecting points to add more segments.
5. Right-click and select **Finish**.

Note: You can change the line style of individual wires if you want. See *Changing the Line Style of Wiring* on page 126. You can also mark your wiring lines with text. See *Adding Text* on page 246.

Stretching and Reshaping Wiring Segments

You can stretch individual segments in a wiring line by clicking and dragging their grips. Stretching wiring segments can change their length or shape.

To stretch a wiring segment:

1. Select the segment you want to stretch. Grips are displayed along the segment.
2. Hover your pointer over the grip you want to grab and stretch.



3. Click and drag to stretch the line, then release your mouse button.



Changing the Line Style of Wiring

By default, electrical wiring is displayed using the Electrical Power Distribution line style, which is a brown, dashed line. You can select a different line style for selected wiring segments if you want. For example, you may want to select the Telephone line style for your telephone lines.

To change the line style of wiring:

1. Select one of the line segments you want to change. Use Shift+click to select the remaining segments in the line.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. In the **Line Styles** dialog, select the line style you want to use.
4. Click **OK**. The line style is updated in your drawing.

Chapter 20

Plumbing



Home & Landscape Pro and Home Designer only

TFP offers a complete selection of sinks, faucets, tubs, showers, toilets and bidets to help you properly equip your home. Plumbing fixtures are inserted with a single mouse click and will automatically snap to walls if Collision Control is turned on. You can control which edge of a fixture snaps to the wall, as well as edit the fixture's size, style and elevation.

Inserting Plumbing Fixtures



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Placing plumbing fixtures in your plan is easy — just select what you want to insert, then point and click. With Collision Control turned on, fixtures will automatically snap to walls when you get close to them. Also, fixtures will insert at a logical height. For example, a toilet will insert on the floor, while a sink may insert 3' off the floor. You can edit a fixture's size and elevation, as well as move and rotate it.

Note: The first four sinks in the Sinks category (kitchen and bathroom sinks) can only be inserted into a cabinet. Also, the cabinet must be large enough to house the sink.

To insert plumbing fixtures:

1. Select **Insert > Interiors > Plumbing Fixtures**, or click the Plumbing Fixtures button on the Interiors toolbar.
2. In the catalog, select the fixture you want to insert.
3. Position the fixture where you want it, then click to insert it.
4. Right-click and select **Finish**.



Moving a Plumbing Fixture

You can move plumbing fixtures by clicking and dragging them.

To move a plumbing fixture:


1. Select the plumbing fixture you want to move.
2. Hover your pointer over the fixture's center grip to display the Move cursor.
3. Click and drag to move the fixture.
4. When the fixture is where you want it, release your mouse button.



Rotating a Plumbing Fixture

You can rotate plumbing fixtures by clicking and dragging them.

To rotate a plumbing fixture:

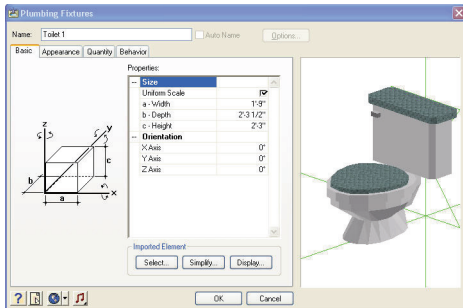
1. Select the fixture you want to rotate.
2. Hover your pointer over the triangular grip to display the Rotate cursor. 
3. Click and drag to rotate the fixture.
4. When the fixture is at the desired rotation, release your mouse button.

Editing the Properties of a Plumbing Fixture

You can edit properties such as the height, width and depth of a plumbing fixture.

To edit the properties of a plumbing fixture:

1. Click on the plumbing fixture whose properties you want to edit.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.



3. Edit the properties as desired.
4. Click **OK**.

Chapter 21

HVAC



Home & Landscape Pro and Home Designer only

The correct placement of heating and ventilation elements is an important part of the home design process. Laying out HVAC elements is quick and easy - just point and click.

The catalog contains just about anything you'd need — furnaces, fireplaces, wood stoves, chimneys, central air units, water heaters, floor registers and cold air returns. Of course, just like anything else, you can move, rotate and edit these elements if you change your mind.

Inserting Heating and Cooling Elements



Home & Landscape Pro and Home Designer only

You can insert heating and cooling elements with a click of your mouse. Heating and cooling elements include fireplaces, wood stoves, furnaces, water heaters, and central air units. By default, heating elements are inserted on the floor and will snap to walls if Collision Control is turned on. Central air units are inserted on the terrain.

To insert a heating element:

1. Select **Insert > Interiors > HVAC Elements**, or click the HVAC Elements button on the Interiors toolbar.
2. In the catalog, select the Heating or Cooling category, then select the element you want to insert.
3. Position the element where you want it, then click to insert it.
4. Right-click and select **Finish**.



Inserting Floor Registers and Cold Air Returns



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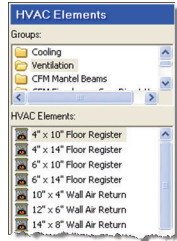
Registers and air returns come in a variety of sizes, but you can create a different size if you need to. Wall air returns will insert directly onto walls. You can change the height of them later if you want.

To insert a ventilation element:

1. Select **Insert > Interiors > HVAC Elements**, or click the HVAC Elements button on the Interiors toolbar.



2. In the catalog, select the Ventilation category, then select the element you want to insert.
3. Position the element where you want it, then click to insert it.
4. Right-click and select **Finish**.




Inserting a Chimney

Home & Landscape Pro and Home Designer only

Chimneys by default are 12' tall, but you can change this before or after you insert the chimney to create the correct height needed for your house. By default, the chimney in the catalog has a brick base and concrete cap. You can edit the appearance of the chimney to match the exterior of your home if you are inserting the chimney on the outside.


To insert a chimney:

1. Select **Insert > Interiors > HVAC Elements**, or click the HVAC Elements button on the Interiors toolbar. 
2. In the catalog, select the Ventilation category, then select the Chimney element.
3. Position the chimney where you want it, then click to insert it.
4. Right-click and select **Finish**.

To edit the height of the chimney:

1. Select the chimney.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. On the Basic property page, change the value in the **Base Height** edit box.
4. Click **OK**.


To apply different materials to the chimney:

1. Display your model in 3D, and make sure the chimney is visible in the view.
2. Select **Edit > Materials Paintbrush**, or click the Materials Paintbrush button on any tabbed toolbar. 
3. In the catalog panel, select the material you want to apply.
4. Click on the component you want to apply the material to. You can apply different materials to the base, cap and flue.
5. When you are finished applying materials, right-click and select **Finish**.

Moving HVAC Elements

You can move HVAC elements by clicking and dragging them.

To move an HVAC element:

1. Select the HVAC element you want to move.
2. Hover your pointer over the element's center grip to display the Move cursor. 
3. Click and drag to move the element.
4. When the element is where you want it, release your mouse button.

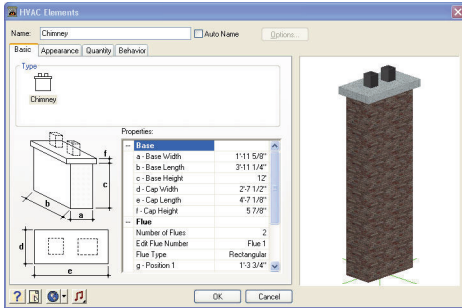
Editing the Properties of an HVAC Element

You can edit properties such as the dimensions of an HVAC element. The more complex an element is, the more variables it will have. A chimney, for example, has separate variables for the base, cap and flue, so you can create the exact look and size you want.

To edit the size of an HVAC element:

1. Click on the HVAC element whose properties you want to edit.

2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.



3. Edit the properties as desired.
4. Click **OK**.

Part 6

Terrain Modeling

Terrain Modeling	page 139
Property Lines	page 149

Chapter 22

Terrain Modeling

For true realism you can recreate the topography of the lot your home will be built on.

By default, a basic 160' x 160' grass terrain is displayed in the drawing area. In 2D view, only the boundary of the terrain is shown (you may need to zoom out to see it). Contour lines may also be visible depending on the terrain's defined properties. In 3D view, the terrain is displayed as a solid, 3D object. It can be viewed in wireframe, hidden line or rendered form. You add hills, berms, plateaus and slopes to your terrain to create an incredibly realistic-looking building site.

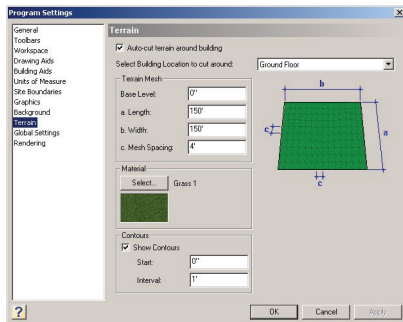
Defining the Basic Terrain

You can control the base level, size (length and width), mesh spacing, and contour interval of the terrain. You can also select a texture to use when displaying the terrain in rendered view (the default is grass).

You can specify whether or not you want the terrain to cut around your building, and select the location that you want the terrain to cut around.

To define the terrain:

1. Select **Settings > Program Settings** or click the Program Settings button on the Settings toolbar.
2. In the **Program Settings** dialog, select **Terrain** in the left column.



3. To force the terrain to cut around a building, enable the **Auto-cut terrain around building** check box, then select the building location that you want the terrain to cut around from the **Select Building Location to cut around** drop box.
4. To change the level at which the base of the terrain sits, type the desired value in the **Base Level** edit box. This value is measured from 0.
5. To change the overall size of the terrain, enter the desired values in the **Length** and **Width** edit boxes.
6. To change the spacing between mesh lines (when viewing the terrain in Wireframe, Hidden Line or Patterned view), enter the desired value in the **Mesh Spacing** edit box.

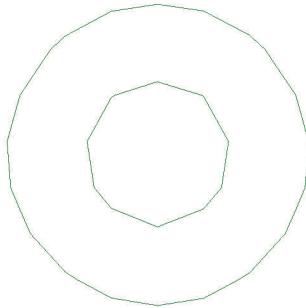
7. To change the texture used for the terrain in the Rendered and Rendered Outline display modes, click the **Select** button in the *Material* area, then make your selection in the **Materials** dialog.
8. To display contours on your terrain, enable the **Show Contours** check box. In the **Start** edit box, enter the elevation of the first contour. In the **Interval** check box, enter the desired spacing between contours. Contours are visible in 2D plan view if the terrain contains hills and valleys.
9. Click **OK**.

Creating Hills and Valleys



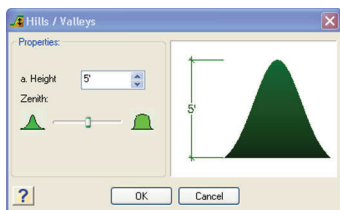
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You can add hills to your terrain with a single mouse click. You can control the height of a hill as well as its peak shape. Generally, the diameter of the hill base is the same as the hill height. You can insert multiple hills together to create one larger hill. Also, if you insert hills next to other terrain elements, like plateaus or slopes, the elements will automatically blend together.



To create a hill or valley:

1. Select **Insert > Terrain > Hills / Valleys**, or click the Hills/Valleys button on the Terrain toolbar.



2. In the **Hills / Valleys** dialog, specify the height of the hill in the **Height** edit box. Entering a negative value will create a valley.
3. Using the **Zenith** slider control, select a peak shape for the hill.
4. Click **OK**.
5. Click to insert the hill. You can insert multiple hills if you like.
6. Right-click and select **Finish**.

Creating Berms and Trenches



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A berm is a mound or bank of soil without formal sides. You often see large berms on the sides of highways, which are used for noise control. On a reduced scale, a natural berm can provide some interesting benefits in a backyard landscape. These include:

Climate control. Berms act as windbreaks, channeling air flow. Berms can create a warmer microclimate or direct cooling breezes.

Privacy. A berm can be a "friendly fence" in the back yard or between your house and a sidewalk.

Vertical interest. You can add variety and texture to your gardens with berms, change the view from your outdoor sitting areas, or even hide eyesores with them.

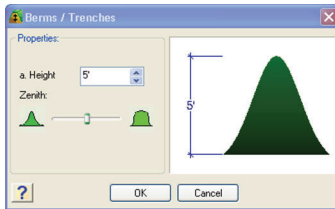
Noise control. A berm can cut down on traffic noise if you live on a busy street or near a schoolyard.

Berms may be shored with stone, bricks, or timbers, and planted with groundcovers, perennials, annuals, trees, etc.

You can control the height of a berm as well as its peak shape.

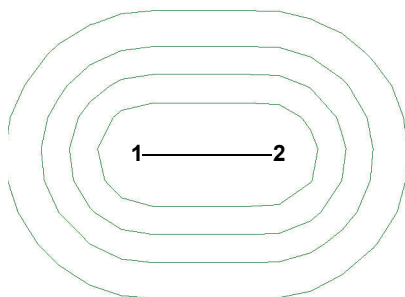
To create a berm or trench:

1. Select **Insert > Terrain > Berms/Trenches**, or click the Berms/Trenches button on the Terrain toolbar.



2. In the **Berms/Trenches** dialog, specify the height of the berm in the **Height** edit box. Entering a negative value creates a trench.
3. Using the **Zenith** slider control, select a peak shape for the berm.
4. Click **OK**.

5. Select two points to define the length of the top of the berm. The berm will be created downward and outward from this line.



6. Right-click and select **Finish**.

Creating Plateaus

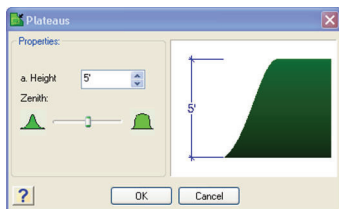


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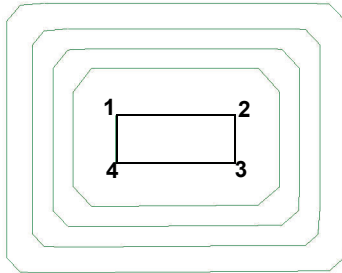
A plateau is a relatively large, flat area of land situated above the adjacent land. Adding a plateau to your terrain involves clicking a few points to define the shape of the plateau. You can control the height of the plateau as well as its peak shape. Note that if you insert a plateau in close proximity to other terrain elements, such as hills, the elements automatically blend together.

To create a plateau:

1. Select **Insert > Terrain > Plateaus**, or click the Plateaus button on the Terrain toolbar.



2. In the **Plateaus** dialog, specify the height of the plateau in the **Height** edit box. Entering a negative value creates an excavated area.
3. Using the **Zenith** slider control, select a general shape for the plateau. The pointier the shape, the steeper the sides will be.
4. Click **OK**.
5. In the drawing area, select points to define the outline of the top of the plateau. Note that the last point picked always closes back to the start point, so you don't have to pick the start point again. The plateau will be created downward and outward from your outline.



6. Right-click and select **Finish**.

Creating Slopes

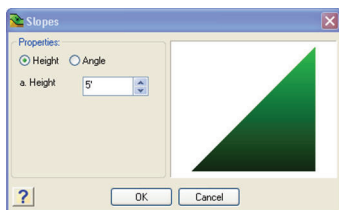


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A slope is an area of land with a natural incline. It is often common practise to slope the land away from the sides of a house so that water drains away from it rather than towards it. When you create a slope, you select two points: the first point is the starting point of the slope, and the second point determines the length and direction of the slope. If the slope comes into contact with other terrain elements, like hills and plateaus, the elements automatically blend together.

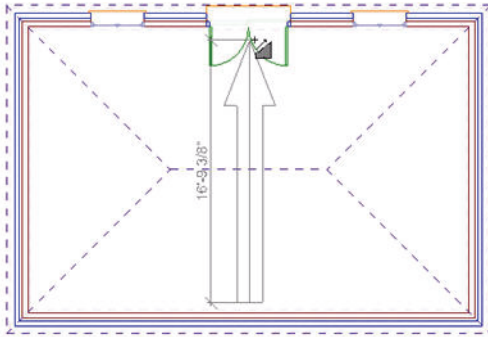
To create a slope in your terrain:

1. Select **Insert > Terrain > Slopes**, or click the Slopes button on the Terrain toolbar.

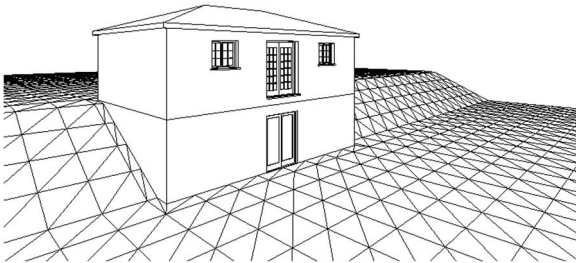


2. In the **Slopes** dialog, enable the **Height** button.
3. In the **Height** edit box, enter the desired height for the slope. Note that slopes are built from the top surface of the terrain (up or down). You can enter a negative value if needed.
4. Enable the **Angle** button.
5. In the **Angle** edit box, enter an angle (in degrees) for the slope. The higher the value, the steeper the slope.
6. Click **OK**.
7. Select a start point for the slope. The slope will incline from this point. Note that the sides of the slope will extend to the very edges of the terrain.

8. Move your cursor in the direction you want the slope to run. A stretchable arrow is displayed.



9. When the arrow is pointing in the right direction and is the desired length, click to insert the slope. The longer the arrow, the more gradual the slope will be. A shorter arrow will result in a steeper slope. Note that if the point you pick is not on the edge of the terrain, the land will level off at the top of the slope.



10. Right-click and select **Finish**.

Chapter 23

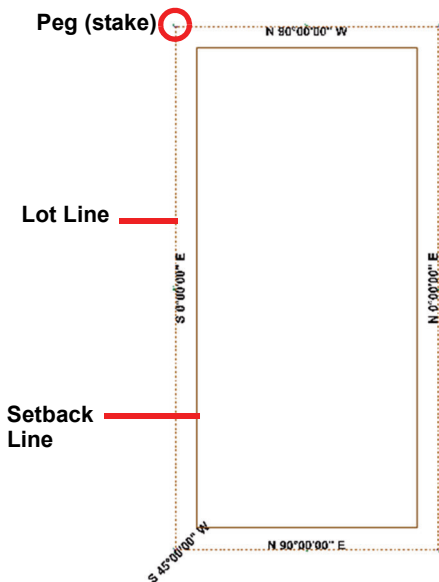
Property Lines

You may want to know where your property lines are, especially if you are working in a confined or unusually-shaped area. Lot lines and setbacks can be found on a survey plan or surveyor's certificate.

Using the Site Boundary tool you can draw a custom site boundary, which shows your stakes and property lines, and can show your building setbacks as well.

Defining Your Building Lot

You can use the Site Boundary tool to define your building lot. A site boundary is a closed line that shows the legal property boundary (lot lines), and is annotated with bearing text, length text and peg numbers. You can specify setbacks as well, which define your building envelope. The site boundary appears only in 2D wireframe view.



Tip: You can put a fence along your lot lines to show where the lot lines are in 3D. See *Inserting a Fence* on page 156.



Creating a Site Boundary

When creating a site boundary using the Reference Angle Method, angles are measured using compass bearings and a reference angle. Each angle is measured within a given quadrant (NE, NW, SE or SW). The angle is the acute (less than 90°) angle from the North or South meridian as measured

to the East or West. For example, the bearing N 90d00'00" E can be thought of as 90° east of North.

By default, the angle is specified using the degrees/minutes/seconds format, but you can choose to use decimal degrees if you prefer.

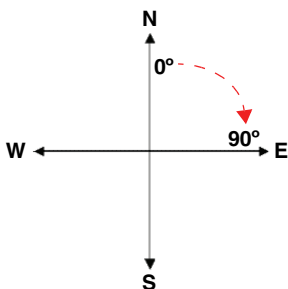
To create a site boundary using the Reference Angle Method:

1. In 2D plan view, select **View > Zoom and Navigate > Zoom to Fit**, or click the Zoom to Fit button on the View Control toolbar. This will bring the entire terrain into view so you can insert the boundary easily and precisely. 
2. Select **Insert > Terrain > Site Boundary**, or click the Site Boundary button on the Terrain toolbar. 
3. Select a point for the first peg (stake). If it is turned on, the Commander becomes instantly active, displaying options for defining the length and direction of line segments.



4. Move your mouse in the general direction you want the first site boundary line to run. This determines the quadrant you are working in, and the compass points used in the bearing. Note that you can also select a quadrant (NE, NW, SE or SW) from the drop box in the Commander if you prefer — just remember to Tab over to the **Distance** edit box when you're done.
5. Type a length for the first boundary line. The value appears in the Commander's **Distance** edit box.
6. To specify the direction of the line, either move your mouse in the desired direction (watching the resulting angle in the Commander's Direction edit box), or press the Tab key to move to the **Direction** edit box, then enter the desired angle and press ENTER. Remember that the angle

is measured from the North or South meridian, and should be between 0 and 90 degrees.



7. Continue defining the remaining segments. When you have defined all but the last segment, right-click and select **Finish**. A closing line segment will be created automatically between the first and last peg, forming a closed site boundary.

Note: Bearings coincide with the angle of the north arrow specified in your global settings.

Defining Building Setbacks

By default, setback lines are not included in your site boundary, as all setback distances are set to 0. You can specify a setback distance for each individual site boundary edge.

To define setback distances:

1. Click on the property line you want to specify a setback distance for. Note that setback distances are defined per site boundary edge, one at a time.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. In the **Site Boundary Edge** dialog, edit the value in the **Setback** edit box.
4. Click **OK**.

Part 7

Adding Exterior Design Elements

Fences & Gates

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Retaining Walls

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Sidewalks, Pathways & Driveways

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Chapter 24

Fences & Gates

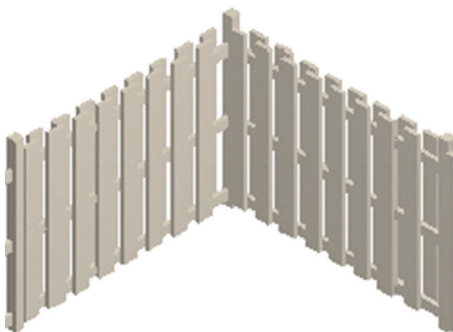


Home & Landscape Pro and Landscape & Deck only

Fences can add beauty, privacy and security to your property. Just point and click to fence off a yard in seconds!

The catalog contains an assortment of fences in a variety of materials, including concrete, stone and wood. You can even add a white picket fence for that classic look.

Once you've drawn your fence you can easily pop a gate into it. You can choose a style that matches your fence, or choose an entirely different style to create a stylish accent.



Inserting a Fence



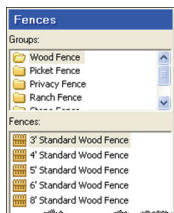
Home & Landscape Pro and Landscape & Deck only

To insert a fence, you draw it just like a wall by selecting a start point and end point. This allows you to create a fence of any length. You can continue selecting points in other directions to add on to the fencing (if you want to fence around your yard, for example).

Tip: If you have inserted a site boundary in your plan, you can draw your fence on top of the lot lines for ease. The fence then acts as a visual indicator of your property extents in 3D.

To insert a fence:

1. Select **Insert > Landscape > Fences/Gates > Fences**, or click the Fences/Gates button on the Landscape toolbar and select **Fences**.
2. In the catalog, select the fence type you want to insert.
3. Select a start point for the fence.
4. Move your cursor in the direction you want the fence to run. The fence stretches as you move your cursor.
5. Select an end point for the fence. If you want you can continue adding sections to the fence in any direction by simply selecting points.
6. Right-click and select **Finish**.



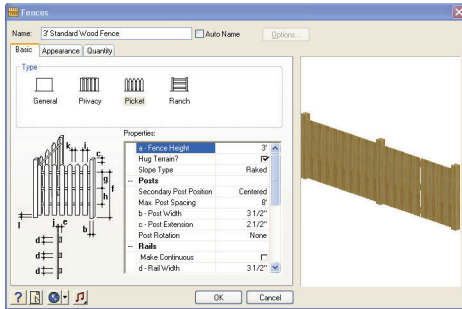
Editing the Properties of a Fence

You can change the height of a fence, specify whether or not you want the fence to hug the terrain, edit the size and position of fence posts, and edit the dimensions of the rails and boards.

To edit the properties of a fence:

1. Click on the fence to select it.

2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.



3. Edit the properties as desired. For more detailed information, see the online help.

Inserting a Gate



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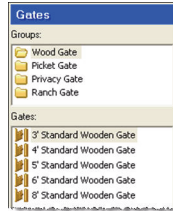
The catalog contains a variety of gate types, including wood, picket and ranch style gates. Gates just pop themselves right into fences. Naturally, if you are inserting a gate in a fence, you want to choose a gate size that corresponds to the fence size. For example, if your fence is a 6' wood privacy fence, you would likely choose the 6' wood privacy gate. Gates are shown slightly open so you can identify them easily in 2D and 3D views.

To insert a gate:

1. Select **Insert > Landscape > Fences/Gates > Gates**, or click the Fences/Gates button on the Landscape toolbar and select **Gates**.



- In the catalog, select the gate you want to insert.
- Position the gate where you want it, then click to insert it. The gate will automatically pop itself into the fence when you position it in the fence.
- Right-click and select **Finish**.

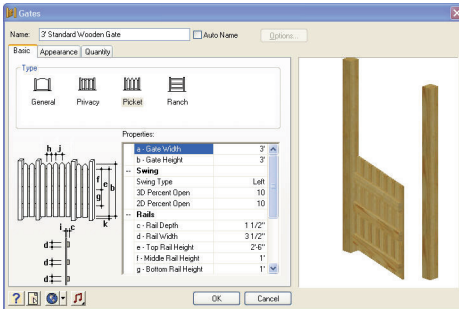


Editing the Properties of a Gate

You can change the height and width of a gate as well as the dimensions of the rails and boards. You can also control how far the gate is open in 2D and 3D views.

To edit the properties of a gate:

- Click on the gate to select it.
- Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.



- Edit the properties as desired. For more detailed information, see the online help.

Chapter 25

Decks & Patios



Home & Landscape Pro and Landscape & Deck only

A great way to add more living space to your home without building an addition is to build a deck or patio. The Deck Builder Wizard makes building a deck so simple — just select the material and shape you want, and the deck is built for you automatically. Or if you prefer, you can create the precise size and shape you want using the Deck tool. Creating a patio involves clicking a few points to define the outline of the slab using the Pads tool.



Using the Deck Builder Wizard



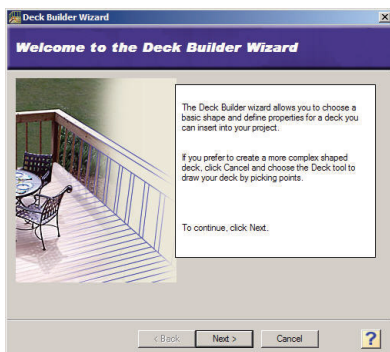
Home & Landscape Pro and Landscape & Deck only

The Deck Builder Wizard takes all the work out of building a deck because it does it all for you! Just select the decking material and deck shape, enter the dimensions you want, then point and click to insert the deck.

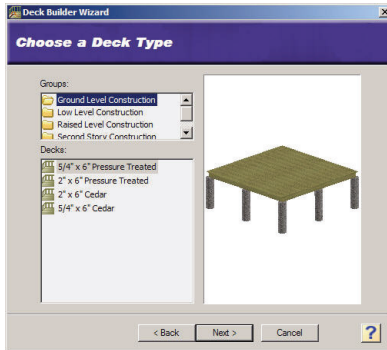
After inserting a deck you can move, stretch, rotate, raise or lower it if needed, as well as edit its properties, which include settings for posts, railings and skirting.

To build a deck using the Deck Builder Wizard:

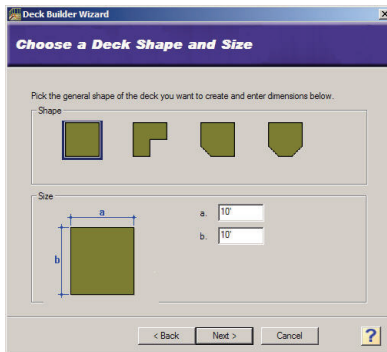
1. In the Building Locations drop box, select the location you want to associate the deck with. The height of a deck is determined by the **Height above current location** variable in the deck properties. You can edit this value after the deck has been inserted if necessary.
2. Select **Tools > Design Wizards > Deck Builder**.



3. In the **Deck Wizard** dialog, click **Next**.

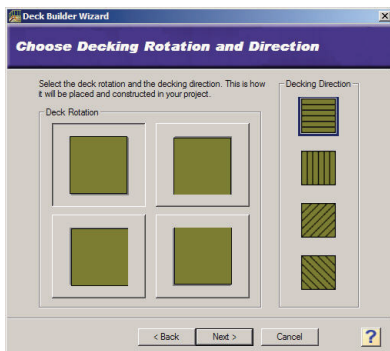


4. Select the decking material you would like to use.
5. Click **Next**.

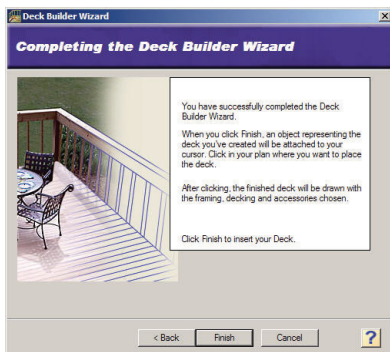


6. In the *Shape* area, click on the shape that most closely resembles the shape you want to create. Remember that you can edit the shape after the deck has been inserted.
7. In the *Size* area, specify the desired dimensions for the deck.

8. Click **Next**.



9. In the *Deck Rotation* area, select the desired rotation for your deck. This is how the deck will be oriented when it is attached to your cursor.
10. In the *Decking Direction* area, select the direction you want the deck boards to run.
11. Click **Next**.



12. Click **Finish**. The Deck Wizard closes, and the deck is attached to your cursor, ready to be inserted.
13. Position the deck where you want it, then click to insert it.

Building a Deck with the Deck Tool



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You can use the Deck tool to build a deck of virtually any shape and size.

Once you've inserted a deck you can move, stretch, rotate, raise or lower it if needed, as well as edit its properties, which include settings for posts, railings and skirting.

To create a deck with the Deck tool:

1. In the Building Locations drop box, select the location you want to associate the deck with. The height of a deck is determined by the **Height above current location** variable in the deck properties. You can edit this value after the deck has been inserted if necessary.
2. Select **Insert > Landscape > Decks > Decks**, or click the Decks button on the Landscape toolbar and select **Decks**.
3. In the catalog, select the decking material you want to use.
4. Select a start point for the deck outline. Continue selecting points until the outline is defined. (You do not have to select the start point again because the last point you pick is always closed back to the start point.)



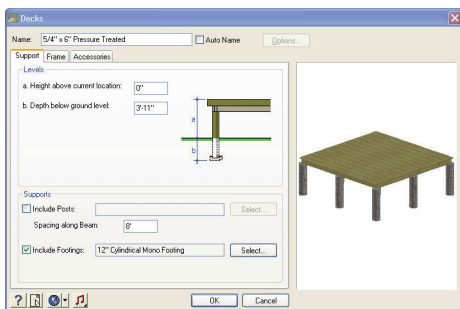
5. Right-click and select **Finish**.

Editing Deck Properties

You can edit properties for a deck's height, posts, beams, footings, decking, railings, skirting, and more.

To edit deck properties:

1. Click on the deck to select it.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.



3. Edit the properties as desired. For more detailed information, see the online help.

Adding Stairs to a Deck



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You can add a staircase to your deck with a single mouse click. Stairs automatically snap to your deck for easy insertion, and the railings on the deck are automatically removed to allow for the stair opening. By default, stairs extend from the deck platform to down to the terrain, so there's absolutely nothing you need to calculate. Also, deck stairs have a railing on both sides by default, but you can remove one or both of them if you want after the stairs have been inserted.

You can choose either pressure treated or cedar stairs, and edit the stair dimensions to get the exact result you want.

To add stairs to a deck:

1. Select **Insert > Landscape > Decks > Deck Stairs**, or click the Decks button on the Landscape toolbar and select **Deck Stairs**.
2. In the catalog, select the type of stairs you would like to insert.
3. Move your pointer close to the deck edge. Position the stairs where you want them, then click to insert them.
4. Right-click and select **Finish**.

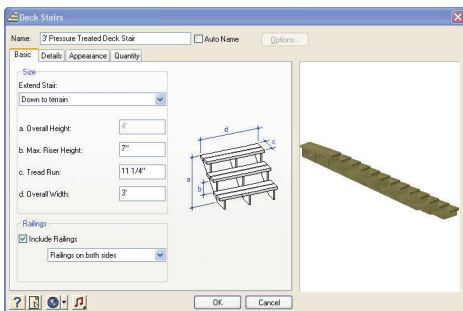


Editing the Properties of Deck Stairs

You can edit properties such as the overall height and width of deck stairs, the width of the steps, and the riser height.

To edit the properties of deck stairs:

1. Click on the staircase to select it.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.



3. Edit the properties as desired. For more detailed information, see the online help.

Creating a Patio



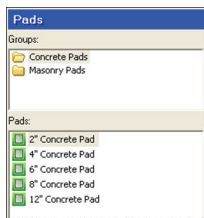
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You can use the Pads tool to insert a concrete or brick patio directly on your terrain. By drawing the outline of the patio, you control its precise size and shape.

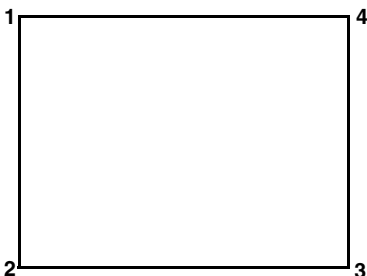
By default, patio slabs hug the terrain they are inserted on. If the terrain is not flat where you are inserting the patio, you may want to turn off the slab's Hug Terrain option. This makes the slab flat and positions it at the Terrain Base Level specified in your Terrain Settings.

To create a patio:

1. Select **Insert > Terrain > Pads**, or click the Pads button on the Terrain toolbar.
2. In the catalog, select the type of slab you want to insert.
3. Select a start point for the slab.
4. Continue selecting points to define the outline of the slab.



Note that the last point picked always closes back to the start point, so you don't have to pick the start point again.



5. Right-click and select **Finish** from the shortcut menu.

Chapter

26

Shed Builder Wizard



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The Shed Builder Wizard steps you through the creation of a custom shed, then builds it for you instantly!

Simply select the shed style you want, then enter the dimensions you would like it to have. Next, define the desired door/window combination, and then select custom materials for the roof, walls, floor, door and window. Finally, just click to insert your new shed where you want it!

Once inserted, you can further edit the shed's individual components if needed.

Note: If you would like to insert a pre-made shed from the catalog, use the Exterior Structures tool. You can find sheds in the Storage and Enclosures category of the catalog.

Building a Shed with the Shed Builder Wizard



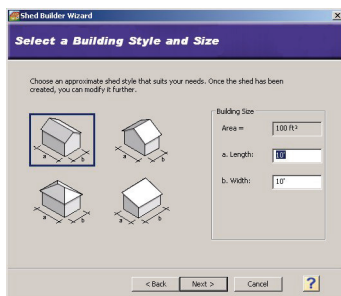
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The Shed Builder Wizard will create a custom shed for you in a few easy steps. All you need to do is select a shed style, enter the desired dimensions, and specify the door and window placement. You can even select what materials you would like to use for the roof, walls, floor, door and window.

Once you've inserted the shed in your plan, you can further edit its individual components to achieve the exact size and appearance you want.

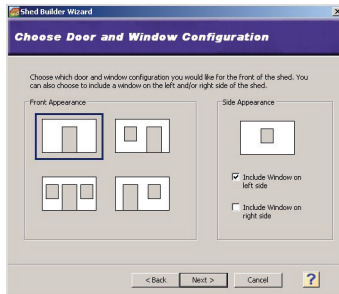
To build a shed:

1. Select **Tools > Design Wizards > Shed Builder**.
2. On the Welcome screen, click **Next**.

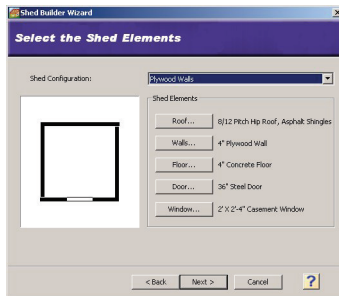


3. On the next screen, click on the graphic that most closely resembles the style of shed you would like to build.
4. Enter the desired dimensions for the shed in the **Length** and **Width** edit boxes.

5. Click **Next**.



6. On the Door and Window Configuration screen, click on the door/window combination that you would like for the front of the shed. If you would like a window on the left side of the shed, enable the **Include Window on left side** check box. If you would like a window on the right side of the shed, enable the **Include Window on right side** check box.
7. Click **Next**.



8. On the Shed Elements screen you can select a custom materials to use for the shed's roof, walls, floor, door and window. Just click the desired elements button, then make a selection from the catalog.

9. Click **Next**.



10. On the final screen, click **Finish**. The shed is attached to your cursor, ready to be inserted.

11. Position the shed where you want it, then click to insert it.

Editing a Shed

If you have created and inserted a shed with the Shed Builder Wizard, you can edit its roof, walls, floor, door and window individually. Just click on the element you want to edit, then edit it as you would if it were part of a house. For example, you can stretch the walls to make the shed bigger or smaller, or select a different window size.

Chapter 27

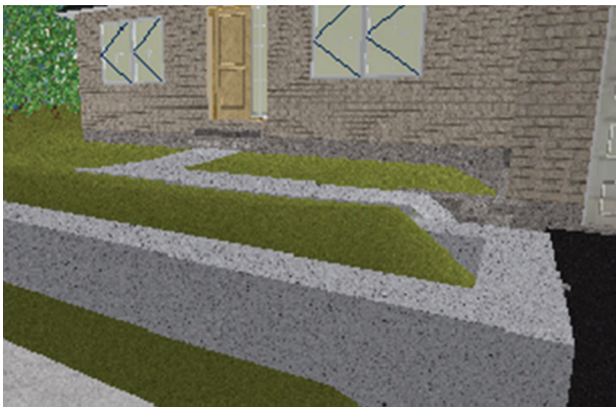
Retaining Walls



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A well-built retaining wall system can preserve the natural shape of your land, reinforce hills and slopes, and protect your home from possible landslides or soil erosion. Retaining walls can also be an attractive addition to a garden or the overall landscaping around your home.

Drawing retaining walls is easy — just point and click.



Drawing Retaining Walls

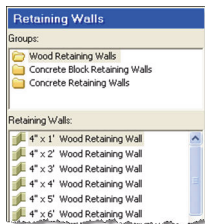


Home & Landscape Pro and Landscape & Deck only

Just like regular walls, retaining walls are a snap to draw — just point and click.

To draw a retaining wall:

1. Select **Insert > Terrain > Retaining Walls**, or click the Retaining Walls button on the Terrain toolbar.
2. In the catalog, select the wall type you want to insert.
3. Select a start point for the wall.
4. Move your cursor in the direction you want your wall to run. Its length is shown as you draw the wall.



Note: By default, drawing is constrained to 15° angles. To

release this constraint, turn off your Angle Snap.

5. When the wall is the length you want, click to set its endpoint.
6. Continue selecting points to add on to the wall if you want.
7. When you are done, right-click and select **Finish**.

Lengthening and Shortening Retaining Walls

You can lengthen or shorten an individual wall by clicking and dragging one of the wall's ends.

To lengthen or shorten a retaining wall:

1. Select the wall. A grip is displayed at each wall end.
2. Hover your pointer over the wall end you want to stretch. The Lengthen cursor is displayed.
3. Click and drag the wall end until it has reached the desired length, then release your mouse button.



Curving a Retaining Wall

You can curve a retaining wall using the Curve tool. Once the tool is active, you can click and drag the wall to curve it, or select a point to curve to.

To curve a retaining wall by clicking and dragging:

1. Click the wall to select it.
2. Right-click and select **Curve**, or select **Edit > Modify Elements > Curve**.
3. Click and drag the wall to the desired curve.
4. Release your mouse button.

To curve a retaining wall to a selected point:

1. Click the wall to select it.
2. Right-click in and select **Curve**, or select **Edit > Modify Elements > Curve**.
3. Select the point you want to curve to. The wall automatically curves to the point.
4. Click to finish.

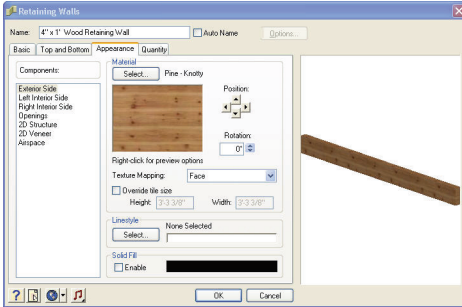
Editing the Properties of a Retaining Wall

Walls have many properties that you can edit to suit your needs. These include size, top and bottom shaping, materials, and more.

To edit the properties of a retaining wall:

1. Click on the wall to select it.
2. Right-click and select **Properties**.

3. Edit the properties in the **Walls** dialog as desired. Refer to the online help for more information.



Chapter

28

Sidewalks, Pathways & Driveways



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Sidewalks, pathways and driveways add to the overall aesthetics of your landscape and provide access to different areas of your property. Drawing them is easy — just select a start point, then point and click in the direction you want the pathway to run. Continue picking points to add segments if you want.

The catalog includes an excellent selection of pathway materials including wood, sand, gravel, concrete, brick and asphalt. You can even create a forest path! A number of different widths are available, but you can create a custom width if you want.

Drawing Sidewalks, Pathways and Driveways



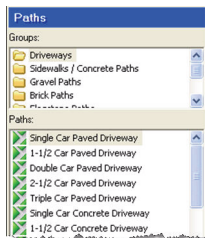
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The catalog contains a wide variety of path types, including boardwalks, sand paths, gravel paths, brick paths, and driveways. The width and thickness of a path is determined by the path's properties in the catalog. You control the length and direction of the path as you draw it. Dimensions are displayed as you draw each segment.

By default, all paths hug the terrain they are inserted on. If the terrain is not flat where you are inserting the path, you may want to turn off the path's Hug Terrain option. This makes the path flat and positions it at the Terrain Base Level specified in your Terrain Settings.

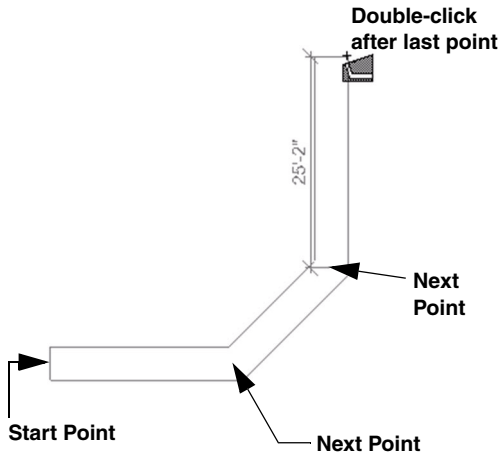
To create a path:

1. Select **Insert > Terrain > Paths**, or click the Paths button on the Terrain toolbar.
2. In the catalog, select the path type you want to insert.
3. Select a start point for your path. Note that your insertion point is on the center line of the path.
4. Move your cursor in the direction you want the path to run, then select an endpoint for the path. You can continue selecting points in any direction to add more sections to the path if you want.



Tip: To create a smooth curve in the path, click several points with a short distance between each point.

5. Double-click to finish, or right-click and select **Finish**.



Curving a Path Element

You can curve a path segment using the Curve tool. Once the tool is active, you can click and drag the path to curve it, or select a point to curve to.

To curve a path by clicking and dragging:

1. Click on the path to select it. If the path has multiple segments, make sure you click on the specific segment you want to curve.
2. Right-click and select **Curve**, or select **Edit > Modify Elements > Curve**.
3. Click and drag the path to the desired curve.
4. Release your mouse button.

To curve a path to a selected point:

1. Click on the path to select it. If the path has multiple segments, make sure you click on the specific segment you want to curve.

2. Right-click and select **Curve**, or select **Edit > Modify Elements > Curve**.
3. Select the point you want to curve to. The path automatically curves to the point.
4. Click to finish.

Editing the Thickness or Width of a Path Element

You can edit the thickness of your path material or the path's overall width.

To edit the thickness or width of a path:

1. Select the path. If the path has multiple segments, you do not have to select them all. Property changes affect the whole path.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. To edit the thickness of the path, enter a value in the **Thickness** edit box.
4. To edit the width of the path, enter a value in the **Width** edit box.
5. Click **OK**.

Part 8

Landscaping

Garden Beds, Ponds & Other Filled Areas page 181

Edging page 185

Trees, Shrubs & Plants page 189

Exterior Furniture page 195

Exterior Structures page 199

Exterior Lighting page 203

Exterior Accessories page 209

Irrigation page 213

Chapter 29

Garden Beds, Ponds & Other Filled Areas



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In the real world, one of the first things you need to do to create a garden is to dig out a bed for your plants. You can create a garden bed instantly by simply picking points to define the outline of the bed. The bed is then automatically filled with a material of your choice, such as soil or bark.

The versatile Fills tool is handy for more than just garden beds. Choose the Water fill to create a pond, or the Sand fill to create a horseshoe pit. The possibilities are endless.

Creating Filled Areas

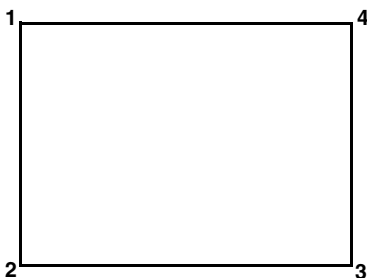


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You can use the Fills tool to define an area filled with soil, sand, gravel, concrete, bark or water. You define the area by picking points to draw its outline. Filled areas automatically hug the terrain they are inserted on.

To create a filled area:

1. Select **Insert > Landscape > Fills**, or click the Fills button on the Landscape toolbar.
2. In the catalog, select your fill material.
3. Select a start point for your filled area.
4. Continue selecting points to define the boundary of the filled area. Note that the last point picked always closes back to the start point, so you don't have to pick the start point again.
5. Right-click and select **Finish**.



Tip: If you want to create a raised garden you may want to insert a raised garden box from the catalog. See *Inserting Exterior Structures* on page 200.

Note: You cannot insert a fill on top of another fill.

Resizing a Filled Area

You can resize a filled area by stretching one of its edges.

To resize a filled area by stretching it:

1. Click on the filled area to select it.
2. Click on the edge you want to stretch.
3. Hover your pointer over the solid blue grip to display the Move cursor. Alternatively you can select the **Move Edge** tool on the right-click menu.
4. Click and drag to stretch the fill.
5. Release your mouse button.

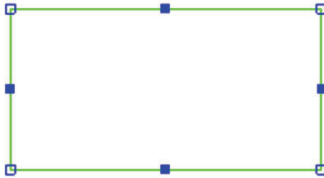


Reshaping a Filled Area

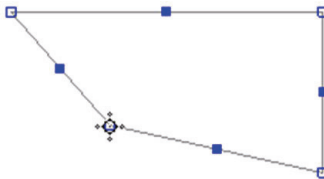
You can change the shape of a filled area by stretching its corners. You can do this by clicking and dragging its grips.

To reshape a filled area by stretching:

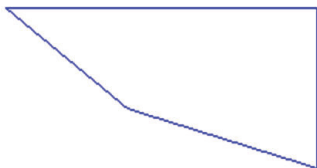
1. Click on the filled area to select it. A grip is displayed at each corner.



2. Click and drag a corner grip to stretch the filled area.



3. Release your mouse button.



Curving a Filled Area

You can curve the edge of a fill using the Curve tool. Once the tool is active, you can click and drag the edge to curve it, or select a point to curve to.

To curve a fill edge by clicking and dragging:

1. Click on the fill edge that you want to curve.
2. Right-click and select **Curve**, or select **Edit > Modify Elements > Curve**.
3. Click and drag the fill edge to the desired curve.
4. Release your mouse button.

To curve a fill edge to a selected point:

1. Click on the fill edge you want to curve.
2. Right-click and select **Curve**, or select **Edit > Modify Elements > Curve**.
3. Select the point you want to curve to. The fill edge automatically curves to the point.
4. Click to finish.

Chapter 30

Edging



Home & Landscape Pro and Landscape & Deck only

Edging can be an attractive accent around gardens, ponds, sidewalks, driveways, and other areas. It can also help retain fill materials and keep weeds out of your garden. You can choose from PVC lawn edging, wood posts, or rails.

Drawing edging is easy — just point and click to define the start and end point of the edging, then keep clicking to add more segments.

Inserting Edging

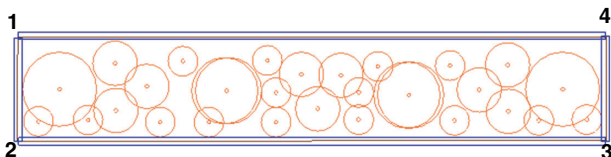


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Use the Edging tool to add PVC lawn edging, wood posts, or wood, brick or concrete rails to your landscape design. The width and height of the edging is determined in the material's properties. You insert edging by simply picking points to define the end points and direction of the edging.

To insert edging:

1. Select **Insert > Landscape > Edging**, or click the Edging button on the Landscape toolbar.
2. In the catalog, select your edging material.
3. Select a start point for the edging.
4. Move your cursor in the direction you want the edging to run, then select an endpoint for the edging. You can continue selecting points in any direction to add more sections to the edging if you want.
5. Right-click and select **Finish**.



Tip: You can also insert decorative borders around a garden. See *Inserting Exterior Accessories* on page 210.

Changing the Length of Edging

You can lengthen or shorten edging by clicking and dragging its end points.

To change the length of edging:

1. Select the edging you want to lengthen or shorten. Grips are displayed at the center and ends of the edging.
2. Hover your pointer over the end you want to stretch.
3. Click and drag to lengthen or shorten the edging, then release your mouse button.



Curving Edging

You can curve a section of edging using the Curve tool. Once the tool is active, you can click and drag the edging to curve it, or select a point to curve to.

To curve edging by clicking and dragging:

1. Click the section of edging that you want to curve.
2. Right-click and select **Curve**, or select **Edit > Modify Elements > Curve**.
3. Click and drag the edging to the desired curve.
4. Release your mouse button.

To curve edging to a selected point:

1. Click the section of edging that you want to curve.
2. Right-click in and select **Curve**, or select **Edit > Modify Elements > Curve**.
3. Select the point you want to curve to. The edging automatically curves to the point.

4. Click to finish.

Chapter

31

Trees, Shrubs & Plants



Home & Landscape Pro and Landscape & Deck only

Nothing brings your landscape to life like trees, shrubs, plants and flowers. With over 7500 plants to choose from, you can create the landscape of your dreams.

Inserting plants involves nothing more than a single mouse click, and once inserted, they can be dragged and dropped anywhere you like. You can even make them grow!

If you need to learn more about a particular species of plant, you can view the plant's light, water, temperature and soil requirements in its properties. For even more detailed information you can browse through the comprehensive Plant Encyclopedia.

Inserting Plants

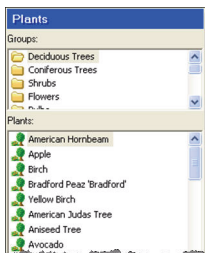


Home & Landscape Pro and Landscape & Deck only

Plants are inserted with a simple mouse click. Once inserted, they can be dragged and dropped anywhere in the drawing.

To insert a plant:

1. Select **Insert > Landscape > Plants**, or click the Plants button on the Landscape toolbar.
2. In the catalog, select the plant you want to insert. If you want to view the plant's size or requirements before inserting it, right-click in the catalog and select **Properties**.
3. Position the plant where you want it, then click to insert it.
4. Right-click and select **Finish**.



Note: Although the catalog contains a wide variety of plants for you to insert, it does not contain all the plants listed in the Plant Encyclopedia. You can, however, insert plants directly from the Encyclopedia. You can also add plants from the Encyclopedia to the current catalog.

Moving a Plant

You can move a plant easily by just clicking and dragging it.

To move a plant:

1. Select the plant you want to move.
2. Hover your pointer over the plant's center grip to display the Move cursor.
3. Click and drag to move the plant.
4. When the plant is where you want it, release your mouse button.



Changing the Age of a Plant



Home & Landscape Pro and Landscape & Deck only

The age of a plant determines its size at planting time. You can increase or decrease the age of a plant by making a change on the plant's Plant Info property page.

To change the age of a plant:

1. Click on the plant whose planting age you want to change.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. In the **Plants** dialog, select the Plant Info tab.
4. Move the **Planting Age** slider left or right until the desired planting age is displayed. Planting age is measured in years.



5. Click **OK**.

Seeing Plant Growth Over Time



Home & Landscape Pro and Landscape & Deck only

Once you have inserted plants in your landscape plan, you can see how they will look any specified number of years down the road using the **Plant Growth Over Time** feature.

To see plant growth over time:

1. Select **Tools > Gardening > Plant Growth Over Time**.
2. Enter the number of years to add to your landscape.
3. Click **OK**.

Applying Seasonal Changes to Plants



Home & Landscape Pro and Landscape & Deck only

The **Plant Seasonal Change** feature updates the appearance of the plants in your drawing to reflect a particular season. Generally the change applies to flowering plants and trees that have a certain bloom time.

You specify the season by adjusting the time of year on the Global Settings page of the **Program Settings** dialog.

To apply seasonal changes to your plants:

1. Select **Tools > Gardening > Plant Seasonal Change**.
2. In the **Program Settings** dialog, change the date. Select a month by clicking the arrows on the month bar at the top of the calendar. Select a day by clicking a number on the calendar.
3. Click **OK**. The plants in your drawing are updated according to the time of year you specified.

Note: Keep in mind that seasonal changes may have different results depending on the plant's properties in the Encyclopedia. Things to consider are the climate of the region the plant is in, and the plant's world origin.

Using the Plant Encyclopedia



Home & Landscape Pro and Landscape & Deck only

The **Plant Encyclopedia** contains comprehensive information on over 7500 different varieties of plants. The Encyclopedia has many uses related to the selection and care of plants. You can view information about any plant, select plants based on certain criteria, research potential diseases, and learn how to care for your plants.

To access the Plant Encyclopedia, select **Tools > Gardening > Plant Encyclopedia**.

You can also access the Plant Encyclopedia by clicking the **Encyclopedia** button on a plant's Encyclopedia property page.

The screenshot shows the 'Glossy Abelia' page in the Plant Encyclopedia. The interface includes a title bar with the plant name, a toolbar with icons for home, search, and other functions, and a main content area with several panels:

- Usage Window:** A panel on the left showing a photograph of the plant and a list of uses: 'Container plant', 'Indoor plant', and 'Fragrant plant'.
- Plant Info:** A central panel containing icons for 'SHE' (Sunlight Exposure), 'Soil' (Sun, Moon, Cloud), and 'Zones' (6-9, 10).
- Season Color Diagram:** A circular diagram on the right showing the months of the year (JAN to DEC) with a green segment indicating the plant's flowering season.
- Plant List:** A scrollable list on the left side of the main content area containing various plant names, with 'Glossy Abelia' selected.
- Select Button:** A green circular button labeled 'Select' located below the 'Overhead View' panel.
- Search Edit Field:** A text input field at the bottom of the interface for searching plants.
- Plant Height:** A vertical slider on the right side of the 'Profile View' panel, currently set to 9 feet.
- Plant Width:** A horizontal slider at the bottom of the 'Profile View' panel, currently set to 13 feet.
- Overhead View:** A top-down view of the plant's growth habit.
- Profile View:** A side-view illustration of the plant's growth habit.

Arrows from the labels point to these specific features in the interface.

Chapter 32

Exterior Furniture



Home & Landscape Pro and Landscape & Deck only

The catalog includes a great selection of exterior furniture so you can relax, eat and entertain outdoors. Furniture types include patio tables, patio chairs, picnic tables, loungers and benches.

All it takes is one click to insert any piece of furniture.

Note: For information about interior furniture, see page 105.


Inserting Exterior Furniture



Home & Landscape Pro and Landscape & Deck only

Inserting exterior furniture is easy — just point and click. When inserting exterior furniture, you have the option of inserting it on the terrain, or on a building location.

To insert exterior furniture:


1. Select **Insert > Landscape > Exterior Furniture**, or click the Exterior Furniture button on the Landscape toolbar. Then, select either **Exterior Furniture on Terrain** or **Exterior Furniture on Location**, depending on where you want to insert the element. The **Exterior Furniture on Location** option lets you insert the element on a deck, or on anything that is associated with a building location. 
2. In the catalog, select the element you want to insert.
3. Position the element where you want it, then click to insert it.
4. Right-click and select **Finish**.



Moving Exterior Furniture

You can move exterior furniture in plan view by simply clicking and dragging it.


To move exterior furniture:

1. Select the element you want to move.
2. Hover your pointer over the element's center grip to display the Move cursor. 
3. Click and drag to move the element.
4. When the element is where you want it, release your mouse button.

Rotating Exterior Furniture

You can rotate exterior furniture by clicking and dragging it.

To rotate exterior furniture:

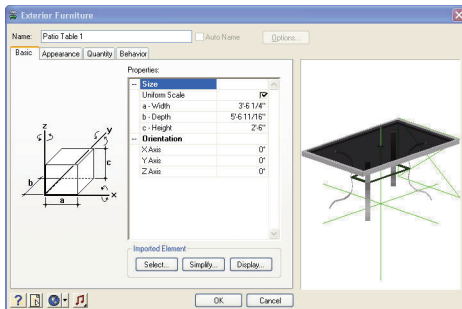
1. Select the element you want to rotate.
2. Hover your pointer over the triangular grip to display the Rotate cursor. 
3. Click and drag to rotate the element.
4. When the element is at the desired rotation, release your mouse button.

Editing the Properties of Exterior Furniture

You can edit properties such as the height, width and depth of exterior furniture.

To edit the properties of exterior furniture:

1. Select the element.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. Edit the values on the Basic page. The **Uniform Scale** option ensures that the element scales uniformly when you change one of its dimensions.



4. Edit the properties as desired.
5. Click **OK**.

Chapter 33

Exterior Structures



Home & Landscape Pro and Landscape & Deck only

TFP offers an excellent selection of exterior structures to make your outdoor living space more functional. These include play gyms, swings, sandboxes, trampolines, tennis and volleyball courts, detached garages, sheds, gazebos, arbors, garden boxes, greenhouses, pools and hot tubs.

If you are creating a landscape plan and do not have a model in your project, you can insert a house template to create your landscape plan around.

All structures are inserted with a single mouse click and can be easily moved, rotated and edited.

Inserting Exterior Structures



Home & Landscape Pro and Landscape & Deck only

Inserting exterior structures is easy — just point and click.

To insert an exterior structure:

1. Select **Insert > Landscape > Exterior Structures**, or click the Exterior Structures button on the Landscape toolbar.
2. In the catalog, select the structure you want to insert.
3. Position the structure where you want it, then click to insert it.
4. Right-click and select **Finish**.



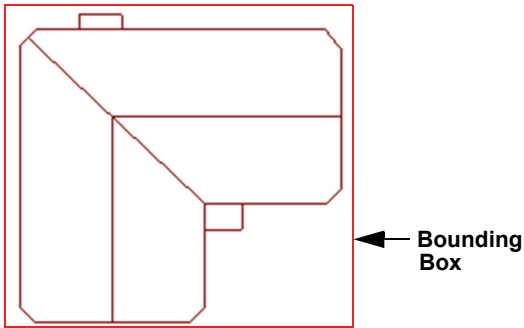
A Note About House Templates

A house template is basically the exterior shell of a finished home. If you are creating a landscape plan and your project does not contain a model, you can insert a house template to serve as the focal point of your plan.

Although a house template looks like a real house, it can't be edited like a real model can. It is considered a single-click element, so clicking on any part of the template selects the entire house.

It is important to note that when you select the house template, the invisible bounding box is always square or

rectangular, and does not necessarily follow the shape of the house outline.



This can interfere with the selection of other elements near the house. If you have inserted elements around the house, such as plants, and want to select them, you may want to use the View Filter to make the house template non-selectable for ease of editing your landscape plan.

Another thing to note is that the house template's exterior walls are not visible in 2D. You only see the roof line. If you want to insert things like fills up against the exterior walls of the house, you will need to either draw them in 3D, or draw them in 2D and then move them into place in 3D.

Moving Exterior Structures

You can move exterior structures in plan view by simply clicking and dragging them.

To move an exterior structure:


1. Select the element you want to move.
2. Hover your pointer over the element's center grip to display the Move cursor.
3. Click and drag to move the element.
4. When the element is where you want it, release your mouse button.



Rotating Exterior Structures

You can rotate exterior structures by clicking and dragging them.

To rotate an exterior structure:

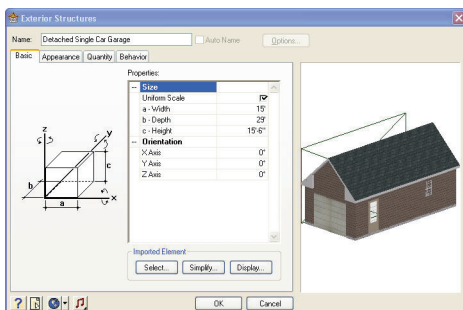
1. Select the element you want to rotate.
2. Hover your pointer over the triangular grip to display the Rotate cursor. 
3. Click and drag to rotate the element.
4. When the element is at the desired rotation, release your mouse button.

Editing the Properties of an Exterior Structure

You can edit properties such as the height, width and depth of most exterior structures.

To edit the properties of an exterior structure:

1. Select the structure.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. Edit the properties as desired.



4. Click **OK**.

Chapter 34

Exterior Lighting



Home & Landscape Pro and Landscape & Deck only

Outdoor lighting can beautify any landscape and offers security and visibility at night. Lighting can also play an important part when you create exterior 3D Real View™ renderings. *TFP* offers light posts, wall lights and ground lighting to enhance the exterior design of your home. You can change their bulbs for different lighting effects, and even turn them on and off!

Exterior lighting can be inserted on the terrain, or on a building location. Just point and click!

Note: For information about interior lighting, see page 115.

Inserting Exterior Lighting




Home & Landscape Pro and Landscape & Deck only

Inserting exterior light fixtures is easy — just point and click. When inserting an exterior light fixture, you have the option of inserting it on the terrain, or on a building location.

Lights are particularly important if you plan to create a 3D Real View™ of your model (page 277), since the program uses light to calculate and create the rendered view.

To insert an exterior light fixture:

1. Select **Insert > Landscape > Exterior Lighting**, or click the Exterior Lighting button on the Landscape toolbar. Then, select either **Exterior Lighting on Terrain** or **Exterior Lighting on Location**, depending on where you want to insert the element. The **Exterior Lighting on Location** option lets you insert the element on a deck, or on anything that is associated with a building location. 
2. In the catalog, select the light you want to insert.
3. Position the light where you want it, then click to insert it.
4. Right-click and select **Finish**.


Tip: If you switch to Rendered or Rendered Outline display mode, you can see instant lighting effects as you position and insert light fixtures.



Moving a Light Fixture

You can move light fixtures in plan view by simply clicking and dragging them.

To move a light fixture:

1. Select the element you want to move.
2. Hover your pointer over the element's center grip to display the Move cursor. 

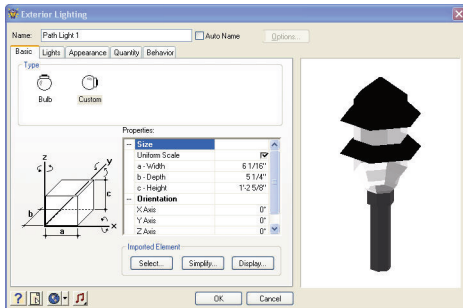
3. Click and drag to move the element.
4. When the element is where you want it, release your mouse button.

Editing the Properties of a Light Fixture

You can edit properties such as the overall height, width and depth of light fixtures.

To edit the properties of a light fixture:

1. Select the light fixture.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. Edit the properties as desired.



4. Click **OK**.

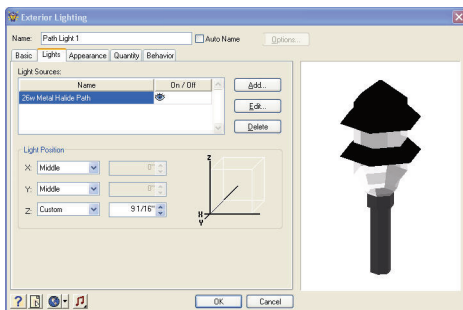
Editing a Light Fixture's Light Source

A light source is a light bulb. You can edit a light fixture's light source to achieve a different lighting effect. For example, you can select a different type of bulb, or a bulb with a different wattage or color.

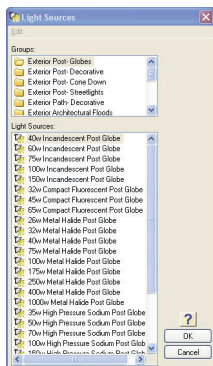
To edit a light fixture's light source:

1. Select the light fixture whose properties you want to edit.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.

3. Select the Lights tab.



4. To replace the currently selected light source with another type, click **Edit**, then select a light source from the **Light Sources** dialog. To add a light source to the fixture, click **Add**, then select a light source from the **Light Sources** dialog.



Tip: You can double-click a light source in the library and edit its *Scale* (intensity) and *Color*.

5. To delete a light source from the light fixture, click **Delete**.
6. To edit the position of the light source in relation to the light fixture, specify the X, Y and Z coordinates in the *Light Position* area. Coordinates are measured from the bottom

center of the fixture. The small red box in the preview window indicates the current position of the light source. Changing the **X** value moves the light source left or right. Selecting *Middle* positions the light in the center of the fixture, and selecting *Minimum* or *Maximum* positions it on the left or right side. If you select *Custom* you can enter a specific value in the adjacent edit box which is relative to the center position. For example, entering **-3** moves the light source 3" left from the center. Changing the **Y** value moves the light source forward or backward. Selecting *Minimum* brings the light source all the way forward, and selecting *Maximum* moves it to the back of the fixture. Changing the **Z** value moves the light source up or down. Selecting *Minimum* positions the light source at the bottom of the fixture, while selecting *Maximum* positions it at the top of the fixture.

7. Once you've specified the properties, click **OK**.

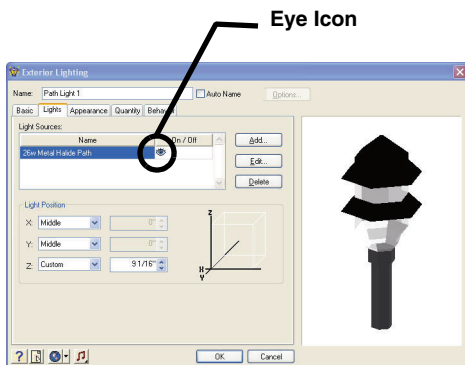
Turning a Light On or Off

By default, lights are on when you insert them. You can virtually turn a light off by disabling its light source.

To turn a light on or off:

1. Select the light fixture you want to turn on or off.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. Select the Lights tab.

4. To turn the light on or off, click the eye icon next to the light source name.



5. Click **OK**.

Chapter 35

Exterior Accessories



Home & Landscape Pro and Landscape & Deck only

It's always those small touches that really pull a design together. *TFP* makes adding decorative accents and accessories a breeze - just point and click to insert a vast array of items, including fireplaces, fountains, wind chimes, decorative columns, corner accents, garden borders, weather vanes, door mats, patio umbrellas, trellises, bird baths, mailboxes, cars and planters.

Note: For information about interior accessories, see page 209.

Inserting Exterior Accessories



Home & Landscape Pro and Landscape & Deck only

Exterior accessories include everything from bird baths to weather vanes. Inserting exterior accessories is easy — just point and click. You can insert exterior accessories on the terrain, or on a building location.

To insert an exterior accessory:

1. Select **Insert > Landscape > Exterior Accessories**, or click the Exterior Accessories button on the Landscape toolbar. Then, select either **Exterior Accessories on Terrain** or **Exterior Accessories on Location**, depending on where you want to insert the element. The **Exterior Accessories on Location** option lets you insert the element on a deck, or on anything that is associated with a building location.
2. In the catalog, select the accessory you want to insert.
3. Position the element where you want it, then click to insert it.
4. Right-click and select **Finish**.



Moving Exterior Accessories

You can move exterior accessories in plan view by simply clicking and dragging them.

To move an exterior accessory:


1. Select the element you want to move.
2. Hover your pointer over the element's center grip to display the Move cursor.
3. Click and drag to move the element.
4. When the element is where you want it, release your mouse button.



Rotating Exterior Accessories

You can rotate exterior accessories by clicking and dragging them.

To rotate an exterior accessory:

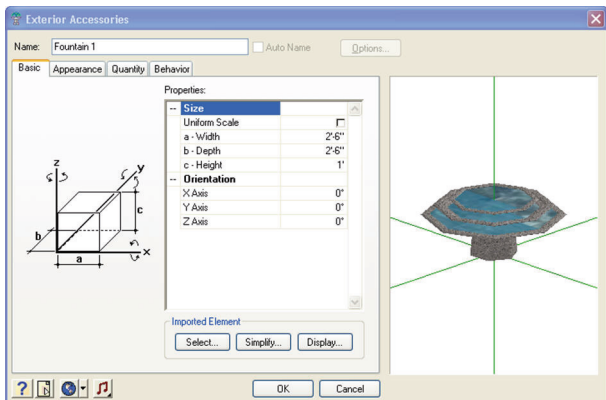
1. Select the element you want to rotate.
2. Hover your pointer over the triangular grip to display the Rotate cursor. 
3. Click and drag to rotate the element.
4. When the element is at the desired rotation, release your mouse button.

Editing the Properties of an Exterior Accessory

You can edit properties such as the height, width and depth of most exterior accessories.

To edit the properties of an exterior accessory:

1. Select the element.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. Edit the properties as desired.



4. Click **OK**.

Chapter 36

Irrigation



Home & Landscape Pro and Landscape & Deck only

You can insert pop-up sprinklers in your landscape plan with a single mouse click. When you insert a sprinkler, the coverage of the spray is outlined with a dashed line.

Inserting Irrigation

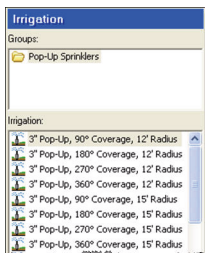


Home & Landscape Pro and Landscape & Deck only

The catalog contains a wide selection of pop-up sprinklers with varying ranges of spray. You insert a sprinkler by simply pointing and clicking with your mouse. When you insert a sprinkler, the coverage of the spray is outlined with a dashed line.

To insert pop-up sprinklers:

1. Select **Insert > Landscape > Irrigation**, or click the Irrigation button on the Landscape toolbar.
2. In the catalog, select the sprinkler you want to insert.
3. Position the sprinkler where you want it, then click to insert it. You can continue inserting more sprinklers if you want.
4. Right-click and select **Finish**.



Moving Sprinklers

You can move a sprinkler by simply clicking and dragging it.

To move a sprinkler:

1. Select the sprinkler.
2. Hover your pointer over the sprinkler's square grip to display the Move cursor.
3. Click and drag to move the element.
4. When the element is where you want it, release your mouse button.



Rotating Sprinklers

You can rotate a sprinkler (and its spray) by simply clicking and dragging its rotation handle.

To rotate a sprinkler:

1. Select the sprinkler.
2. Hover your pointer over the sprinkler's triangular grip.
3. Click and drag to rotate the sprinkler, then release your mouse button.

Editing a Sprinkler's Spray Coverage

You can edit the distance covered by a sprinkler's spray.

To edit a sprinkler's spray properties:

1. Select the sprinkler.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. Edit the size values on the Basic property page. For most sprinklers you would edit the **Width** and **Depth** values. The Adjustable sprinkler in the catalog lets you specify a custom radius and included angle for the spray.
4. Click **OK**.

Part 9

Drawing & Editing Tools

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Measurement page 225

Layout Tools page 255

Editing Elements page 231

Chapter 37

Drawing Aids

TFP offers a variety of powerful drawing aids that help you insert elements easily and precisely where you want them in your drawing.

If you want you can display a drawing grid in your drawing area, as well as set up a snap grid so that your cursor snaps to the grid when you are inserting elements. The Object Snap feature automatically snaps your pointer to existing objects, and the Angle Snap snaps your pointer to specified angles. The Collision Control feature prevents you from inserting elements where they do not fit.

You can set up drawing aids in your program settings, and toggle them on and off using the buttons on the Status bar.


GRIDSNAP **OBJSNAP** **ANGLESNAP** **GRID** **ORTHO** **COLLISION**

TFP also offers a handy Query Element/Location tool that lets you select any element in your drawing and instantly view the element's name and building location.

Setting Up a Drawing Grid

A drawing grid is simply a set of horizontal and vertical lines that can help you orient objects to one another. By default, the spacing between grid lines is 1', but you can change this if you want. You can also control the color and style of the grid. Note that the drawing grid is a visual aid only, and will not be included in printouts.


To set up a drawing grid:

1. Select **Settings > Program Settings** or click the Program Settings button on the Settings toolbar. 
2. In the **Program Settings** dialog, select **Drawing Aids** in the left column.
3. In the *Grid* area, check the **Enable (F7)** check box.
4. Click the **Grid Color** swatch, then select a color for the grid from the **Color** dialog.
5. From the **Grid Style** drop box, select a style for the grid — **Dots** or **Lines**.
6. Specify the desired distance between vertical grid lines in the **X Spacing** edit box.
7. Specify the desired distance between horizontal grid lines in the **Y Spacing** edit box.
8. By default, the grid is 150' x 150', which is the default size of the terrain. To change the overall size of the grid, enter the desired width in the **X Limit** edit box, and the desired height in the **Y Limit** edit box.
9. Click **OK**.

Turning the Drawing Grid On and Off

You can toggle the drawing grid on and off in one of two ways:

- Press **F7** on your keyboard
- Click the **GRID** button on the Status bar




GRIDSNAP OBJSNAP ANGLESNAP **GRID** ORTHO COLLISION

Using the Grid Snap

The Grid Snap feature snaps your pointer to an invisible grid when inserting elements. By default, the spacing between the grid lines in the invisible grid is 1", but you can change this if you want. If you enable the **Match Grid** option, the invisible snap grid becomes the same size as the drawing grid. This will make it seem like you are snapping to the drawing grid while drawing.

To set up a snap grid:

1. Select **Settings > Program Settings** or click the Program Settings button on the Settings toolbar. 
2. In the **Program Settings** dialog, select **Drawing Aids** in the left column.
3. If you want the snap grid to be the same size as the drawing grid, check the **Match Grid** check box in the *Grid Snap* area.
4. To specify a custom distance between vertical grid lines, enter a value in the **X Spacing** edit box.
5. To specify a custom distance between horizontal grid lines, enter a value in the **Y Spacing** edit box.
6. If you want to turn the grid snap on, check the **Enable (F4)** check box.
7. Click **OK**.

Turning the Grid Snap On and Off

You can toggle the grid snap on and off in one of two ways:

- Press **F4** on your keyboard
- Click the **GRIDSNAP** button on the Status bar



Using the Object Snap

The Object Snap feature makes elements that you are currently inserting automatically snap to existing elements in your drawing. For example, if you are drawing a wall and hover

your pointer near an existing wall, your pointer will snap to the existing wall, making it easy to create a wall layout with cleanly intersecting walls.

By default, the Object Snap is enabled, but you can turn it off whenever you want. There are three ways to turn the Object Snap on or off.

To turn the Object Snap on or off:

- Press **F5** on your keyboard
- Click the **OBJSNAP** button on the Status bar



- Select **Settings > Program Settings**, then on the Drawing Aids pane, check or uncheck the **Enable (F5)** check box in the *Object Snap* area

Using Ortho

The **Ortho** feature restricts your cursor movement to 90-degree angles when you are inserting elements. This can be especially helpful when drawing elements like walls.

By default, Ortho is enabled. You can toggle it on and off using one of three methods.

To turn Ortho on or off:

- Press **F8** on your keyboard
- Click the **ORTHO** button on the Status bar



- Select **Settings > Program Settings**, then on the Drawing Aids pane, check or uncheck the **Ortho (F8)** check box

Using Angle Snap

When the **Angle Snap** feature is turned on, your cursor snaps to specific angles when rotating an element. If you set your snap angle to 10°, for example, your cursor will snap at 10° intervals as you rotate the element.

By default, the Angle Snap is on. You can turn the Angle Snap on and off using one of three methods.


To turn the Angle Snap on or off:

- Press F6 on your keyboard
- Click the ANGLESNAP button on the Status bar



- Select **Settings > Program Settings**, then on the Drawing Aids pane, check or uncheck the **Angle Snap (F6)** check box

To change the snap angle:

1. Select **Settings > Program Settings** or click the Program Settings button on the Settings toolbar. 
2. In the **Program Settings** dialog, select **Drawing Aids** in the left column.
3. In the *Ortho / Angle Snap* area, type the desired snap angle in the **Snap Angle** edit box, or use the arrows to scroll up or down through a list of values.
4. Click **OK**.

Disabling/Enabling Collision Control

The program's intelligent **Collision Control** feature prevents objects from being inserted where they do not fit. By default, Collision Control is on, but you can turn it off whenever you like using one of three methods.

To turn Collision Control on or off:

- Press **F9** on your keyboard
- Click the **COLLISION** button on the Status bar



- Select **Settings > Program Settings**, then on the Building Aids pane, check or uncheck the **Enable Collision Control (F9)** check box

Note: Collision Control affects building elements on the current building location only. It does not affect landscape elements.

Querying Elements and Locations

Using the Query Element/Location tool you can select any element in your drawing and instantly view its name and building location.

To query an element/location:

1. Select **Tools > Query Element/Location**.
2. With the Query Element/Location cursor active, click on the element you want to inquire about. The **Query Element/Location** dialog displays the element's name and building location.



3. When you are finished viewing the element and location information, click **OK**.

Note: For landscaping and terrain elements, which are associated with the terrain, the *Location* box displays “Terrain” rather than a building location.

Note: The Query Element/Location tool can only be used on elements that were inserted from the catalog. You cannot use it on drafting objects.

Chapter 38

Measurement

You can change the unit of measure used in a drawing, or select a different level of precision for your measurements.

Once you've drawn something, you can measure it using the Measure tool. You can also use the Area/Perimeter tool to instantly calculate the area of your building.

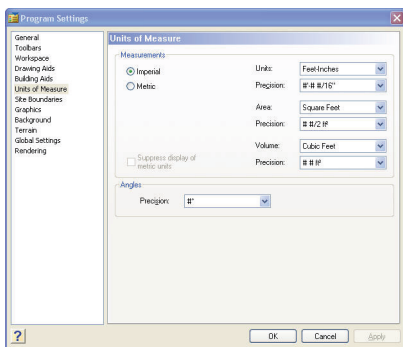
Changing the Unit of Measure

The units of measure used in your project are determined by a template, which by default is either a feet/inches template or millimeters template.

Once you've opened a new project, you can change the units of measure and levels of precision used in that project by making selections on the Units of Measure pane of the **Program Settings** dialog.

To set your units of measure:

1. Select **Settings > Program Settings** or click the Program Settings button on the Settings toolbar.
2. In the **Program Settings** dialog, click **Units of Measure** in the left column.



3. Select either **Imperial** or **Metric** units.
4. To select a unit for distance measurements, make a selection from the **Units** drop box.

System	Units Available
Imperial	Feet-Inches Inches
Metric	Millimeters Centimeters Meters

- To select a unit for area measurements, make a selection from the **Area** drop box. Area measurements appear in the Area/Perimeter Calculator.

System	Units Available
Imperial	Square Feet Square Yards
Metric	Square Meters

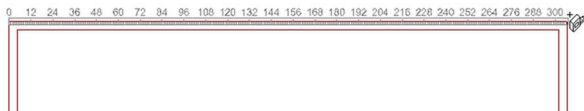
- Select a level of precision for each unit of measure. For example, selecting a unit precision of $\#-\# \# / 16''$ sets the level of precision to 1/16th of an inch when measuring distances in feet and inches.
- To change the level of precision for angle measurements, which are displayed in decimal degrees, make a selection from the **Precision** drop box in the *Angles* area. The selection you make determines the number of decimal places used.
- Once you've set your units of measure, click **OK**.

Measuring Distances

Use the Measure tool to measure the distance between any two points in your 2D plan.

To use the Measure tool:

- Select **Tools > Measure**.
- Click your first point on the screen.
- Move your cursor in the direction you want to measure. A ruler is displayed that stretches as you move your cursor.



- Click your second point on the screen. The distance is shown on the ruler as well as on the Status bar at the bottom of the screen.
- Once you have measured your first distance, you can keep selecting points to measure additional distances from the last point selected. A running total is displayed on the Status bar.

< Distance: 25'-9/16", Total Distance: 25'-9/16" >

- When you have finished measuring, right-click and select **Finish**.

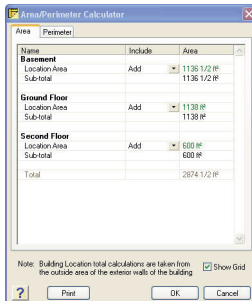
Calculating Area and Perimeter

The **Area/Perimeter Calculator** displays the area (e.g. square footage) and perimeter length of each location in your model. It also displays the total area and total perimeter (of all locations). You can use the calculator at any given point in time. The values in the calculator update automatically as your model increases or decreases in size.

Note that the calculations are taken from the exterior side of the building's walls.

To measure area:

- Select **Tools > Calculate/Estimate > Area/Perimeter**. Area measurements are displayed on the *Area* tab of the **Area/Perimeter Calculator** dialog. Perimeter measurements are shown on the *Perimeter* tab.



You can omit selected locations from the total if you want. If a calculation is included in the total, it is highlighted green.

2. To omit a location from the calculation, select **Omit** from the drop box in the *Include* column.
3. To add a location that has been omitted back into the calculation, select **Add** from the drop box in the *Include* column.
4. To turn the grid lines off, uncheck the **Show Grid** check box.
5. To print the calculations, click **Print**.
6. When you are done viewing the area calculations, click **OK**.

Note: The units of measure used for the area and perimeter can be changed on the Units of Measure pane in your program settings.

Chapter 39

Editing Elements

When you double-click after inserting an element or select **Finish** from the right-click menu, you automatically go into Selection Mode, meaning you can select elements in your drawing area and edit them.

Most elements can be moved, rotated, copied, replaced and deleted. Some elements have additional editing commands available. For example, you can lengthen, break and curve walls. All elements have a property sheet where you can change the size or appearance of the element.

To access a menu of editing commands for a selected element, just right-click in the drawing area or select **Edit > Modify Elements**. Certain functions can be performed without selecting any commands at all. For example, you can move and rotate most elements by simply clicking and dragging your mouse.

This chapter describes how to select elements, and use general editing commands like Move, Rotate, Elevate, Duplicate, Replace and Delete. It also describes how to access and edit element properties, and apply materials and colors with the Materials Paintbrush.

Undoing the Previous Action

The Undo tool cancels your most recent action. You can undo as many actions as you have taken since your last save.

To undo an action:

- Select **Edit > Undo**, or
- Click the Undo button on the Standard toolbar, or
- Press **Ctrl+Z**



Tip: You can use the Redo tool to reapply an action you have canceled using the Undo tool.

Redoing an Undo

The Redo tool reapplies a tool that you have reversed using Undo. Redo will only work directly following an Undo.

To redo a task:

- Select **Edit > Redo**, or
- Click the Redo button on the Standard toolbar, or
- Press **Ctrl+Y**



Accessing Edit Commands

When you have an element selected, you can access a menu of edit commands by right-clicking in the drawing area, or by selecting **Edit > Modify Elements**.

Menus vary depending on the element selected. Typical commands are Properties, Move, Rotate, Duplicate, and Delete. If two types of elements are selected (such as a floor and a wall), only commands that are common to both element types are available.

Certain functions can be performed without selecting any commands at all. For example, you can move and rotate most elements by simply clicking and dragging your mouse.

Moving Elements

When you select an element, you are automatically in Drag and Drop mode. If the element is a singular, one-click object, like a cabinet or plant, you can move the element by simply

clicking and dragging it. If you want to move an area-drawn element, such as a roof, you need to select the Move tool before clicking and dragging. Otherwise, doing a straight drag-and-drop will only stretch it. If you click and drag a wall, all walls attached to it move with it.


If you have your Commander turned on and would like to be able to enter precise values for the move, you need to select the Move tool instead of doing a straight drag-and-drop.

Note: Elements associated with walls, such as doors and windows, can only be moved within the wall they are in. You cannot move them to another wall.

Doing a Drag-and-Drop

The straight drag-and-drop method is ideal for singular, one-click elements like cabinets and plants.

To move an element using drag-and-drop:

1. Select the element you want to move. You are now in Drag and Drop mode.
2. Hover your pointer over the element's center grip to display the Move cursor. 
3. Click and drag to move the element.
4. When the element is where you want it, release the mouse button.

Using the Move Tool

Use the Move tool when you want to be able to specify a precise distance and direction for the move in the Commander.

To move an element using the Move tool:

1. Select the element you want to move.
2. Right-click and select **Move**, or select **Edit > Modify Elements > Move**.
3. Select a base point for the move. The move distance and direction will be measured from this point.

4. Without holding your mouse button down, move your mouse to move the element. Select the point you want to move the element to, or enter a distance and direction in the Commander.

Nudging an Element

You can nudge an element slightly using the arrow keys on your keyboard. By default, the element is nudged 1" (or 25mm). You can change the nudge distance in your program settings before nudging if you like.

To nudge an element:

1. Select the element that you want to nudge.
2. Use the arrows on your keyboard to nudge the element up, down, left or right.

Raising or Lowering an Element

Most elements can be raised or lowered using the Elevate tool on the element's right-click menu. Some elements, such as roofs, do not provide access to the Elevate tool. In the case of a roof, you can raise or lower it by changing the Support Height variable in its properties.

To raise or lower an element using the Elevate tool:

1. Select the element you want to raise or lower.
2. Right-click and select **Elevate**, or select **Edit > Modify Elements > Elevate**. The value shown in the **Elevate** dialog is the current elevation of the element.
3. In the **Elevate** dialog, specify the desired elevation of the element above the floor. If the element is a landscaping element, the value you specify is relative to the terrain. The distance you enter is the distance from the floor or terrain to the insertion point of the element. For most elements, the insertion point is at the base of the element. For windows and wall openings, however, the insertion point is at the top of the element. Therefore, if you are raising or lowering a window or wall opening, specify the desired distance from the floor to the top of the window or opening.

- Click **OK**.

Rotating Elements in 2D Plan View

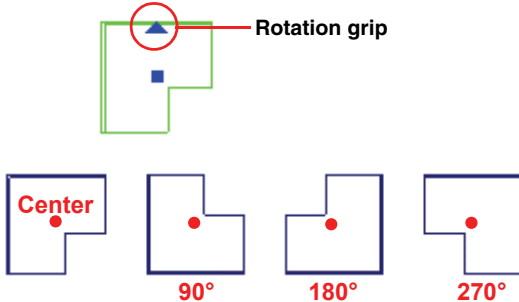
Singular, one-click elements like cabinets and furniture can be rotated on the spot by simply clicking and dragging them while in Rotation mode.

Railings can be rotated by clicking and dragging their end points.

For most other elements such as walls, floors, ceilings or roofs, you need to use the Rotate tool. You also need to use the Rotate tool if you want to be able to enter a precise rotation angle in the Commander, or you want to rotate the element about a point other than the center point of the element.

Doing an On-the-Spot Rotation

If you see a triangular grip on an element when it is selected, it can be rotated by simply clicking and dragging it. Using this method, the element is rotated about its center point.



If your Angle Snap is on, the element will rotate in increments of whatever angle is set for the Angle Snap. If the Angle Snap is off, the element will rotate in increments of 1° .

To rotate an element by clicking and dragging:

- Select the element you want to rotate.

2. Hover your pointer over the triangular grip to display the Rotate cursor. If you do not see the triangular grip, the element can only be rotated with the Rotate tool.



Tip: If the square grip is in close proximity to the triangular grip, you may want to zoom in on the element to distinguish between the two grips.

3. Click and drag to rotate the element.
4. When the element is at the desired rotation, release your mouse button.

Using the Rotate Tool

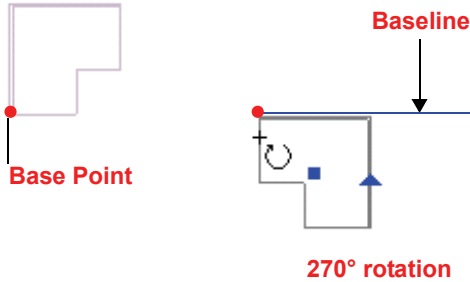
Using the Rotate tool you can rotate an element about any selected base point. You should also use the Rotate tool if you want to be able to enter a precise rotation angle in the Commander.

If your Angle Snap is on, the element will rotate in increments of whatever angle is set for the Angle Snap. If you are using the Commander, you can override the Angle Snap by entering the desired angle in the Commander. If the Angle Snap is off, the element will rotate in increments of 1°.

To rotate an element using the Rotate tool:

1. Select the element to rotate.
2. Right-click and select **Rotate**, or select **Edit > Modify Elements > Rotate**.
3. Select a base point for the rotation. The base point can be any point on the element (e.g. center point or corner point), or any point in the drawing area. The point you pick establishes an automatic baseline that runs through

the point at 180°. You can rotate full-circle around this baseline.



Tip: If you want to align an element with another element that may be lying at an odd angle, select a base point on the other element, then line up your rotation line with that element.

- Without holding your mouse button down, move your mouse to rotate the element. The element will rotate from the defined base point in the direction you move the mouse. If the **Commander** is turned on, you can view the angle of rotation as you rotate, or enter a precise angle. Positive angle values are read in a counter-clockwise direction, while negative values are read in a clockwise direction.

Copying Elements

The Duplicate tool creates a copy of a selected element that you can then position where you like on the current location.

To duplicate an element:

- Select the element to copy.
- Right-click and select **Duplicate**, or select **Edit > Modify Elements > Duplicate**.
- Select a base point for the copy movement. Typically you would select one of the element's grips, but you can click anywhere in the drawing. The base point is simply a reference point used to define the move distance.

4. Select the point you are copying the element to. You can do this by moving your mouse and then clicking to insert the copy, or by typing a distance and direction in the Commander.

Replacing Elements

You can use the Replace tool to replace an element in your drawing with a different item from the catalog.

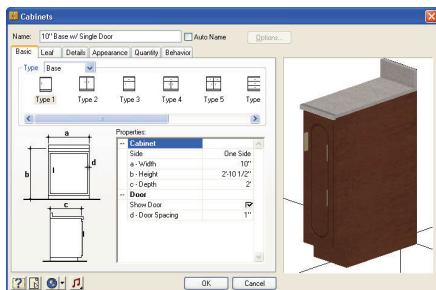
To replace an element:

1. Select the element that you want to replace.
2. Right-click and select **Replace**, or select **Edit > Modify Elements > Replace**.
3. In the **Catalog Access** dialog, select the replacement item.
4. Click **OK**. The element is automatically replaced.

Note: You can only replace an element with another of the same type. For example, you can replace a window with another window, but you cannot replace a window with a door.

Editing an Element's Size or Composition

You can edit the physical make-up of an element as well as its dimensions by accessing the element's Basic property page. Some elements have additional property pages that control its composition. For example, cabinets have Leaf and Details property pages.



When you edit the properties of elements that exist in your drawing, only selected elements are changed. Other occurrences of the element in your drawing remain unchanged. You can, however, select and edit multiple elements at the same time provided they share the same properties.

To edit the properties of an inserted element:

1. Select the element you want to edit. To select multiple elements, use Shift + click.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. Adjust the properties as desired. Clicking a dimension marked with an alphabetical character (a, b, c, etc.) highlights the corresponding dimension in the element graphic, and vice versa, if one exists.
4. Click **OK**. The selected elements are updated in the drawing.

Note: Editing the properties of an element in your drawing has no effect on the element's property definition in the catalog it came from. Editing an element in a catalog affects all future insertions of that element in your drawing.

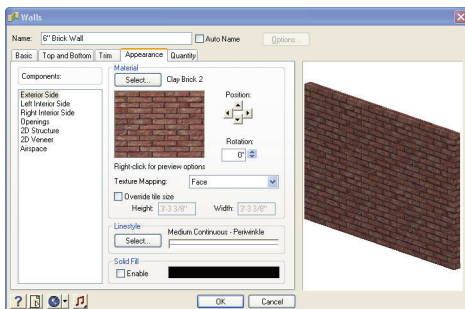
Editing an Element's Material/Color Settings

When you view your design in Rendered or Patterned mode, elements are displayed using materials that are defined in the elements' properties. A material can be a texture, such as brick, or a color. Materials also have a pattern assigned to them, which is what you see when you view in Patterned view. You can select a different material for each of an element's components.

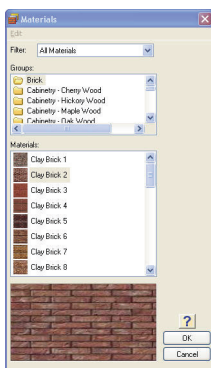
You can edit an element's material settings through its Appearance property page.

To change an element's material through the Appearance property page:

1. Select the element you want to edit. To select multiple elements, use Shift + click.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. Select the **Appearance** tab.



4. In the *Components* pane, select the component whose material you want to change.
5. In the *Material* area, click the **Select** button.



6. In the **Materials** dialog, select the group containing the desired material. If you want to choose a solid color, select


the Paint group. You can filter the material list according to specific applications by making a selection from the **Filter** drop box.

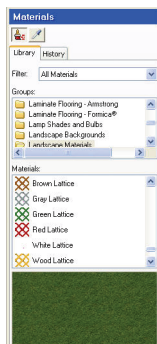
7. Select the material that you want to use. The swatch in the preview window updates automatically.
8. Click **OK** to return to the Appearance page.
9. If you want to learn more about the settings on the Appearance page, see the online help.
10. Click **OK**.

Applying Materials and Colors with the Materials Paintbrush

The Materials Paintbrush is best used in 3D view. It lets you select a material or color in the catalog, then apply it to parts of an element. When you use the Materials Paintbrush on an element, the settings on the element's Appearance property page update to match the selections you made with the Materials Paintbrush.

To use the Materials Paintbrush:

1. Select **Edit > Materials Paintbrush**, or click the Materials Paintbrush button on any tabbed toolbar. 
2. In the catalog panel, select the material you want to apply. There is an incredible selection to choose from, including Wood, Brick, Marble, Concrete, Steel, Carpet, Tile, Roofing, Fabric, Paint, and much more. You can filter the material list according to specific applications by making a selection from the **Filter** drop box.
3. In 3D view, click on the element part that you want to apply the material to. The material is immediately applied.
4. Right-click and select **Finish**.



Sampling Materials with the Eyedropper

While the Materials Paintbrush is active you can use the Eyedropper tool to identify a material applied to an element in your drawing. Once you've clicked on the element, the catalog panel updates to display the material applied to the element. This eliminates guesswork and allows you to identify a material that you want to use again without having to search the catalog.

To sample a material with the Eyedropper:

1. Activate the Materials Paintbrush tool.
2. In the catalog panel, click the Eyedropper button. Your cursor becomes an eyedropper.



Eyedropper

3. Click on the element whose material you want to sample.
4. The catalog updates to display the material applied to the element.

Note: The material will not be added to the materials history list unless you apply it to an element.

Deleting Elements

You can delete an element from your drawing in two quick steps.

To delete an element:

1. Select the element.
2. Press the **Delete** key on your keyboard, or right-click and select **Delete**, or select **Edit > Modify Elements > Delete**.

Part 10

Design Tools

Text & Dimensions

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Chapter 40

Text & Dimensions

Using text tools you can add text to any area of your drawing. You may want to add a title to the plan, or label rooms or specific elements. You can use whatever fonts and colors you want.

Dimensions are used to convey precise measurements. You can dimension the exterior of your design instantly, and quickly insert interior dimensions with a few simple mouse clicks.

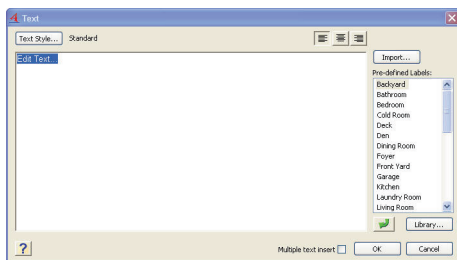
This chapter describes all text and dimension tools available, and how to edit text and dimensions.


Adding Text

You can add custom text or pre-defined labels to your drawing. You can select the text style you want to use, and control the justification of the text. Text can be moved and rotated after it has been inserted, just like most other elements.

To add text:

1. Select **Tools > Text > Text**, or click the Text button on the Notation toolbar.



2. To select a style for the text, click the **Text Style** button and select or create a text style in the **Text Styles** dialog. Note that the text style is applied to text that you are about to type, or that is selected in the editing window.
3. Type the desired text in the editing window. Or,
 - To import a text (*.txt) file, click **Import**, then select the file to import.
 - To insert a pre-defined label, select the label you want in the *Pre-defined Labels* list on the right side of the dialog, then drag it into the editing window. You can also double-click the label or click  to add the label to the editing window. To access the Labels library, where you can add and edit labels, click **Library**.
4. By default, text is left justified. For multi-line text, this means that text lines will line up on the left, and be ragged

on the right. If you want to change the justification of the text, click the appropriate justification button.



5. If you want to automatically return to the **Text** dialog after you have inserted the current text, enable the **Multiple text insert** check box. Otherwise, the Text command is finished once you insert the text.
6. Click **OK**. The text is attached to your cursor.
7. Position the text where you want it, then click to insert it.

Editing Text

You can edit the style or content of text by accessing its properties.

To edit text:

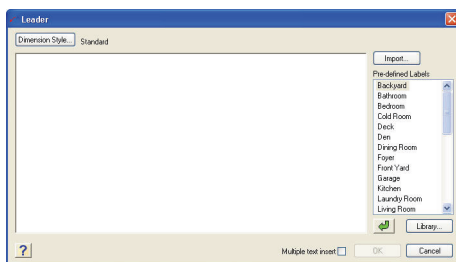
1. Select the text you want to edit.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. In the **Text** dialog, make the desired changes.
4. Click **OK**.


Adding Text with a Leader

You can insert text with an arrow attached to it that points to a particular element or area in your drawing. The leader has two segments and can be oriented in any fashion.

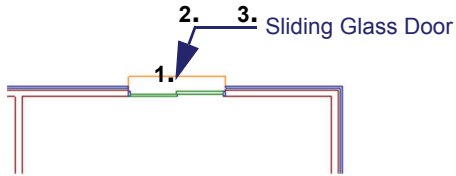
To add a text with leader:

1. Select **Tools > Text > Text with Leader**, or click the Text with Leader button on the Notation toolbar.



2. To select a dimension style for the leader and text, click the **Dimension Style** button and make a selection from the Dimension Styles dialog.
3. Type the desired text in the editing window. Or,
 - To import a text (*.txt) file, click **Import**, then select the file to import.
 - To insert a pre-defined label, select the label you want in the *Pre-defined Labels* list on the right side of the dialog, then drag it into the editing window. You can also double-click the label or click  to add the label to the editing window. To access the Labels library, where you can add and edit labels, click **Library**.
4. If you want to automatically return to the **Leader** dialog after you have inserted the current text, enable the **Multiple text insert** check box. This lets you keep inserting text without having to select the **Text with Leader** tool again.
5. Click **OK**.
6. In the drawing area, select the point where you want the arrowhead to appear.
7. Select the next point of the leader. If you only want a two-point leader, right-click and select **Finish** at this point. Otherwise, you can select a third point for the leader if you want.

8. If you are creating a three-point leader, select a third point for the leader. The text is inserted.



Editing Text with a Leader

You can edit the style or content of text with a leader by accessing the text's properties.

To edit text with a leader:

1. Click on the text with leader to select it.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.
3. In the **Leader** dialog, make the desired changes.
4. Click **OK**.

Dimensioning

TFP automatically displays on-screen dimensions as you draw, making it easy to draw walls at correct lengths, and insert elements like doors and windows precisely where you want them. These dimensions are drawing aids only that disappear once you have inserted the element.

Using *TFP*'s selection of Dimension tools, you can add fixed dimensions to your drawing to convey the precise measurements of your floor plan. You can control the style of these dimensions, and move and stretch them if you need to.

Setting the Current Dimension Style

When you add dimensions to your drawing, they use the current dimension style, which by default is the Standard dimension style. You can select a different dimension style to be the current one if you want.

To set the current dimension style:

1. Select **Settings > Dimension Settings**.
2. In the **Dimension Settings** dialog, click the **Current Style** button.
3. In the **Dimension Styles** dialog, select the style you want to set as current.
4. Click **OK** in the **Dimension Styles** dialog.
5. Click **OK** in the **Dimension Settings** dialog.

Creating Automatic Exterior Dimensions

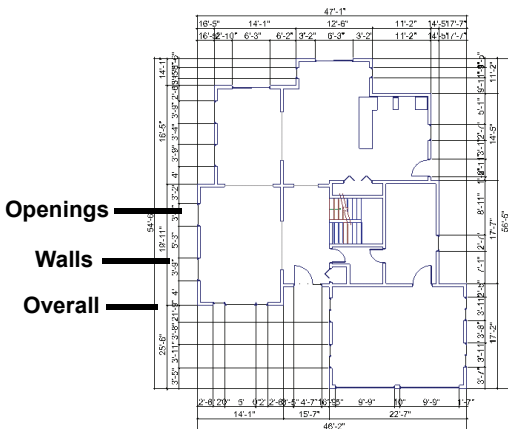


Home & Landscape Pro and Home Designer only

The Apply Auto Exterior Dimensions tool automatically dimensions the exterior walls of your home. By default, three dimension strings are created: one for openings, one for wall segments, and an overall dimension for each side of the model.

To create automatic exterior dimensions:

1. Select **Tools > Dimensions > Apply Auto Exterior Dimensions**, or click the Apply Auto Exterior Dimensions button on the Notation toolbar.

**Creating Auto Interior Dimensions**

Home & Landscape Pro and Home Designer only

The Auto Interior Dimensions tool automatically dimensions interior walls in your model.

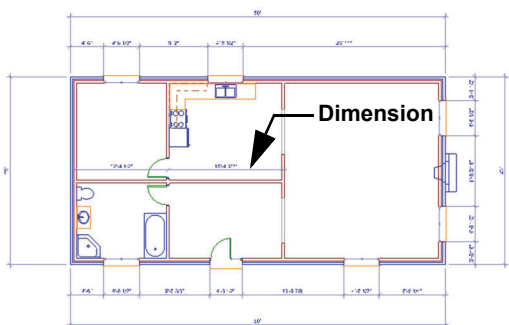
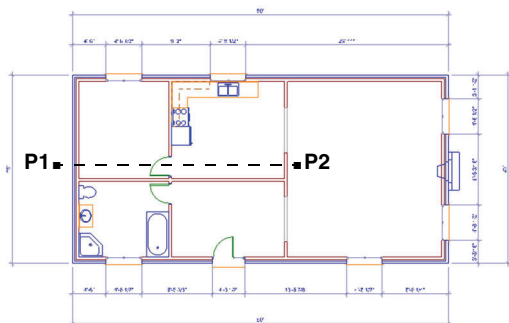
To create automatic interior wall dimensions, you draw a base line through your model. Dimensions are created for any walls along that line (running in the same direction as the line).

To create automatic interior dimensions:

1. Select **Tools > Dimensions > Auto Interior Dimensions**, or click the Auto Interior Dimensions button on the Notation toolbar.
2. Select a start point for the base line that is outside of the model.



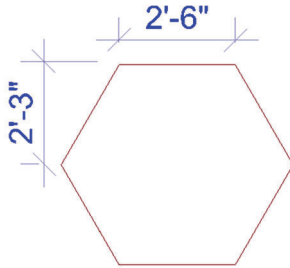
3. Select an end point for the base line that is outside of the model. Dimensions are created along that line.



4. Right-click and select **Finish**.


Creating Linear Dimensions

A linear dimension is a horizontal or vertical dimension with extension lines going vertically (for a horizontal linear dimension) or horizontally (for a vertical linear dimension) to the origins of the extension lines, which define the endpoint of the dimension.



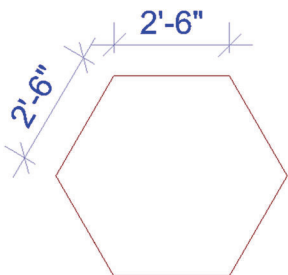
This tool is ideal for creating interior dimensions, or dimensions on a landscape plan.

To create linear dimensions:


1. Select **Tools > Dimensions > Linear Dimensions**, or click the Linear Dimensions button on the Notation toolbar. 
2. Click a point in your drawing to begin the dimension line.
3. Move your mouse (you do not have to hold the mouse button down) to a second point and click. A dimension line including offsets, arrows and a numerical value is added to your drawing.
4. Move your mouse away from the dimension line to stretch your extension lines. When the extension lines are the desired length, click to finish the dimension.

Creating Aligned Dimensions

An aligned dimension is similar to a linear dimension, except it tilts to the same angle as the element you are dimensioning, making it the ideal choice for elements that are not horizontal or vertical.



To create aligned dimensions:

1. Select **Tools > Dimensions > Aligned Dimensions**, or click the Aligned Dimensions button on the Notation toolbar. 
2. Click a point in your drawing to begin the dimension line.
3. Move your mouse (you do not have to hold the mouse button down) to a second point and click. A dimension line including offsets, arrows and a numerical value is added to your drawing.

Changing the Style of a Dimension

You can change the appearance of a dimension's line, arrows and text by applying a different dimension style to it.

To change the style of a dimension:

1. Select the dimension.
2. Right-click and select **Change Style**, or select **Edit > Modify Elements > Change Style**.
3. In the **Dimension Styles** dialog, select the style you want to apply to the dimension.
4. Click **OK**.

Chapter 41

Layout Tools



Home & Landscape Pro only

TFP provides a basic set of 2D drafting tools — Line, Arc, Circle and Rectangle. Objects drawn with these tools will not display in 3D view. You can use these tools to help with your design layout. For example, you may want to draw construction lines to help you place walls and other elements.


Note: The tools on the Layout menu are only available in 2D plan view.

Drawing Lines

 Home & Landscape Pro only

You can draw a line with one or more segments by simply picking points.

To draw a line in Model View:

1. Select **Tools > Layout > Line**, or click the Line button on the Layout toolbar. 
2. Select a start point for the line.
3. Select the end point for the line. If you want you can continue adding segments to the line. If you want to close the last line back to the first line to create a closed shape, right-click and select **Close**.
4. When you are finished drawing the line, right-click and select **Finish**.

Note: Lines can only be drawn in 2D plan view.

Drawing Arcs

 Home & Landscape Pro only

An arc is basically a curved line. There are three Arc tools available:


Start, Center, End. When you specify the start and center points, you define the arc's radius. The end point establishes the arc's length.

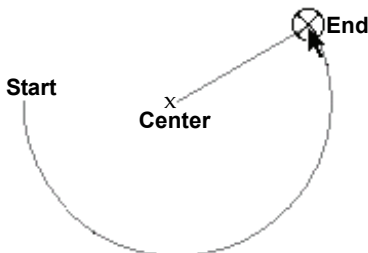
3 Points. Select a start point for the arc, a second point along the arc, then drag the arc into position as you specify the end point.

Start, End, Radius. Select the start and end point of the arc to define its length, then select a third point to define the arc's radius. With this option, you can only draw the arc in the counterclockwise direction.

Note: Arcs can only be drawn in 2D plan view.


To draw an arc with the Start, Center, End tool:

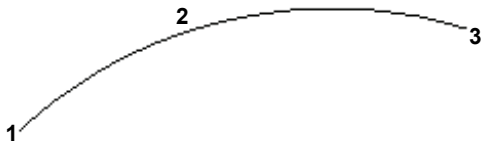
1. Select **Tools > Layout > Arc > Arc - Start, Center, End**, or click the Arc button on the Layout toolbar and select **Arc - Start, Center, End**. 
2. Select a start point for the arc.
3. Select the arc's center point. The radius is now defined.
4. Select the arc's end point to define the arc's length.



5. Right-click and select **Finish**.


To draw an arc with the 3 Points tool:

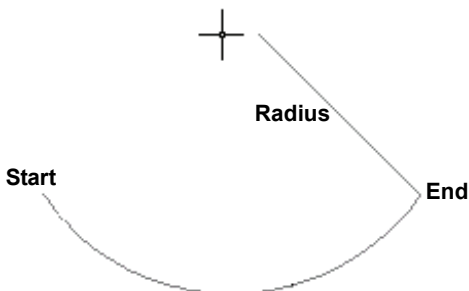
1. Select **Tools > Layout > Arc > Arc - 3 Points**, or click the Arc button on the Layout toolbar and select **Arc - 3 Points**. 
2. Select the start point of the arc.
3. Select a second point on the arc.
4. Drag the arc to stretch it to the desired length and position, then select the end point of the arc.



5. Right-click and select **Finish**.

To draw an arc with the Start, End, Radius tool:

1. Select **Tools > Layout > Arc > Arc - Start, End, Radius**, or click the Arc button on the Layout toolbar and select **Arc - Start, End, Radius**. 
2. Select the start point of the arc.
3. Select the end point of the arc. Keep in mind that the arc can only be created in the counterclockwise direction.
4. Select a third point to define the arc's radius.



5. Right-click and select **Finish**.

Drawing Circles




Home & Landscape Pro only

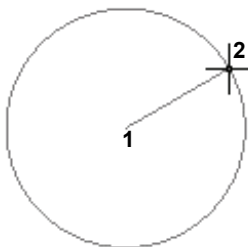
There are two ways to draw a circle. With the Circle - Center, Radius tool you draw the circle from the center out, by picking two points to define its radius. With the Circle - 2 Point tool, you draw the circle outward from a selected point, essentially defining the circle's diameter.

Note: Circles can only be drawn in 2D plan view.

To draw a circle by specifying its radius:


1. Select **Tools > Layout > Circle > Circle - Center, Radius**, or click the Circle button on the Layout toolbar and select **Circle - Center, Radius**. 
2. Click the point that is to be the center of the circle.

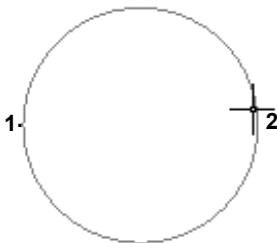
3. Move your pointer away from the center point. The circle grows as you move farther away from the center.
4. When the circle is the desired size, click to finish.



5. Right-click and select **Finish**.

To draw a circle by specifying its diameter:

1. Select **Tools > Layout > Circle > Circle - 2 Point**, or click the Circle button on the Layout toolbar and select **Circle - 2 Point**. 
2. Click a point in the drawing. The circle will grow from this point.
3. Move your pointer away from the selected point. The farther you move away from this point, the larger the circle becomes.
4. When the circle is the desired size, click to finish.




5. Right-click and select **Finish**.

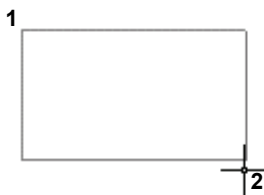
Drawing Rectangles

 Home & Landscape Pro only

You can draw a rectangle easily by just picking two points on the screen.

To draw a rectangle:

1. Select **Tools > Layout > Rectangle**, or click the Rectangle button on the Layout toolbar. 
2. Click a point on the screen. This will be one of the rectangle's corners.
3. Move your pointer away from the current point. The rectangle grows as you move farther away.
4. When the rectangle is the desired size, click to finish it.



5. Right-click and select **Finish**.

Note: Rectangles can only be drawn in 2D plan view.

Part 11

Power Tools

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Chapter 42

Photo Boards

You can import digital photographs or scanned images into your work space. The image is oriented vertically in 3D view, much like a billboard. You could, for example, import a picture of your backyard, so when you look out the window, it feels like you're home.

A photo board can be stationary or set to rotate with the camera so it's always facing you. You can also control the height and width of the photo board.

The handy **Photo Board Wizard** steps you through the process quickly and easily. You can also insert pre-defined photo boards from the catalog.

Importing a Photo Board

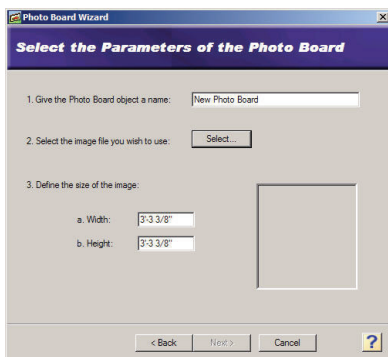
A photo board is simply a digital image that is oriented vertically in your 3D workspace. You can import any image you want — your family, pets, neighbor's house — the only limit is your imagination. The handy Photo Board Wizard does it all in a few quick steps.

To import a photo board:

1. Select **File > Import > Photo Board Wizard**.

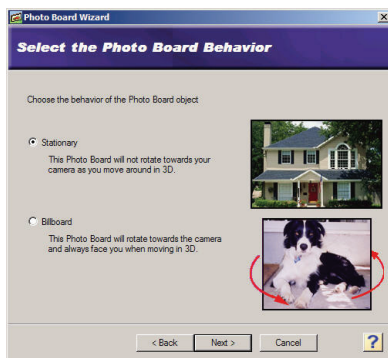


2. Click **Next**.



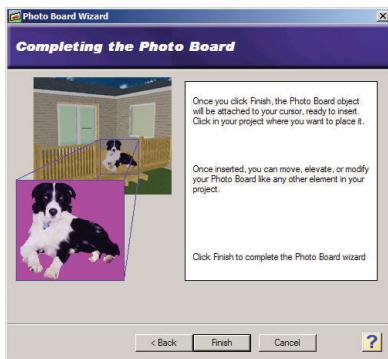
3. Type a name for your photo board.

4. Click the **Select** button, then select the image you want to import. You can import BMP, JPG and TGA files. The image is displayed in the preview window.
5. Define the size of the image by entering values in the **Height** and **Width** edit boxes. Generally you should specify a size that is as close to reality as possible. For example, if the image is of a person who is six feet tall, you should enter a value close to 6' in the **Height** edit box.
6. Click **Next**.



7. Specify whether you want the photo board to be stationary or active. If **Stationary** is selected, the board will always remain oriented the same way, regardless of changes in your camera angle. If **Billboard** is selected, the photo board will rotate toward the camera so it will always face you in 3D.

8. Click **Next**.



9. Click **Finish**. The photo board is attached to your cursor, ready to be inserted.
10. Position the photo board where you want it, then click to insert it.
11. Right-click and select **Finish**.

Inserting a Photo Board from the Catalog

The catalog contains a collection of photo boards containing pictures of people, animals, flags, and other objects. If you have saved your imported photo board to the catalog, it is also displayed with the existing photo boards in the catalog.

To insert a photo board from the catalog:

1. Select **Insert > Photo Board**.
2. In the catalog, select the photo board you want to insert.
3. Position the photo board where you want it, then click to insert it.
4. Right-click and select **Finish**.
5. Click and drag to rotate the photo board, then release your mouse button.

Chapter 43

Project Estimate

TFP keeps track of all the materials you use to build your home as you design it — right down to the very last nail. You can generate a project estimate with a single mouse click. The estimate consists of two reports: the quantity report and the cut list. The *quantity report*, or bill of materials, lists all of the materials used to build your house, as well as the quantity, unit price and total cost of each material. The *cut list* reports all the timber and steel members in your drawing calculates the number of members you need to buy at the store using real-world lengths of your choice.

Sample unit prices are provided for your convenience, but you can specify custom pricing directly from your suppliers. The grand total is calculated for you automatically, making estimating simple, quick and accurate.

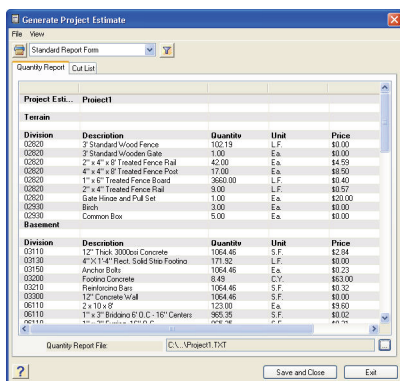
Generating a Project Estimate

You can view an accurate project estimate at any time during a design session. The estimate is always up-to-date and reflects your project in its current state.

The project estimate includes both a quantity report and cut list. The *quantity report*, or bill of materials, lists all of the materials used to build your house, as well as the quantity, unit price and total cost of each material. The *cut list* reports all the timber and steel members in your drawing calculates the number of members you need to buy at the store using real-world lengths of your choice. If you have no members in your drawing, the cut list page will be blank.

To generate a project estimate:

1. Select **Tools > Calculate/Estimate > Generate Project Estimate**.
2. To view the quantity report, select the Quantity Report tab.

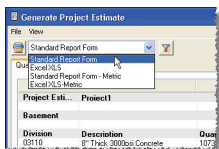


Selecting a Report Template

By default, project estimates use the *Standard Report Form* template, which generates a TXT file. You can select a different report template to use if you want, such as a Microsoft Excel template.

To select a report template:


1. In the **Generate Project Estimate** dialog, select the template you want to use from the template drop box.



Printing a Project Estimate

You can print the quantity report or cut list directly from the **Generate Project Estimate** dialog. Alternatively you can open the report in its associated editor and print it there.

To print a project estimate:

1. If you are in the **Generate Project Estimate** dialog, select the Quantity Report tab or the Cut List tab depending on which one you want to print.
2. Select **File > Print**. You can also click the Print button to the left of the report template drop box. 
3. In the **Print** dialog, select the printer you want to use, then click **Print**.

Saving a Project Estimate

The **Generate Project Estimate** acts like a viewer for your estimate. If you want to save the estimate to a file, you need to use the Save and Close tool. By default, reports are saved in the same directory where the project is saved. The file extension depends on the currently selected report template.

To save the current project estimate:

1. In the **Generate Project Estimate** dialog, select **File > Save and Close**, or click the **Save and Close** button at the bottom of the dialog.

To save a quantity report using a different file name or save location:

1. Click the Browse button next to the **Report File** edit box at the bottom of the **Generate Project Estimate** dialog.

Quantity Report File: C:\Documents and Settings\User\My Documents\...\Project4.TXT

Browse button 

2. In the **Report Filename** dialog, select the location where you want to save the report.
3. In the **File name** edit box, type the name you want to save under.
4. Click **Save**. The report is saved under the specified name and location.

Editing Material Pricing

Most elements have a default unit price set for them in their properties. These prices are used in the project estimate.

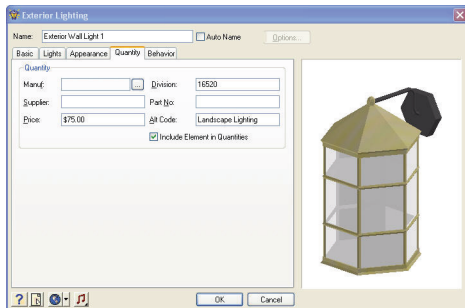
If you have already created your design, you can edit the prices of inserted elements by selecting them in the drawing, then editing their properties. Alternatively you can generate and save a project estimate, then edit the pricing in the estimate's associated editor, such as *Excel* or *Notepad* (depending on the report template used).

If you edit the price of any element in the catalog, the price change will affect all new insertions of the element.

To edit the price of an inserted element:

1. Select the element in your drawing. You can select multiple elements of the same type using Shift+click.
2. Right-click and select **Properties**, or select **Edit > Modify Elements > Properties**.

3. In the properties dialog, select the Quantity tab.



4. Edit the value in the **Price** edit box. Note that prices are unit prices. For a carpet, for example, you would enter the price per square foot, not the price of the entire carpet.
5. Click **OK** in the properties dialog.

To edit material pricing in the catalog:

1. Select **File > Catalogs > Catalog Manager**, or right-click an element in the catalog and select **Catalog Manager**.
2. From the **Elements** menu, select the element type you want to edit.
3. In the *Groups* window, select the group containing the element you want to edit.
4. In the element window, select the element to edit.
5. Select **Edit > Edit Element**, or right-click and select **Edit Element**.
6. In the properties dialog, select the Quantity tab.
7. Edit the value in the **Price** edit box. Note that prices are unit prices. For a carpet, for example, you would enter the price per square foot, not the price of the entire carpet.
8. Click **OK** in the properties dialog.
9. Click **OK**.

Chapter 44


3D Navigation

While in 3D view you can use a variety of navigation tools to move around in your design in real time. These include Walk Around, Fly Around, Look Around and Slide.

Walking Around in a 3D Camera View

When you are in a 3D camera view, you can use the Walk Around tool to walk around your model, or even go right inside it. You can walk forward, backward, left or right.


To walk around in a 3D camera view:

1. Select **View > Zoom and Navigate > Walk Around**, or right-click in the drawing area and select **Walk Around**, or click the Walk Around button on the Zoom and Navigate toolbar. 
2. Click and drag in the direction you want to move.
 - To move forward, click and drag upward.
 - To move backward, click and drag downward.
 - To walk left or right, click and drag left or right.If you click and drag up to the left, your path of motion will curve upward to the left, and so forth.

Flying Around Your 3D Model

In a 3D camera view, the Fly Around tool revolves the camera around the target.

To fly around your model in a 3D camera view:

1. Select **View > Zoom and Navigate > Fly Around**, or right-click in the drawing area and select **Fly Around**, or click the Fly Around button on the Zoom and Navigate toolbar. 
2. Use your mouse button to orbit the camera. Your options are described below.
 - Click and hold the mouse button to slowly rotate the camera around the target on a level plane.
 - Drag toward the top of the screen to make your model tilt downward like a boat coming off a wave.
 - Drag toward the bottom of the screen to make your model tilt up like a boat riding onto a wave.
 - Drag to the right to rotate the model in a clockwise direction.


- Drag to the left to rotate the model in a counterclockwise direction.

Note: Model direction is the opposite of camera direction. For example, if the model appears to be moving clockwise, the camera is actually moving counterclockwise.

Sliding in a 3D Camera View

In a 3D camera view, the Slide tool moves both the camera and target at the same time.

To slide in a 3D camera view:


1. Select **View > Zoom and Navigate > Slide**, or right-click in the drawing area and select **Slide**, or click the Slide button on the Zoom and Navigate toolbar. 
2. Once **Slide** is selected, you can do the following:
 - Drag right to move your model view to the left.
 - Drag left to move your model view to the right.
 - Drag up (toward the top of the screen) to move your model view down (toward the bottom of the screen).
 - Drag down to move your model view up.

Note: Model direction is the opposite of camera and target direction. For example, if the model appears to be moving to the right, the camera and target are actually moving to the left.

Spinning the View Using the Look Around Tool

In a 3D camera view, the Look Around tool revolves the target around the camera.

To spin the view in a 3D camera view:

1. Select **View > Zoom and Navigate > Look Around**, or right-click in the drawing area and select **Look Around**, or click the Look Around button on the Zoom and Navigate toolbar. 

2. Once **Look Around** is selected, you can do the following (presuming that your target is located inside or near the model):
 - Drag right to move the target in a counterclockwise direction. Your model orbits around you in a clockwise direction.
 - Drag left to move the target in a clockwise direction. Your model orbits around you in a counterclockwise direction.
 - Drag up to lower the height and shorten the distance of the target. Your view becomes high-angle, and your model moves toward the top of the screen.
 - Drag down to raise the height and lengthen the distance of the target. Your view becomes low-angle, and your model moves toward the bottom of the screen.

Note: Be careful when using the Look Around tool. It is very easy to lose sight of your model since the camera's "eye" is fixed in one direction only. It does not move to follow the orbiting target. Therefore, your field of vision is limited, and your model can quickly get above, below or behind you.

Resetting the Camera in a 3D View

If you have moved the camera of a 3D camera view, either by dragging it in 2D plan view or using a navigation tool like Walk Around or Slide, you can use the Reset Camera tool to move the camera back into its original position.

To reset the camera to its original position:

1. Select **View > Zoom and Navigate > Reset Camera**, or click the Reset Camera button on the Zoom and Navigate toolbar.



Chapter 45

3D Real View™

TFP incorporates powerful 3D Real View™ rendering technology. 3D Real View rendering adds light and shadow to a textured 3D view to achieve photo-realistic images of both the interior and exterior of your home. These images can be printed directly from the screen. You can also choose to save the rendered image to a bitmap (BMP) or JPG file that you can then open in most graphic editing applications.

Once you've set up your scene, creating a 3D Real View rendering involves only a mouse click or two. In a short time you'll have a vivid, life-like view to enjoy!

Setting the Viewpoint for the Scene

When you create a 3D Real View rendering, your model is captured at the angle currently shown on the screen. In most cases, the best type of view for 3D Real View rendering is a Perspective view, because it is the most realistic. For information about 3D viewing, see *2D and 3D Viewing* on page 17.

Setting the Scene

Even though creating a 3D Real View rendering involves nothing more than a mouse click, there are a few things you should consider beforehand.

Note: It doesn't matter what display mode (wireframe, patterned, etc.) you're currently in. 3D Real View renderings will always be textured.

Exterior Shots

If you want to do an exterior shot, the most important factor to consider is sunlight. This is determined by your global position and time of day. By adjusting these settings, you control how much sunlight is in the scene, and from what angle it shines. See *Defining Your Location and Time of Day* on page 279.

Night Shots

To create a night shot, you need to first set your background to a night scene. See *Selecting a Background for 3D Views* on page 24. Once your background is set, all you need to do is set the time to a time of day when there is no sun. If you do want to create a night shot, you will probably want to insert some exterior lighting in your design. See *Inserting Exterior Lighting* on page 204.

Interior Shots


When creating interior shots, light comes from light fixtures that you have inserted in the room, and can also come through the windows if it is daytime. You can turn lights on and off as well as change their light bulbs for different light intensity and

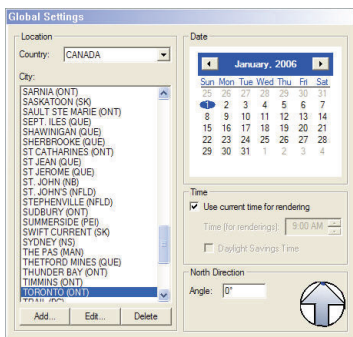
effect. For information about interior light fixtures, see *Interior Lighting* on page 115.

Defining Your Location and Time of Day

You can define where your model is located in the world, as well as set the time of day. This determines how much daylight there will be in the scene.

To define your location and time of day:

1. Select **Settings > Program Settings**, or click the Program Settings button on the Settings toolbar. You can also click the **Options** button in the **3D Real View** dialog. 
2. In the **Program Settings** dialog, select **Global Settings** in the left column.



3. Specify your location and time of day. For more information, see the online help.
4. Click **OK**.

Creating a Basic 3D Real View™ Rendering

You can create a basic 3D Real View rendering with the click of a button.

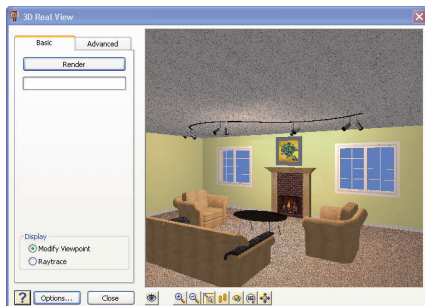
Basic rendering uses the *raytracing* method. Raytracing is a direct illumination algorithm that traces the path taken by a ray of light from the camera through the scene, then calculates the reflection, refraction, or absorption of the ray when it intersects objects in the scene.

Basic rendering is ideal when you want to produce something of average quality very quickly.

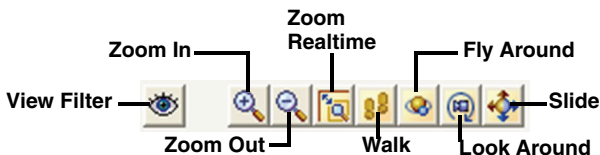
Rendered views are displayed in the 3D Real View dialog once they've been calculated. The image is also saved to a BMP or JPG file for later access. For more information see *Saving a 3D Real View™ Rendering to a File* on page 286.

To create a basic 3D Real View rendering:

1. Display the 3D view that you want to render.
2. Select **View > Render 3D Real View**.
3. In the **3D Real View** dialog, make sure the scene is how you want it to appear.



You can change the scene using the tools below the preview window.



4. On the Basic tab, click the **Render** button. The progress of the ray tracing is indicated on the progress bar. When the rendering is complete, the word 'Done' appears below the progress bar.
5. If you want to change the scene and render it again, enable the **Modify Viewpoint** radio button, then use the tools below the preview window to change the scene. Enabling the **Raytrace** radio button loads the last rendered image.
6. When you are finished rendering, click **Close**.

Creating an Advanced 3D Real View™ Rendering

Advanced 3D Real View rendering uses the *radiosity* method as well as the *raytracing* method.

Radiosity is a global illumination algorithm that simulates the many reflections of light around a scene, generally resulting in softer, more natural shadows and reflections.

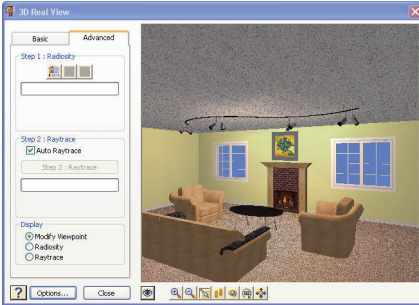
Advanced 3D Real View rendering can take considerably longer than basic rendering, but the result is generally more photo realistic.

By default, the scene is automatically raytraced once the radiosity solution has been calculated. However, you can choose to prevent this if you want to be able to navigate through the radiosity solution before raytracing the scene.

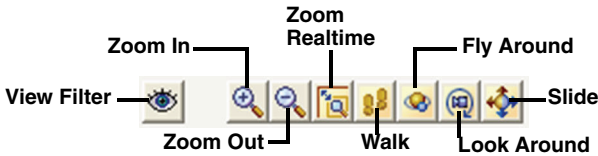
To create an advanced 3D Real View rendering:



1. Display the 3D view that you want to render.
2. Select **View > Render 3D Real View**.

3. In the **3D Real View** dialog, select the Advanced tab.



Make sure the scene is how you want it to appear. You can change the scene using the tools below the preview window.



4. By default, raytracing will begin as soon as the radiosity calculations are complete. If you do not want to raytrace automatically after radiosity, disable the **Auto Raytrace** check box. Disabling automatic raytracing gives you the opportunity to navigate through the scene before raytracing begins.
5. Click the Calculate Radiosity Solution button in the *Radiosity* area. Radiosity calculations begin. 
Basically, radiosity determines how much light is given off by the sun or by lighting fixtures, and how much light is reflected off the surface of elements. The view is updated at regular intervals during these calculations.
If you click the Stop Radiosity Solution button during radiosity calculations, the solution will stop, and the scene will be instantly raytraced unless you have disabled automatic raytracing. You may want to do 

this if the process seems to be taking a long time, but you may not get the result you want. (The image may turn out too dark.)

If you have disabled automatic raytracing, you can click the Calculate Radiosity Solution button to resume the radiosity solution.

To erase the current radiosity solution, click the Reset Radiosity Solution button. This frees up memory, and also lets you start a new solution if you want.



6. By default, once the radiosity calculations are complete, raytracing begins. Please wait while the rendered image is generated.

If you disabled automatic raytracing, the scene is not automatically raytraced once the radiosity calculations have been performed. Instead, the radiosity solution remains in the preview window. When you are ready to raytrace, click the **Step 2: Raytrace** button.

7. Once the rendering is complete, it appears in the preview window. If you want to change the scene and render it again, enable the **Modify Viewpoint** radio button, then use the tools below the preview window to change the scene. Enabling the **Radiosity** radio button loads the last radiosity solution. Enabling the **Raytrace** radio button loads the last rendered image.
8. When you are finished viewing the 3D Real View rendering, click **Close**.

If you selected the Render to File option before rendering, the image is saved to a file. For more information, see *Saving a 3D Real View™ Rendering to a File* on page 286.

Editing the Lighting in a Scene

If you find that your rendering is too light or too dark, or that you want to create different lighting effects, consider the following concepts:

Time of Day. Your location and time of day determine how much daylight is in a scene. The time of day in your program settings determines the time of day in your rendering. See *Defining Your Location and Time of Day* on page 279.

Light Fixtures. You may need to add light fixtures to increase the amount of light in a scene. This is particularly important for interior shots and night shots. For information on inserting interior light fixtures, see page 116. For information on inserting exterior light fixtures, see page 204.

Light Sources. You can change the bulbs in your light fixtures to achieve different lighting effects. For example, you can choose a bulb with a stronger or weaker wattage, or one that is a different color. See *Editing a Light Fixture's Light Source* on page 116.

Turning Lights Off. If you have light fixtures in your scene and want to decrease the amount of light in the scene, you can turn selected light fixtures off. See *Turning a Light On or Off* on page 118.

Editing 3D Real View™ Settings

There are a number of different settings that you can define to customize the look of your 3D Real View rendering. You can control the quality of the image, add fog or smoke effects, turn daylight off, and set antialiasing properties. These settings must be defined prior to rendering.

To edit 3D Real View settings:

1. Select **View > Render 3D Real View**.
2. In the **3D Real View** dialog, click the **Options** button.
3. In the **Program Settings** dialog, select **Rendering** in the left column.
4. Edit the settings as desired. Here is a basic description of each setting:

Quality Level. The level of quality in the resulting 3D Real View image. There are 5 levels to choose from. Note that the higher level of quality you choose, the longer the rendering process takes. This option must be set before rendering takes place.

Update display every _ steps. As the program performs lighting calculations, the view updates at regular intervals to reflect calculations up to that point. This is the number of steps between visual updates.

Image Brightness. Specifying a value manually overrides the automatic exposure of the virtual camera. The program's "virtual camera" works in a manner similar to actual point-and-shoot cameras. It automatically calculates the correct "exposure" for the lighting situation and produces a view with infinite depth of field (i.e. everything is in focus).

Enable Daylight. If disabled, omits daylight from the lighting calculations, and can speed up rendering. Daylight is included in radiosity calculations, even for indoor scenes (light can come through a window). This option should always remain on for exterior shots, even if it is a night shot. An example of a situation where you might turn daylight off is if you are rendering a room with a very small window, or no windows at all.

Antialiasing. Blends pixels in areas where two colors or two materials meet to reduce artifacts (or "stair steps") and produce a more natural look to the scene.

Raytrace Automatically after Radiosity. Sets the default state for the Auto Raytrace check box in the 3D Real View dialog (Advanced tab).

Enable Effects. Allows you to create either a fog or smoke effect in the rendering.

Fog. Creates a fog effect in the rendering.

Smoke. Creates a smoke effect in the rendering.

Density. The thickness of the fog or smoke.

Render to File. If enabled, the next 3D Real View rendering you create will be saved to a file. The image will be saved to a BMP or JPG file that you can open in most graphic editing applications.

Location. The name and save location of the rendered image. Click the Browse button to view or specify the file name and save location for the rendered image.

Size. The size of the resulting rendered image in pixels. The default selection is *Current View Size*, which saves the image at the size currently shown in the preview window. Pre-defined sizes include 640 x 480, 800 x 600, and 1024 x 768. Selecting the *Custom* option lets you define a custom size by entering values in the Width and Height edit boxes.

Width. If *Custom* is selected in the **Size** drop box, this lets you define a custom width for the rendered image in pixels.

Height. If *Custom* is selected in the Size drop box, this lets you define a custom height for the rendered image in pixels.

Saving a 3D Real View™ Rendering to a File

By default, 3D Real View renderings are saved to a BMP file in your Projects directory. You can edit the save settings if you want. For example, you may want to define a specific file name or different save location.

To save a 3D Real View rendering to a file:

1. Select **View > Render 3D Real View**.
2. In the **3D Real View** dialog, click the **Options** button.
3. In the **Program Settings** dialog, select **Rendering** in the left column.
4. In the *Image Output* area, enable the **Render to File** check box.

5. By default, rendered images are saved in the same directory your projects are stored in. By default, this would be the following directory:

C:\Documents and Settings\<<Current User>\My Documents\TurboFLOORPLAN product name\Projects

To select a different location to save your rendered image in, click the Browse button next to the **Location** edit box. In the **Save As** dialog, navigate to the folder where you want to store rendered images.



To specify a custom name, enter the name in the **File Name** edit box. You can select either BMP or JPG as your file format from the **Files of type** drop box.

6. Click **Save** in the **Save As** dialog.
7. Click **OK**.

Note: If you have created and saved a rendering, and then create another one, the currently saved will be overwritten unless you specify a different save name or location. See the next topic, *Creating Multiple 3D Real View Renderings in the Same Project*.


Creating Multiple 3D Real View Renderings in the Same Project

When you perform a rendering, the image is saved to a BMP or JPG file in your Projects directory. The file has the same name as your project. If you create another rendering in the same project, the file from the previous rendering is overwritten.

If you want to create and save more renderings within the same project, you need to specify a different output name for each new image before creating the rendering.

To create and save an additional 3D Real View rendering:

1. Select **View > Render 3D Real View**.
2. In the **3D Real View** dialog, click the **Options** button.
3. In the **Program Settings** dialog, select **Rendering** in the left column.

4. In the *Output Options* area, make sure **Render to File** is checked.
5. Click the browse button next to the **Location** edit box. A small square button with a blue border and three dots inside, representing a browse or file selection icon.
6. In the **Save As** dialog, enter a name in the **File name** edit box that is different from any other images that you have saved. You can select either BMP or JPG as your file format from the **Files of type** drop box.
7. Click **Save**.
8. Click **OK** in the **Program Settings** dialog.

The next 3D Real View rendering you create will be saved to the new file name.

Chapter 46

Animation



Home & Landscape Pro only

An animation is just like a movie. *TFP*'s powerful animation tools let you record an actual tour through your 3D model that you can play back at any time. You can even add realistic sounds to your animation, such as a doorbell ringing. You can also choose to ray trace the animation for a photorealistic display that includes light, shadows and reflection.

To create an animation, all you need to do is draw one or more paths for the camera to follow. Then, just sit back and watch your design come to life!

Drawing an Animation Path


Home & Landscape Pro only

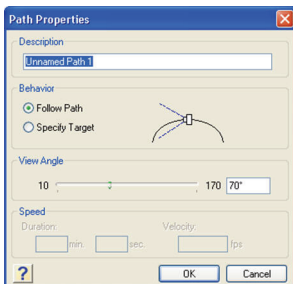
The first step in creating an animation is defining a path for the camera to follow. You can specify where you want the camera to look (along the path or at a specific target or target path), as well as the view angle.

You draw the path by selecting a camera start point and subsequent control points. The path automatically curves between points to create a smooth motion for the camera. Once you have drawn the path, you can add, remove and elevate control points if you want.

You can draw more than one path if you want. By default, all paths will be included in the animation, and will be followed in the order in which they were drawn. You can, however, choose which paths you want to include in the animation, as well as the order of paths for the camera to follow.

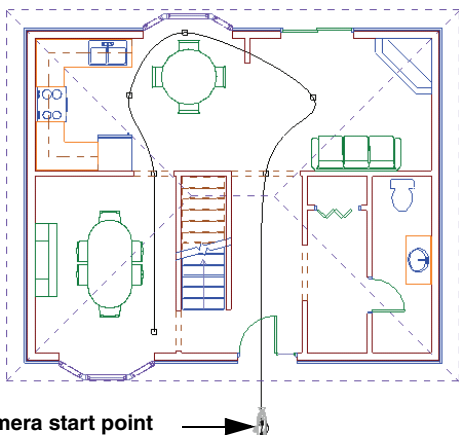
To draw an animation path:

1. Make sure that the location on which you want to capture the animation is the current building location. Also, it is recommended that you draw the path while in 2D plan view.
2. Select **Tools > Animation > Insert Path**, or click the  Insert Path button on the Animation toolbar.



-
3. In the **Path Properties** dialog, specify a name for the path for identification purposes.
 4. In the *Behavior* area, specify what you want the camera to focus on during the animation. If you select **Follow Path**, the camera will focus on a different target along the path in each frame. If you select **Specify Target**, the camera will always point towards a target point that you specify.
 5. In the *View Angle* area, specify how wide you want the view angle to be by either sliding the ruler or entering a value in the edit box. Higher values produce a wide-angle view; lower values produce a close-up view.
 6. Click **OK**.
 7. Select a start point for the camera. For example, if you want to start your animation by walking through the front door, select a point outside the front door.
 8. If you selected the **Specify Target** option, select the point you want the camera to remain focused on during the animation.
 9. Select the next point of the path. Each point you select is called a *control point*. The camera will move to each control point and capture an image of the view at that point.

Basically, control points are the key to drawing and shaping your path.



10. Continue selecting control points until your path is finished.
11. Right-click and select **Finish**.

Tip: You can simulate the movement from one location to another by drawing your path up or down a staircase. Once the path is drawn, you can then edit the elevation of control points on the other location to view elements on that location.

Previewing the Animation

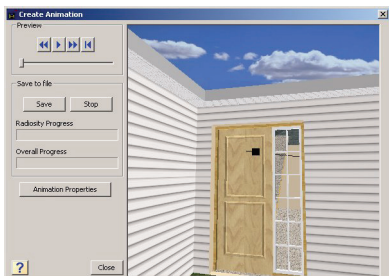
 **Home & Landscape Pro only**

Once you have drawn one or more paths for your animation, you can preview the resulting animation. You can play the animation automatically, or step through it frame by frame.

To preview an animation:

1. Make sure you have drawn a suitable path for your camera.

2. Select **Tools > Animation > Create Animation**, or click the Create Animation button on the Animation toolbar.



3. In the **Create Animation** dialog, click the Play button to automatically play the animation.
To pause the animation, click the Pause button.
4. To play the animation manually by stepping through each frame, click the Next Frame button. Alternatively you can click and drag the slider to play it manually or skip to specific frames of the animation.
To step back to the previous frame, click the Previous Frame button.
5. To return to the start of the animation so you can play it again, click the Restart button.



Note: To output the animation to an actual file so that it can be viewed outside of TFP, you need to save it. See *Saving an Animation to a File* on page 294.


Note: If you enabled the Ray Trace Animation option in your Animation Properties, the ray tracing will not appear in the preview. It will only appear when you export the animation to a file.

Adding Sounds to an Animation

 Home & Landscape Pro only

You can add a variety of sounds to your animation, such as a doorbell ringing or the creak of a door opening. Sound is added to an animation by inserting a sound node at a selected path control point, and choosing the sound file you want to play at that point. The sound will be played when the camera reaches that point during the playback of the animation.

To add a sound to an animation:

1. With your 2D plan displayed, select **Tools > Animation > Add Sound Node**, or click the Add Sound Node button on the Animation toolbar. 
2. Click on the control point on your animation path where you want to insert the sound.
3. In the **Open** dialog, select the sound file you want to insert. Sound files have a *.wav extension. A number of sounds can be found in the program's Sounds directory. To hear the selected sound, click the **Play Sound** button.
4. Click **Open**. A small node is inserted next to the control point.


Note: Sound nodes can only be placed at control points. You can add control points to your path if necessary.

Saving an Animation to a File

 Home & Landscape Pro only

Once you have previewed your animation and are satisfied with it, you can record it to an *.avi file which can be played using any digital media application that supports the *.avi file format, such as Windows Media Player.

To save an animation to a file:

1. Select **Tools > Animation > Create Animation**, or click the Create Animation button on the Animation toolbar. 

-
2. In the **Create Animation** dialog, click **Save**.
 3. In the **Save As** dialog, specify a file name and save location for the animation file, then click **Save**. The animation begins recording.
 4. Wait until the entire animation has been recorded. The progress of the recording is shown on the Overall Progress bar. If you want to stop recording before the animation has finished, click **Stop**. The file will be saved at this point.
 5. When the recording is complete, click **Close**.

Part 12

Managing Projects

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Chapter 48

Importing

Using the Project Trace Image tool you can import a BMP, JPG or TGA file into your drawing space. You can then trace the image using elements from the catalog, creating a true *TFP* model. This is the perfect tool to use if you have sketched out ideas in a drawing program or scanned a floor plan, and want to recreate the plan in *TFP*. You can resize the image if you need to before tracing, and delete it once you're done tracing. Most floor plans are copyrighted, so make sure you have permission to copy them.

Using the Object Import Wizard you can quickly import custom 3D objects in DXF, SKP or 3DS format directly into your drawing.

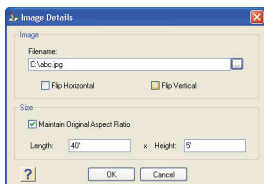
For information on importing photo boards, see page 263.

Importing an Image to Trace

You can import a BMP, JPG or TGA image, such as a scanned floor plan, and trace it using elements from the catalog, creating a true *TFP* model.

To import an image to trace:

1. In 2D plan view, select **File > Import > Project Trace Image**.
2. In the **Open** dialog, select the file type you are importing from the **File type** drop box. You can import BMP, JPG or TGA files.
3. Locate the file to import, then click **Open**.



4. If you want to reverse the image (i.e. flip it left to right), enable the **Flip Horizontal** check box. If you want to flip the image vertically (so it is upside down), enable the **Flip Vertical** check box.
5. To change the scale of the image, enter the dimensions in the **Length** and **Height** edit boxes. Typically you would use the overall dimensions shown on the floor plan. For example, if the house is 70' long, enter 70' in the **Length** edit box. Keeping the **Maintain Aspect Ratio** check box enabled ensures that the image scales uniformly when one of the dimensions is changed. This prevents the image from becoming distorted.
6. Click **OK**. A bounding box is attached to your cursor.
7. Position the box in your drawing area, then click to insert it. The image is displayed.

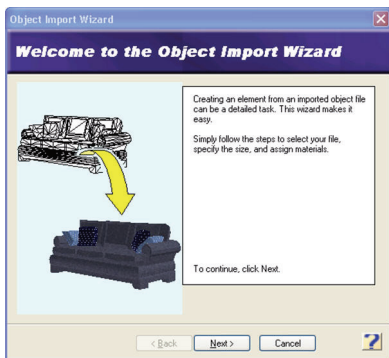
Importing Custom Objects into Your Drawing

If you have any custom 3D objects in 3DS, DXF or SKP (Google™ SketchUP) format, you can import them into your TFP drawing. Many sites on the Internet offer free downloading of objects for your convenience. Typically, these are objects such as furniture and appliances.

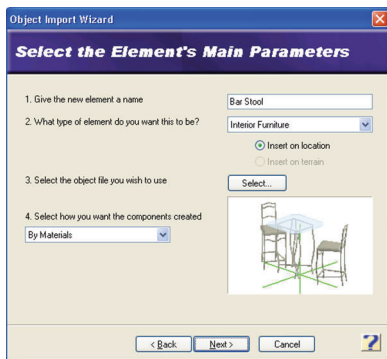
You can import a custom object directly into your drawing using the Object Import Wizard. Once inserted, you can edit its properties.

To import a custom object into your drawing:

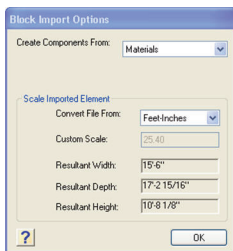
1. Select **File > Import > Object Wizard**.



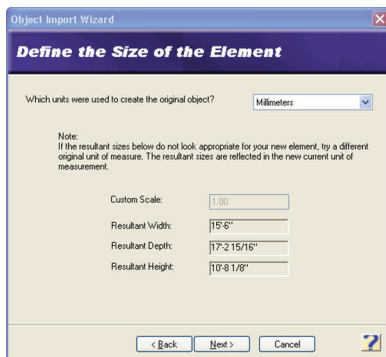
- On the first screen of the **Object Import Wizard**, click **Next**.



- In the first edit box, type a name for the element.
- From the element drop box, select the type of element you are importing.
- If you selected Exterior Furniture or Exterior Accessories, you have the option of inserting the element on the floor of the current building location, or the terrain. Select either **Insert on location**, or **Insert on terrain**.
- Click the **Select** button.
- In the **Open** dialog, locate and select the file that you want to import, then click **Open**. You can import DXF, 3DS and SKP files. If you selected a DXF or 3DS file, the following dialog appears:



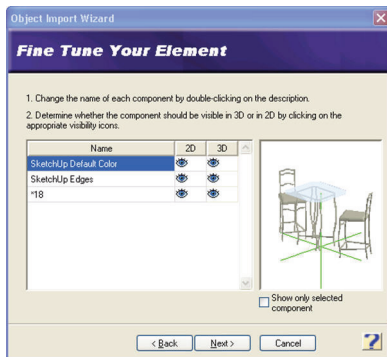
- Specify how you want the components created by making a selection from the next drop box. For DXF files you can choose from *Colors* or *Layers*. Since 3DS objects are essentially an assembly of materials, the only selection for 3DS objects is *Materials*. (This step does not apply to SketchUp files.)
- Click **Next**.



- (This step does not apply to SketchUp files.) If you know what units were used to create the object, select the units from the units drop box. Otherwise, select the unit of measure that will result in a logical **Resultant Width**, **Resultant Depth** and **Resultant Height**. Selecting **Custom** lets you specify a custom scale in the **Custom Scale** edit box.

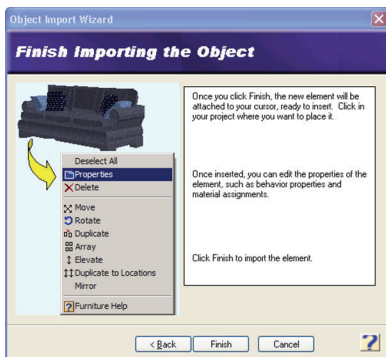
The scale is the multiplication factor of the units used for objects in the block. For example, if you're converting a file that you assume was created in feet and inches, the scale is 25.4.

11. Click **Next**.



12. To display or hide a component in 2D and/or 3D view, select it in the list, then click the appropriate eye icon. Enabling the **Show only selected component** check box displays only the currently selected component in the object preview.

13. Click **Next**.



14. Click **Finish**.

15. Click to insert the new element in your drawing.

16. Right-click and select **Finish**.

Chapter 49

Opening, Saving & Printing

Once you have started and saved a project, you can work on it whenever you like. You can open a saved project by selecting Open on the File menu. Once you have opened a project, you can edit, save, print and export it.


You can have more than one project open at a time. If you have more than one project open, you can switch between projects using the Window menu.

The Save function saves the current project under its current name. You can use Save As to save a project under a different name, and Save All to save all currently open projects. By default, one backup of your drawing is saved along with the drawing.

Opening a Saved Project

You can open a saved project (*.bld file) using the Open tool.

To open a saved project:

1. Select **File > Open**, or click the Open button on the **Standard** toolbar. 
2. In the **Open** dialog, navigate to the location where you saved the project. By default, projects are saved in the following directory:



C:\Documents and Settings\<<Current User>\My Documents\TurboFLOORPLAN product name\Projects

3. Select the project to open, then click **Open**.

Tip: If the project you want to open is one that your recently worked on, it may be listed in the recently used file list near the bottom of the **File** menu. Just select it to open it.

Saving Projects

The program has three save functions: **Save**, **Save As** and **Save All**. They are located on the **File** menu.

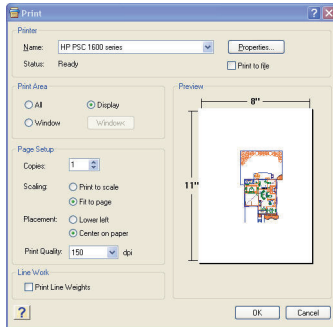
- To save the current project under the current name, or to save the current project for the first time, select **File > Save**, or click the Save button on the Standard toolbar. If you are saving for the first time, you are prompted for a file name. 
- To save the current project under a different name (i.e. create a copy of it), select **File > Save As**, then specify a name in the **Save As** dialog.
- To save all currently open projects, select **File > Save All**, or click the **Save All** button on the Standard toolbar. 

Printing Drawings

The program uses the standard *Windows* Print routine with a few added features, such as a print preview, print area selection, scaling options, and paper placement.

To print a drawing:

1. Select **File > Print**, or click the Print button on the Standard toolbar.



2. In the **Print** dialog, specify your print settings.

Printer. Select a printer from the drop box. Click **Properties** to specify general printer properties such as orientation and paper size. Note that if you are printing to scale, and the scale of the drawing is too large for the selected paper size, the drawing will be automatically tiled across multiple sheets of paper.

Print to file. If enabled, the project is printed to a print file rather than a printer.

(Print) **All.** Prints the extents of your drawing, which is the portion of your drawing that currently contains elements. As you add new elements, the extents update automatically.

(Print) **Display.** Prints exactly what you see on the screen in the current view. If only part of your drawing is currently visible, only that part will appear in the printout.

(Print) **Window.** Prints a specific area of your drawing that you define by drawing a bounding window around it. Click the **Window** button, then click two points in your drawing to define the selection window. You can snap the window to elements in your drawing if desired. The preview in the **Print** dialog will update automatically.

Copies. Select the number of copies to print from the **Number of copies** drop box.

Scaling. The **Print to Scale** option prints the current view according to its defined scale in the view properties.

To see a view's defined scale, select **Edit > View Properties**, or right-click in the drawing area and select **View Properties**, or right-click on a view's tab below the drawing area and select **View Properties**.

Note that the **Print to Scale** option will not work with most 3D views (unless they are elevation views), since 3D views cannot be scaled.

The **Fit To Page** option scales the drawing to fit the selected paper size. Note that this is the default setting for 3D views, since 3D views are not affected by changes in scale (unless they are elevation views).

Placement. If you select **Lower left**, the image is printed in the lower left corner of the paper. If you select **Center on paper**, the image is centered on the paper.

Print Quality. Choose from three levels of print quality (150, 300 or 600 dpi). A higher resolution (600 dpi) produces graphic images that are sharper and show finer detail, while a lower resolution (150 dpi) permits faster printing and shows less detail.

Preview. Displays a preview of how the drawing will fit on the paper. If the drawing is too large for the selected paper size, it will be automatically tiled across multiple sheets of paper. Separation marks will then appear in the preview indicating where the drawing will be divided.

Print Line Weights. Prints the lines in your drawing using the weight (thickness) assigned to them in element properties. Otherwise, all lines print with the same thickness.

3. Click **OK**.

Chapter 50

Exporting

TFP offers three different Export tools: 2D Image, 2D Drawing and 3D Model.

The 2D Image tool lets you export the image on the screen to a BMP, JPG or TGA file, which can be opened in a variety of graphic editing applications.

With the 2D Drawing tool you can export your 2D plan to an AutoCAD DXF file.

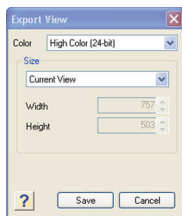
The 3D Model tool lets you export your 3D model to a DXF, 3DS (3D Studio), WRL (VRML) file. When you open the file in the associated application, you will see an actual 3D model in that application.

Exporting the Current View to a 2D Image File

The 2D Image export tool lets you save the current view to a BMP, JPG or TGA file, which can be opened in most graphic editing applications.

To export the current view to an image file:

1. Select **File > Export > 2D Image**.
2. In the **Save As** dialog, click on the **Save as type** drop box and select the file format you want to export to.
3. Locate the directory where you want to save the exported file.
4. In the **File name** edit box, type a file name.
5. Click **Save**. The **Export View** dialog appears:



6. From the **Color** drop box, select the desired color setting. Choose from *Grayscale*, *High Color (16-bit)*, *High Color (24-bit)* or *True Color (32-bit)*.
7. From the **Size** drop box, select the desired output size. By default, *Current View* is selected, which saves the image at the size currently shown on the screen. You can choose from a list of preset sizes, or select *Custom* and enter the desired values in the **Width** and **Height** edit boxes.
8. Click **Save**. The view is exported.

Exporting the 2D Drawing to a DXF File

The 2D Drawing export tool saves your 2D plan in a 2D, vector drawing format that can be opened in AutoCAD or any application that accepts DXF files.

To export your 2D drawing to a DXF file:

1. Select **File > Export > 2D Drawing**.
2. Locate the directory where you want to save the exported file.
3. In the **File name** edit box, type a file name.
4. Click **Save**. A dialog appears confirming the model has been exported successfully.
5. Click **OK**.

Exporting the 3D Model

The 3D Model export tool lets you save your 3D model in the following 3D file formats:

- AutoCAD DXF (*.dxf)
- Autodesk 3D Studio (*.3ds)
- VRML (*.wrl)

When you open the file in its associated application, you will see an actual 3D model in that application.

To export your 3D model:

1. Select **File > Export > 3D Model**.
2. In the **Save As** dialog, click on the **Save as type** drop box and select the file format you want to export to.
3. Locate the directory where you want to save the exported file.
4. In the **File name** edit box, type a file name.
5. Click **Save**. A dialog appears confirming the model has been exported successfully.
6. Click **OK**.

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