Quick Start Tutorial

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Contents

Introduction 4
About this Guide 5
Installing the Program 5
Technical Support 6
Starting the Program 7
Activating the Program 7
Starting a New Project 8
Getting to Know Envisioneer 9
Setting Up a Project 16
Drawing Walls 18
Quick Tip: Adding a Level 31
Inserting Doors 32
Inserting Windows 36
Inserting Openings 37
Viewing in 3D 38
Navigating in 3D 40
Switching Back to 2D Plan View 42
Customizing Floors 42
Inserting a Structural Floor 44
Inserting Ceilings 47
Inserting a Roof 47
Customizing a Roof 48
Viewing Elevations 51
Filtering the View 52
Creating a Kitchen 52
Creating a New 3D Camera View 55
Inserting Lighting 57

3D RealView™ Rendering 57
Creating a Section 58
Landscaping 60
Adding Dimensions 62
Adding Text 65
Calculating Square Footage 67
Viewing a Project Estimate 67
Creating Construction Documents 69

Quick Start Tutorial

Introduction

Welcome to Cadsoft Envisioneer, a quick and easy modeling tool that helps you create home plans smoothly and efficiently, with the added flexibility of 3D viewing, rendering, and estimating.

You can use this all-in-one design system for:

- Floor plans
- Interior design
- Exterior design
- Landscaping
- Elevations and Sections
- 3D Navigation
- Working Drawings
- Animations
- 3D RealView™ Rendering
- Estimates and Quotes

Since most of the features in Envisioneer are automated, it is very easy to learn and use. You can complete most tasks with a few clicks of the mouse. And with the built-in power of Cadsoft's advanced design technology, you can count on fast, accurate, professional-level drawings.

About this Guide

CONTENTS

This guide can be used with the following products:

- Personal Architect
- Pro Architect
- Building Essentials
- Construction Suite

It is designed to get you up and running as quickly as possible. You'll start off with a brief tour of the interface. Next, the step-bystep tutorial shows you how to create a 3D model as well as landscaping, 3D viewing, rendering, quantity reports, construction documents, and more. For more information on each of the tools used, see the Program Help on the Help menu.

TUTORIAL AIDS

To clarify point and element selections, the tutorial includes diagrams and screen captures throughout. In diagrams containing multiple selection points, the points have been enhanced to aid in selection. For example,

Indicates the first point to be selected.

Indicates the second point to be selected.

Installing the Program

Make sure you exit all other programs, applications and screensavers before installing.

To install from a downloaded file:

1 Double-click the installation file (*.exe) that you downloaded.

2 Follow the on-screen instructions to complete the installation.

Technical Support

Online Support 24/7

Before contacting Technical Support, check out the Cadsoft web site, where you can find a variety of articles and videos.

To view support materials, go to https://www.cadsoft.com/learning-center/ support-learning.

To access the Learning Center directly from Envisioneer, select Help > Customer Care or click on the Help toolbar.

You can also post questions on the Cadsoft Forum 24 hours a day, 7 days a week. Go to http://www.cadsoft.com/community-posts.

Technical Support

If you cannot find the answer you need from the resources above, please contact Cadsoft's technical support team.

When you contact technical support, be prepared to provide information about your computer name and model, and the brand name of the video card you are using. If possible, sit at your computer with the program running when you call.

Cadsoft Customer Support

Hours: Monday to Friday, 8:30 AM - 5:00 PM, EST

Phone: 1-888-CADSOFT (223-7638)

Fax: (519) 823-8821
E-mail: support@cadsoft.com

Starting the Program

Once you have installed the program, you can start using it.

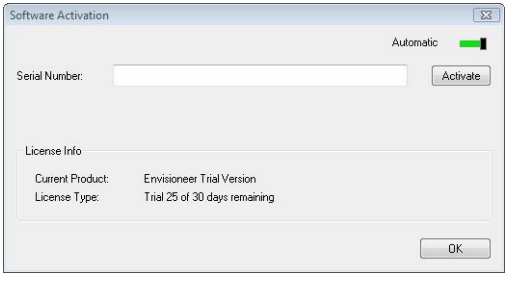
1. On your Windows desktop, click the Start button.
2. Select Cadsoft > Envisioneer. Or, click on the program's shortcut on your desktop.

Activating the Program

When you start the program for the first time, an Activation dialog appears. This is a good time to activate the program.

To activate the software:

1. In the Activation dialog, click Activate....
2. In the Software Activation dialog, enter your product Serial Number and then click Activate.

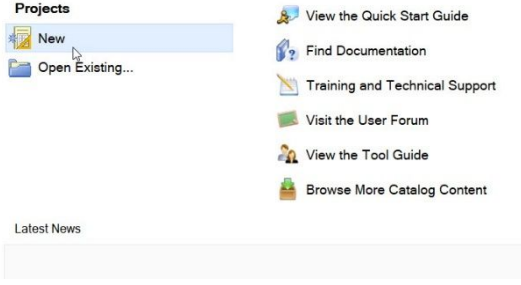


Starting a New Project

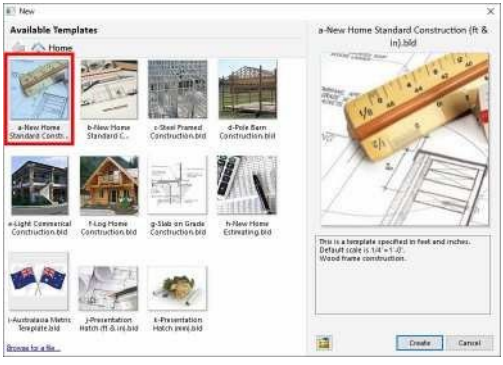
By default, a Startup screen appears every time you start the program. This screen lets you start new projects and provides instant access to saved projects that you've been working on. It also contains links to various

resources to help you get started and displays the latest news from Cadsoft.

1 On the Startup screen, select New to start a new project.



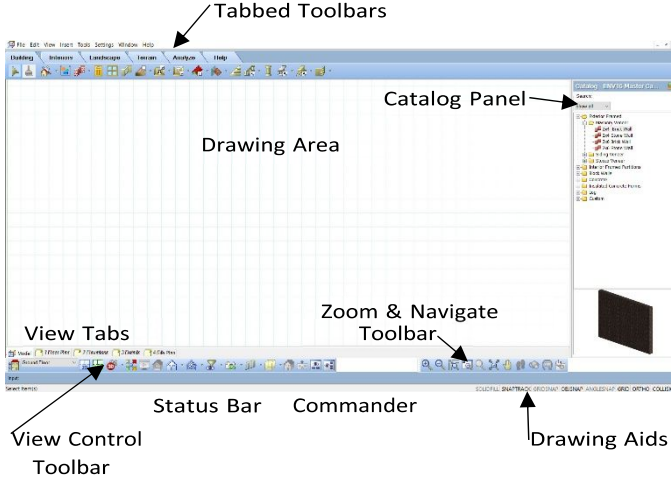
2 In the New dialog, select the a - New home standard construction (ft & in) template, then click Create.



A new, blank project is started for you.

Getting to Know Envisioneer

Take a moment to familiarize yourself with the Envisioneer interface.



TOOLBAR TABS

In Model View, six tabs are located just beneath the menu bar: Building, Interiors, Landscape, Terrain, Analyze and Help. These are actually toolbars displayed in tabbed format. They provide you with instant access to the tools you need, when you need them.

BUILDING TOOLBAR

The Building toolbar contains the tools you need to build a home or any architectural structure. It includes tools such as Walls, Doors, Windows, and Roofs.

Interiors Toolbar

The Interiors toolbar contains the tools you need to furnish, decorate and equip the interior of your home. It contains tools such as Cabinets, Countertops, Appliances, Furniture, Lighting and Plumbing Fixtures.

Landscape Toolbar

The Landscape toolbar contains all the tools you need to create a complete landscape plan for the exterior of your home. Tools include Plants, Fences/Gates, Decks, and Irrigation.

Terrain Toolbar

The Terrain toolbar contains tools that you can use to recreate the topography of your building site, which is especially important in 3D views. Use the Import Site Data tool to import spot level points from a site recorder file and create an accurate triangulated mesh, or shape the existing terrain using tools such as Hills/Valleys, Slopes and Plateaus. Add hardscaping elements such as Paths, Pads and Retaining Walls. Show the extents of the property with the Site Boundary tool.

Analyze Toolbar

The Analyze toolbar provides instant access to a variety of tools that help you estimate or calculate information. You can view a project estimate, schedules (door, window and member), as well as area and perimeter calculations for different levels, areas or rooms in your model.

Help Toolbar

The Help toolbar contains instant links to the

Program Help, Glossary of Terms, the Cadsoft web site, and our Customer Care site. You can also control the display of the Tutor, which pops up when you use program tools, and the Startup screen that you see when the program is started.

VIEW CONTROL TOOLBAR

The View Control toolbar contains several essential view-related tools.

The toolbar's building location drop box displays the current building location, which is important when inserting elements in your drawing. The toolbar also lets you quickly switch between 2D view and 3D view, and view and create elevations and sections.

A display mode button lets you choose the current display type for the view (wireframe, hidden line, patterned, etc.). The toolbar also provides instant access to the View Manager, where you can create new view windows if you want.

ZOOM AND NAVIGATE TOOLBAR

Zoom tools on the Zoom and Navigate toolbar include Zoom In, Zoom Out, Zoom Realtime, Zoom Window, Zoom Previous, and Pan. The navigation features on the toolbar (Walk Around, Fly Around, Look Around, Reset Camera) are only active when you are in a 3D view. These tools let you change the view in real time using your mouse.

NAVIGATOR

The most common viewing and navigation tools can also be found on the onscreen Navigator, which is kind of like a video game controller. It lets you switch between 2D and 3D, zoom and pan, and navigate in 3D, all from a simple control panel displayed on the screen. Motion is controlled by clicking and dragging the central trackball.

COMMANDER

The Commander lets you enter precise values when inserting or editing elements. Initially the Commander will look grayed out because it is inactive. It will become active when you insert or edit elements.

VIEW TABS

By default, each project has a number of view tabs displayed below the drawing area. Tabs vary depending on the product you have. The Model view window is where you build and edit your 3D model. In all products except Personal Architect, there are some numbered view tabs beside the Model view tab, such as 1 Floor Plan and 2 Elevations. These are Worksheet View windows, where you can create your construction documents.

View tabs help you easily switch between view windows. If you create new view windows, the tab display updates automatically. You can edit the name of view tabs and other properties.

Note: If you are using Personal Architect, your project has only one view window by default (Model).

Model View vs. Worksheet View

When you open a new project, the Model view window is displayed. This is where you build, edit and view your 3D model. You also have access to a 2D drafting mode called Worksheet View. This mode contains a number of different drafting tools that help you create professional-looking working drawings. Worksheet View is accessed by selecting the view tabs beside the Model view tab, or by opening Worksheet View windows from the View Manager.

Note: Worksheet View is not available in Personal Architect.

Grid and Grid Snap

By default a grid is displayed in the drawing area. This set of vertical and horizontal lines is simply an on-screen visual aid that helps you orient objects to one another. The distance between grid lines is 4 feet. The grid can be turned off if desired, and you can control the grid spacing and appearance in your program settings.

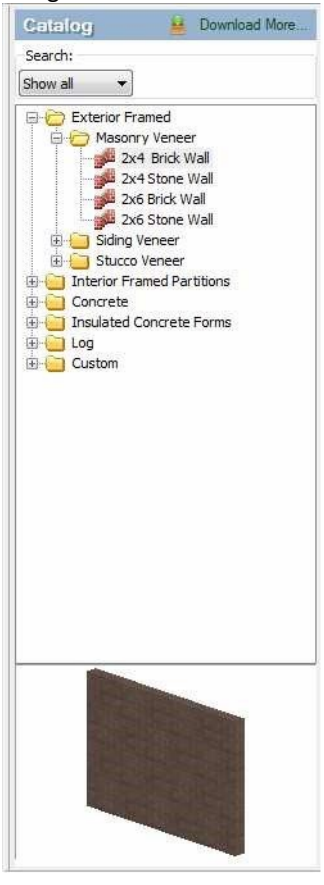
By default the Grid Snap is also turned on. This feature snaps your pointer to an invisible grid when inserting elements. The default Grid Snap spacing is 1 inch. You can control the spacing of the snap grid as well as turn the Grid Snap off if you want to. You can also match the snap grid to the visible drawing grid by editing your program settings.

AUTO SCROLL

If you are drawing an element such as a wall and need to scroll the drawing area to be able to finish drawing the element, simply press and hold the CTRL key when your cursor is near the edge of the drawing area. This activates the Auto Scroll feature and scrolls the drawing area in the direction in which you move your mouse, allowing uninterrupted drawing.

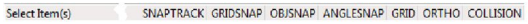
CATALOG PANEL

The catalog panel displays the elements contained in the program's Master Catalog, or whatever catalog is currently open. This is where you select elements to insert into your drawing.



STATUS BAR

The Status bar is located at the bottom of the screen. It displays helpful prompts while you are working on your design project. For example, if you are inserting a wall, it may display “Pick first insertion point”. The Status bar also includes a selection of drawing aid buttons such as ORTHO and OBJSNAP.



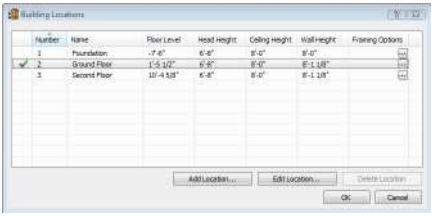
Setting Up a Project

Once you’ve familiarized yourself with the Envisioneer environment, you’re ready to start your first project. Before you begin, make sure you have a new, blank project open (File > New).

BUILDING LOCATIONS

When you insert an element in your drawing, it is inserted on the current building location. It is important to define your building locations before inserting elements.

1 Select Settings > Building Locations.



2 Note the settings in the Building Locations dialog. You can edit the settings for the existing locations, as well as create new locations. When you define building locations, you are doing two things:

- setting the wall height for each floor in your model
- specifying where each floor is positioned relative to grade or another building location

3 Click OK to accept the default settings.

Unit of Measure

Before you start drawing you need to make sure you're using the correct unit of measure for your project, and select a level of precision for your measurements.

1 Select Settings > Document Settings.

2 In the Document Settings dialog, select Units of Measure in the left pane.

3 Make sure the Imperial radio button is selected, and that Feet-Inches is selected in the Units drop box.

4 Click the Precision drop box below the Units drop box, and select the full feet and inches option (#'-#"). This is a good setting for this tutorial.

Grid Snap

Let's define a new grid snap spacing.

1 In the Document Settings dialog, select Drawing Aids in the left pane.

2 Enable the Grid Snap (F4) check box, as well as the Custom Spacing radio button below that.

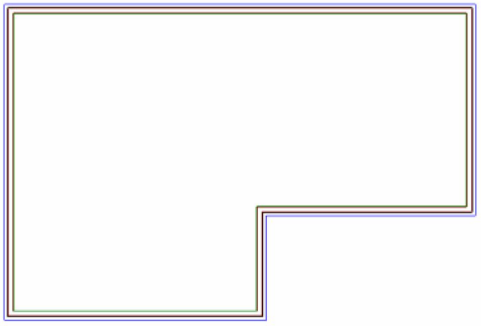
3 Highlight the value in the X edit box and then type 12. Do the same in the Y edit box. This defines a grid snap spacing of 12".

4 Click OK. You are ready to draw!

Drawing Walls

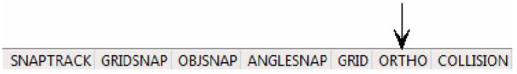
EXTERIOR WALLS

Now you're ready to start drawing. We're going to create a simple exterior wall layout that looks like this:



1 Look at the View Control toolbar and make sure the current location is the Ground Floor.

2 Make sure the Ortho is enabled on the status bar below the drawing area. This will constrain your walls to 90-degree angles.

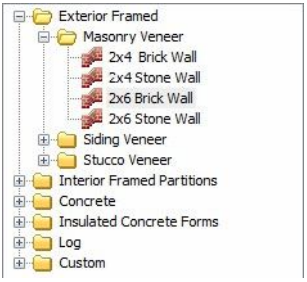


3 Select Insert > Walls > Walls, or click the Walls button on the Building toolbar.

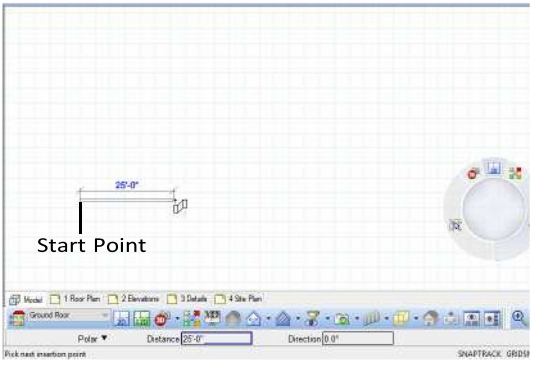
NOTE: If the Tutor window pops up, enable the Don't show the Tutor again check box at the bottom of the window. This will keep the Tutor off while you are completing the tutorial (recommended). The Tutor is a context-sensitive help aid that pops up when you

select most tools. You can turn it back on again later by selecting Help > Tutor.

4 In the catalog panel on the right side of the screen, select the 2 x 6 Brick Wall in the Masonry Veneer folder.



5 Move your pointer into the drawing area, then click a point near the lower left quadrant of the drawing area.

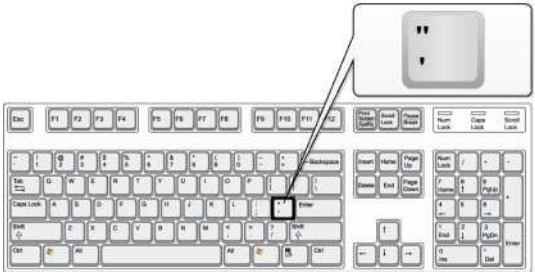


6 Without dragging, move your pointer to the right, and watch the on-screen dimensions as you stretch the wall. When the dimension reads 25', click to select the

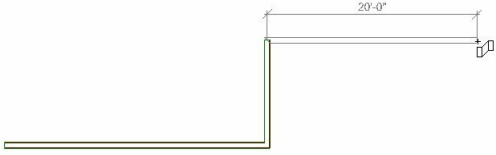
wall's end point.

7 Move your pointer upward. When the dimension reads 10', click to select the wall's end point.

8 Start moving your pointer to the right. This time, type 20' and press Enter, making sure that you include the feet symbol (') after the 20. To type the feet symbol, hit the quotation mark key on your keyboard.

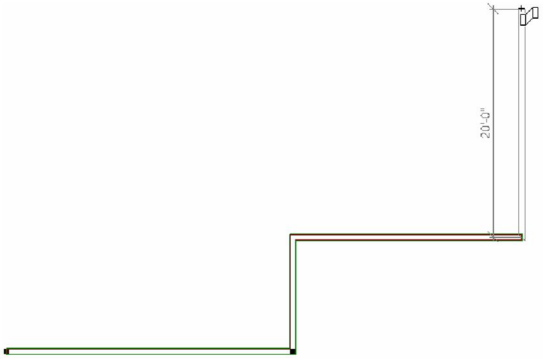


If you do not include the feet symbol when typing a value, the value will be taken as inches.

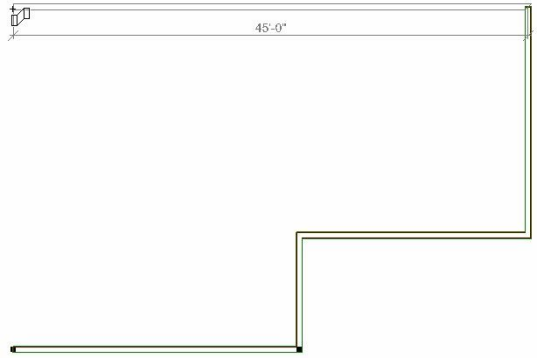


This illustrates another method of drawing walls where you can type precise values. As you type the value, it appears in the Distance edit box of the Commander, and the angle appears in the Direction edit box.

9 Start moving your pointer upward. Type 20′ and press Enter.

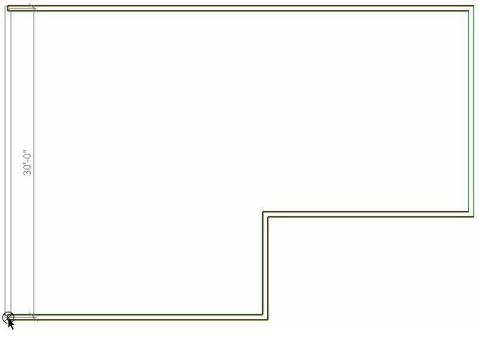


10 Move your pointer to the left. Type 45′ and press Enter.



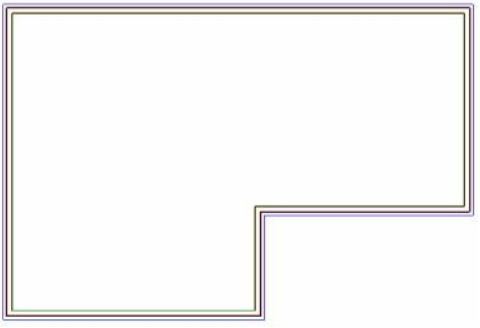
11 Hover your cursor over the original start point.

When you see the intersection snap icon at this point, click to finish the wall layout.



12 Right-click and select Finish.

NOTE: Because we created a closed wall layout using a wall type with composite properties, the walls automatically become composite walls. A composite wall is a structural wall and veneer wall put together, with an air space in between.



13 Select File > Save.

14 In the Save dialog, type Quick Start Tutorial in the File name edit box, then click Save.

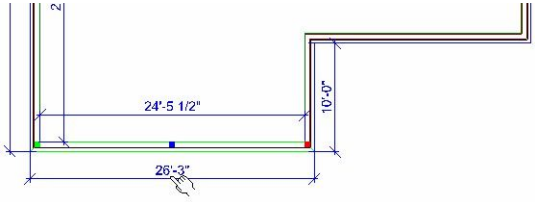
TIP: If you make a mistake or change your mind about something, simply select Edit > Undo, or press

CTRL + Z. You can undo until the last time you saved. To cancel out of a task or dialog, just press the ESC key on your keyboard.

Editing Wall Dimensions

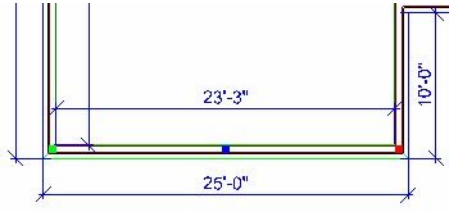
1 Click on the bottom wall. Notice that the exterior dimension on this wall is not 25', which is the value we used when drawing the wall. That is because walls are drawn on center when you use the Walls tool.

2 Click on the bottom exterior dimension value.



3 In the Edit Dimension dialog, type 25', then make sure that the lefthand arrow is selected so that the left end of the wall adjusts instead of the right end. Press ENTER or click OK.

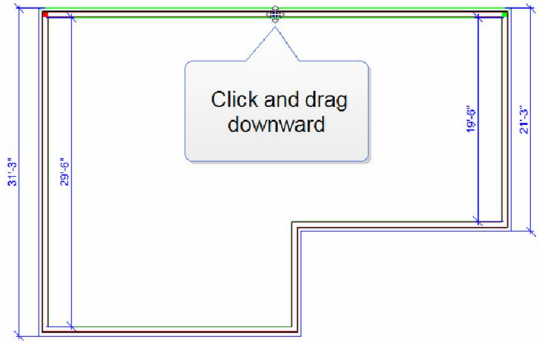
The wall layout adjusts automatically so that the bottom wall measures exactly 25' on the exterior face.



4 Press ESC on your keyboard to hide the dimensions. Now let's look at another way of editing the dimensions of your wall layout.

5 Click on the top exterior wall. Notice that the dimension on the right side of the model is not 20'.

6 Position your pointer over the top wall's center blue grip, then click and drag the wall downward.



7 When the dimension on the right side of the model is closer to 20', release your mouse button. The wall layout is adjusted again.

QUICK TIP: DRAWING WALLS ON A BASELINE

(For reference only)

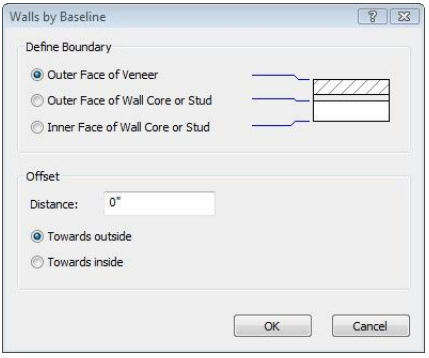
When you draw walls with the Walls tool, the walls are drawn on center. You can use the Walls by Baseline tool to draw walls along a different baseline. For example, you could offset them from the outer veneer line.

Use this tool when you know precisely what you want your finished dimensions to be. To draw walls on a baseline:

1 Select Insert > Walls > Walls by Baseline, or click the down arrow next to the Walls button on the Building toolbar and select Walls by Baseline.

2 Draw the outline of your exterior wall layout, then right-click and select Finish. This is the baseline you will offset the wall thickness from.

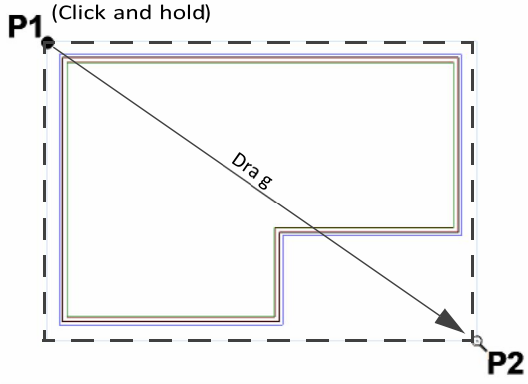
3 Once you've drawn the outline the Walls by Baseline dialog pops up, and you can define your offset.



INTERIOR WALLS

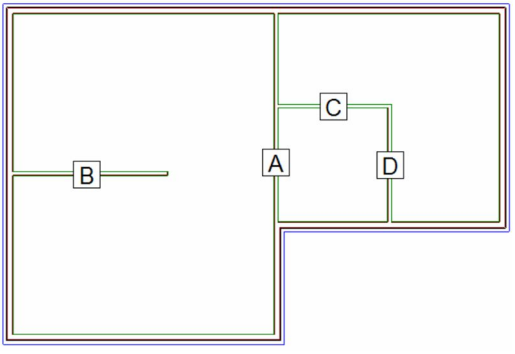
1 Before we continue, let's maximize the view. Select View > Zoom and Navigate > Zoom Window.

2 Referring to the following figure, click and hold down your mouse button above the top left corner of the model (P1), then drag diagonally to the bottom right corner of the model (P2) to form a selection window around the model. Release your mouse button to perform the zoom.



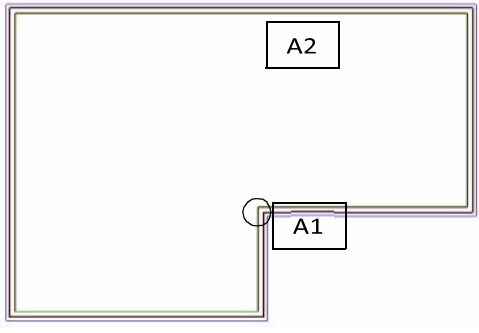
3 Turn the Grid Snap off by clicking the GRIDSNAP button on the status bar.

4 Now let's continue with the interior walls. We're going to draw four of them.



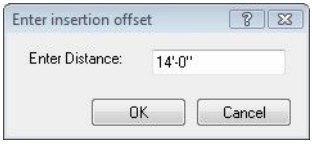
5 In the catalog, double-click the Interior Framed Partitions folder, then in that folder double-click the Wood Framed folder. In the Wood Framed folder select the 2 x 4 Interior Wall.

6 Referring to the diagram below, hover your cursor over the corner marked A1. When you see a small black square pop up, which is a snap point, click to select that point. Then, click inside the top wall at point A2 to create Wall A.

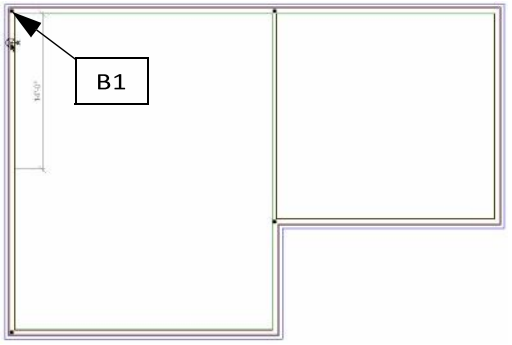


7 To insert Wall B, we're going to enter a precise offset. Right-click in the drawing area and select Enter insertion offset.

8 Type 14', then press ENTER or click OK.

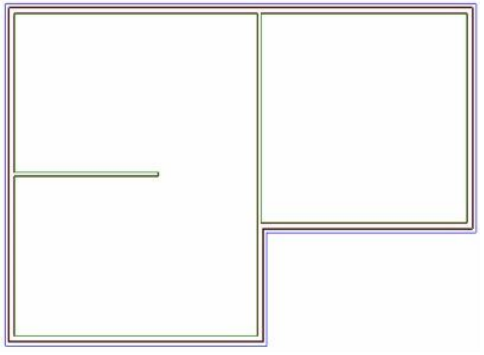


9 Referring to the following diagram, position your cursor slightly below point B1. A 14'-0" dimension appears.



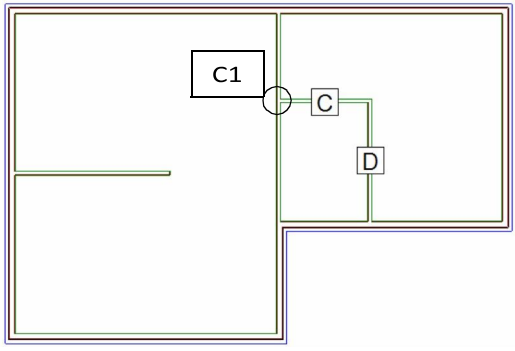
10 Click to select the wall's start point, then start moving your pointer to the right.

11 Type 14′ and press Enter to create a 14-foot wall.



12 Right-click and select Repeat. This lets you start a new wall elsewhere instead of continuing from the current one.

13 Referring the diagram, select a point roughly where point C1 is located.

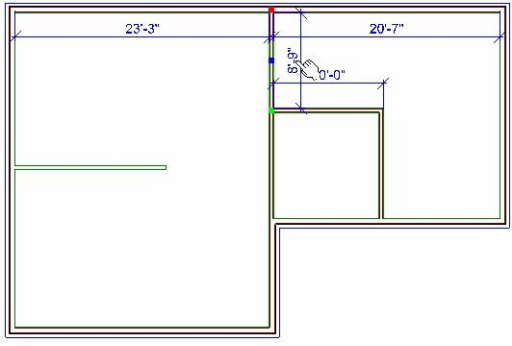


14 Start moving your pointer to the right, then type 10’ and press Enter to create Wall C.

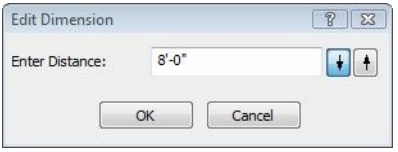
15 Continuing from the end of Wall C, click in the lower exterior wall to create Wall D.

16 Right-click and select Finish.

17 Click on the vertical wall above Wall C, then click on its dimension.



18 In the Edit Dimension dialog, change the dimension to 8’ and make sure that the down arrow is selected. We want to make sure that the lower endpoint adjusts and not the top endpoint.



19 Click OK. The length of the wall is now 8’-0” exactly.

20 Press ESC to deselect everything. Your walls are complete.

21 Save the drawing.

Quick Tip: Adding a Level

(For reference only)

There are three ways to add another level to your model.

Method 1: Floor/Foundation Wizard

If you already have one level drawn, you can use the Floor & Foundation Builder Wizard to automatically create a foundation level or new story. Select Insert > Design Wizards > Floor & Foundation Builder, then simply follow the screens to build your new level.

Method 2: Duplicate to Locations

Another quick way of creating a new level is to duplicate walls from an existing level. To do this, simply select the walls that you want to copy, and then right-click and select Duplicate to Locations.

In the Duplicate to Locations dialog, select the Second Floor location, or whatever location you are copying to. The walls are then copied to the selected location. To continue working on the new level, select the appropriate building location from the location drop box on the View Control toolbar.

Method 3: Draw Walls

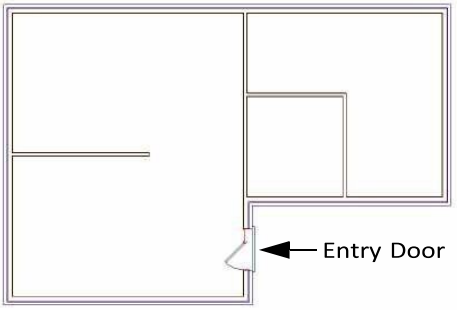
Alternatively, you can select a new building location from the location drop box, then select the Walls tool and start drawing.

Conveniently, the walls on the ground floor are visible (but dimmed) so that you can trace over them or use them as a visual reference when drawing your second floor walls.

Inserting Doors

You can insert a variety of doors with point-and-click simplicity. Because doors are intelligent elements, they fit themselves into walls and become part of them automatically. However, you can edit doors separately from the walls that contain them. We will insert 3 doors in our design.

1. Select Insert > Doors, or select the Building toolbar tab and click the Doors button.
2. In the catalog, open the Entry 2x6 Wall folder, then open the w/Single Sidelite sub-folder. Select the 32" Solid Wood Door w/ Sidelite.
3. Right-click and select Center on wall.
4. Position the door in the wall where shown in the figure below. While you are positioning the door, you may need to pull to the left slightly to get the door to swing to the inside of the model. Notice that the door is automatically centered in the wall for you.

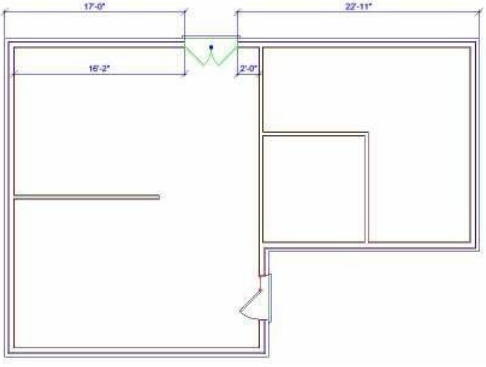


5 Click to insert the door.

Note that door marks have been hidden in the figures to improve clarity. You can turn off element marks using your View Filter.

6 In the catalog, open the French Doors folder and then the Double Door sub-folder. Select the 60” Double French Door.

7 Referring to the figure below, position the door in the top exterior wall where shown. Dimensions appear on either side of the door. When the right-hand dimension reads approximately 2’-0”, click to insert the door.

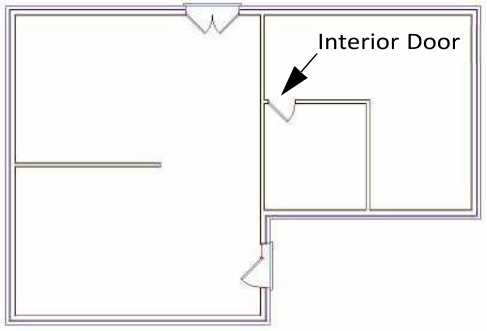


8 In the catalog, open the Interior Doors folder and select the 30" Hinged Door - 6 panel.

9 In the drawing area, right-click and select Enter insertion offset.

10 In the Enter insertion offset dialog, type 4 and then press Enter or click OK.

11 Position the door in the wall where shown in the figure below. It snaps into place exactly 4" from the end of the wall. Click to insert the door.



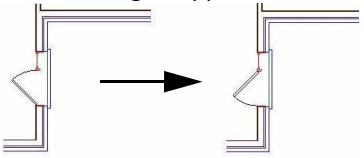
12 Right-click and select Finish.

Flipping Door Swings

The Flip Swing command lets you instantly flip a door's hinge side. Let's do this now.

1 Click on the front door.

2 Right-click in the drawing area and select Flip Swing. The swing is flipped.



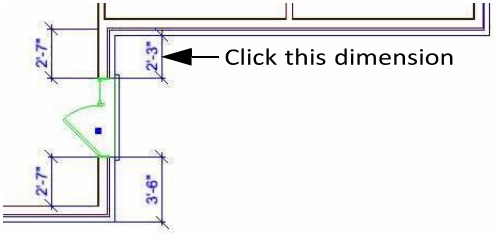
TIP: If you need to flip a door around so that its swing is on the other side of the wall, use the Flip Opening tool on the right-click menu.

MOVING A DOOR

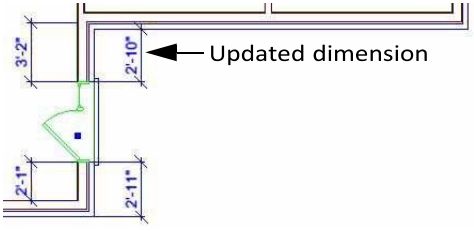
To move a door you can simply click and drag it within the wall, or edit the on-screen dimensions around it. Let's move the front door.

1 Click on the front entry door to select it. Dimensions appear around the door.

2 Click on the top right dimension indicated in the figure below.



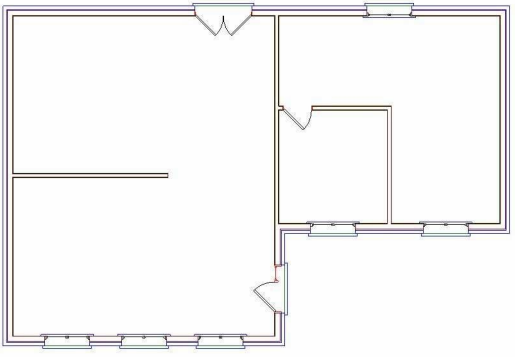
3 In the Edit Dimension dialog, type 2'10 and press Enter or click OK. The door is moved.



4 Press ESC or click in blank space to de-select the door, then save the drawing.

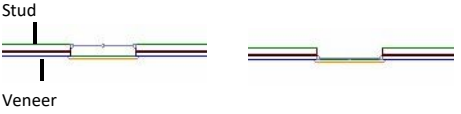
Inserting Windows

We're going to insert six windows in our model.



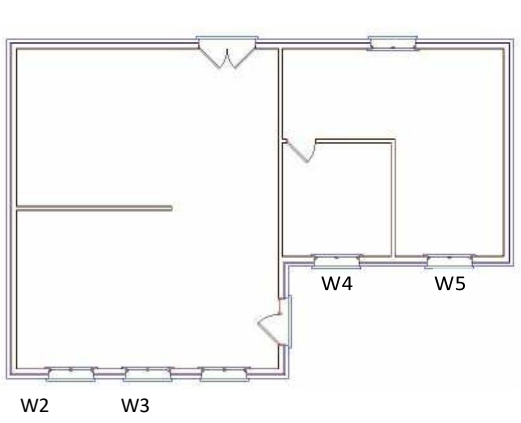
1. Select Insert > Windows, or click the Windows button on the Building toolbar.

2. In the catalog, open the Double Casement folder, then select the 4'-0" X 4'-6" Double Casement Window.
3. In the drawing area, right-click and select Center on Wall.
4. Position the first window (W1) where indicated above. For this exercise, pull slightly towards the inside of the model when positioning each window so that the window is inside the stud wall.



TIP: If necessary, you can use the Flip Opening tool on a window's right-click menu to flip the window around after you have inserted it.

5 With the Center on Wall option still active, insert the remaining windows.



6 Right-click and select Finish.

7 Save the drawing.

Inserting Openings

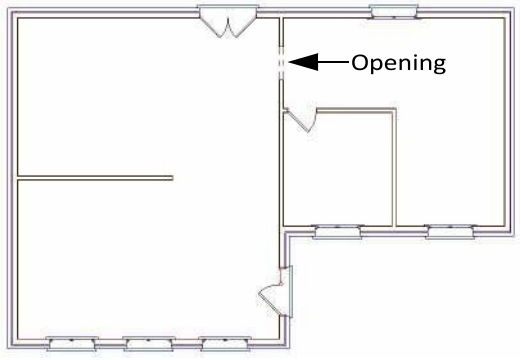
An opening is simply a cutout in a wall, or a pass-through. You insert openings in the same way that you insert doors and windows.

Let's insert an opening now.

1 Select Insert > Openings, or click the Openings button on the Building toolbar.

2 In the catalog, open the Arched (Doorways) folder, then select the 3'-0" Arched top Doorway.

3 Position the opening where indicated below, then click to insert it.



4 Right-click and select Finish.

5 Save the drawing.

Viewing in 3D

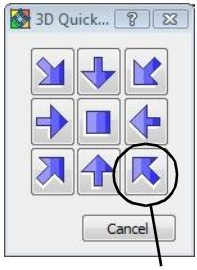
Let's take a look at what we've done so far in 3D. There are various tools available for viewing in 3D, including 3D QuickView and 3D Camera.

3D QUICKVIEW

The 3D QuickView tool lets you choose a preset viewing angle for quick 3D viewing.

1 Select View > 3D QuickView, or click the 3D QuickView button on the View Control toolbar.

The 3D QuickView button is also available on the Navigator controller. 2 In the 3D Quick View dialog or on the Navigator's control pad, click the lower right arrow.



Click Here

OR

Click Here

The model is displayed in 3D from a Southeast viewpoint.

3D CAMERA

The 3D Camera tool displays a 3D perspective view of your model which you can adjust by controlling the view's camera. Interactive camera settings are displayed in the panel on the right side of the screen while the camera view is active.

1 Select View > 3D Cameras > 3D Perspective, or click the 3D Cameras button on the View Control toolbar and select 3D Perspective.

The 3D Camera button is also available on the Navigator.

In a 3D Perspective view, the scale of an element decreases according to its distance from the viewer, creating a more realistic view.

Navigating in 3D

Not only can you view in 3D, but you can also move around in 3D using a variety of realtime navigation tools.

Navigation tools are available on the View menu and Zoom & Navigate toolbar, but you may prefer to the use the onscreen Navigator instead. The choice is yours.

Walking Around

The Walk Around tool lets you walk forward, backward, left or right while in a 3D camera view. You can even walk inside the model! Let's walk around and take a look at the model now.

1. Make sure you are still in the 3D Perspective camera view.
2. Select View > Zoom and Navigate > Walk Around, or click the Walk Around button on the Zoom and Navigate toolbar.

If you prefer to control your navigation with the Navigator, click the Walk button on the Navigator.

3 Click and hold down your mouse button, then drag to walk around. If you used the menu or toolbar to activate the Walk tool, click and drag in the drawing area. If you activated the Walk tool on the Navigator, click and drag the Navigator's central trackball.

- To walk forward, drag upward.
- To walk backward, drag downward.
- To walk left or right, drag left or right.

Flying Around

The Fly Around tool revolves the camera around the target, which by default is at the center of the model. This creates a spinning effect.

1 Select View > Zoom and Navigate > Fly Around, or click the Fly Around button on the Zoom and Navigate toolbar, or on the Navigator.

2 Click and hold down your mouse button, then drag to fly around.

Looking Around

In a 3D camera view, the Look Around tool revolves the target around the camera.

1 Select View > Zoom and Navigate > Look Around, or click the Look Around button on the Zoom and Navigate toolbar, or on the Navigator.

2 Click and hold down your mouse button, then drag to look around.

3 To reset the camera, select View> Zoom and navigate>Reset Camera, or click the Reset Camera button on the Zoom and Navigate toolbar.

RESETTING THE CAMERA

If you have moved the camera or lost your orientation in your 3D view, you can use the Reset Camera tool to move the camera back to the position it was in before you started navigating around.

1 To reset the camera, select View> Zoom and navigate>Reset Camera, or click the Reset Camera button on the Zoom and Navigate toolbar.

Switching Back to 2D Plan View

When you are in a 3D view or elevation view, you can switch back to 2D plan view at any time using the 2D Plan tool. Let's do this now using one of four available methods.

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

Customizing Floors

By default, a floor is inserted automatically when you create a closed wall layout. Initially the floor spans the entire model and then splits into individual floors as you create rooms inside the model.

By default, the floor type inserted is a wood-framed floor with hardwood flooring applied. You can customize floors in your model in many ways.

We are going to change the floor in the bathroom to a tiled floor.

2D Designer's View

Floors are not visible or selectable in 2D wireframe view because the floor edge lines can interfere with the display of the wall lines. You can use the 2D Designer's Plan tool to quickly display a rendered version of the 2D plan. In this view you can see and select floors.

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

Using the Materials Paintbrush

Now let's change the hardwood flooring in the bathroom to tiled flooring. We can do this quickly with the Materials Paintbrush.

1 With the 2D Designer's Plan view still active, select Edit > Materials Paintbrush, or click the Materials Paintbrush button on any tabbed toolbar. The panel on the right side of the screen displays the materials library.

2 In the materials library, scroll down in the Groups pane and select the Tile - Generic Floor Tile group.

3 In the Materials pane, select a tile that you'd like to use in the bathroom.

4 Click inside the smallest room. The tile is applied to the floor.

5 Right-click and select Finish.

Inserting a Structural Floor

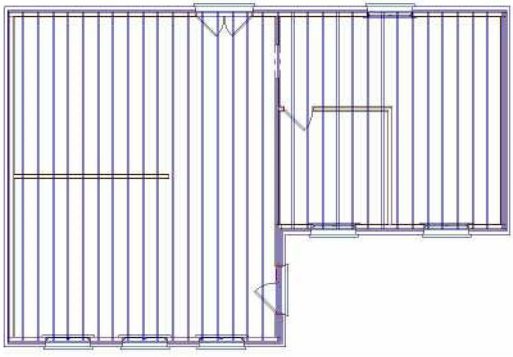
A structural floor is needed to support the flooring surface.

1 Return to standard 2D plan view.

2 Select Insert > Structural Floor > Structural Floor by Perimeter, or click the Structural Floor button on the Building toolbar and select Structural Floor by Perimeter.

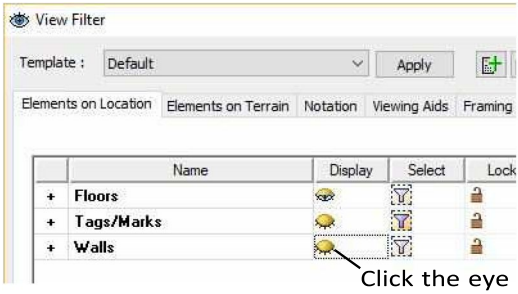
3 In the catalog, select the 2x10 Floor System w/ 3/4" OSB.

4 Click inside the model. A framed floor with OSB sheathing is inserted throughout the model. Notice that the joists on the left side of the model span a significant distance, and need to be broken into shorter lengths.



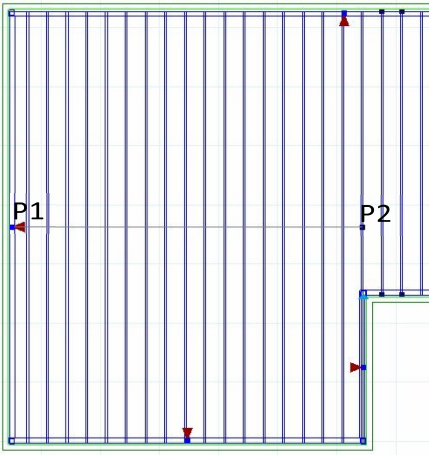
5 To make the structural floor easy to select, we're going to hide the walls temporarily. Select View > View Filter > View Filter or click the View Filter button on the View Control toolbar.

6 In the View Filter dialog, click the eye icon next to the Walls item. This closes the eye, indicating that walls will be hidden. You may also want to turn off Tags/Marks. Click OK.

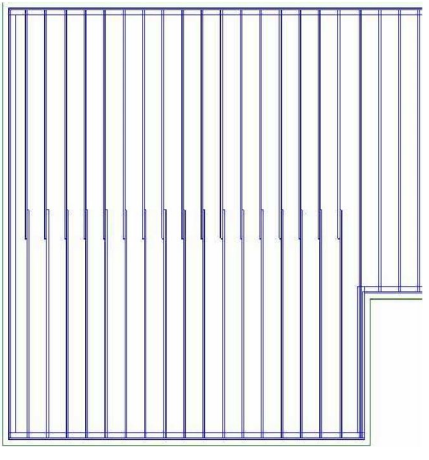


7 Hover your cursor over the outer edge of the floor and use the tooltip to confirm that you are selecting the structural floor and not the hardwood floor. Click on the floor edge to select the floor, then rightclick and select Structural Floor > Insert Bearing Line.

8 Select two points (P1 and P2) to create a bearing line across the left half of the model.



The joists are broken and overlapped along the bearing line.



9 Select View > View Filter > View Filter, then click the eye icon next to the Walls item to turn the walls back

on. Also expand the Floors item and hide the Structural Floor components. Click OK.

Inserting Ceilings

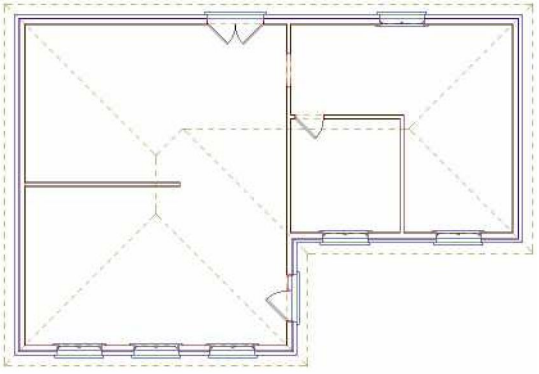
Let's insert a ceiling in each room of our model using the Ceiling by Room tool.

1. Select Insert > Ceilings > Ceiling by Room, or click the Ceilings button on the Building toolbar and select Ceiling by Room.
2. In the catalog, open the Unframed folder and select the 1/2" Drywall Ceiling.
3. Position your cursor in the left room. The room will highlight.
4. Click inside the left room.A ceiling is inserted.
5. Insert a ceiling in each of the other two rooms, then right-click and select Finish.

Inserting a Roof

Inserting a roof couldn't be easier. All it takes is one mouse click.

1. Select Insert > Roofs > Roof by Perimeter, or click the Roofs button on the Building toolbar.
2. In the catalog, select the 8/12 Slope Hip Roof - Shingles.
3. Click anywhere inside the model. The roof is automatically inserted. Roof surface edges are represented by a dashed line.



Customizing a Roof

Once you have inserted a roof you can edit the properties of each roof segment individually to create a complex roof with varying pitches, styles and plate heights.

For example, you can convert a hip end to a gable end, edit the support height, edit the overhang distance, edit the slope, and control the appearance of fascias, soffits and gables.

Creating Gables

We are going to convert two of the roof's hip ends to gable ends by editing the properties of selected roof edges.

1 Select View > 3D QuickView, or click the 3D QuickView button on the View Control toolbar.

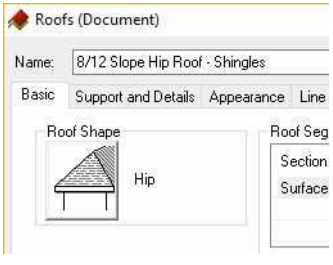
2 In the 3D QuickView dialog, click the lower left arrow.

3 Click on the very front roof edge. A green arrow projects from the plate line of this roof edge. Red arrows project from all other plate lines.

4 Click on the red arrow projecting from the plate line on the right side of the model. It will turn green. A green arrow indicates that a particular roof edge is selected and will receive changes you subsequently make. Edges marked with a red arrow will not be changed.

5 Right-click and select Properties.

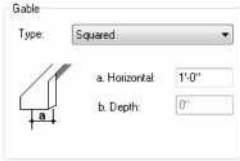
6 In the Roofs dialog, click on the button in the Roof Shape area, which is currently set to Hip.



7 In the Roof Shape dialog, click on the Gable option.

8 Back in the Roofs dialog, select the Support and Details tab.

9 In the Gable area, select Squared from the Type drop box, then type 12 in the Horizontal edit box.



10 Click OK. The selected roof edges are now gables.

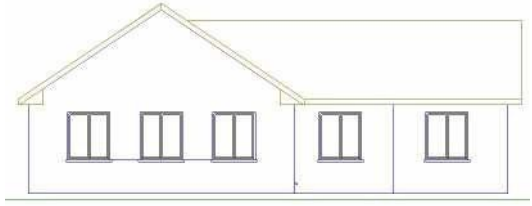
11 Save the drawing.

Viewing Elevations

You can view front, back and side elevations of your model with a couple of mouse clicks.
There are four default elevations available. You can modify the properties of these elevations, or create new ones on the fly. As you edit your model in other views, elevation views update automatically.

Let's view a front elevation of our model now.

1 Select View > Elevations > Front Elevation, or click the down arrow next to the Elevations button on the View Control toolbar and select Front Elevation.



By default, elevations are displayed in Hidden Line display mode. Select View > Display Mode, or click the down arrow next to the Display Mode button on the View Control toolbar, then select Patterned. This displays material patterns such as shingles and brick.

Filtering the View

In the next exercise we're going to work on the interior of the model, so let's hide the roof from view to make that easier.

1. Select View > 2D Plan or click the 2D Plan button on the View Control toolbar or the Navigator.

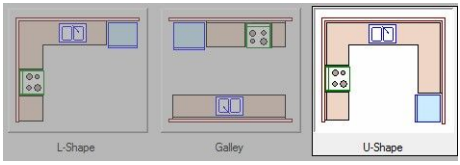
2. Select View > View Filter > View Filter, or click the View Filter button on the View Control toolbar.
3. In the View Filter dialog, click the eye icon next to the Roofs item.
4. Click OK. The roof is hidden from view.

Creating a Kitchen

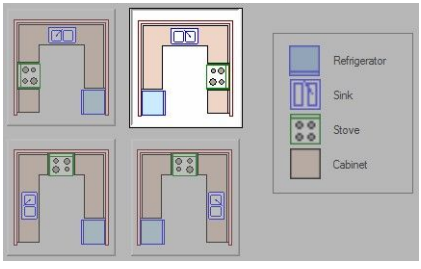
Using the Kitchen Builder Wizard you can quickly and easily create a kitchen layout that includes upper and lower cabinets, a sink, refrigerator and stove. There are a number of layouts and styles to choose from. Once the kitchen has been created you can move, edit and delete elements as well as add more elements if you want.

Let's create a kitchen now.

1. Select View > Zoom and Navigate > Zoom Window, then click and drag a selection window around the kitchen to zoom in on the kitchen. The kitchen is the rear, left room with the French door.
2. Select Insert > Design Wizards > Kitchen Builder.
3. On the first Kitchen Builder Wizard screen, click Next.
4. On the General Kitchen Style screen, click on the U-Shape style, then click Next.

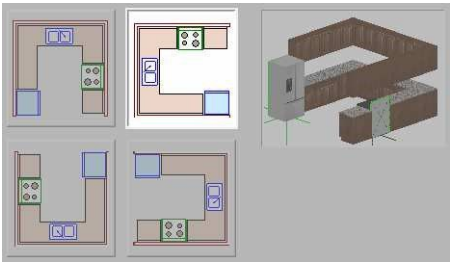


5 On the General Kitchen Layout screen, select the top right kitchen layout, then click Next. Remember that you can move and edit things later.



6 On the General Kitchen Theme screen, select a theme for the kitchen, then click Next. The selection you make determines the materials used for the cupboards and countertops.

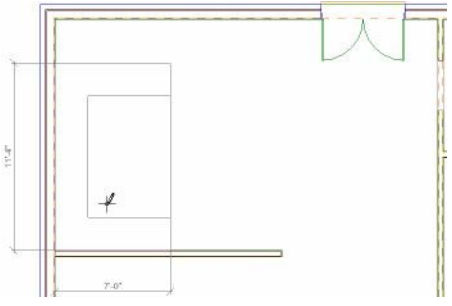
7 On the Kitchen Rotation screen, select the top right rotation option, then click Next.



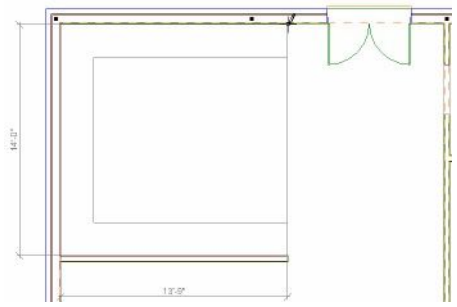
8 Click Finish. The kitchen configuration is attached to your cursor.

9 Position the kitchen layout in the lower left corner of the kitchen area. It will automatically snap to the walls when you get close to them. Click to anchor the kitchen elements.

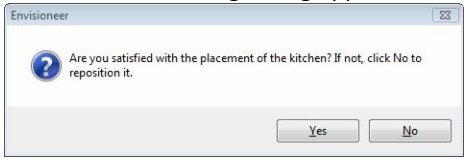
Dynamic dimensions are displayed to show you the size of the layout.



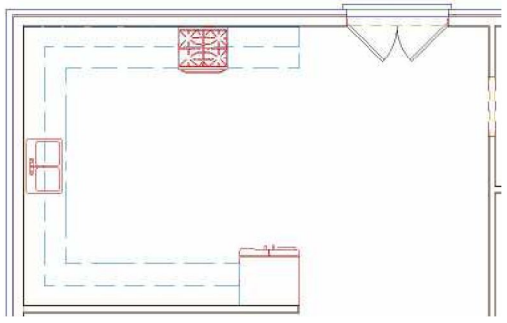
10 Move your cursor toward the upper right corner of the kitchen to stretch the layout. Stretch it until the kitchen touches the rear exterior wall and the lower run of cabinets meets up with the end of the horizontal interior wall.



11 Once the dimensions are correct, click to finish the insertion. The following dialog appears:



12 Click Yes to finish the task. If you click No you can reposition or resize the kitchen. 13 Save the drawing.



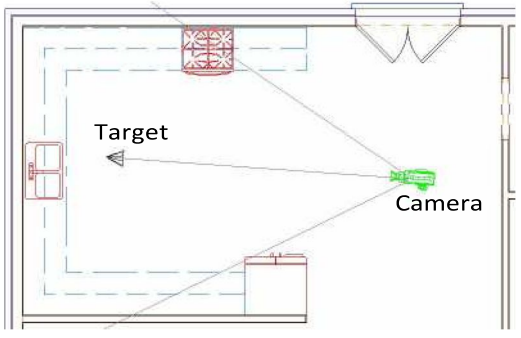
Creating a New 3D Camera View

You can create a new 3D 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. Let's insert a camera in the kitchen area so that we can see what the kitchen looks like in 3D.

1 Select View > 3D Cameras > Place New Camera, or click the 3D Cameras button on the View Control toolbar and select Place New Camera.

2 Referring to the diagram below, click where Point 1 is shown to insert the camera, and then click where Point 2 is shown to indicate the target of the view.



3 The 3D view is created instantly. It should look something like this:

Inserting Lighting

Light fixtures are one of the many different elements that you can use to enhance your design. You can insert a variety of light fixtures and see lighting effects in real time as you insert them.

Light fixtures add lighting to a 3D scene, which is important if you plan to generate 3D RealView renderings of your home's interior.

Since we're in the kitchen, let's insert a light fixture there.

1 Select Insert > Interiors > Interior Lighting, or select the Interiors toolbar tab and click the Interior Lighting button.

2 In the catalog panel, open the Ceiling Lights folder and then select a light fixture for your kitchen ceiling.

3 Position the light on the kitchen ceiling, then click to insert it.

4 Right-click and select Finish. The model is now complete.

5 Save the drawing.

3D RealView™ Rendering

Rendering involves generating a photo-realistic 3D view complete with textures, light, reflection and

shadows. You can render any interior or exterior 3D camera view with a simple mouse click.

Rendering consists of two steps: Radiosity and Raytracing. Raytracing begins right after the radiosity solution has been calculated, making the whole process seamless.

When a rendering is complete, you can save the image to a BMP, JPG or TGA file that can be opened in most graphic editing applications.

Let's render the view of the kitchen.

1 With the 3D kitchen view displayed, select View > Render 3D RealView.

2 In the 3D RealView dialog, click the Size drop box and select 640 x 480.

3 Click the Start Render button.

The radiosity solution is calculated, then raytracing begins right after that. The progress of the rendering is displayed in the preview window in real time.

4 When the rendering is complete, click the Save button in the Image area, then specify a name and save location for the rendered image in the Save As dialog.

5 Once the rendering is saved, click Close in the 3D RealView dialog. 6 Save the project.

TIP: If you want to add more light to the scene, add light fixtures to the room, then render again.

Creating a Section

Section views are cross-sections through your model. You create one by defining a cut line and viewing distance. Let's create one now.

1 Return to 2D Plan view by selecting View > 2D Plan or clicking the 2D Plan button on the View Control toolbar or the Navigator.

2 Select View > Zoom and Navigate > Zoom Realtime, or click the Zoom Realtime button on the Zoom and Navigate toolbar.

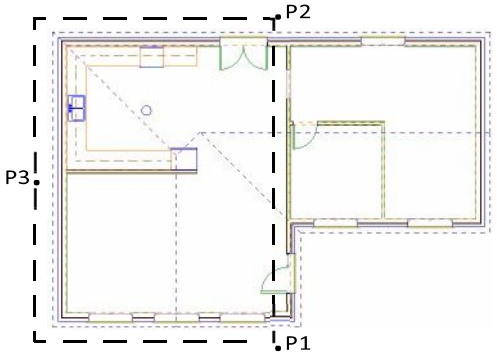
3 Position your cursor in the drawing area. Click and hold your left mouse button, then start dragging downward to start zooming out. When the entire model is visible, release your mouse button.

4 Select View > View Filter > View Filter, or click the View Filter button on the View Control toolbar.

5 In the View Filter dialog, click the eye icon next to the Roofs item to turn the roof back on.
Note that the eye will be only half open. This is because the Roofs item has framing associated with it, but the framing is locked in a hidden state. The half eye indicates that some of an element's components are visible, and others are hidden. Click OK.

6 Select View > Sections > Create New Section, or click the Sections button on the View Control toolbar and select Create New Section.

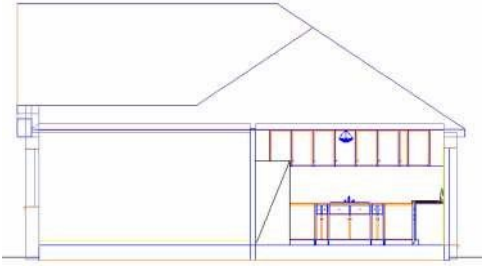
7 Referring to the following figure, select a point outside the front of the model (P1).



8 Select a point outside the rear of the model (P2). The cut line is defined.

9 Select a point outside of the left exterior wall (P3). This defines the viewing direction and distance.

The section is generated automatically.



We will work with the section in a later exercise.

Landscaping

Envisioneer offers a wide variety of landscaping tools to help you create a complete landscape plan and design all your outdoor living areas. These

include decks, fences, garden beds, edging, plants, furniture and lighting.

INSERTING TREES

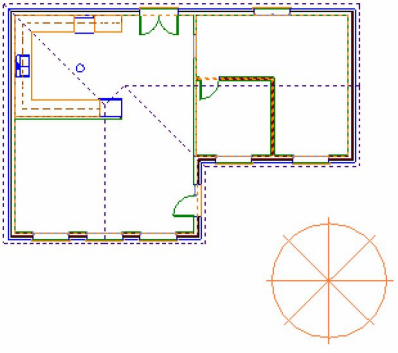
Let's insert a tree in the front yard.

1 Return to 2D Plan view.

2 Select Insert > Landscape > Plants, or select the Landscape toolbar tab and click the Plants button.

3 In the catalog, open the Deciduous Trees folder and select Maple.

Insert the tree where shown in the following figure.



4 Right-click and select Finish.

Adding Dimensions

Now we're ready to start annotating the drawing. Although you'll probably want to add things like text and dimensions when creating your construction documents in Worksheet View, there are a few powerful dimension tools that are available only in Model View.

Filtering the View

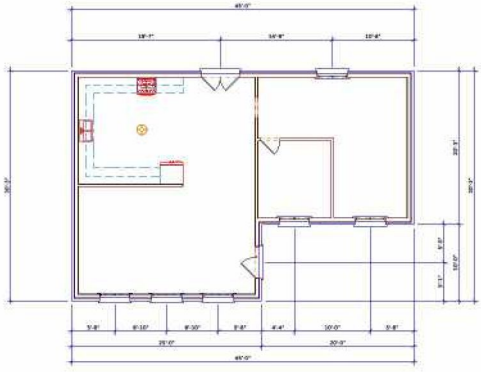
In the next exercise we're going to add dimensions to our plan. To optimize the view for that exercise, let's hide the roof, terrain, tree, and section mark from view.

1. Select View > View Filter > View Filter, or click the View Filter button on the View Control toolbar.
2. In the View Filter dialog, click the eye icon next to the Roofs item to turn the roof off.
3. Now select the Elements on Terrain tab.
4. In the Display area, click None.
5. Select the Viewing Aids tab.
6. Click the eye icon next to the Section Mark item to turn the section mark off.
7. Click OK.

Auto Exterior Dimensions

Let's add automatic exterior dimensions to the model now.

1. Select Tools > Dimensions > Auto Exterior Dimensions. Dimensions automatically appear around the exterior of the model.



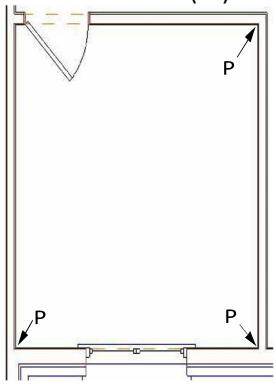
ROOM DIMENSIONS

Room dimensions are commonplace on floor plans, and Envisioneer calculates and inserts them automatically. All you need to do is pick three points to define a room's length, width and rotation.

1 Use the Zoom Window tool to zoom in on the bathroom.

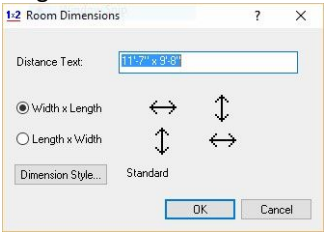
2 Select Tools > Dimensions > Room Dimensions.

3 Referring to the following figure, select the inside bottom left corner (P1) of the bathroom.

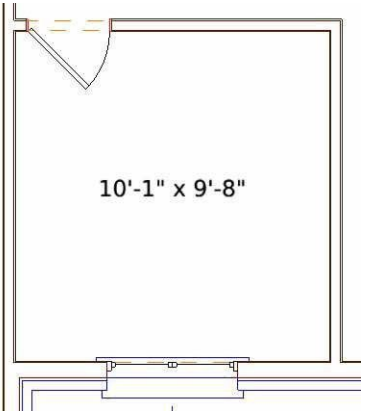


4 Select the room's inside bottom right corner (P2). This defines the width of the room.

5 Select the room's inside top right corner (P3). This defines the length of the room. The resulting dimensions are displayed in the Room Dimensions dialog.



6 Click OK. The room dimensions are automatically inserted in the center of the room.



7 Insert room dimensions in the two rooms on the left side of the model. When you are finished, right-click and select Finish.

Adding Text

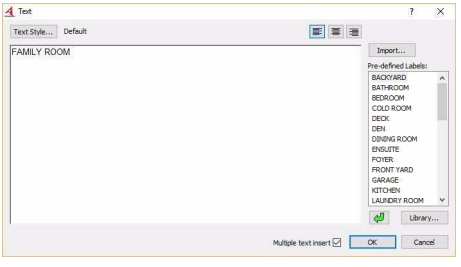
Next we'll use the Text tool to label the rooms in the design.

1 Select Tools > Text > Text.

2 In the Text dialog, click Text Style....

3 In the Text Styles dialog select the Default text style and then click OK.

4 Back in the Text dialog, type FAMILY ROOM in the text editing window.



5 Enable the Multiple text insert check box at the bottom of the dialog. This will return you to the Text dialog after you have inserted the text.

6 Click OK. The text is attached to your cursor.

7 Insert the FAMILY ROOM text in the room below the kitchen.

8 In the Text dialog, make sure the FAMILY ROOM text is highlighted.

9 Double-click the KITCHEN label in the list of pre-defined labels. The FAMILY ROOM text is replaced with the KITCHEN text in the text editing window.

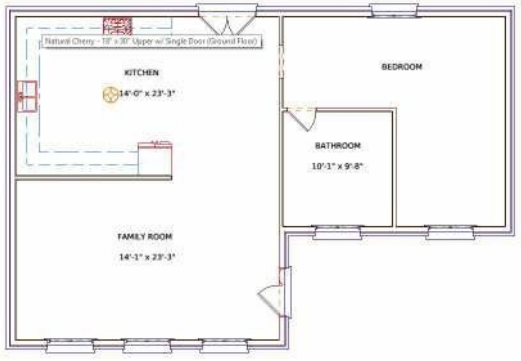
TIP: You can save time by dragging a pre-defined label from the list into the

text editing window, or by selecting the label and clicking below the list.

10 Click OK.

11 Insert the Kitchen text in the kitchen.

12 Insert the remaining labels as shown below, then click Cancel in the Text dialog.



Editing Text

You can edit the style or content of text after it has been inserted.

1 Click on the FAMILY ROOM text to select it, then right-click and select Properties. Or simply double-click the text.

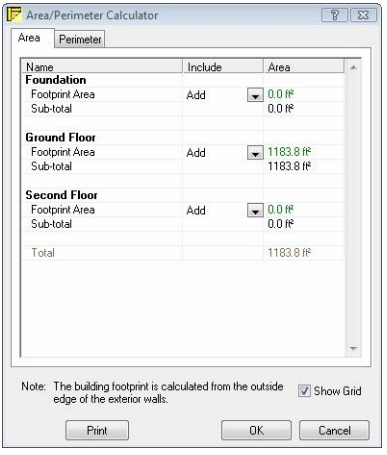
2 In the Text dialog, change the text to LIVING ROOM, then click OK. The text updates in the drawing automatically.

3 Save the drawing.

Calculating Square Footage

You can use the Area/Perimeter tool to instantly view the square footage and perimeter measurements of your design.

1 Select Tools > Analyze > Area/ Perimeter, or select the Analyze toolbar tab and click the Area/ Perimeter button.



The dialog has two tabs: one for area measurements, and one for perimeter measurements. You can print the calculations by clicking Print at the bottom of the dialog.

2 Click OK.

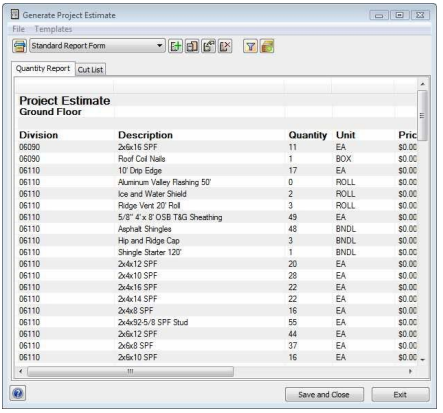
Viewing a Project Estimate

You've done all your modeling and design work. Now let's see how much the project will cost.

1 Select Tools > Analyze > Generate

Project Estimate, or click the Generate Project Estimate button on the Analyze toolbar.

Your project estimate is displayed.



The project estimate, or bill of materials, lists all of the materials used to create your model. It lists information like the quantity, unit price and total cost of each material, as well as the total cost of the project. You can control what information is reported, how it is reported, and specify custom material pricing. You can select a different report template from the report drop box to generate a different report file type. Some templates generate files that can be opened in an external estimating program.

2 When you are finished viewing the estimate you can click Exit to close the dialog without saving the estimate, or click Save and Close to save the estimate and return to your drawing.

3 Save the project.

The following section does not apply to Personal

If you are using Personal Architect, you have finished the lessons. The remaining lessons pertain to ProArchitect, Building Essentials, and Construction Suite.

Creating Construction Documents

Once you have created your model in Model View you can switch to Worksheet View to complete your working drawings.

Worksheet View is a quick and simple 2D drafting environment where you can set up drawing sheets, insert views of your model, annotate your drawings with text, dimensions and basic line objects, and add construction details. A wide variety of CAD editing tools are available to help you achieve the exact result you want.

In this section of the tutorial we are going to create documents containing the following:

- Floor plan
- Elevations
- Section

We'll also learn how to edit, annotate and customize documents.

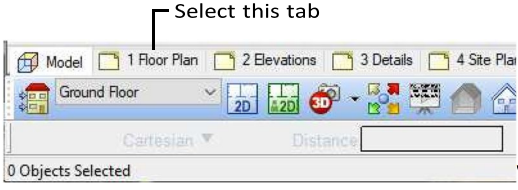
Worksheet View

When you are ready to start creating your construction documents, you need to switch to Worksheet View. Before switching it is a good idea to make sure that your model is as complete as possible and that any elements that you want displayed in your construction documents are turned on in Model View.

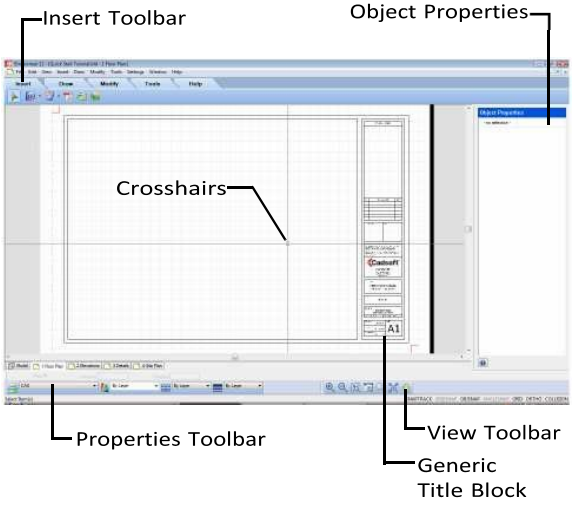
1 Select View > View Filter > View Filter or click the View Filter button on the View Control toolbar.

2 In the View Filter dialog, turn the roof back on and click OK.

3 Just below the drawing area there are several view tabs. We are currently on the Model view tab. Select the 1 Floor Plan tab.



You are now in Worksheet View.



INSERT TOOLBAR

The Insert toolbar contains the tools needed for setting up the main components of your worksheet. Use the Define SmartView tool to bring in a view of your model, such as a 2D plan or elevation. Use the

Import tools to bring in outside CAD files in DWG or DXF format, PDFs or image files such as JPGs and BMPs. To save time you can use the Define Block tool to capture a group of objects in a block that can be saved and then inserted on other worksheets.

Draw Toolbar

The Draw toolbar contains a number of drafting tools: Line, Polyline, Circle, Ellipse, Arc, Polygon, Rectangle, Polygon Hatch,
Revision Cloud, Boundary Hatch, Rigid
Insulation, Batt Insulation, Wood Section, Masonry Section, Cut Line, and Roof Symbol.

Modify Toolbar

The Modify toolbar contains a wide variety of tools for editing objects in your drawing: Delete, Move, Rotate, Duplicate, Array,
Offset, Stretch, Scale, Mirror, Break, Extend, Trim, Fillet, Join Polyline, and Explode.

Tools Toolbar

Use the Tools toolbar to insert Text, Leaders, Dimensions, and Wall Panels. Use the Measure tool to quickly determine the distance between any two points.

Properties Toolbar

The Properties toolbar indicates the current layer, and the color, line type and line weight assigned to that layer. You can override layer settings by making selections from the layer setting drop boxes. The toolbar also provides access to the Layer Properties dialog.

View Toolbar

The View toolbar contains a complete set of zoom and pan tools: Zoom In, Zoom Out, Zoom Realtime, Zoom Window, Zoom Previous, Zoom to Fit, and Pan.

Drawing Area

The drawing area contains a generic drawing sheet border and title block that you can delete or edit to suit your needs. You can insert any pre-defined or custom title block,

as well as various views of your model. From there you can edit, detail and annotate your drawing to create a detailed, accurate construction document.

Crosshairs, Pickbox and Cursor

In Worksheet View you see crosshairs, which are lines that represent the two coordinate axes. At the center of the crosshairs is a pickbox, a square used for selecting objects. When you move your pointer outside the drawing area you see a cursor, an arrow for accessing menus and toolbars. The cursor can also become a double-headed arrow when resizing windows.

Object Properties Panel

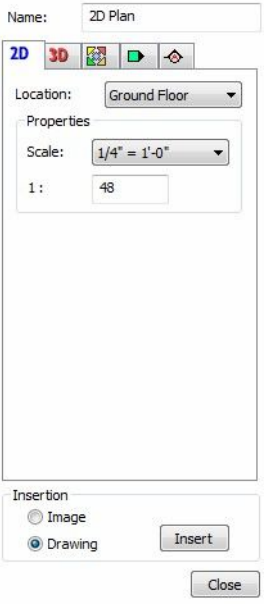
The Object Properties panel displays the properties of the currently selected object, such as the layer it is assigned to. You can edit properties by simply making different selections in the panel.

Inserting a 2D Plan

Let's create a floor plan drawing first. To do that, we need to insert a 2D view of the model onto our worksheet. We'll just use the generic drawing sheet border and title block for this exercise.

1 With the Floor Plan view tab current, select Insert > SmartViews > Define SmartView, or click the Define SmartView button on the Insert toolbar.

2 On the 2D tab of the Insert View dialog, make sure that the Location is set to Ground Floor.

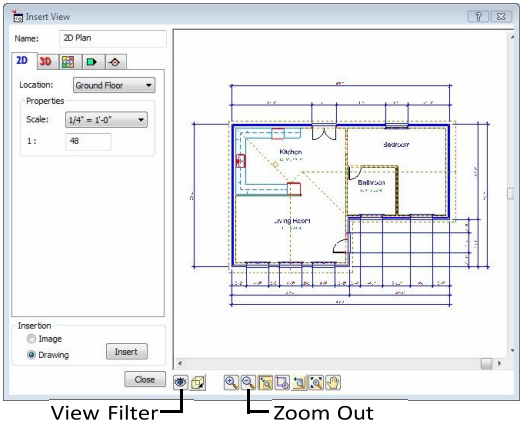


3 From the Scale drop box, select the 1/4" = 1'-0" scale. The scale is the ratio of units on paper to real-world units. In this case, that would

mean that every foot of the physical model is represented by 1/4 of an inch on paper.

4 In the Insertion area, select the Drawing radio button. This option inserts a vector image. Vector data provides useful information about the geometry in a drawing, such as endpoints, curves and polygons. The Image option inserts a raster image (bitmap) which can be resized.

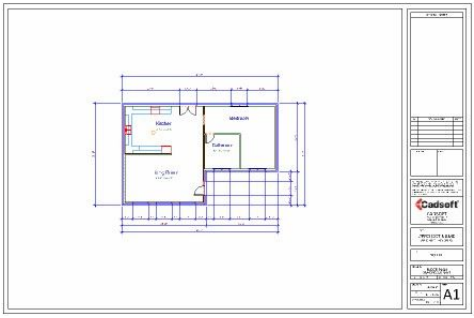
5 Click the Zoom Out button at the bottom of the dialog if necessary to zoom out until the entire floor plan (including exterior dimensions) is visible inside the window. Anything that is not visible in the preview window will not be visible when the plan is inserted on the worksheet.



6 For this particular view we want the roof turned off, so click the View Filter button at the bottom of the dialog and then turn off the roof in the View Filter dialog. Click OK to return to the Insert View dialog. The roof is now turned off in the preview window.

7 In the Insert View dialog, click Insert. The ground floor plan view is attached to your cursor.

8 Position the plan in the center of the drawing sheet, then click to insert it.



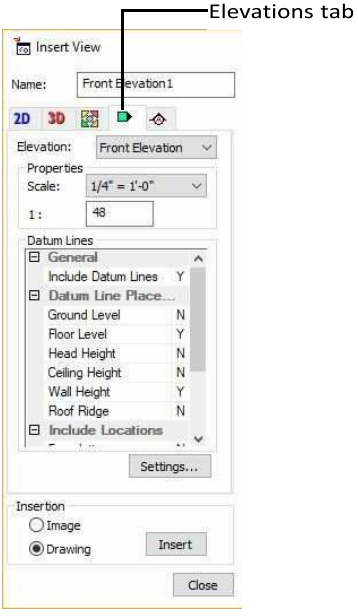
Inserting Elevations

There are four pre-defined worksheet views available, and you can create more if you want. Let's switch to a different worksheet and then insert our elevation views on that sheet.

1 Below the drawing area, select the Elevations view tab.

2 Select Insert>SmartViews>Define SmartViews or, click the Define SmartView button on the Inset toolbar.

3 In the Insert View dialog, select the Elevations tab.



4 In the Datum Lines pane, set the Datum Line Placement to Yes for Floor Level and Wall Height. This will place datum lines and measurements at the floor level and top of wall.

5 In the Include Locations section, select Yes for the Ground Floor location.

6 Make sure that the entire elevation is visible in the preview window.

7 Click Insert.

8 Insert the front elevation in the top left corner of the drawing sheet.

9 Use the Define SmartView tool (Insert > SmartViews > Define SmartView) to insert the remaining three elevations as shown below.

Hatching an Elevation

You can use the Boundary Hatch tool to apply patterns to areas of a drawing. Let's work with the front elevation and apply a shingle pattern to the roof, and a brick pattern to the walls.

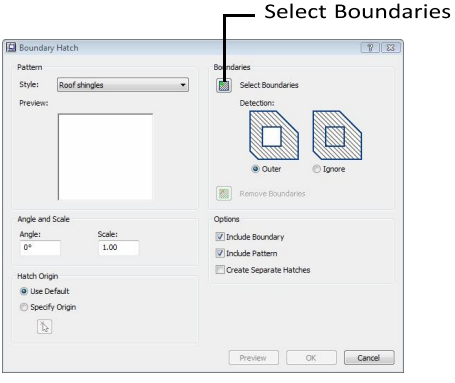
1 Select View > Zoom Window, or click the Zoom Window button on the View Toolbar.

2 Click and drag a selection window around the front elevation, then release your mouse button. This zooms in on the front elevation.

3 Select Draw > Boundary Hatch, or select the Draw toolbar tab and click the Boundary Hatch button.

4 In the Boundary Hatch dialog, select Roof shingles from the Style drop box.

5 Click the Select Boundaries button. This takes you back out to your drawing.



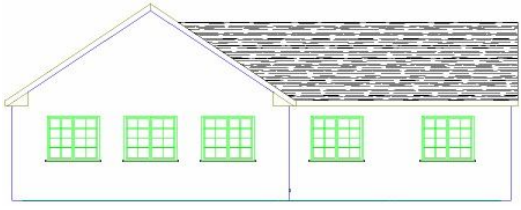
6 Click anywhere inside the roof surface. The roof boundary highlights green to indicate that it has been selected.

7 Right-click and select Enter.

8 Back in the Boundary Hatch dialog, click Preview to see what the hatching will look like.

9 Press ESC or right-click and select Cancel to return to the Boundary Hatch dialog.

10 Click OK to apply the hatching to the roof.



11 Select the Boundary Hatch tool again and this time select Brick pattern.

12 Click the Select Boundaries button, and then click inside the wall in the elevation.

13 Right-click and select Enter.

14 In the Boundary Hatch dialog, click OK.

TIP: You can insert elevations that are already hatched by setting the display mode to Patterned in the Insert View dialog when inserting the elevations onto your worksheet. The patterns applied depend on the material settings in each element's properties.

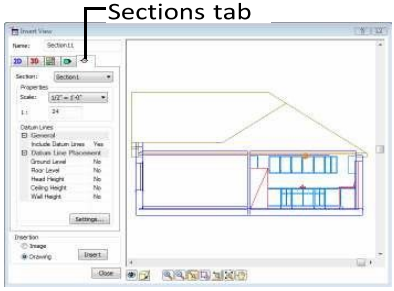
Inserting a Section

Now let's switch to another worksheet and insert the section we created earlier.

1 Below the drawing area, select the 3 Details view tab.

2 Select Insert > SmartViews > Define SmartView.

3 In the Insert View dialog, select the Sections tab.



4 From the Scale drop box, select the 1/2” = 1’-0” scale, which is a common scale for building sections.

5 Make sure that the entire section is visible inside the preview window, then click Insert.

6 Insert the section in the center of the sheet.

7 Save the project.

Congratulations!

You have successfully completed the Quick Start Tutorial. By completing the tutorial you have learned the basics of:

- Model building
- Zooming and view control
- 3D viewing and navigation
- Elevations and sections
- Estimating
- Annotation
- Landscaping
- Creating construction documents
- 3D RealView™ rendering

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