

House Design Tutorial

This House Design Tutorial shows you how to get started on a design project. The tutorials that follow continue with the same plan. When we are finished, we will have created a sample plan named “Stucco Beach House.” You can then apply the tools and techniques learned to your own plans.

In this tutorial you will learn about:

- Before You Begin
- Getting Started
- Setting Defaults
- Drawing Walls
- Creating Dimension Lines
- Adjusting Wall Positions
- Creating Rooms
- Creating a 3D View
- Adding Floors
- Adding Stairs

Before You Begin

Home Designer Pro may look differently on your screen than it does in the following tutorials.

- Screen captures are taken from a smaller window to optimize image quality, so the size and proportion of your interface may be different.
- Some features, such as the Reference Grid, have been turned off to optimize image quality. For more information, see “General Plan Defaults Dialog” on page 58 of the Reference Manual.
- Since toolbars can be customized, their default layout and location may differ. For more information, see “Toolbar Customization Dialog” on page 93 of the Reference Manual.
- As the program is updated, features may be added or removed. If you are using the latest version of Home Designer Pro, you may see buttons and/or menu items that have been added or removed since this tutorial was written. For more information, see “Program Updates” on page 22.
- Depending on your operating system and Windows system settings, dialogs and toolbars may appear differently than they do in the tutorials.

Getting Started



We'll start with a new, blank plan.

To start Home Designer Pro

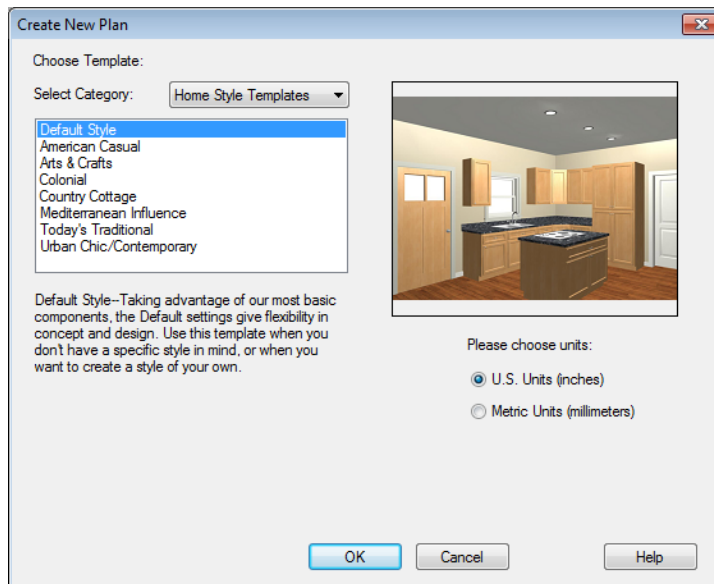
1. Click the Windows Start button and select All Programs.
2. Browse to Chief Architect> Home Designer Pro 2014> Home Designer Pro 2014, and click to start the program.




- When Home Designer Pro launches, the **Getting Started** window displays. For more information, see “Startup Options” on page 24 of the Reference Manual.



- Click **New Plan**  to open a new, blank plan.
- If you have disabled the Startup Options at startup or already have the program open, you can select **File> New Plan**  to open a new, blank plan.

4. The **Create New Plan** dialog displays next.




5. Home Designer Pro includes a selection of Home Style, Interior and Landscaping template plans, each with different default settings that allow you to begin working in a particular plan style quickly. For this tutorial, select **Home Style Templates** from the drop-down list. The **Default** template and **U.S. Units** are selected by default. Click **OK**. The floor plan view window opens, ready for you to begin drawing.
6. You should begin work on any new file by saving it. To do this:
 - Select **File> Save**  from the menu to open the **Save Plan File** dialog.
 - Specify the location on your computer where you would like to save the plan.
 - Type a name for your plan.
 - Click **Save**.
7. It is wise to save your work, and save it often, as you proceed. To do this, you can:
 - Select **File> Save**  from the menu to open the **Save Plan File** dialog
 - Click the **Save**  button on the toolbar.
 - Type **Ctrl + S** on your keyboard.

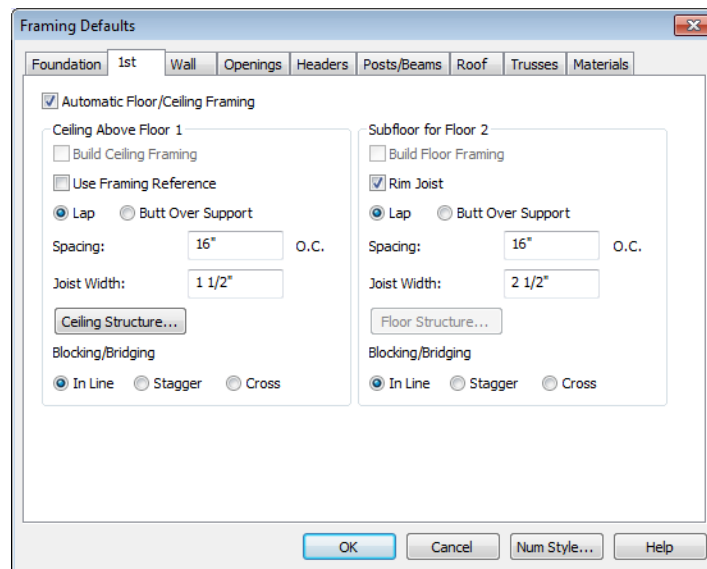
For more information about saving files, see “Saving, Exporting, and Backing Up Files” on page 43 of the Reference Manual.

Setting Defaults

Default settings determine the initial characteristics of objects when they are first drawn. Before we draw walls and create rooms, we should always make sure the defaults will meet our needs for the current project.

To set the Framing Defaults

1. Select **Edit> Default Settings**  to open the **Default Settings** dialog.
2. Click on "Framing" to highlight it, then click on the **Edit** button to display the **Framing Defaults** dialog.

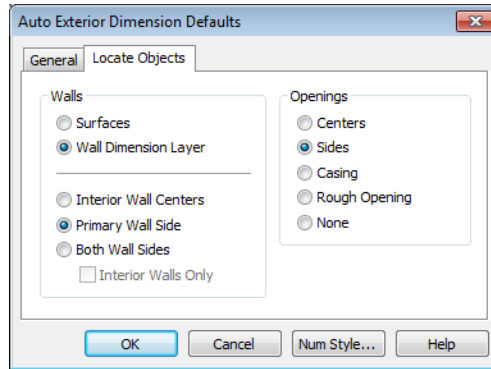


3. Review each of the tabs and settings available for setting up your Framing Defaults. For more information, see “Framing Defaults” on page 436 of the Reference Manual.

Once you have set up your Framing Defaults to suite your needs, click OK to apply the changes. ***To set the Dimension Defaults***

1. Select **Edit> Default Settings**  to open the **Default Settings** dialog.

2. Click on the plus sign next to "Dimension" to expand out this category, then select the type of dimension you want to modify. For the purposes of this tutorial, we will select **Auto Exterior Dimensions**, and click the **Edit** button.

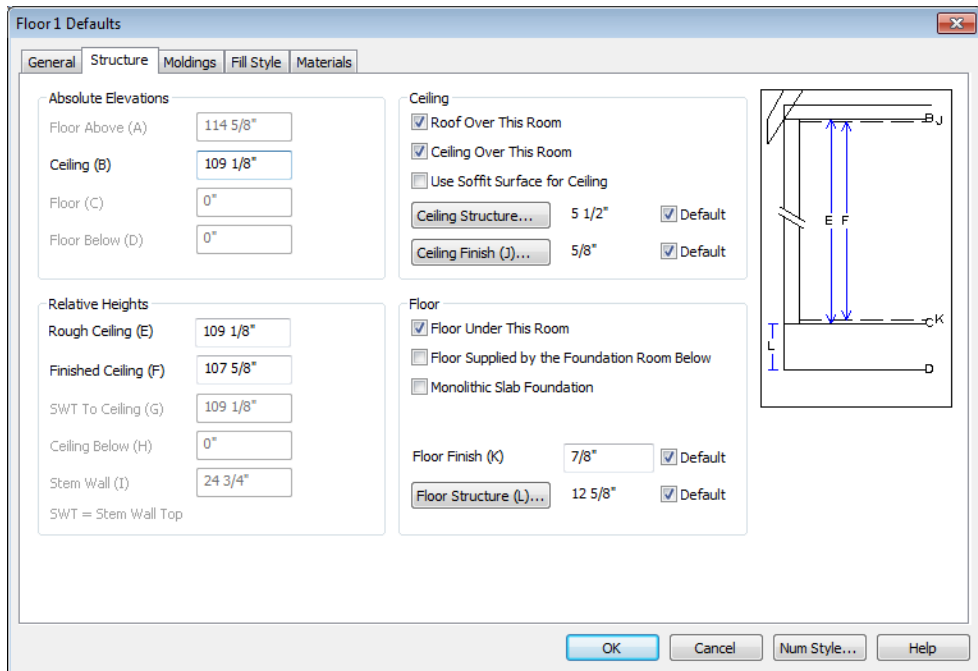


3. Review each of the tabs and settings available for setting up your Dimension Defaults. For more information, see "Dimension Preferences and Defaults" on page 719 of the Reference Manual.

To set the Floor Defaults


1. Select **Edit > Default Settings**  to open the **Default Settings** dialog.

2. Select "Floor" from the list and click the **Edit** button to open the **Floor Defaults** dialog.

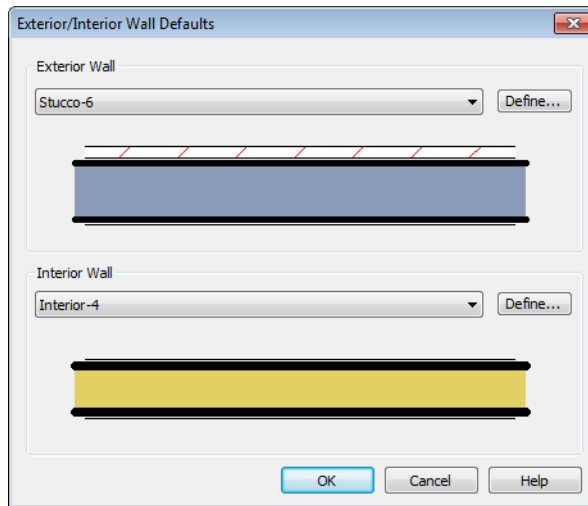


3. On the Structure tab, note the **Ceiling Height**. The initial value is 109 1/8" (inches). We will leave this value unchanged for this tutorial.
4. Click OK to close the **Floor Defaults** dialog.
5. For more information, see "Floor Defaults Dialog" on page 316 of the Reference Manual.

To set the Wall Defaults

1. Select **Edit> Default Settings**  to open the **Default Settings** dialog.
2. Click on the plus sign next to Walls, highlight "Exterior/Interior Wall" and click on the **Edit** button.

3. From the Exterior Wall drop down menu, we will select Stucco-6, and click OK.



4. Click the **Done** button to close the **Default Settings** dialog.

You may want to review some of the other available defaults when setting up your template. For example, you can modify your Cabinet defaults, where you can set up your materials for Base, Wall and Full Height Cabinets so that any future cabinets placed in the plan will initially use these default settings.

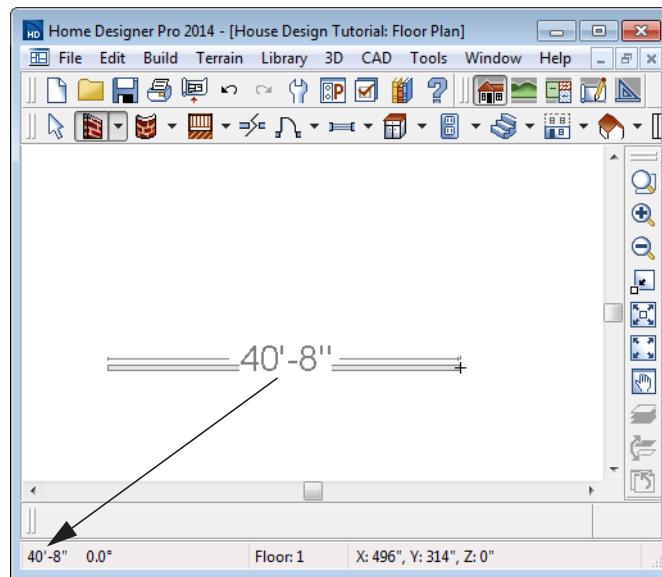
Drawing Walls

We'll start by drawing some exterior walls. When drawing walls, do not try to size or position them precisely - they can be more easily positioned after they are created. For more information, see "Walls, Railings & Fencing" on page 175 of the Reference Manual.



To draw exterior walls

1. Select **Build> Wall> Straight Exterior Wall**  from the menu or click the corresponding toolbar button.

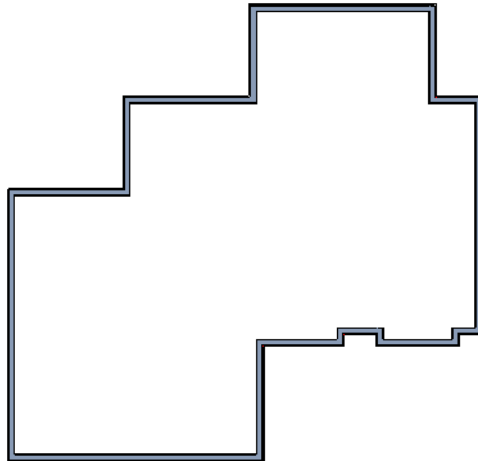
- Click and drag from left to right to draw a wall.



Wall length is indicated in the Status Bar as the wall is drawn

2. There are a few things to make note of as you draw a wall.
 - The wall's length displays in two places: above the wall and in the Status Bar at the bottom of the screen.
 - Wall angles are restricted to increments of 7.5° when Angle Snaps  are on. . See "Snap Behaviors" on page 109 of the Reference Manual for more information.
3. Continue drawing walls, creating a rough outline of the building's exterior, as shown in the following image.
 - Exact dimensions are not important yet, but it is helpful to keep the final size of the structure in mind as you draw. The overall length of this building's sides will be 41' x 39'6".
 - It is important that exterior walls (and any other wall types with an interior side and an exterior side) are drawn clockwise to ensure the proper orientation of wall surfaces.

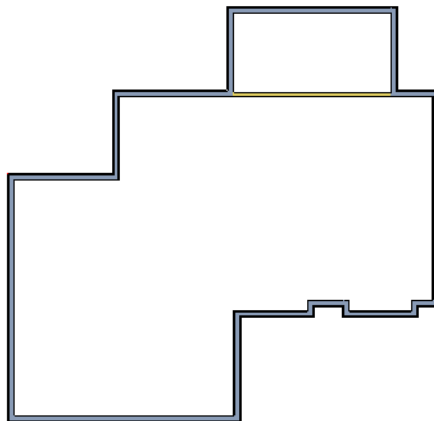
- When the walls enclose an area completely, a Living Area label is created. See “Living Area” on page 237 of the Reference Manual.





Interior walls are drawn the same way that exterior walls are.

To draw interior walls

1. Select **Build> Wall> Straight Interior Wall**  from the menu or click the corresponding toolbar button.
2. Draw an interior wall as shown in the following image.




To delete a wall

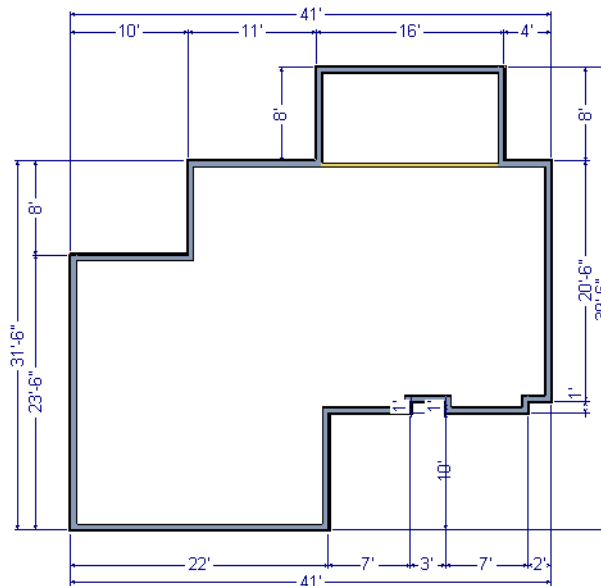
1. While the **Select Objects**  tool is active, click on a wall with the pointer to select it.
2. Press the **Delete** key or click the **Delete**  edit button.

Creating Dimension Lines


Dimension lines locate walls, openings in walls, and other objects. In Home Designer Pro, you can generate two types of automatic dimension lines and draw a variety of manual dimensions. For more information, see “Dimensions” on page 719 of the Reference Manual.



To create automatic exterior dimension lines

1. Select **CAD > Dimensions > Auto Exterior Dimensions** .



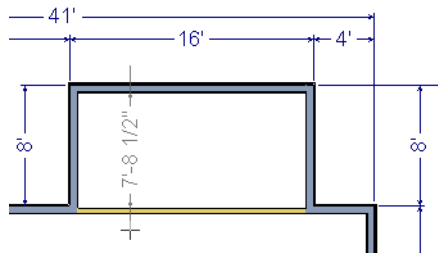
LIVING AREA
1145 sq ft

2. For a closer view of a certain area, click the **Zoom**  tool, click and drag a box around the area you want to see in detail, and release the mouse button. That area fills the screen. For more information, see “Zoom & View Tools” on page 653 of the Reference Manual.

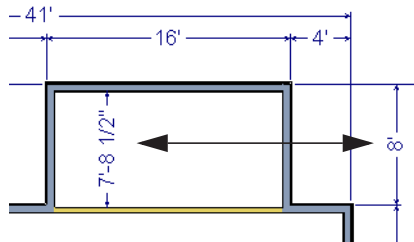
3. To return to the previous zoom factor, select **Window> Undo Zoom** .
4. If you can't see all the exterior dimension lines at once, select **Window> Fill Window Building Only**  to center your plan on screen.

To draw an interior dimension line

1. Select **CAD> Dimensions> Interior Dimension** .
2. Click and drag a line that intersects the interior wall and other walls you want to locate.



3. Release the mouse button to display the interior dimension.






Note: Interior Dimensions locate the Main Layer of walls by default rather than wall surfaces. See "Wall Type Definitions Dialog" on page 211 of the Reference Manual. This and other options can be changed in the Dimension Defaults dialog. See "Dimension Defaults Dialog" on page 720 of the Reference Manual.

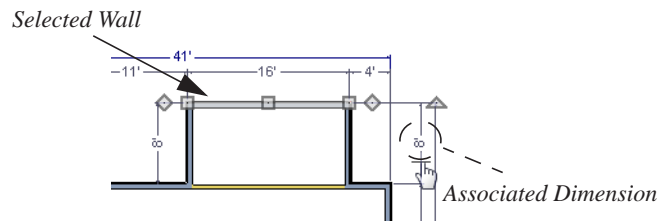
Adjusting Wall Positions

Now we'll adjust the spacing of walls with more precision. There are a couple of ways to move walls into position, but the fastest and most accurate uses dimension lines. For more


information about using dimensions to relocate objects with accuracy, see “Moving Objects Using Dimensions” on page 737 of the Reference Manual.

To move walls using dimensions

1. Let’s begin by selecting **Window> Fill Window Building Only**  so we can see the entire building.
2. Click the **Select Objects**  button, then click on a wall that you want to move.
3. Click on a dimension line that indicates how far the selected wall is from another wall. There are a couple ways to determine which dimensions can be used for this purpose:
 - Move the selected wall and see which dimensions update.
 - Move your pointer over a dimension. If it is an associated dimension, the icon will change to a pointing hand ().

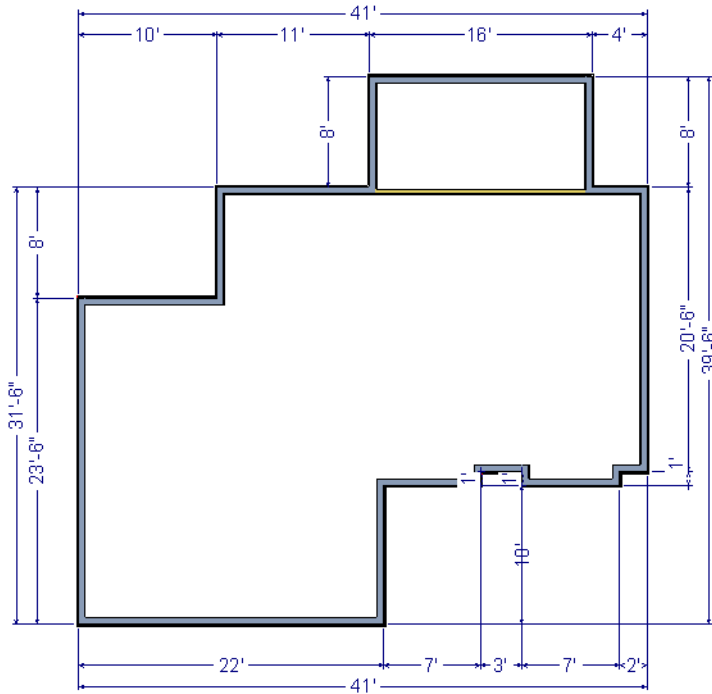


4. Click on the associated dimension and enter a new value. Remember, numbers entered with an apostrophe denote feet and numbers entered with quotes denote inches. If neither apostrophes or quotes are included, the entered value defaults to inches.
5. Use the Enter key on your keyboard to close the dialog and apply the change so that the wall will move the specified distance.
6. Repeat this process for the adjacent exterior wall, continuing in a clockwise direction. It may help to refresh **Auto Exterior Dimensions** (Shift + A) between commands.

 If you use dimensions to reposition walls, you should always work in the same direction, adjusting one wall section after another.




Dimensions can also be used to change the length of a selected wall. Bear in mind, though, that when a wall is resized in this manner its Start point will always be locked and its End point will always be moved. When, adjusting all the walls in a floor plan, it is often easier to move them than to resize them. See “Editing Walls” on page 197 of the Reference Manual.

When you are finished, the dimensions of your model should match those in the following image.




When your exterior walls are positioned properly, you may find it helpful to delete the dimensions.




To delete all dimensions at once

1. Select **Edit > Delete Objects**  to open the **Delete Objects** dialog. See “Delete Objects Dialog” on page 171 of the Reference Manual.
2. Select the **All Rooms On This Floor** radio button.
 - Check **Manual Dimensions** to delete manually-drawn dimension lines such as those drawn by the **Interior Dimension**  tool;
 - Check **Automatic Dimensions** to delete automatically generated dimension lines such as those created by the **Auto Exterior Dimensions**  tool;
 - Click OK.


Although using dimensions is generally the fastest and most accurate way to move walls, you can also move them using their edit handles and edit tools.


To move walls using their edit handle

1. Click the **Select Objects**  tool then click on an exterior wall to select it.
2. Click and drag the Move edit handle that displays at the position along the wall where you clicked. Walls can be moved perpendicular to the direction that they are drawn.
3. As you move the wall, the dimension lines that indicate how far it is from other walls will update.

If you have difficulty positioning a wall at the desired location because it jumps over that location as you move it, try zooming in on it by scrolling with your mouse wheel or by using either the **Zoom**  or **Zoom In**  tool. You can also use the **Accurate Move**  edit tool to slow your mouse movement.

To use the Accurate Move edit tool

1. Click on the wall that you wish to move more slowly and with greater accuracy.
2. Click the **Accurate Move**  edit button.
3. Click and drag the Move edit handle to the desired position.

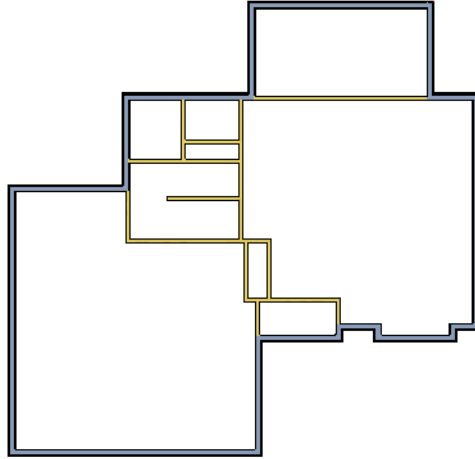
Your mouse will move more slowly for this edit only. The next time you want to move or resize the wall slowly, you will need to click the **Accurate Move**  edit button again.


Creating Rooms

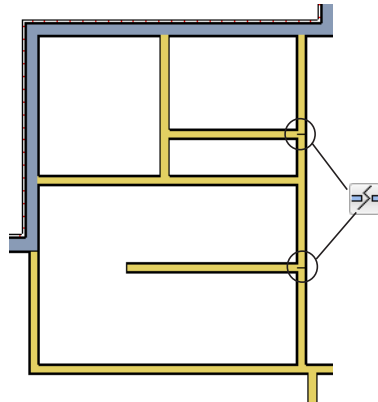
Now that the exterior of the house has been finalized we can begin laying out rooms on the interior. Rooms are defined by the walls that enclose them. They are then assigned a Room Type that assigns common room attributes. For more information about rooms, see “Room Types” on page 234 of the Reference Manual.


To define rooms using interior walls

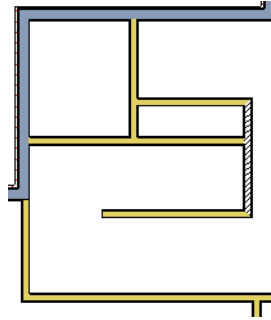
1. Select **Build> Wall> Straight Interior Wall** , then click and drag to draw interior walls. As with exterior walls, you don't need to worry about exact placement as you draw.



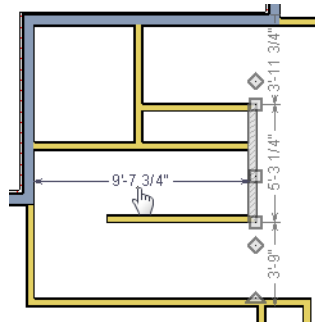
2. Select **Build> Wall> Break Wall**  and click to place two breaks at the locations shown in the following image.




- Click the **Select Objects**  button, then select the top wall section created by the breaks and delete it. Repeat this process for the bottom wall section, so that only the middle section remains, which is hatched in the image below for illustrative purposes.



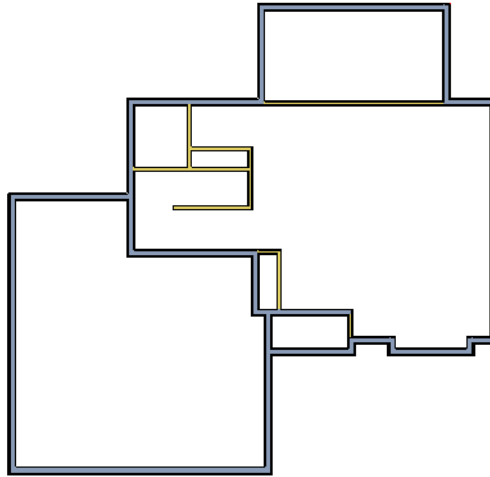
- Draw a horizontal **Interior Dimension**  inside this new room, then use it to move the vertical interior wall 9' 7 3/4" from the opposing exterior wall.



To change a wall's type

- Select a wall with the incorrect wall type and click the **Open Object**  edit button to open the **Wall Specification** dialog. See “Wall Specification Dialog” on page 214 of the Reference Manual.
- On the Wall Types tab, click the **Wall Type** drop-down list and select the desired wall type

3. Click **OK** to close the dialog and change the selected wall to the chosen wall type. Repeat this process for each of the wall's that you want to change, as in the image below.



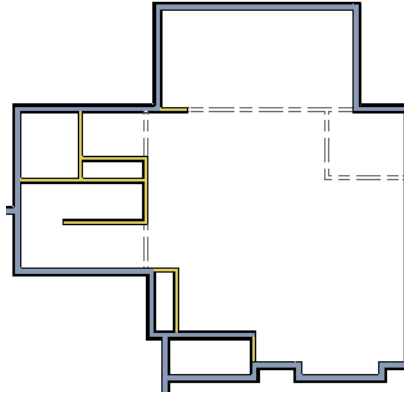
Using Invisible Walls



In reality, rooms are not always divided by a physical wall. The separation of two rooms may be marked by a change in the flooring (carpet to tile, for example), or by a change in the interior wall covering. In Home Designer Pro, an invisible wall can be used to define rooms without creating an actual wall. We'll use invisible walls to define more of the first floor layout.


As with changing a wall's type, we can also place a break and mark walls as Invisible, or draw walls using the tool. For more information, see "Invisible Walls" on page 186 of the Reference Manual.

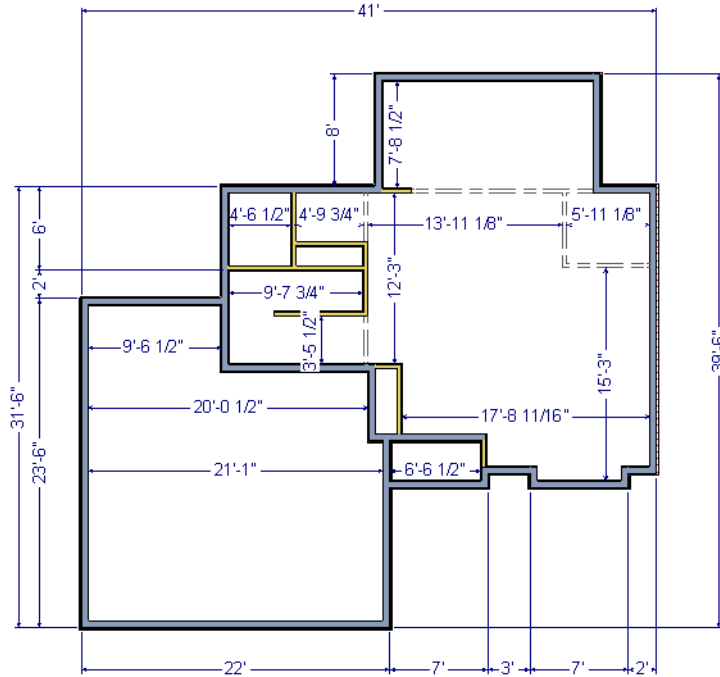
To create an invisible wall

1. Select **Build> Wall> Invisible Wall**  and draw invisible walls as shown in the following image.



2. Using the **Select Objects**  tool, select one of the Invisible Walls and click on the **Open Object**  edit tool to display the **Wall Specification** dialog. On the **General** tab, note that **Invisible** and **No Locate** are checked.
3. Uncheck **No Locate**, as while this option is selected, it will prevent dimensions from locating the wall, and click **OK**. Repeat this process for any of the remaining invisible walls in the plan that you want to be able to dimension to.

- Adjust the wall spacing of the interior, exterior and invisible walls to match the following image using **Interior Dimensions** , just as you did with exterior walls.



LIVING AREA
1143 sq ft

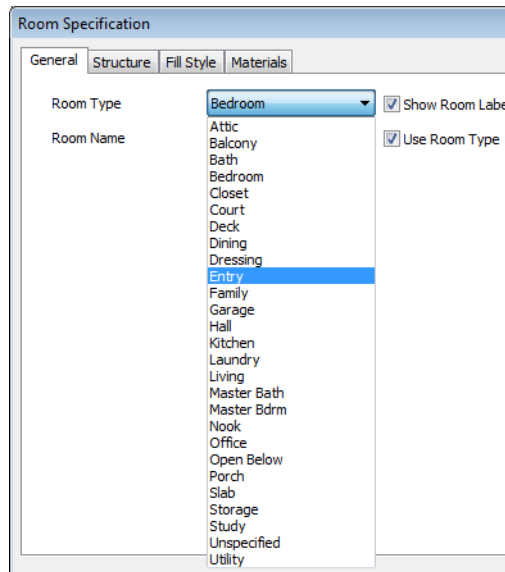
Room Types

Rooms in Home Designer Pro are given special attributes by assigning a Room Type. For example, porches use a concrete floor material and have a ceiling and roof, while decks use floor planking and have no ceiling or roof. For more information, see “Rooms” on page 229 of the Reference Manual.


To designate a Room Type for a room

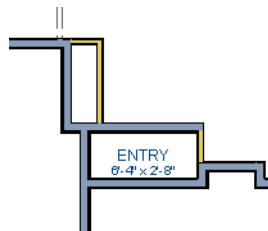
- Click the **Select Objects**  button, then click in the small room at the bottom of the plan.

- Click the **Open Object**  edit button to open the **Room Specification** dialog.

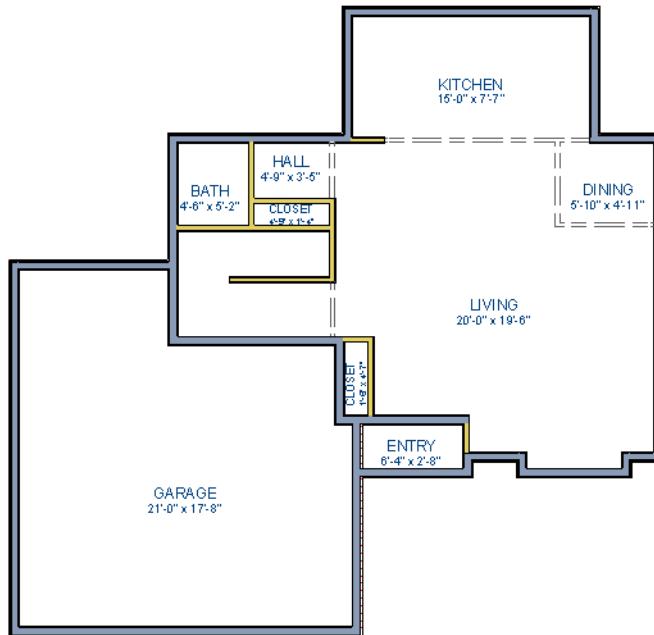


- On the General tab, click the **Room Type** drop-down list and select **Entry**.
- Click **OK** close the dialog and apply your change.

Double-clicking a room when the **Select Objects**  tool is active will also open the **Room Specification** dialog. For more information, see “Room Specification Dialog” on page 244 of the Reference Manual.



5. Open each of the rooms and assign room types as shown in the following image.



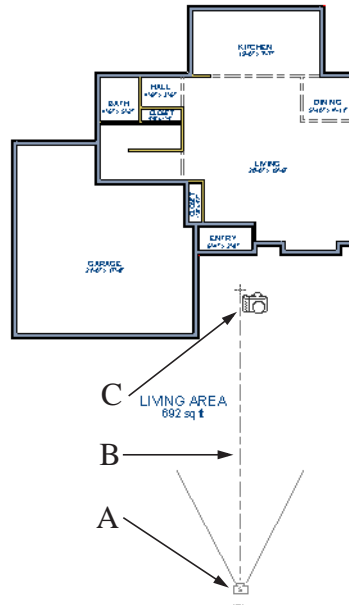
Creating a 3D View


Let's take a look at our plan in 3D and see how it looks so far. For more information, see "3D Views" on page 663 of the Reference Manual.



To create a camera view

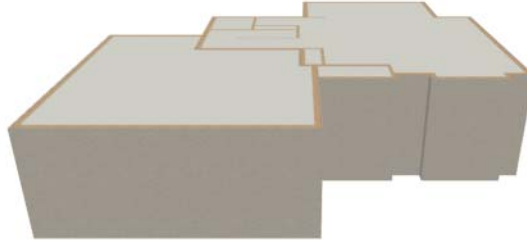
1. In floor plan view, click the **Fill Window**  button to zoom out as needed to fill the view window with the entire drawing.
2. Select **3D> Create Perspective View> Full Camera**  (or press Shift + J).

- Click at the bottom of the floor plan view window and drag a line that stops at the Entry. The point where you click (A) defines the point of perspective and the line (B) defines the direction of perspective.



- Release the mouse button to create the 3D camera view. Where the mouse is released (C) is the camera's focal point.
- If necessary, you can use the **Mouse-Orbit Camera**  tool to change the camera's perspective. The camera will revolve around its focal point (C). See "Repositioning Cameras" on page 680 of the Reference Manual for more information.



6. Once you have accurately positioned your camera, to smooth out the edges and create a more realistic rendering of the model, you can select **3D> Camera View Options> Final View**  or **Final View with Shadows** .



Final Views often take significantly longer to generate than Previews, so the 3D view reverts back to the Preview Settings as soon as anything is changed within the view.

7. To return to floor plan view, select **File> Close** from the menu.

To create a Doll House View

1. In floor plan view, select **3D> Create Perspective View> Doll House View** . A Doll House View displays a single floor without a ceiling or roof.
2. Select **3D> Move Camera With Mouse> Mouse-Orbit Camera**  (which should be selected by default) then click and drag the mouse on screen to change the camera perspective. You can press the I (in) and the O (out) keys on the keyboard to zoom in and


out of the plan. For more information on modifying camera views, see “Editing 3D Views” on page 684 of the Reference Manual.



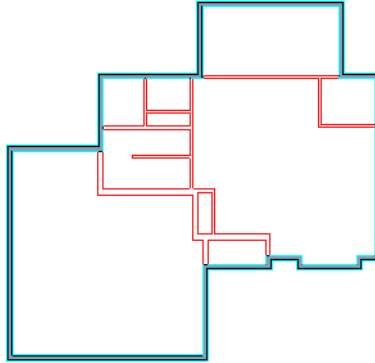
Adding Floors

Creating new floors in a plan is easy, but it is best to do so only after the first floor plan has been finalized. Now that we have done so in our plan, we’ll add a second story and basement. For more information about working with multiple floors, see “Multiple Floors” on page 315 of the Reference Manual.

To add a second floor

1. Select **Build> Floor> Build New Floor** . The **New Floor** dialog displays.
2. Select **Derive new 2nd floor plan from the 1st floor plan** and click **OK** to close the **New Floor** dialog to display the Floor 2 Defaults.
3. Click **OK** and a floor plan for the second floor is created based on the exterior walls of the first floor plan. We will need to edit the walls of our second floor manually. It will be difficult to know where the second story walls should be without knowing where the first floor walls are located.

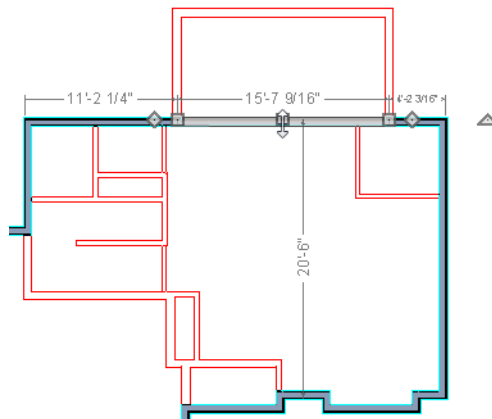
4. Select **Tools > Reference Floors > Reference Display**  (or press F9). The first floor walls are displayed for reference.



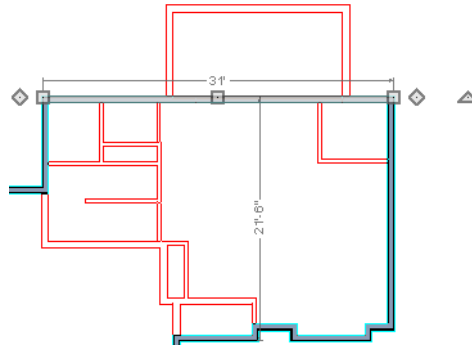
We will now edit the second story walls.

To merge two parallel walls into one

1. Select the upper wall of the house, then click and drag its center edit handle to move it.
2. When the wall becomes aligned with another wall and can merge with it, it will stop at a "sticky point."
3. If you keep dragging the mouse, the wall will break free of the sticky point and you can continue moving it. In this case, we will release the mouse button.

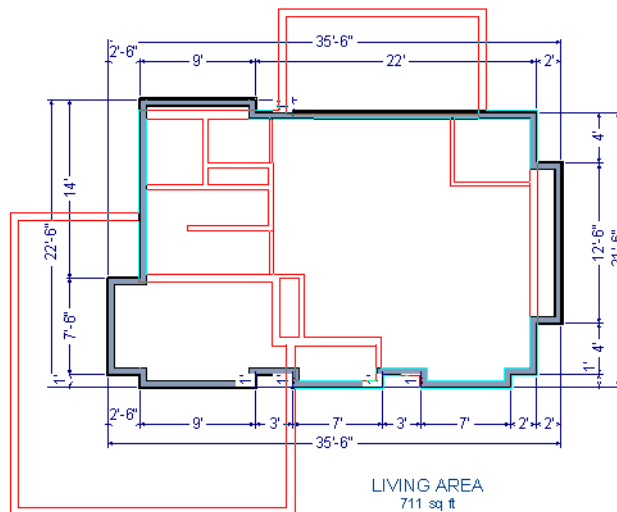


- Note that if select the wall now, the edit handles now extend the full length of the wall.





Note: Before merging walls, make sure Object Snaps are turned on. For more information, see "Object Snaps" on page 110 of the Reference Manual.

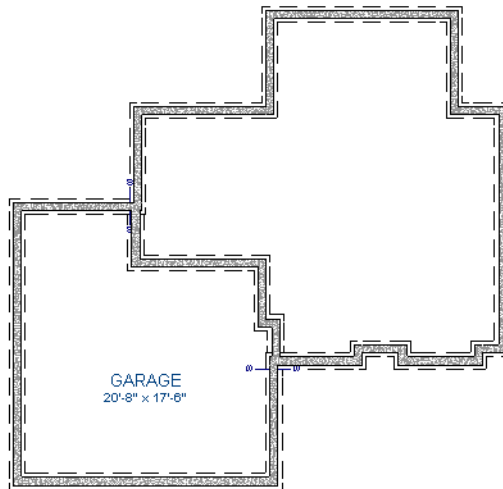
- Repeat these steps until we have exterior walls that are aligned as shown in the following image. To achieve this, we could also have created a blank second floor plan and then drawn our second story walls manually.



- At this point, let's remember to **Save**  our plan before adding a foundation level.

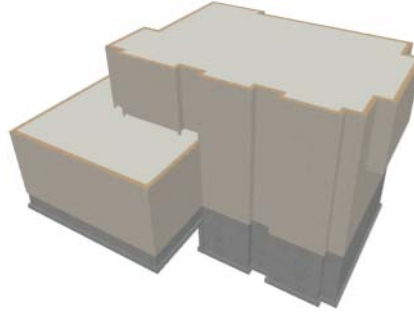
To create a foundation or basement

1. Select **Build> Floor> Build Foundation** . In the **Build Foundation** dialog:
 - Change the **Minimum Stem Wall Height** to 100 inches.
 - Click **OK** to close the dialog and create a foundation level for your plan.
 - For more information, see “Foundation Defaults” on page 330 of the Reference Manual.
2. Select **Derive New Foundation Plan From the First Floor Plan** and click **OK** to close the **New Floor** dialog. For more information, see “Adding Floors” on page 317 of the Reference Manual.
3. You can select **Window> Fill Window Building Only**  from the menu to center the plan on screen.





Notice that the "S" Markers indicate a Step Foundation. For more information, see “Foundation Defaults” on page 330 of the Reference Manual.

4. Select **3D> Create Perspective View> Full Overview**  from the menu to create a 3D overview of our entire plan so far.




To add a second story balcony

Now that we have a second floor, we'll use the tools and techniques we learned earlier to add a second story balcony that is aligned with the floor below.

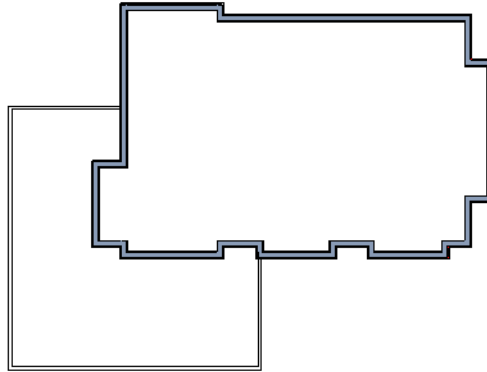
1. Press **Ctrl + Tab** on your keyboard to switch back to floor plan view and return to Floor 2.
2. If they are not already displayed, click **Reference Display**  to display the first floor walls.
3. Select **Build> Wall> Straight Railing** .







For best results, do not use the Deck Railing tool or specify the balcony room as a Deck.

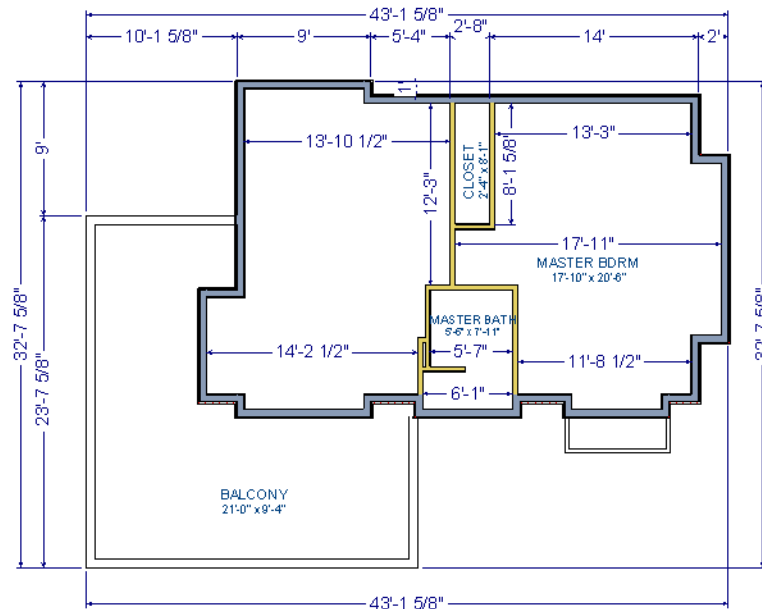
4. Draw a balcony as shown in the following image. If you have **Object Snaps**  on, the second story balcony railing will likely be drawn in alignment with the first floor on your

first attempt. If not, you can manually align the wall with the first floor deck below in the following steps.



5. Next, use the **Select Objects**  tool to select one of the railings, and click on the **Open Object**  edit tool to display the **Railing Specification** dialog. On the General tab, increase the Thickness to 8 1/8" then click **OK**.
6. Repeat this process for the remaining railings in the plan.
7. Select a section of railing that has a wall below it on the first floor and click the **Align with Wall Below**  edit button.
 - Note: If **Align with Wall Below**  is not available, the selected railing either needs to be moved closer to the wall below, or the railing is already aligned with the one below. See “Aligning Walls” on page 201 of the Reference Manual.
8. Repeat this step for each section of railing that has a railing directly below it on the first floor.




9. Finally, you can customize the interior of your second floor with interior walls. When you are finished, your second floor should look similar to this:



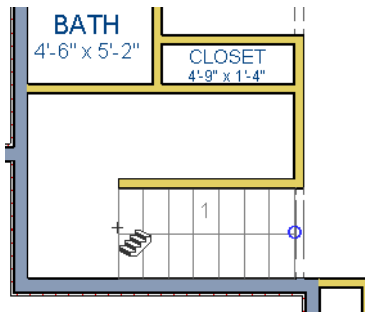
Adding Stairs

Now that we've got three floors we'll need to get from one floor to another. For more information about stairs, see "The Stair Tools" on page 398 of the Reference Manual.

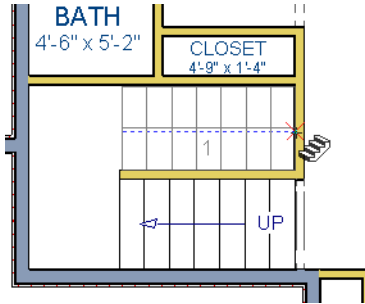
To draw stairs with a landing


1. Click **Down One Floor**  to go to the first floor. You may want to select **Tools> Reference Floors> Reference Display**  to turn off the display of the reference floor.
2. Select **Build> Stairs> Straight Stairs**  (or press Shift + Y).

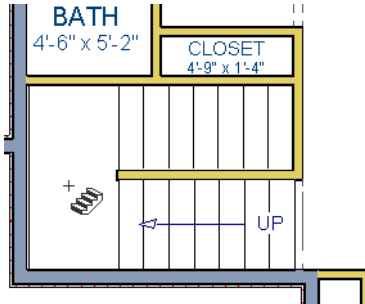
3. Click and drag to draw a short stair section as shown in the following image.



4. Draw another stair section 180° to the right of the first stair section, along the interior wall.





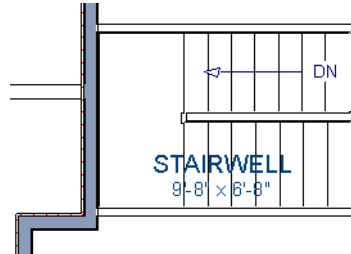
5. While the **Straight Stairs**  tool is still active, click in between the two stair sections to create a landing.




6. Click on the landing with either the **Straight Stairs**  or **Select Objects**  tool active, and if needed, resize it using its edit handles to fit against the wall.

To create a stairwell



1. Select either of the two stair sections.
2. Click the **Auto Stairwell**  edit button to create a stairwell.
3. Click the **Up One Floor**  button to go to the second floor. Notice that the second floor now displays a stairwell defined by railings.



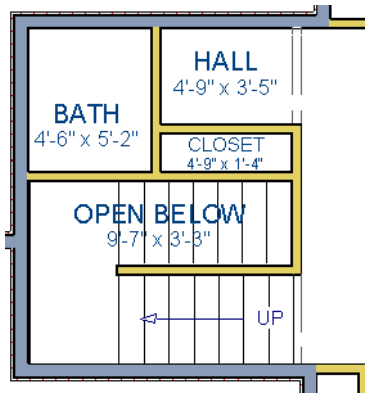
A stairwell is an interior room that is automatically assigned the **Room Type** “Open Below” in the **Room Specification** dialog. See “Room Specification Dialog” on page 244 of the Reference Manual.



It makes sense to draw the basement stairs directly below the stairs to Floor 1. We could use the **Auto Stairwell**  edit tool to create another stairwell; however, in this situation, it will be better to use our existing interior walls to define the stairwell, rather than by the railings that the Auto Stairwell tool generates.

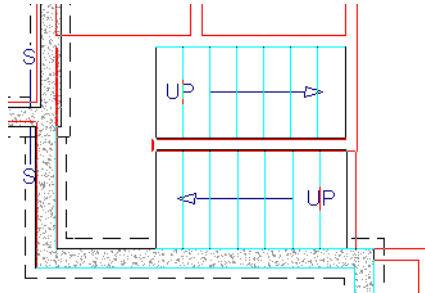
To manually create a stairwell


1. Click the **Down One Floor**  button to go down to Floor 1.
2. Next, click on a stair section inside of the stairwell room and click the **Select Next Object**  edit button as many times as needed until the room is selected instead of the stair.



3. With the room selected, click the **Open Object**  edit button and in the **Room Specification** dialog, select Open Below from the **Room Type** drop-down list and click OK.

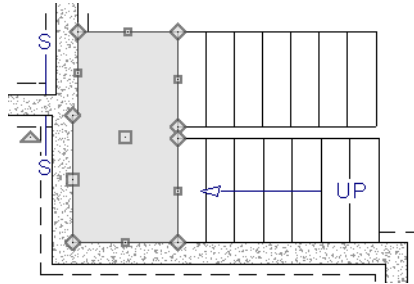





4. Go **Down One Floor** to the foundation (Floor 0) level, and turn on the **Reference Display** .
5. Select **Build> Stairs> Straight Stairs**  and draw two stair sections directly below the stairs you drew on Floor 1. Do not draw the landing just yet, though.

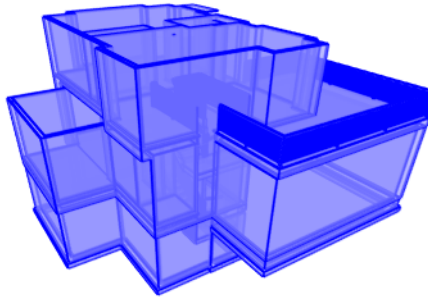


6. Select each stair section and adjust its width and position using its edit handles so that it fits within the walls forming the stairwell drawn on Floor 1.
7. When the stair sections are positioned properly, click with the **Straight Stairs**  tool to create a landing as you did on Floor 1.

8. Next, use the **Select Objects**  tool to select the landing, click on the **Break Line**  edit tool, and click along the landing's edge to place a break, which allows you to reshape it so that it fits against the foundation walls.




9. Select **3D> Create Perspective View> Full Overview** .
10. When the view has generated, select **3D> Glass House**  to view our entire model, inside and out.
11. Select **3D> Move Camera With Mouse> Mouse-Orbit Camera**  and click and drag the mouse on screen to change the camera perspective. You can press the I (in) and the O (out) keys on the keyboard to zoom in and out of the plan.




Placing Doors and Windows

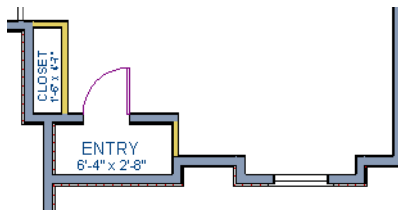
We're making progress on our house, but we can't get into it, and neither can light. Now is a good time to add some doors and windows. For more information about doors and windows, see "Doors" on page 253 of the Reference Manual and "Windows" on page 279 of the Reference Manual.

To add a door



1. If your views are still tiled, close the 3D view and maximize the floor plan view.
2. Select **Build> Door> Hinged Door** .
3. Move the pointer to the entry and click on the front wall, left of its center, to place a door.

To add a window


1. Select **Build> Window> Window** .
2. Move the pointer to the entry and click on the wall, right of center, to place a window.



To edit a door

1. So that we can better see the results when we edit our door, let's select **3D> Create Camera View> Perspective Full Camera**  to create a camera view of the entry. Click and drag a camera arrow inside the structure, pointed at the entry.
2. Click the **Select Objects**  tool, then click on the door to select it in the 3D view.



3. Click the **Open Object**  edit button to open the **Door Specification** dialog. For more information, see “Door Specification Dialog” on page 265 of the Reference Manual.


4. On the General tab, set the **Door Style** to Glass and set the Width to 36".
5. On the Frame & Lites tab, set the **Frame Bottom** to 8 inches. Press the Tab key to update the preview image on the right side of the dialog so that it reflects your change.
6. On the Lites tab, set the **Lites across** to 3 and **Lites vertical** to 5.
7. On the Hardware Tab, set the Handle **In from Door Edge** to 2"
8. Click **OK** to return to the 3D view.




To edit a window

1. Next, click on the window to select it.



2. Click the **Open Object**  edit button to open the **Window Specification** dialog. For more information, see “Window Specification Dialog” on page 294 of the Reference Manual.
3. On the General tab, select “Fixed Glass” from the **Window Type** drop-down list and set the **Width** to 54”.
4. On the Lites tab, change the **Lites across** to 4 and **Lites vertical** to 4.
5. Click OK to close the **Window Specification** dialog.

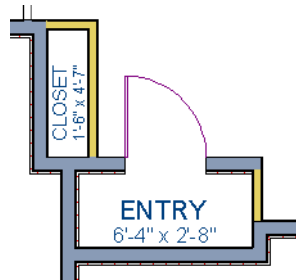


 If you would like all of your doors and/or windows to be customized, make your changes in the Door Defaults and Window Defaults dialogs before placing these objects. For more information, see “Default Settings vs Preferences” on page 56 of the Reference Manual.


To change the door swing

1. Return to floor plan view and select the door.

2. Click the **Change Opening/Hinge Side**  edit button.






To copy a window or door

1. Return to the 3D view and select the window, or door, you wish to copy.
2. Click the **Copy/Paste**  edit button. For more information about copying objects, see “Copying and Pasting Objects” on page 114 of the Reference Manual.


Doors and windows can be placed, selected, deleted, copied, pasted, and edited in either 2D or 3D views. If there is a window design that you will be using throughout a plan, you can create it once, then just copy and paste it. An even better approach is to set your door and window defaults to the desired settings before placing these objects. For more information, see “Default Settings vs Preferences” on page 56 of the Reference Manual.

To create a doorway

1. Return to floor plan view and **Zoom**  in on the entry room.
2. Select **Build> Door> Doorway**  and click on front Entry room wall nearest to place a doorway.
3. Select **3D> Create Perspective View> Full Camera**  and create an exterior camera view of the doorway.

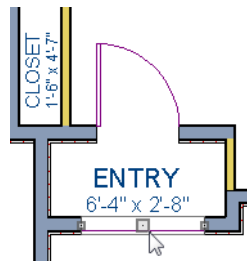



To customize the doorway

1. Select the doorway by clicking on its frame and click the **Open Object**  edit button to open the **Door Specification** dialog.
2. On the General tab, change the **Width** to 54" and the **Height** to 96".
3. On the Casing tab, change the **Casing Width** to 10". Be sure to delete the (D) from the text field as it stands for "default" and will continue to apply the default casing width if it is not removed, regardless of the value you specify.
4. On the Arch tab, click the Type drop-down and specify a broken arch from the list. Set the Height of the broken arch to 12".
5. On the Casing tab, click the **Library** button below casing and select a molding profile from the Door & Window Casings library.
6. Click OK to close the **Door Specification** dialog.

To center a wall opening

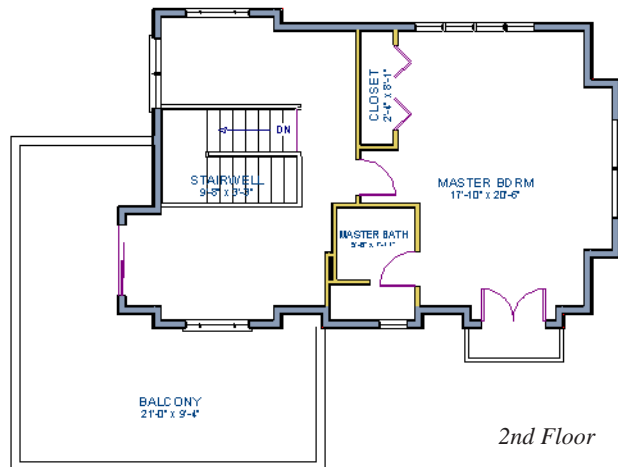
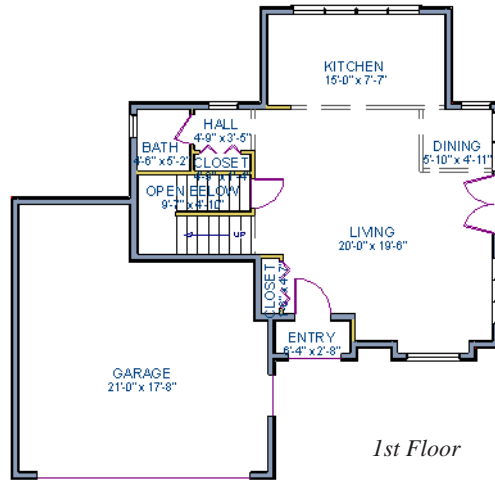
1. Return to floor plan view and select the doorway.



2. Click the **Center Object**  edit button, then click inside the entry room, near the interior wall containing the doorway. For more information, see "Using Center Object" on page 156 of the Reference Manual.

Use the tools and techniques you've learned to add window and doors to the rest of the plan, as shown in the following images. Doors placed in interior walls become interior doors and have different specifications than exterior doors. If you feel inspired, customize the doors and


windows as you see fit. For example, increase a door's width to 48" or greater and the program will automatically create a double door.

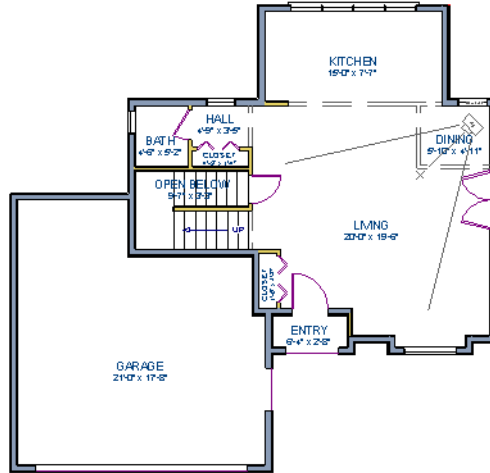



When you have finished, **Save**  your work.

We've added quite a lot to our model. Let's see how it all looks.

To take a final look

1. Using the **Full Camera**  tool, create an interior camera view on Floor 1. Remember that where you click determines the camera's perspective and where you release determines the point about which the camera will rotate. A short drag distance is ideal, however, the distance must be greater than one foot.




2. Release the mouse button to create the 3D camera view then use the **Mouse-Orbit Camera**  tool to take a look around and see our progress so far.



3. You can also create a **Floor Overview**  on any floor.



4. When you are finished, be sure to **Save**  your work.

If you would like, you can continue working on this plan in the Interior Design Tutorial or Kitchen and Bath Design Tutorial. You can also learn about materials in the Materials Tutorial or find out more about roofs in the Roof Tutorial. To learn how to arrange views of your model on a page for printing, see the Layout Tutorial.

