Kitchen and Bath Design Tutorial

This tutorial continues where the Materials Tutorial left off. You should save this tutorial using a new name to archive your previous work.

The tools and techniques used to design kitchens and bathrooms are very similar. This tutorial focuses on kitchen design. When you're finished you can use what you've learned to finish up the bathrooms as well. In this tutorial you will learn about:

- Adding Cabinets
- Placing Appliances
- Editing Cabinets and Appliances
- Creating a Custom Countertop

- Creating Architectural Blocks
- Editing Cabinets and Appliances
- Working in Cross Section/Elevation Views

Adding Cabinets

First, let's select **File**> **Save As** ![save icon], and choose to name our plan BeachHouse - Kitchen Bath Tutorial.

We'll begin by placing a cabinet in the kitchen and editing its dimensions, orientation, and placement. For more information about cabinets, see "Cabinets" on page 617 of the Reference Manual.

To place a base cabinet

1. **Zoom** ![zoom icon] in on the Kitchen area in floor plan view.

2.   Select **Build> Cabinet> Base Cabinet** 📦 .

3.   Click to place a base cabinet anywhere in the kitchen.

Once a cabinet is placed, it can be edited like other objects.

To select and edit a cabinet

1.   Cabinets can be selected using one of the following methods.

   • Click on the cabinet while the **Select Objects** 🔓 tool is active.

   • Click on the cabinet while any of the **Cabinet Tools** 📦 are active. This allows only cabinets to be selected.

   • Right-click on the cabinet when another tool is active.

2.   When the cabinet is selected, edit handles, a front indicator, and a temporary dimension display. As with other objects, the arrow that displays when the pointer is held over an edit handle indicates what edit function that edit handle will perform. See "Editing Box-Based Objects" on page 188 of the Reference Manual.

Resize edit handles

Move edit handle

Front indicator
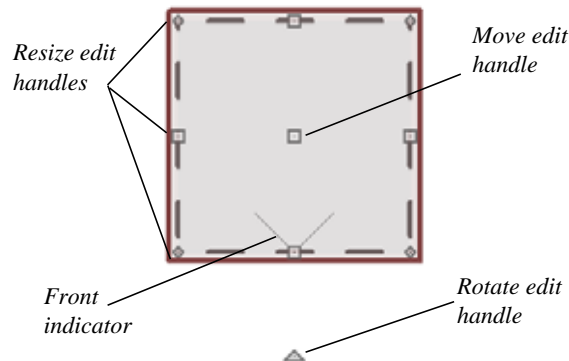
Rotate edit handle

   • Move a cabinet using the move edit handle. By default, you can move a cabinet along either the X axis or the Y axis. To allow unrestricted movement, hold down the **Ctrl key** (or click using the right mouse button) then drag the cabinet.

   • Resize two sides of a cabinet using a resize edit handle, located in each corner.

   • Extend a cabinet's edge on one side using an extend edit handle. One of the extend edit handles also displays an arrow that indicates the cabinet's front.

   • Rotate a cabinet using the rotate edit handle.

   • A temporary dimension updates as the cabinet is moved or resized.

3.   When the cabinet is selected, you can also click the **Open Object** 📘 edit button to open its specification dialog and make a wide variety of changes to the cabinet. For more information, see "Cabinet Specification Dialog" on page 636 of the Reference Manual.

To lay out base cabinets for this tutorial
1. Place and position several initial base cabinets in your plan and edit their width and orientation as shown in the following image.
   - Notice that two of the cabinets are 36", two are 24" wide, one is 33" and one is 27" wide.
   - A cabinet snaps to another if they are in alignment, facing the same direction, and of the same type.
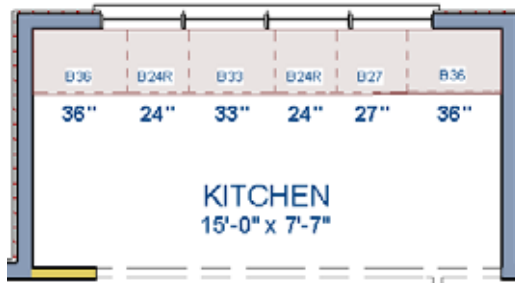
Note: The display of cabinet module lines has been turned on in the following images. See "Displaying Cabinets" on page 625 of the Reference Manual for more information.

To create corner cabinets
1. Select the three foot base cabinet at upper right.

2. Click the **Open Object** edit button to open the **Base Cabinet Specification** dialog. On the General tab:
   - Specify a **Width** greater than the Depth. The selected cabinet's width should already have been changed to 36", which works well with a 24" depth. If it isn't, change it to 36" now.
   - Click the **Special** drop-down list and select Corner.
   - On the Front tab, uncheck the box beside **Diagonal Door**.

3

• Click **OK** to change the cabinet into a corner cabinet.
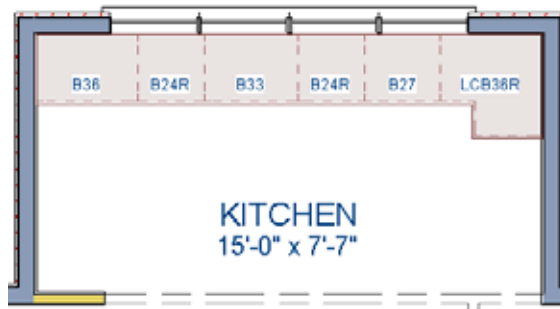
3. Repeat this process with the upper left Base Cabinet and open it for specification:
   • On the General tab, change it to a corner cabinet (as we did in the previous step).
   • On the General tab, change the **Left Side Width** to 36 inches (36").
   • On the Front tab, uncheck the box beside **Diagonal Door** if it is checked.
4. Click OK to close the **Base Cabinet Specification** dialog, then select this cabinet, use its rotate edit handle, then move it into the corner, until it bumps into the walls.

Note: To move a group of cabinets, select one cabinet, place the pointer over the move handle, the click and drag the mouse cursor and you can push the entire group of cabinets.

To place wall cabinets

1. Select **Build> Cabinet> Wall Cabinet** .
2. Click very above the left corner base cabinet to place a wall cabinet as shown.

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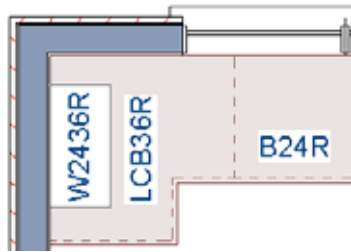
3. Click the **Open Object** ▯ edit button to open the **Wall Cabinet Specification** dialog. In the Wall Cabinet Specification dialog:
   - On the General tab, specify a **Width** of 33.
   - On the Door/Drawer tab, change the Door Style to **Framed Doors**, and check **Glass Doors** if it is not already selected.
   - On the Moldings tab, choose **Add New** to add a new molding profile to the cabinet. For the purposes of this example, we will use a crown molding profile set with a **Height** of 2 1/2", a **Width** of 2 1/2", and a Vertical **Offset** of - 2 1/2".
   - Click **OK** to apply these changes to the wall cabinet.
4. Once you have finished modifying the original wall cabinet, select it and click on the Copy edit tool, then click near the opposite wall to place a second wall cabinet identical to the first, and rotate it so that it faces out in to the door, instead of in to the wall.


Note: The display of cabinet face indicator lines has been turned on in the following images. See "Displaying Cabinets" on page 625 of the Reference Manual for more information.

To place soffits

Select **Build> Cabinet> Soffit** ▱ then click above the wall cabinets to place soffits. Adjust their width and orientation to match the wall cabinets below.

> When objects are very close to one another or occupy the same vertical space in floor plan view, it may be difficult to select the intended object. You can select an objects, then click the **Select Next Object** edit button or press the Tab key to select a neighboring object. The Status Bar indicates which object is currently selected.
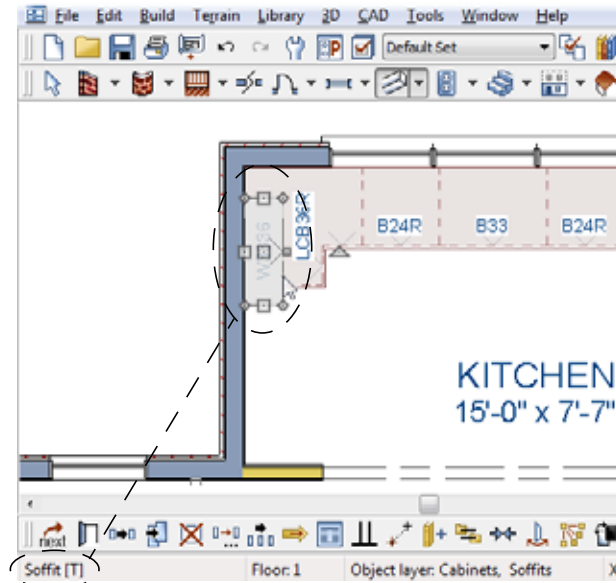

Placing Appliances

Appliances come in two basic varieties, freestanding and built-in. Most plans use both types, including this one. For more information about library objects such as appliances, see "The Library" on page 753 of the Reference Manual.

To place a freestanding appliance

1. Select **Library> Library Browser** to open the Library Browser.
2. Go to **Architectural> Appliances> Refrigerators**, locate a refrigerator, and select it for placement.
3. On the left of the kitchen, click in the empty space to the bottom of the base corner cabinet to place the refrigerator.

6
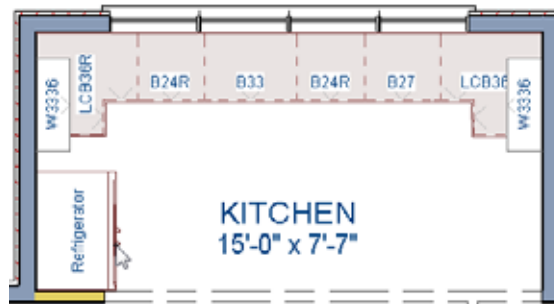
4. In the Appliances library, find the electric range and select it for placement.
5. Place the range in the empty space on the right of the kitchen.

To place a built in appliance
1. Open the Fixtures category to the Sinks library, find the double self-rimming 32 inch sink and select it for placement. For the purposes of this tutorial, we used the Offset 32" sink.
2. Click on the base cabinet near the top of the screen that is 33" wide to place the sink.
3. In the Appliances library, find a basic dishwasher, select it for placement, and click on the cabinet to the right of the sink.
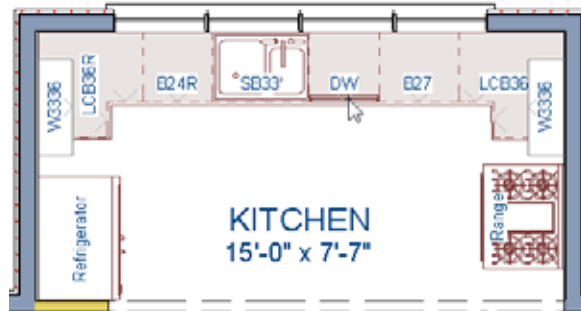

Editing Cabinets and Appliances

We've already learned how to edit the dimensions of cabinets and appliances in floor plan view. Like other objects, cabinets and appliances can also be edited in their own specification dialogs. This method allows a higher degree of customization.

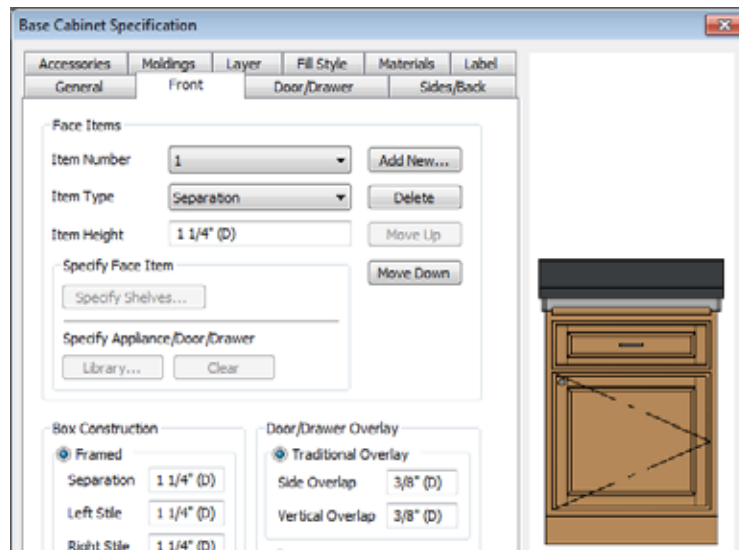*To edit cabinets in the Cabinet Specification dialog*

1. Select the cabinet to the left of the sink and click the **Open Object** ▯ edit button to open the **Base Cabinet Specification** dialog.
2. Select the drawer in the preview. Notice that clicking anywhere on the preview takes you to the Front tab.
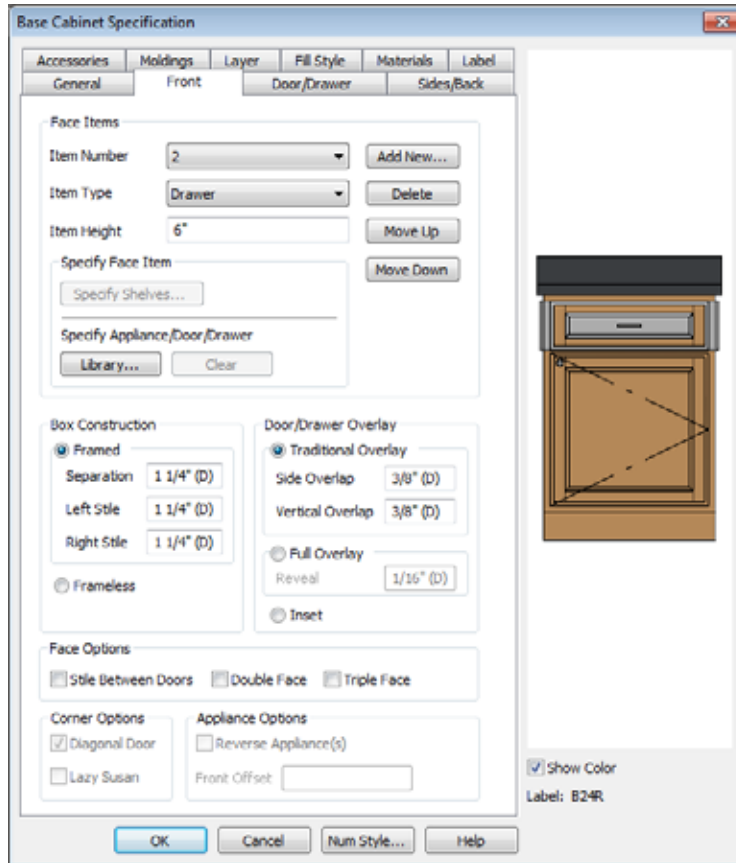
3. Click the **Add New** button to open the **New Cabinet Face Item** dialog.
4. Click the **Item Type** drop-down list and select Cutting Board, assign an **Item Height** of 1 inch, and click **OK** to return to the **Cabinet Specification** dialog.
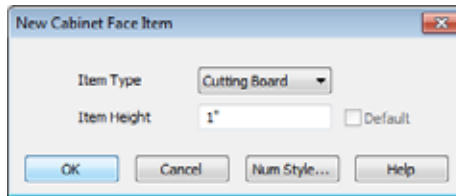
5. A new Cutting Board face item, as well as a new Separation, will be added below the drawer that you selected.
6. Click on the cutting board in the preview, then click the **Move Up** button three times to move the cutting board above the drawer and the empty spaces above and below it.
7. Select the Separation and click the **Move Up** button three times, as well.

8. Click OK to close the **Base Cabinet Specification** dialog.
9. Follow this same procedure to make any additional changes to the other cabinets in your kitchen area, such as creating a bank of drawers, or changing the handle for drawers to be knobs.
10. Finally, we will add in several smaller base cabinets to fill in the gaps between appliances

To edit appliances in their specification dialogs

1. Select the refrigerator and click the **Open Object** edit button to open the **Fixture Specification** dialog.
2. On the General tab, change the **Depth** to 28 and click **OK**.

9
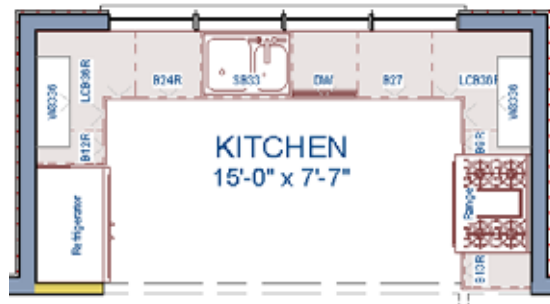
Creating a Custom Countertop

Now we'll create a kitchen cabinet island, and add a custom countertop with an overhang. For more information, see "Editing Custom Countertops" on page 632 of the Reference Manual.

To create a cabinet island

1. Select **Build> Cabinet> Base Cabinet** 🗄.
2. Click to place a base cabinet in the kitchen area, and select it.
3. Click the **Open Object** 🗋 edit button to open the **Base Cabinet Specification** dialog.
   • On the General tab, specify a **Height** of 33", a **Width** of 33" and a **Depth** of 27";
   • On the Front tab, create 3 **Double Drawer**s each having an **Item Height** of 7 1/2":
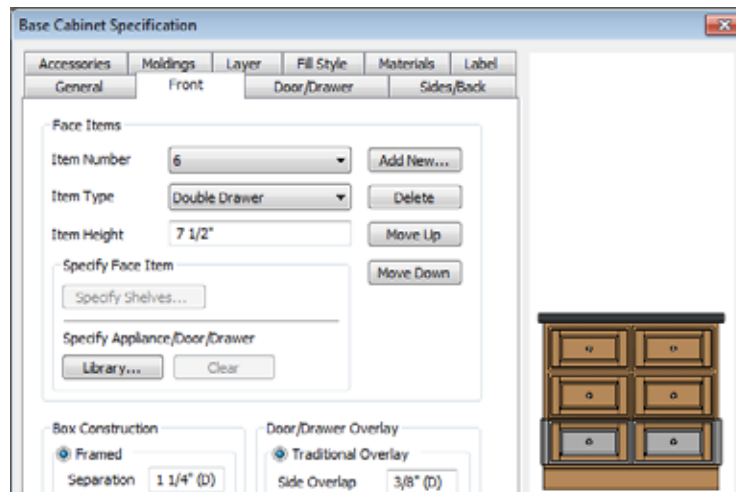
      • On the Door/Drawer tab, set the Drawer Handle to **Knob**;

      • Click **OK**.

4. With the Base Cabinet still selected, click on the **Copy/Paste** 🔧 edit tool, and paste a copy of this modified cabinet next to the first, as in the image below.


5. For the next portion of this tutorial, we will turn off the display of cabinet labels by selecting **Tools**> **Display Settings**> **Display Options** ☑, scroll down to the Cabinets, Labels layer, remove the checkmark the **Disp** column, and click **OK**.

To create a custom countertop

1. Turn on **Object Snaps** 🔲.

2. Select **Build> Cabinet> Custom Countertop** 🔲.

3. Click and drag to draw a rectangular polyline that will become our custom countertop.
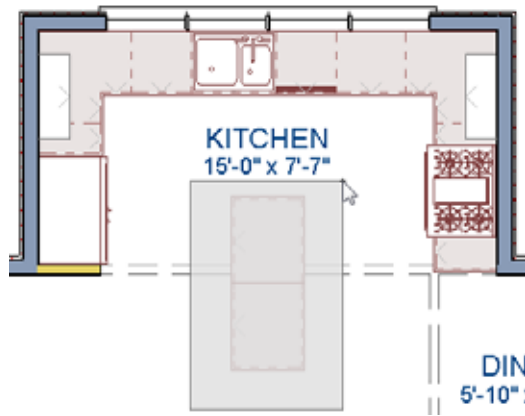
4. Select the custom countertop and use the edit tools to edit its shape as shown in the following images, where we have applied an Angle Hatch Fill Style to the Custom Countertop for easy viewing.

    • Use the **Break Line** and **Change Line/Arc** edit buttons to add edit handles and change the polyline's shape. For more information, see "Break Line" on page 212 of the Reference Manual.

    • You can also draw **End to End** dimensions from the Base Cabinet to the edge of the Custom Countertop, and use those dimensions to type in a precise value for the distance. For more information see "Moving Objects Using Dimensions" on page 932 of the Reference Manual.

5. Let's create a **Full Camera** 📷 view and take a look.

6. Finally, let's return to the Floor Plan view, add one more Wall Cabinet and Soffit above it on the right side of the kitchen, and resize them so that they are slightly wider than the Range below them.

Creating Architectural Blocks

Groups of items can be blocked together and saved to the library for use in other plans.

To create an architectural block
1. While in Floor Plan view, group select all objects you would like to include in the architectural block.
2. One way to group select the objects is to hold down the **Shift** key and select additional objects to add them to the selection set. There are many other ways to select and group select objects. For more information, see "Selecting Objects" on page 166 of the Reference Manual.
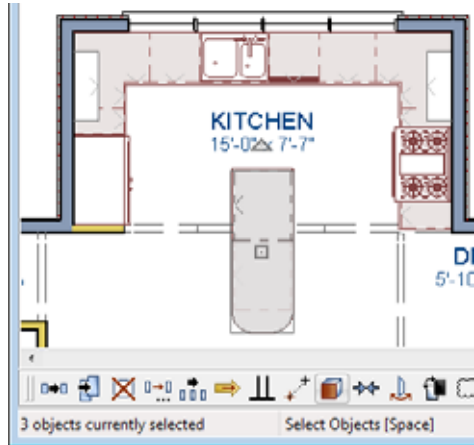
3.   Click the **Make Architectural Block** ◼ edit button.

To add objects to the library
1.   If it is not still selected, select the architectural block.

2.   Click the **Add to Library** ▮+ edit button to add the cabinet to the User Catalog folder in the Library Browser.

3.   Right click on the Base cabinet name in the Library Browser and select Rename to change this cabinets name to Kitchen Bar.

4.   Now click and drag the newly named Kitchen Bar cabinet into the appropriate User Catalog folder that you have created for it, such as Base Cabinets.

To explode an architectural block
1.   Select an architectural block.

2.   Click the **Explode Architectural Block** ◼ edit button.

Working in Cross Section/Elevation Views

Like other objects, cabinets can be edited in cross section/elevation views. This method of editing is very powerful and allows objects to be edited easily in vertical space. Next we'll edit wall cabinets and add a range hood. For more information about working in 3D views, see "Working in 3D" on page 848 of the Reference Manual.

To create a cross section/elevation view

1. In floor plan view, select **3D> Create Orthographic View> Cross Section/Elevation** 🏠.
   Click and drag a line of sight that intersects the group of cabinets that includes the range.

2. **Zoom** 🔍 in on the kitchen.

To edit the cabinets in a cross section/elevation view

1. Click the **Select Objects** 🔍 button, then click on the wall cabinet above the range, which
   should have double doors and be slightly wider than the base cabinet below it.

2. Click on the cabinet's bottom edit handle and drag it upwards.

3. When the temporary dimension indicates that the cabinet height is 18 inches, release the mouse button.

> Note: If you do not see Temporary Dimensions Displayed, select CAD> Dimension> Display Temporary Dimensions ⬚ to toggle this feature back on.

To place a range hood
1. Find a range hood from the Fixtures Library (Architectural> Appliances> Hoods> Large) and select it for placement.
2. Click above the range to place the hood.
3. If necessary, adjust its height and size using its edit handles.
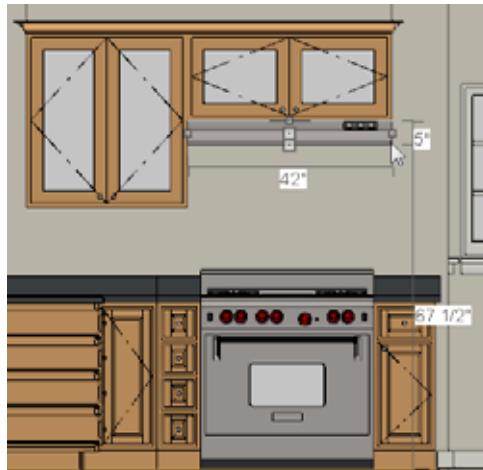
Finishing Touches

You may want to add a few finishing touches.

• While we're at it, let's add some additional interior design elements from the Library Browser, including stools to our new bar in the kitchen (Interiors> Furniture> Seating> Stools).

• Add furniture to the dining nook and change the flooring to match the kitchen.

• Add a table and some chairs to the dining area.

• Continue placing objects from the Library Browser to customize the remainder of the house design.

To view our kitchen using the Cross Section Slider and Final View

1. In floor plan view, click **Fill Window** ⬚.

2. Create a **Full Camera** 📷 view that starts from the exterior and release the mouse button in the kitchen. See "To create a camera view" on page 46.

3. Use the **Mouse-Orbit Camera** 🔄 tool to adjust the camera's perspective. If you want, you can turn off the display of the backdrop in the **3D View Defaults** dialog. For more information, see "3D View Defaults Dialog" on page 824 of the Reference Manual.

4. Select **3D> Camera View Options> Cross Section Slider** 🔲 to open the **Cross Section Slider** dialog.
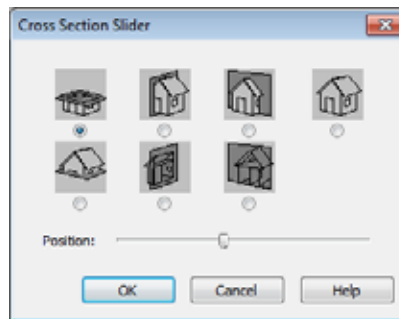
5. Select the flat cut line and use the position slider to specify the location of the cutting plane. See "Cross Section Slider" on page 847 of the Reference Manual.

6. Select **3D> Camera View Options> Final View** 🏠 to create a higher quality final view.

17

7. In a future tutorial, we will be returning to this plan file, so be sure to **Save** 💾 your work.

If you would like, you can continue working on this plan in the Landscaping Tutorial. To learn how to arrange views of your model on a page for printing, see the Layout Tutorial.