

Landscaping Tutorial

This tutorial was written to help you learn how to use Chief Architect's Terrain tools. In this tutorial, you will learn how to add elevation information to your terrain, how to create terrain features, and how to add plants and other objects from the library.

It is a good idea to become familiar with the terrain tools before beginning your own terrain project.

In this tutorial, you will learn about:



- Creating a Terrain Perimeter
- Creating a Walkout Basement
- Creating a Retaining Wall
- Adding a Driveway
- Adding Library Objects to Your Plan

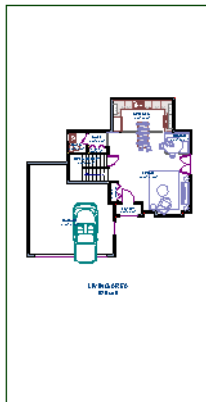
This tutorial continues from where the House Design Tutorial left off, so you may want to save this plan using a new name to archive your previous work.


Creating a Terrain Perimeter


The Terrain Perimeter is a closed polyline that defines the boundary of the terrain that generates in 3D views, and of the contour lines that generate in floor plan view. It can also be used to represent a lot boundary. See “Terrain Perimeter” on page 688.

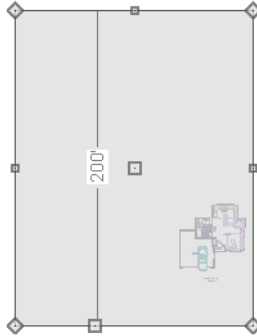
To create and resize a terrain perimeter

1. On Floor 1 of your plan, select **Terrain> Create Terrain Perimeter**  from the menu or click the corresponding toolbar button. See “Toolbar Arrangement” on page 125 of the Reference Manual.
 - If this menu option is not available in a given plan file, a terrain perimeter already exists.
2. Select **Window> Fill Window**  to fill the screen with the terrain perimeter.



3. Select **CAD> Dimensions> Display Temporary Dimensions**  and make sure temporary dimensions are turned on. When they are enabled, a checkmark displays next to the item in the submenu instead of the tool icon.
4. Select the terrain perimeter by clicking on either of the vertical edges. Notice that a temporary dimension displays, indicating that the selected edge of the terrain perimeter is 100 feet from the opposite edge.
5. With the terrain perimeter edge selected, click on the temporary dimension. Enter 150 feet using an apostrophe to denote feet (150'). The program will default to inches if no apostrophe is included. For more information about using dimensions to relocate objects, see “Moving Objects Using Dimensions” on page 971 of the Reference Manual.

6. Press the Enter key on your keyboard and repeat this process for the adjacent edge of the terrain perimeter, creating a rectangle that is 150 feet by 200 feet.
7. Click **Window> Fill Window**  to fill the screen with the terrain perimeter.

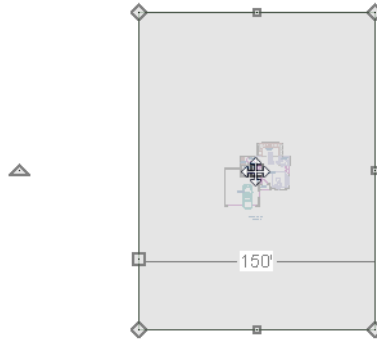


The Reference Grid, or Virtual Graph Paper, is a visual aid that helps create a sense of scale when drawing. Grid squares are 12 inches per side. The Reference Grid is turned off for these tutorials but can be turned on or off in the Plan Defaults dialog. See "General Plan Defaults Dialog" on page 82 of the Reference Manual.




Your house may already be centered on the terrain perimeter. If it is not, you can move it.

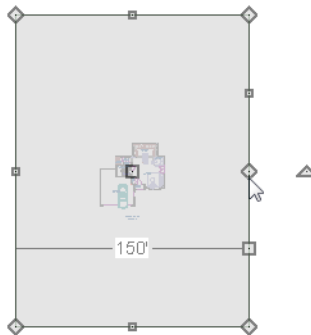
To move the terrain perimeter

1. Select the terrain perimeter and place your pointer over the move edit handle.
2. Move the terrain perimeter so that the house is centered.

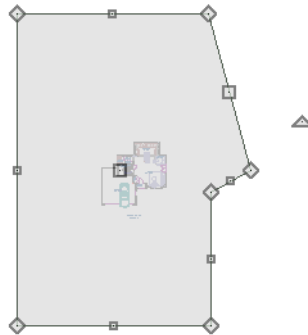



To edit the shape of the terrain perimeter

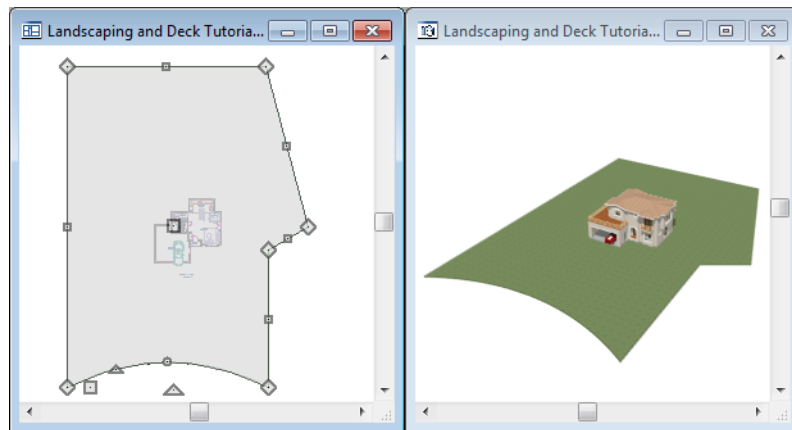
1. In addition to adjusting the size of your rectangular terrain perimeter, you can also use the **Change Line/Arc**  and **Break Line**  edit tools to modify its shape.
2. To place a break on the right segment of the Terrain Perimeter, creating a new corner edit handle at that location, and two separate edges on either side of that handle, use the **Break Line**  edit tool.



3. You can then use the edit handle to adjust the size and shape of the Terrain Perimeter. For more information, see “Editing Closed-Polyline Based Objects” on page 194 of the Reference Manual.



4. Select the bottom edge of the Terrain Perimeter, and click on the **Change Line/Arc**  edit button, and notice that this segment changes in to an Arc, which can then be modified using its edit handles. For more information on modifying arcs, see “Editing Arc Based Objects” on page 184 of the Reference Manual.





5. Once you have finished modifying your terrain perimeter, you are ready to move on to the next section of the tutorial.

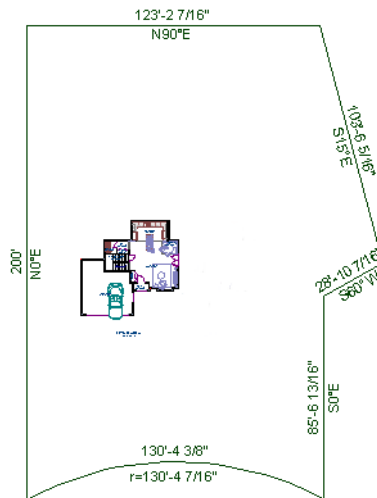
Displaying Lot Line Information

When plans are submitted for approval, bearing information for the lot perimeter is often required.

To display bearing information

1. Select the terrain perimeter and click the **Open Object**  edit button.

2. On the Line Style tab of the **Terrain Specification** dialog, check **Show Length** and **Show Angle**, then click OK. See “Terrain Specification Dialog” on page 703 of the Reference Manual.
3. Select **Edit> Default Settings**  to open the **Default Settings** dialog, browse to **CAD> General CAD** and click on the Edit button to open the **CAD Defaults** dialog. See “To display bearing information” on page 5.
4. Click the radio button to Display Line Angle as **Quadrant Bearing** and click OK.
5. Click Done to close the **Default Settings** dialog, and move the terrain perimeter so that it looks similar to the image below.




Creating a Walkout Basement



Our terrain is currently flat because there is no elevation data in the plan. For more information about elevation information, see “Elevation Data Tools” on page 690 of the Reference Manual.

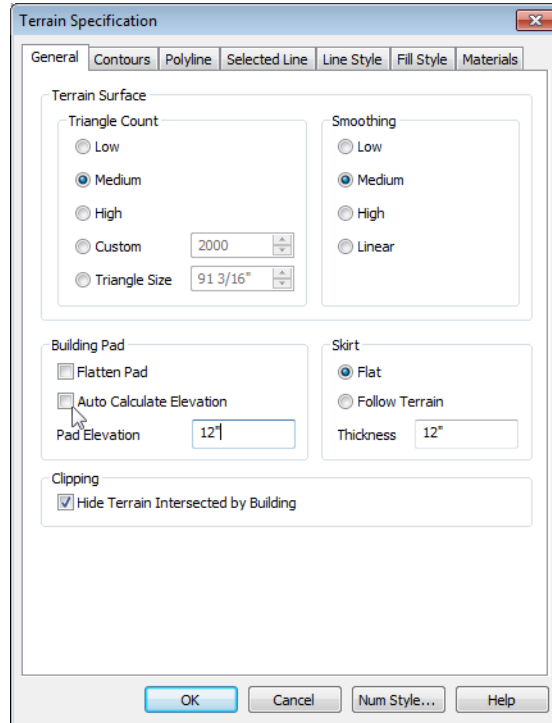



You can display all of the tools in the Terrain menu on your toolbars by using the Terrain Configuration. See “Toolbar Configurations” on page 126 of the Reference Manual.



To add elevation information to your plan

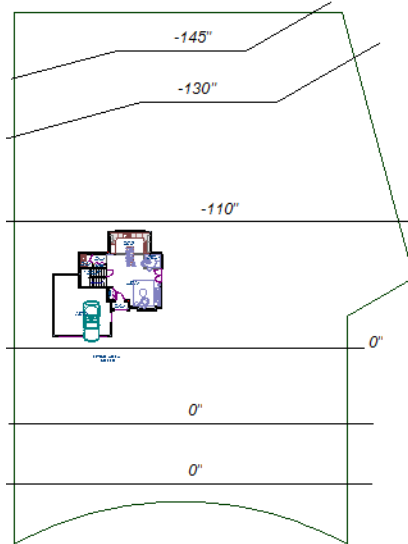
1. Select **Window> Fill Window**  to fill the window with the terrain perimeter.


2. Using the **Select Objects**  tool, select the Terrain Perimeter and click on the **Open Object**  edit button to display the Terrain Specification dialog.
3. On the General tab, make sure **Flatten Pad** and **Auto Calculate Elevation** are unchecked, and change the **Elevation** to 12 inches.

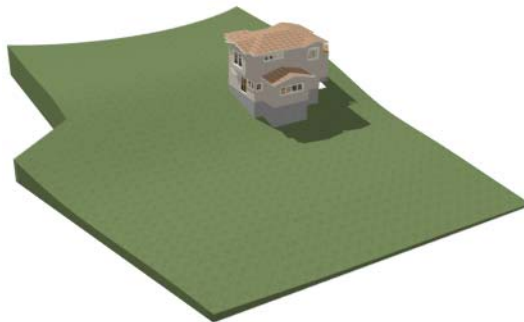


- **Flatten Pad** flattens the building pad around the house. By unchecking this, the terrain will be allowed to slope where it intersects the house.
 - **Auto Calculate Elevation** places the house at average terrain height. By unchecking this, we can control the building's height relative to the terrain.
 - The **Elevation** is the distance between the default floor height of Floor 1 and a terrain elevation of 0". We will specify the Elevation as 12 inches to lower the terrain 12 inches below the first floor.
4. Click OK to close the Terrain Specification dialog.
 5. Next, Select **Terrain> Elevation Data> Elevation Line**  and draw elevation lines as shown in the following image. An elevation line drawn near the end of another will merge.

- To enter elevation information, click the **Select Objects**  button, select an elevation line, and click the **Open Object**  edit button to open the **Elevation Line Specification** dialog. Values entered are in inches unless the foot (') mark is added. Negative values should be preceded with a hyphen (-).



- Select **3D> Create Perspective View> Full Overview**  to create a full overview. Pressing the "I" key or the "O" key moves the camera in or out.

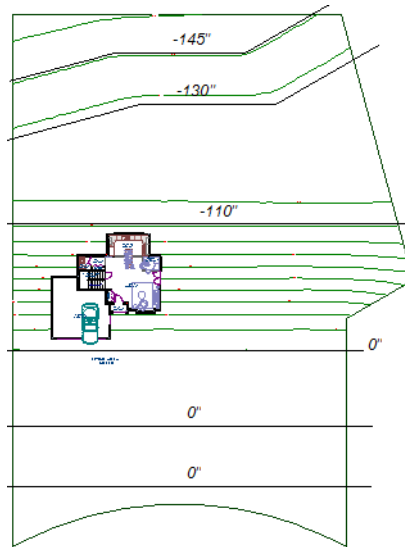


Creating a Retaining Wall


Adding a retaining wall helps create a flat building pad near the garage. For more information see “Retaining Walls” on page 700 of the Reference Manual.

To draw a retaining wall

1. Return to floor plan view. Note the generated contours.



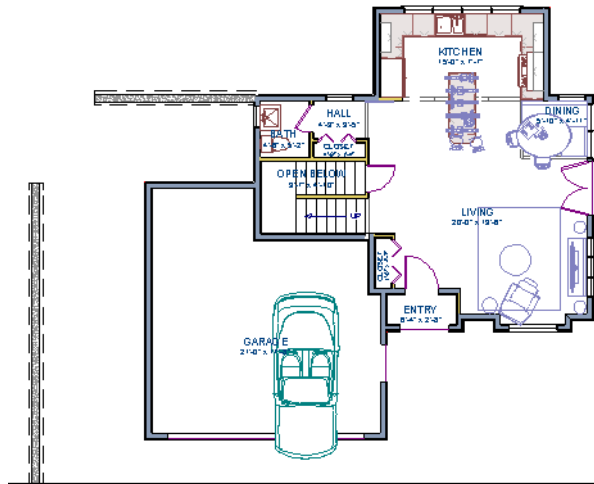
2. To make it easier to draw, you can turn off the display of primary contour lines in 2D.



Select **Tools> Display Settings> Display Options**  to open the **Layer Display Options** dialog. Remove the check from the Disp column for the layer “Terrain, Primary Contours”. See “Layer Display Options Dialog” on page 144 of the Reference Manual for more information.

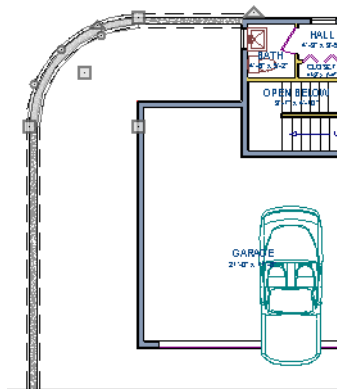



Open 3D views are redrawn whenever changes are made to the plan, even if the 3D views are not active. Closing 3D views when they are not needed will help maximize your computer's performance.

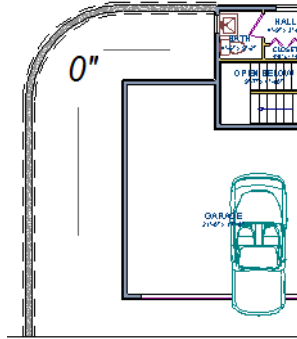
3. Select **Terrain> Wall and Curb> Straight Retaining Wall** . Draw two straight wall sections as shown in the following image.




4. Select **Terrain> Wall and Curb> Curved Retaining Wall**  and draw a curved retaining wall that connects at both ends to the two straight sections. Don't worry about the angle just yet, we'll adjust the curve in the next step.
5. Select the curved section then click the **Make Arc Tangent**  edit button to open the **Radius of Tangent Curved Wall** dialog. This dialog gives you a few alignment options. For more information, see "Make Arc Tangent" on page 278 of the Reference Manual. Click OK to make the curved wall section tangent to both straight sections.



- Now add two more Elevation Lines  just inside the retaining wall. This helps designate the height of this area when terrain is generated. This elevation line can stay at its default height of 0' 0".



- Take a look in a **Full Overview** . Your plan should look similar to the image below.






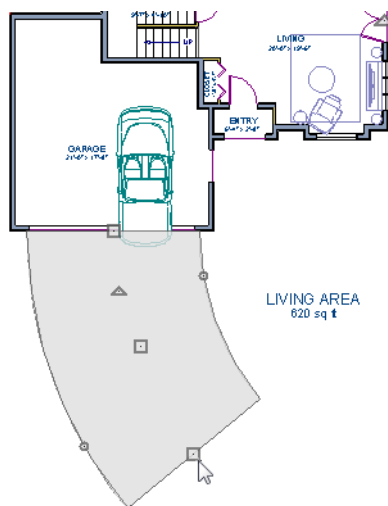
Adding a Driveway

Now we'll add a driveway to our plan.

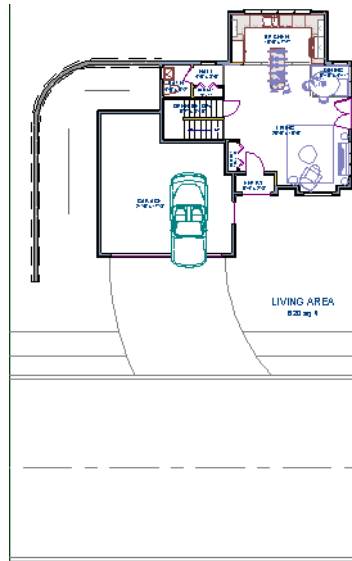
To add a driveway to the plan



- Select **File> Close** to return to floor plan view. You should still be on Floor 1.

2. Click the **Fill Window**  button to fill your screen with the terrain perimeter.
3. Turn off the display of the layer, "Terrain, Primary Contours". If you cannot remember how to do this, see "Creating a Retaining Wall" on page 9.
4. Select **Terrain> Driveway> Spline Driveway**  then click and drag to draw driveway sections. Driveway sections drawn using the **Driveway**  tool will merge when drawn end to end.
5. Click and drag the driveways edit handles to customize its shape as desired. See "Editing Spline Based Objects" on page 201.



6. Next, add in a **Terrain> Road> Straight Road**  and **Terrain> Sidewalk> Straight Sidewalk**  to complete the design.






7. Finally, take a look at your plan in a **Full Overview**  to see the results. Recall that you can select **3D> Camera View Options> Final View**  to smooth surface edges and improve the quality of the view.

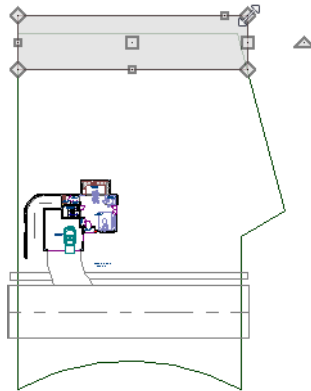





Adding Terrain Features

Now we'll add a beach, a water line, and a pathway to our plan. For more information about terrain features, see "Terrain Feature Tools" on page 696 of the Reference Manual.

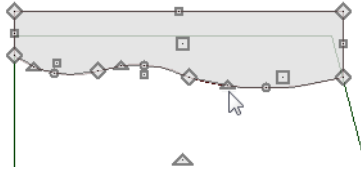
To create a beach


1. Close the overview and return to floor plan view.
2. Select **Window> Fill Window**  then select **Window> Zoom Out**  to give us some working space outside the terrain perimeter.
3. Select **Terrain> Feature> Rectangular Feature**  and draw a terrain feature that extends to the boundaries of the terrain perimeter.



4. Select the terrain feature and the **Open Object**  edit button to open the **Terrain Feature Specification** dialog.
 - On the General tab, the **Height** should be at 0 inches.
 - On the Materials tab, select the terrain feature and click the **Library Material** button to open the **Select Library Object** dialog and assign a sand material from the landscaping library.
 - Click OK to close the **Select Library Object** dialog then click OK to close the **Terrain Feature Specification** dialog and return to floor plan view.
5. With the Terrain Feature still selected, use the **Break Line**  edit tool to place two breaks in the front of the rectangular feature.
6. Next, select one of the segments you have created, and click the **Change Line/Arc**  edit tool, and use the triangular edit handle to adjust the shape of the curved segment, and


repeat this procedure for the remaining front segments of the Terrain Feature, as in the image below.

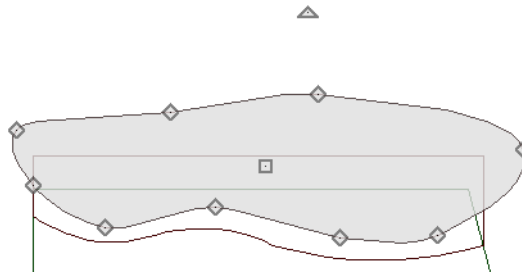



7. Take a look at our new beach in a **Perspective Full Overview** .




To create a body of water

1. Return to floor plan view, select **Terrain> Water Feature> Round Pond**  and draw another spline feature, within the existing terrain feature (the beach) and resize it similar to the image below.

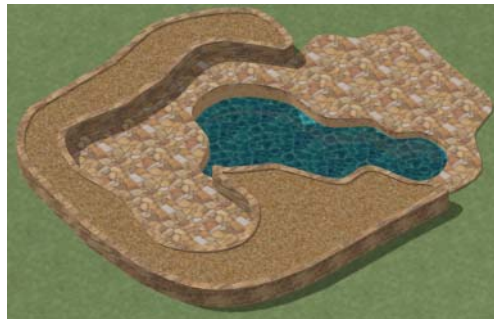


2. Select the pond and click the **Open Object**  edit button. On the General tab of the **Terrain Feature Specification** dialog, raise the **Height** to 1 inch. This will display the water material above the beach.

3. Click OK and take a look in a **Perspective Full Overview** . Notice that only the portion of the terrain feature that is included within the terrain perimeter is modeled.




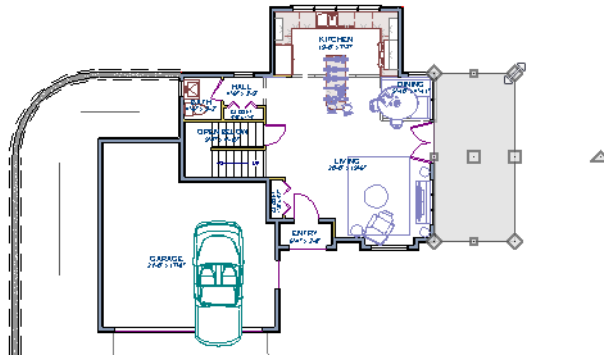
4. Using the method described above, you can quickly see how it is easy to create a terrain features, customize their height, material, shape and even combine them together to create nearly any type of terrain feature you might want in your plan.





To use an Elevation Region


An Elevation Region contains absolute elevation data for an enclosed region and is ideal for creating a flat surface in your terrain.

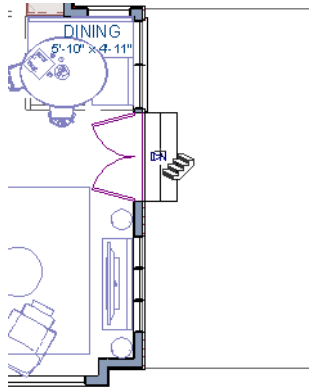
1. Select **Terrain> Elevation Data> Elevation Region**  to activate the tool, then click and drag out a rectangular region to the right of the structure in front of the door.



2. Once the Elevation Region is placed, select it and click on the **Open Object**  edit tool to display the Elevation Region Specification dialog, and enter in an Elevation of -8.
3. Click OK and take a look in a **Perspective Full Overview**  to see the changes that this makes for our Terrain.



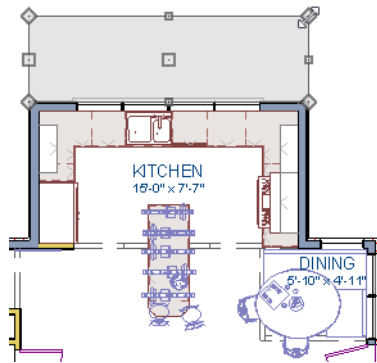
4. Let's return to floor plan view and select **Build> Stairs> Click Stairs** , then click outside of the doorway to create a set of stairs from our door down to the terrain of our newly created Elevation Region.





To use a Terrain Modifier

A typical walkout basement has an upper flat region where you enter the house on the first floor, and a lower flat region where you walk out to ground level from the basement.

1. In floor plan view, select **Terrain> Modifier> Flat Region**  and draw a flat region directly in front of the Kitchen windows.






2. If you have not already placed a door for your walkout basement, select **Tools> Reference Floors> Down One Floor**  and place a door in the wall below the kitchen windows.
3. Click OK and take a look in a **Perspective Full Overview**  to see the changes that this makes for our walkout basement.



Adding Library Objects to Your Plan



The library contains many objects that can be added to a plan such as plant images and landscaping blocks. There are two ways to find objects in the library: by browsing and by searching. For more information about library objects, see “The Library” on page 789 of the Reference Manual.

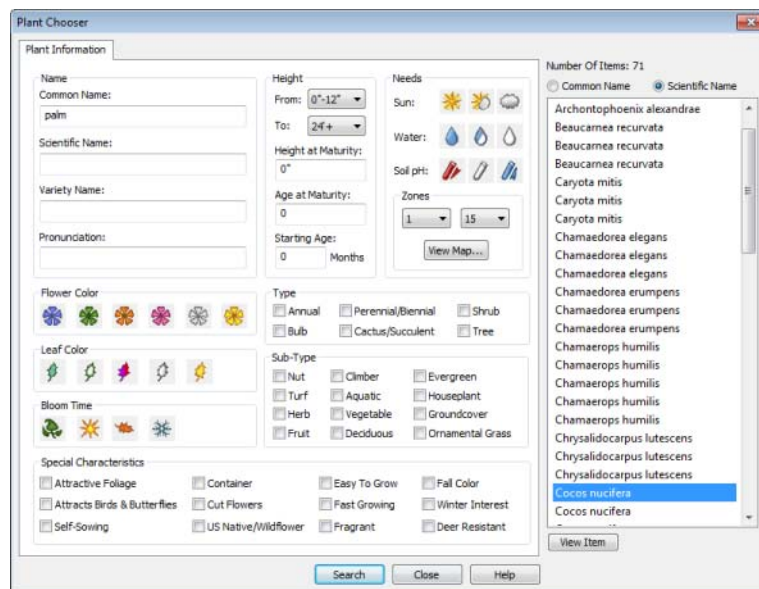
To browse the Plants library category





1. If the Library Browser is not open, select **Library> Library Browser**  to open it.
2. Click the + beside Plants to expand this category  and see its contents.
3. Click the + beside Trees to expand this folder  and view its contents, as well.
4. Expand the Deciduous folder and note the many tree species to choose from. Many of these folders contain still more subfolders with different varieties of that species.

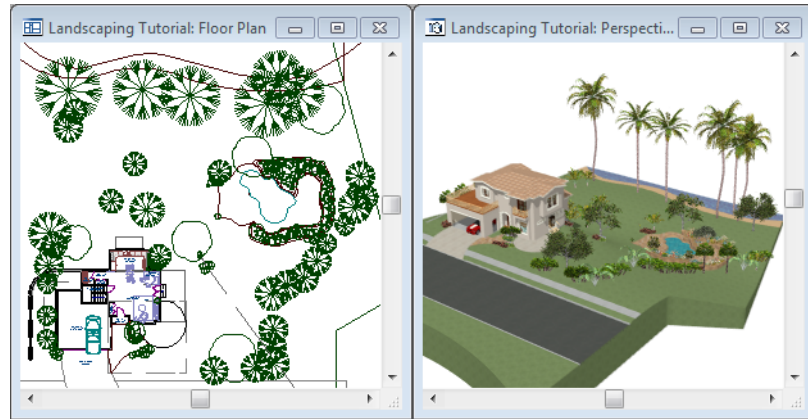
If you know exactly what tree you would like to place in your plan, browsing to it is an efficient way to find and select it; however, with so many options available it is often helpful to perform a search.



To search using the Plant Chooser

1. With the Library Browser still open, click the **Plant Chooser**  button at the bottom of the Library Browser to open the **Plant Chooser** dialog. This dialog can also be opened by selecting **Terrain> Plant> Plant Chooser** .
2. On the Plant Information tab, enter “palm” in the **Common Names** field, and click the **Search** button to find palm trees in the Library Browser.



3. Select a *Cocos nucifera* from the search results and click the **Close** button. This locates and selects this plant in the Library Browser for placement.
4. Click in floor plan view or a 3D view to place the selected plant at that location. You can continue placing the selected plant image until another tool or library object is selected.
5. Once you have placed a grouping of plants, hold down the Shift key on your keyboard and drag a marquee around the plant objects and click the **Make Architectural Block**  edit tool to block these items together.
6. In floor plan view, click the **Select Objects**  button, select the stepping stone, click the **Copy/Paste**  edit button, then click the **Sticky Mode**  secondary edit button.
7. Click in floor plan view to paste copies of the group selected objects. Continue pasting copies until you have created a pathway that leads to the house.
8. Repeat this process for any additional plants or groupings of plants that you want to place in your design.



1. In the Library Browser , browse to the Chief Architect Core Catalogs folder.
2. The Exteriors library contains a selection of landscaping, deck and patio accessories, outdoor furniture, and other objects that you can place in your plan.
3. Outdoor furniture such as a garden bench are located in the Outdoor Living library folder. Library objects may need to be rotated, and can be accented with additional plants.
4. Additional objects, such as Fencing, Sprinkler Heads, exterior fixtures, and other library browser objects such as rocks can also be added to customize your designs landscaping.
5. Once you have completed adding items to your landscaping design, create a **Perspective Full Camera**  view to see the results.

