Tip Sheet

ArchiCAD 11
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Graphisoft New Zealand
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3D Cutaways

Building structures can easily become very intricate and hard to convey with just 2D details, sections and floor plans. A 3D view of the model can clarify much of the data, just like the saying 'A picture is worth a thousand words.'

Because ArchiCAD is primarily a 3D CAD package, we tend to model much of our data anyway which makes 3D explanation and presentation very quick and easy. This tip will show you different techniques on how to achieve these views.

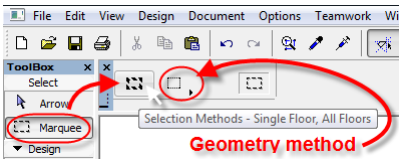
How can I create a 3D Cutaway?

The main point to remember is that anything you can view in ArchiCAD's 3D window can be exported or copied for use in documentation and presentation. Although the following tools are excellent for showing relationships between structures and building spaces, it does not replace the need to use the section tool for sectional building documentation.

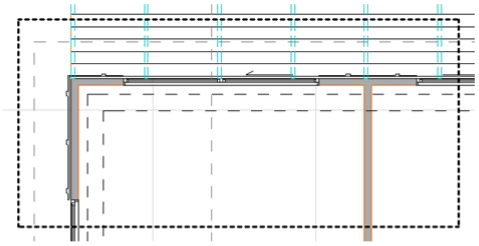
Simple Cutaway with the Marquee Tool

The marquee tool allows us to segregate areas of a plan as well as in 3D. By using a multi-storey marquee we can do a full cutaway through all stories of our project.

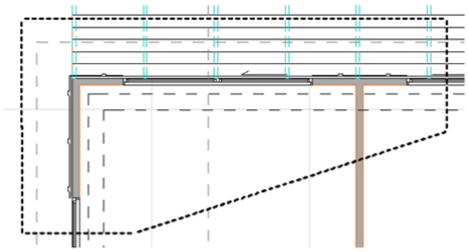
To do this, set your Marquee to **All Floors** within the 'info box' and define the geometry method you would like to use. In this example we have used a rectangle. Now draw the shape of the marquee defining your cutaway perimeter.

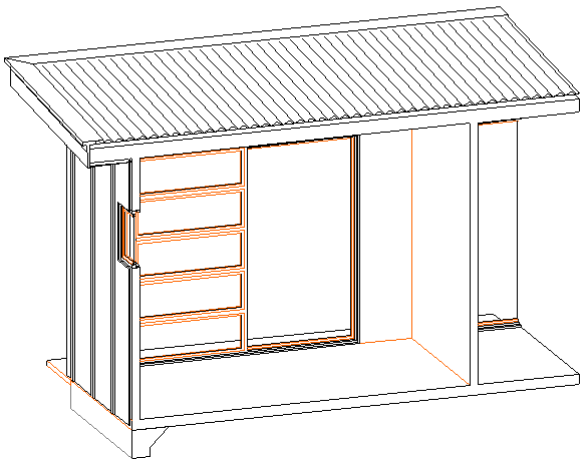


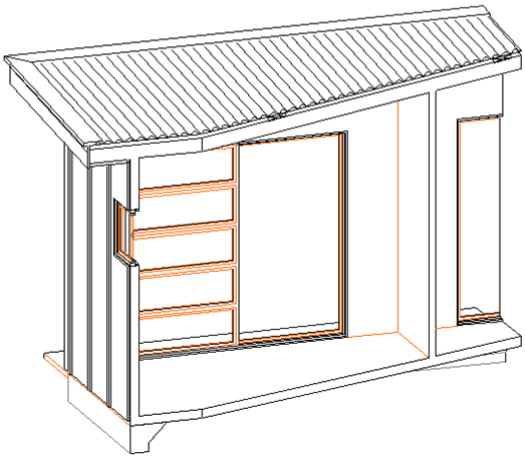
Go to the 3D window and view the result. If it is incorrect, drag the marquee to a new location or draw another.



Using the different marquee geometries you can give your cutaway a specific shape to workaround any elements you wish to omit from the view.

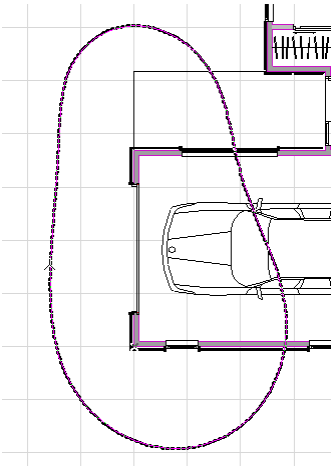






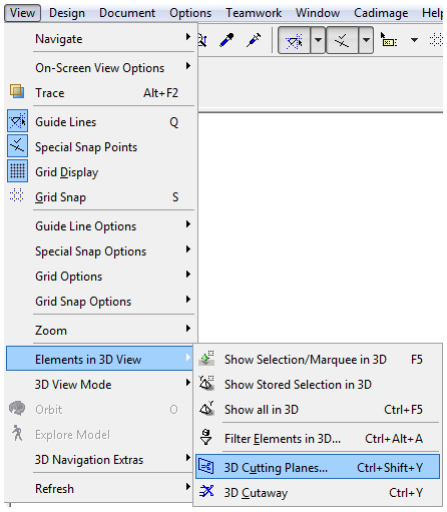
For presentation cutaways you may prefer to use the marquee tool in conjunction with the magic wand to create an unusual cutaway shape. This will make rendered cutaway images a little more interesting. This method obviously is not ideal for formal documentation.

To create a magic wand based marquee, create a spline on the floor plan the shape of your intended cutaway. Activate the marquee tool and set to either Single Floor or All Floors from the info box. Hold down the space bar and click onto your spline. Now go to the 3D window.



Advanced Cutaway

For full control on a cutaway you can use the **3D Cutaway** command. Before you do this you need to define the planes that will create the cutaway. The cutting planes are setup under **3D Cutting Planes**, go to **View > Elements in 3D View > 3D Cutting Planes**. You need to be in the 3D window and then choose this option, make sure that your whole model is visible first.

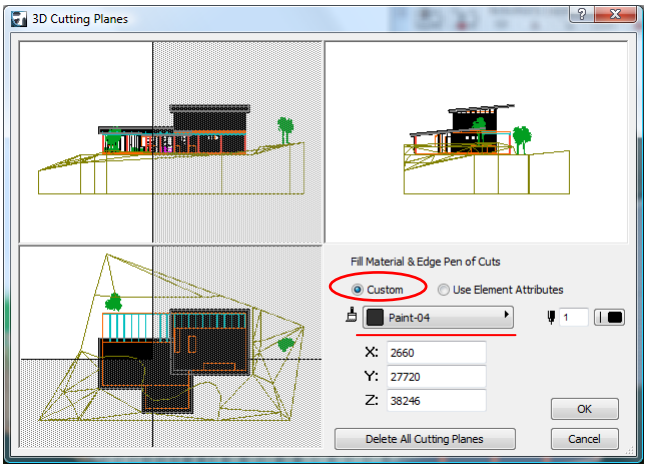


The 3D Cutting Planes dialog box will show you three views: floor plan, side and front elevations. If it doesn't show you three views click on the **Delete All Cutting Planes** button.

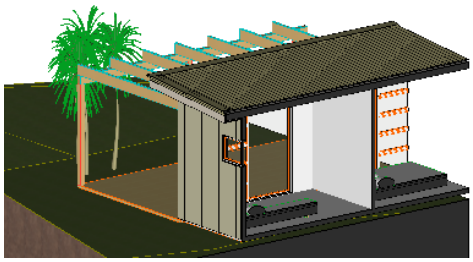
By clicking into one of those three views you will be able to define a cutting plane and then a masking direction (hint: use shift to constrain). Shown here we have applied a cutting plane along the centre of our floor plan and then halfway through our elevation.

You can set the Edge Fill material for cut surfaces by selecting Custom and choosing a material (typically a Paint colour).

Once you have defined your cutting planes and Material, click **OK** and then go to the 3D window. At this stage you will still see your full model.

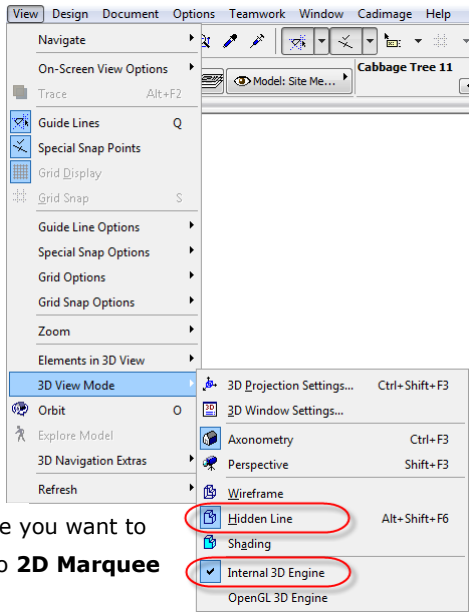


To activate and deactivate your cutaway go to **View > Elements in 3D View > 3D Cutaway**. Now you should see in 3D your cutaway result.



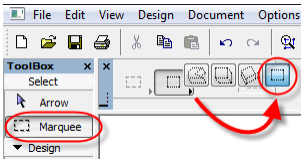
Editing Cutaway Data

Copying and Pasting from the 3D Window

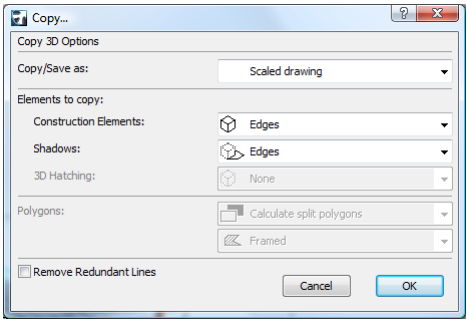


The results you receive from the 3D cutaways can be copied and pasted into other views for custom editing. However, by doing this you are exploding them and making them static. To copy and paste your cutaway view you must put a 2D marquee over the view in the 3D window you wish to copy.

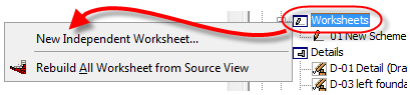
Most likely you would be setting your **3D View Mode** to **Internal 3D Engine** with **Hidden Line** mode under ArchiCAD's **View** Menu which would give you a Hidden Line drawing, ideal for documentation.



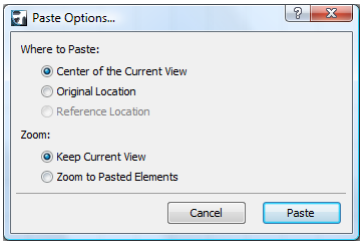
Now go to the 3D window and get into the position/angle you want to copy a view from. Activate the Marquee tool and set it to **2D Marquee** in the Info Box as shown here.



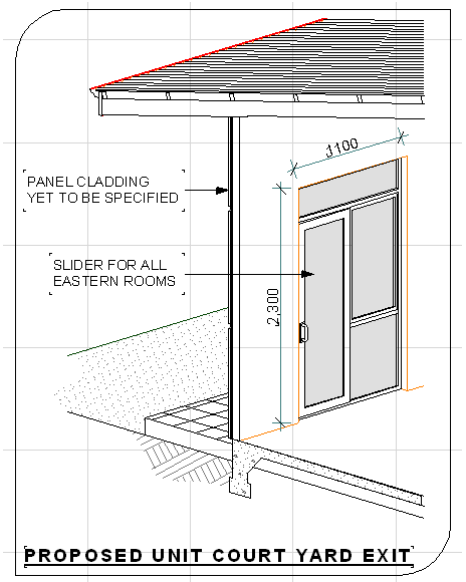
Now draw a marquee over the area in the 3D window that you want to copy and choose **Copy** from the ArchiCAD menu. You will be prompted with a dialog box asking you what you intend to copy. Different options are available depending on the 3D mode. Once you have made your selections in this dialog, click **OK**.



Now create a new Worksheet in which to place our copied data. Within the Project Map right click on **Worksheet** and select **New Independent Worksheet...** Give your new Worksheet an ID and Name. Choose **Paste** select your **Paste Options** and your image will be pasted down in a dotted outline. Clicking inside the dotted outline you can drag around the image, clicking outside will place it down.



Now that it's pasted you can edit, enhance and customise the view adding notation to complete your 3D cutaway.



You may like to transfer this 2D cutaway information to a single layer for easier management. To do this select all of the data from your completed cutaway and choose **Edit Selection Set** in the Info Box as shown here.

Change the layer here which will change all elements selected to your desired layer. NOTE: If you choose to change the layer on the Info Box it will only change the active tool shown in the Info Box.

Not only can you produce cutaways for documentation but you may like to do it for rendered views as well. Sometimes a cutaway render can help a client understand the setup of building structures and the spaces you have designed. Remember most clients can't read plans like you can!