

GRAPHISOFT® ARCHICAD 9

Special Edition Library
Illustrated Windows

Table of Content

1. Introduction	3
2. Placing Windows.....	3
3. Visual Editing	5
4. Parameter Setting	8
4.1 Parameter List.....	8
4.2 Basic Parameters	9
4.3 Custom Settings (Graphic User Interface).....	9
5. Graphic User Interface.....	10
5.1 General Tab Page	10
5.2 Frame	16
5.3 Sash	17
5.4 Casing	23
5.5 Sill	24
5.6 Brick Veneer.....	26
5.7 Arch Type	28
5.8 Shutter.....	30
5.9 2D.....	31
5.10 3D.....	34
6. The Parameter List	36
6.1 Cavity Closure	37
6.2 Materials.....	38
6.3 Options	39
6.4 ArchiFM & Listing Parameters.....	39
7. Dimensioning	40
8. Window Marker	40

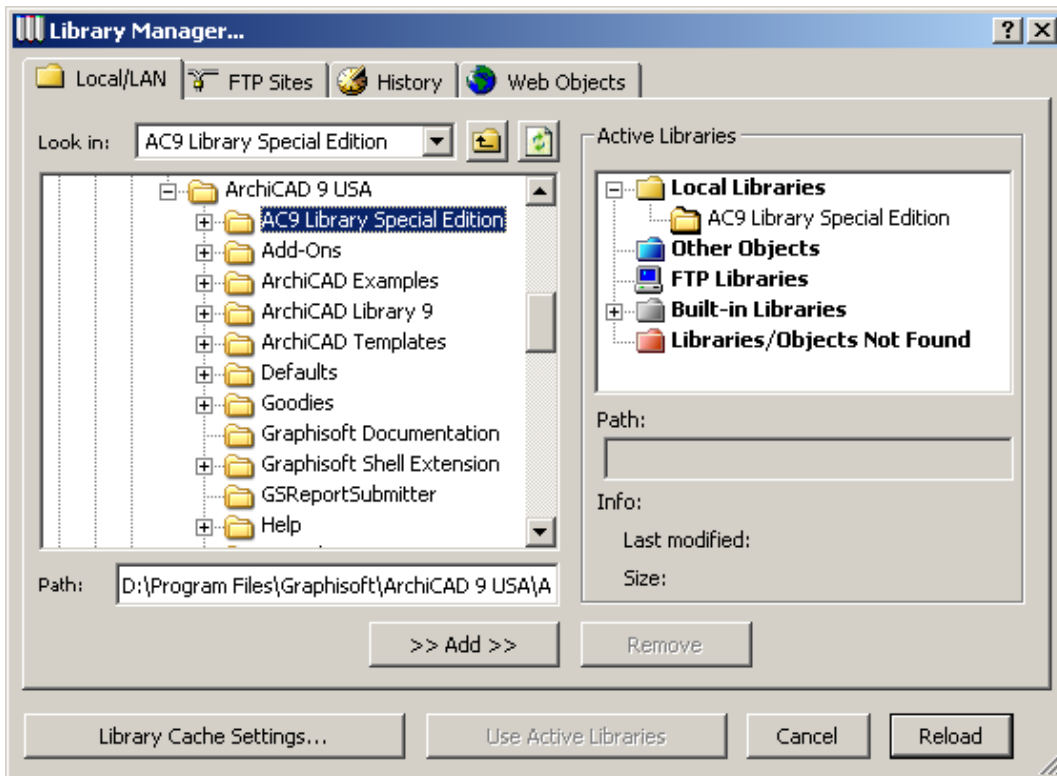
1. Introduction

In this document we would like to introduce you the windows of the *ArchiCAD 9 Special Edition Library*. The window objects in this library are highly parametric and have options for important details such as sash, casing, sill, arch, shutter, trim and many more. There are 82 windows in this library including double hung, casement, gliding awning and special ones. Below we'll describe how you can customize these library parts to your needs and how you can place and modify them.

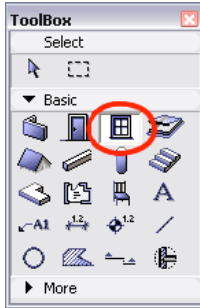
2. Placing Windows

In ArchiCAD, windows can only be placed in walls. Consequently, you must have drawn at least one wall on your floor plan in order to place any window. If you want to use a window from the Special Edition Library you have to load it first.

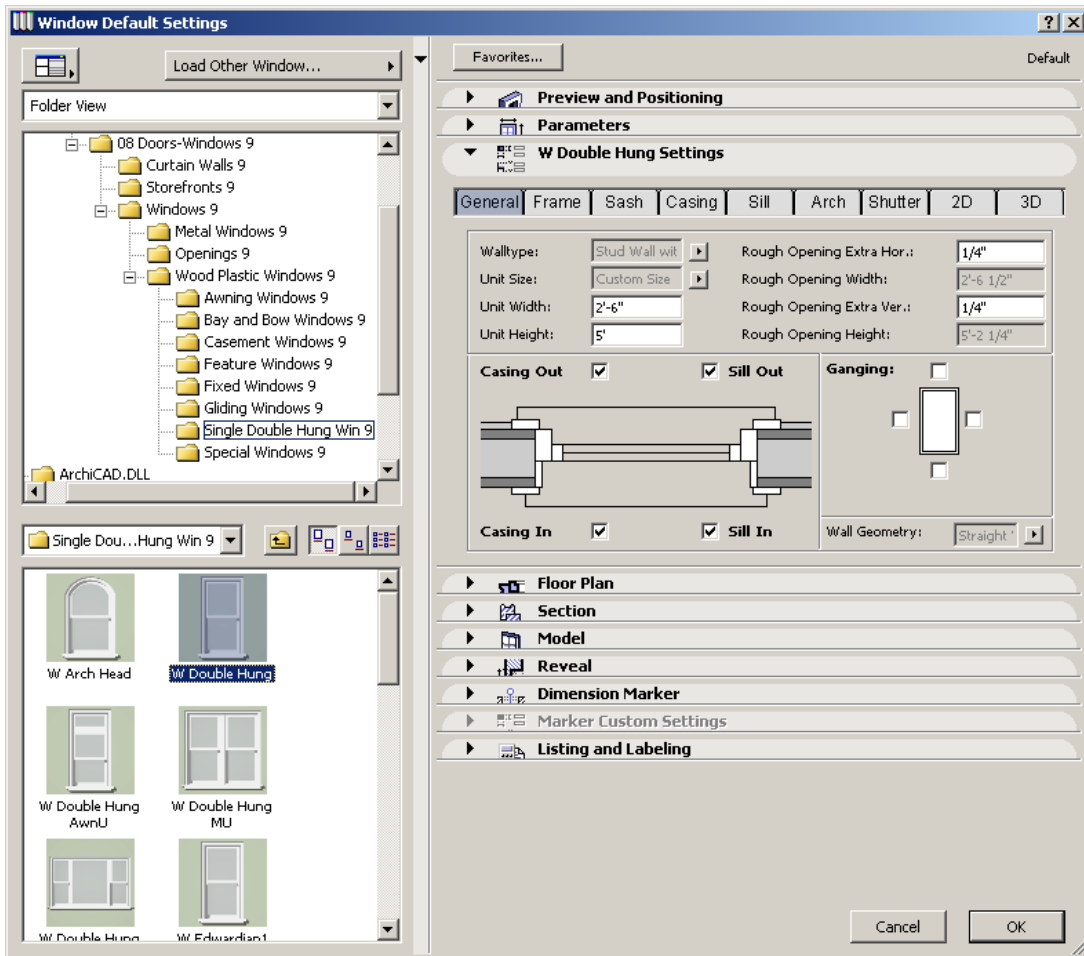
1. Open the library manager, select the “AC9 Library Special Edition” folder and load it.



2. Choose the *Window Tool* from the *Toolbox*

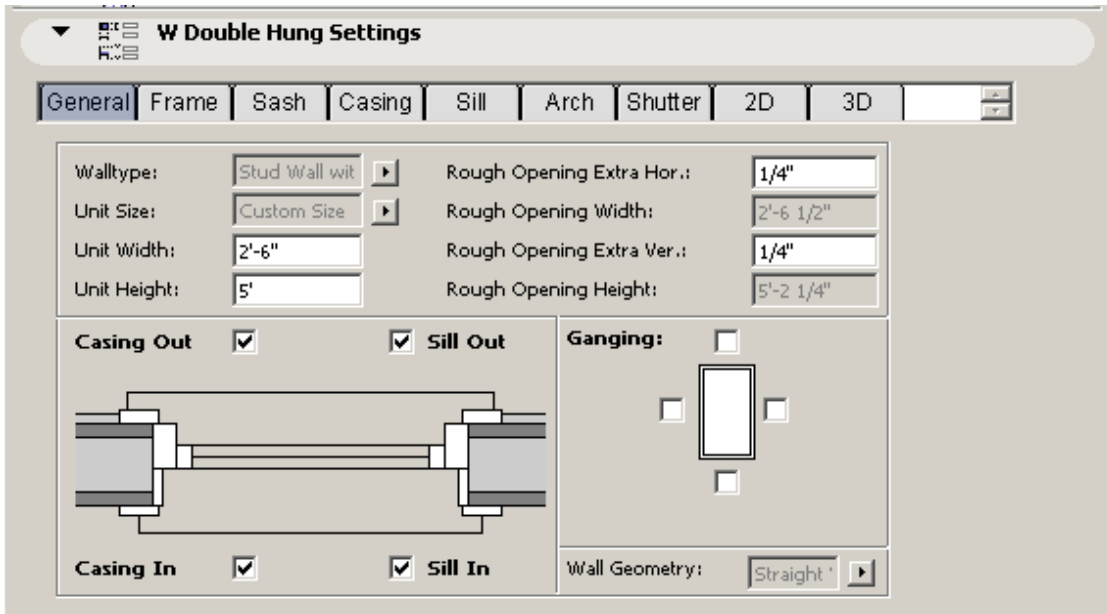


3. Select the preferred window type in the object browser on the left side of the dialog. In this example we'll use the *W Double Hung* window. You will find it under *Object Library 9\08 Doors-Windows 9\Windows 9\Wood Plastic Windows 9\Single Double Hung Win 9*.



4. The selected objects parameters will appear on a graphical user interface on the left side of the object setting dialog. Before you place the window on the floor plan you have to define at least the most important parameters (e.g. size) on the General user interface tab page. *Note: It is very important to set the values for the Wall Type and Wall Geometry parameters in order to get a*

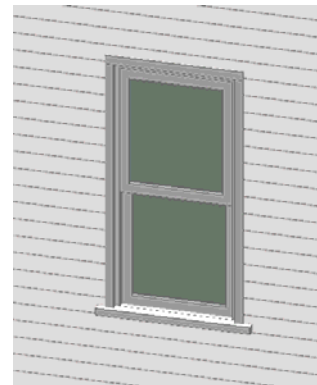
correct result on the floor plan and 3D windows. For more details please read the description of the General user interface page below.



5. After closing this dialog with *OK*, you are ready to place the window. Make sure to insert it in the same type of wall that you've specified in the window setting dialog. Now, define its position on the base line of a wall. With a second click beside the wall you show the outer side of the window.



Floor Plan

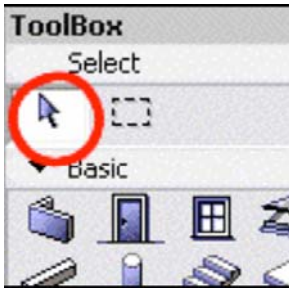


3D View (exterior)

3. Visual Editing

Once the window has been placed, you have the ability to alter some of its properties right on the floor plan. You get immediate graphical feedback from the changes made, that's what we call visual editing.

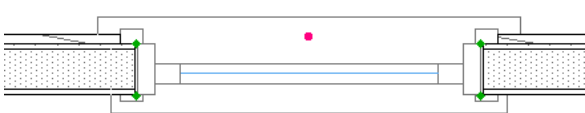
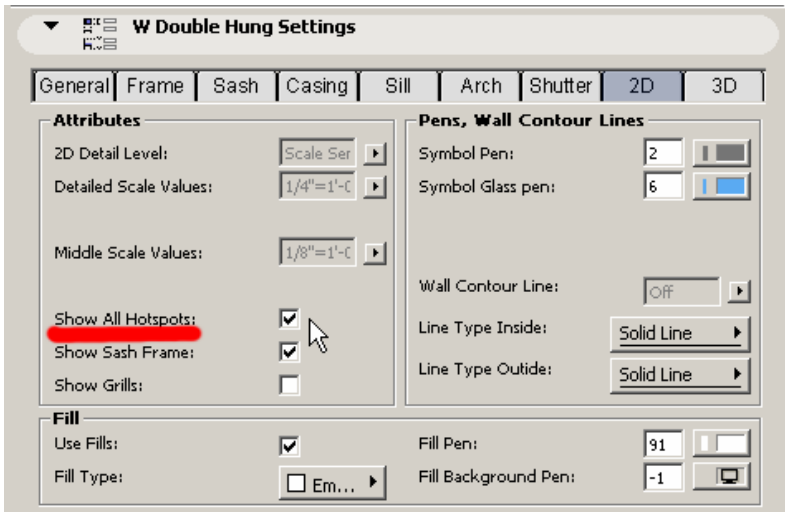
Select the window with the *Arrow Tool*, by clicking on it with the pointer.



The cursor turns into arrow-shaped over the hotspots and into magnet-shaped over other selectable region. When selected, the hotspots of the window become highlighted



Usually you find hotspots on the corners and on other characteristic points of objects. With the *Special Edition Library* windows there are always hotspots on the corner points of the window unit. You can turn on additional hotspots on the 2D user interface tab page with the *Show All Hotspots* option. *Note that these hotspots are not hotspot editable*



Show All Hotspots = OFF



Show All Hotspots = ON

On the floor plan, you can change two different things.

Position of the window

Click once on any of the highlighted hotspots. The pet palette pops up. Choose *Move*. With a second click you specify the size of the displacement. Of course, openings can be moved only in the plane of the wall.



Width

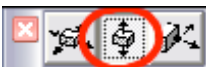
Click once on any of the outer corner points of the window frame. Choose *Stretch* from the popup palette. Specify the new corner with a second click. *Note that hotspots editing is available only if the Custom option is set for the unit size (this is the default).*



In addition to the above two options in 2D, you can also change the vertical position of the window in the 3D view.



Use *Drag horizontally* for changing the position of the door.

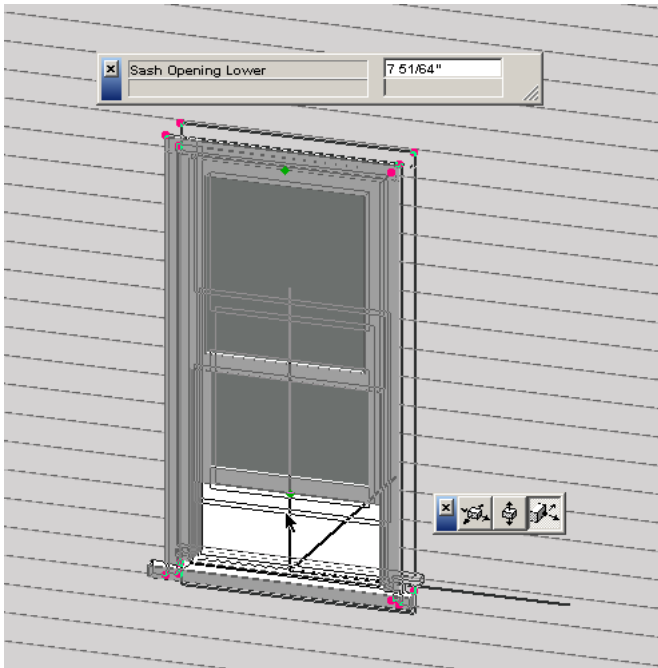


Move it up or down with *Elevate*.



Use *Stretch* for adjusting the width.

In addition to these parameters you can also open the windows in 3D view with the help of the editable hotspots. Editable hotspots are differentiated from normal ones by a green color and a diamond-shape. It works like a real life window: snap the handle (the hotspot) with the cursor and pull it until the window is open at the desired angle. Alternatively, you can type in the opening angle numerically into the corresponding palette.

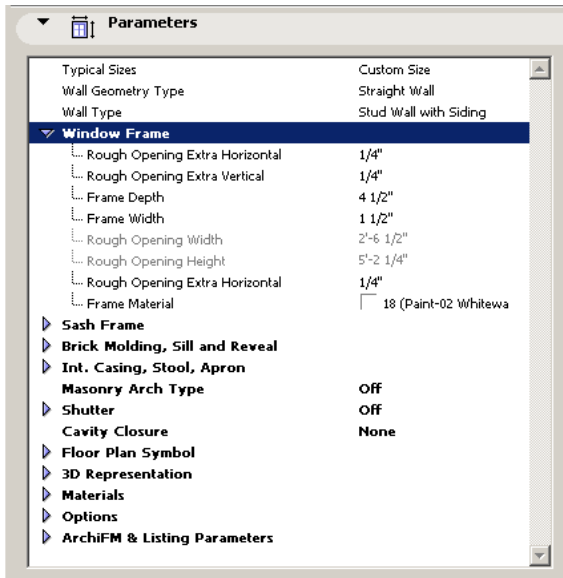


While the default settings apply, no other editable hotspots are available. As far as the *H_V Custom Grid* option is set for the sash style you will see more of them. That will be discussed later.

4. Parameter Setting

4.1 Parameter List

Each ArchiCAD window has the list of parameters located under the parameters panel. The list contains all the available parameters of the object. See the description of the parameter list at *Chapter 6*.



4.2 Basic Parameters

On this page you can also find the Basic parameters that control the windows size and position. Even empty window openings are provided with them. You can find them right from the custom parameter list in the *Parameters* panel.

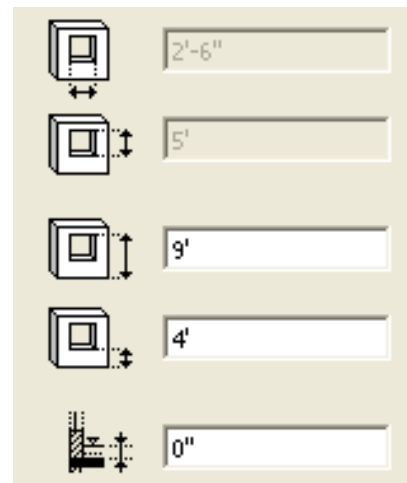
Window Width

Window Height

Window Header Height

Window Sill Height

Subfloor Thickness



Note that the width and height input fields are disabled until parameter Typical Sizes in the parameter list has been set to Custom.

4.3 Custom Settings (Graphic User Interface)

All the windows in the SE library are having a graphic user interface that contains all the parameters (except a few ones that will be discussed at chapter 6.) You

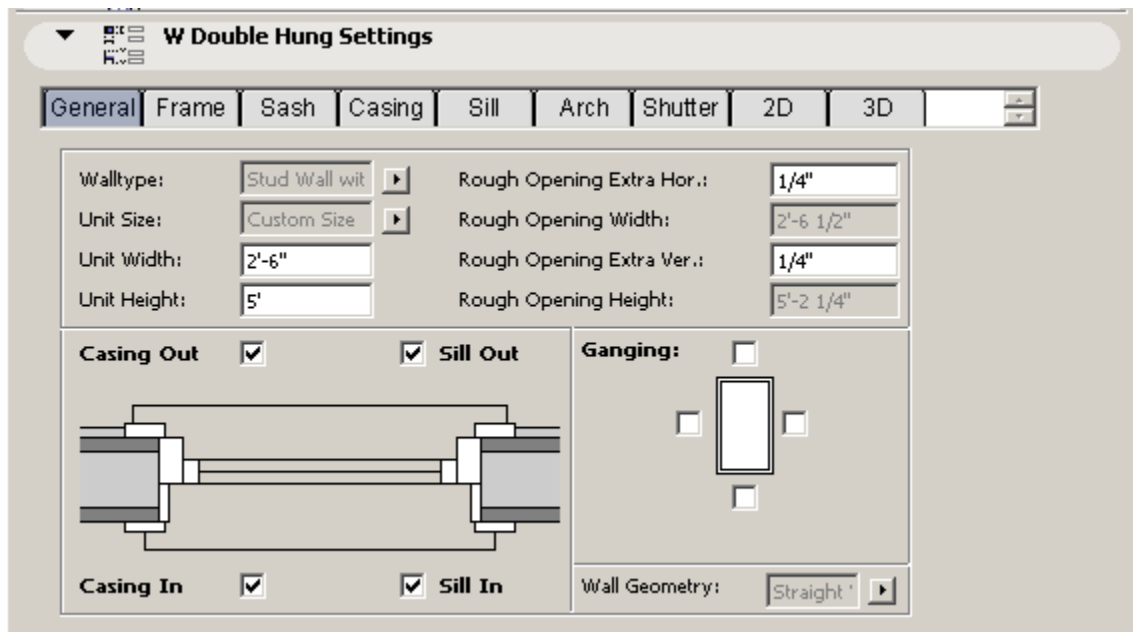
can find this panel under the parameter list. See the detailed description in the next chapter

Note: You can modify the object's parameters of the objects from both the parameter list and the Graphic User Interface. The windows of the Special Edition library have their Custom Settings Dialog turned on by default in the window setting dialog.

5. Graphic User Interface

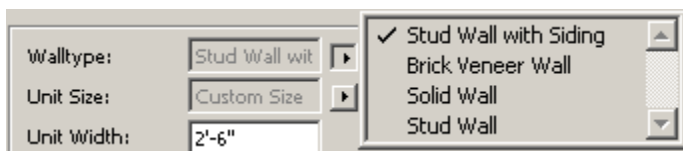
5.1 General Tab Page

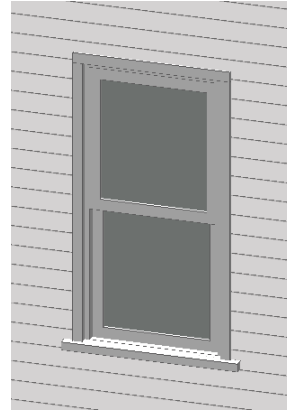
The *General* page contains only the most important parameters like wall types, window size, casing, sill and ganging. Find below the detailed description of these parameters.



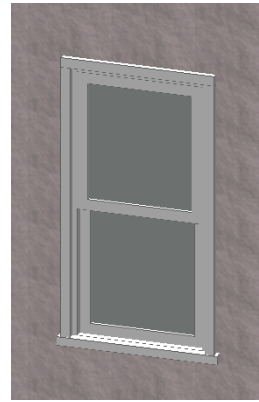
Wall Types

You have to set this parameter correctly prior to placing the window in a wall. The value of this parameter and the type of the wall in which you want to place the object has to match since the 3D model and the 2D symbol of the window will change significantly according to this setting. There are four types of walls to choose from: *Solid wall*, *Stud wall*, *Stud Wall with Siding*, and *Brick Veneer Wall*.

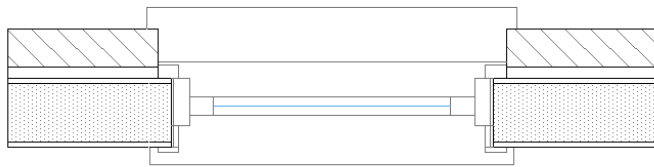




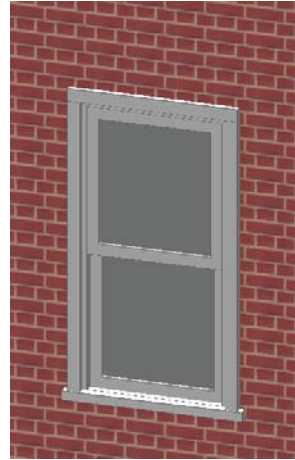
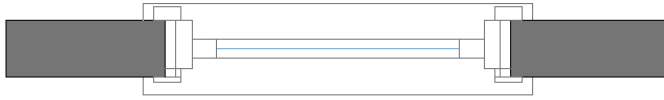
Stud Wall with Siding (detailed floor plan and exterior 3D view)



Stud Wall (detailed floor plan and exterior 3D view)



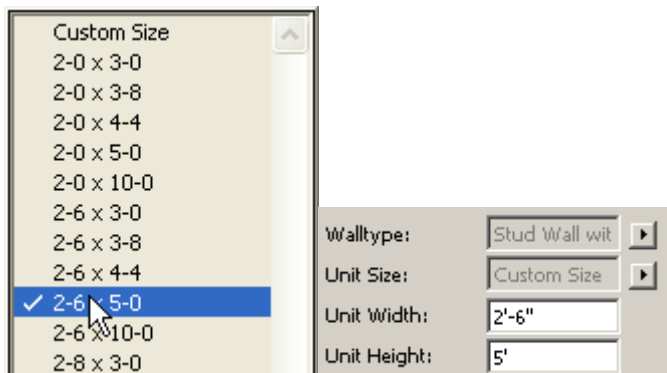
Brick Veneer Wall (detailed floor plan and exterior 3D view)



Solid Wall (detailed floor plan and exterior 3D view)

Unit Sizes

With the very first parameter called *Unit Size* you set the most important properties of the window: width and height. For your convenience, many common sizes are predefined. You just choose the preferred one from the list. Of course, this doesn't mean you are only restricted to these default sizes. After choosing *Custom Size*, the window can take any arbitrary size. *Note that if you use a typical size you can't edit the width and height with a hotspot.*



Below the *Unit Size* you see the actual value of *Unit Width* and *Unit Height* parameters. If a typical size is selected these parameters will be displayed with grey indicating that you can't modify their values. If you set the *Custom Size* option they become black and you can simply enter their custom value into the parameter field.

Rough Opening

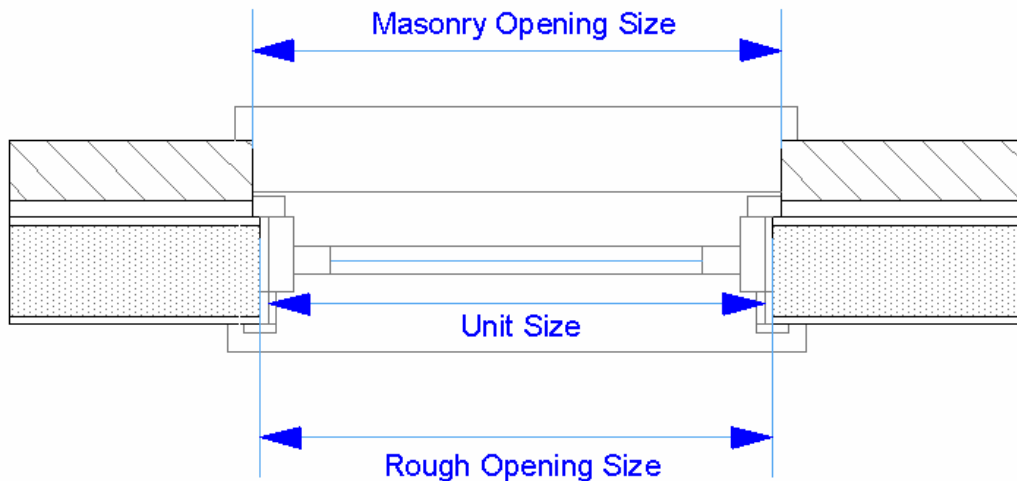
Rough Opening is the size of the hole that has to be cut in the wall for the window. It is calculated from the *Unit Size* and the *Rough Opening Extra* value. The parameters *Rough Opening Extra Left / Right / Top / Bottom* add extra airspace to the window hole on the corresponding side. This is used to fit the window in by enlarging the frame so it fits in a larger opening.

Rough Opening Extra Hor.:	1/4"
Rough Opening Width:	2'-6 1/2"
Rough Opening Extra Ver.:	1/4"
Rough Opening Height:	5'-2 1/4"

Masonry Opening

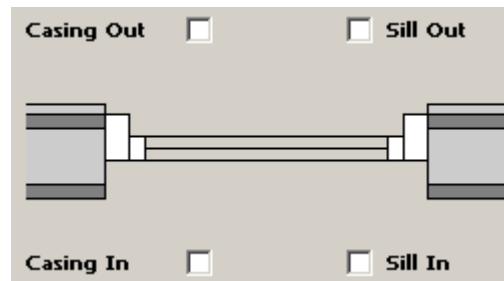
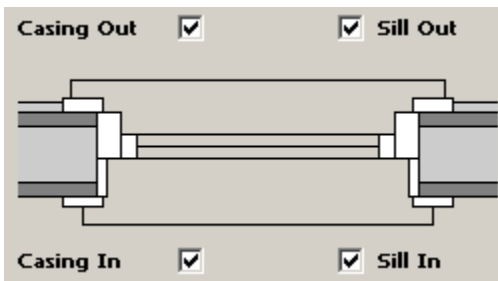
These parameters become active only if you select the *Brick Veneer* wall type. Here you can define the size of the opening in the exterior brick wall layer.

Walltype:	Brick Ve	Rough Op.E. Hor.:	1/4"	Mas. Op. W.:	2'-9"
Unit Size:	Custom	Rough Op. W.:	2'-6 1/2"	Rough Op.E. Ver.:	1/4"
Unit Width:	2'-6"	Rough Op. H.:	5'-2 1/4"	Mas. Op. H.:	5'-3 1/2"
Unit Height:	5'				



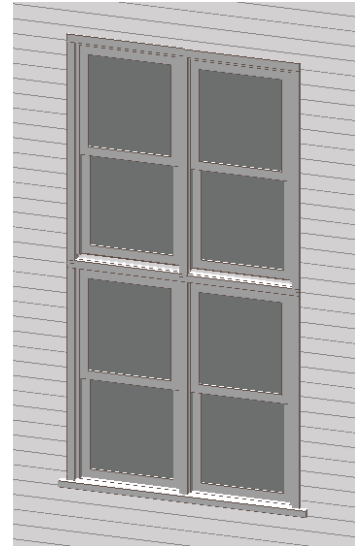
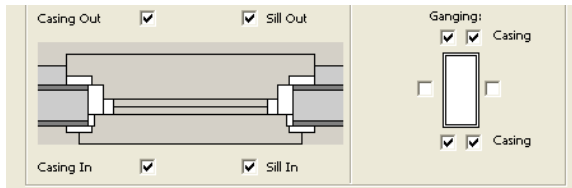
Casing In/Out, Sill In/Out

With these checkboxes you can turn on and off the casing and sill on the interior and exterior sides. The size and configuration of these elements can be set on the *Casing* and the *Sill* tab panels.



Ganging

You can align windows horizontally and vertically with these parameters. If you click on these checkboxes the structure of the window will change on the selected side (e.g. trim will be turned off) so that you can connect it to another window. *Note that you have to turn on this parameter on the corresponding side of the connecting window as well.*

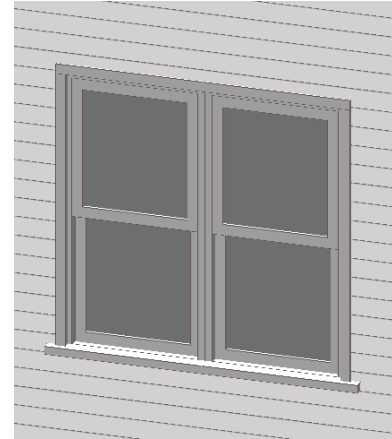
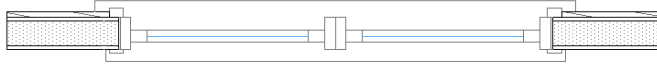


Ganging has some important consequences on the window structure:

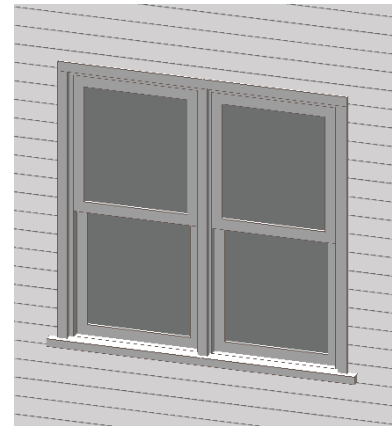
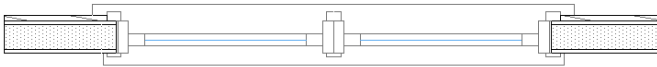
- There is no place for shutters. Therefore, the parameter *Shutter* will be hidden.
- Trim doesn't have to run along the frame of each window, but around the whole group. So the trim and sill on the affected sides will be cut away.

- There is no need to specify any *Cavity Closure* for windows placed between two other ones and aren't adjacent to the wall. Accordingly, if the ganging is turned on both sides, *Cavity Closure* will be hidden.

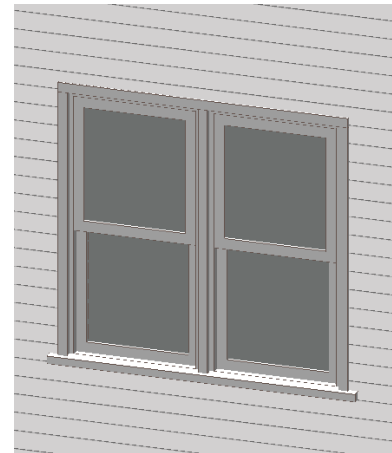
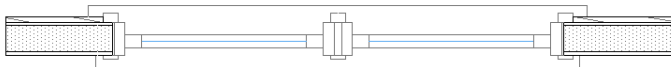
There is an additional option to define a *Casing* on the connection and also an additional *Spacing* between the two windows.



Casing= OFF, No Spacing



Casing= ON, No Spacing

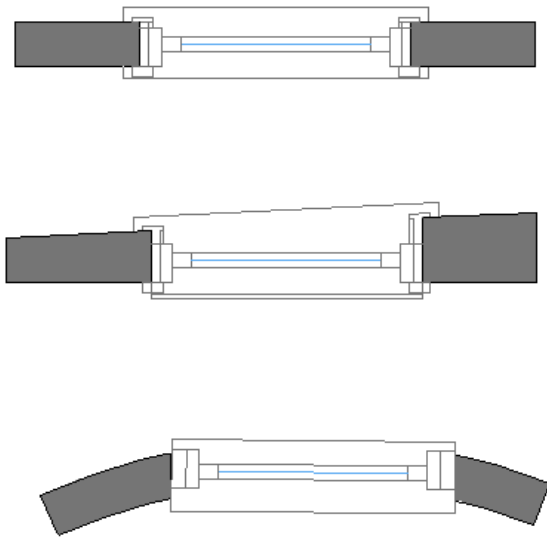


Casing= ON, Spacing ON

Wall Geometry

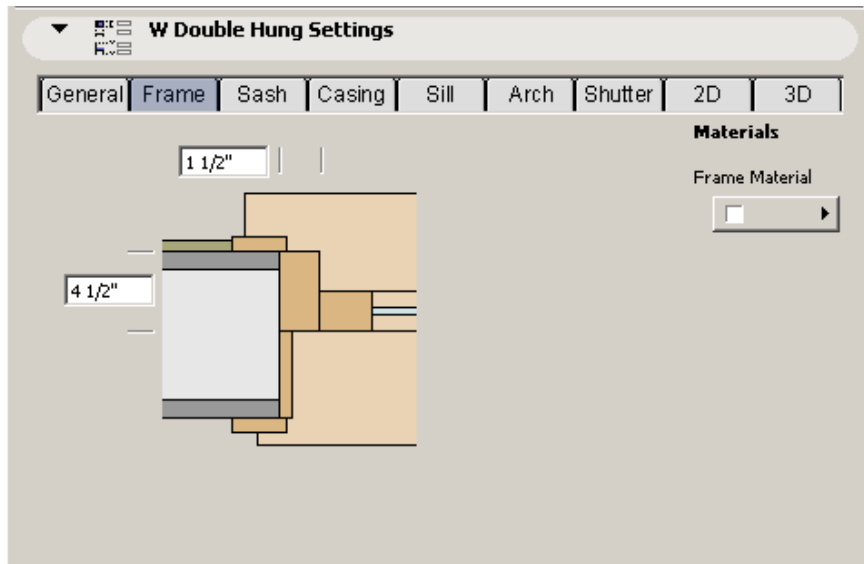
With this parameter you can adjust the window to the geometry of the wall. There are three options: *Straight Wall*, *Trapezoid Wall* and *Curved Wall*. This parameter

has to be set according to the geometry of the wall in which the window will be placed.



5.2 Frame

This group collects the parameters that control the appearance of the frame: *Frame Depth*, *Frame Width* and *Frame Material*

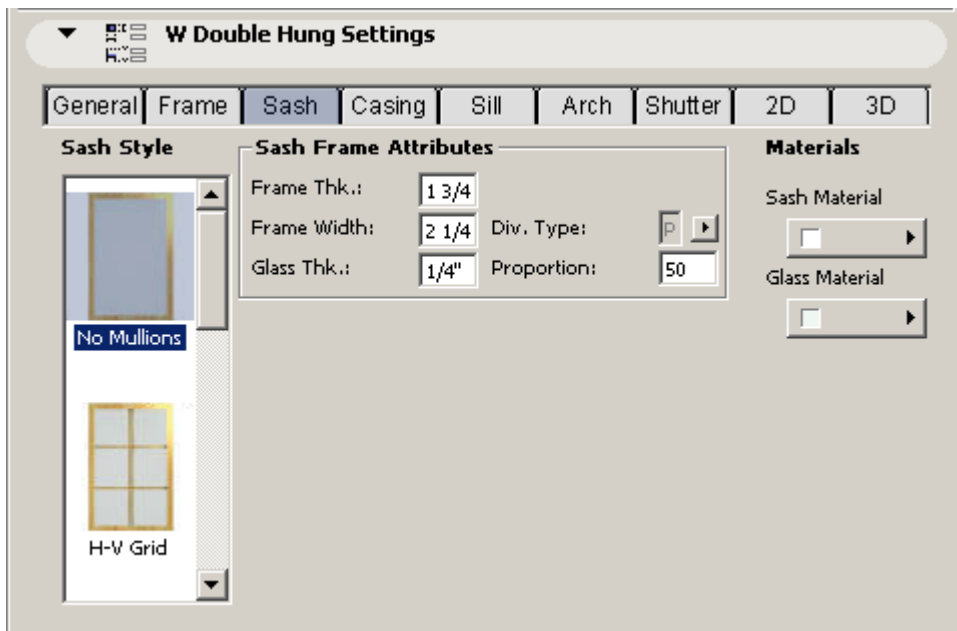


When *Frame Width* grows, the size of the sash will be reduced. It doesn't influence the outside dimensions of the whole window.

Frame Material is affected only if *Use Object's Materials* from the panel *Model* is chosen. Otherwise, the whole object will be displayed with the color specified there.

5.3 Sash

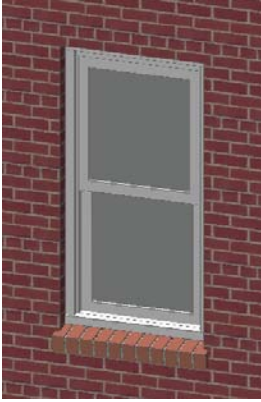
This panel collects the parameters related to the window sash frame. On the left side you can select from the available sash styles, in the middle you can set the sash frame attributes and on the right you choose the material of the sash, glass and mullions. General geometrical parameters are *Sash Frame Depth*, *Sash Frame Width* and *Glass Thickness*. Furthermore, there are parameters to set the sash, glass and mullion materials.



Parameter *Sash Style* can take six values:



1. *No Mullions* means the glass plate is not divided.



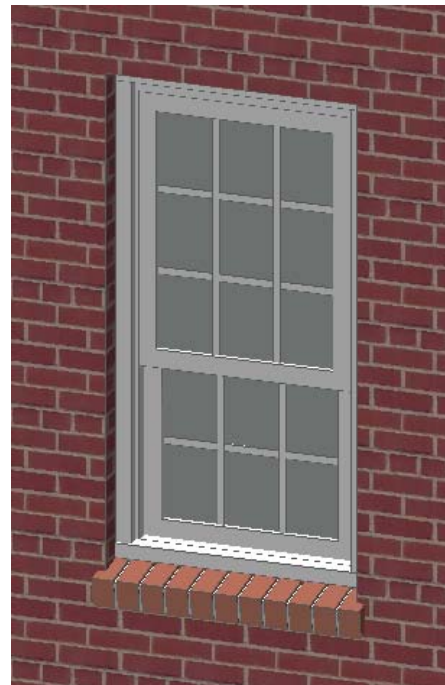
2. *H-V Grid* shows that the glass plate will be divided into a given number of panes by vertical and horizontal bars. The bars are placed at an equivalent distance. If you select this option for W Double Hung window the following parameters will become visible under sash frame attributes:

- Equal Glass height
- Division type
- Proportion
- Panes number (upper/lower, rows, columns)

If the *Equal Glass Height* parameter is on the height of the lower sash will be automatically calculated from the number of panes set for the lower and upper sash. ArchiCAD set the lower sash height so that the heights of the window panes are equal on the bottom and the top sash.



H-V Grid, Equal Sash Sizes



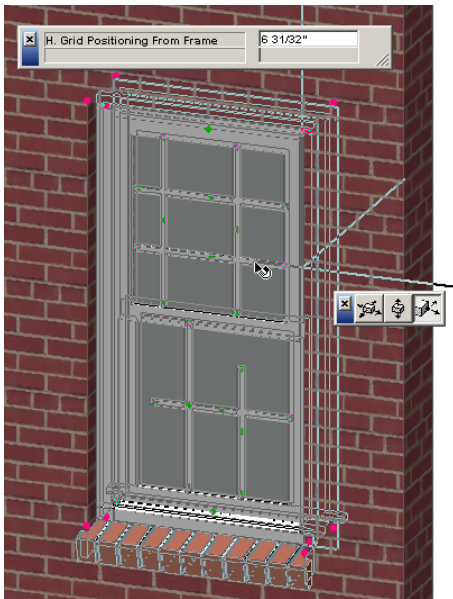
H-V Grid, Equal Glass Pane Heights

If the *Division Type* parameter is set to *Proportion* you can adjust the lower and upper sash height with the *Proportion* parameter. This value is set to 50% by default meaning that the lower and upper sashes have equal heights.

If the *Division Type* parameter is set to *Lower Sash Height* you can enter an exact value for the height of the bottom sash.

With the *Panes Number* parameters you can define the number of window panes (rows and columns) on the lower and upper sashes.

3. Option *H-V Grid Custom* gives you the most editing freedom. With editable hotspots, you not only set the distance of the mullions arbitrarily, but also their length. So every possible layout can be generated. The only limitation is that the bars can only be horizontal or vertical, not inclined. For editing, please switch *Mullions Edited by Hotspots* on. If you select the window in the 3D window with the *Arrow* tool you'll see three editable hotspots on each mullion. With the middle one you can modify the position of the mullion while with the other two on the ends you can adjust the length.



4. *Simple Prairie Style* and *Detailed Prairie Style* offer more eye-catching mullion arrangements, however, these are without any adjustment possibilities.



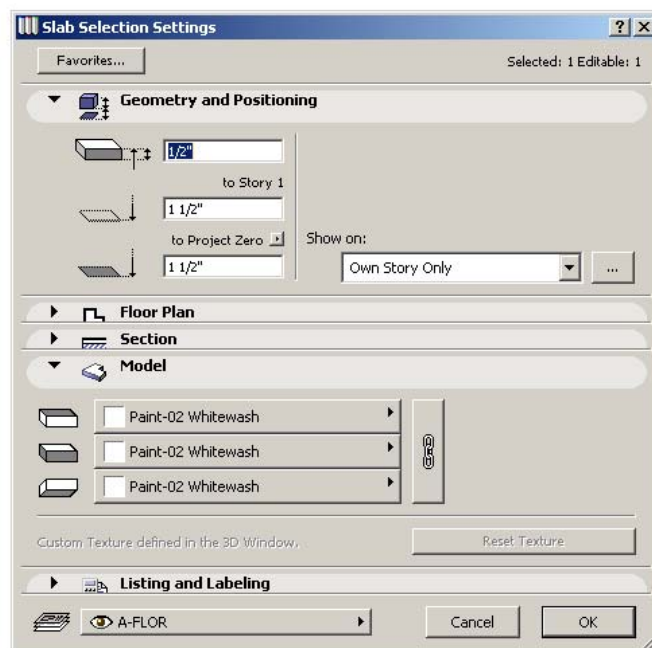
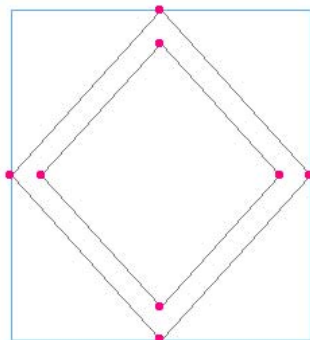
Simple Prairie Style



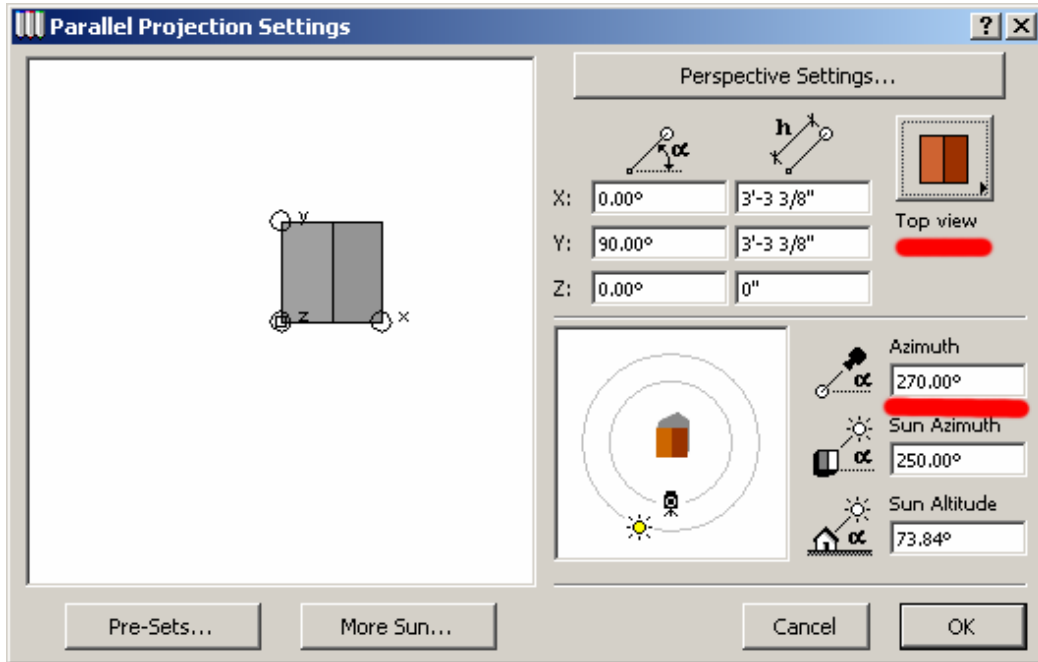
Detailed Prairie Style

5. At *Custom Panel* a GDL macro object can be inserted as a sash panel. You can also create such objects without any GDL knowledge. For this you have to do the following:

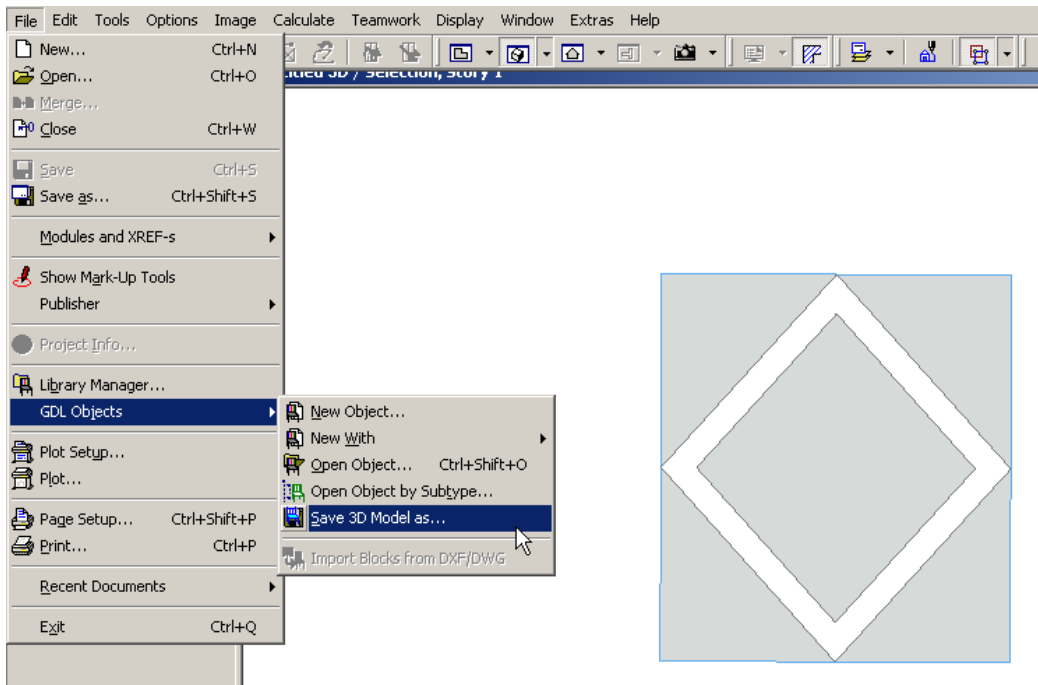
1. Model the required sash panel on the floor plan using the AC tools (e.g. slabs walls etc.) Make sure that the size of the panel matches with the actual window frame in which you want to insert it. AC is able to stretch this panel into any sash size but then the object will be proportionally distorted.



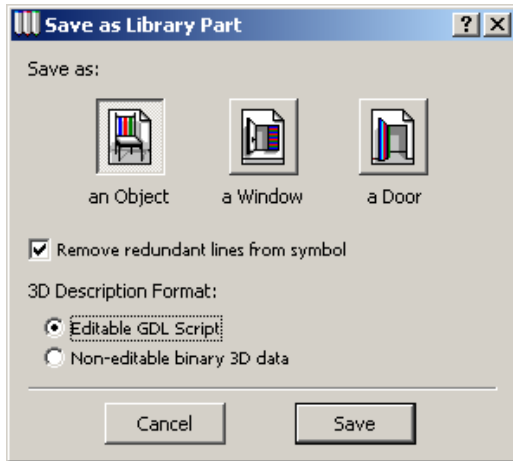
2. Open the 3D window and set the top view and the camera azimuth to 270 at the *3D Projection Settings* dialog



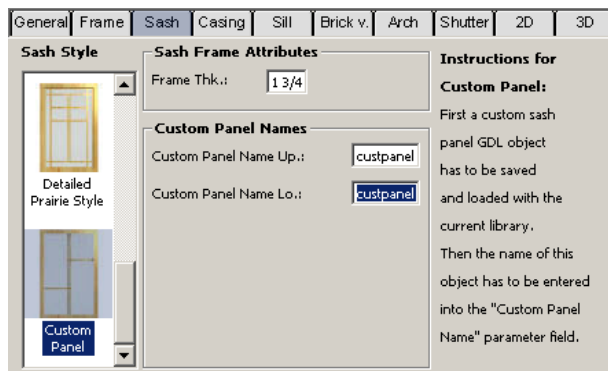
3. Go to *File/GDL Objects/Save 3D Model as...*



4. Select the *Object* option



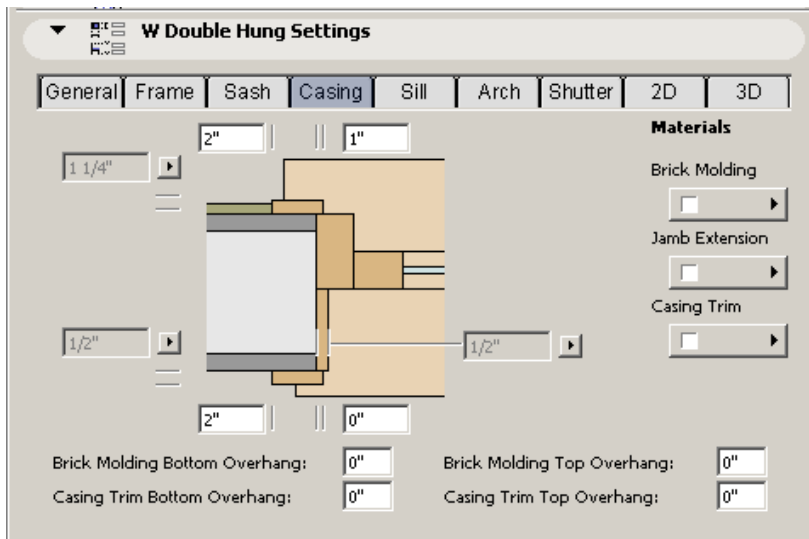
5. Define a name for the object and save it in the loaded project library
6. Select the required window in the *Window Setting Dialog*, open the *Sash* tab page and select the *Custom Panel* option
7. Enter the name of the custom sash object (without the GSM extension) in the *Custom Panel Name* field



Once you have mullions, you can always define their width and thickness. According to your actual *Sash Style* setting, the other necessary parameters will be added to the list.

5.4 Casing

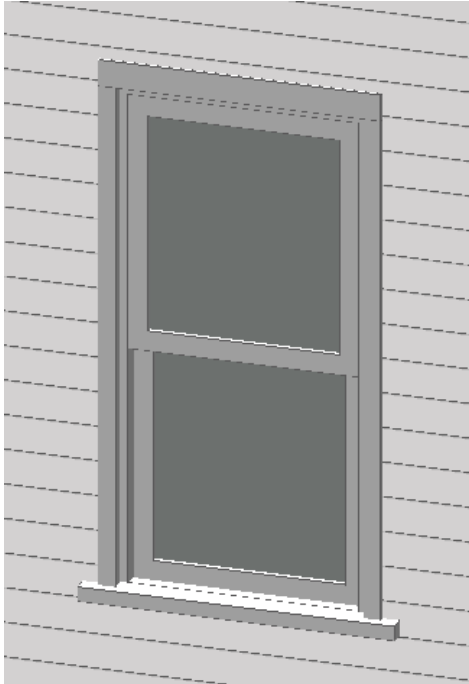
This group deals with the internal and external side of the window. *Note that this panel is empty if the Casing In and Casing Out parameters are turned off on the General tab page.* Casing Trim is a board running around the window frame on the interior side in order to cover the joint gap between the frame and the wall. The exterior casing is also known as brick molding. *Brick Molding* is a bar extending and decorating the frame of the outer side of the window.



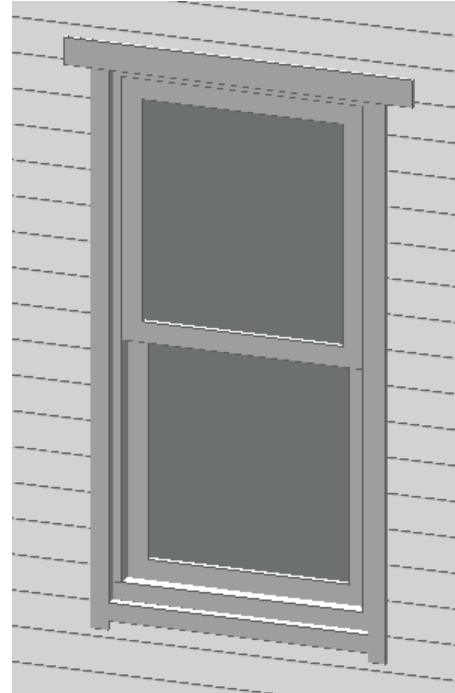
You can set different thickness and width for the internal casing and the brick molding. The most common thickness values are available from a pop up list however you can also set custom values. The top casing dimensions can be defined on the *Sill* tab page. The width of head casing can be different from the side casing.

Casing Trim Offset prescribes the distance of the trim from the internal edge of the frame. *Brick Molding Offset* means the distance of the molding from the window opening's edge. Left, right and top parts will be offset but not the bottom part (at the sill).

You can define an *Overhang* for the head and bottom casing trim and brick molding. This way you can set traditional traditional style window casing like shown on the picture. If the *Brick Veneer* wall type is selected on the *General* tab page the *Brick Molding Offset* parameter is not available.

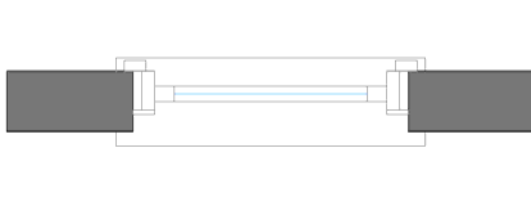


Sill Out=ON
 Brick Molding Top Overhang=OFF
 Brick Molding Bottom Overhang=OFF
 Bottom Brick Molding=OFF



Sill Out=OFF
 Brick Molding Top Overhang=ON
 Brick Molding Bottom Overhang=ON
 Bottom Brick Molding=ON

Jamb Extension is an optional frame member which is added onto the jamb to extend the frame to match wall thickness. This structural element is primarily used in thick walls. You can define the thickness of this element from a value list and you can also turn it off there.



Jamb Extension=OFF



Jamb Extension=ON

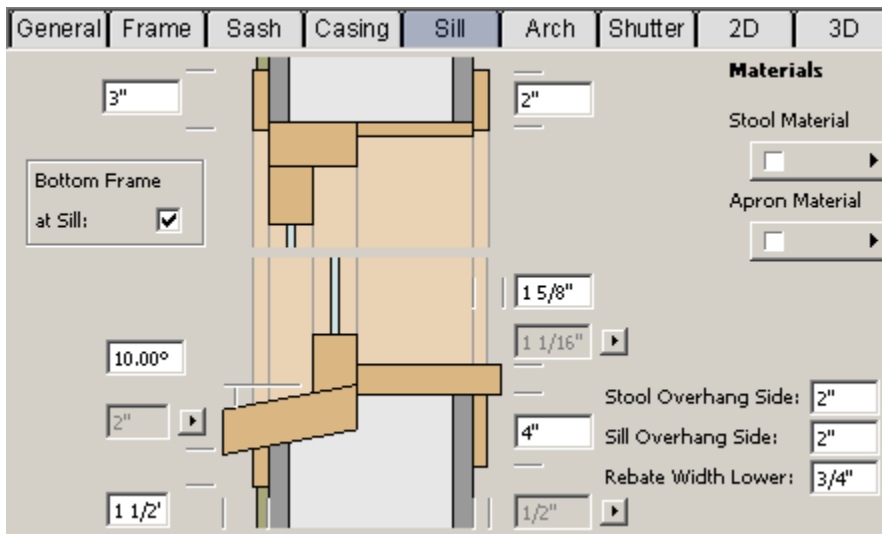
Under the materials section you can modify the materials of the *Brick molding*, *Jamb Extension* and *Casing Trim* elements

5.5 Sill

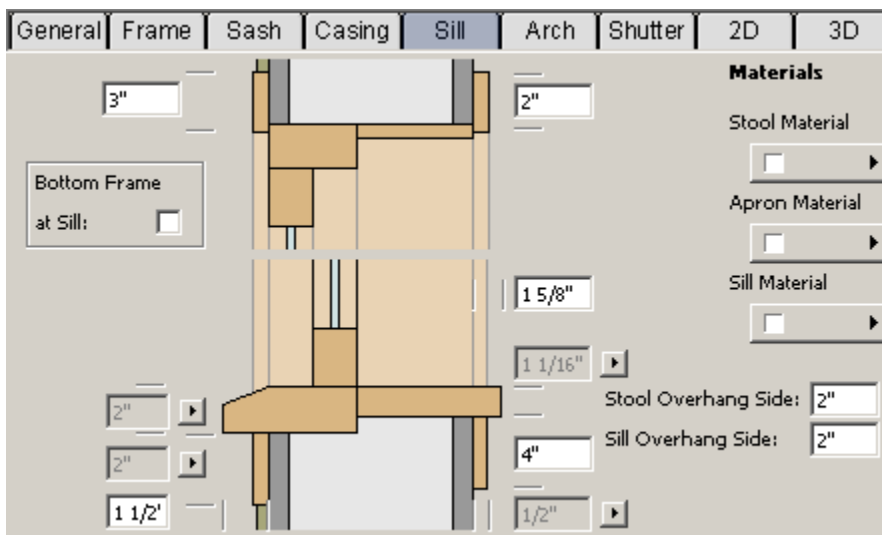
The custom settings tab *Sill* shows the geometrical parameters on both the outer and inner side of the window.

The bottom of the outer frame is the sill. There are parameters to set the sill thickness, nosing, and side overhang on this page.

Bottom Frame @ Sill = ON results in a sloped sill. Otherwise, the frame runs around the sill in unchanged form. The geometrical parameters of the sill don't require any explanation.



Bottom Frame @ Sill = ON



Bottom Frame @ Sill = OFF

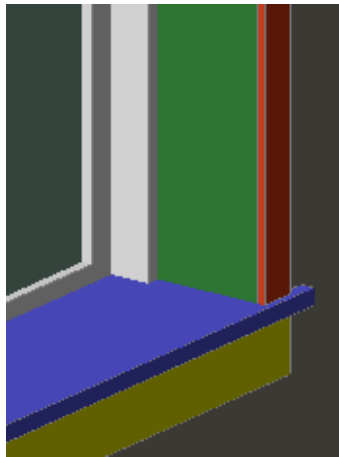
Similar to the *Sill*, you can set the thickness, overhang and side overhang of the *Stool*. The stool is the inside window sill.

The *Apron* is the board below the *Stool*. Its length is always determined by the trim; its thickness and width are independent parameters.

Rebate is the vertical distance between the bottom of the lower sash frame and the top of the stool. You can set a nosing between the sill and the stool with this parameter. This parameter is hidden if the *Bottom Frame at Sill* option is turned off.

The head and bottom brick molding width can also be set here. If the *Brick Veneer Wall* type is selected at the *General* tab page the *Bottom Brick Molding Width* parameter is not available

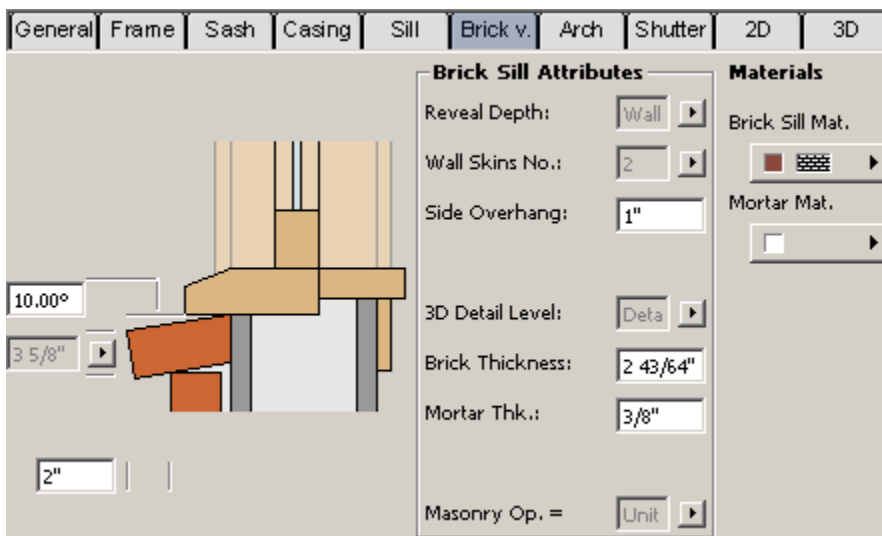
All parts have their own material as usual. The diagram below helps to identify the different parts of the window mentioned in this section.



- └─ Casing Trim Material ■ 102 (C12)
- └─ Jamb Ext. Material Inside ■ 100 (C11)
- └─ Stool Material ■ 99 (C10)
- └─ Apron Material ■ 103 (C13)

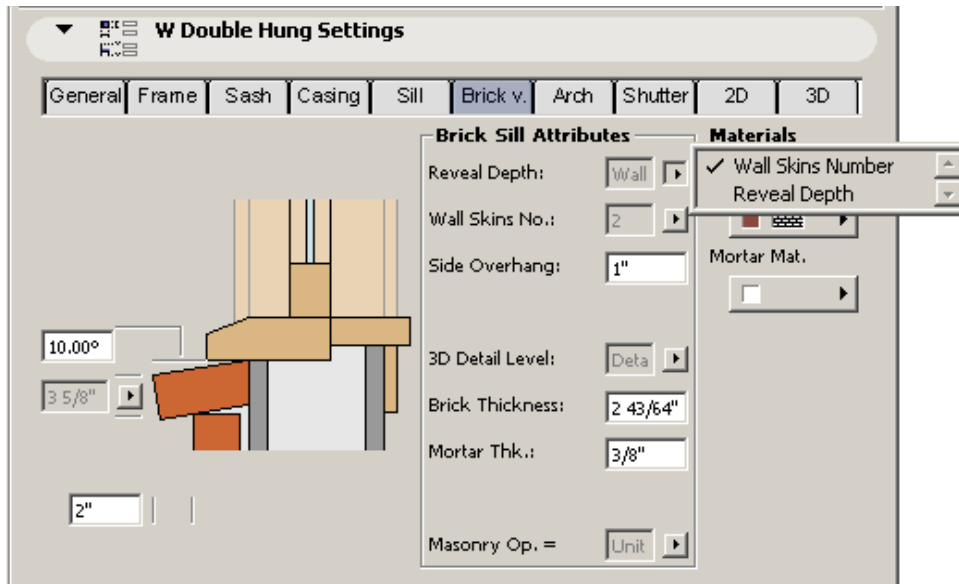
5.6 Brick Veneer

This tab page is active only if the *Brick Veneer* wall type is selected on the *General* tab page. Here you can set the brick sill and the brick veneer details.

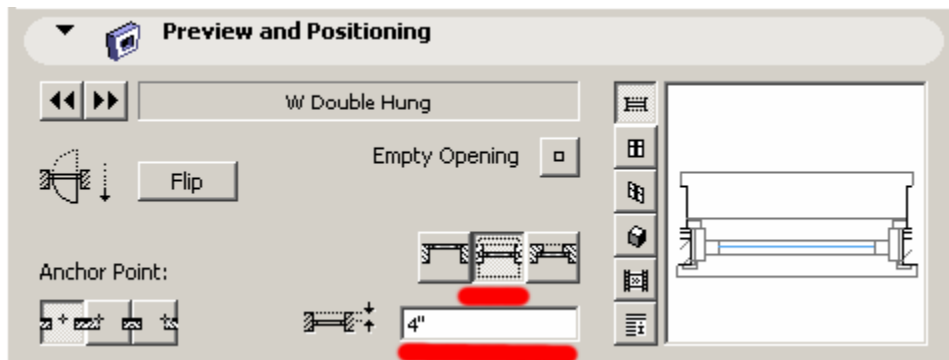


There are two ways to define the *Reveal Depth*:

1. If the *Wall Skins Number* option is selected the *Reveal Depth* is automatically calculated from the number of wall skins set at the corresponding parameter.



2. With the *Reveal Depth Option* you can define the depth manually using the window reveal setting.



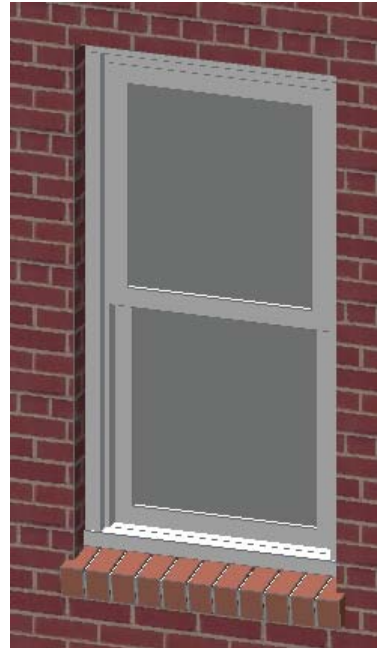
There are parameters to adjust the brick thickness, height angle offset and even the mortar thickness.

The *3D Detail Level* option has two values:

1. If set to *Detailed* all the bricks and the mortar between them are shown in 3D.
2. *Simple* the sill is represented as one block resulting less 3d surfaces and faster 3D regeneration



Simple Brick Sill



Detailed Brick Sill

The *Masonry Opening* is the hole in the exterior brick layer. There are two options to set its size:

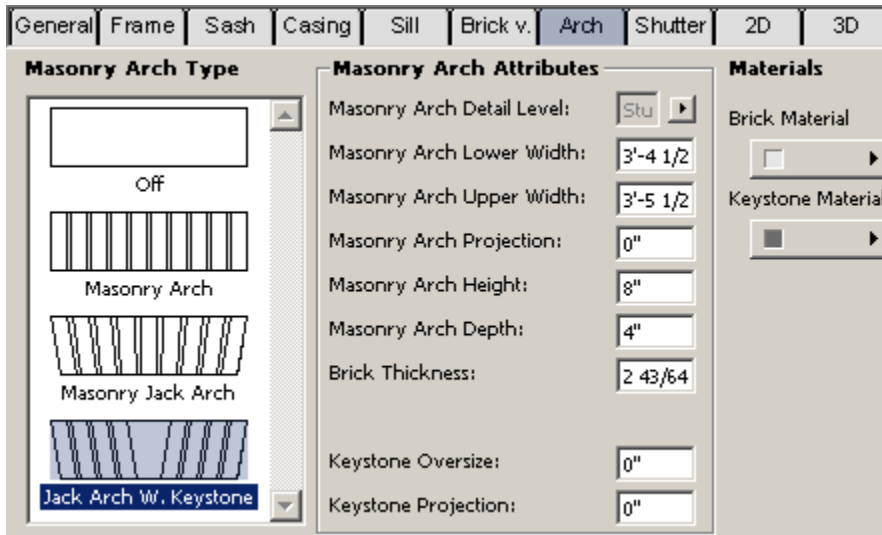


1. *Masonry Opening Width=Unit Size+Brick Molding Width+Brick Molding Offset*. In this case there are no *Masonry Opening Extra* parameters on the *General* tab page, but the *Brick Molding Offset* appears on the *Casing* page. The value of the *Rough Opening Extra* parameter is automatically calculated from the above three parameters. *Brick Molding Width* and *Brick Molding Offset* remain constant when you stretch the window on the floor plan or in 3D.
2. *Masonry Opening Width=Unit Size+Masonry Opening Extra*. *Masonry Opening Extra* parameters are available on the *General* tab page, while the *Brick Molding Offset* is hidden on the casing page. The *Brick Molding Offset* value is automatically calculated from the above two parameters. *Masonry Extra* remains constant when you stretch the window on the floor plan or in 3D.

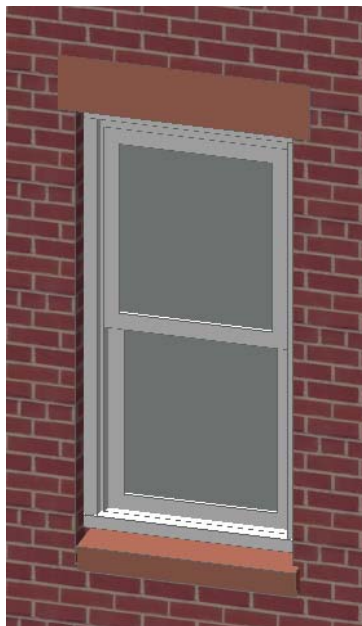
5.7 Arch Type

Turn *Masonry Arch Type* on and choose one of the three options, such as *Masonry Arch*, *Masonry Jack Arch*, and *Masonry Jack Arch with Keystone*. If

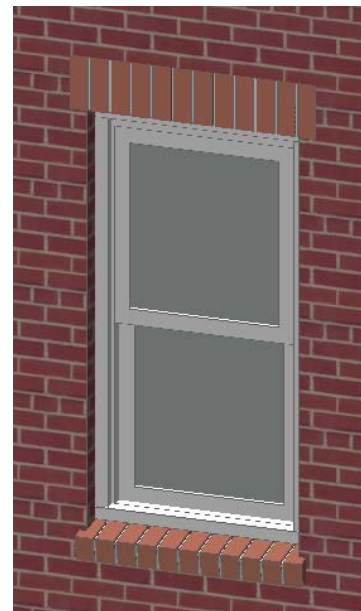
turned on, the structural parameters of the arch will be visible: *Height, Depth, Lower Width, Projection* and *Brick Thickness*.



You can select from two types of arches at the *Detail Level Parameter*: *Stucco* and *Brick Arch*. The *Brick* option will show up with mortars between the bricks thus it result more surfaces in the 3D model. If you want to reduce it you can select the stucco option and assign a material that has a brick texture on it on rendering views.



Masonry Arch, Stucco



Masonry Arch, Brick



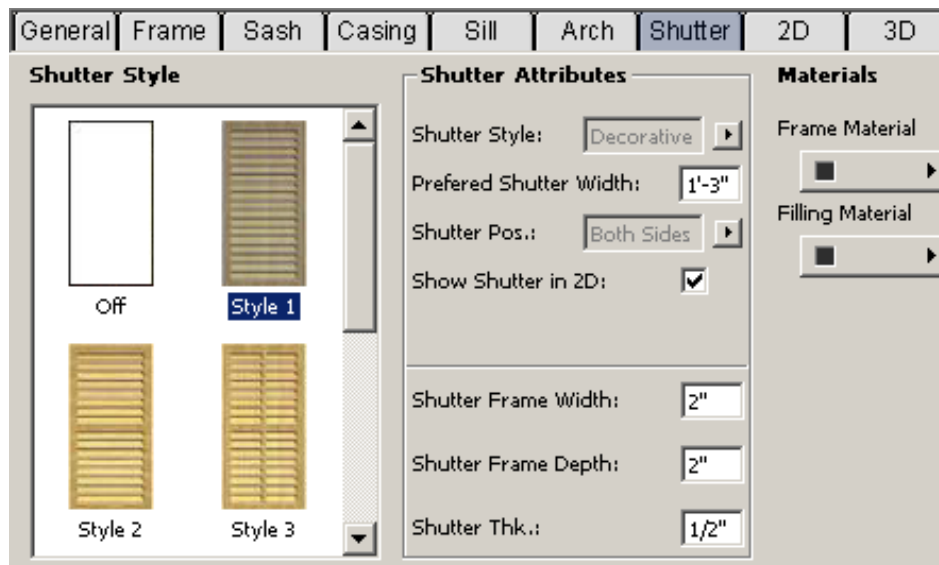
Masonry Jack Arch



Masonry Jack Arch with Keystone

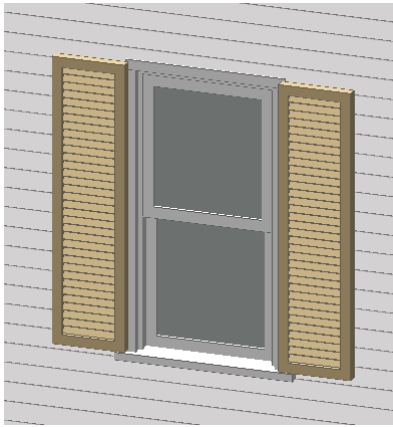
5.8 Shutter

Upon activating any *Shutter Styles* on the graphical value list on the left side, the group with the corresponding parameters will unfold. Only parameters that have a meaning in the actual context appear. Most of the styles provide the parameter *Shutter Style* which offers two options: *Decorative* and *Functional*.

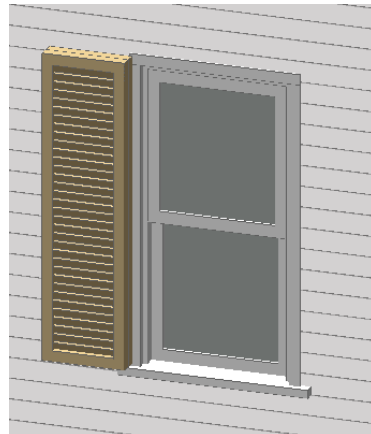


The first one is just a fixed decoration element on the façade thus it can't be closed or folded. The overall width of decorative shutters doesn't necessary match with the window width.

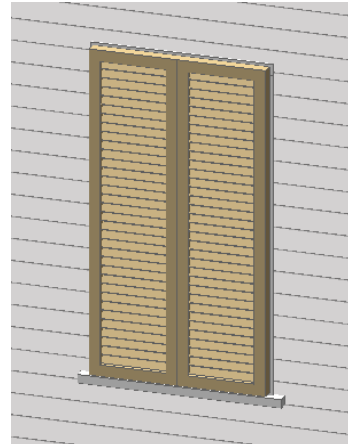
The overall width of *Functional* shutters is equal with the width of the window and it is automatically calculated by ArchiCAD. With the *Shutter Panes Number* parameter you can define foldable shutter panes if the number is bigger then 1.



Decorative Shutters on
Two Sides



Functional Shutter on
One Side



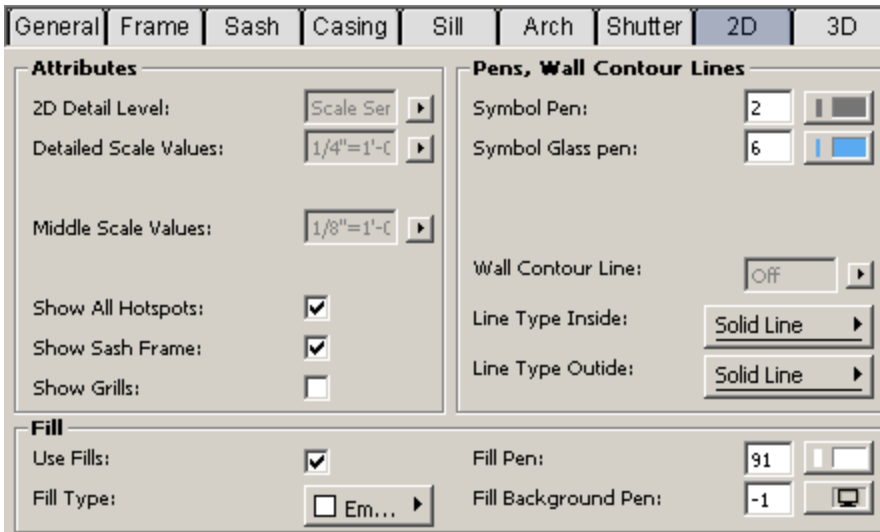
Functional Shutter
Closed

Functional shutters can be opened and closed with the parameter *Close Shutter*. Intermediate angle values cannot be specified. The effect is visible only in the 3D window.

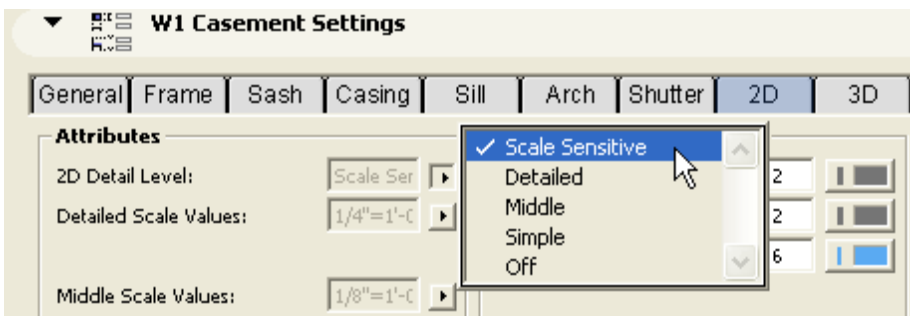
Just like for any other window component you can define the structural sizes and the materials of shutters separately.

5.9 2D

This page collects parameters that change the appearance of the window on the floor plan. Under the *Attributes* section you can modify the details of the plan symbol.



ArchiCAD's GDL objects can recognize the plan's scale. Many of them, like this window, change its shape depending on the scale. The higher the scale is, the simpler is the presentation. This has a trivial technical reason; too many lines close to each other cannot be printed or displayed clearly. If you need this distinction, set *2D Detail Level* to *Scale Sensitive* (this is the default). You can define the scales where AC should switch between the different 2D detail levels with the *Detailed Scale Values* and *Middle Scale Values* parameters.



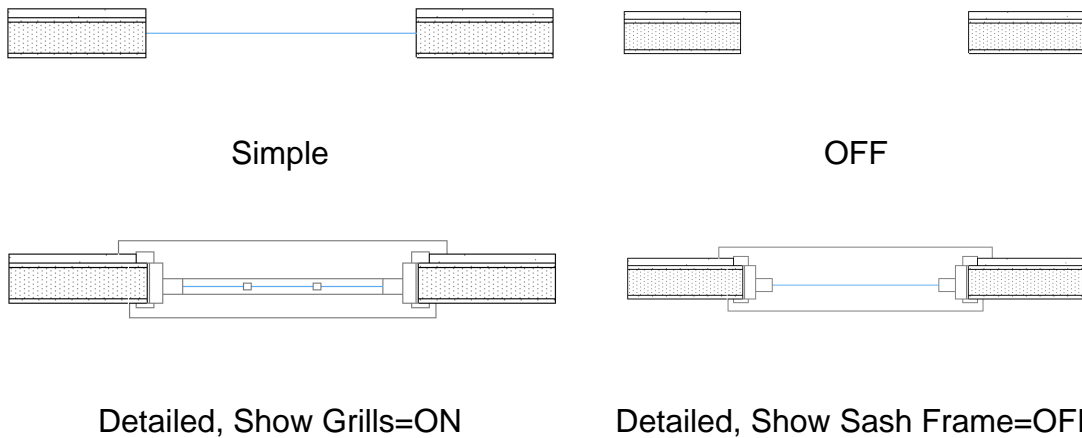
You can also designate a high, medium or low detail level manually by choosing the option *Detailed*, *Middle* or *Simple*. When detail is turned *Off*, nothing will be displayed in 2D. This option can be useful when you place two windows on top of each other.



Detailed

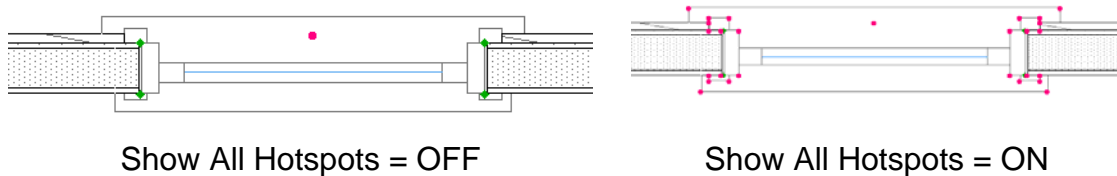


Middle



There are two additional checkboxes to control the visibility of *Sash Frames* and *Grills* on floor plan.

There are always hotspots on the corner points of the window unit. You can turn on additional hotspots with the *Show All Hotspots* option.

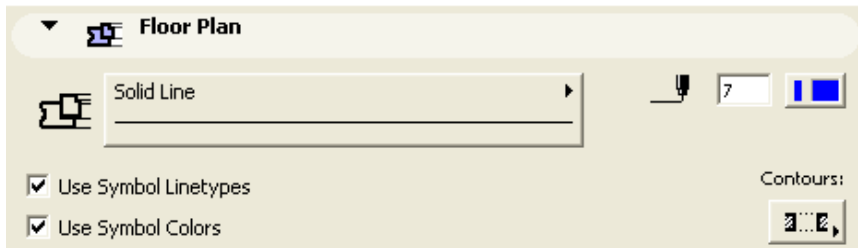


Different pen types can be assigned to the frame, glass and other parts. *Symbol Pen* controls the color of the sill and trim sash and frame while *Symbol Glass Pen* is for the glass.

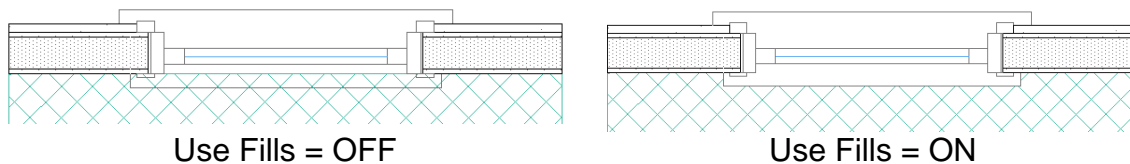
Wall contour lines can be displayed optionally on both sides of the wall. On large scale plans, these lines are usually not shown. At a small scale, they are sometimes drawn for accuracy. Since the sill and stool cover the lower edges of the wall opening, the line type is typically dashed.



Please note that all these settings take effect only when *Use Symbol Linetypes* and *Use Symbol Colors* are turned on in the panel *Floor Plan*. Otherwise, the values specified below will be applied for the whole object.



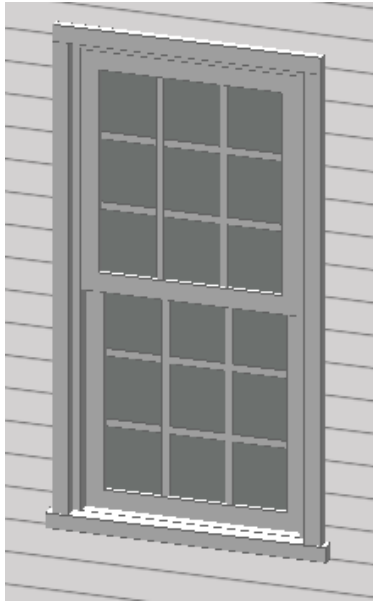
The *Fill* parameters allow you to set a background fill behind a window. This can be useful when you want to hide any elements under the sill (e.g. floor fills).



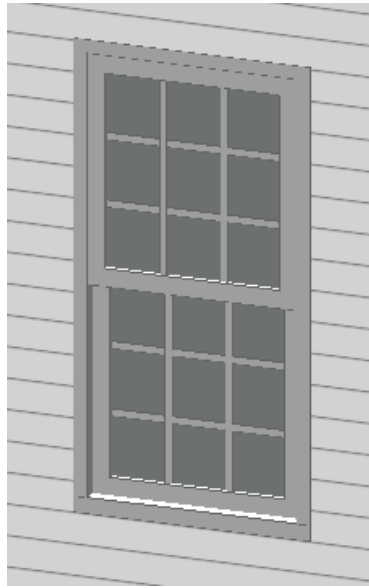
5.10 3D

The parameters on this page control the appearance of the window in the 3D, section and elevation views.

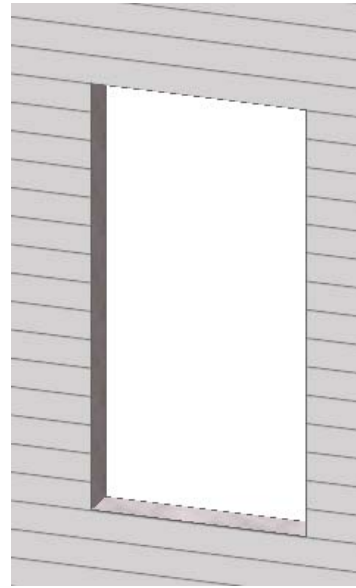
The *3D Detail Level* parameter has 3 values: *Detailed*, *Simple* and *OFF*. The *Simple* 3D representation requires less time to regenerate however it contains less detail. It also looks simpler in section views.



Detailed

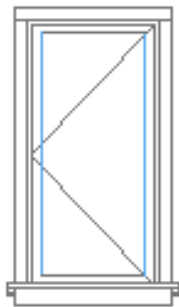


Simple

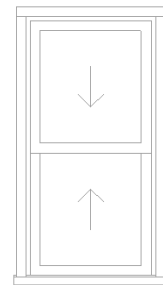


OFF

Opening Lines show the opening direction of the window. That has an importance on elevations. The lines look like they are drawn on the sash. If you open the sash the lines move with it. Turn it on by *Opening Line in 3D*. Further, you can change its line type.

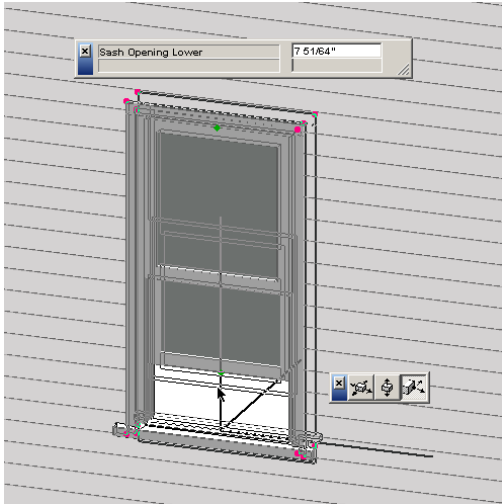


Casement Window



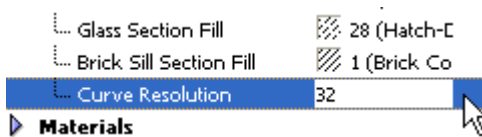
Double Hung Window

You have options to open the window sashes in 3D. You can also open them using the editable hotspots in the 3D window. *Opening Angle* shows its effect in 3D only. On the floor plan the window is always closed



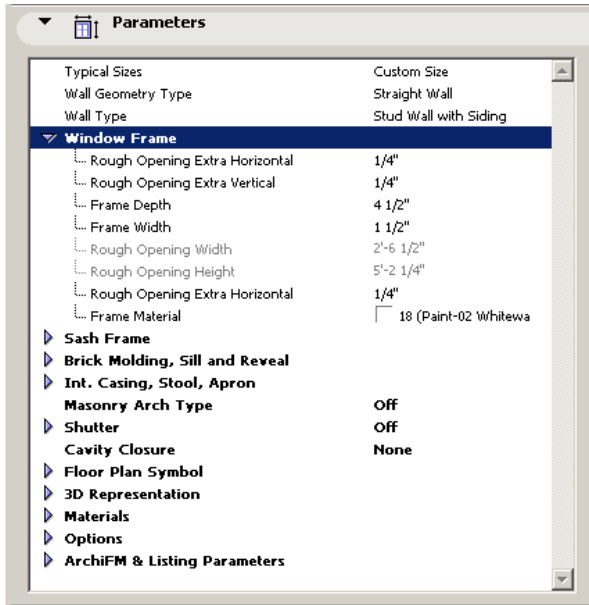
Both the pen and section fill can be set separately for the frame, sash, glass and brick sill.

Curve Resolution determines the drawing accuracy of circles and cylindrical surfaces. The higher this value is, the more accurate the curve will be. However, it will be slower to be drawn on the screen.



6. The Parameter List

The parameter list contains all the editable parameter of the object in a scrollable window without any graphical interface. It also includes those parameters that you can find on the graphical interface however in a slightly different organization. For example the brick molding sill and apron parameters are organized under the same title parameter here. Below we'll give you the description of only those elements that can not be found on the graphical interface.



6.1 Cavity Closure

This parameter is relevant only if the window is placed into a cavity wall. In such cases, the cavity has to close at the openings and some of the skins have to be turned in or out. The following example demonstrates the effect of the different options.



None



Turn in



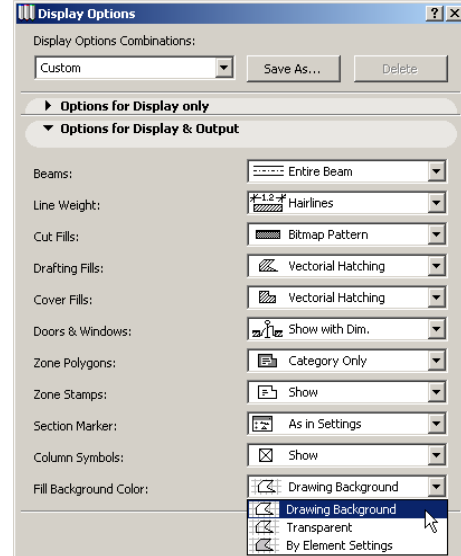
Turn out



Continuous

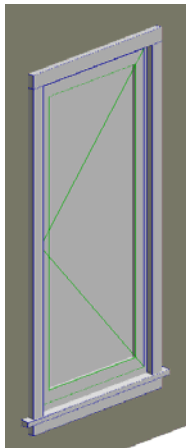
Once you have chosen a cavity closure, you can also specify how many skins have to be turned in or out. For a proper result you should set this value in accordance with the actual wall skin structure. Furthermore, a joint can be inserted to connect the two outside skins. *Note that the cavity closure doesn't work with the Brick Veneer Wall Type option. If you choose Continuous make sure that the interior and exterior layers of the wall are identical.*

Note that the *Fill Background Color* has to be set to *Drawing Background* on the *Display Options* dialog in order to get a correct cavity closure representation on the floor plan.

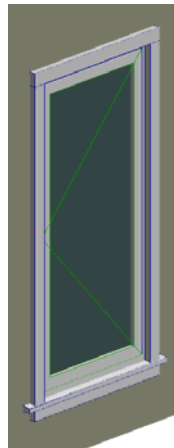


6.2 Materials

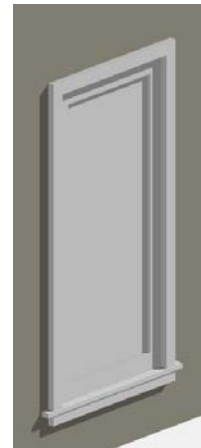
Turn *All Frame Materials* on if you wish to use the same material for all parts of the window, except the glass. When turned on, an additional parameter for specifying that material appears. If *Use Object's Materials* in the panel *Model* is switched off, not only the frame and panel, but also the glass material will be changed to the given one.



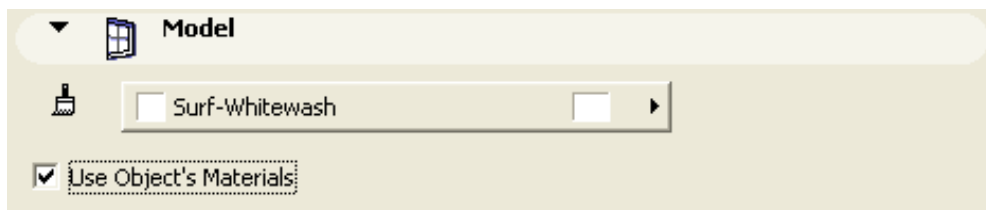
All Frame Materials=OFF



All Frame Materials=ON



Use Object's
Materials=OFF



6.3 Options

If you do not need to fine tune all the details of the window object and would like to see a simpler parameter list, it is possible to reduce the number of available parameters.



Switching the option *Parametric Level* to *Low* causes a total of 14 marginal parameters to be hidden in the list. Of course, the substantial ones remain visible. *Fully Editable* enables hotspot editing. If turned on, you can change the window sash opening angle graphically as described in the section Visual Editing. If switched off, a plain black hotspot will appear on the handle instead of the editable green diamond-shaped hotspot. After clicking on this hotspot the pet palette springing up won't contain the *Stretch* button.

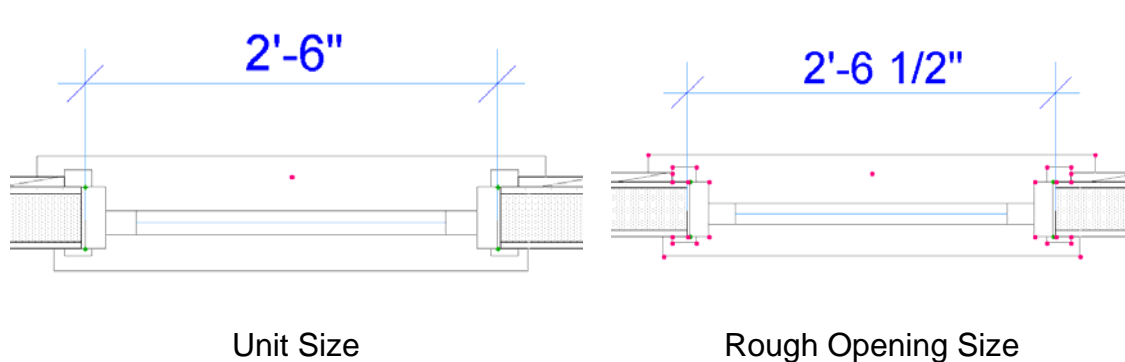
6.4 ArchiFM & Listing Parameters

These parameters are intended for storing various product specific data that do not affect the geometric presentation of the window. They have been added to the object to provide ArchiFM compatibility. However, you can also use them successfully without ArchiFM. The listing functionality of ArchiCAD enables you to generate a list of objects placed into your plan, showing the value of specified parameters. With this, you can even manage inventories. This is also the basic idea of ArchiFM, which is a complete solution for facility management. The standard Interactive Schedule window template was made to actively use these parameters.

ArchiFM & Listing Parameters	
Cost	0.00
Manufacturer	
Note/Remarks	
Location	
Accessories	
Glazing	
Header Detail	
Jamb Detail	
Sill Detail	
Hardware Set	
Operation Type	Double Hung
Finish	
Elevation	
Hinges	
Lockset	
Total Glass Area	0.00
Total Glass Perimeter	0.00
Heat Transfer Rate	

7. Dimensioning

You can place dimensions on a window by clicking at its hotspots using the dimension tool. If you resize the window the dimensions will be automatically updated. The default hotspots are always at the unit size however you can turn on additional hotspots with the *Show More Hotspots* option on the *2D* tab page. This way you can dimension the rough opening size too.



8. Window Marker

Window markers are used for displaying information, such as type or identification number, about the window on the floor plan. Some markers are prepared for marking the centerline of an opening or showing its dimensions. The *Basic Window-Door Marker*, the *Window-Door Marker -70* and the *Window Marker* objects can display the unit size of the window on the floor plan

