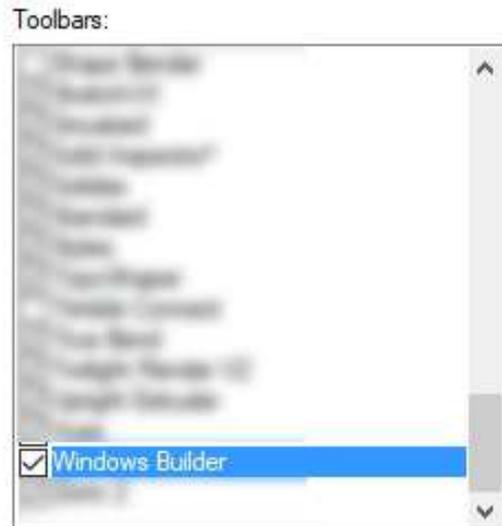


Windows Builder 1.1.0 for SketchUp 2016 and higher (Make/Free/Pro)

D. Bur - July 2019

Windows Builder is a plugin that lets you create and place diverse window components in your models.

After installation, if the toolbar doesn't appear, select **Toolbars** in the **Display** menu, and tick the **Windows Builder** checkbox:



There are 3 icons in the toolbar:
(see below for details)



Available window types:

Fixed rectangular window

Fixed window of any shape

Single sash opening window of any shape

Sliding window, 1 or more sashes

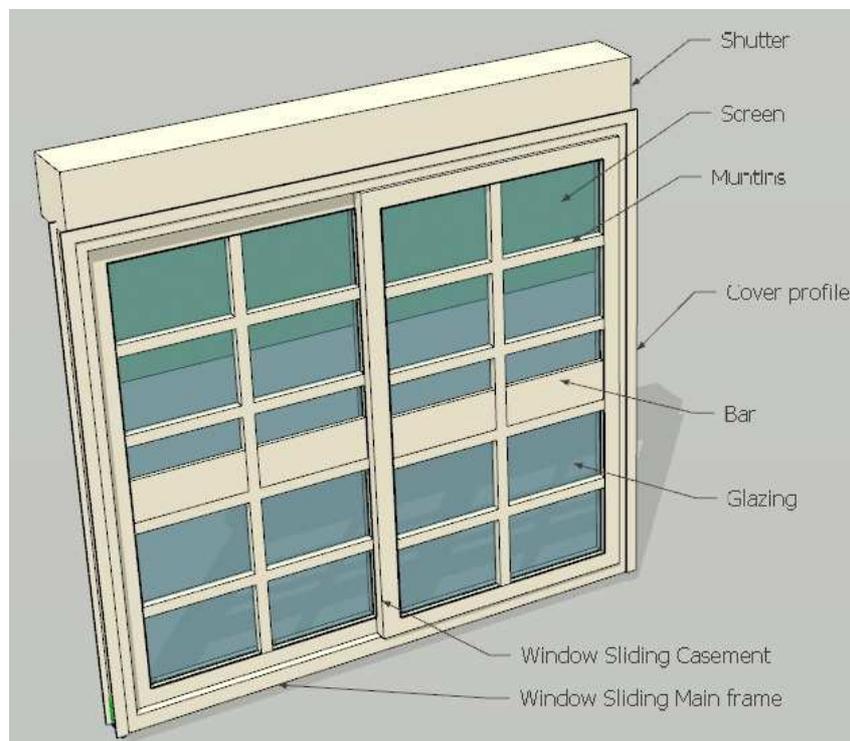
French opening window, 1 or more sashes

Double-hung window, 1 or more sashes



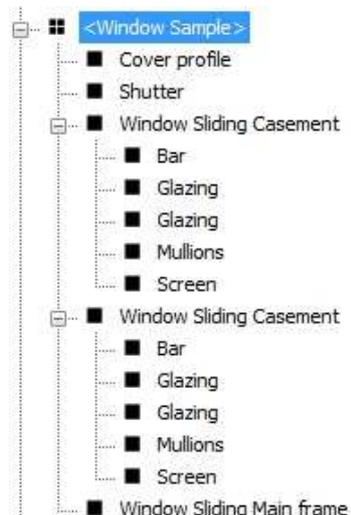
Options:

- window type
- component name
- materials of all parts
- glazing (simple, double, triple)
- muntins (numbers, dimensions)
- cover profile (side, shape, dimensions)
- horizontal bar (sill, dimensions)
- shutter (side, dimensions)
- screen (side, dimensions, opening %)
- cuts opening (yes, no)
- glue to (none, arbitrary, horizontal, vertical, sloped)
- scaling constraint (none, 1D, 2D, 3D)



Structure:

A window component is an assembly of groups and sub-groups.

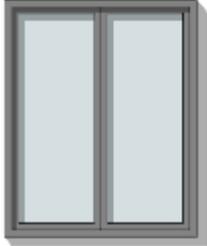


1. Create a component window:

Clicking on the button  will display this dialog:

Window settings
—
□
×

Window type



French 1 ▼


2

Fixed
 Sliding
 French
 Single-double hung

Parameters

Sashes:	<input style="width: 100%;" type="text" value="1"/>	3	
Window length:	<input style="width: 100%;" type="text" value="200,0 cm"/> 	4	
Window height:	<input style="width: 100%;" type="text" value="225,0 cm"/> 	5	
Frame width:	<input style="width: 100%;" type="text" value="7,0 cm"/>	6	
Frame depth:	<input style="width: 100%;" type="text" value="10,0 cm"/>	7	
Sash width:	<input style="width: 100%;" type="text" value="7,0 cm"/>	8	
Sash depth:	<input style="width: 100%;" type="text" value="7,0 cm"/>	9	
Frame material:	<input style="width: 100%;" type="text" value="WB Frame"/> ▼	10	
Glazing:	Select <input style="width: 100%;" type="text" value="Double"/>	11	
Cover profile:	Add... <input style="width: 100%;" type="text" value="None"/>	12	
Muntins:	Add... <input style="width: 100%;" type="text" value="0x0"/>	13	
Horizontal bar:	Add... <input style="width: 100%;" type="text" value="None"/>	14	
Roll shutter:	Add... <input style="width: 100%;" type="text" value="None"/>	15	
Screen:	Add... <input style="width: 100%;" type="text" value="None"/>	16	
Layers:	Configure...	23	

Behavior

Cuts opening:	<input type="checkbox"/>	17	
Glue to:	<input style="width: 100%;" type="text" value="Arbitrary"/> ▼	18	
Scaling constraint:	<input style="width: 100%;" type="text" value="None"/> ▼	19	

Default name: Window French#1

Custom name:	<input style="width: 100%;" type="text" value="Enter name here"/>	20	
	Create Create and place	21	
	Load preset... Save preset...	24	
	Cancel Help	22	

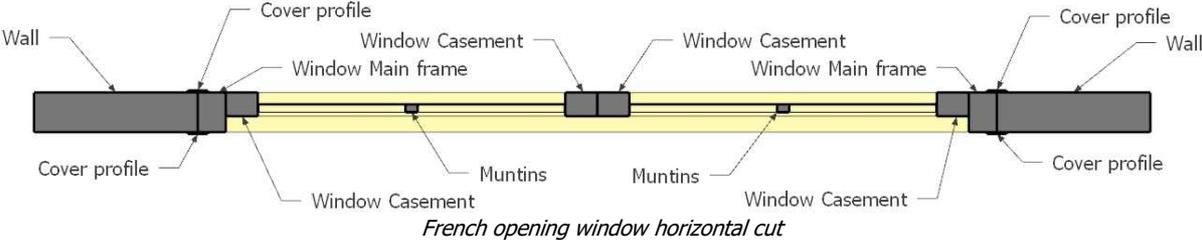
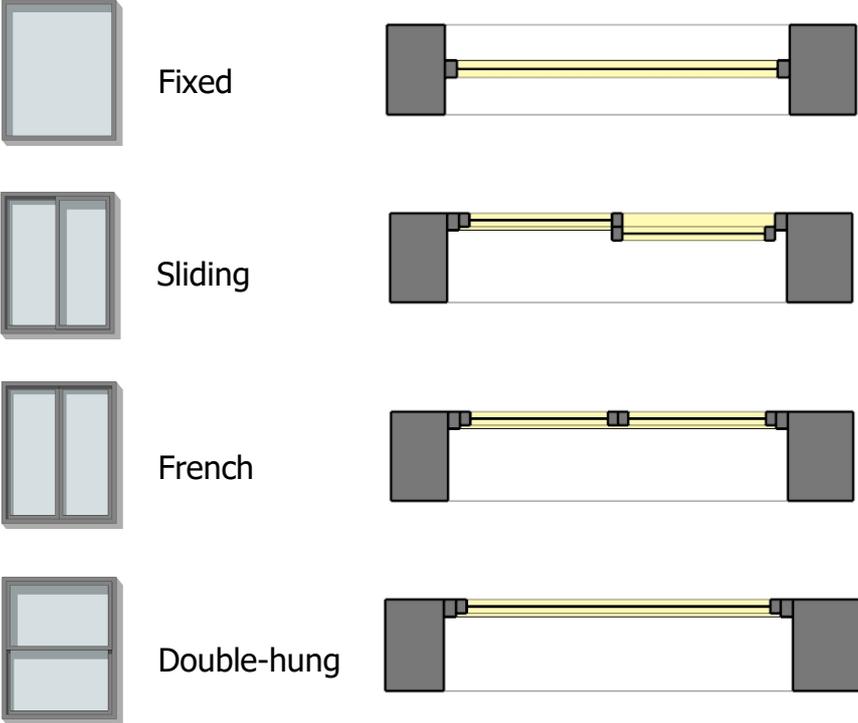
None
 Arbitrary
 Horizontal
 Vertical
 Sloped

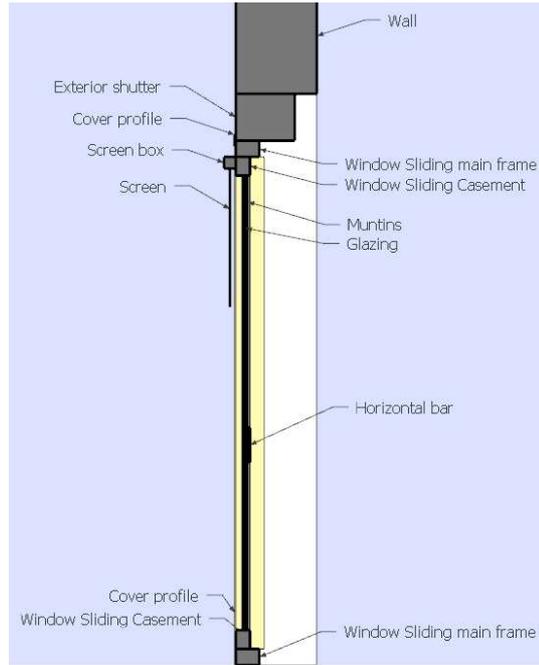
None
 1D
 2D
 3D

When the mouse hovers an input, a tooltip details what it is for:

Frame width:
 Frame depth: Integer or float, in current unit
 Roll shutter:
 Screen: Select shutter side, dimensions and material

1 **Window type:** select the window type in the drop-down list:

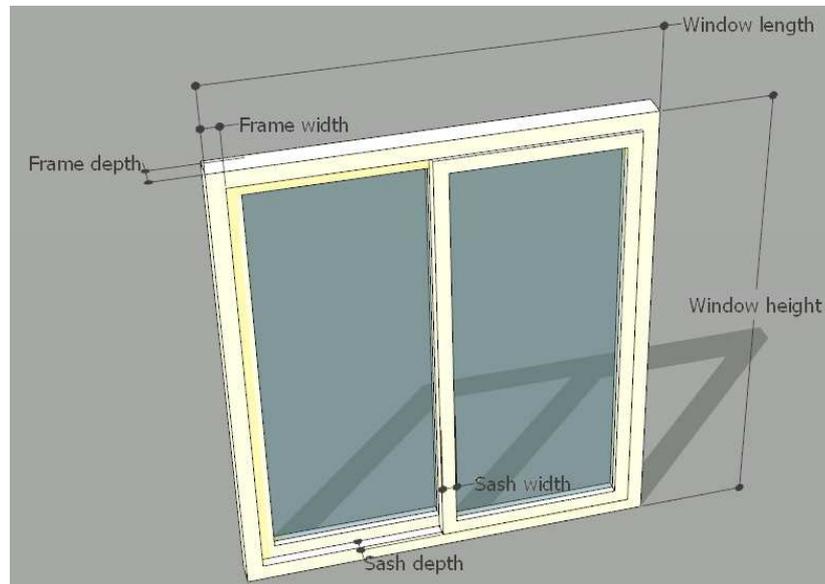




Sliding window vertical cut

2 Click on the **eyedropper** to retrieve the properties of another window and fill the dialog with them (this allow one to click on a previously created window and create a new one with the same properties and other dimensions)

3 Number of **sashes**: always set to 0 for fixed window, maximum for all other types: 9



4 **Window length**: enter the length of the window in your current units, or click on the ruler button to measure the length on the model. Use your current decimal separator for non-integer numbers.

5 **Window height:** enter the height of the window in your current units, or click on the ruler button to measure the length on the model. Use your current decimal separator for non-integer numbers.

6 **Frame width:** enter the width of the main frame section in your current units. Use your current decimal separator for non-integer numbers.

7 **Frame depth:** enter the depth of the main frame section in your current units. Use your current decimal separator for non-integer numbers.

8 **Sash width:** enter the width of each sash in your current units. Use your current decimal separator for non-integer numbers.

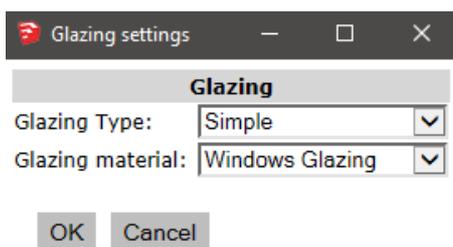
9 **Sash depth:** enter the depth of each sash in your current units. Use your current decimal separator for non-integer numbers.

10 **Frame material:** select material for the main frame.

You can choose among:

- default (frame will get the default material, color as set in the style)
 - a default WB Frame material, provided with the plugin
 - all the "in model" materials
-

11 **Glazing:** will display a second dialog box:

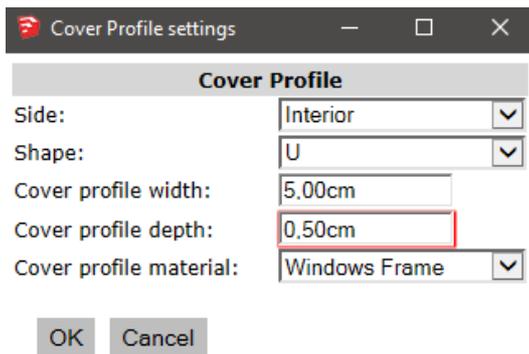


Select glazing type among none, simple, double, triple. Selecting "none" means that no glazing group will be drawn.

Select glazing material among:

- default (glazing will get the default material, color as set in the style)
 - a default WB Glazing material, provided with the plugin
 - all the "in model" materials
-

12 **Cover profile:** will display a second dialog box:



Select side among none, interior, exterior, both. Selecting "none" means that no cover profile group will be drawn.

Select shape "O" or "U".

O shaped profile will be draw all around the main frame, while a U shaped profile will be drawn like an upside-down U (no profile at window bottom)

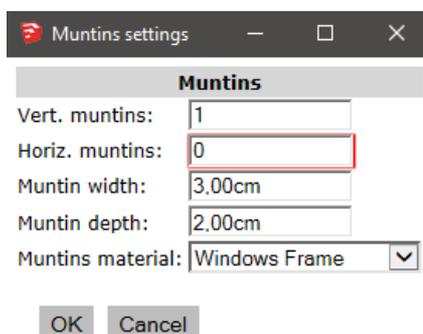
Enter cover profile width, using your current units. Use your current decimal separator for non-integer numbers.

Enter cover profile depth, using your current units. Use your current decimal separator for non-integer numbers.

Select the cover profile material among:

- default (cover profile will get the default material, color as set in the style)
- a default WB Frame material, provided with the plugin
- all the "in model" materials

13 **Muntins:** will display a second dialog box:



Enter the number of vertical muntins (mullions). 0 means that no vertical muntin will be drawn. Maximum number: 10

Enter the number of horizontal muntins (mullions). 0 means that no horizontal muntin will be drawn. Maximum number: 10

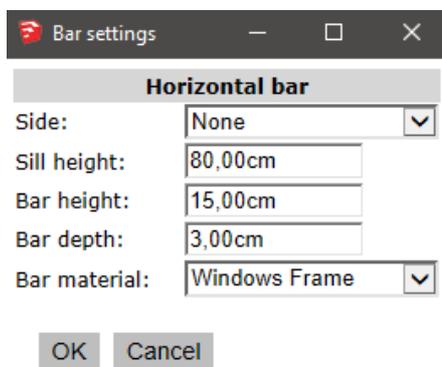
Enter the muntin width, using your current units. Use your current decimal separator for non-integer numbers.

Enter the muntin depth, using your current units. Use your current decimal separator for non-integer numbers.

Select the muntins material among:

- default (muntins will get the default material, color as set in the style)
- a default WB Frame material, provided with the plugin
- all the "in model" materials.

14 **Horizontal bar:** will display a second dialog box:



Select side among none, interior, exterior, both. Selecting "none" means that no horizontal bar group will be drawn.

Enter the sill height, using your current units. Use your current decimal separator for non-integer numbers. This value is measured from the window bottom to the bar bottom.

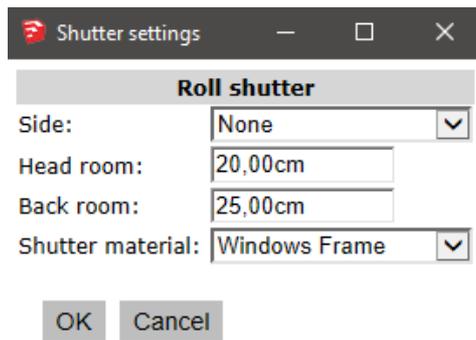
Enter the bar height, using your current units. Use your current decimal separator for non-integer numbers.

Enter the bar depth, using your current units. Use your current decimal separator for non-integer numbers.

Select the bar material among:

- default (horizontal bar will get the default material, color as set in the style)
- a default WB Frame material, provided with the plugin
- all the "in model" materials.

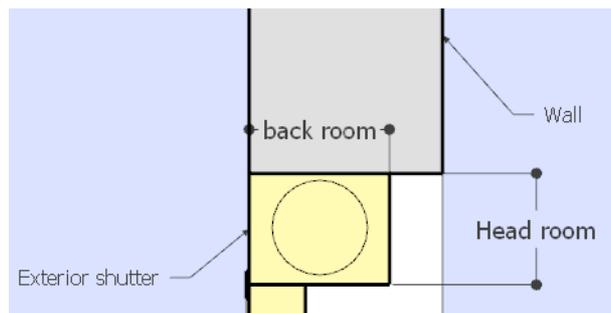
15 **Roll shutter:** will display a second dialog box:



Select side among none, interior, exterior. Selecting "none" means that no shutter group will be drawn.

Enter the head room, using your current units. Use your current decimal separator for non-integer numbers.

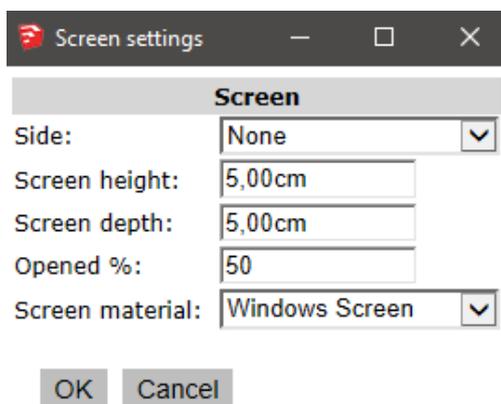
Enter the back room, using your current units. Use your current decimal separator for non-integer numbers.



Select the shutter material among:

- default (shutter will get the default material, color as set in the style)
- a default WB Frame material, provided with the plugin
- all the "in model" materials.

16 **Screen:** will display a second dialog box:

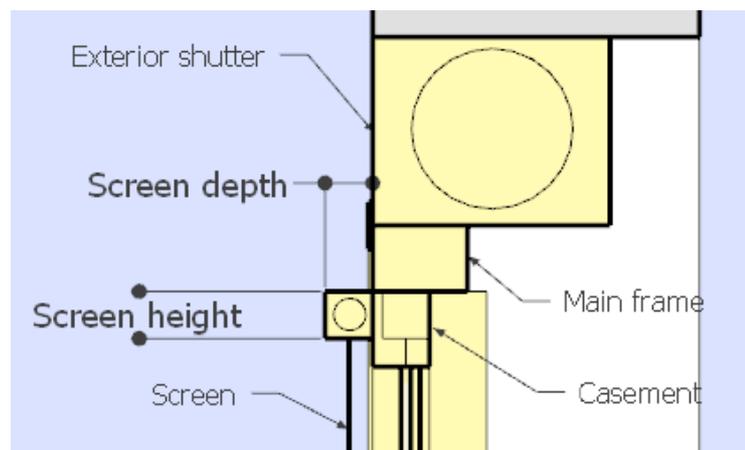


Select side among none, interior, exterior. Selecting "none" means that no screen group will be drawn.

Enter the screen height, using your current units. Use your current decimal separator for non-integer numbers.

Enter the screen depth, using your current units. Use your current decimal separator for non-integer numbers.

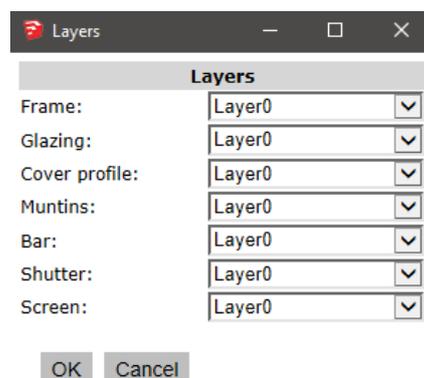
Enter a percentage (between 0 and 100) to set how much the screen will be rolled down. 100% means that the screen covers the entire window height.



Select the screen material among:

- default (shutter will get the default material, color as set in the style)
- a default WB Screen material, provided with the plugin
- all the "in model" materials.

23 **Configure layers** will display a second dialog box:



Select the layers in the drop-down lists for each part of the window.

Default value is the default layer.

Select "Active" if you want any part of the window to be put on the currently active layer.

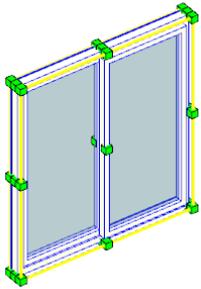
The layers configuration is also saved in preset files (see **24**).

17 Behavior parameters

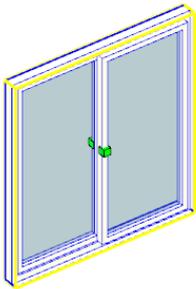
Cuts opening: same than native SketchUp option (this can be edited later in the Components tab)

18 **Glue to:** same than native SketchUp option (this can be edited later in the Components tab)

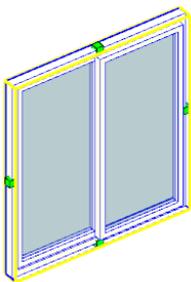
19 **Scaling constraint:** select among none, 1D, 2D, 3D
Selecting none means that the scale tool will behave as usual with this window:



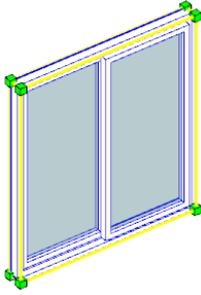
Selecting 1D means that the window will only be scalable in its blue direction:



Selecting 2D means that the window will only be scalable in its red or green directions:



Selecting 3D means that the window will only be scalable uniformly in its red, green and blue directions:



20 Component name:

Default name: Window Sliding#9

Component name:

Either let the plugin automatically name the component with the next default name, or enter your name in the input text box.

21 Create or Create and place buttons:

Click on the **Create** button to generate a new component definition with your specified parameters. It will appear in the Components tab.

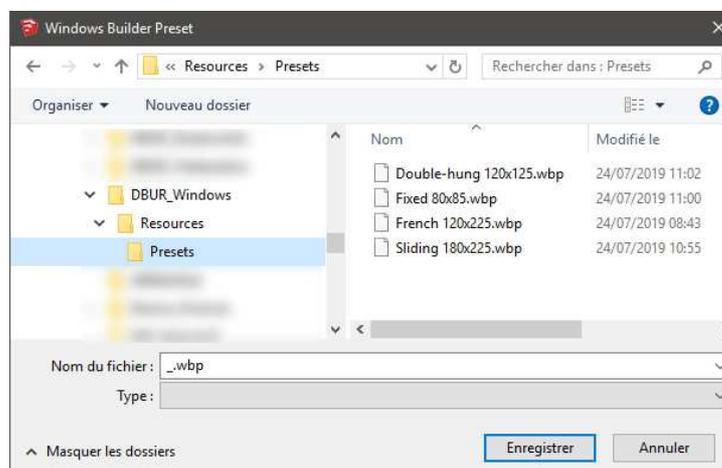
Click on the **Create and place** button to generate the new definition and immediately place an instance in the model.

22 Help button:

Guess you know what it is for ;-)

24 Load and save preset buttons

Save preset: Fill the main dialog with all the desired values and click on "Save preset". This will open a file save window like this:

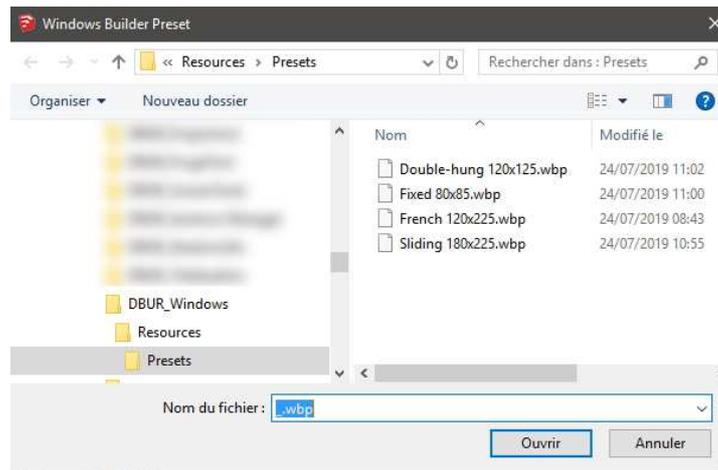


Enter a name for your preset (with or without extension) and click on the "Save" button (Enregistrer in the above figure).

Preset files default location is the "Presets" sub-folder of the plugin, but you can save them anywhere on your system.

Preset files extension is ".wbp" for Windows Builder Preset".

Load preset: Open the main dialog and click on "Load preset". This will open a file load window like this:



Select a preset file and click on the "Open" button (Ouvrir in the above figure).

The main dialog and all secondary dialogs will be filled with all the values contained in the preset file.

Notes:

- if you load a preset containing some layer(s) that are missing in your model, they will be automatically created.
- 4 presets are included in the release, for tests purpose.

2. Face based window component

Another way of creating a window component is to select a face first, then click on the  icon. This is particularly suitable for non-rectangular windows.

Fixed window settings — □ ×

Window type


Fixed light ▼

Parameters

Sash:	0
Window length:	93,52cm
Window height:	147,22cm
Frame width:	<input style="width: 80%;" type="text" value="7,00cm"/>
Frame depth:	<input style="width: 80%;" type="text" value="10,00cm"/>
Sash width:	<input style="width: 80%;" type="text" value="7,00cm"/>
Sash depth:	<input style="width: 80%;" type="text" value="7,00cm"/>
Frame material:	Windows Frame ▼
Glazing:	Select Simple
Cover profile:	Add... None

Behavior

Cuts opening:	<input checked="" type="checkbox"/>
Cuts wall:	<input type="checkbox"/>
Glue to:	None ▼
Scaling constraint:	None ▼

Default name: Window Fixed light#11

Component name:

Create
Create and place

Cancel
Help

Fixed window settings — □ ×

Window type


Opening light ▼

Parameters

Sash:	1
Window length:	93,52cm
Window height:	147,22cm
Frame width:	<input style="width: 80%;" type="text" value="7,00cm"/>
Frame depth:	<input style="width: 80%;" type="text" value="10,00cm"/>
Sash width:	<input style="width: 80%;" type="text" value="7,00cm"/>
Sash depth:	<input style="width: 80%;" type="text" value="7,00cm"/>
Frame material:	Windows Frame ▼
Glazing:	Select Simple
Cover profile:	Add... None

Behavior

Cuts opening:	<input checked="" type="checkbox"/>
Cuts wall:	<input type="checkbox"/>
Glue to:	None ▼
Scaling constraint:	None ▼

Default name: Window Opening light#8

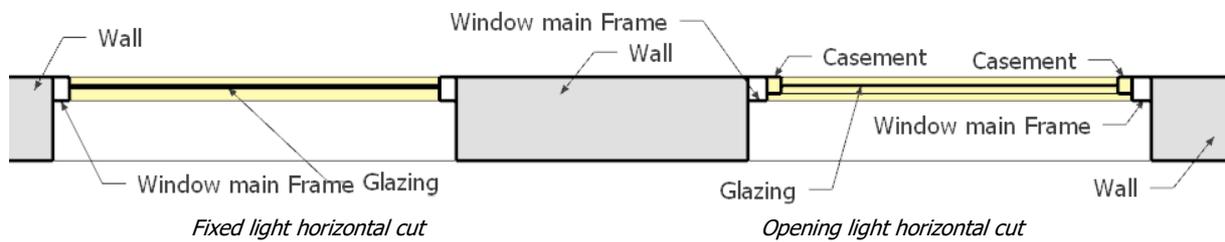
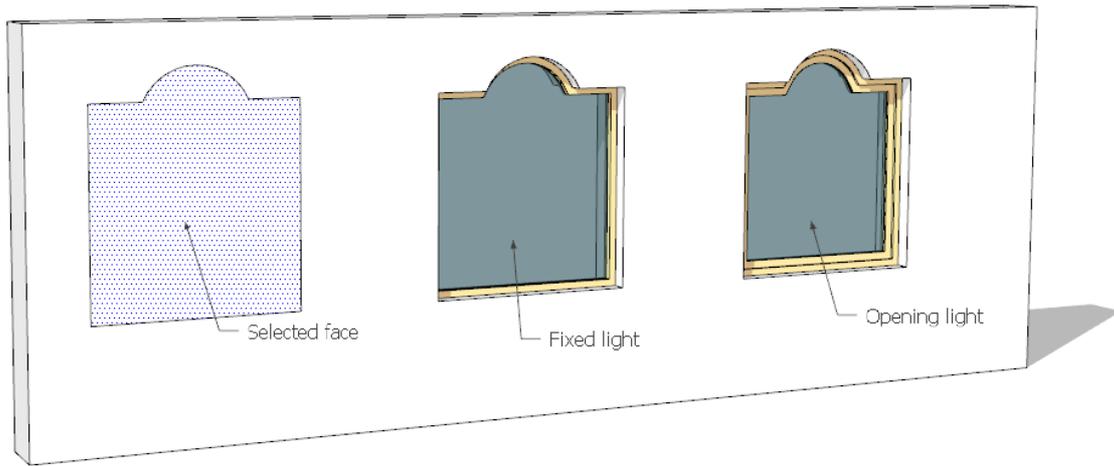
Component name:

Create
Create and place

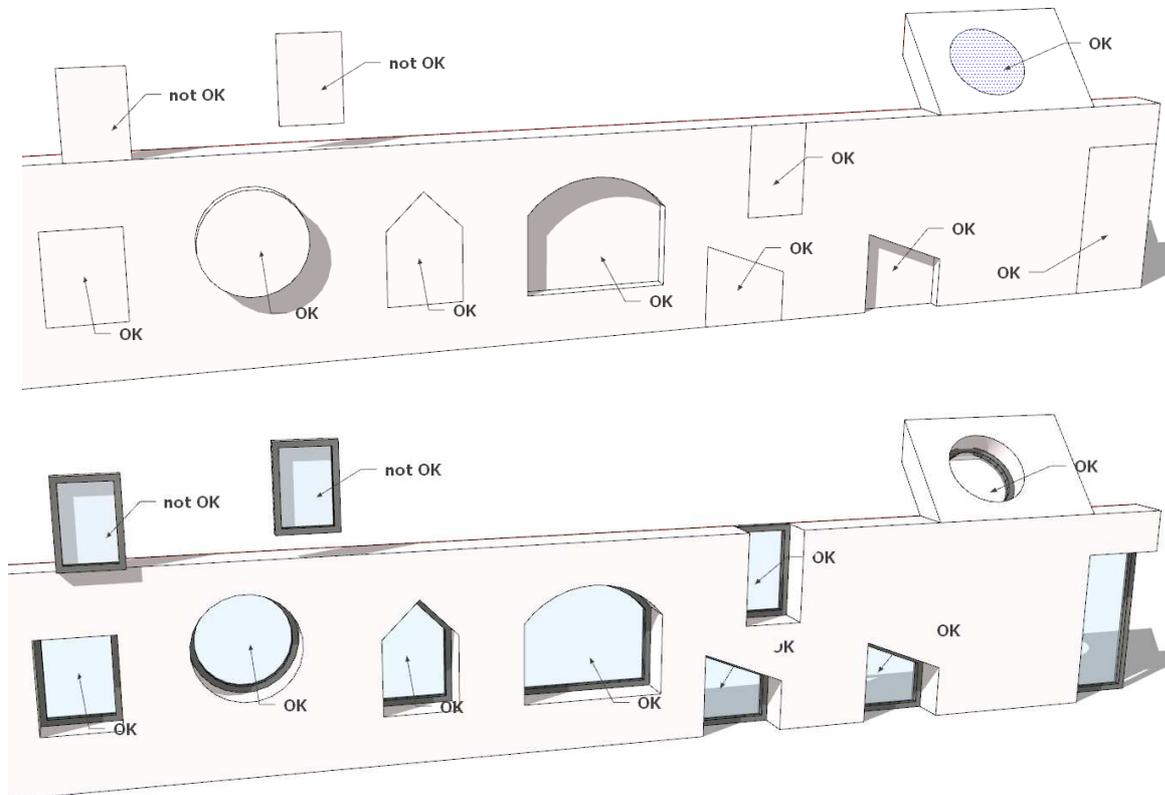
Cancel
Help

Note that the icon is only enabled when a flat, no-holes face is selected.

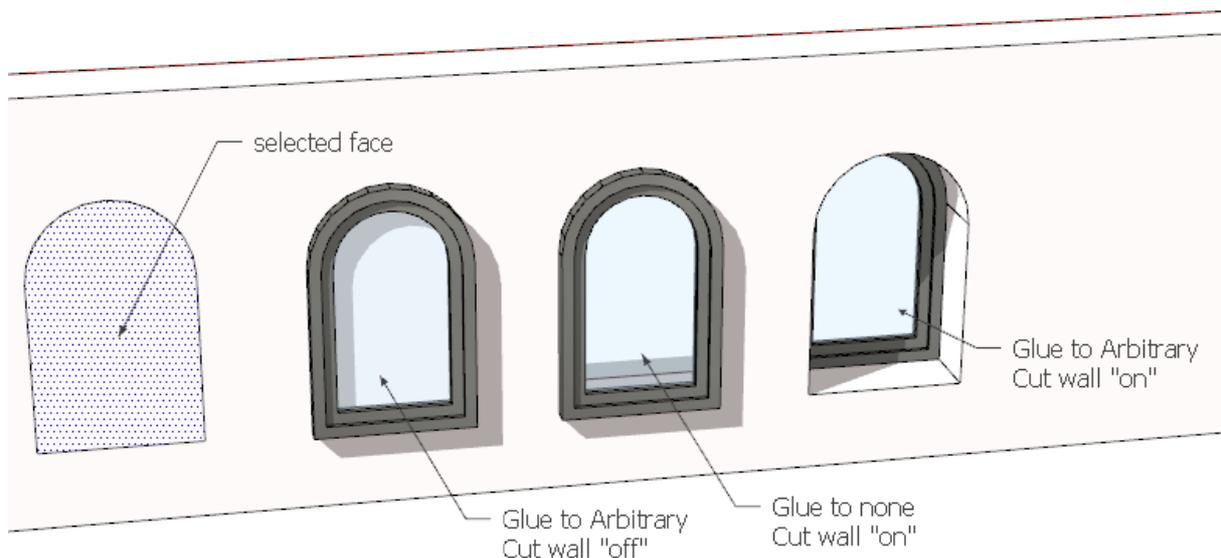
Two window types are provided: fixed light and opening light:



As you can see in the above dialogs, most of the options and fields are the same than those of the rectangular windows, except the **cut wall** option: when ticked, this checkbox will tell SU to "dig a hole" in the wall wherever possible.



Note that the plugin considers a face being part of a wall if the wall has a thickness less than 1 meter. The wall is wether regular geometry or a group. The selected face can be a regular face (a the top-level of the model) or within a group.



Buttons:

The **Create** button will just create the new window component definition in the Components palette, while the **Create and place** button will place an instance of the new component definition on the selected face, gluing to it if its gluing property is set to anything but **None**.

3. Wall pusher:

The icon will only be enabled when a valid window component is selected. Select a valid component and click on the icon: the window (or door) will be pushed on the inner face of the wall while a hole is "drilled" in the wall. If for some reason it will not work, you'll be told so.

Note:

- the window can be at top-level of the model and the wall as well,
 - the window can be within a wall group or outside a wall group.
-

Recommandations:

- Units and precision should be adapted to the smallest value you want to use. For instance, if you use the meter unit and want to set, say the cover profile depth with an accuracy of 1mm, set the unit precision to 3 decimal places. This will avoid zero or empty values in the dialogs.
- When typing float values, use your local decimal separator in the dialogs.

Known issues:

- materials whose names aren't pure ASCII (i.e. Foncé, Grès, Plâtre, Matière2...) will most of the time end up to Default material.
- when creating a window based on a face within a group, the glue feature will sometimes fail.

How to localize your version of Windows Builder:

The extension is available by default in English and French. It automatically translates the menu, options, messages, tooltips, when it loads, because it detects which locale version of SketchUp is actually running. You can easily translate the extension to your own language, following the steps below:

1. get your local version string of SketchUp
2. create your language file, translate it to your own language
3. restart SketchUP

1. Get your locale version string of SketchUp:

In SketchUp, open the Ruby console and type: `Sketchup.get_locale`
You'll get a string such as: en-US, fr, it, de, es, ja, ko, zh-CN, zh-TW, pt-BR, nl, ru.

While you're at it, type: `Sketchup.find_support_file("Plugins")` in the ruby console. This will indicate where the plugins are installed (useful for next point).

2. Create your language file, translate it to your own language:

Browse your disk to your DBUR_Windows folder. On a PC, a typical path can be:
C:/Users/YOUR_USER_NAME_HERE/AppData/Roaming/SketchUp/SketchUp
2019/SketchUp/Plugins

Open the Resources folder, you'll see two languages files: wbEN-US.lingvo and wbFR.lingvo

In a pure text editor, open the file wbEN-US.lingvo
Save it as wbXX.lingvo, where XX is the capitalized string you got at point 1.

Examples: you got "it" when typing "Sketchup.get_locale"
Save your language file as wbIT.lingvo

you got " zh-CN" when typing "Sketchup.get_locale"
Save your language file as wbZH-CN.lingvo

Each line of the base file is divided in two parts separated by <==>
The left part is the English part and must be left unchanged.
The right part is your language part that you must translate.

Below is an example of the first lines of the french file:

Windows Builder<==>Créateur de fenêtres
Settings<==>Paramètres
Type<==>Type
Fixed<==>Fixe
Sliding<==>Coulissante
French<==>A la française
Single-double hung<==>A guillotine

Important notes:

- The 3 last lines of the lingvo file define the names of the materials that will be created when you first create a window. Feel free to give whatever suits you on the right part of the line.
- Be careful to translate exactly the English part, respecting the spaces. There are actually 191 lines to translate.
- Please leave line 192 blank.
- When done, move the file to the Resources folder of the DBUR_Windows folder, restart SketchUp and here you go!

Please send me your lingvo translated file so I can include it in the extension for other users of your language. Thank you.
