

Stair Maker
Version 1.0.23

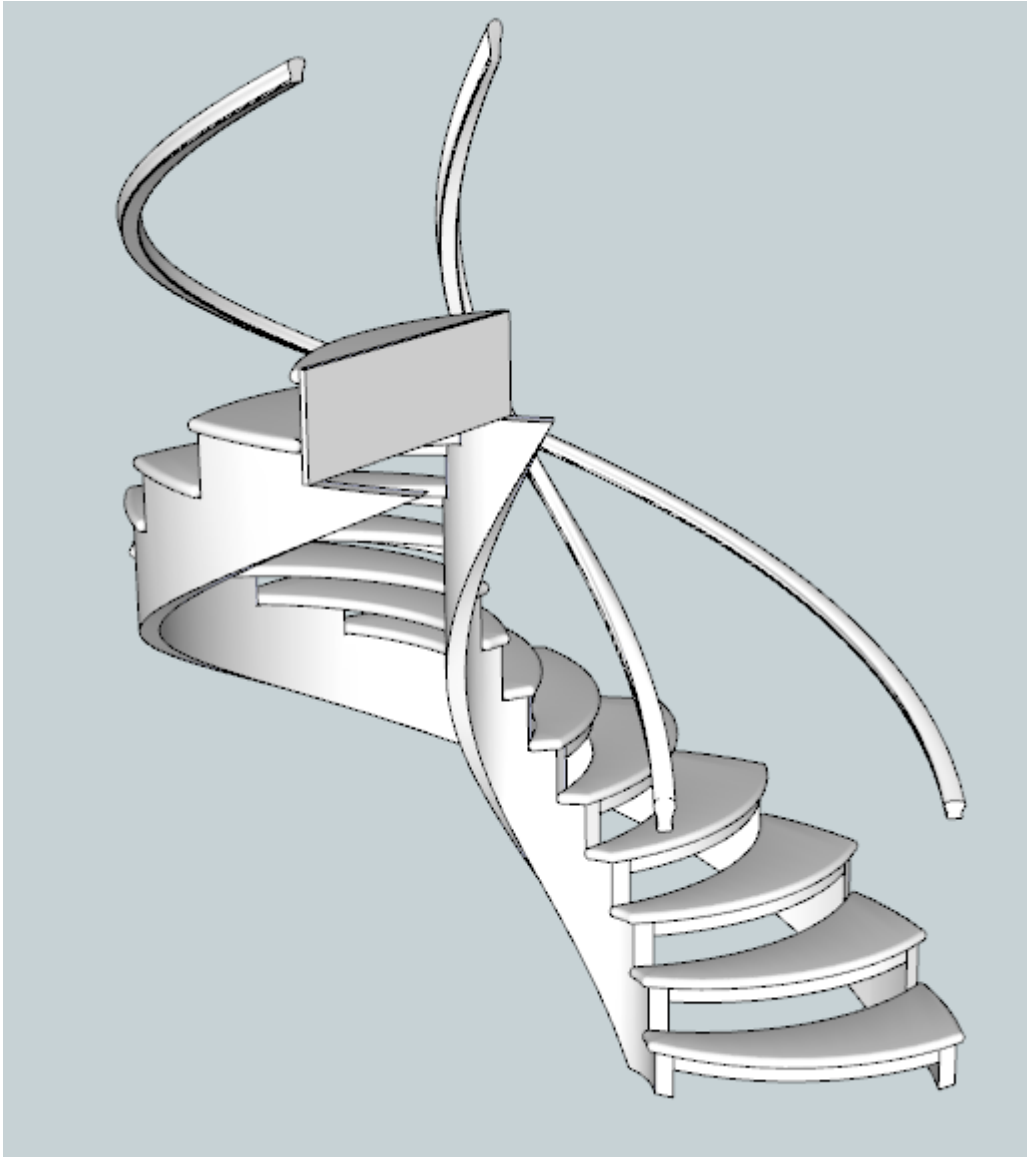


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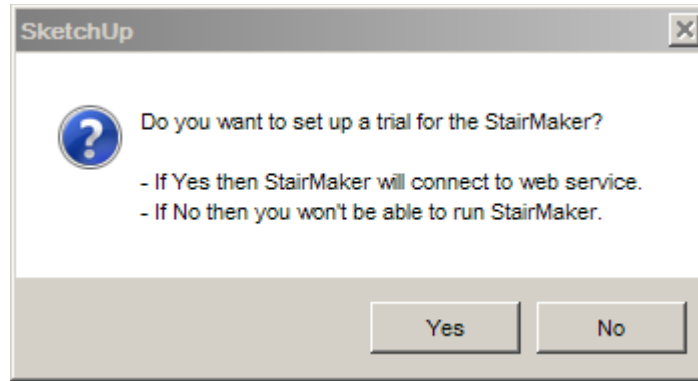
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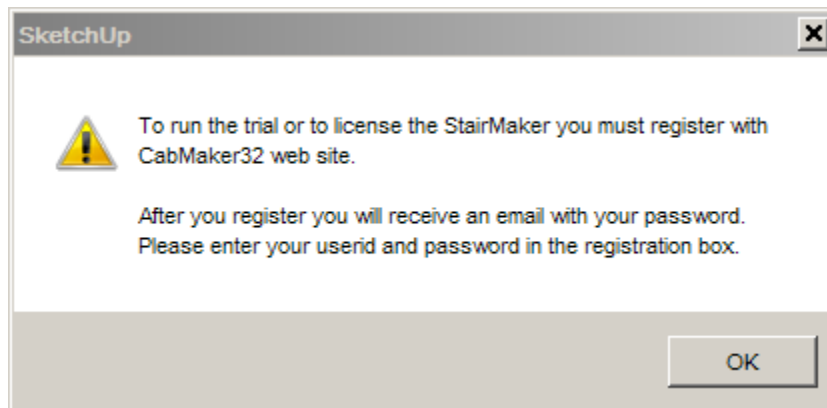
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1 Setup

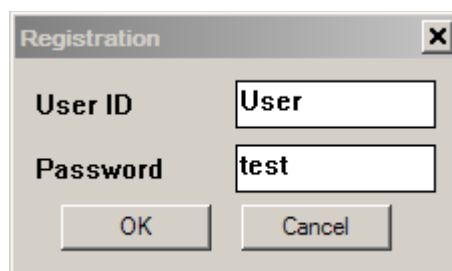
Please note that if you are trying out the Stair Maker you will be asked to register on cabmaker32.com website. At startup Stair Maker will look for the config.txt file in config folder and if it isn't found it will then look for it in GKWare_stairmaker folder. Door Maker will use the userid and password for your license. The userid and password must match the userid and password that you created when you register on cabmaker32.com.



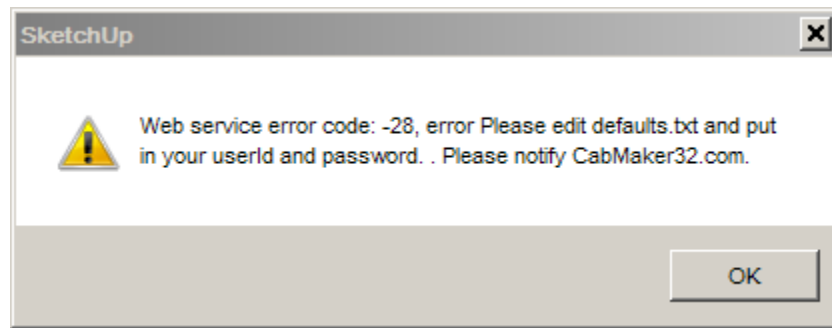
It is important that you have proper rights to these folders as Stair Maker needs to write files. You will then see another message telling you what Stair Maker is about to do. Please note that if you provide your own password at registration you will not receive an email.



Once you have registered you will see an input box asking for User ID and Password. Please replace the default User ID and password with your own.



If you do not replace the User ID and Password you will see this error message.



If you do not type in the User ID and or Password correctly you will see this error message.



If you have one of these error messages you need to delete the license.dat file which is in GKWare_stairmaker\config folder and try again. You will never loose anything if you delete the license.dat file. Your 'Trial' or 'licensed user' information is stored on the web site.

There are many different error messages. If you receive an error message that you do not understand please go to cabmaker32.com and email me with your problem. Please provide me with your User ID, Sketchup version and OS version as this can speed up rectifying the situation.

2 Introduction

The Stair Maker system has 4 buttons in the “GKWare Stair Maker” tool bar and has 8 commands under the “Plugins/GKWare Stair Maker” menu.



Tool Bar Buttons

1. The first button brings up the “Stair Maker” configuration form.
2. The second button “Extrude Handrail” along a path.
3. The third button is used to “Glue Edges” together to form a single welded arc.
4. The fourth button provides you with the ability to save your or modify handrail profiles.
5. The fifth button “Stair 2D to 3D” pops up a simple input form which includes total rise, number of risers etc.
6. The sixth button “3D Tread” pops up a simple form containing Tread Number. This button converts a 2D tread into a 3D tread and and riser assembly.



Menu Options

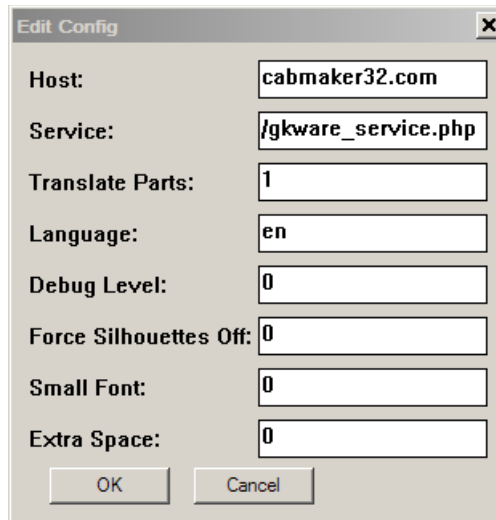
6 of the 8 menu choices work exactly the same way as the buttons on the toolbar. The menu choices are mostly in the same order and are:

1. Stair Maker
2. Extrude Handrail
3. Glue Edges
4. Add Handrail Profile
5. Stair Maker - Check License
6. Stair Maker - Edit Config
7. Stair 2D to 3D
8. 3D Tread

Please notice that I have setup short cuts for Stair Maker (S) and for 3D Tread (Shift+T). Check License will bring up the registration input box. This lets you fix any keying mistakes you may have made during registration.

Edit Config

The "Edit Config" menu choice allows you to edit additional inputs found in config.txt without having to find the file on your hardrive.



Host:	<input type="text" value="cabmaker32.com"/>
Service:	<input type="text" value="/gkware_service.php"/>
Translate Parts:	<input type="text" value="1"/>
Language:	<input type="text" value="en"/>
Debug Level:	<input type="text" value="0"/>
Force Silhouettes Off:	<input type="text" value="0"/>
Small Font:	<input type="text" value="0"/>
Extra Space:	<input type="text" value="0"/>

OK Cancel

Host

This is my web site. Please leave this as "cabmaker32.com" Unfortunately it is possible that a web site provider shuts down which would make it necessary to change urls.

Service

This is the web service that the plugin communicates with to detect licensing etc. Please leave this as "/gkware_service.php"

Translate Parts

This is relevant if you are using a language other than English and wish to control whether each component is translated or left as English.

Language

Choose which language you want. The default value is 'en' which is English. Please note that unlike most of the stair configuration settings the language file is loaded when Sketchup starts up. So you must restart Sketchup for a new language setting to take effect. If the language you choose is not available or if you enter an invalid choice then StairMaker defaults back to 'en' English. You may create your own language file if one does not exist. Save the lang.en file as lang.?? where the ?? represent the language code that you want. Please send me the completed language file and I will include it in the next release and post it to the web site.

Debug Level

This setting is currently not used. It is intended to be used to log various values of the ruby script for potential bug tracing.

Force Silhouettes Off

If checked this setting will turn off the Edge Style 'Profiles'. If not checked then Force Silhouettes has no effect.

Small Fonts

Set this field to 1 if you want smaller fonts and a smaller input box.

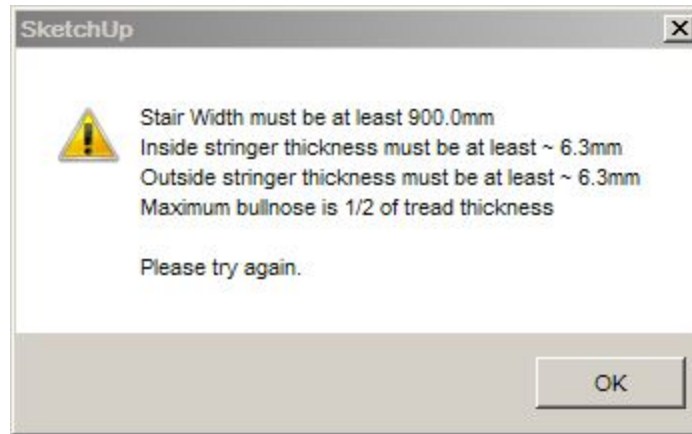
Extra Space

If you are have modified your Screen Resolution you may need to add more space to keep the form side by side.

3 Important Notes

It is recommended that you open up a second instance of Sketchup and build your stair there. You can then copy and paste it into your model. The Stair Maker is quite complicated and uses the origin [0,0,0] as the center radius point.

The Stair Maker plugin provides a few built in checks. Here is an example



Please note that there are a number of stair defaults that are in defaults.txt. This includes minimum stair width etc. Additionally, there is a rules.txt file that contains building codes and rules. You may adjust these as needed.

The Stair Maker plugin can calculate a one of three values providing that only one of the three values is initially set to 0. These three values are Radius, Degrees and Average Run.

If you provide Degrees and Average Run and set Radius to 0 the Stair Maker will calculate the Radius.

If you provide Radius and Average Run and set Degrees to 0 the Stair Maker will calculate the Degrees of stair rotation.

However if you provide Degrees and Radius the Stair Maker will calculate run.

If you set your Radius to 50 mm or less (but greater than 0) then Stair Maker will build a spiral staircase with a center pole.

If you want to delete a stair immediately after rendering then use the undo keys. Ctrl Z will remove the stair. Click stair – make a change and click “OK” or press the “Enter” key.

4 Metric Stair Maker Input Box

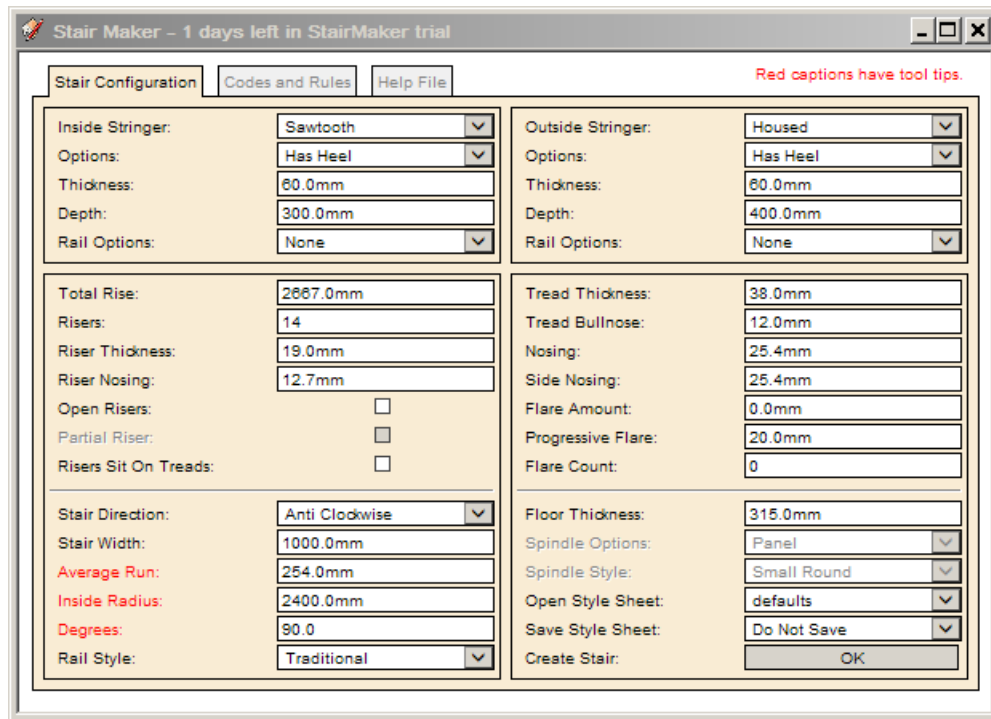
Stair Maker uses an input box which contains four sections. This is an example input box when using metric units.

The screenshot shows the 'Stair Maker - licensed user' application window. It has three tabs: 'Stair Configuration' (selected), 'Codes and Rules', and 'Help File'. A red text tip at the top right says 'Red captions have tool tips.' The window is divided into several sections for inputting stair specifications.

Section	Parameter	Value
Stringer Configuration	Inside Stringer:	Sawtooth
	Options:	Has Heel
	Thickness:	60.0mm
	Depth:	300.0mm
	Rail Options:	None
Stringer Configuration	Outside Stringer:	Housed
	Options:	Has Heel
	Thickness:	60.0mm
	Depth:	400.0mm
	Rail Options:	None
Riser Configuration	Total Rise:	2667.0mm
	Risers:	14
	Riser Thickness:	12.7mm
	Riser Nosing:	0.0mm
	Open Risers:	<input type="checkbox"/>
	Partial Riser:	<input type="checkbox"/>
	Risers Sit On Treads:	<input type="checkbox"/>
Stair Geometry	Stair Direction:	Anti Clockwise
	Stair Width:	1000.0mm
	Average Run:	254.0mm
	Inside Radius:	600.0mm
	Degrees:	172.0
	Rail Style:	Classic
	Create Stair:	OK
Tread Configuration	Tread Thickness:	38.0mm
	Tread Bullnose:	19.0mm
	Nosing:	25.4mm
	Side Nosing:	25.4mm
	Flare Amount:	50.0mm
	Progressive Flare:	20.0mm
	Flare Count:	0
Spindle Configuration	Floor Thickness:	315.0mm
	Spindle Options:	Panel
	Spindle Style:	Small Round
	Open Style Sheet:	combo
Save Configuration	Save Style Sheet:	Do Not Save

5 Small Font Metric Stair Maker Input Box

Stair Maker allows you to change the height of the input box by using smaller fonts. In the Stair Maker – Edit Config editor set Small Fonts to 1.



The screenshot shows the 'Stair Maker' software window with the title 'Stair Maker - 1 days left in StairMaker trial'. The window has three tabs: 'Stair Configuration', 'Codes and Rules', and 'Help File'. The 'Stair Configuration' tab is active. The interface is divided into two main columns of input fields. The left column contains settings for the 'Inside Stringer' (Sawtooth, Has Heel, 60.0mm thickness, 300.0mm depth, None rail options), 'Total Rise' (2667.0mm), 'Risers' (14), 'Riser Thickness' (19.0mm), 'Riser Nosing' (12.7mm), 'Open Risers' (unchecked), 'Partial Riser' (unchecked), 'Risers Sit On Treads' (unchecked), 'Stair Direction' (Anti Clockwise), 'Stair Width' (1000.0mm), 'Average Run' (254.0mm), 'Inside Radius' (2400.0mm), 'Degrees' (90.0), and 'Rail Style' (Traditional). The right column contains settings for the 'Outside Stringer' (Housed, Has Heel, 60.0mm thickness, 400.0mm depth, None rail options), 'Tread Thickness' (38.0mm), 'Tread Bullnose' (12.0mm), 'Nosing' (25.4mm), 'Side Nosing' (25.4mm), 'Flare Amount' (0.0mm), 'Progressive Flare' (20.0mm), 'Flare Count' (0), 'Floor Thickness' (315.0mm), 'Spindle Options' (Panel), 'Spindle Style' (Small Round), 'Open Style Sheet' (defaults), 'Save Style Sheet' (Do Not Save), and a 'Create Stair' button with an 'OK' label. A red text note at the top right states 'Red captions have tool tips.'.

Category	Parameter	Value
Inside Stringer	Inside Stringer:	Sawtooth
	Options:	Has Heel
	Thickness:	60.0mm
	Depth:	300.0mm
	Rail Options:	None
Outside Stringer	Outside Stringer:	Housed
	Options:	Has Heel
	Thickness:	60.0mm
	Depth:	400.0mm
	Rail Options:	None
Riser & Tread	Total Rise:	2667.0mm
	Risers:	14
	Riser Thickness:	19.0mm
	Riser Nosing:	12.7mm
	Open Risers:	<input type="checkbox"/>
	Partial Riser:	<input type="checkbox"/>
	Risers Sit On Treads:	<input type="checkbox"/>
	Tread Thickness:	38.0mm
	Tread Bullnose:	12.0mm
	Nosing:	25.4mm
Stair & Rail	Side Nosing:	25.4mm
	Flare Amount:	0.0mm
	Progressive Flare:	20.0mm
	Flare Count:	0
	Floor Thickness:	315.0mm
	Spindle Options:	Panel
	Spindle Style:	Small Round
	Open Style Sheet:	defaults
	Save Style Sheet:	Do Not Save
	Rail Style:	Traditional
Stair Direction:	Anti Clockwise	
Stair Width:	1000.0mm	
Average Run:	254.0mm	
Inside Radius:	2400.0mm	
Degrees:	90.0	

6 Imperial Stair Maker Input Box

Here is an example input box when using imperial units.

Stair Maker – licensed user

Stair Configuration Codes and Rules Help File Red captions have tool tips.

Inside Stringer:	Sawtooth	Outside Stringer:	Housed
Options:	Has Heel	Options:	Has Heel
Thickness:	2 1/2"	Thickness:	2 1/2"
Depth:	12"	Depth:	16"
Rail Options:	None	Rail Options:	None

Total Rise:	105"	Tread Thickness:	1 1/2"
Risers:	14	Tread Bullnose:	1/2"
Riser Thickness:	1/2"	Nosing:	1"
Riser Nosing:	1/2"	Side Nosing:	1"
Open Risers:	<input type="checkbox"/>	Flare Amount:	0"
Partial Riser:	<input type="checkbox"/>	Progressive Flare:	3/4"
Risers Sit On Treads:	<input type="checkbox"/>	Flare Count:	0

Stair Direction:	Anti Clockwise	Floor Thickness:	12 1/4"
Stair Width:	42"	Spindle Options:	Panel
Average Run:	10"	Spindle Style:	Small Round
Inside Radius:	96"	Open Style Sheet:	combo
Degrees:	172.0	Save Style Sheet:	Do Not Save
Rail Style:	Classic	Create Stair:	OK

7 Stair Configuration

7.1 Section – Inside Stringer

Inside Stringer

The Inside Stringer type is Sawtooth, Housed or None. None is useful if you are building a spiral staircase without a stringer.

Options

The choices for Options are Heel, Foot, Both or None. Currently the Foot is supported only for Straight Stairs.

Thickness

This is the thickness of the inside stringer. If for instance you have 5 layers of 3/8" spruce and 1/4" oak plywood then set it to 2 1/8" or 54 mm. It is a good idea when building the stair to set this value to exactly the thickness of the stringer. Use a digital micrometer and measure a sample of all 6 layers.

Depth

This is the depth of the inside stringer. The default is set to 300 mm or 12". A freestanding stair may require a bit more depth. A housed stringer could be set to less than 300 mm.

Rail Options

The options are Guard Rail, Wall Rail and None. A Guard Rail is for posts and spindles and a Wall Rail is just a hand rail.

7.2 Section – Outside Stringer

Outside Stringer

The Outside Stringer type is Sawtooth, Housed or None. None is useful if you are building a spiral staircase without a stringer or if you are building a stair that has a thick single staircase.

Options

The choices for Options are Heel, Foot, Both or None. Currently the Foot is not supported.

Thickness

This is the thickness of the outside stringer. If for instance you have 5 layers of 3/8" spruce and 1/4" oak plywood then set it to 2 1/8" or 54 mm. It is a good idea when building the stair to set this value to exactly the thickness of the stringer. Use a digital micrometer and measure a sample of all 6 layers.

Depth

This is the depth of the outside stringer. The default is set to 400 mm or 16". A freestanding stair may require a bit more depth. A housed stringer could be set to less than 400 mm.

Rail Options

The options are Guard Rail, Wall Rail and None. A Guard Rail is for posts and spindles and a Wall Rail is just a hand rail.

7.3 Section – Riser Section

Total Rise

This is the total Rise of the stair.

Risers

Set the number of risers that you wish for the stair. This number is somewhat dependent on the minimum and maximum rise per riser. These values are found in the defaults.txt file under `metric_min_rise`, `metric_max_rise`, `imperial_min_rise` and `imperial_max_rise`. If you set the number of risers to a value where the rise per tread exceeds the maximum rise then the Stair Maker adjusts the number of Risers. Conversely if you set the number of risers to a value where the rise per tread is less than the minimum number of risers then the Stair Maker will automatically adjust the number of risers.

Riser Thickness

This is the thickness for the risers and sets the riser portion of a sawtooth stringer and or the dado for the riser portion of a housed stringer. It also sets the width of the dado for the tread where the riser fits into the tread. If you want an open riser stair then set this value to 0. The depth of the dado for both housed stringers and the tread is found in the defaults.txt file under `metric_tread_dado`, `metric_stringer_dado`, `imperial_tread_dado` and `imperial_stringer_dado`.

Riser Nosing

The "Riser Nosing" or riser return is for sawtooth stringer and is the amount that the riser board extends beyond the sawtooth stringer. It is used to return the carpet.

Open Risers

This is a check box that will build either open or closed riser stairs.

Partial Riser

The "Partial Riser" option is used in jurisdictions where there is code stipulating a maximum space that is allowed. This option is used in conjunction with the "Maximum Gap" setting found on the "Code and Rules" page.

Risers Sit On Treads

The “Risers Sit On Treads” option is useful for certain kinds of risers such as marble where the riser must sit on the tread. In this case the tread is extended to where the back of the riser is and the riser is shortened by the “Tread Thickness”

7.4 Section – Tread Section

Tread Thickness

This is the thickness of the treads and top nosing. An open riser stair should have a thicker tread such as 3 layers of 3/4” fir plywood glue laminated. A 1” tread is minimum tread thickness governed under most building codes. The default is set to 1 1/2” or 38 mm. Again you may change the defaults in the defaults.txt file to suit your requirements.

Tread Bullnose

This is the radius of the tread bullnose. You can adjust how many segments that the bullnose uses. The setting is in the defaults.txt file and is found under Segments. For example if you want 1/4” radius bullnose then you might try Segments=4 or if you want a 1/2” bullnose which would be good for carpet you might try Segments=6. Alternatively you could set Segments=1 and the Stair Maker plugin will create a chamfer.

Nosing

This is the amount of the Tread nosing for the front of the treads. In most jurisdictions the minimum allowed nosing is 1”. You may set it 0 if you wish. There may be cases where you want to attach a solid oak nosing after the fact.

Flare Amount

This is the amount that you want each and every tread to flare forward. We also call this a continuous flare.

Side Nosing

This is the amount of the nosing for the sides of the Tread when building sawtooth stringers.

Flare Amount

This is the amount that every step is flared. It is measured at the center of the tread. Riser boards will also flare by this same amount. Set this to 0 for no flare.

Progressive Flare

A progressive Flare stair is where each step is flared this amount more than the previous step. For example, if you Flare Count to 5 and Progressive flare to 20 mm then counting backwards from the bottom step the flares would be 100, 80, 60, 40, 20, 0 and so on.

Currently disabled for closed riser stairs.

Flare Count

This is the number of steps that are progressively flared. Currently disabled for closed riser stairs.

7.5 Section – General Section

Stair Direction

The stair can be Clockwise or Anti Clockwise. The default is Anti Clockwise. You can also choose “Straight Stair”.

Stair Width

This is the width of the stair from inside of the inside stringer to the outside of the outside stringer. The stair must be at least minimum width. The minimum width is found in the defaults.txt file under metric_min_stair_width and imperial_min_stair_width.

Average Run

The average run is measured at the middle of the tread. You may set this value to 0 and let the Stair Maker calculate a value based on Radius and Degrees.

Radius

This is the radius at the inside of the inside stringer. You may set it to 0 and the Stair Maker will figure out the radius based on Average Run and Degrees.

Degrees

You may set the degrees to 0 and the Stair Maker will figure out how far the stair rotates based on Average Run and Radius.

Rail Style

This is a dropdown list of all the rail styles that you have. The StairMaker plugin supplies 6 different handrail profiles. You can add more handrail profiles.

7.6 Section – Last Section

Floor Thickness

This is the floor thickness at the top of the stair and is used to calculate the Stringer Heel and top riser board.

Spindle Options

The “Spindle Options” is not used for this version.

Spindle Style

The “Spindle Style” is not used for this version.

Create Stair

The Create Stair button draws the stair.

Open Style Sheet

The “Open Style Sheet” drop down contains a list of saved style sheets. Retrieve a saved style sheet by selecting a different style sheet and click the “OK” button.

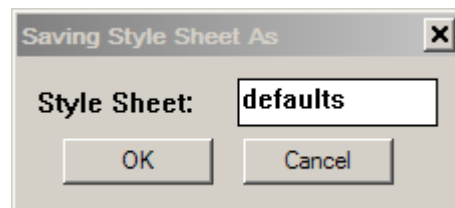
Save Style Sheet

The 'Save Style Sheet' drop down contains 3 choices: 'Do Not Save', 'Save' and 'Save As'.

1. Do Not Save - any changes to style sheet are for this session only.
2. Save - update current style sheet with current settings.
3. Save As - create a new style sheet with current settings.

Choose 'Save As' and click the 'OK' button to create a new style sheet. The style sheet is added to the drop down 'Open Style Sheet' and the current selection contains the name of the new style sheet.

An input form pops up when you choose the 'Save As' option and you click the 'OK' button. The text box is pre populated with the current Style Sheet. You can click 'OK' and update the current Style Sheet or change the name and create a new Style Sheet. If you change the name to another existing Style Sheet it will be over written with the current settings.



The next time you open the Stair Maker web dialog box you will see the Open Style Sheet contains the name of the saved Style Sheet.

Create Stair

The Create Stair button draws the stair. Please note that the Enter key works just like the Create Stair button.

8 Metric Stair Maker Codes And Rules

Stair Maker uses an input box for Codes and Rules which contains four sections. This is an example input box when using metric units.

The screenshot shows the 'Codes and Rules' dialog box in the Stair Maker software. The window title is 'Stair Maker is licensed'. It has three tabs: 'Stair Configuration', 'Codes and Rules' (selected), and 'Help File'. A red text note in the top right corner says 'Red captions have tool tips.' The dialog is divided into two main columns of input fields. The left column contains: 'Nosing Segments:' (4), 'Minimum Riser Height:' (125.0mm), 'Maximum Riser Height:' (200.0mm), 'Minimum Run:' (210.0mm), 'Maximum Run:' (355.0mm), 'Minimum Stair Width:' (900.0mm), 'Rail Clearance:' (40.0mm), 'Maximum Gap:' (100.0mm), 'Stair Rail Height:' (800.0mm), and 'Level Rail Height:' (900.0mm). The right column contains: 'Inside Tread Segments:' (3), 'Outside Tread Segments:' (4), 'Minimum Radius:' (50.0mm), 'Top Riser Thickness:' (19.0mm), 'Dado Depth Tread:' (12.7mm), 'Dado Depth Stringer:' (12.7mm), 'Stringer Above Floor:' (12.7mm), 'Housed Stringer Reveal:' (38.0mm), 'Preferred Panel Width:' (600.0mm), 'Radius of Foot:' (300.0mm), 'Foot Above Floor:' (50.0mm), and 'Flare Sawtooth Face:' (checked).

Field	Value
Nosing Segments:	4
Minimum Riser Height:	125.0mm
Maximum Riser Height:	200.0mm
Minimum Run:	210.0mm
Maximum Run:	355.0mm
Minimum Stair Width:	900.0mm
Rail Clearance:	40.0mm
Maximum Gap:	100.0mm
Stair Rail Height:	800.0mm
Level Rail Height:	900.0mm
Inside Tread Segments:	3
Outside Tread Segments:	4
Minimum Radius:	50.0mm
Top Riser Thickness:	19.0mm
Dado Depth Tread:	12.7mm
Dado Depth Stringer:	12.7mm
Stringer Above Floor:	12.7mm
Housed Stringer Reveal:	38.0mm
Preferred Panel Width:	600.0mm
Radius of Foot:	300.0mm
Foot Above Floor:	50.0mm
Flare Sawtooth Face:	<input checked="" type="checkbox"/>

9 Metric Stair Maker Codes And Rules

This is an example input box for Codes and Rules when using imperial units.

The screenshot shows the 'Codes and Rules' dialog box in the Stair Maker software, configured for imperial units. The window title is 'Stair Maker is licensed'. It has three tabs: 'Stair Configuration', 'Codes and Rules' (selected), and 'Help File'. A red text note in the top right corner says 'Red captions have tool tips.' The dialog is divided into two main columns of input fields. The left column contains: 'Nosing Segments:' (4), 'Minimum Riser Height:' (5"), 'Maximum Riser Height:' (8"), 'Minimum Run:' (8 1/4"), 'Maximum Run:' (14"), 'Minimum Stair Width:' (36"), 'Rail Clearance:' (1 1/2"), 'Maximum Gap:' (4"), 'Stair Rail Height:' (32"), and 'Level Rail Height:' (36"). The right column contains: 'Inside Tread Segments:' (3), 'Outside Tread Segments:' (4), 'Minimum Radius:' (2"), 'Top Riser Thickness:' (3/4"), 'Dado Depth Tread:' (1/2"), 'Dado Depth Stringer:' (1/2"), 'Stringer Above Floor:' (1/2"), 'Housed Stringer Reveal:' (1 1/2"), 'Preferred Panel Width:' (24"), 'Radius of Foot:' (12"), 'Foot Above Floor:' (2"), and 'Flare Sawtooth Face:' (checked).

Field	Value
Nosing Segments:	4
Minimum Riser Height:	5"
Maximum Riser Height:	8"
Minimum Run:	8 1/4"
Maximum Run:	14"
Minimum Stair Width:	36"
Rail Clearance:	1 1/2"
Maximum Gap:	4"
Stair Rail Height:	32"
Level Rail Height:	36"
Inside Tread Segments:	3
Outside Tread Segments:	4
Minimum Radius:	2"
Top Riser Thickness:	3/4"
Dado Depth Tread:	1/2"
Dado Depth Stringer:	1/2"
Stringer Above Floor:	1/2"
Housed Stringer Reveal:	1 1/2"
Preferred Panel Width:	24"
Radius of Foot:	12"
Foot Above Floor:	2"
Flare Sawtooth Face:	<input checked="" type="checkbox"/>

10 Codes And Rules

10.1 Section – Sketchup Geometry

Nosing Segments

This value is used to determine the number of arc segments you want for the tread's bullnose. A value of 1 or more is allowed. A value of 1 will give the effect of a mitered bullnose. It is recommended that you keep this number between 1 and 6.

10.2 Section - Options

Inside Tread Segments

This is the number of segments that is used for the arc of the inside tread, inside stringer and inside handrail. A value of 3 is generally recommended, however a larger value may work better for a very tight radius stair.

Outside Tread Segments

This is the number of segments that is used for the arc of the outside tread, outside stringer and outside handrail. A value of 4 is generally recommended, however a larger value may work better for a very tight radius stair.

10.3 Section – Building Codes

Minimum Riser Height

The “Minimum Riser Height” is used to override the number of risers if necessary. Stair Maker adjusts the number of risers if the current number would create a stair where each riser height is less than this value. Change this value if your jurisdiction has a different value. Canadian Building Code is 125 mm.

Maximum Riser Height

The “Maximum Riser Height” is used to override the number of risers if necessary. Stair Maker adjusts the number of risers if the current number would create a stair where each riser height is greater than this value. Change this value if your jurisdiction has a different value. Canadian Building Code is 200 mm.

Minimum Run

The “Minimum Run” is used to check the run of straight stairs and is not currently used for this version. Canadian Building Code is 210 mm.

Maximum Run

The “Maximum Run” is used to check the run of straight stairs and is not currently used for this version. Canadian Building Code is 355 mm.

Minimum Stair Width

The “Minimum Stair Width” is used to make sure that the stair follows code. Canadian Building Code is 800 mm.

Maximum Gap

The “Maximum Gap” is the maximum space allowed. Canadian Building Code is 100 mm.

Rail Clearance

The “Rail Clearance” is the amount of finger room between a wall rail and the outside of the wall stringer. Canadian Building Code is 40 mm.

Stair Rail Height

This is the height of the stair rail as measured vertically from the tread nosing. Canadian Building Code is 800 mm. For inside residential stairs

Level Rail Height

This is the height of level rail as measured vertically from the floor. Canadian Building Code is 900 mm for inside residential rails and 1000 mm. for outside and commercial rails.

10.4 Section - Details

Minimum Radius

This is the minimum radius that we allow for inside stringers on spiral stair cases. At this setting we will create a solid round pole instead of a stringer.

Top Riser Thickness

The top riser can be a different thickness than the other riser boards. This is because it is used to secure the stair to the upper level. There are also the situations where you have flared risers. The top riser is never flared.

Dado Depth Tread

Riser boards extend into a dado on the underside of the tread. This is the depth of that dado. The width of the dado is determined by the thickness of the riser board.

Dado Depth Stringer

Treads and risers extend into a stair dado on the inside surface of housed stringers.

Stringer Above Floor

This is the amount that a housed stringer is above the upper floor landing. A value of 0 means the stringer is cut flush with the floor. A value like 12.7 mm means that the stringer is cut so that none of it is more than 1/2” above the floor.

Housed Stringer Reveal

The “Housed Stringer Reveal” is the amount the stringer is above nosing of the stair.

Preferred Panel Width

The “Preferred Panel Width” is the width of glass panels. This setting is not used in this version.

Radius of Foot

A foot gives you more surface area at the floor for the stringer which increases rigidity. Very useful for open stair cases. The minimum diameter for the radius is 50 mm.

Foot Above Floor

The “Foot Above Floor” gives you vertical distance for the foot before it begins curving. A small amount of vertical makes it easier to fit a bottom plate or moulding.

Flare Sawtooth Face

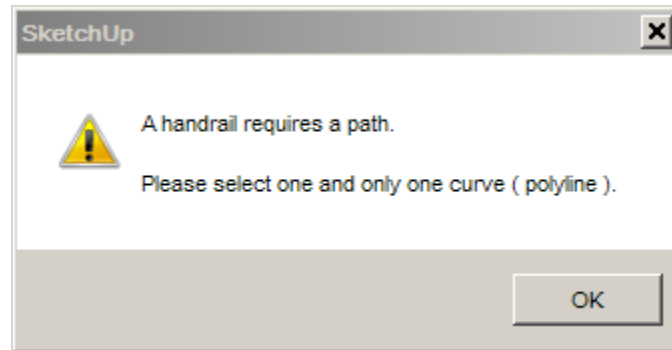
Check the “Flare Sawtooth Face” check box and stair maker miters each sawtooth stringer riser faces to match the riser board. If not checked then the sawtooth stringer is cut at 90 degrees.

11 Extrude Handrail

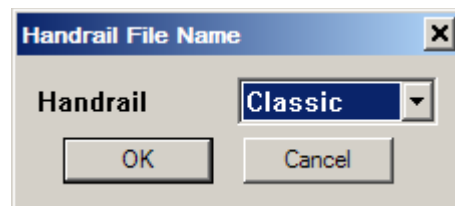
Extrude Handrail gives the user the ability to create 1 or more sections of handrail. The handrails may be level rail or stair rail.

The user first selects a polyline (an arc or a number of line segments that are glued). The the user clicks the Extrude Handrail button or chooses Extrude Handrail from the GKWare Stair Maker sub menu.

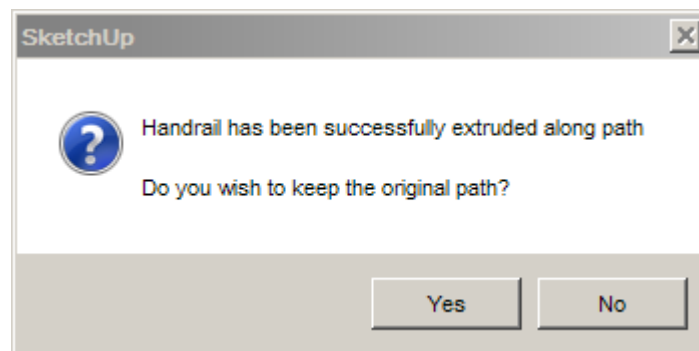
If the user does not choose a path then the user will see:



If the user selects a proper curve (polyline) then the user will see:



If the user chooses a handrail profile and then clicks ok the user will see:

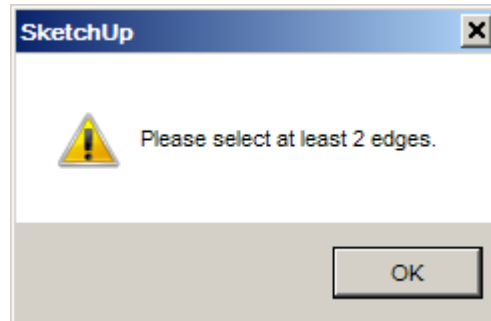


If the user clicks 'No' then the original path will be deleted otherwise the original path will remain selected.

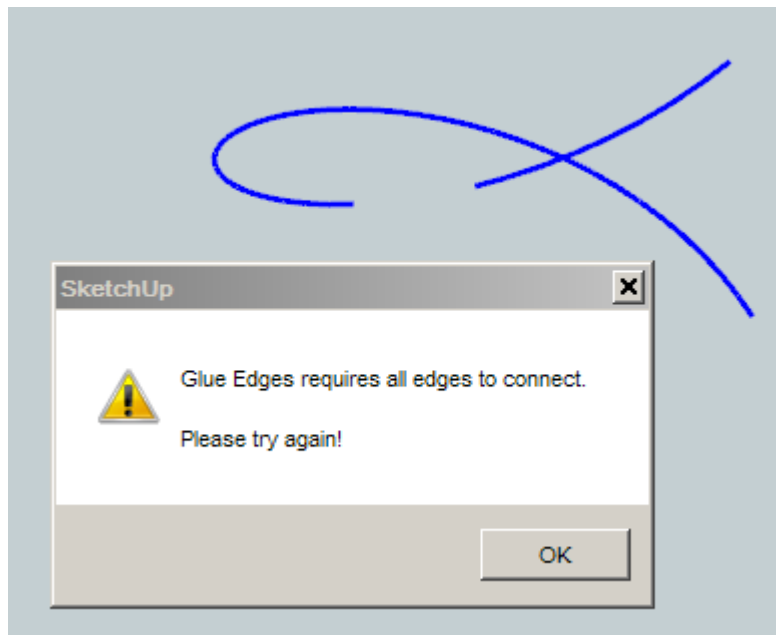
12 11 Glue Edges

Glue Edges will glue together (weld) a number of connected edges together. If some of the edges were already glued together this process will glue all the edges together.

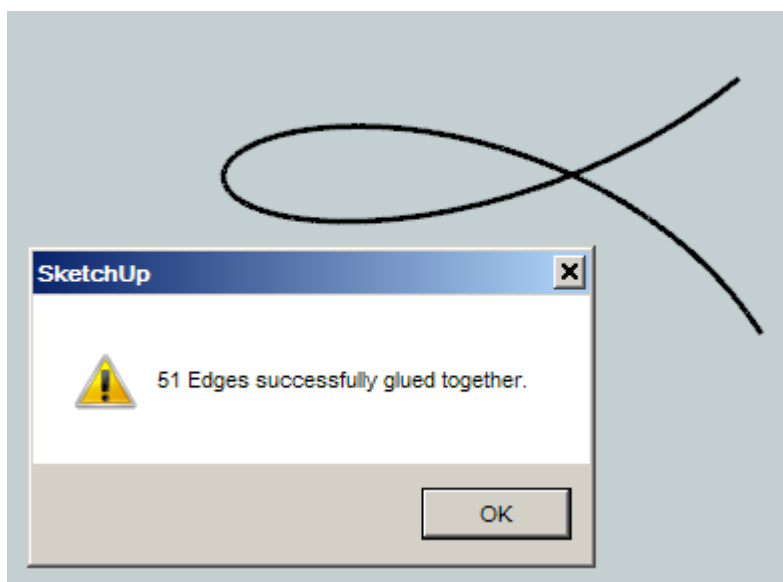
If the user clicks “Glue Edges” button without choosing at least 2 edges then the user will see:



If the user chooses more than 1 edge but the edges are not connected then the user will see:



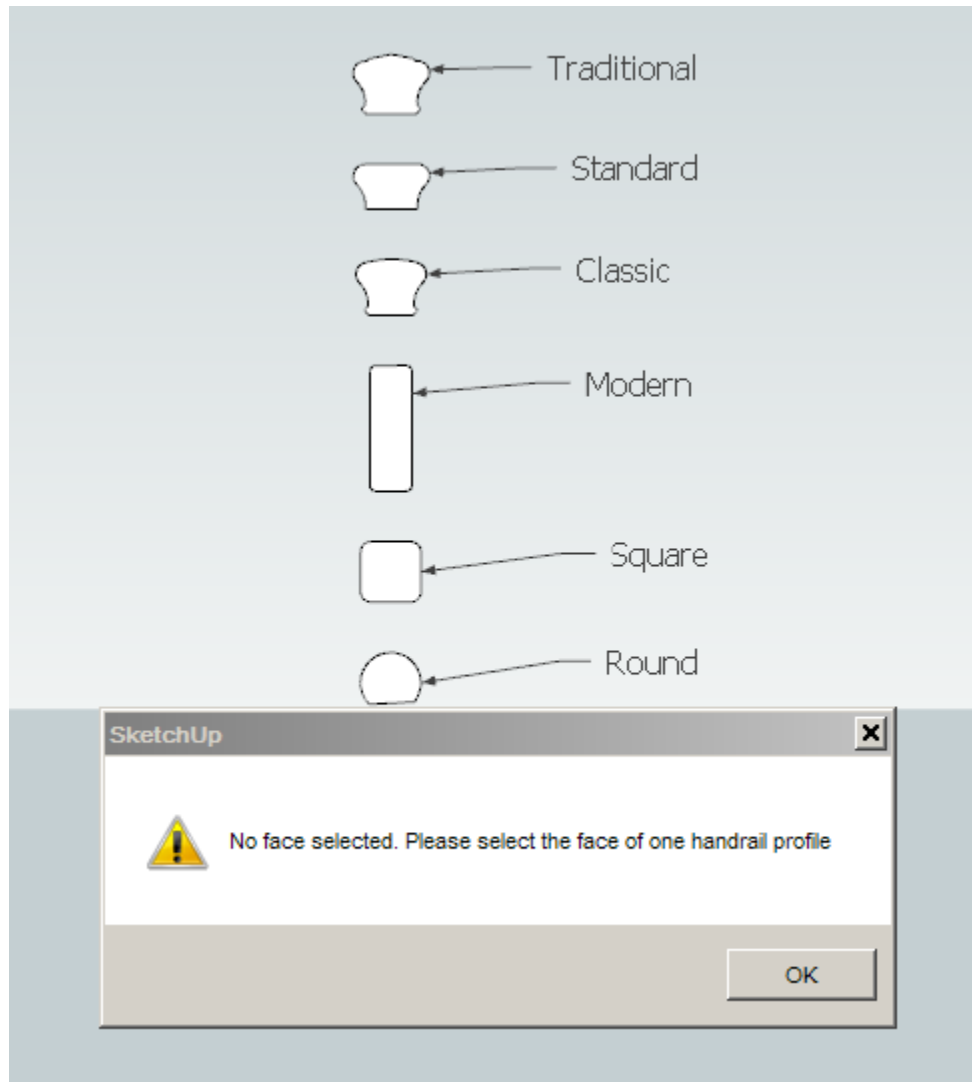
If the user chooses more than 1 edge and all the edges are connected together then the user will see something like this:



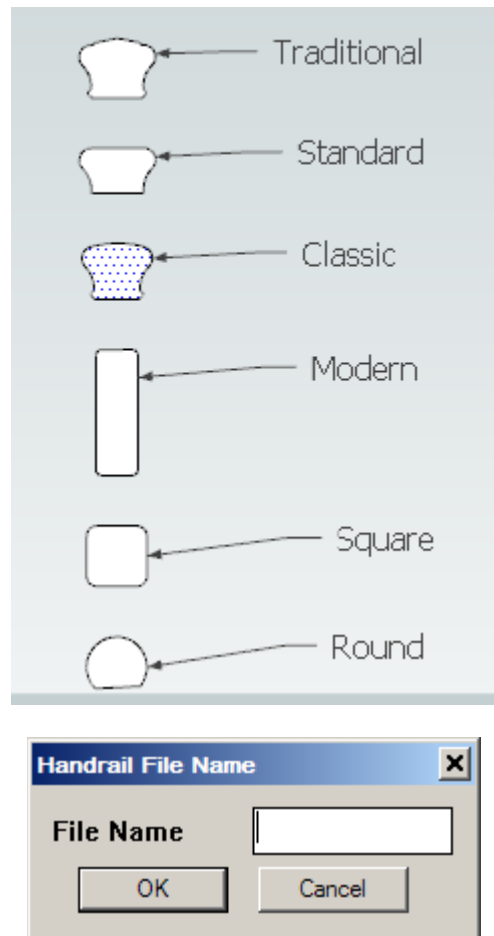
13 Add Handrail Profile

The “Add Handrail Profile” button allows the user to add or modify a handrail profile. You may load your own handrail profile or use the one Stair Maker provides which is GKWare_StairMaker/rail profiles.skp.

If the user does not choose the face of a handrail profile then the user will see:

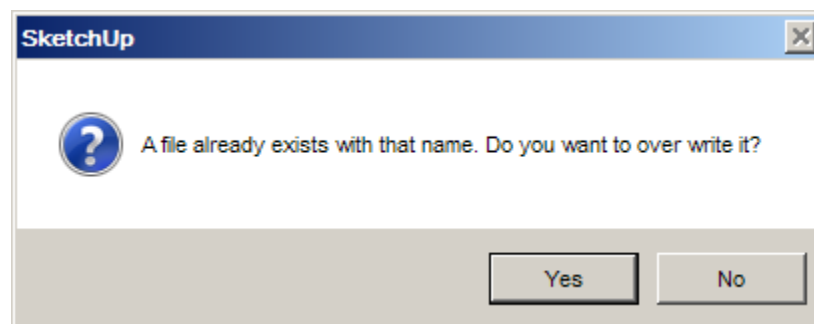


If the user selects 1 and only 1 handrail profile face and then clicks the “Add Handrail Profile” button then the user will see:

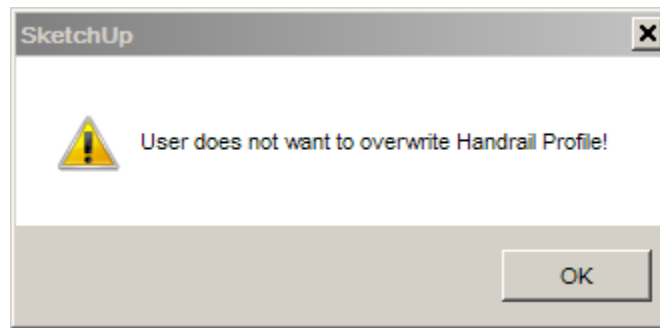


The user needs to create a name for the Handrail Profile. Please note that the rail profiles.skp file has the names of the supplied handrail profiles. You may use the same name which will result in over writing the handrail or preferably you can enter a different name.

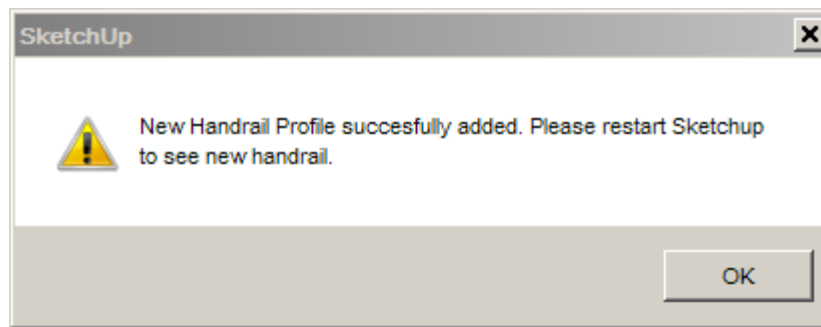
If the user enters a name that exists, for example “Classic” the user will see:



If the user chooses “No” then the the user will see:

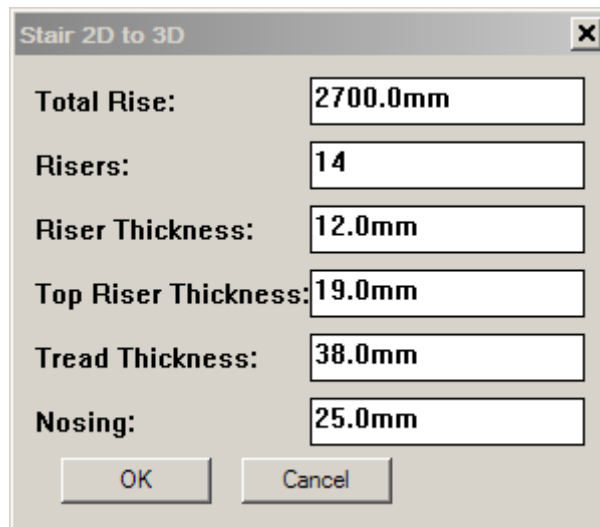


If the user chose “Yes” then the user will see:



14 Stair 2D to 3D

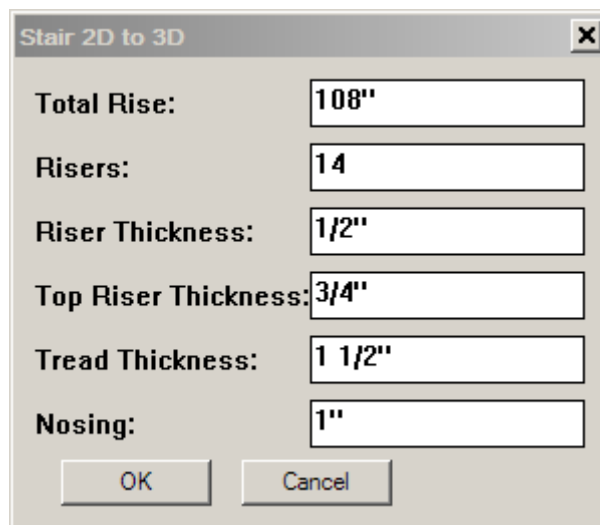
The “Stair 2D to 3D” button pops up a simple input form used by the “3D Tread” button.



A screenshot of a software dialog box titled "Stair 2D to 3D". The dialog box has a close button (X) in the top right corner. It contains six input fields with labels to their left: "Total Rise:" with the value "2700.0mm", "Risers:" with the value "14", "Riser Thickness:" with the value "12.0mm", "Top Riser Thickness:" with the value "19.0mm", "Tread Thickness:" with the value "38.0mm", and "Nosing:" with the value "25.0mm". At the bottom of the dialog box are two buttons: "OK" and "Cancel".

Parameter	Value
Total Rise:	2700.0mm
Risers:	14
Riser Thickness:	12.0mm
Top Riser Thickness:	19.0mm
Tread Thickness:	38.0mm
Nosing:	25.0mm

These stair settings are in metric or in imperial depending on your model settings. This form must be filled out before using the “3D Tread” button. These settings are stored in the config folder as either metric_2d.txt or imperial_2d.txt.



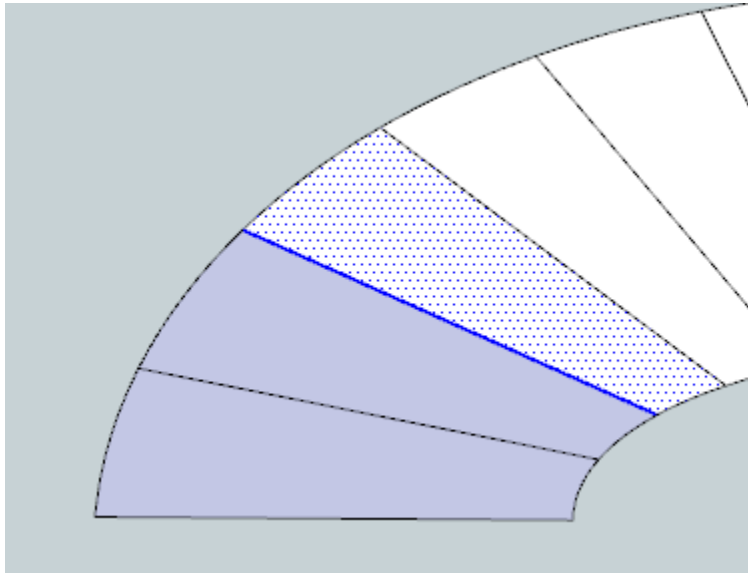
A screenshot of the same "Stair 2D to 3D" dialog box, but with imperial units. The values in the input fields are: "Total Rise:" is "108\"", "Risers:" is "14", "Riser Thickness:" is "1/2\"", "Top Riser Thickness:" is "3/4\"", "Tread Thickness:" is "1 1/2\"", and "Nosing:" is "1\"". The "OK" and "Cancel" buttons are at the bottom.

Parameter	Value
Total Rise:	108"
Risers:	14
Riser Thickness:	1/2"
Top Riser Thickness:	3/4"
Tread Thickness:	1 1/2"
Nosing:	1"

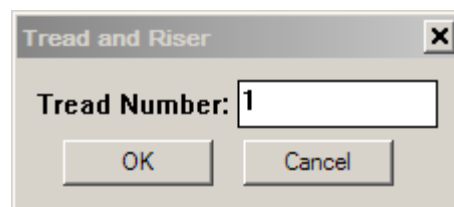
15 3D Tread

The “3D Tread” button is used to create a Tread and Riser. There are 2 new layers created “Treads” and “Risings”. Select a tread face and 1 or more edges that make up the front nosing of the tread. Then click the “3D Tread” button or choose from the plugins menu or preferably assign a short cut and use it. The short cut that I use is Shift T. The reason I picked this is my finger is already on the shift key during the selection process and I can remember “T” for tread.

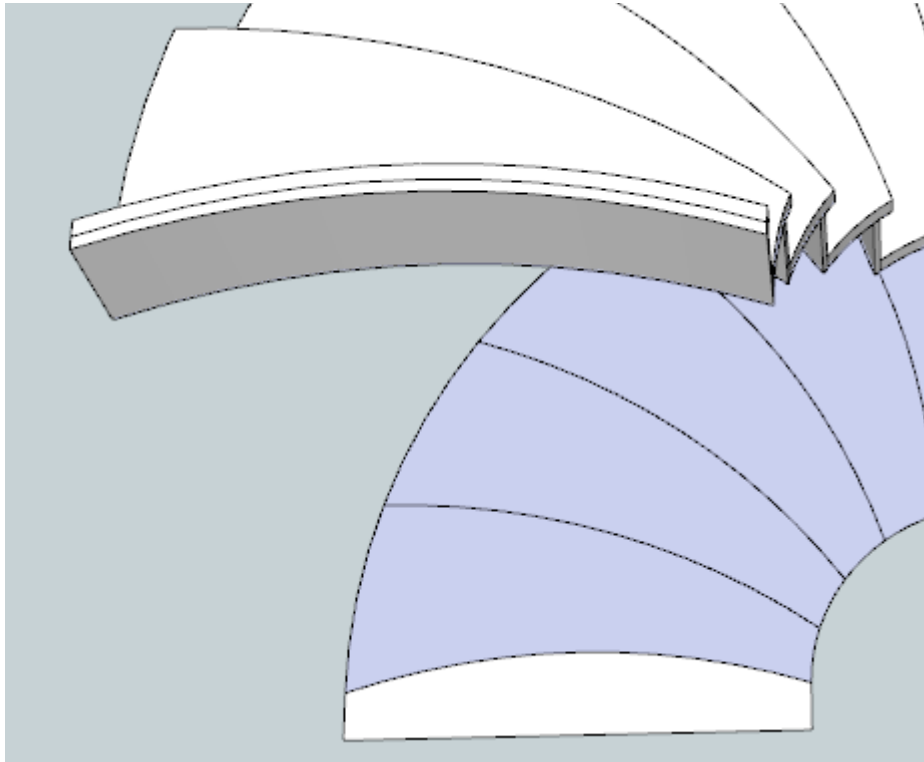
Here is an example when ready to process the third tread. Notice that the tread face and the front of the tread are selected.



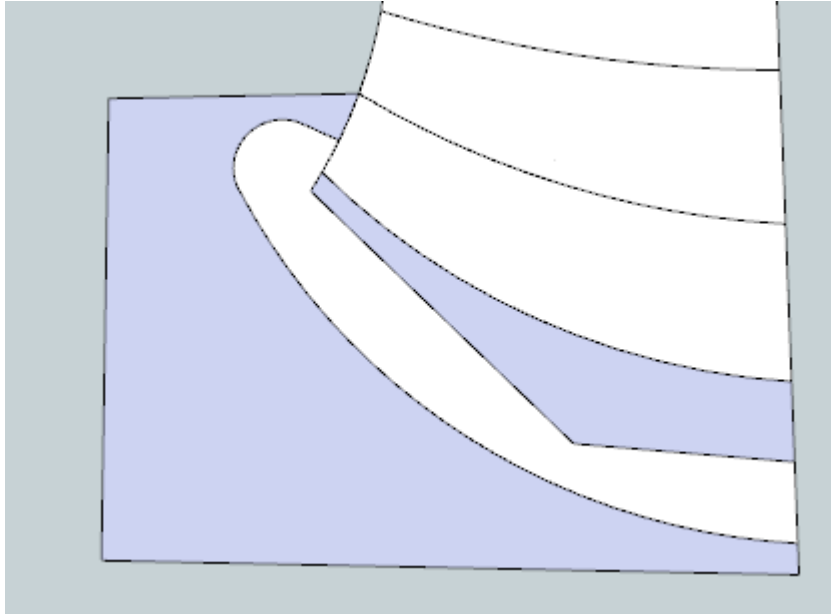
The “3D Tread” button opens up this simple input box. The tread number is 1 for the first tread. The second time you use the “3D Tread” utility the number will automatically increment to 2.



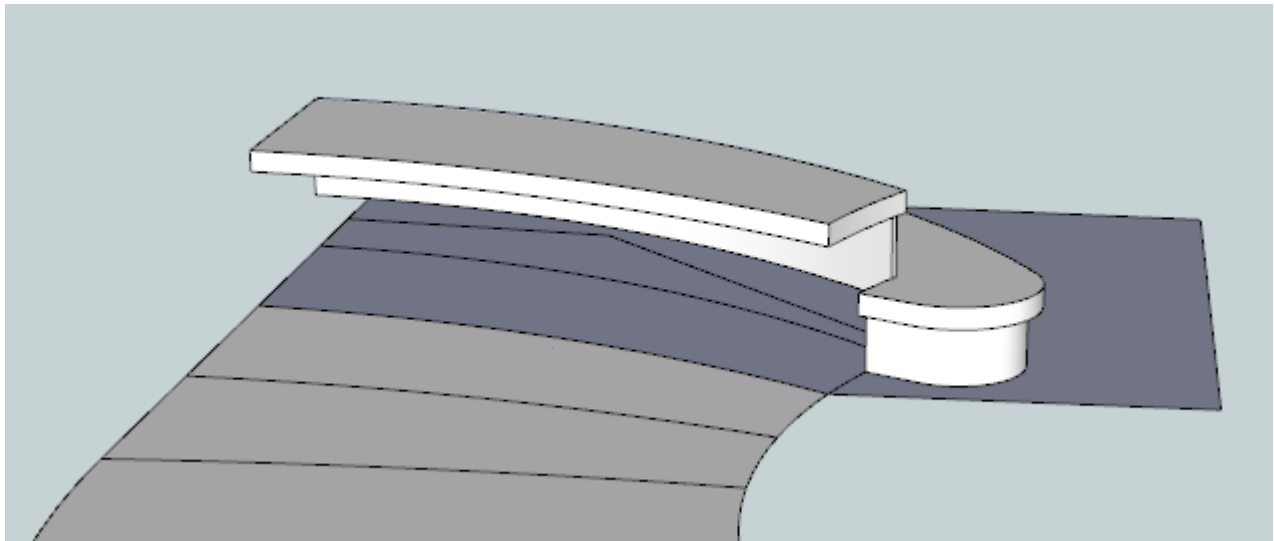
The one exception is for the top riser assembly. All you need to select is the edge(s) that makes up the nosing at the top of the stair. Please note that you can add and select an additional face. This will provide a path for the two edges for the top riser. If this is omitted then the cut is always at 90 degrees to the edge at both ends of the riser.



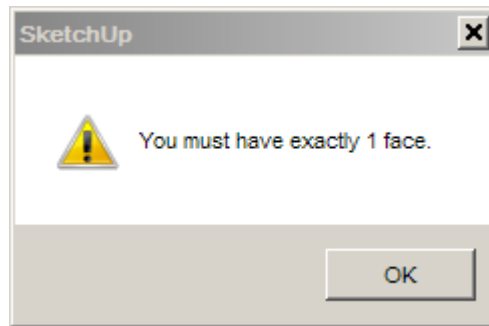
Additional information at the bottom of the stair will inform the “Tread 3D” utility to properly process volutes etc. There is an extra face added to help tread 1 and tread 2. Please note that the extra face for tread 2 is added after tread 1 is complete.



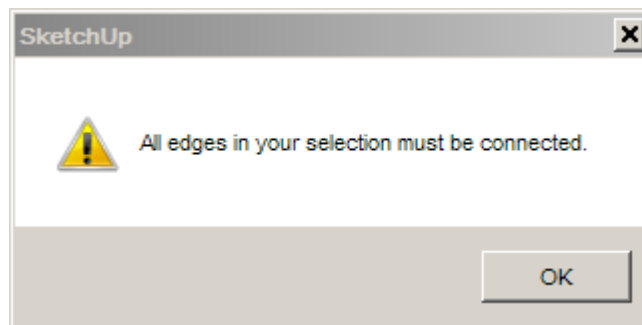
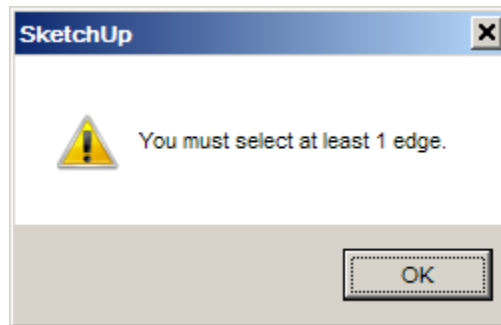
These are the first 2 tread assemblies including the volute.



If you do not provide adequate information with what you select then you will see one of the following error messages.



There is one exception to this first error message. The top riser assembly will work when only an edge is selected and there are no faces.

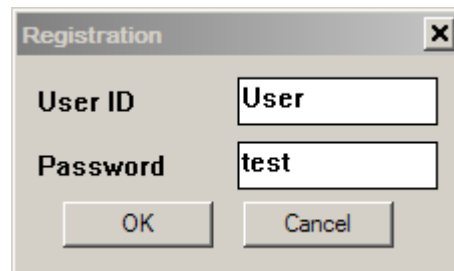


16 Stair Maker – Check License

For a licensed user - Stair Maker checks licenses at first time use for each new sketchup session every 5 to 10 days. During a trial Stair Maker checks licenses at every first time use for each new sketchup session. First time use means the first time you use any of the utilities that are provided with the Stair Maker Suite.

The “Stair Maker - Check License” menu option forces the license check. This is useful if you are wanting to run the Stair Maker off line for extended periods of time. After you Check License you will have at least 5 days before Stair Maker will try to Check the license.

This options also allows you to change your User ID and or Password. This comes in handy if you miss keyed either entry during the registration process.

A screenshot of a 'Registration' dialog box. The dialog has a title bar with the word 'Registration' and a close button (X). Inside, there are two labels: 'User ID' and 'Password'. Next to 'User ID' is a text input field containing the text 'User'. Next to 'Password' is a text input field containing the text 'test'. At the bottom of the dialog are two buttons: 'OK' and 'Cancel'.

17 defaults.txt

There is an optional file called defaults.txt which contains 1 or more lines that override the plugins defaults. You may override any number of defaults.

default non length values for input box

```
inside_option=None
inside_stringer=Sawtooth
inside_rail=Guard Rail
outside_option=None
outside_stringer=Housed
outside_rail=Wall Rail
direction=Anti Clockwise
degrees=90.0
rail_style=Traditional
risers=14
open_riser=1
partial_riser=1
riser_on_tread=0
flare_count=0
spindle_option=Panel
spindle_style=Small Round
```

metric default values for input box

```
metric_inside_thickness=60.0
metric_inside_depth=300.0
metric_outside_thickness=60.0
metric_outside_depth=400.0
metric_stair_width=1000.0
metric_average_run=254.0
metric_radius=2400.0
metric_total_rise=2667.0
metric_riser_thickness=12.7
metric_tread_thickness=38.0
metric_tread_bullnose=12.7
metric_nosing=25.4
metric_flare_amount=0.0
metric_progressive_flare=20.0
metric_floor_thickness=315.0
```

imperial default values for input box

```
imperial_inside_thickness=2.5
imperial_inside_depth=12
imperial_outside_thickness=2.5
imperial_outside_depth=16
imperial_stair_width=42
imperial_average_run=10
```

imperial_radius=96
imperial_total_rise=105
imperial_riser_thickness=0.5
imperial_tread_thickness=1.5
imperial_tread_bullnose=0.5
imperial_nosing=1
imperial_flare_amount=0.0
imperial_progressive_flare=0.75
imperial_floor_thickness=12.25

18 rules.txt

defaults

inside_sections=3

outside_sections=4

segments=4

metric building code and stair configuration

metric_top_riser_thickness=19.0

metric_tread_dado=12.7

metric_stringer_dado=12.7

metric_riser_nosing=12.7

metric_minimum_radius=50.0

metric_stair_rail_height=800.0

metric_level_rail_height=900.0

metric_housed_stringer_reveal=38.0

metric_stringer_above_floor=12.7

metric_min_rise=125.0

metric_max_rise=200.0

metric_min_run=210.0

metric_max_run=355.0

metric_min_stair_width=900.0

metric_rail_clearance=40.0

metric_max_gap=100.0

metric_panel_width=600.0

imperial building code and stair configuration

imperial_top_riser_thickness=0.75

imperial_tread_dado=0.5

imperial_stringer_dado=0.5

imperial_riser_nosing=0.5

imperial_minimum_radius=2.0

imperial_stair_rail_height=32

imperial_level_rail_height=36

imperial_housed_stringer_reveal=1.5

imperial_stringer_above_floor=0.5

imperial_min_rise=5

imperial_max_rise=8

imperial_min_run=8.25

imperial_max_run=14

imperial_min_stair_width=36

imperial_rail_clearance=1.5

imperial_max_gap=4.0

imperial_panel_width=24.0

19 config.txt

Stair Maker comes with a config.txt file that currently contains 9 lines.

1. userid=User
2. password=test
3. host=cabmaker32.com
4. service=/gkware_service.php
5. default_file=defaults
6. language=en
7. debug=0
8. force_silhouettes_off=0
9. translate_parts=1
10. small_font=0
11. extra_space=0

If the userid or password is blank you will get an error and will not be able to run the Stair Maker plugin.

Config.txt now contains items 6, 7, 8 and 9 that used to be in defaults.txt. These items are no longer in defaults.txt or in any of the named Style Sheets.

20 metric_2d.txt

```
total_rise=2700.0
risers=14
riser_thickness=12.0
top_riser_thickness=19.0
tread_thickness=38.0
nosing=25.0
```

21 imperial_2d.txt

```
total_rise=108.0
risers=14
riser_thickness=0.5
top_riser_thickness=0.8
tread_thickness=1.5
nosing=1.0
```

22 Files and File Locations

If you are several versions of Sketchup or have several users on a network then you can have one copy of the gkware_stairmaker in a location of your choosing. All you need to do is to place a simple file in each version's plugins folder which is named loader.rb by convention and has the following 2 lines where the second line is a folder of your choosing and where you will unzip the gkware_stairmaker_vx.x.xx.rbz file.

```
require 'sketchup.rb'  
require_all( 'C:/Users/Public/Documents/Sketchup' )
```

The Stair Maker Plugin has the following files:

- 1 Sketchup
 - 1.1 gkware_stairmaker.rb
- 2 Sketchup/ gkware_stairmaker
 - 2.1 2dto3d_lg.png
 - 2.2 2dto3d_sm.png
 - 2.3 3d_lg.png
 - 2.4 3d_sm.png
 - 2.5 addhandrail_lg.png
 - 2.6 addhandrail_sm.png
 - 2.7 extrudehandrail_lg.png
 - 2.8 extrudehandrail_sm.png
 - 2.9 glueedges_lg.png
 - 2.10 glueedges_sm.png
 - 2.11 railpathl_lg.png
 - 2.12 railpath_sm.png
 - 2.13 stairmaker_lg.png
 - 2.14 stairmaker_sm.png
 - 2.15 config.txt
 - 2.16 defaults.txt
 - 2.17 rules.txt
 - 2.18 gkware_stairmaker_loader.rb
 - 2.19 license_stairs.rbs
 - 2.20 riserlib.rbs
 - 2.21 stairlib.rbs
 - 2.22 stairmaker.rbs
 - 2.23 stairmakerlib.rbs
 - 2.24 stair_2D.rbs
 - 2.25 stair_checks.rbs
 - 2.26 stair_defaults.rbs
 - 2.27 stair_gui.rbs
 - 2.28 stair_rules.rbs
 - 2.29 treadlib.rbs
 - 2.30 utils_stairs.rbs
 - 2.31 rail_profiles.skp
 - 2.32 stairmaker.pdf

- 3 Sketchup/gkware_stairmaker/config
 - 3.1 readme.txt
- 4 Sketchup/gkware_stairmaker/named defaults
 - 4.1 combo.txt
 - 4.2 eastern.txt
 - 4.3 western.txt
 - 4.4 ...
- 5 Sketchup/gkware_stairmaker/spindles
 - 5.1 Small Round.txt
 - 5.2 ...
- 6 Sketchup/gkware_stairmaker/handrail
 - 6.1 Classic.txt
 - 6.2 Full Round.txt
 - 6.3 Modern.txt
 - 6.4 Round.txt
 - 6.5 Small Round.txt
 - 6.6 Square.txt
 - 6.7 Standard.txt
 - 6.8 Traditional.txt
 - 6.9 ...
- 7 Sketchup/gkware_stairmaker/translators
 - 7.1 en.lang
 - 7.2 fr.lang
 - 7.3 ru.lang
 - 7.4 zh.lang
 - 7.5 ...
- 8 Sketchup/gkware_stairmaker/css
 - 8.1 gkware.css

23 Version History

Version 1.0.23 – Jan 2, 2015

1. Added Config file editor. You can now edit a number of fields without having to find the files on your hard drive.
2. Added extra space field which allows you to pad the input form with more space.
3. Added small_font field which you can turn on / off.
4. Modified the menu option "Stair Maker - Check License". It now brings up your userid and password which may need to be changed.
5. Fixed Foot for Straight stairs.

Version 1.0.22 – Nov 18, 2014

1. Added Straight Stair to Stair Direction.
2. Completed Foot for Straight stairs.

Version 1.0.21 – Oct 10, 2014

1. There was a problem with translated prompts. Fixed.
2. Supplied "Open Styles" wasn't working with translations. Fixed.

Version 1.0.20 – Oct 4, 2014

1. Changed the web dialog
the enter key now acts like the OK button.
the escape key now acts like the cancel button.
2. Fixed first time registration bug.
3. Web dialog is no longer resizeable
4. Added 'Open Style Sheet' drop down. You can now store and retrieve style sheets.
5. Changed 'Save As Default' check box to 'Save Style Sheet' drop down. You can now save current style as a named style sheet.
6. Issue with first nosing. Fixed
7. Added feature risers now have choice to sit on tread - stone risers etc...
8. Added feature for partial risers with open riser stair
9. Added feature - you can now specify side nosing for tread independently from front of tread nosing.
10. Back of tread was not bullnosed for open riser progressive flare. Fixed
11. Added checks
Web Dialog data entry now pops up message for invalid data entry
Tread dado must be less than tread thickness
Tread bullnose cannot be negative
Tread nosing cannot be negative
Tread side nosing cannot be negative
Riser nosing cannot be greater than tread nosing
Riser nosing cannot be negative
Tread bullnose cannot be larger than tread nosing
12. Riser boards now work with progressive flare.
13. Updated translation files
14. Flared risers have stringer dado problem. Fixed
15. Housed stringer at front of stair not calculating properly. Fixed

16. Flared treads greater than 65mm had problems. You can now flare tight radius stairs up to around 150 mm.

Version 1.0.19 – Jul 17, 2014

1. Added two new utilities to the Stair Maker Suite. 'Stair 2D to 3D' and '3D Tread'. These utilities give the user the ability to easily create 3D tread and risers from a 2D drawing.
2. Re-factor common code used by Stair Maker and Door Maker.
3. All utilities now under license. License is checked once per session and by first utility that is run.

Version 1.0.18 – Jun 3, 2014

1. The undo stack wasn't correct for Stair Maker and for Extrude Handrail. Fixed.
2. If user click No – for trial there was an error. Fixed.

Version 1.0.17 – May 30, 2014

1. Added help button to web dialog.
2. There is a bug with open riser stair and cut stringer - the stringer is cut as if there are risers. Fixed.
3. The back of treads for open riser stair aren't bullnosed. Fixed.
4. Setting inside radius to 50 mm now properly creates a center pole for spiral.

Version 1.0.16 – May 22, 2014

1. Missed a couple of web dialog labels with language translation. Fixed.
2. Extrude Handrail didn't work with SU 2014. Fixed.
3. Add Profiles didn't work with SU 2014. Fixed.

Version 1.0.15 – May 17, 2014

1. Stair Maker now calculates Screen size which is dependent on language file, OS, Browser etc.
2. Modified language translation files. Added "Screen Width Pixels" which is a minimum value. This helps Stair Maker calculate proper screen size.
3. Changed "Radius" to "Inside Radius"
4. Inside Radius, Degrees and Average Run labels are now in Red. This is to visually identify which fields have mouse over help. Hold mouse over red label to see additional information.

Version 1.0.14 – May 14, 2014

1. Added documentation for buttons and menu choices: "Extrude Handrail", "Glue Edges", "Add Handrail Profile" and "Stair Maker – Check Licences".
2. Modified user feedback for the prior buttons and menu choices.
3. Moved Adding of new layers into Make_Stair. The Ctrl-Z undo key will now remove the added layers.
4. The "Extrude Handrail" process was creating a violation. Fixed.

Version 1.0.13 – May 8, 2014

1. The Metric rule for minimum run was wrong. Should be 125 – Fixed.
2. Missed updating the plugin menu for stair maker. Fixed.

Version 1.0.12 – Apr 27, 2014

1. Separated rules, defaults and connection data from defaults.txt file into rules.txt and config.txt
2. Remove functions from stairmaker.rb that are in utils
3. Move code into stair_defaults.rb and stair_gui.rb
4. Update GUI to use tabs and tables
5. Add second page of defaults to input box
6. Add in language translations for second page
7. Write save_defaults function for "Save as Defaults"
8. Clean up code - move Stair variables into separate st
9. Rail width needed to be calculated based on profile
10. Splice in licensing information
11. Modify the html, css, javascript and jquery code

Version 1.0.11 – Mar 6, 2014

1. Now SU 2014 compatible
2. Added missing line to gkware_stairmaker_loader.rb. Utils.rb was only loading if door maker was installed.
3. Added Config folder to hold user configuration and temp files
4. Make button images for add Handrail profile and glue edges
5. Fixed bug in handrail scaling
6. Auto Sizing of Web Dialog. For some reason - need to add room for scroll - even if it shouldn't be needed
7. Fixed bug where trial string keeps growing
8. Handrail was not going into "Handrail" layer. Fixed
9. Changed Stringer "Width" to "Depth" in web dialog, language files and in defaults.txt
10. Made changes to defaults.txt for "imperial_stair_width"

Version 1.0.10 – Feb 21, 2014

1. Made changes to web dialog to support Mac OS (Mavericks)

Version 1.0.9 – Feb 15, 2014

1. Made changes to web dialog – error when units have feet and inches.

Version 1.0.8 – Feb 9, 2014

1. Added better error handling for http error

Version 1.0.7 – Feb 8, 2014

1. Units using feet created error. Fixed.

Version 1.0.6 – Jan 29, 2014

1. First published version. Please read help file for complete description