

zf-outdoor-stair / v. 0.1 beta / 05.06.2014

user's guide

## 0. INSTALLATION

copy the content of the zip-file to your  
skp 6, 7, 8, 2013 plugin folder and  
restart sketchup.

not tested on apple. thanx for any information about that.

In sketchup 2014 use the installation routine from  
Sketchucation.

For manual installation, copy

- the ruby (01.rb) into the tools folder  
(for example C:\Program Files (x86)\SketchUp\SketchUp 2014\Tools\)

-the data folder ("zf") into the tools folder  
(for example C:\Users\fajfrlik\AppData\Roaming\SketchUp\SketchUp  
2014\SketchUp\Plugins\

Known conflicts:

there is one known conflict:  
please DO NOT install this ruby, if you have  
'sketchy physics' installed in your sketchup.  
i still investigate for a solution...

otherwise enjoy.....  
.....my Module for outdoor-stair generation.

## A. DESCRIPTION

### Features:

- straight stairs
- free angle left and right (by defining the middle-axis-offset and top-width)
- curved form left and right (only walls and handrails a.t.m.)
- definable step form
- definable landing intervall and depth (in steps)
- definable railing options and forms (more forms in the next version)
- arena-modus (user defined polygon) (pyramids and stadiums coming soon)
- separate new colours for each element-type
- monochrome or colour modus (on screen)
- global stair measures input (length and height) possible

works with metric and (hopefully) imperial system (reads the global skp-user-setting, data always imperial).

in metric system, input all parameters in cm (avoids most of the comma input and saves time)

### diverse autocorrect-functions:

- min. 3 steps between landings
- min. 3 steps before top level
- partly optimizing of the railing-post-interval
- railing position / side walls
- autocorrect of some extreme values
- automatic settings for arena-modus

### limitations:

- central handrail not curved
- no bars in curved handrails left and right
- minor problems with stair front-recess in curved mode
- step-divide - straight cut on both ends
- terrain-ramps only experimental at the moment
- when step-relief is set, coplanar faces on steps are not removed
- no light-relief at steps, when steps are divided

## B. OVERVIEW

>> menu: plugins / 01-zf-stairs

1 outdoor stair : create a stair-model

2 save active model (fixed directory)

3 open saved file (select directory)

4 user's preferences (saved)

5 reset ( = templates 1-9)

6 this user's guide as pdf

7 support

## C. PARAMETERS

menue 1 : stairs

submenue 1.1 : global values

- width - basis
- width - top stair
- offset of the center-axis at the top-end-level (+ / -)
- steps (total amount, incl. landings)
- landing-depth (in steps)
- top-landing (in steps)
- landing-intervall (in steps)
- curve factor left (only positive or 0)
- curve factor right (only positive or 0)

note:

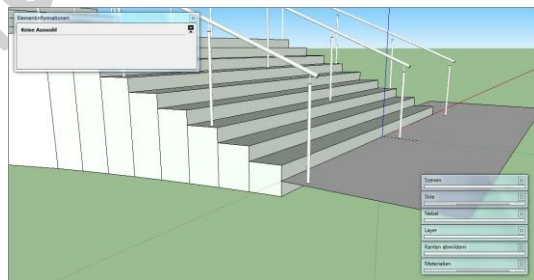
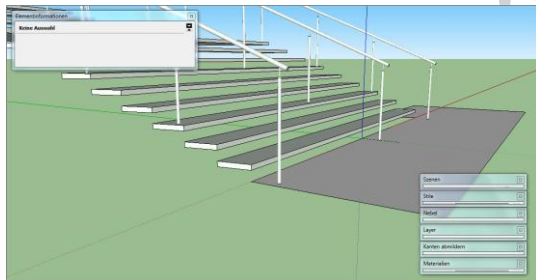
curve-factors are only applied, when  
top-offset is not 0 or basis and top width are different

at the moment only handrails, but not the rail-bars are bended

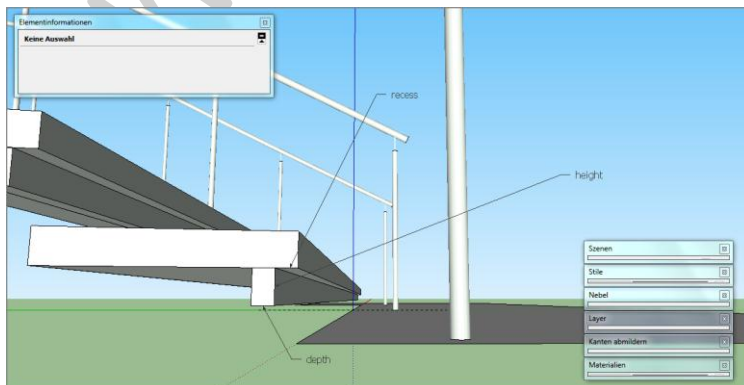
- curve factor vertical (slope / experimental, unfinished)

submenue 1.2 : stairs-details

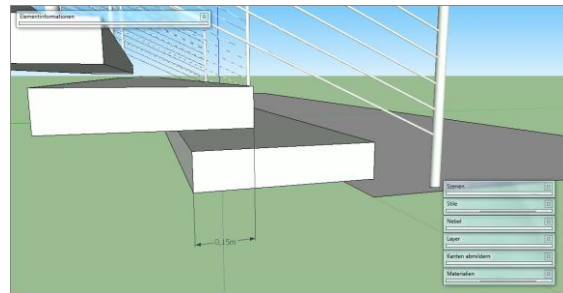
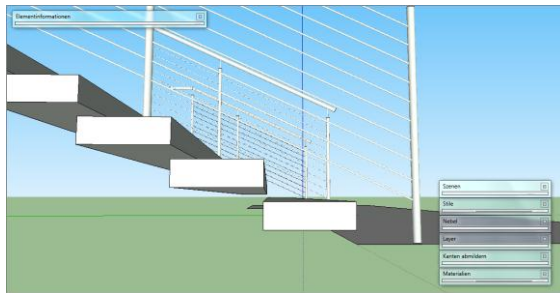
- run ( 1 step or total length of the stair)
- rise (1 step or total height of all steps)
- thickness (1 step)/ thickness higher than total height will be cut 1 step under the base-level



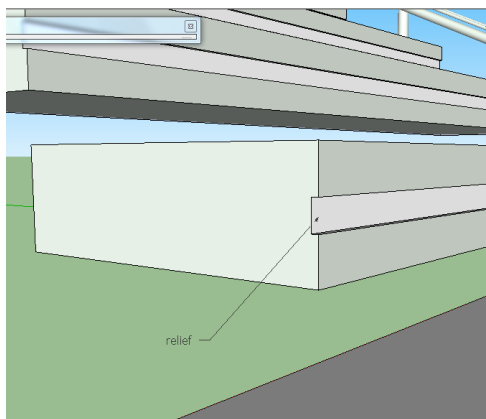
- filling height (vertical, under step)
- filling depth (horizontal, under step)



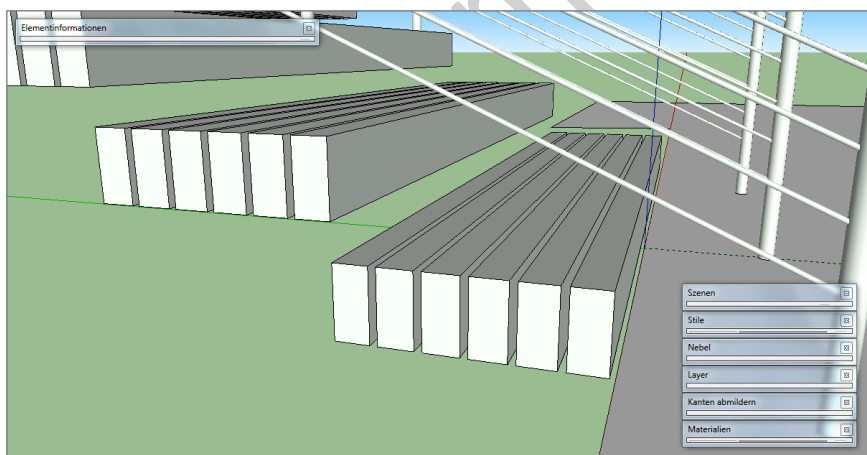
- step-overlap



- landing (length in steps)
- landing interval (steps between landings)
- recess (depth offset of the filling)
- relief (a recess in the front of a stair, experimental)

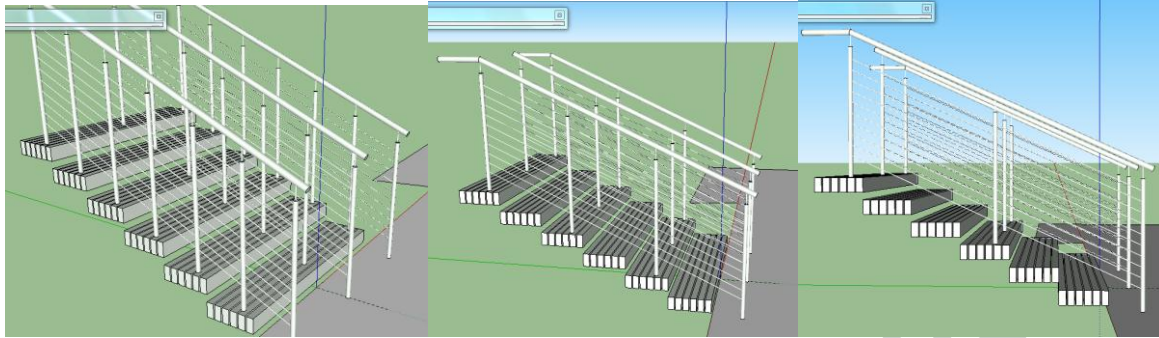


- stepdivide (division of one step in run-direction)



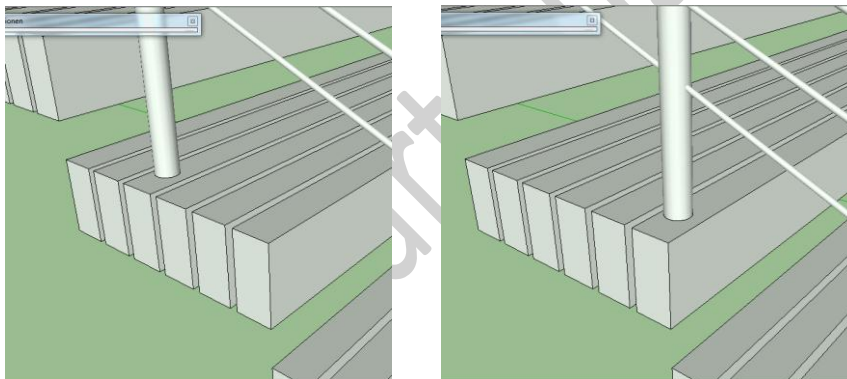
submenue 1.3 : railing

- height left
- height right
- height center
- post modul (in steps)

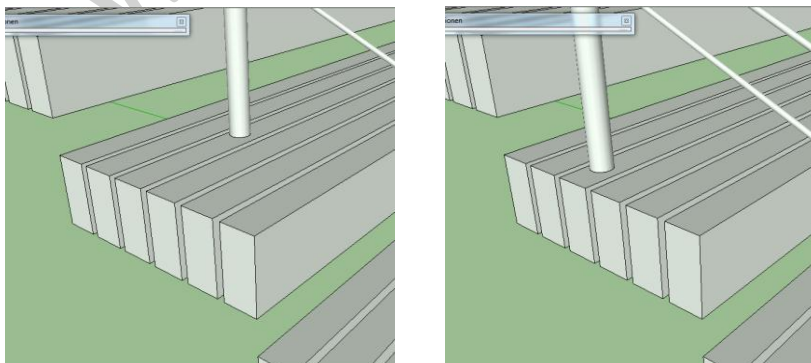


- post radius left (or form, when negative)
- post radius right (or form, when negative)
- post radius center (or form, when negative)
- handrail radius (or form, when negative)
- bar radius (filling when 0, w.i.p)
- bars (amount of horizontal bars)

- offset in "run" direction



- offset left in "width" direction (negative places outside the stair or on sidestring)



- offset right in "width" direction (same as left)

note: railing-posts are components, so you can modify all at once, if you like....

#### submenue 1.4 : frames / construction

- width sidestring left (no string, when 0)
- top height of sidestring left
- total height of sidestring left
- sideward ramp left - "width"-direction
- sideward ramp left - "run"-direction
- sideward ramp left - ramp-factor
- width sidestring right (no string, when 0)
- top height of sidestring right
- total height of sidestring right
- sideward ramp right - "width"-direction
- sideward ramp right - "run"-direction
- sideward ramp right - ramp-factor

#### submenue 1.5 - carriers

- carrier width
- carrier height
- carrier offset (left and right)
- carrier offset vertical (can avoid z-fights in vis-apps)
- carrier type (0, 1)

note:

in this menu settings from last generated model are always reloaded (even after reopening a new skp-file) as default settings for the menus. you can then change all values, when ok.

to keep it, make the model a component or copy it (last generated stair is saved even in case of a bugslat / crash).

otherwise the next model deletes the latest 'original'. this makes trying the features quicklier, until the stair is ok (see preferences to change this setting).

(in the future there will be a 'on cursor' option for placing anywhere by the user.

at the moment, the stairs are always generated at absolute 0,0,0 ).

in case, that there is less then 3 stairs behind the last landing, the parameters will be changed automatically.

special feature:

total dimensions of a stair:

you also can input total length of the stairs (inkl. landings)

and total height instead of

run and rise !

then the step dimensions will be calculated, the 'steps' parameter remains valid.

orientation / information:

check every step or landing (element information) and see it's number and total height (relative).

menue 2 : save model (parameter-file)

just enter a name, directory is fixed to 'models'

menue 3 : load model (parameter-file)

select any directory, default is the save directory

menue 4 : preferences

4.1 - menus in template-load on/off,  
saved with preferences

4.2 - monochrome (0 = on / 1 = off)

saved with preferences.

screen display monochrome or coloured (but unchanged names of colours for transferring for external material assignment in vis-apps etc.).

with the first model created in a skp-file a set of colours is written to the model's library. they will alternate with this setting and be used by all zf-models in this skp-file.

To make them unique for 1 stair, simply create the stair in another skp-instance and rename then. Then copy / paste the stair into your master skp-project.

4.3 - curve precision

saved with preferences

adjust precision between 8 and 48

4.4 - delete old model

saved with preferences

you can decide, if single models (not arena-modus) is deleted automatically, when a new model is created.

if on, to keep the created model,  
either:

- copy it
- make it to a group or component
- rename it (default name is zf-stair)

if off,

just move the model to anywhere or delete it  
and create the next one

4.5 - ruby console

saved with preferences

default = off / you can switch on for the session

if on, some basic informations are displayed

4.6 - arena-mode

'arena' - setting / 0 = off / positive 3-16 = amount of segments in the arena

(future: negative values for pyramids)

arena elements always have to be deleted manually (a.t.m.)



## 5 support

surely not really necessary, but

check the sketchucation-site for updates or  
check [www.artmusicstudio.de/ruby.htm](http://www.artmusicstudio.de/ruby.htm) for actual infos or a new version  
or write (and maybe send a photo of your place) to [ruby@artmusicstudio.de](mailto:ruby@artmusicstudio.de)  
every place, where the ruby is used, will be shown in an  
online gallery !

## 6 reset / templates

just load some examples and edit directly or afterwards (see preferences  
setting for menu on/off).

calling the basic function (01 stairs) will always recall the last used  
settings (last template, last entries etc.) for further manipulations,  
even after a crash.

with the 'arena'-setting some parameters are tweaked automatically to  
make the segments symmetrical and reduce some coplanar faces

in the next-version, templates 2-9 will be user-definable (name and  
parameters).

## C. SPECIAL TWEAKS AND INFOS

handrail :

- enter negative amounts for square handrail, positive for round
- make the side-walls higher than the railing to get a wall-mounted handrail (from a certain offset on posts will be generated again)

- posts:

positive : round

negative 10's : square ( example: -14 gives 4 cm )

negative 100's : type 1 ( example: -104 gives 4 cm )

- ramps

can be created left and right for integration in the landscape (w.i.p.)

- construction lines

some c-lines are created for drawing (connecting) user lines along the stair elements

- c-line cross is created at 0,0,0 of the stair for comfortable selection of the model

- c-point is created in the middle of an arena (in arena-modus)

enjoy the ruby, hopefully it is useful for you !

zdenek fajfrlik / 05.06.2014

[www.artmusicstudio.de/ruby.htm](http://www.artmusicstudio.de/ruby.htm)

-:)