

Tuile generator

how to generate roof with staggered tiles

TuileGenerator v.1.0 - Developed by [Matteo Porchedda](#) - Copyright [C4Dzone.com](#)



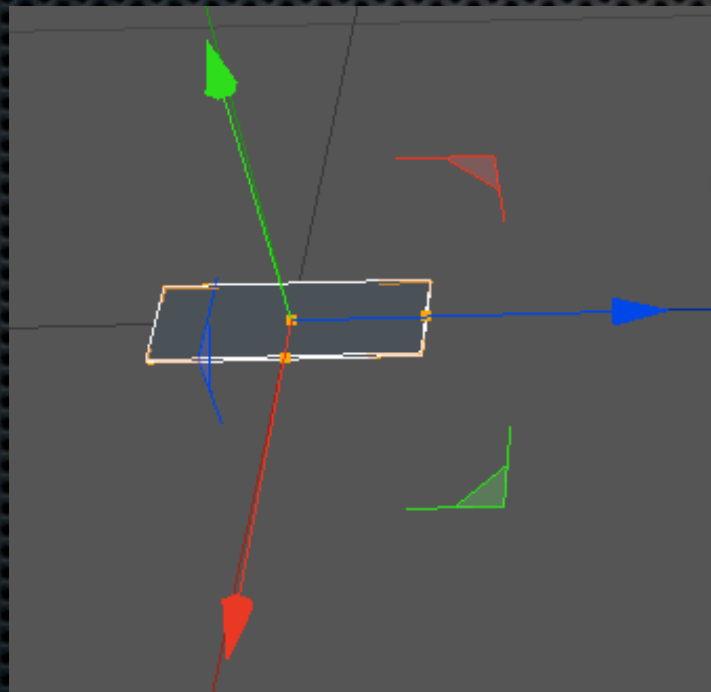
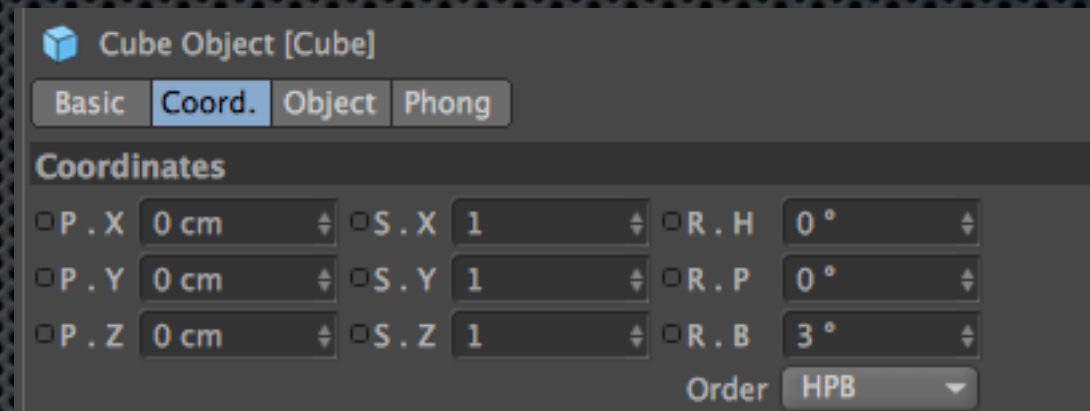
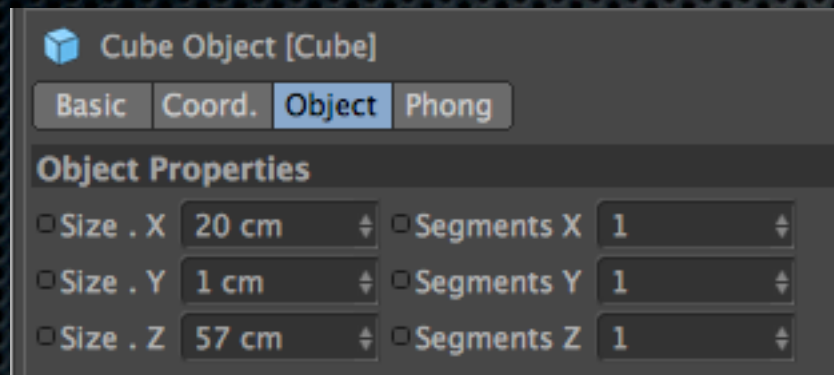
Suppose we want to generate this roof
with staggered tiles



1° step - let's create the tile

For our example we create tile with this dimensions 57x20x1

- Open c4d
- Add a cube to hierarchy
- use the following settings



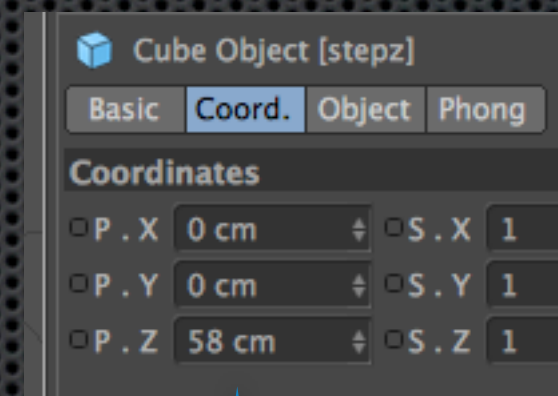
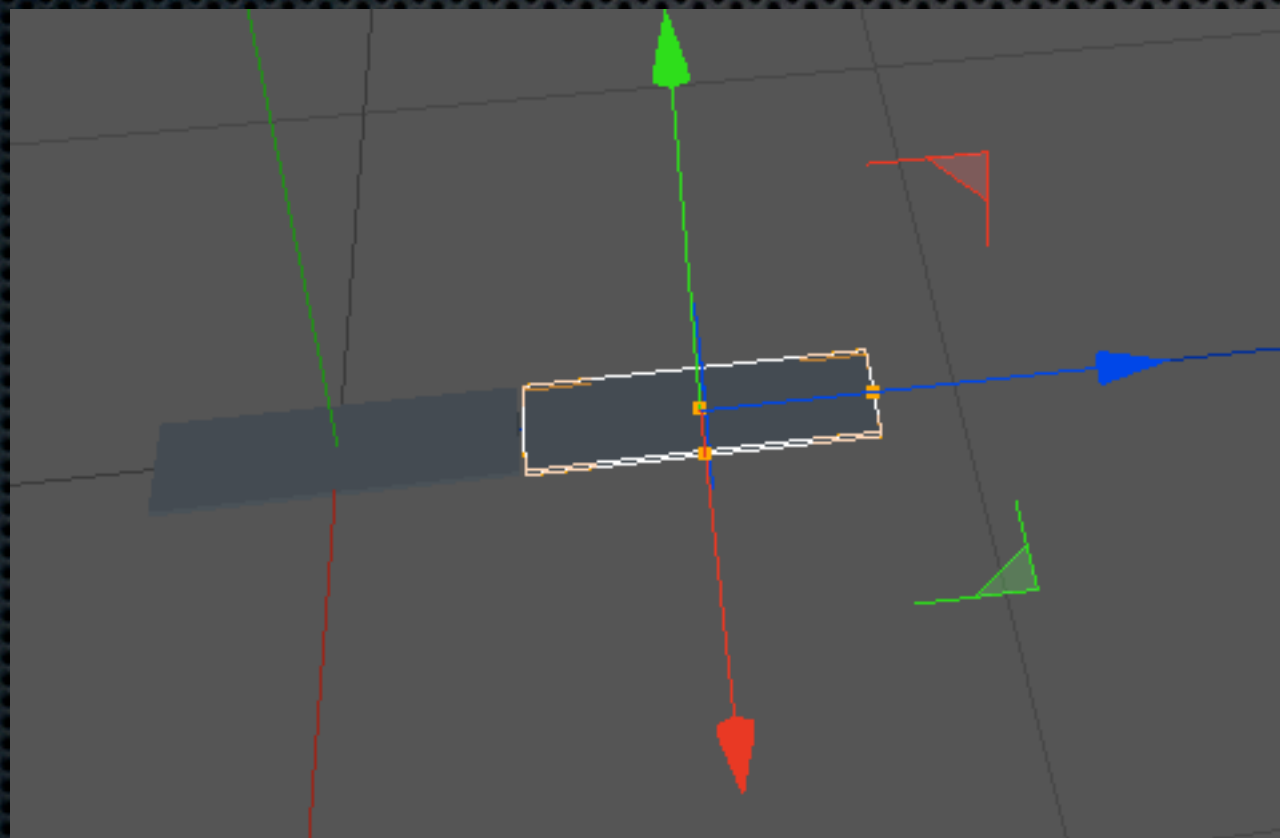
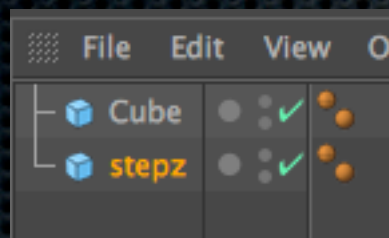
This is the result you should obtain
then transform the cube into polygon with the
following command



2° step - let's create the template for the automatic roof generation

Copy and Paste our polygon and rename it **stepz**

Let's move the tile on the right of the first tile leaving 1 centimeter of space

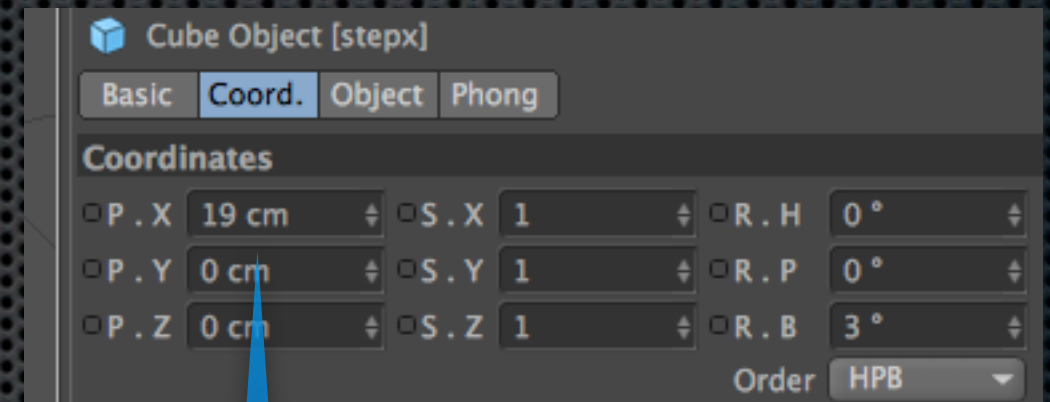
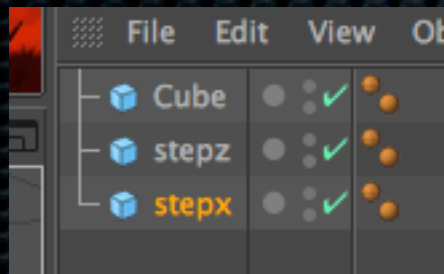


the value 58 is the result of moving the tile for its whole width + 1 cm of space

so it's $57+1=58$

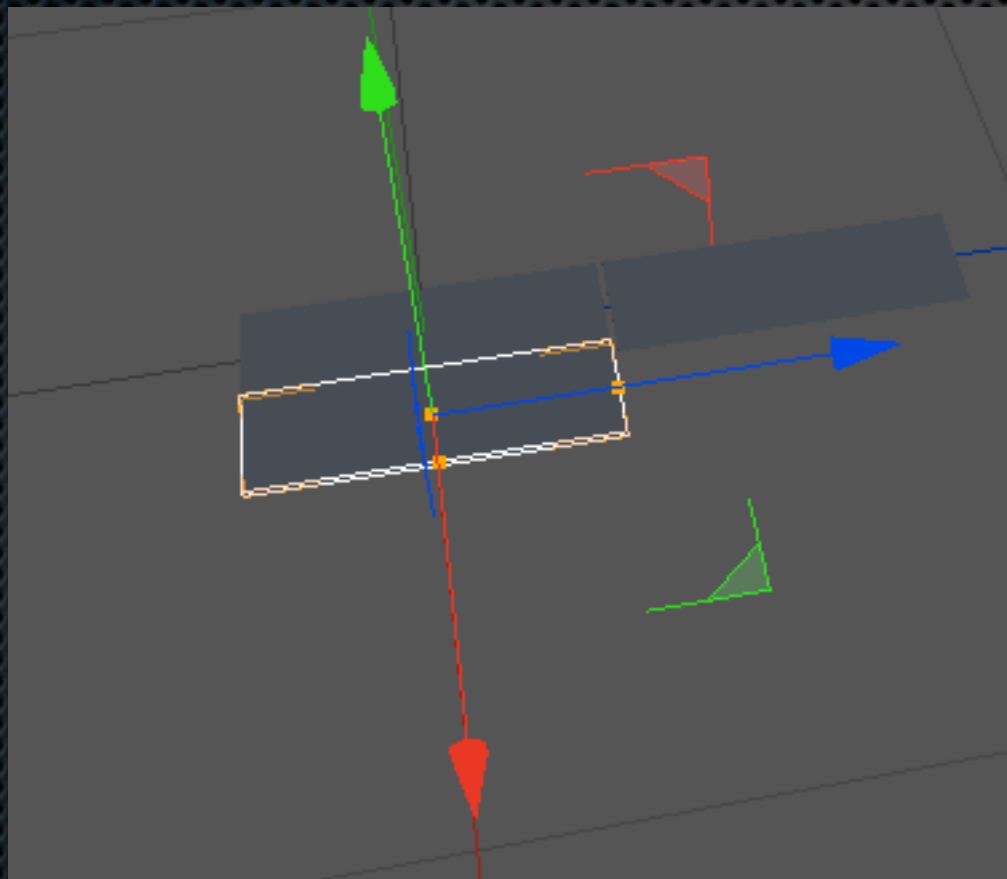
Copy again the tile, paste it and rename it **stepx**

Let's move the tile under the first one superimposing it by 1 cm

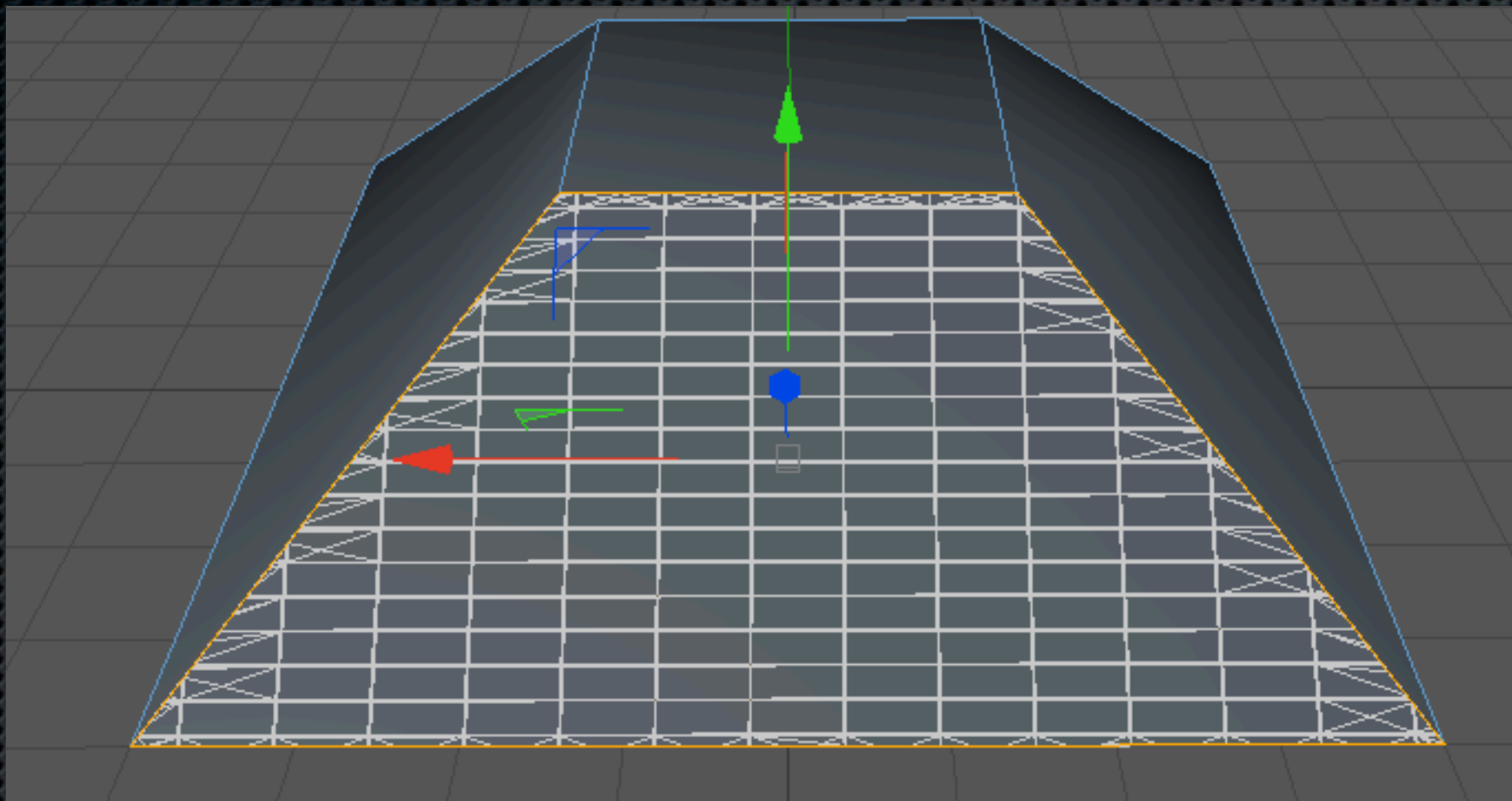


the value 19 is the result of movement of
the tile for its whole depth - 1 cm of
superimposing

so it's $20-1=19$

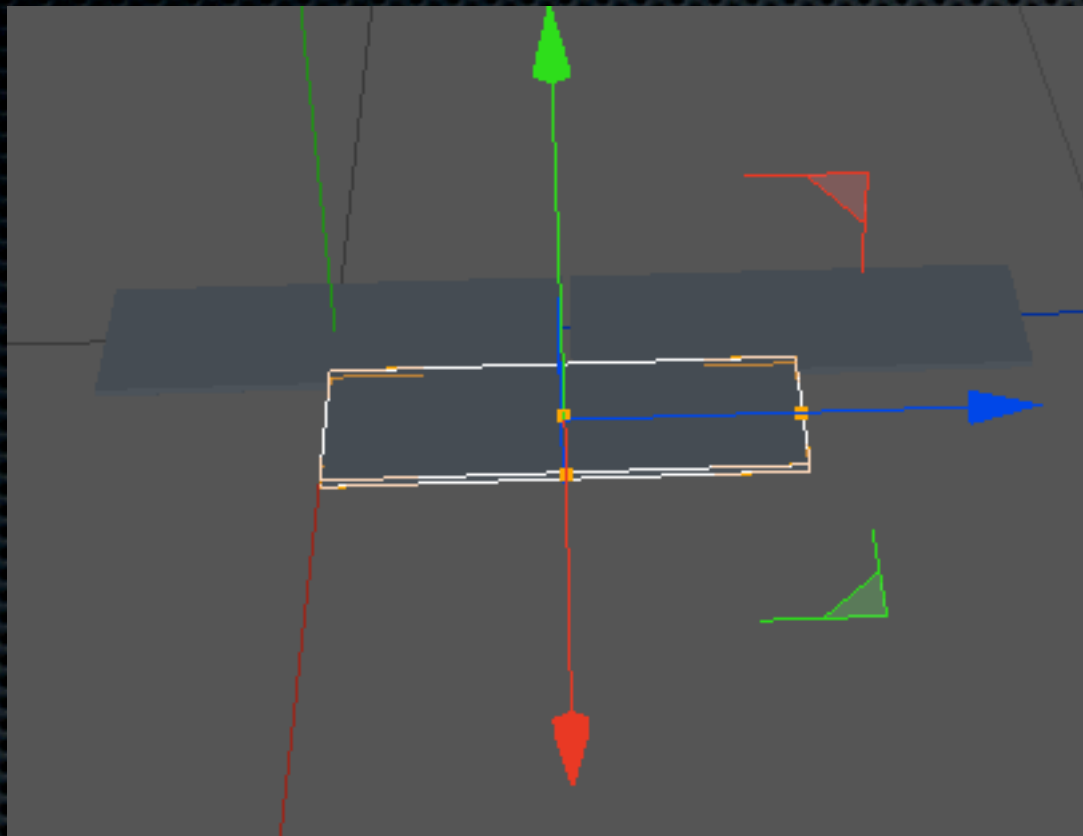


If we use this tile with the tuilegenerator the result will be as the following in the picture. All the tiles will be perfectly straight align



but our purpose is to realize roof with staggered tiles :-)

To stagger the tiles we have to move the tile **stepx** by 28,5 cm, which is the half of the tile's width



Coordinates					
<input type="checkbox"/> P . X	19 cm	<input type="checkbox"/> S . X	1	<input type="checkbox"/> R . H	0 °
<input type="checkbox"/> P . Y	0 cm	<input type="checkbox"/> S . Y	1	<input type="checkbox"/> R . P	0 °
<input type="checkbox"/> P . Z	28.5 cm	<input type="checkbox"/> S . Z	1	<input type="checkbox"/> R . B	3 °
					Order HPB

this parameter is equivalent to **row translation** that you can find in roof section of tuile generator

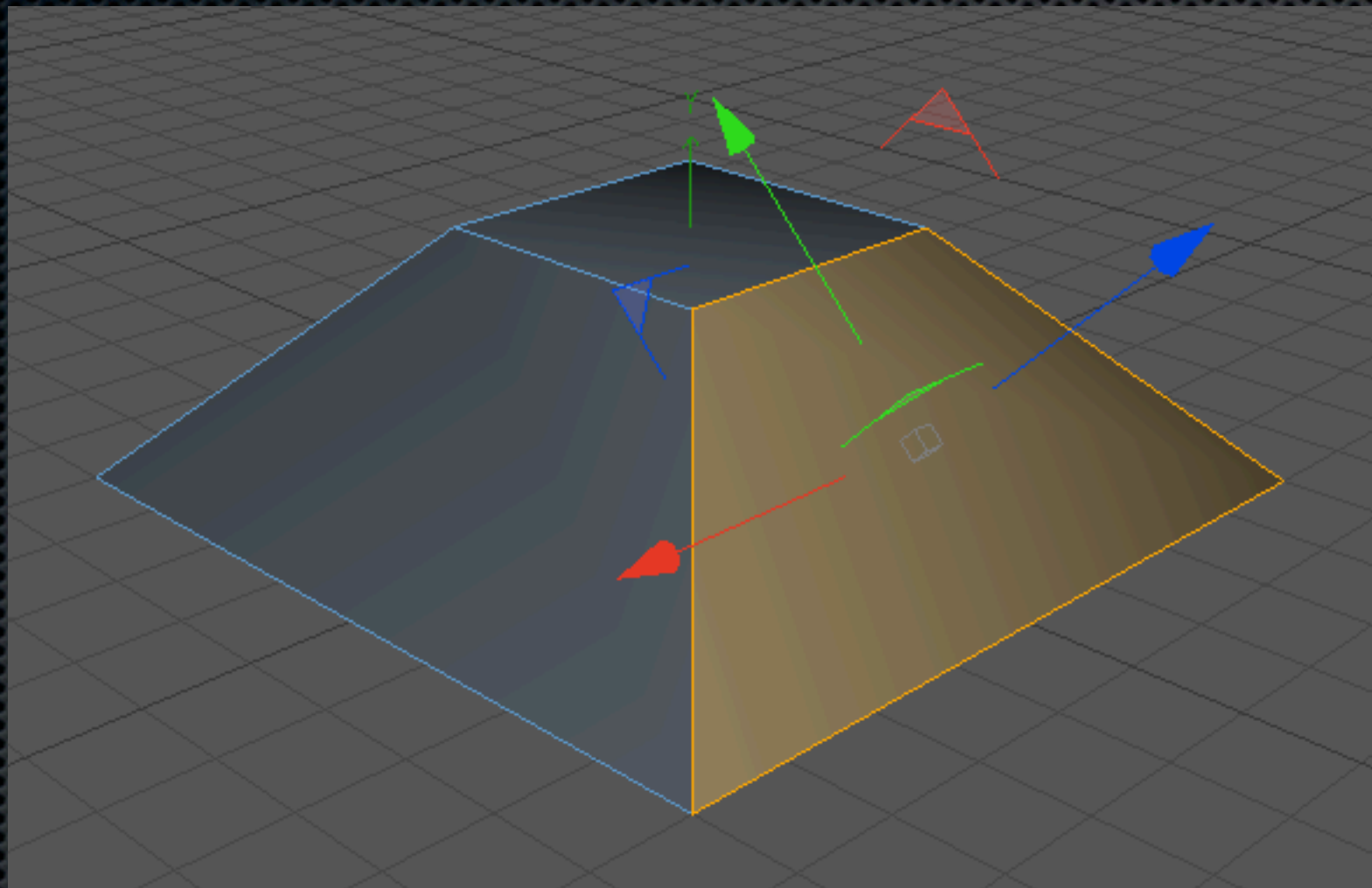
Now save your file, name it as you wish and copy it inside the folder **tiles** of tuile generator.

In our example we call the file `staggered_tile.c4d`

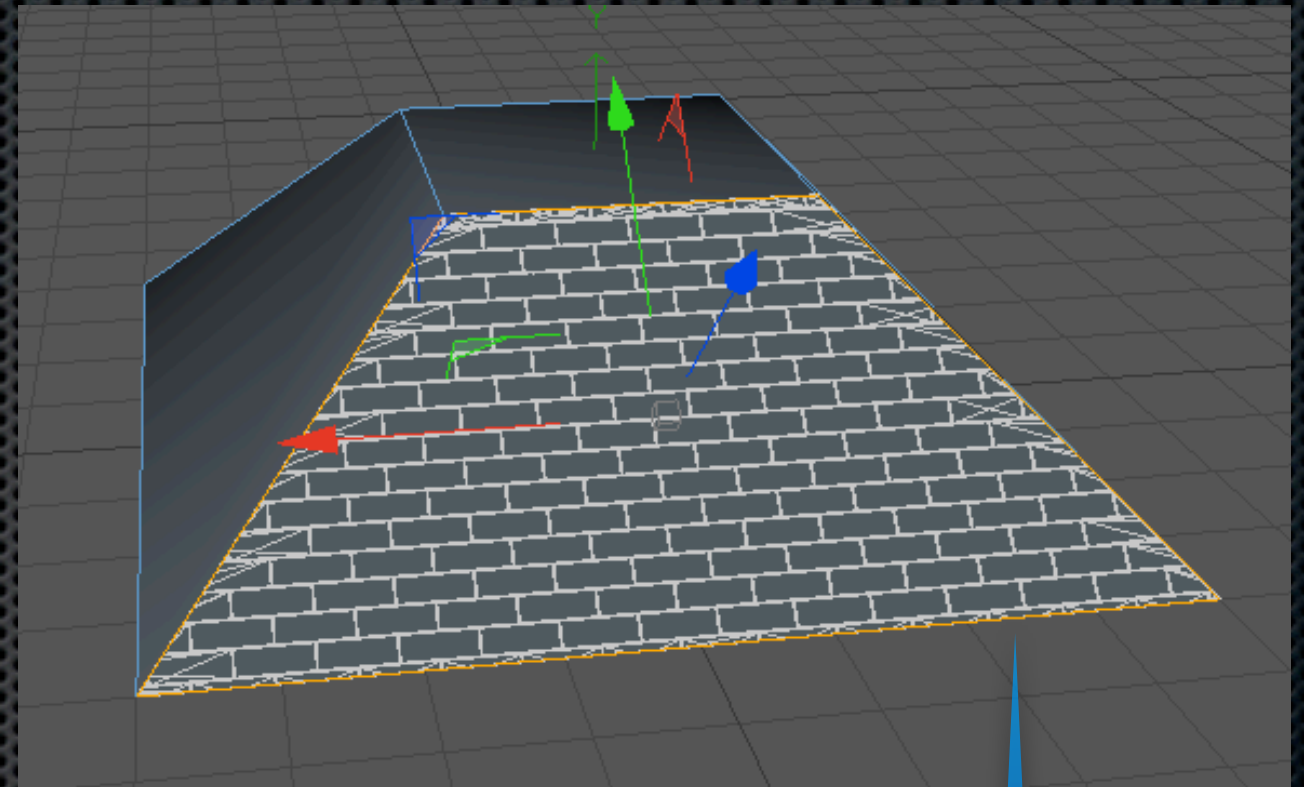
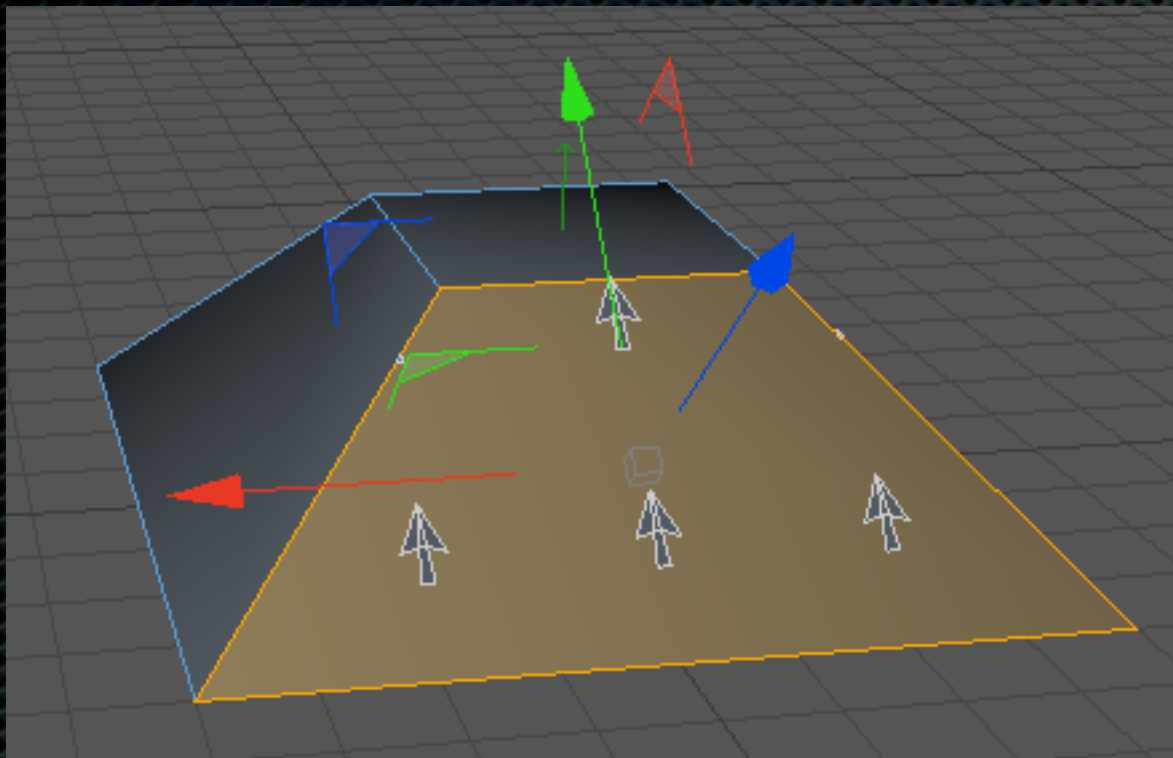
Close c4d and reopen it in order to allow tuilegenerator to reload your new tile

3° step - let's create the roof

open your project with the roof to generate



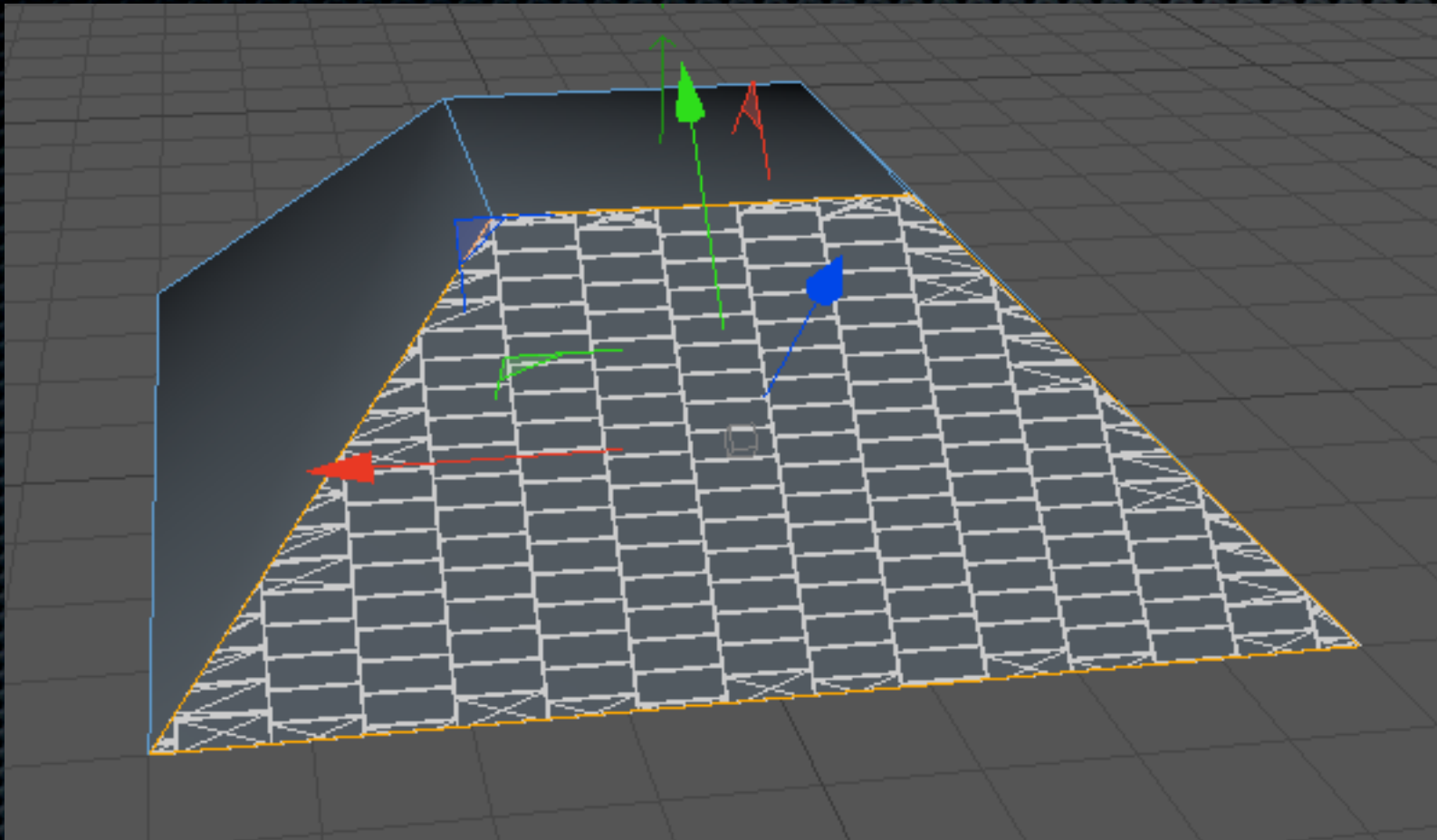
select the first polygon face to generate
align correctly the test tile and then select the tile you have just created:
staggered_tile.c4d



this is the result that you should obtain :-)

tips: to make your roof much realistic and superimpose the tiles better, apply a little Rotation Z by 3° and move up the roof with Offset Y parameter

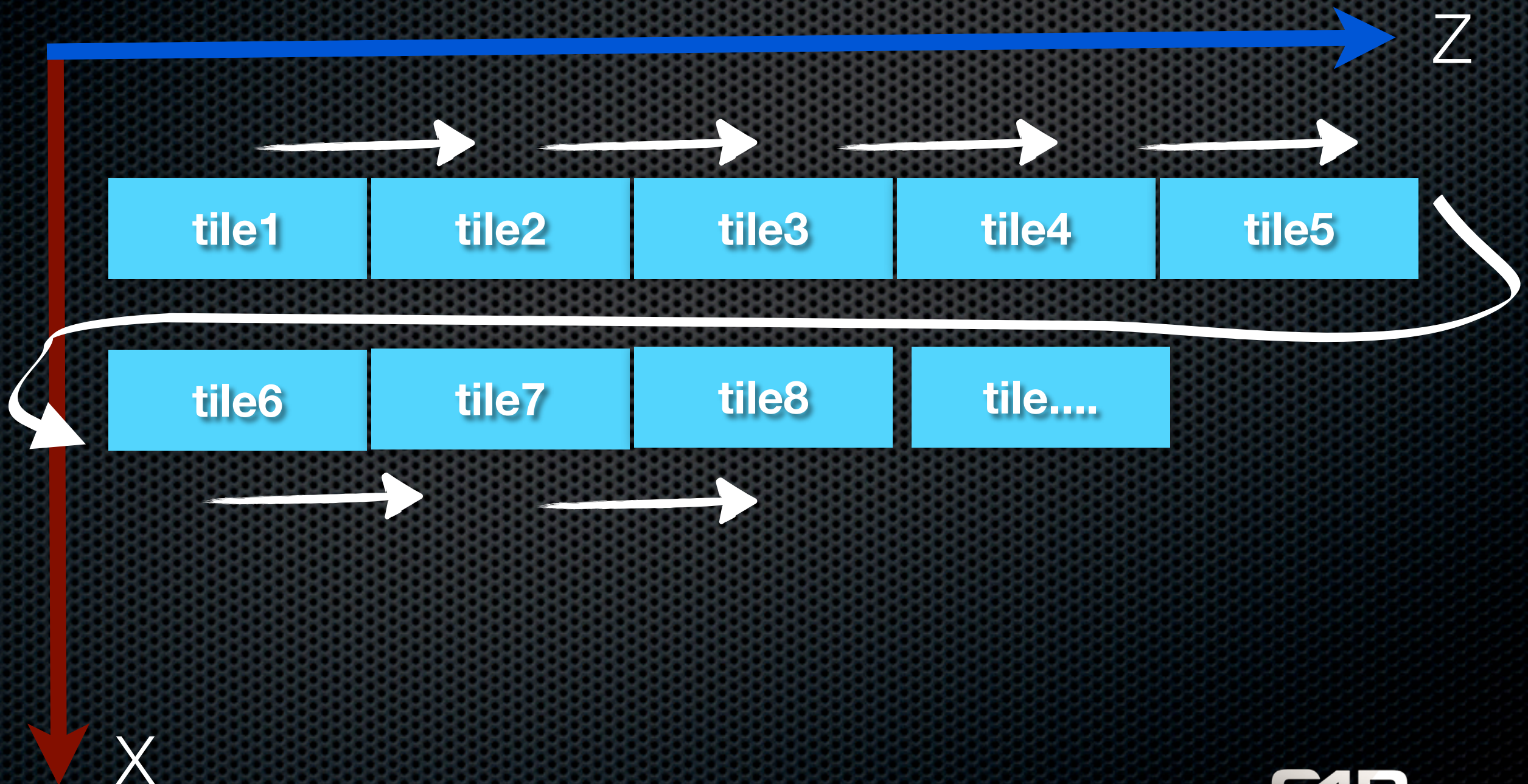
but sometimes you may obtain this result... why?? what's wrong ?? :-)



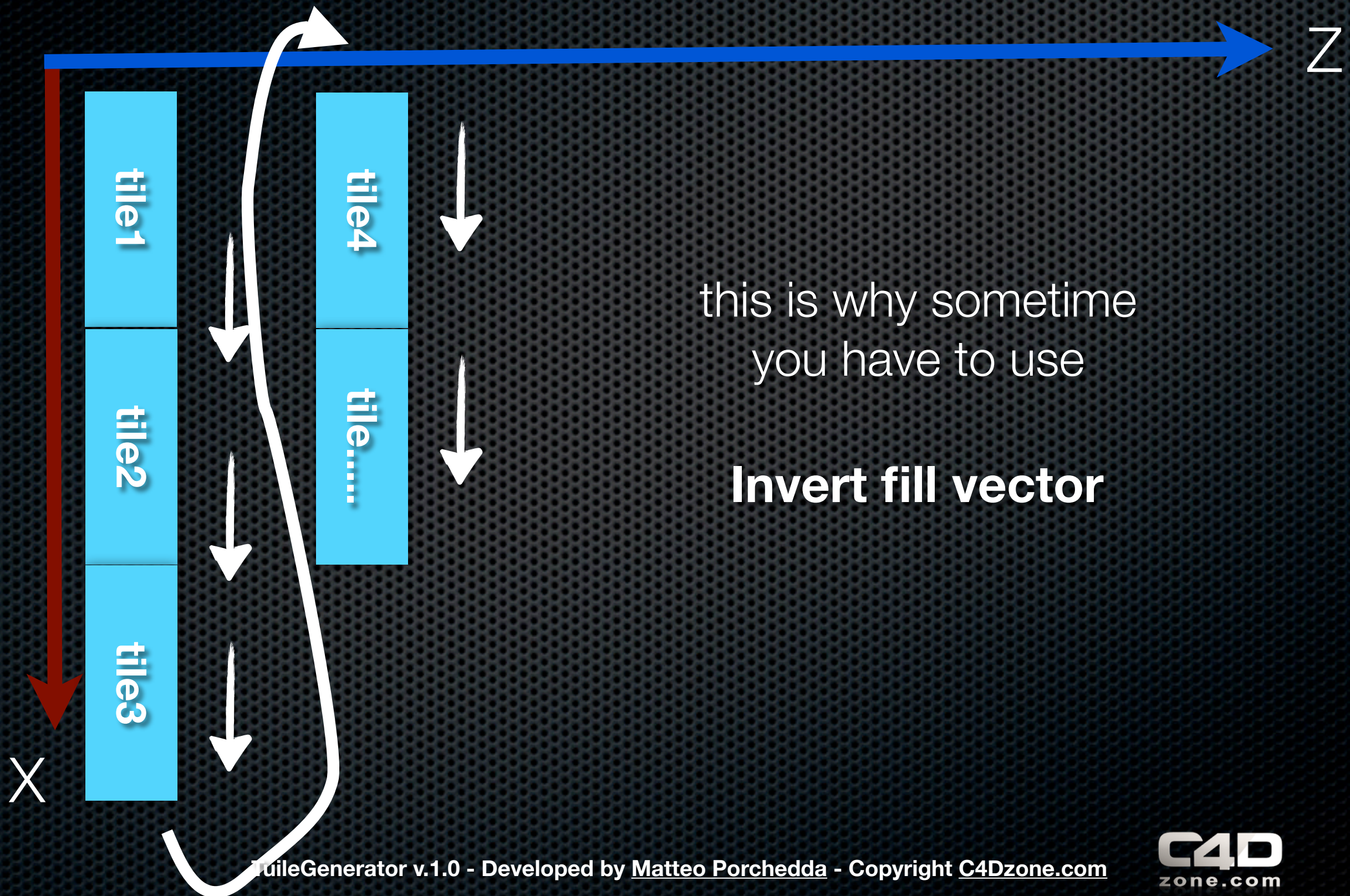
Stay relaxed :-)you didn't make mistake.....to solve this behaviour you have to use the parameter **Invert Fill Vector**

what is Invert Fill Vector and why we use it to solve the problem?

the tiles by default are disposed in row following the direction of Z axis, when the tuilegenerator arrives at the end of line it restarts by zero moving down by one following the direction of X axis



It happens very often that according to the roof's inclination and the face's orientation regarding to X and Z axes you have to invert the filling tiles procedure using the function **Invert Fill Vector**

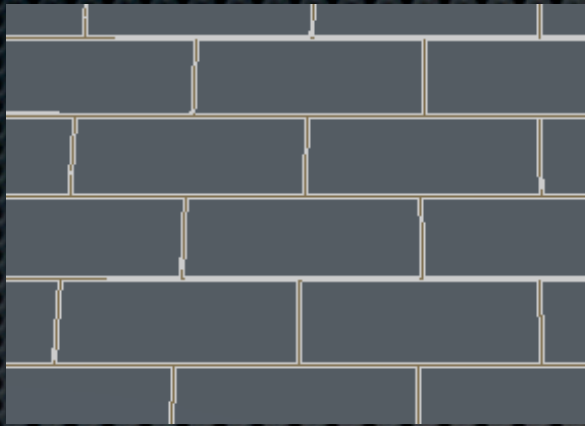


Does the **invert fill vector** influence the **row translation**?

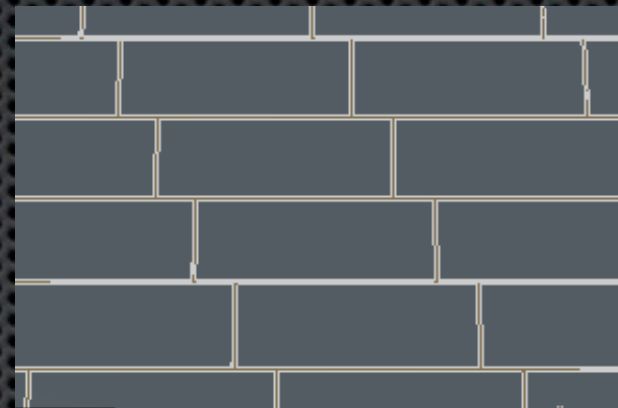
Absolutely not :-) the two parameters are totally independent and you have to use it for generate most of roof patterns

This is an example of what you can do modifying the **row translation**

row translation 28.5 cm



row translation 10 cm

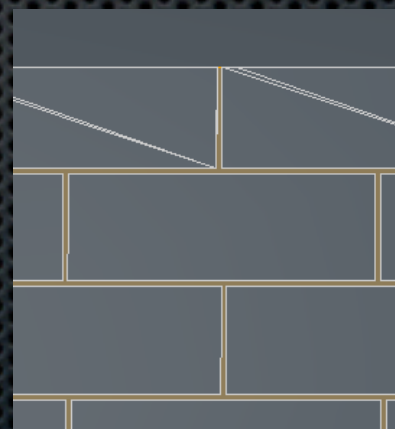


With Offset X Y and Z you can modify the disposition of the roof and change start up coordinates of tiles

Offset X 0 cm



Offset X 8 cm



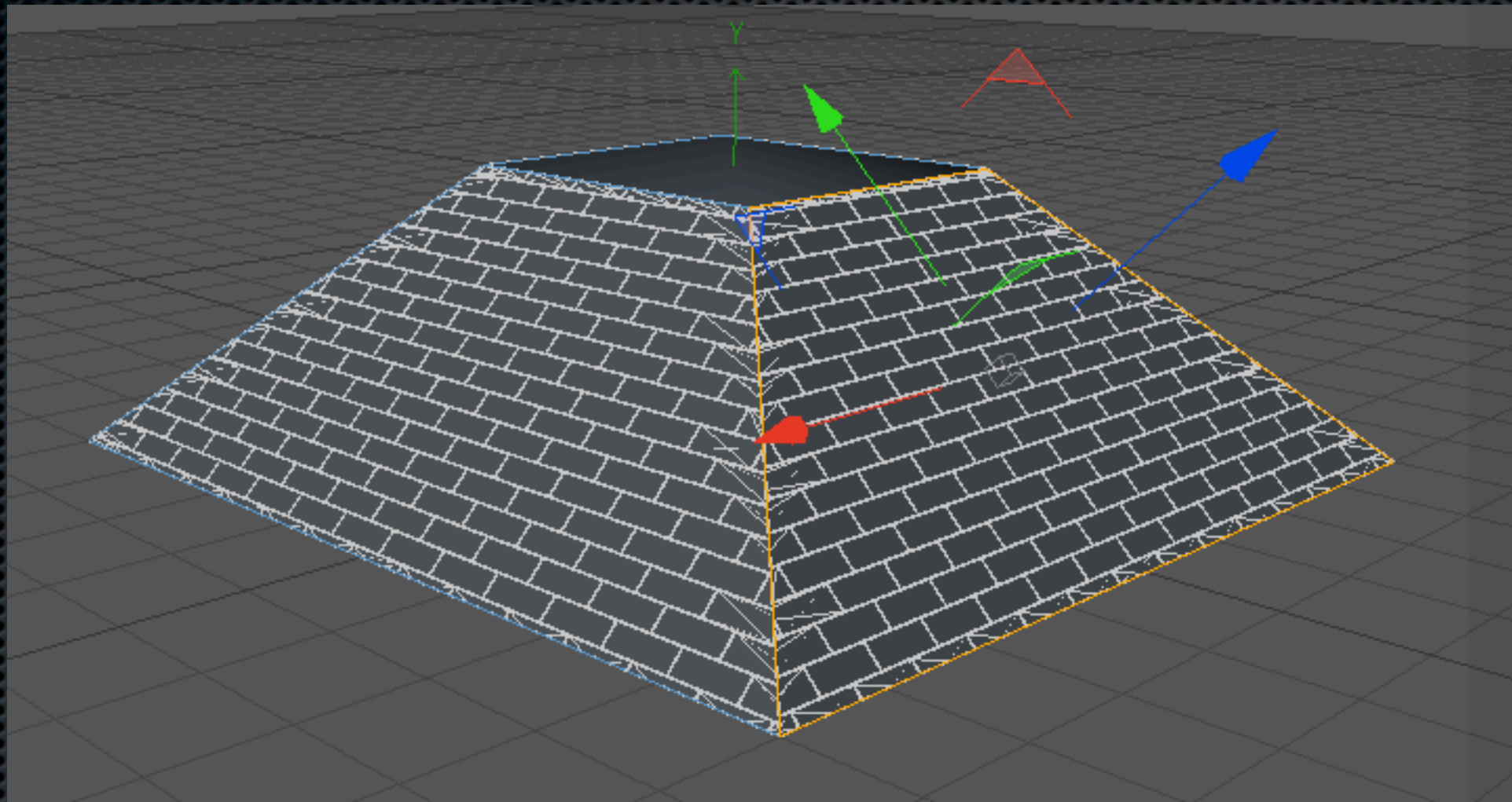
With rotation parameters you can incline the tiles as you wish

Remember that with the option Realtime Update activated every time you modify a value you can see instantly the effects on the roof

**tips: if you use high definition tiles the operation real time update may be very slow, so if you want to make a complex roof try to create it before with a small piece of roof
The generating of the roof with small polygon will be faster :-)**

4° step - multiple edges

Let's come back to our example project, after generating the whole roof you should obtain something like this



How can I create an edge like this?

First of all let's decompose the edge:
in this example we have to create 3 edges and
arrange on the same side

Vertical DX Tiles

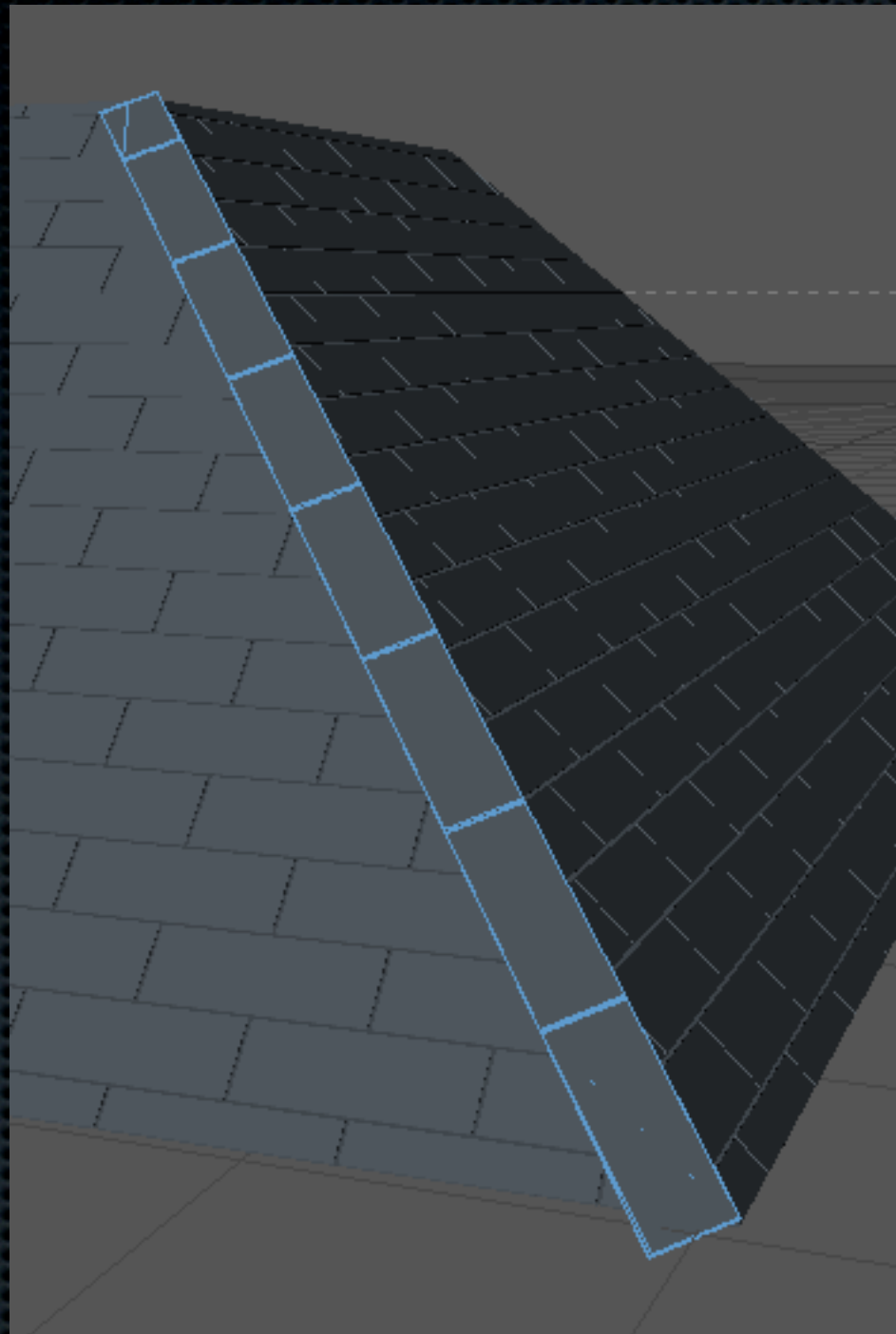
Piedmont Tile

Vertical SX Tiles

- Go to section Edges of tuilegenerator
- Select one edge of polygon
- Select our example tiles
- Click on **Build New Edge**
- The edge will appear
- Now with a little bit of patience try to change the values of **Rotation**, **Step** and **Offset** in order to place it in correct way
- you can also use **Filler %** to make shorter the total length of the edge

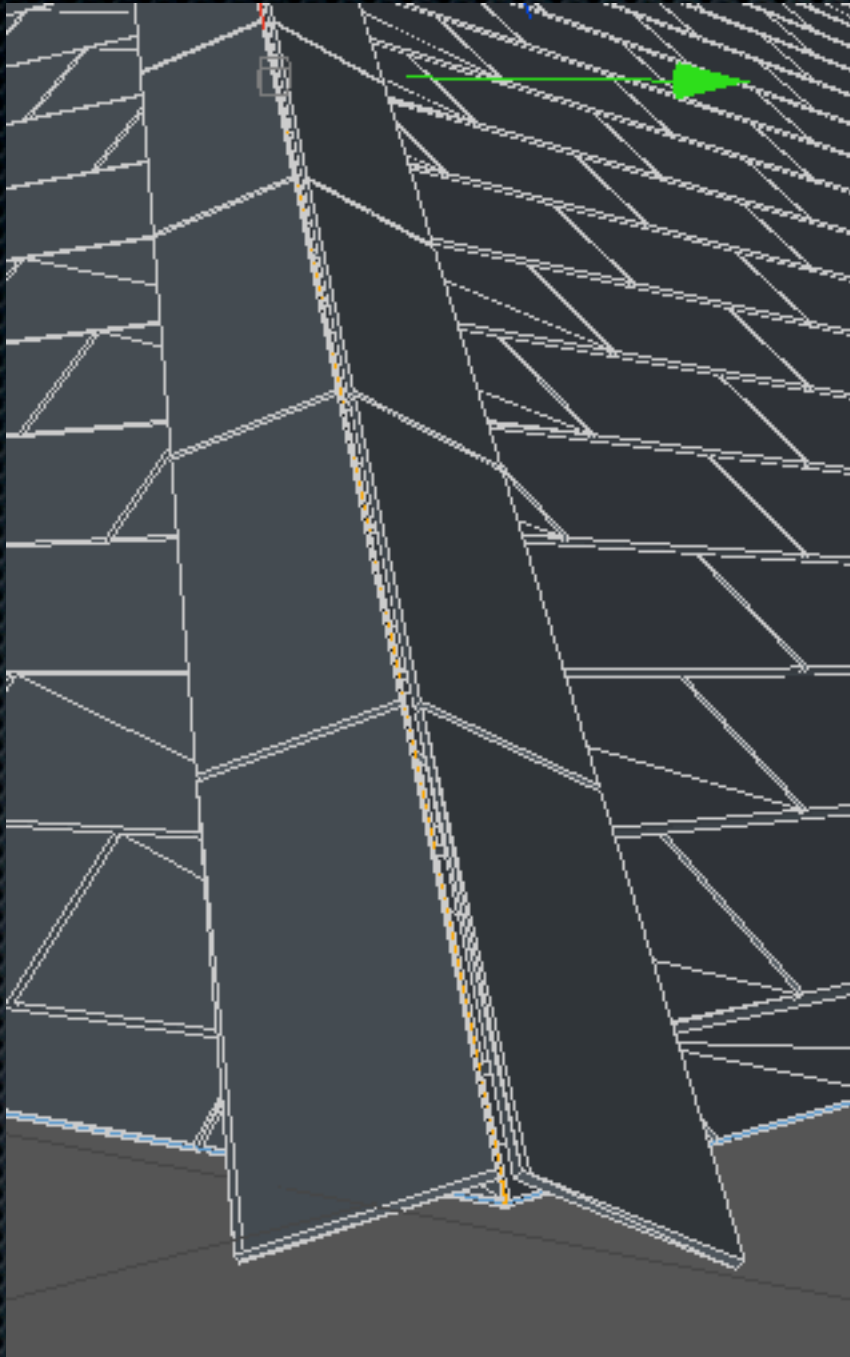


This is the final result using our example project in conjunction with these values
You have to repeat this centering procedure for each edge



Custom Settings	
Edge Id	colmo_105505
Offset X	0 cm
Offset Y	8 cm
Offset Z	-6 cm
Step	58 cm
Rotation X	90 °
Rotation Y	54 °
Rotation Z	90 °
Scale X	1
Scale Y	1
Scale Z	1
Filler %	100

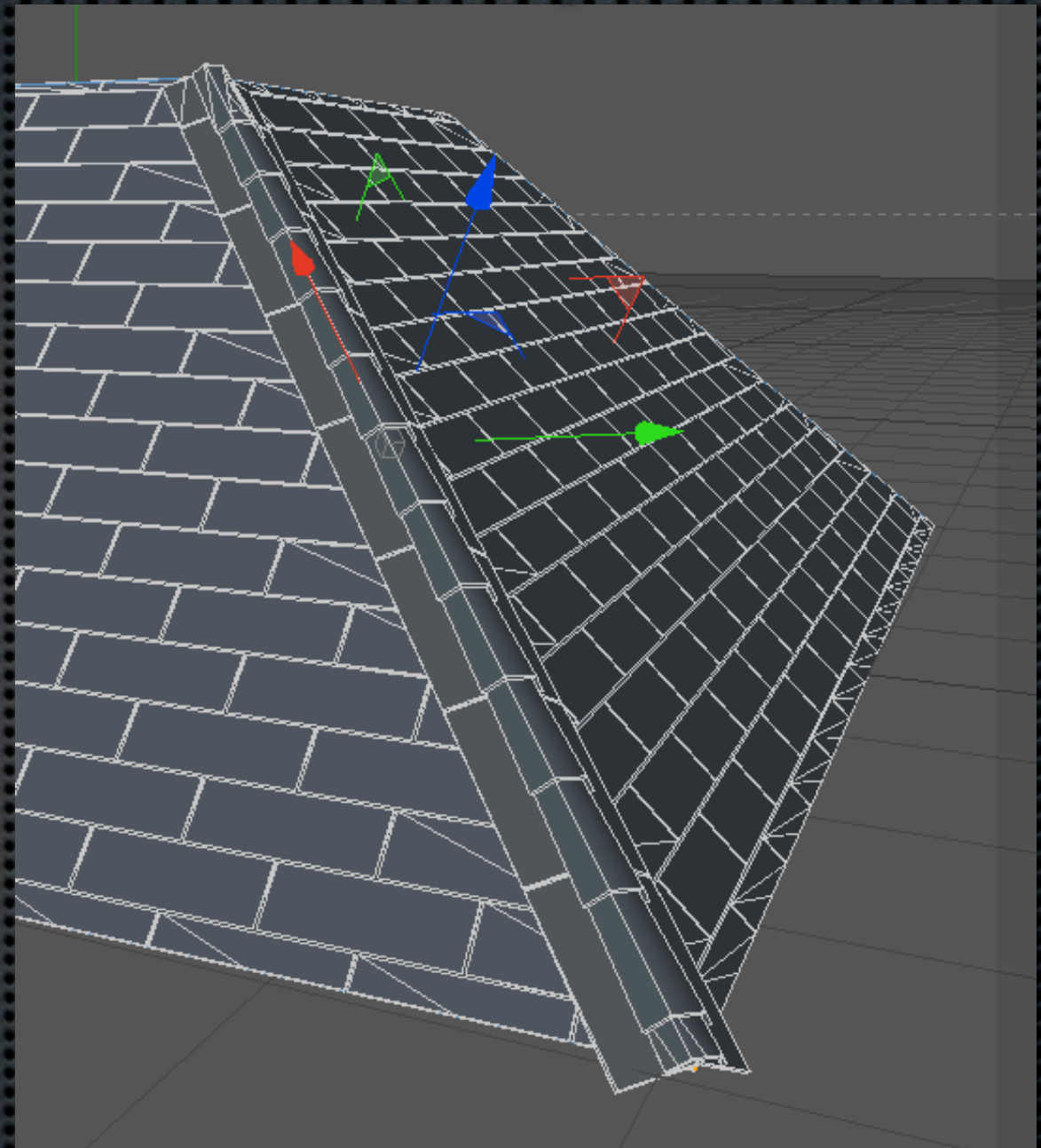
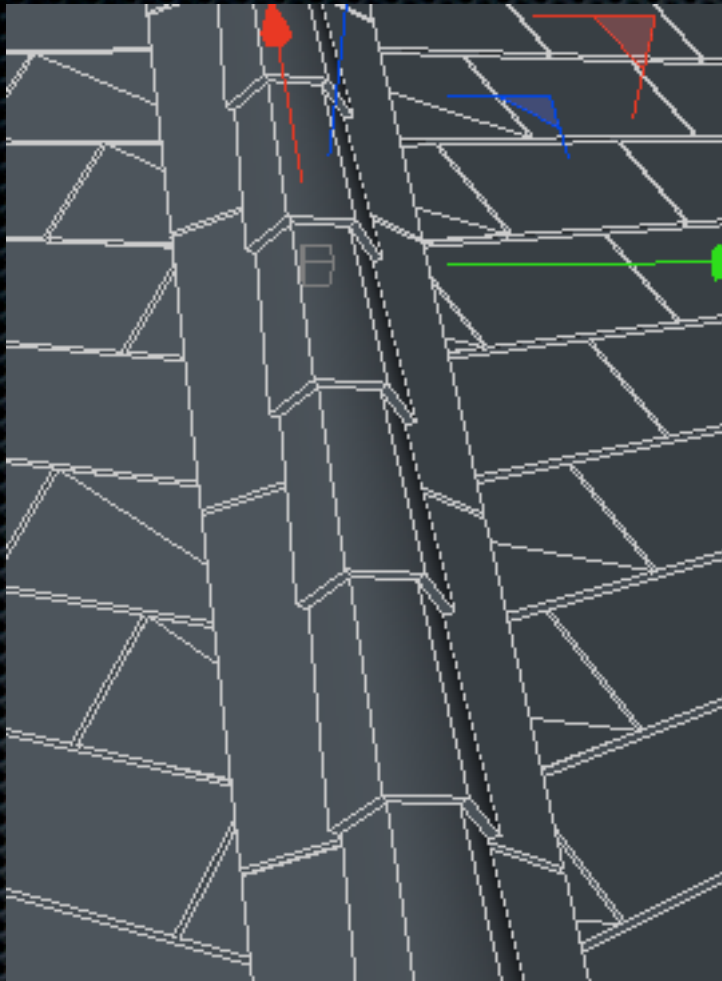
Again with the selected edge reclick on **Build New Edge** and a new edge will appear. Try to change value of **Rotation**, **Step** and **Offset** until the edge is centered correctly



with a little bit of patience you should obtain something like this

Custom Settings	
Edge Id	colmo_851985
Offset X	0 cm
Offset Y	-9 cm
Offset Z	3 cm
Step	58 cm
Rotation X	90 °
Rotation Y	0 °
Rotation Z	90 °
Scale X	1
Scale Y	1
Scale Z	1
Filler %	100

Finally with the same edge selected reclick again on **Build New Edge**
The last new edge will appear and after select Piedmont Tile to change its type
Try to change value of **Rotation**, **Step** and **Offset** until the edge is centered correctly



Repeat these steps for each edge and enjoy yourselves :-)