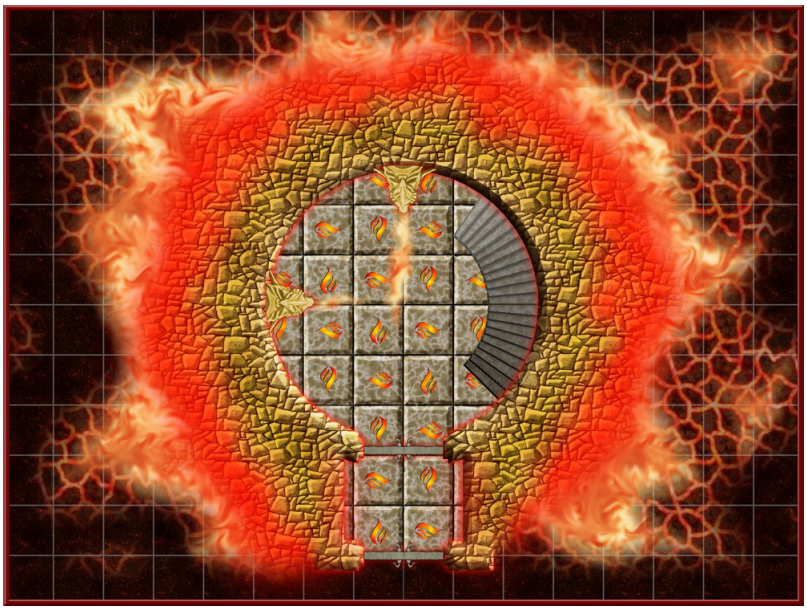
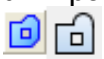
Multiple uses of Multipolys
A Campaign Cartographer 3/3+ Article



Credits

Text and layout by Joachim de Ravenbel.
Maps and methods by Joachim de Ravenbel except
Water transparency effect method on page 13 by SlaveOne.
Proofreading and technical advice by KenG.

Conventions

In CC3 and CC3+, many tools have an icon button on one of the toolbars around the main screen. All the icons will be displayed in pairs with the CC3 picture followed by the new CC3+ version, for example the ***Multipoly*** tool:  . All the features of this article are the same regardless of your version.

Introduction

Multipolys are CC3/CC3+ entities that combine other entities following a specific rule that will be detailed below. As the icon  hints, one use for this tool is to create shapes with holes in them. There are however other cool uses of multipolys.

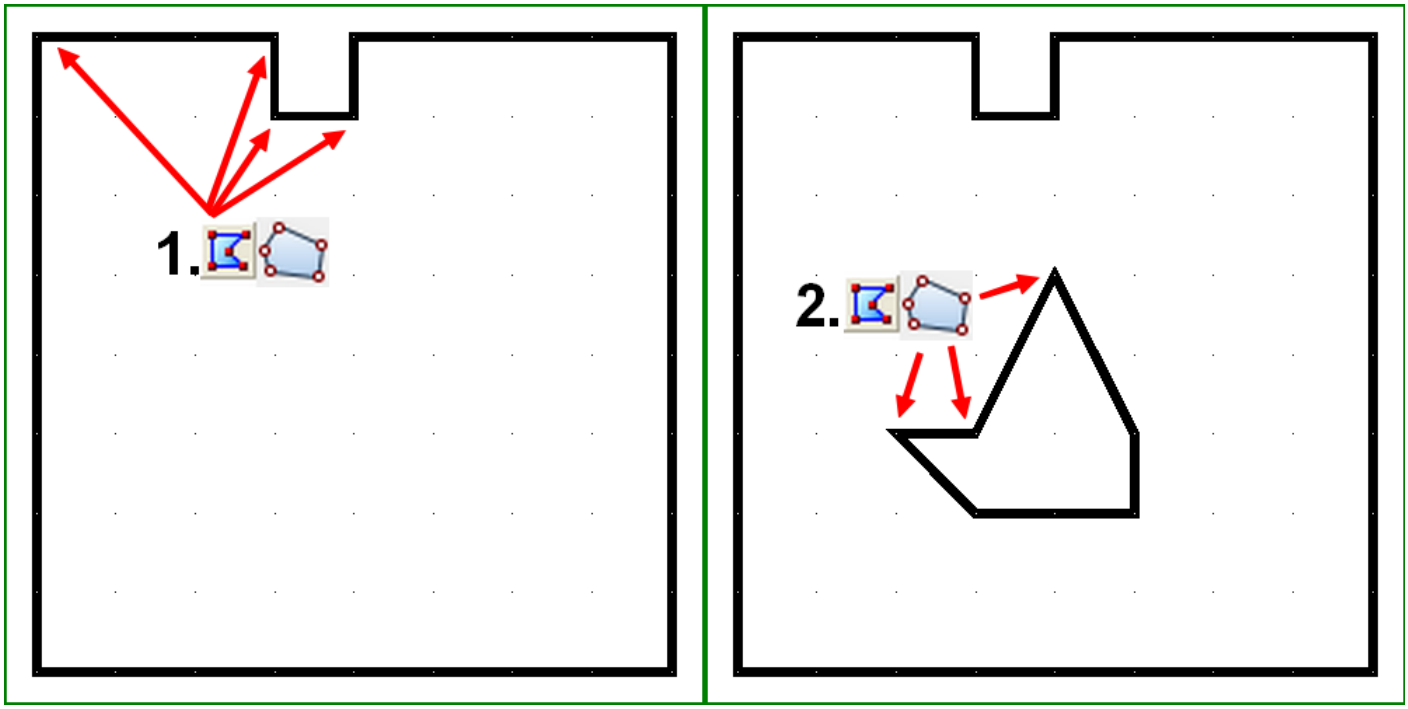
This article will describe:

1. How to make shapes with holes in them.
2. How to combines curves and lines to create a closed shape.
3. How to apply a uniform fill style to separate entities.
4. How to align a gridded fill style to your specific grid.
5. How to apply different edge effect to a -supposedly- single entity.

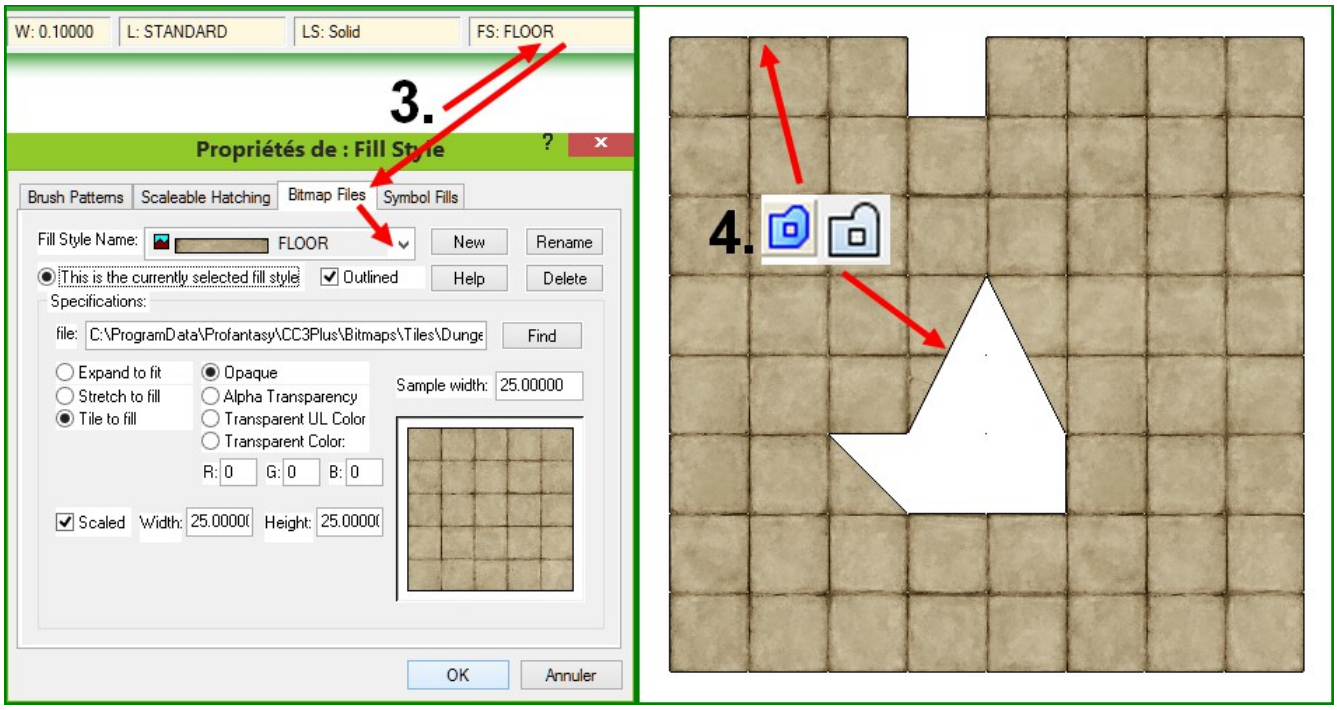
1. How to make shapes with holes in them

You want to create a lake with an island. Or you want create a cavern floor with a pit leading to a lava pool. You could add the island on another sheet, above the lake, or add the lava the same way. Or you could create shapes with holes in them using a multipoly:

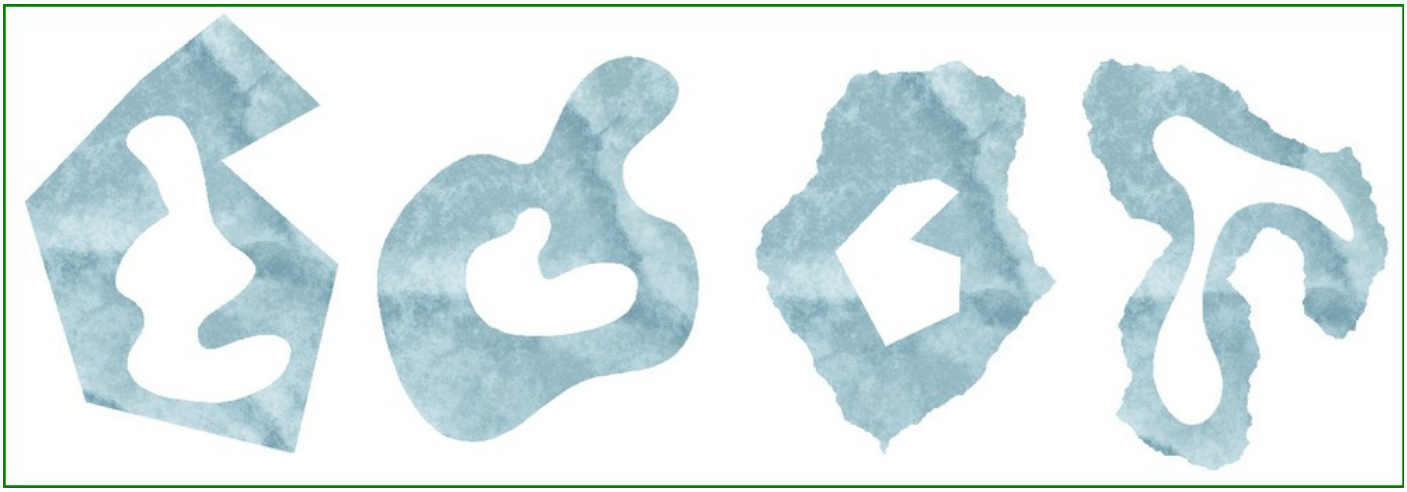
1. Draw the outer contour with the polygon tool  , the smooth polygon tool  , or the fractal polygon tool  .
2. Draw the inner contour with any polygon tool, which can be different from the tool used at step **1.** For example, you could draw a fractal polygon outer contour and a smooth polygon inner contour.



3. Click on the **Fill Style Indicator**, and make the target style current. You'd probably aim for a bitmap pattern so click on the **Bitmap Files** tab and scroll down the **Fill Style Name** menu to select your fill style. Make sure the **This is the current fill style** radio button is checked or check it before clicking on the **OK** button.
4. Click on the ***Multipoly*** tool icon and select the two contours either by clicking on them in turn (order not relevant) or by using a selection box encompassing or intersecting both entities if no other entity lies in or across the selection box. Right-click and choose **do it** (or just hit the "**d**" keyboard key).

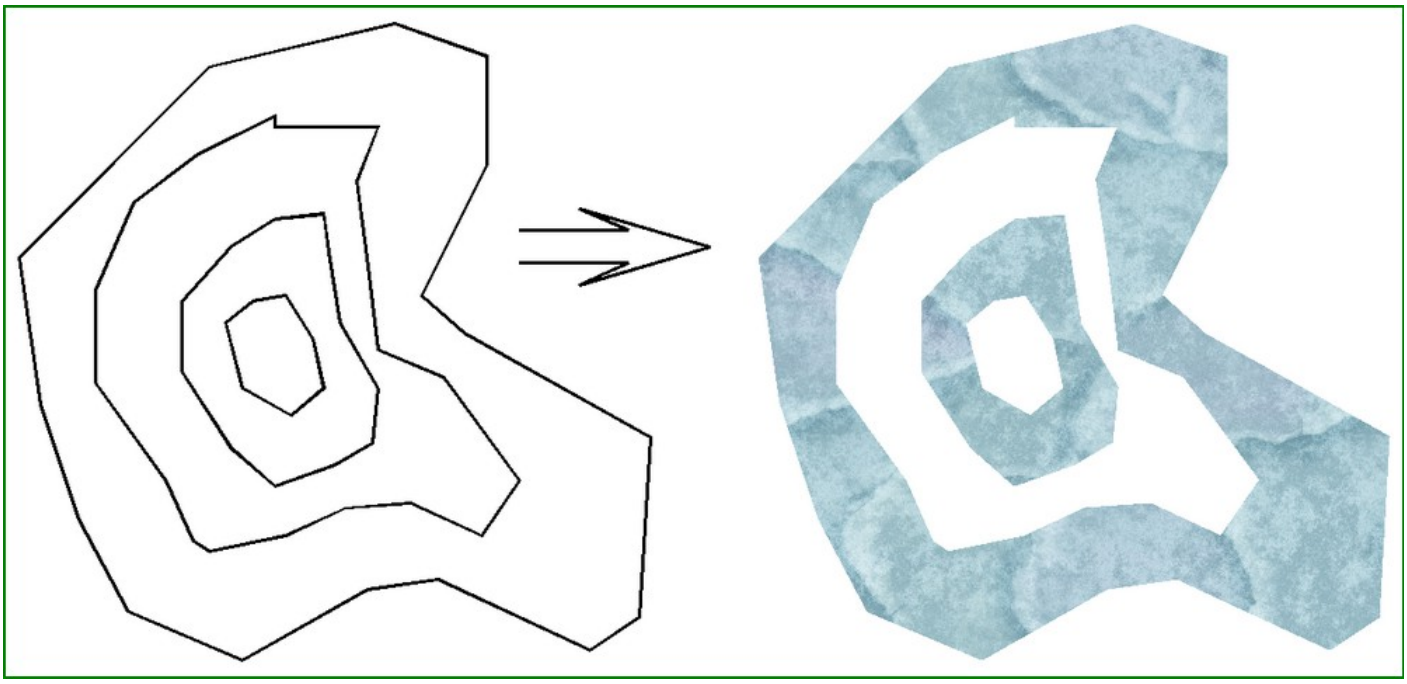


You can mix every kind of closed entities that way:

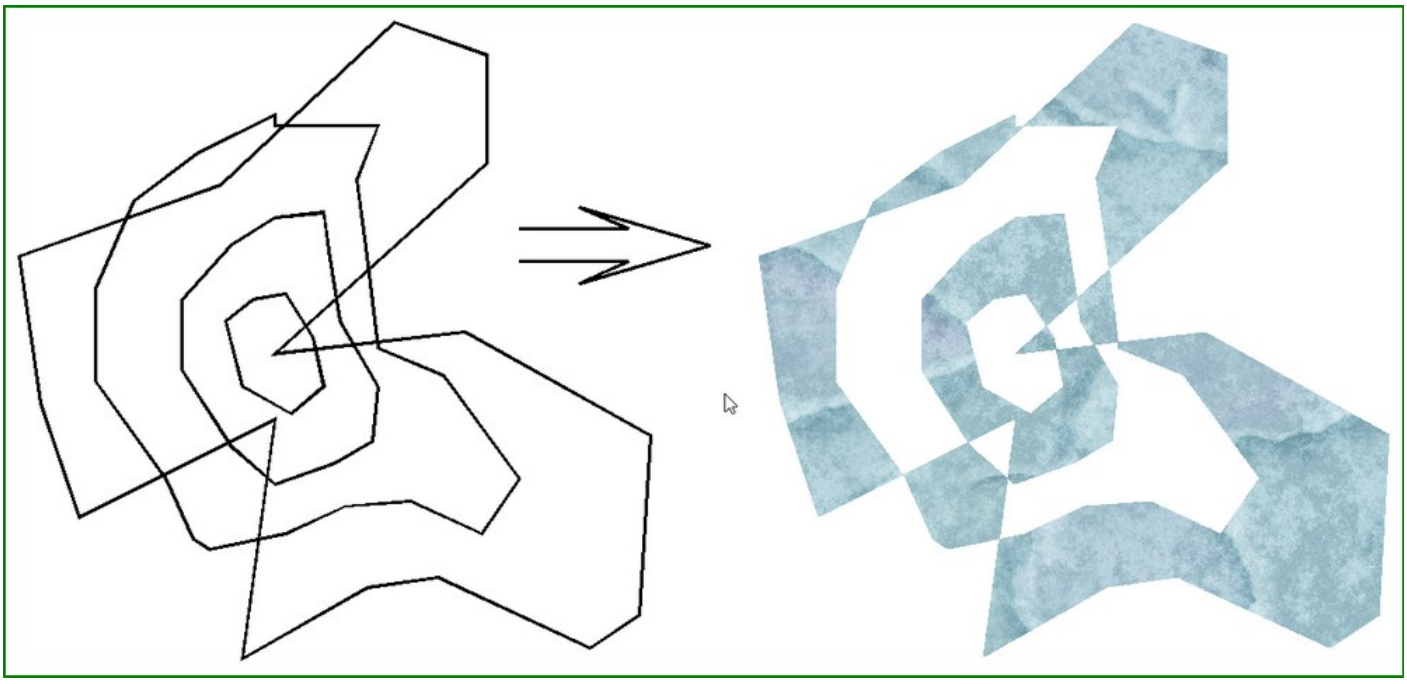


Mixing polygon kinds. From left to right: straight/smooth, smooth/smooth, fractal/straight and fractal/smooth.

Note 1: if you have more than two polygons, the multipoly alternates between filled and hollow areas. So you can for example create an island on a lake with a smaller lake in the island:



Note 2: if the second polygon is not fully inside the first one, the hollow area(s) will occur only where the polygons overlap:

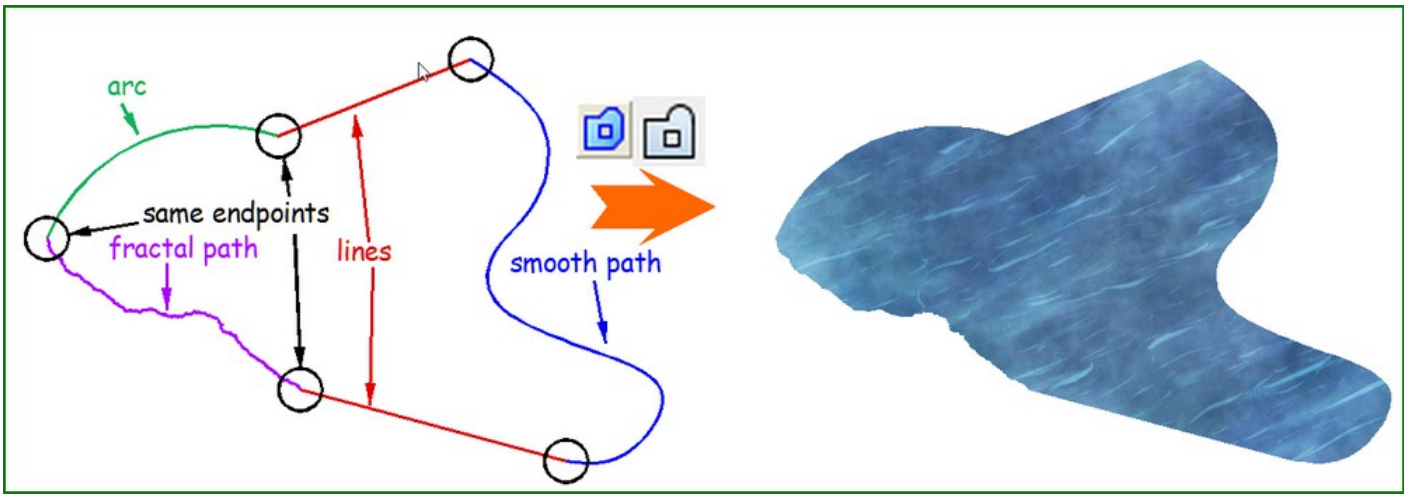


IMPORTANT: Multipolys don't respond to line width change, they are always at a line width of 0. If you copy a multipoly to create a thick contour, you need to explode the copied multipoly to revert to the initial entities whose line widths can be altered.

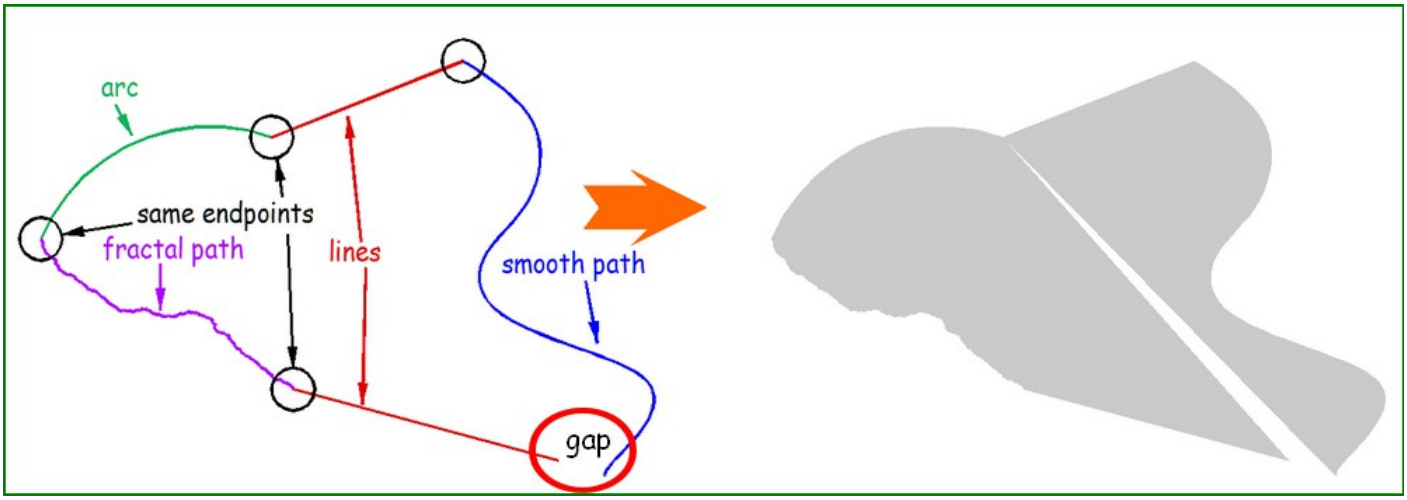
2. How to combine curves and lines to create a closed shape

You can combine straight, smooth or fractal paths, arcs, elliptical arcs or lines within a multipoly to create a closed shape but you need to comply to the following rule:

IMPORTANT: The last endpoint of every entity must be exactly the same as the first endpoint of the following entity and the last endpoint of the last entity must be exactly the same as the first endpoint of the first entity.



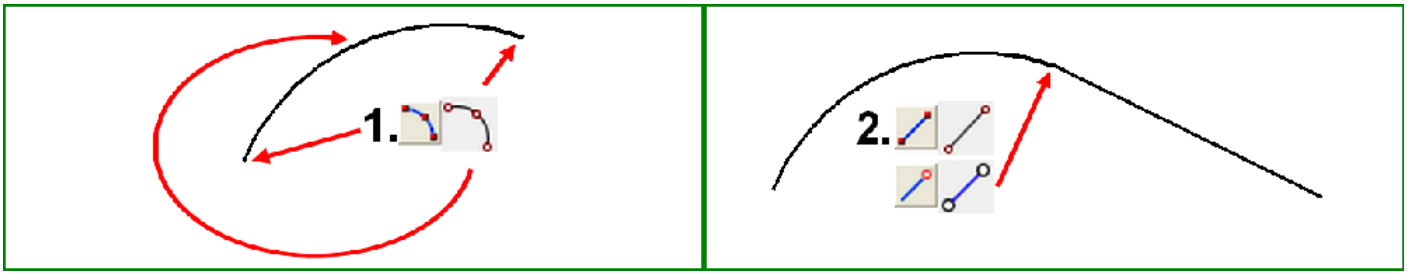
If you don't follow this rule, and thus create one ore more gaps in your shape, you may experience odd results when CC3 tries to use a random endpoint to connect the entities of the multipoly:



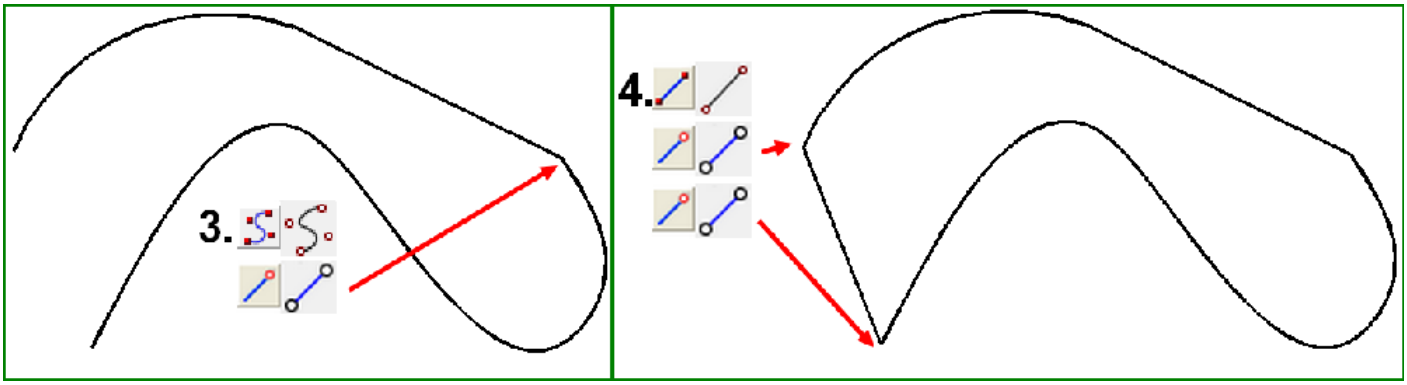
For more about multipoly troubleshooting see this tutorial, Part 5, pages 29-30.

To create a multipoly according to the rule:

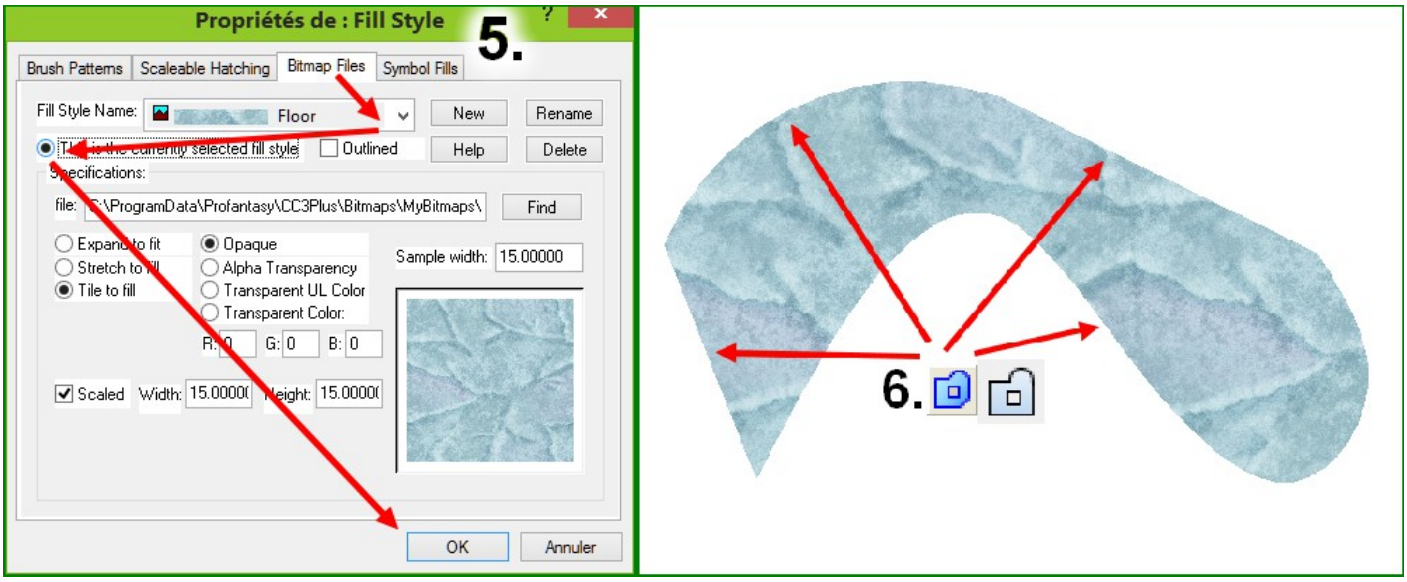
1. Draw the first entity normally. For this sample, it is an arc .
2. Click on the next tool icon (***Line*** for the sample), then on the ***Endpoint modifier*** (or hit the function key **F5**), click near the end of the first entity and draw your new entity.



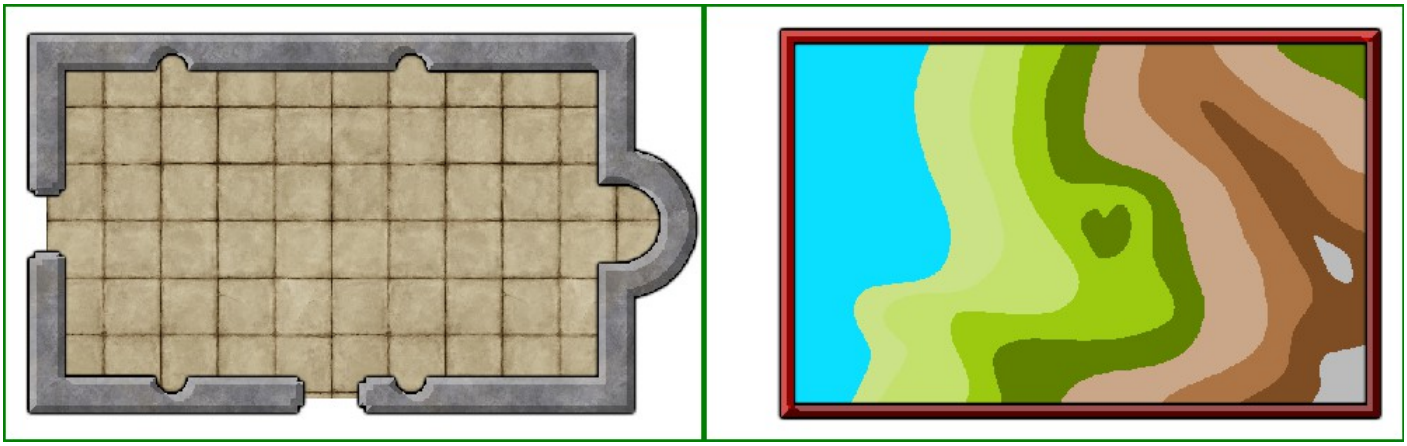
3. Repeat step **2.** until you reach the last entity.
4. For the last point of this last entity, use again the ***Endpoint modifier*** (**F5**) and click near the beginning of the very first entity.



5. Click on the **Fill Style Indicator**, and make the target style current. You'd probably aim for a bitmap pattern so click on the **Bitmap Files** tab and scroll down the **Fill Style Name** menu to select your fill style. Make sure the **This is the current fill style** radio button is checked or check it before clicking on the **OK** button.
6. Use the ***Multipoly*** tool and select all the entities making your shape. Right-click **do it**.

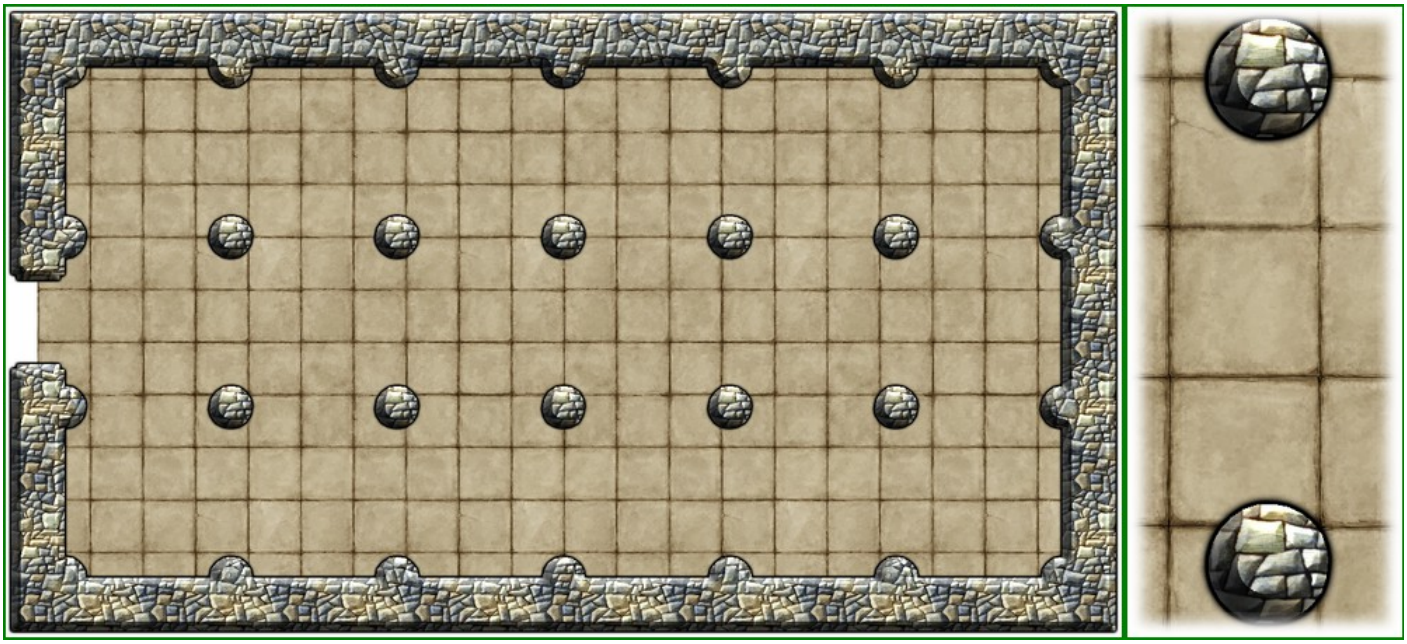


With multipolys created that way you can draw dungeon walls with a round tower and straight building, or add circular recesses in thick walls. You can also combine a smooth contour with the straight map border (though by using twice the same node you can add straight parts to a smooth polygon):



3. How to apply a uniform fill style to separate entities

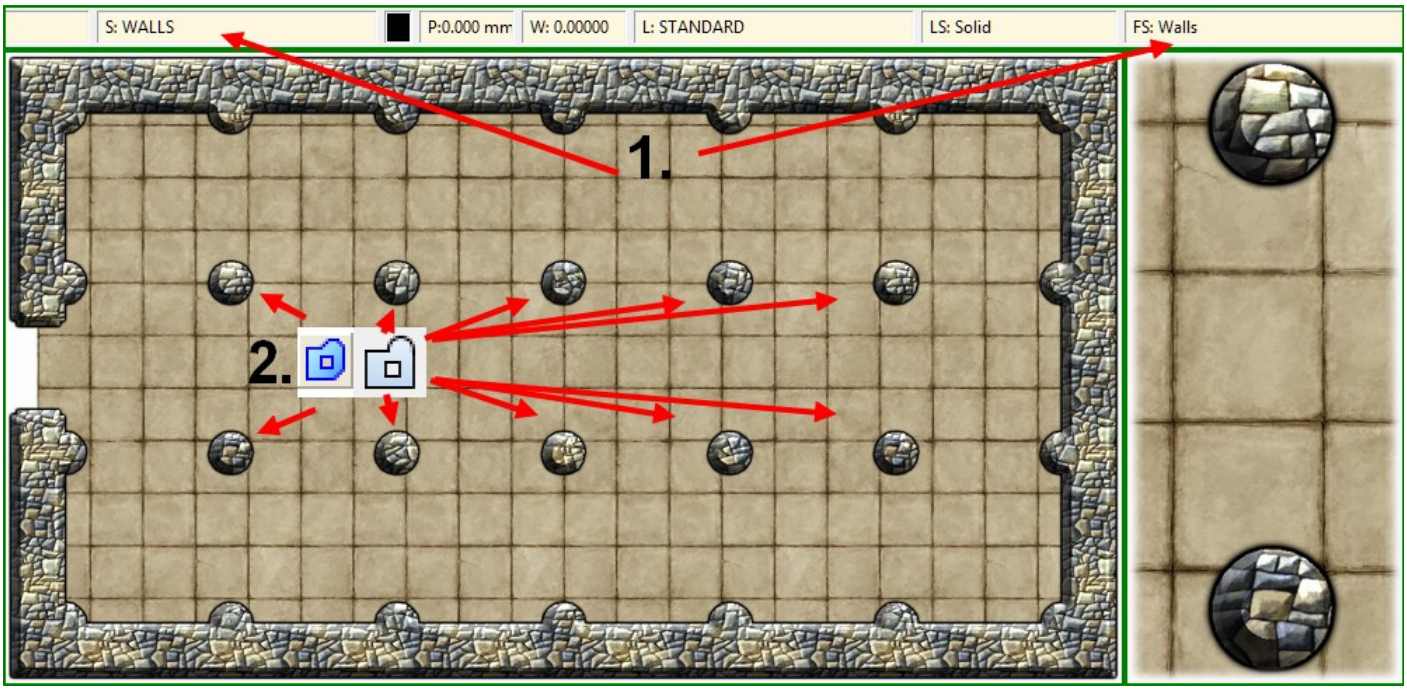
You have found a nice texture for your walls and added some columns in the same fill style but all these columns look exactly the same...



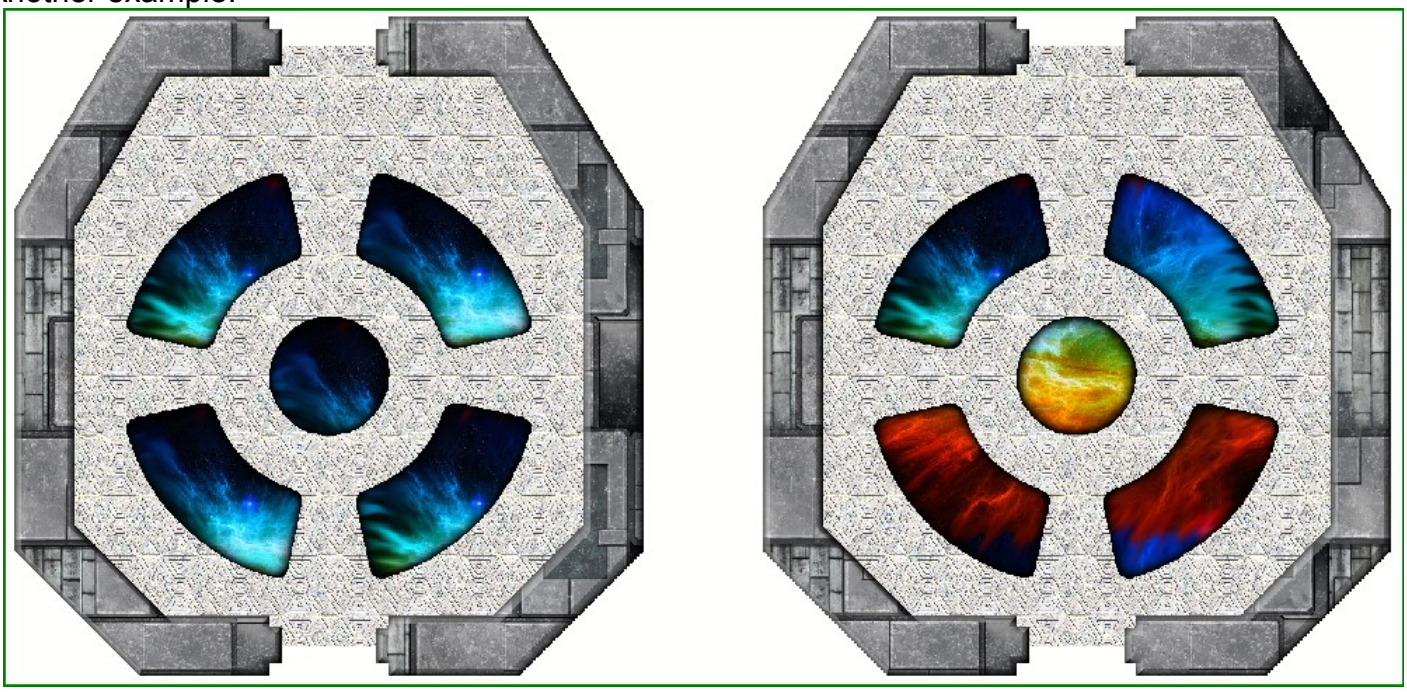
All the columns look the same because the fill style is applied individually to each one.

To change this just:

1. Make sure the fill style is the right one or change it accordingly. Also change the current **sheet** if it's not the right one.
2. Click on the ***Multipoly*** tool icon  and select all the columns before right-clicking **do it**.



Another example:

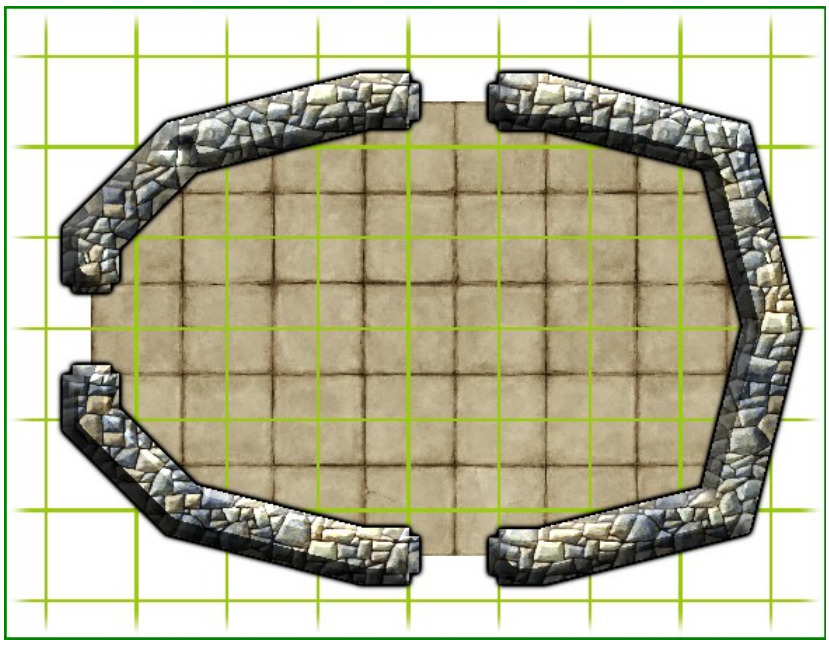


This map of a spaceship room has floor windows looking out. On the left, the windows are made of five separate entities that were multipoly-ed on the picture to the right.

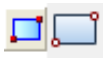
4. How to align a gridded fill style to your specific grid

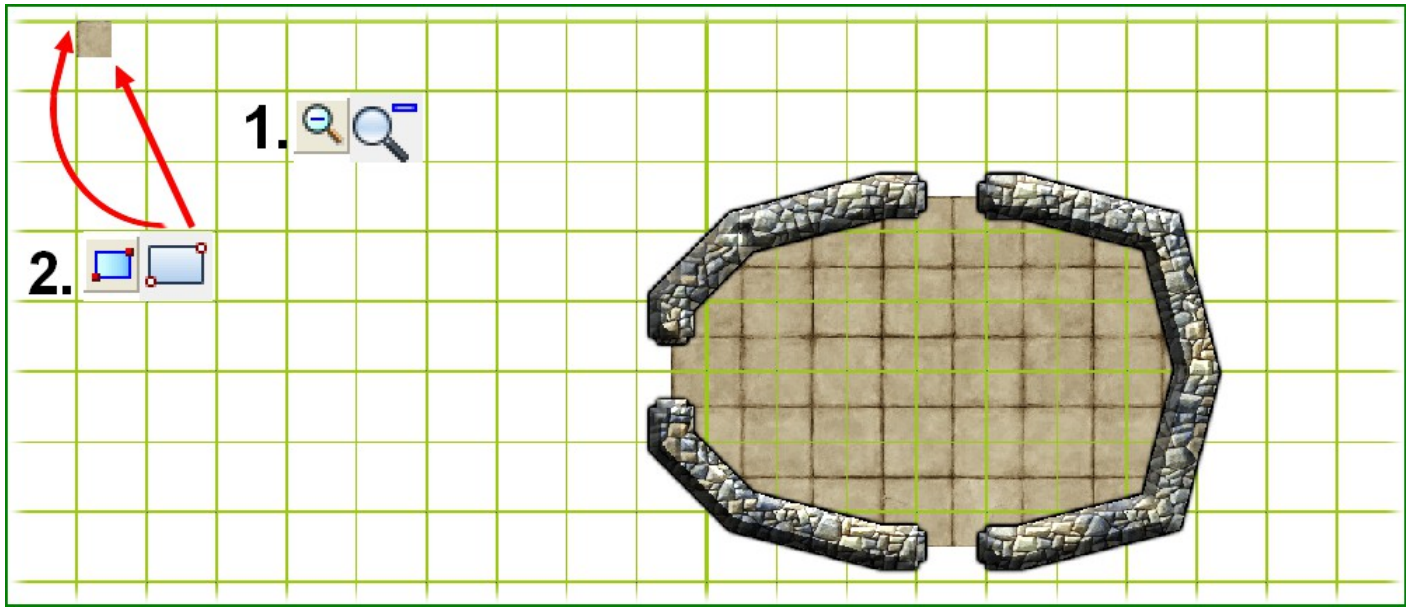
Some dungeon fill styles display tiles that already form a grid, for example the beige floor fill style that has been used in this article from the beginning and that comes from Jon Roberts' dungeon annual 54.
You draw your floor with this fill style but due to the shape, the tiles don't follow the grid you'd like...

On this sample map, the target grid is in olive green and the fill style grid is clearly offset.



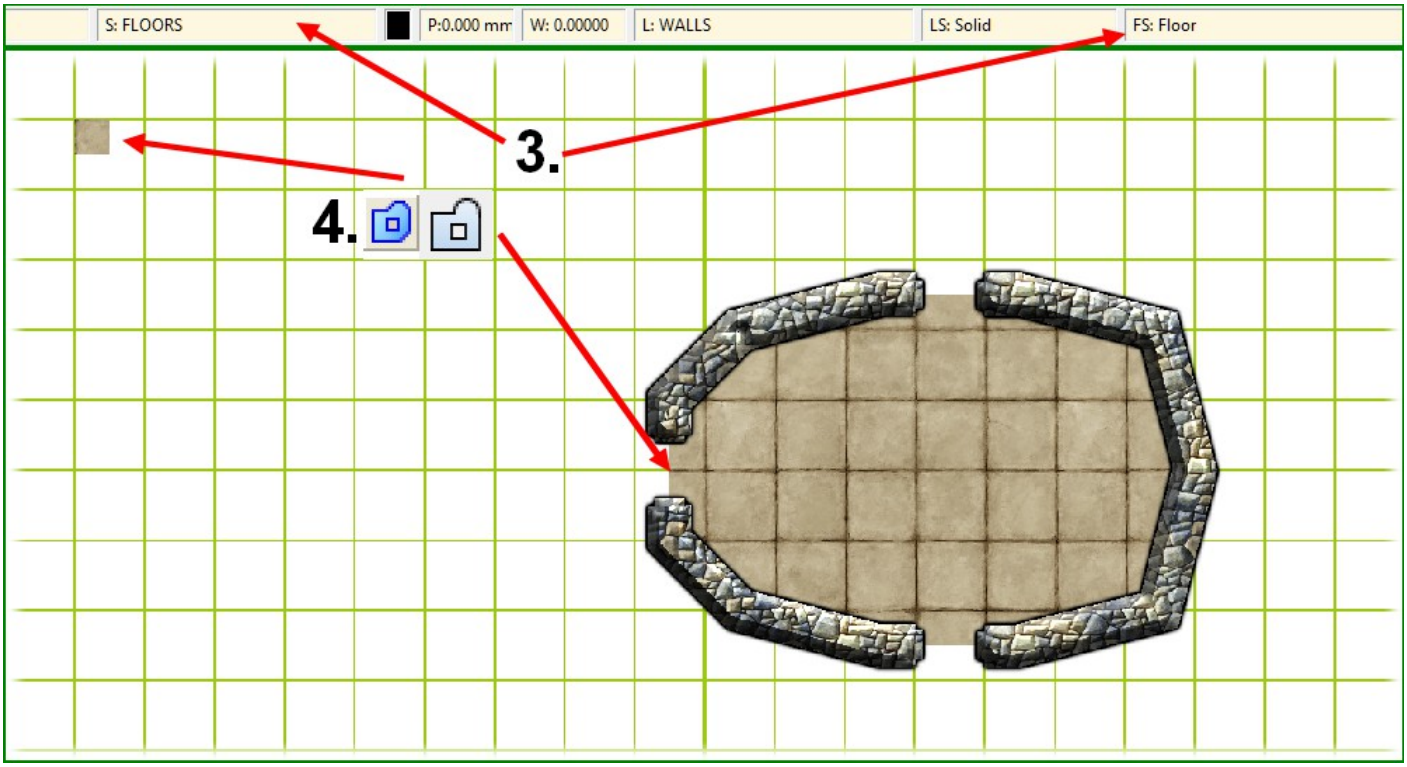
To align the fill style with a multipoly:

1. ***Zoom Out***  to reach areas well outside the map's scope, to the left and the top of your room.
2. With the ***Box***  tool draw a box somewhat to the **left and above** the map, and whose **top left corner is a node of the target grid**[1]. The size of the box doesn't matter so keep it small.



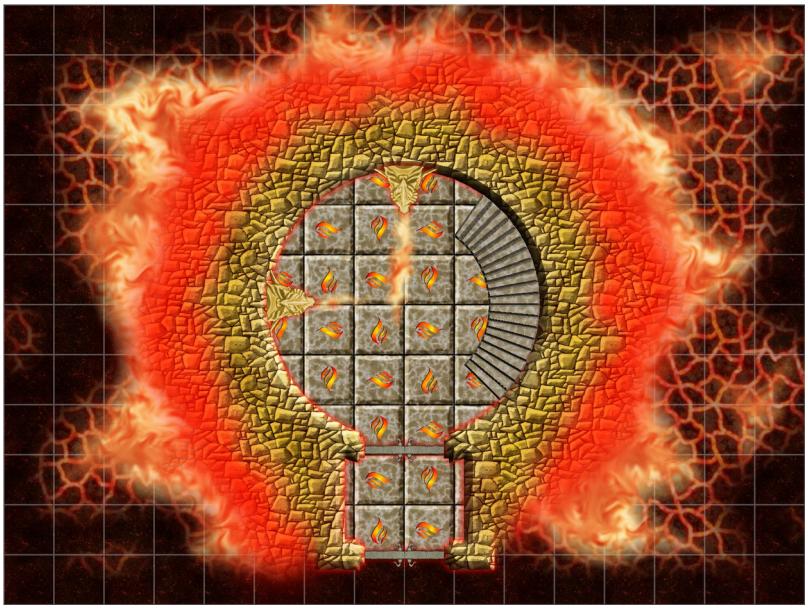
1 Because fill styles are applied from the top left of the area. See this tutorial, part 6 page 38.

3. Make sure the fill style is the right one or change it accordingly. Also change the current **sheet** if it's not the right one.
4. ***Multipoly*** the box with the floor. The fill style is aligned to your grid:



5. How to apply different edge effect to the same – supposedly – entity

You want to apply a bevel effect to the inside of your cavern walls but an edge fade effect to the outer walls? All you need are some aligned multipolys...



On the title sample map, you see a wall with:

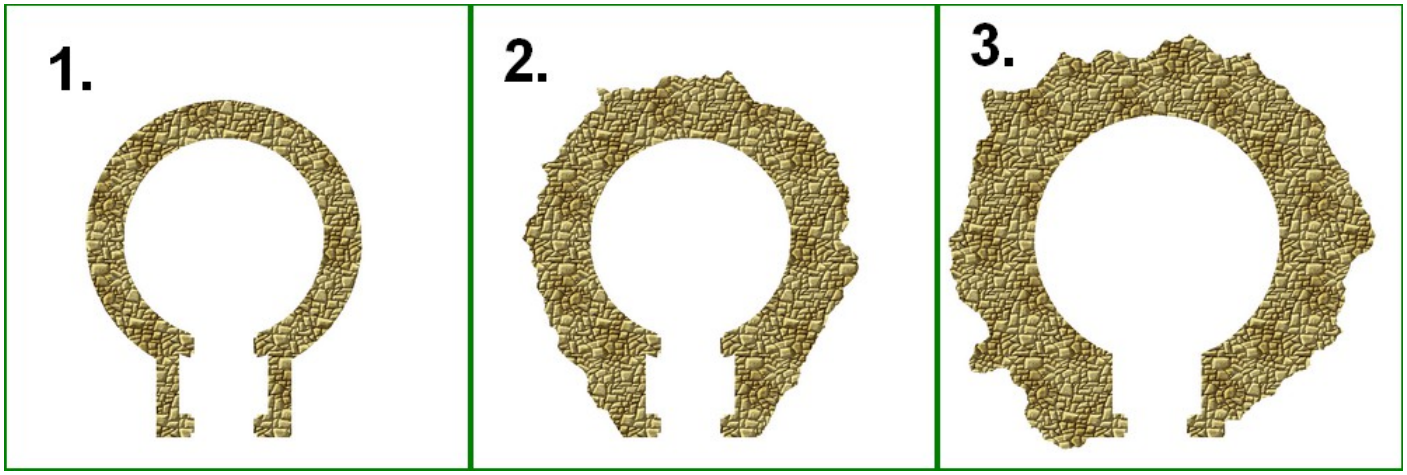
- a bevel effect inside,
- an edge fade gradually fading to a red hot glowing area,
- an Rgb matrix effect to make the stone glowing hot on the outside, gradually fading out.

Though the wall looks like a single entity, it consist in three aligned multipolys:

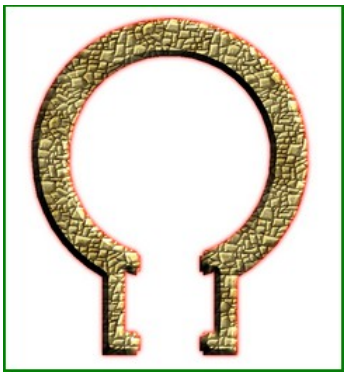
- the inner wall, with a bevel effect, masked by
- the intermediate wall, with an edge fade effect, masked by
- the outer wall with an RGB matrix and an edge fade effect.

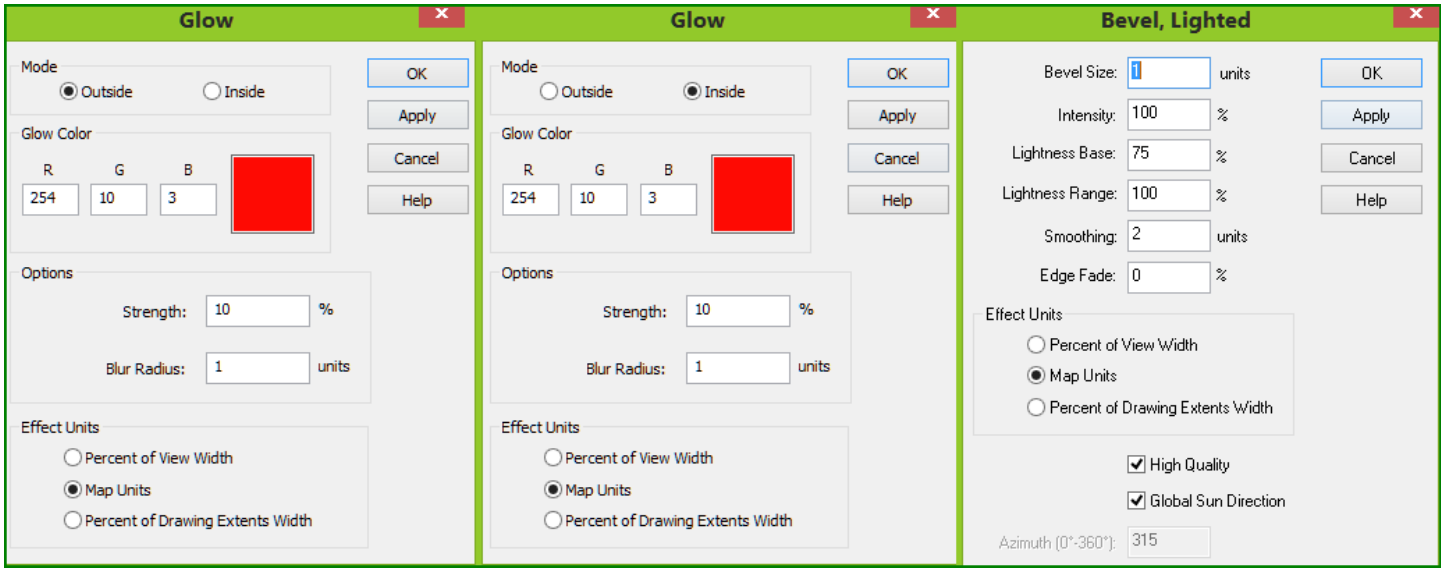
The trick is just to extent the previous part to multiple sheets by copying the aligning box from page 8 to all these sheets and multipoly-ing all the shapes with these copies. To create such a battle-map:

1. Draw the inner walls, thick enough to overlap the next the intermediate shape, on a **WALLS, INSIDE** sheet.
2. Draw the intermediate shape on a new **WALLS, INTERMEDIATE** sheet. The inside follows closely the previous shape but it extents on the outside.
3. Draw the outside shape on a second new **WALLS, OUTSIDE** sheet. The inside also follows the first shape but the outside is largely extending outward.

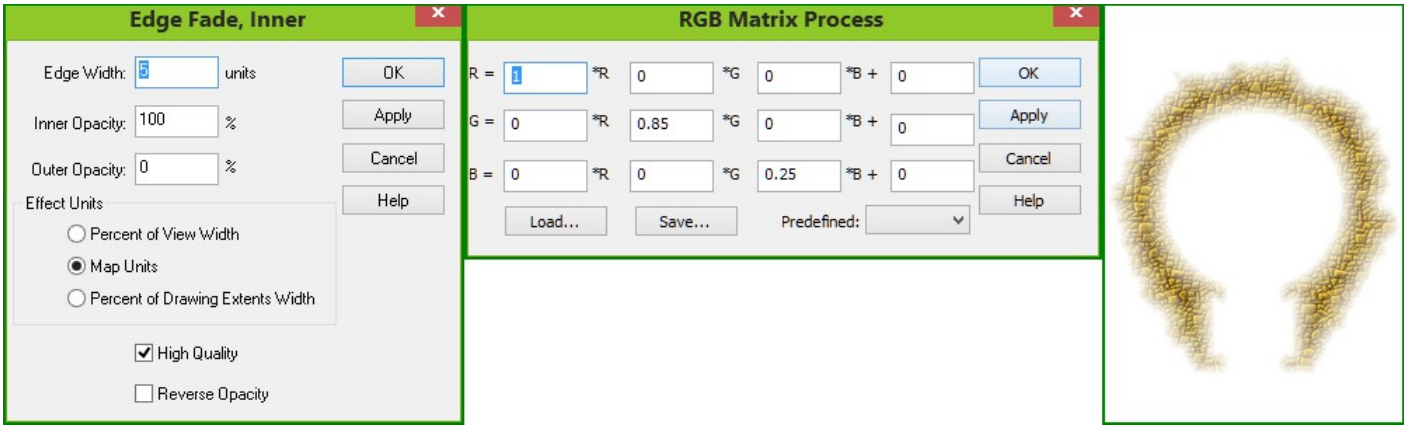


4. Add all the desired effect to the **WALLS, INSIDE** sheet. For the sample map, it's a **Lighted bevel**, an inside bright red **Glow** and the same outside **Glow**:

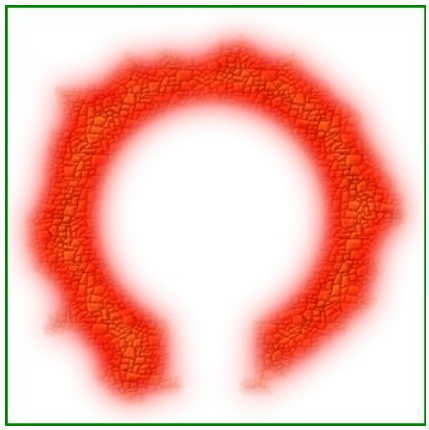


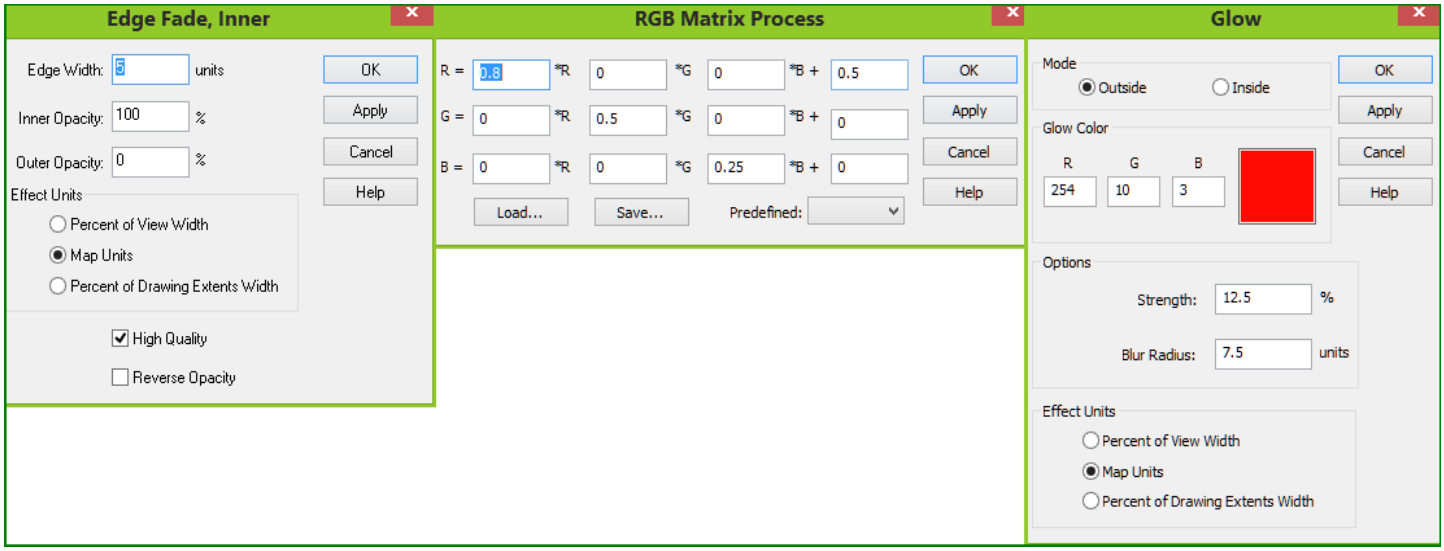


5. Add all the desired effects to the **WALLS, INTERMEDIATE** sheet. For the sample map, it's an **RGB matrix** effect to enhance the yellow and an **Edge fade, inner** to blend with the inside and outside entities.



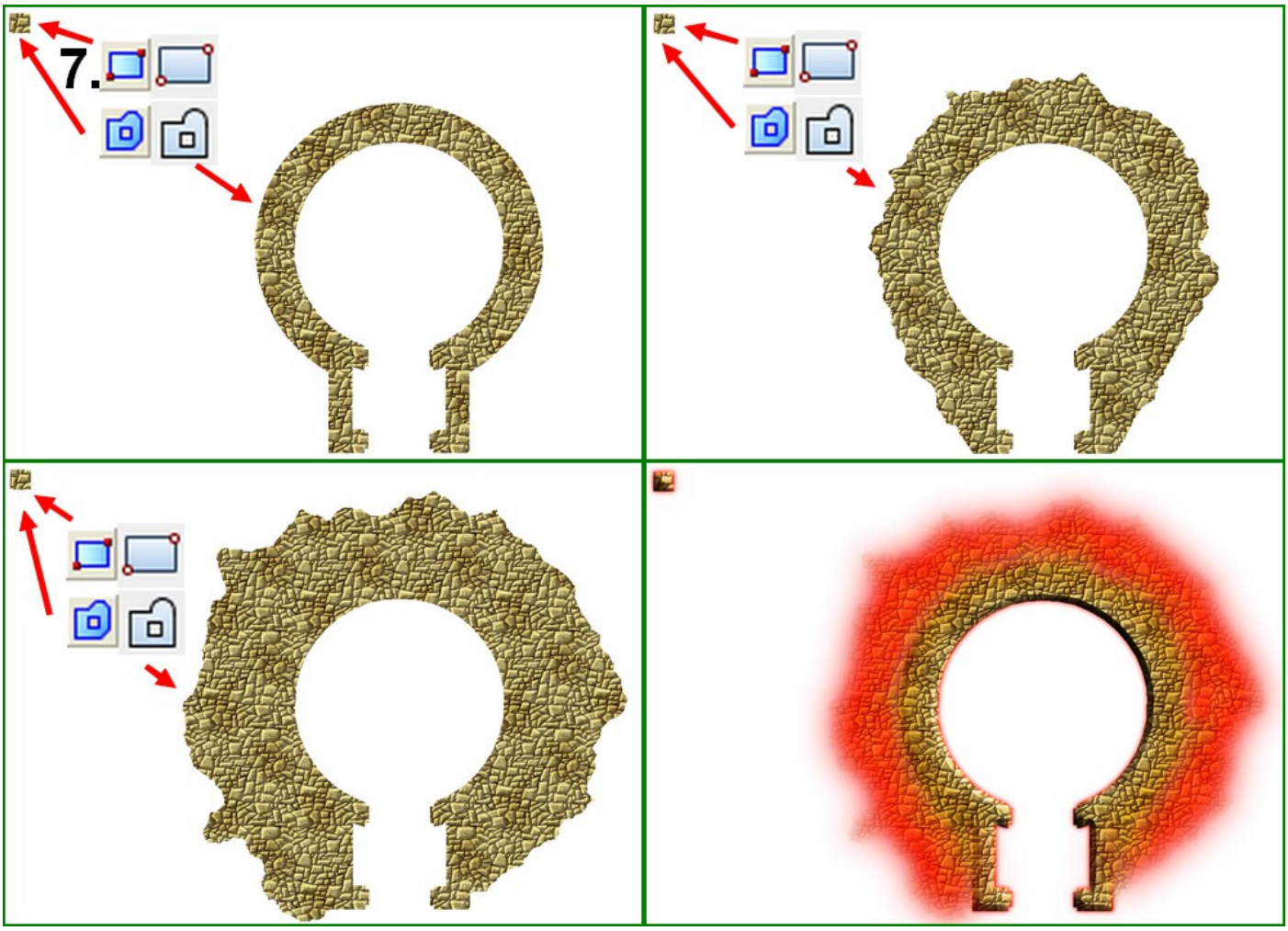
6. Add all the desired effects to the **WALLS, OUTSIDE** sheet. For the sample map, it's an **RGB matrix** effect to make the walls blazing hot and an **Edge fade, inner** to blend inwards.

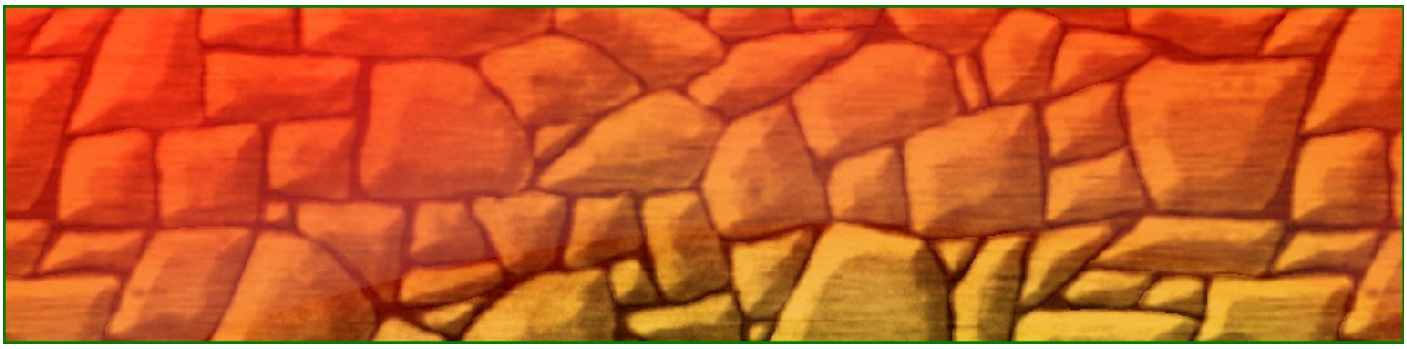




If you show all three sheets, with effects on, you will notice that the fill styles don't align:

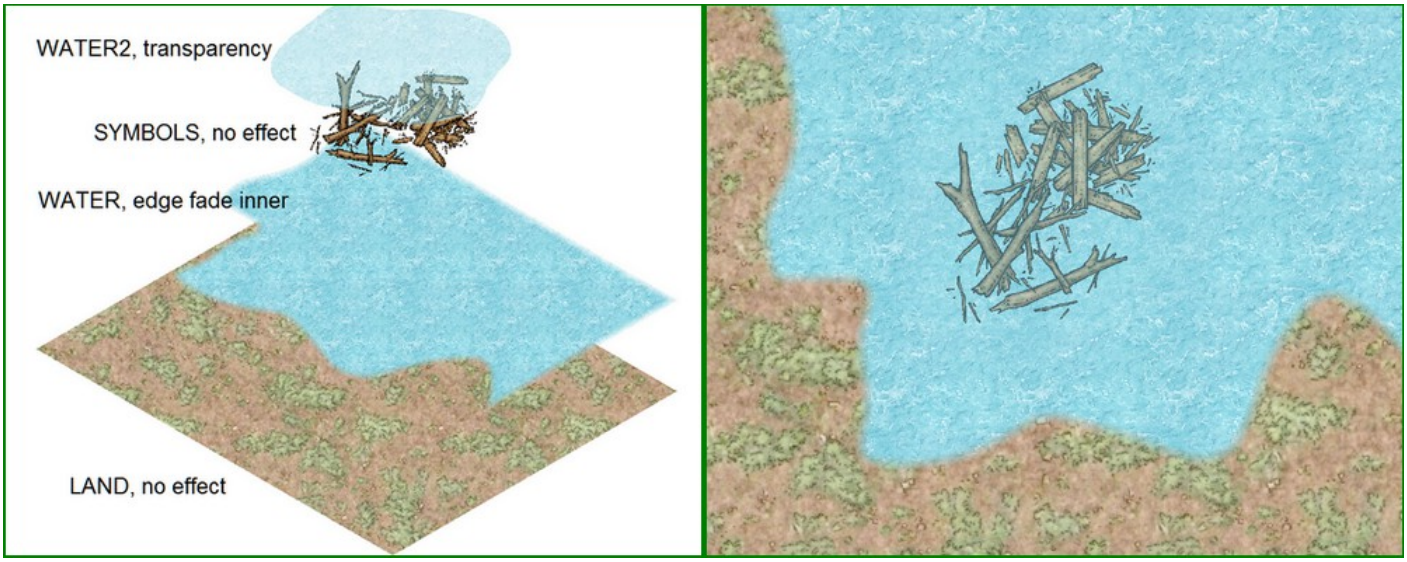
7. To remedy, add a hidden square to every relevant sheet and make multipolys: repeat the steps from page 8, choosing the same location for all the aligning boxes. This location must be above and to the left off all the target entities.





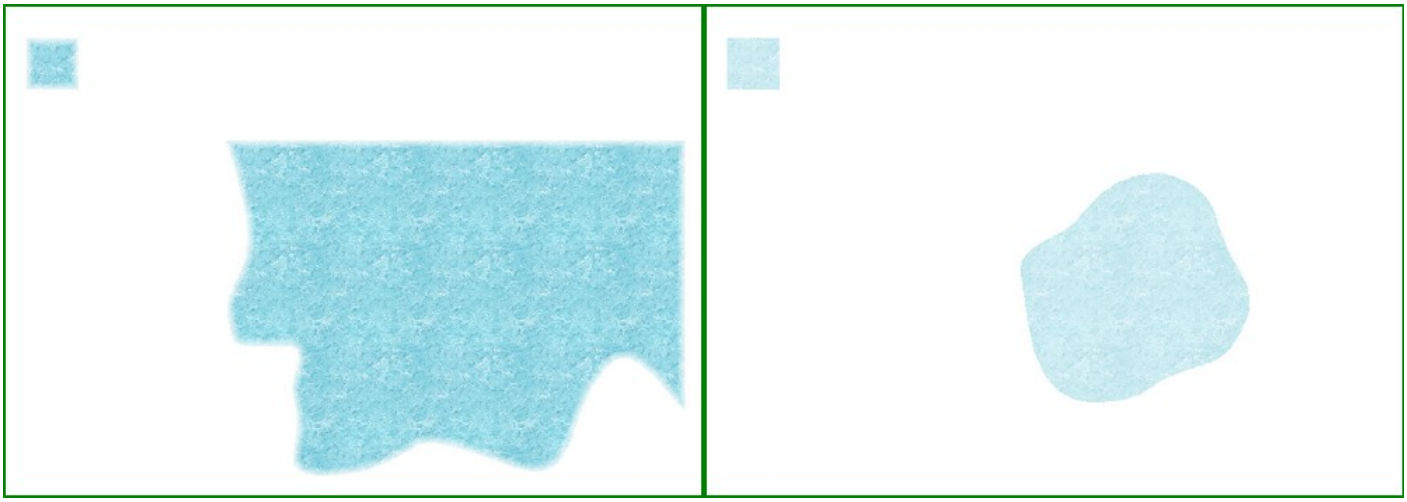
Another use for this is the technique of ProFantasy Forum's friend SlaveOne who creates cool maps with objects floating in, or emerging from, water.

His method consists in “sandwiching” the mid-water entities between two water sheets, the upper one being partially transparent.



Left: isometric view of the piling of SlaveOne's sheets. Right: resulting map.

If you look very closely, you'll see that the white tips of the waves are a bit blurred. This is due to the blue transparency of the top **WATER1** sheet that isn't aligned with the lower **WATER** sheet.
To align the fill styles just add a box outside the map to every relevant sheet, above and to the left, and multipoly each water polygon with the box as shown on page 12.



Left: new version of the sample map on page 13. Mid: zoom on an area without fill style aligning. Right: zoom on the same are with fill style aligning. The white areas are more visible.

Conclusion

Multipolys are not only useful to create entities with hollow parts but can also

- combine lines, paths, smooth paths, fractal paths and arcs to form a closed shape,
- uniformly apply a fill style to entities apart,
- align a fill style however you want it,
- align a fill style to entities across different sheets to make it look like a single entity with various effects applied to different areas.

If you enjoyed this article, or have other ideas about multipolys, please leave your feedback here.

Happy mapping!
Joachim de Ravenbel
March 2015