Work in software (blender)

Spiral staircase

I wanted a spiral staircase, and the main problem I had neglected while sketching is that I would require a 'landing' area, so that you can walk out onto the floor easily. This meant that I couldn't have a single spiral staircase as a single array going upwards, but rather I would need one for each floor, and the same.
Here I did some maths for how many steps, of what height, and the diameter etc:

$$\begin{aligned}\text{height of one floor} &= 2.7\text{m} + 0.3\text{m} \\ &= 3000\text{mm} \\ \text{minimum clear tread} &= 600\text{mm} \\ \text{height of a step} &= 200\text{mm} \\ \text{number of steps} &= \frac{3000}{200} \\ &= 15 \\ \text{usable stair section} &= \frac{360}{2} \\ &= 180 \\ \text{angle of rotation / step} &= \frac{180}{15} \\ &= 12 \text{ degrees per step}\end{aligned}$$

So in blender I made a circle of diameter 1400mm with 30 vertices (15×2) to make 15 steps per flight, then added an empty at the centre which I spun 12 degrees clockwise, and made the array modifier use object offset of said empty and a constant offset of 0.3m on the Z axis.

Then since each flight of stairs goes round half the circle, I made a boolean cutter object that is a semicircle to cut a hole in the floor/ceiling to make way for these stairs, which I placed in a corner of the house.
This also solves the problem of the stairs being dangerous as there was previously no landing, meaning someone could walk off into the abyss, falling ~6 meters (ouch).

The last part was to make the stairs a little nicer by adding a handrail and some more decorations, so I just bevelled the edges a bit, used the same array modifier on the post for the handrail, and added a curve which I rounded off for the actual rail.