Prototyping the Spiral Staircase using cad/cam Software and the Laser Cutter

Using layers on 2D Design I started to plan out my steps by creating a circle the size of the tower in which it must fit. I then created spoke like lines using the rotate function on 2D Design in order to specify the 28 steps needed for each rotation, using 9mm ply this will mean that each rotation is 252mm high just 2mm out of my intended floor height, therefore I will just tweak it and make the floors that extra 2mm apart as that amount of change is insignificant. Next I had to create a square that was 4mm² as this is the size of my metal rod which will support and be the centre of the staircase. I now had to simply design my step around the square using my previous lines to guide me. It was now merely a case of using the rotation tool to rotate the square and then fitting each rotated square into the step template so that as I slot each step onto the metal rod it will rotate the steps to create an even spiral effect. I am incredibly pleased with how this prototype turned out and I’m sure that when it is made of wood it will look even sleeker and ooze the fairytale charm that my design should embody. There are some small changes I must make to the prototype for my final design but I will talk about them on the next page.