

## Case Study : The Spire Laser Cutting



### Introduction

We, at Aqua

Design Ltd, were privileged to have been part of a major iconic landmark in Dublin city, The Millennium Spire. The Spire is a fantastic work of engineering standing 120 metres tall and 3 metres wide at its base. Aqua Design was involved with the project from the very start working with the principal contractor in two capacities;

### Problem/challenge

The Spire is like a cone, wide at the base and narrowing all the way to the top. Each section of Stainless Steel had to be rolled individually and at a taper, it was highly important that this was done exactly and precisely as a mistake would mean that one section would not fit onto another section. A mistake costs time and money.

### Solution

We, at Aqua Design, came up with a solution. As each section had to be rolled at a taper, we cut three templates to each section. ***The templates were cut and etched at the same time by the Laser Machine.*** Each template was the precise

radius of the curve at the bottom, middle and top of each section so as to ensure the plate was being rolled correctly.

On each template we Engraved,  
The number of the section,  
The radius  
And the position (top middle bottom)

This method assisted the operator to instantly identify the templates required to be used when rolling a section of the Spire. This Template was an essential piece of equipment in the construction of the Spire as each section of plate had to be rolled to the correct radius and tapered to the correct angle. The templates ensured the smooth running of the fabrication of the sections of the Spire before being assembled to be welded.

### Services Used

As previously stated we were involved in the project from the start, so we were able to advise our customer on the best method of ensuring that the sections of the Spire would be rolled and tapered to the correct measurements and angles. The services used was the knowledge and expertise gained from years dealing with different materials, drawing office, the **Laser Machine** combining both the cutting of the steel to the correct radius but also to be able to Etch the necessary numbers onto the template.