

## The Embassy for Refugees

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A Luxembourg native, Thomas has studied Structural Engineering at ETH Zurich and Imperial College. Before starting his MSc in 2010, he interned with Bouygues in Zurich and high-rise specialist Thornton Tomasetti in New York. Since 2012, Thomas works at Arup in London in the commercial buildings group.

**Keywords:** *timber structures, OSB, parametric design, freeform, buildability*

### 1. Introduction

Commissioned for Celebrating Sanctuary London 2013, the Embassy for Refugees blurs the boundaries between architecture, art practice and engineering, as a cross-disciplinary endeavour that explores concepts of sanctuary and representation. Nestled within Bernie Spain Gardens next to the Oxo Tower in London, the temporary organic timber structure formed a poetic expression of refuge whilst providing a platform for debates on humanitarian issues. This unusual and highly bespoke structure was brought to life through the rich collaborative efforts of architect Natasha Reid, engineers Arup and fabricators Grassroot Garden.

### 2. Content



In a pro bono effort, a small team of young engineers at Arup collaborated with the artiste to design and explore the form of the unusual and highly surprising structure. Using plywood-like material to build such a structure is unusual and standard building codes were inadequate to design such complex, curved beams. Due to the low self-weight and sensitivity to wind action, an advanced numerical approach was taken to analyse the behaviour of this deceptively complex structure.

Striving to overcome the challenges of delivering the artiste's vision, the Pavilion was designed with a focus on buildability to achieve a 10 hour construction time. Using 3D modelling and powerful parametric design tools, a simple solution was developed that was easy to construct, deconstruct (& reconstruct) as required by the fast-paced programme. The structural ribs of the pavilion were cut from standard sized OSB sheets in a sophisticated CNC-machined process. Each element was clearly marked and identifiable by an engraved code, which determined the member's position, both in the structure and the construction sequence.



### 3. Conclusions

The Embassy for Refugee project showcased, albeit in a concise format, how important collaboration between architects and structural designers is when it comes to developing unusual structures. The proactive approach of the engineers to understand the artiste's intent and transpose it into a safe and economical design ensured the success of this project and is of paramount importance for the future of good design.

### References

Articles in the press: [bdonline.co.uk](http://bdonline.co.uk), [londonarchitecturediary.com](http://londonarchitecturediary.com)