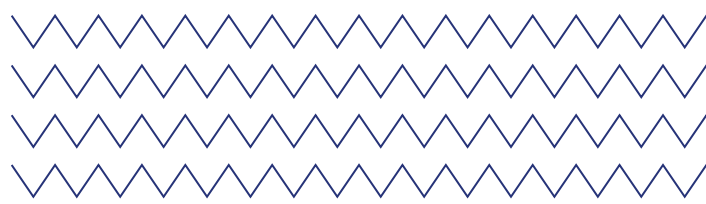


Ultimaker



3D printing sustainable lighting interventions to transform historic entries



Urban Scale Interventions (USI) is a team of researchers, architects, designers, technologists, and makers. USI supports both public and private organisations in people-centered design innovation. The team uses their skills to push new ways of thinking by delivering tangible interventions.

Company

Urban Scale Interventions (USI)

Industry

Architecture



Challenge

In 2020 USI won a contract to reimagine a series of entries in Belfast, through specialist lighting pieces. Belfast is facing a similar challenge to many cities around the world. Belfast was lacking a central vision to lighting, over the decades the city has been filled with irregular lighting that has been assembled gradually by a multitude of organisations and actors. This has created a fragmented, albeit functional, approach to street lighting. The wine cellar entries had many challenges both with antisocial issues and no active street frontages. USI's lighting proposal sought to create an intervention which both celebrated the history of the site and created a new 'instagramable' spectacle within the city.

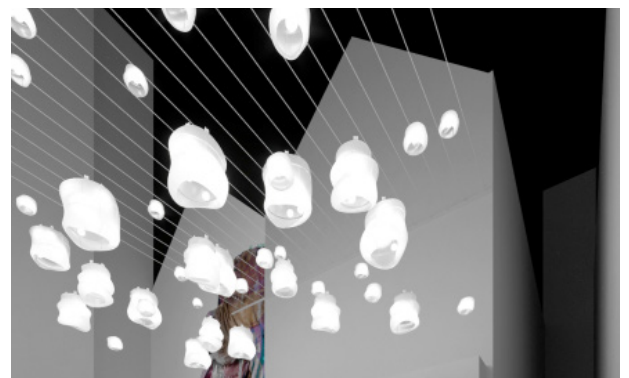
Solution

Enter a new approach. In 2019, the Belfast City Council embarked on a journey to establish a 'placemaking' approach to lighting the cities entries. USI worked with the council to develop a co-designed vision for lighting the city and

this resulted in an immersive lighting piece and soundscape consisting of 43 suspended 'ocean orbs.' USI wanted to make the orbs from a translucent recycled material, to profile and make a commentary on the potential of more sustainable/recycled materials in the build environment. Therefore, USI chose to use a clear PETG filament by Filamentive, which provided both the strength and the translucency needed for the suspended lighting.

Results

- 3D printing increased the flexibility to design bespoke components and test prototypes
- Ultimaker Material Alliance gives more material efficiency
- 3D printing gives USI the ability to mass manufacture in-house with less people involved at a reduced cost.



Artistic illustration of the suspended Ocean Orb lights

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Ocean Orb lights suspended above the square outside Whites Tavern in Belfast.

USI historical influences

The installation is influenced by the sites' history as an oyster market with 43 large 3D printed ocean-like floating orbs created to mirror its past. The changing colours, in line with the ambient soundscape help, to create a relaxed and reflective atmosphere for visitors of the Whites Tavern.

The 'Entries' in Belfast are a series of narrow alleyways that connect many of the main city-centre streets and districts. Steeped in historical context, they are still used today as cut throughs or as gathering spaces such as bars and restaurants. The Whites tavern entry was one of the chosen alleys to design, manufacture and build specialist lighting. The objectives were to improve wayfinding and safety, created a sense of place, reflecting the historical significance of the sites, responded to the environment, and ultimately enhanced people's experiences of the entries.

Chosen Material

USI chose Filamentive Translucent PETG for its sustainable credentials. Filamentive PETG is made from a high-percentage recycled material – plastic waste that would otherwise go to landfills if not reused. Filamentive products feature a 100% recyclable cardboard spool to minimise

hard-to-recycle plastic waste and reduce wastage associated with 3D Printing. Filamentive also proactively commit to tree plantation with at least 1kg of CO2 offset for every 1kg of plastic sold.

Social Impact

The Hospitality industry has been given the opportunity to rethink the way that they spill on to the pavement. USI has been able to create a space that allows for cultural activities to take place.

The Ocean Orb lights were installed in the square outside Whites Tavern, this area was a void space and now offers a more welcoming environment. With the COVID restrictions in place outside dining and drinking was the only way to meet up with friends. The lights provided visitors with a space to socialise. Since the installation the area has become a focal point of the tavern and very 'instagramable' for photographs.



Segment of the 3D printed Ocean Orbs printed on an Ultimaker S5.

About Ultimaker

Since 2011, Ultimaker has built an open and easy-to-use solution of 3D printers, software, and materials that enables professional designers and engineers to innovate every day. Today, Ultimaker is the market leader in desktop 3D printing. From offices in the Netherlands, New York, Boston, and Singapore – plus production facilities in Europe and the US – its global team of over 400 employees work together to accelerate the world's transition to local, digital manufacturing.

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