TEDI-LONDON SUMMER SCHOOL 2020
CASE STUDY: INDUSTRY LED

PROJECT
WATERBENDER

DELIVERED BY
THE WATERBENDER TEAM

An international, multidisciplinary group of students from Australia, Ireland and the United Kingdom, the Waterbender team's academic backgrounds included industrial design, mechanical and manufacturing engineering, chemistry with biomedicine, French, management and media arts.

BRIEF

Work with our industry partner, Hawkins Brown, to repurpose materials from PrintWorks and design a campus entrance that demonstrates TEDI-London's values using sustainable construction approaches.

PROJECT OVERVIEW

CONTEXT

The TEDI-London campus at Canada Water will be built from materials – including steel and timber – left over from the deconstruction of a nearby decommissioned Printworks. The campus will require an innovative entrance structure with a lifespan of around seven years, so consideration must be given to its disassembly and the onward journey of the materials used to create it.

One of the key purposes of the entrance area is to encourage interactivity between students, staff and visitors to the campus, so it will need seating areas, welcoming lighting and must also provide shelter from the rain. Presented with the opportunity to develop a design solution that answers an explicit client need, the Waterbender team enthusiastically embraced recycled materials and running water to create an inviting, interactive environment that encapsulates the values of TEDI-London.

THE BIG IDEA

Waterbender

A living embodiment of project-based learning in response to industry needs, Project Waterbender is a smart campus design intended to communicate TEDI-London's key values in an environment that is accessible, sustainable and interactive.

Its 'inside-outside' design draws people into the entrance area with a series of gesture-activated LED panels that display campus-related information. Interactivity begins as soon as people approach the LED 'wall', as proximity and motion sensors detect their presence and begin displaying TEDI-London branding, signage, games and social features.

The solar-powered LED wall also controls motion sensor valves, which release water through the glass panel roof to create a 'waterfall' effect. The roof provides shade to three wheelchair-accessible modules with varying seating arrangements. Project Waterbender's modular structure and use of recycled materials, solar panels, flowing water and interactive digital technology enable it to flex with the changing needs of its users and ensure that it can be easily disassembled at the end of its working life.

APPROACH

The Waterbender team undertook the project in five phases:

1 RESEARCH AND IDEATION
Undertaking market research alongside initial creative development, which was tested and refined in line with emerging insights.

2 CAD, PROTOTYPING AND USER INTERFACE DESIGN
Embarking on physical and/or digital prototyping while developing key features.

3 FURTHER DEVELOPMENT AND USER INTERFACE IMPLEMENTATION
Iterating on the initial design in response to feedback from TEDI-London and industry advisors, then working towards completion of the prototype.

4 BUSINESS PLAN DEVELOPMENT
Devising a thorough yet flexible business plan containing detailed projections for launch and future growth.

5 PROMOTIONAL VIDEO AND PITCH DEVELOPMENT
Creating, rehearsing and delivering the final presentation, and writing the project report.

The Waterbender team overcame early scheduling conflicts to begin ideation alongside initial research, which allowed them to refine their concept as new insights emerged. The design team started on CAD halfway through the second week, with further meetings helping them to accommodate concerns around sustainability and aesthetics.

A good relationship between the designer and engineer established the firm foundations needed for rapid yet flexible development. When the design aspect of the project became unrealistic, the process was discussed in depth with the team, allowing them to find a mutually satisfying solution in a relatively short time period. Ideas and iterations were tossed back and forth, creating a strong concept and ironing out the kinks from the final product.

The third week saw major developments on the prototype, with multiple design iterations and modules completed. Physical prototyping fell prey to time constraints and social distancing so the team shifted focus to digital prototyping. Unfortunately, a team member left the project shortly afterwards, with the project manager turning to outsourcing in order to complete the prototype in time for the pitch.

A flexible approach to team composition and task allocation reflected the modularity of the design solution, improving collaboration between the sub-teams and with the outsourced motion designer. In the final week, teamwork was at its height as the prototype neared completion. Multiple practice sessions ahead of the final pitch resulted in a successful presentation with which the whole team was satisfied.

DID IT WORK?

In their self-evaluation, the Waterbender team identified many positive project outcomes, including:

- The team was satisfied that the innovative concept and user-friendly interactions built into Project Waterbender's three modules would attract people from all ages and backgrounds, thus achieving the aim of creating a collaborative and participatory experience for a diverse group of people.
- The team's accessibility goals were met with a ramp to allow for easy wheelchair access and bike racks to welcome cyclists and provide temporary parking, shelter and a place of rest.
- The use of easily disassembled, recycled and refurbished Printworks' timber and solar panels to power the LED wall, WiFi for each module and a charging USB port for phones ensured that Project Waterbender met sustainability goals established at the outset.
- The incorporation of QR codes, social media hashtags and clear branding into the LED wall were all excellent ways to increase users' social media engagement when interacting with the Waterbender modules.
- Visually demonstrating a person looking at LED screens displaying fantastic animations in a real-world setting gave Project Waterbender an extra 'wow' factor and resulted in a powerful pitch that pleased the panel.
- Although one person dropped out, each team member did an excellent job contributing towards their area of the design solution and final presentation. The Waterbender team was especially proud of the close teamwork and communication involved in making their vision a reality.

"Although we had a rocky start and further complications with the departure of a team member, we met all the challenges thrown at us with aplomb."

THE WATERBENDER TEAM

KEY LEARNINGS

The Waterbender team reported that beneficial takeaways from their TEDI-London Summer School experience included learning to:

- Carry out as much primary research as possible and ask a wide variety of students, locals and staff members for their input.
- Co-design with prospective users to ensure success.
- Socialise and bond as a team early in the development cycle.
- Set clear roles for each team member but be flexible and help each other to stay on top of weekly tasks in order to meet collective objectives. Regular, open communication and a strong team spirit are essential.
- Create minutes at every group meeting so that people who cannot attend are kept in the loop.
- Be prepared for unexpected hurdles, such as a team member dropping out during the project.
- Not allow setbacks to affect motivation or productivity.
- Spread the workload evenly and allow everybody to focus on their area of expertise.

"This project was innovative, well-executed and sustainable, capturing TEDI-London's values while simultaneously showcasing the team's skill. The panel were unanimous in naming them winners for their excellent understanding of the brief and industry-standard project and pitch."

DR SARAH CAMPBELL – TEDI-LONDON SUMMER SCHOOL DIRECTOR, 2020

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