Oasis

Portfolio
documentation

Problem Statement

Noise pollution in cities impacts the health and wellbeing of its residents, increasing stress, decreasing productivity and negatively affecting sleep *(Stansfeld & Matheson, 2003)*. By addressing this problem in areas of citizens' daily lives and creating a more pleasant experience, the quality of life can be improved for all.

Oasis

Oasis is a noise transformation wall, lighting and seating installation that collects noise pollution, such as cars and construction noise and transforms them into a more pleasant sound to play back to the user as they relax.

PROTOTYPE & TESTING

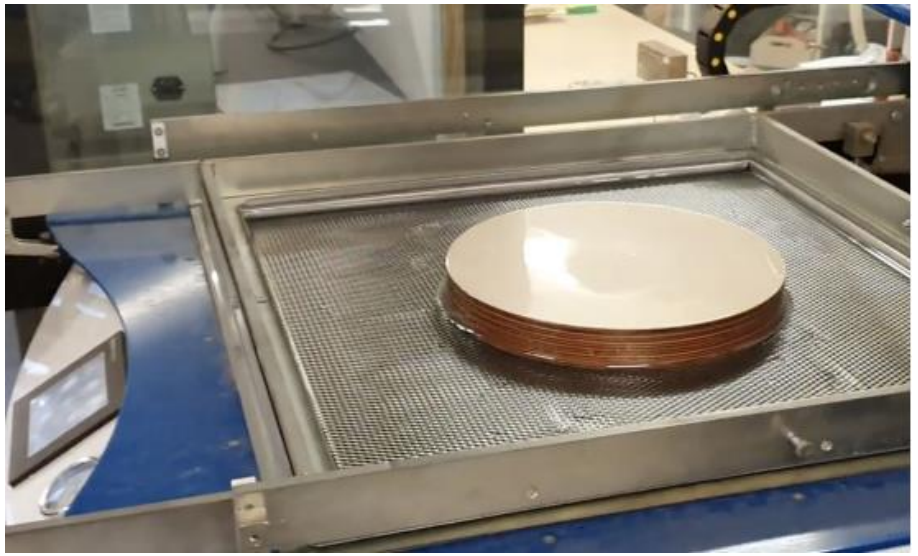
One of Oasis' main interactions is the rotating of the light discs. Each light disc effects the output of the sound users hear as well as house the a set of LED strips.

With our tests we wanted to determine if the intended interaction was easy to understand for users. To test this, we bought a round tray from Kmart and I tied the handles together using my shoelaces and suspended the tray on a wall with tape and pins. This was extremely low fidelity and could have played into why users initially had trouble understanding the interaction.

MAKING A LIGHT DISC

The Kmart tray acted as our prop of the light disc before we actually started to build the discs. Originally we planned on making the light discs by vacuum forming the tray six times to create the domes. Unfortunately our Kmart tray didn’t make it through the first vacuum form, snapping in the middle as the plastic was being formed over it.

Eventually we found skylights on eBay that were a perfect size and proved to be more sturdy than plastic forming. Once we sprayed the inside with window frosting we were ready to start on the inside components.



PROGRAMMING LIGHTS

The light discs have LED strips inside which cycle through green and blue colours, slowly ‘breathing’ in and out, creating a meditative aesthetic.

This was done with pretty simple lines of code in Arduino IDE, lights light up to 80% (so its not extremely bright), then, with a small delay go back to 0%.

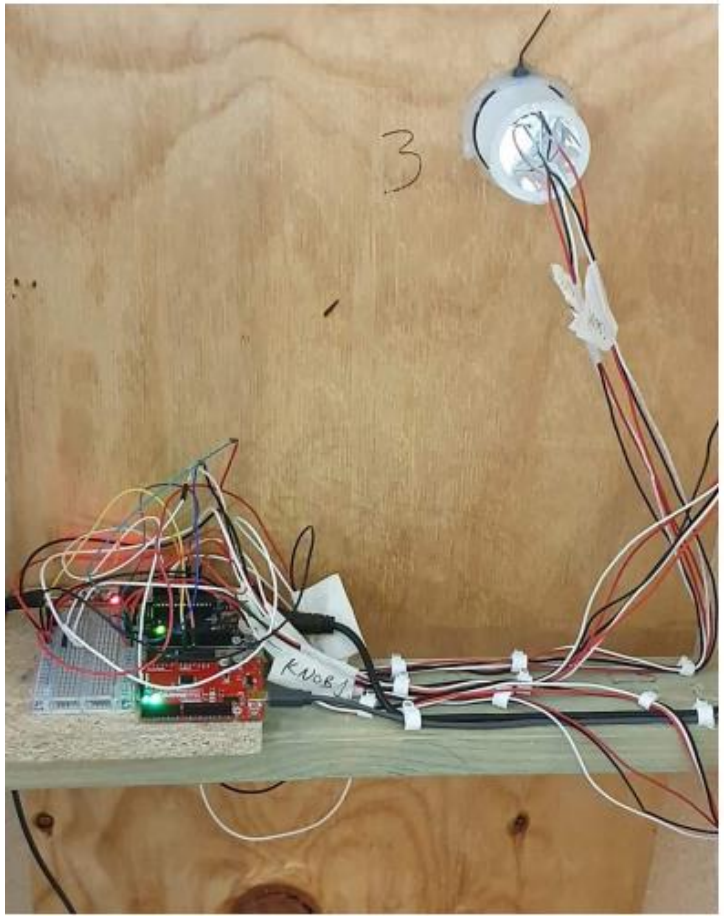
With more time I would have liked to make the lights interactive in terms of spinning the discs, perhaps as you used the disc the brightness increases relative to how far you spin the disc.

PROGRAMMING SOUND

To control the sound we used six potentiometers, one per disc, that were mapped to a specific sound element on an external computer.

The wiring for this was pretty unconventional as if we followed red wire to positive and black to ground, the potentiometers would work, however they would work in reverse, that is, turning the potentiometers anticlockwise would increase the sound output rather than increase.

Keeping this is in mind meant that wiring up six discs alongside six LED strips proved to be extremely confusing.



ASSEMBLY

When assembling Oasis' technical components, a lot of it was discussed and drawn out on the day. We knew what we needed and troubleshooted along the way.

This method allowed for a lot of errors to occur and this was expected. We understood that errors were inevitable and that it was more about keeping mental composure trying to assemble than actually assembling. Multiple times Mikkel and I would have to swap roles for an hour just to get a clear view on what we were doing.

In the end I believe we could have spent time to plan out the assembly so that we were all on the same page and that we could avoid some of the trivial problems we faced.

REFLECTIONS

Overall I think the technical aspect of Oasis was handled very well.

With more time the interactions could be made more intuitive, such as having more feedback when turning the disc other than sound alone. The wiring could also be improved, however once Oasis is set up, it only requires one outlet port and two USB ports.

Again, with more time I would have liked to make Oasis completely stand alone, that is having the wall be independent of a computer and transform sound completely live.

As a team we all knew our roles and trusted each other to work independently then come together towards the end and piece Oasis together.