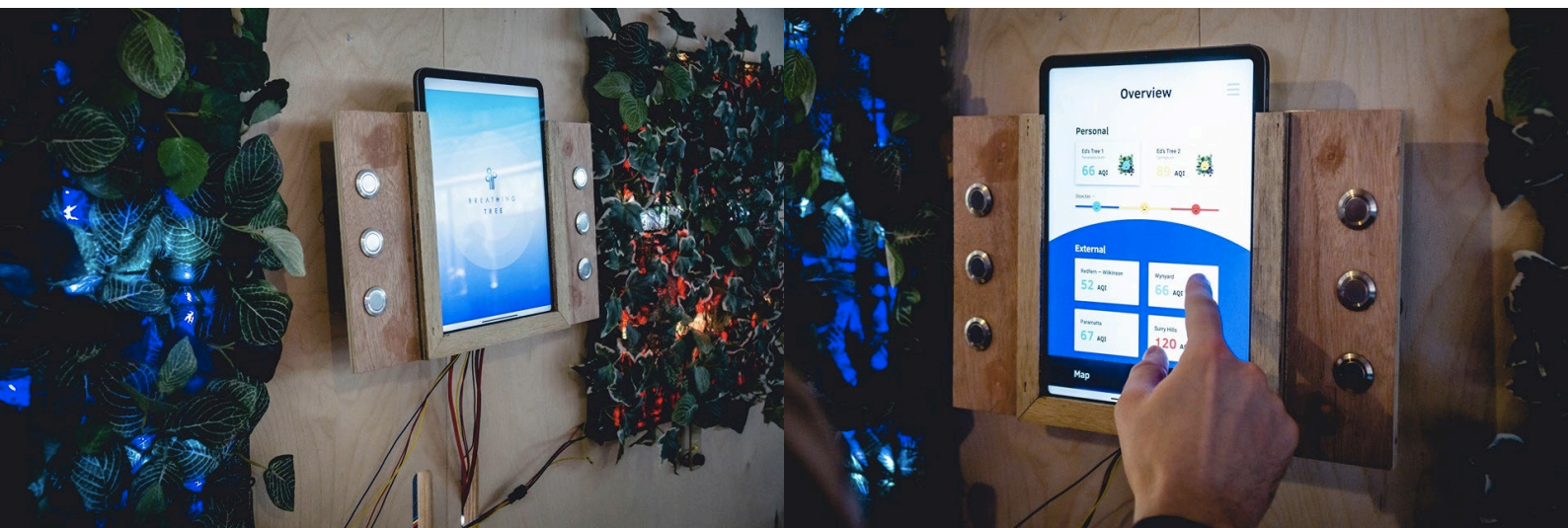


INTRODUCTION

The Breathing Tree is an adaptable display system, designed for urban green spaces or suitable public areas, intended to convey information about air quality within its locality. The Breathing Tree's main purpose is to raise public awareness about air quality.

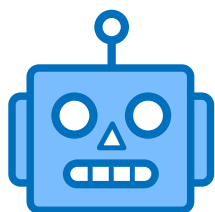
"We seek to visualise air pollution data through daily interaction in order to raise public awareness about air quality in local areas and the greater environment"





OUR TEAM

While all team members contributed across all aspects of the project, we found it extremely helpful to designate areas that each member would be in charge of.



IAN

Lead Product
Designer



HAMISH

Documentation,
Brand Assets



EDMOND

Lead Interaction
designer



MAYA

Video Lead

MY RESPONSIBILITY

Documentation: Part of this responsibility was assembling all documenting materials from the duration of our project (photos, sketches, graphics etc.) for our final documentation and video. It also involved compiling all these materials into the final document and creating any further assets that were needed for the final documentation.



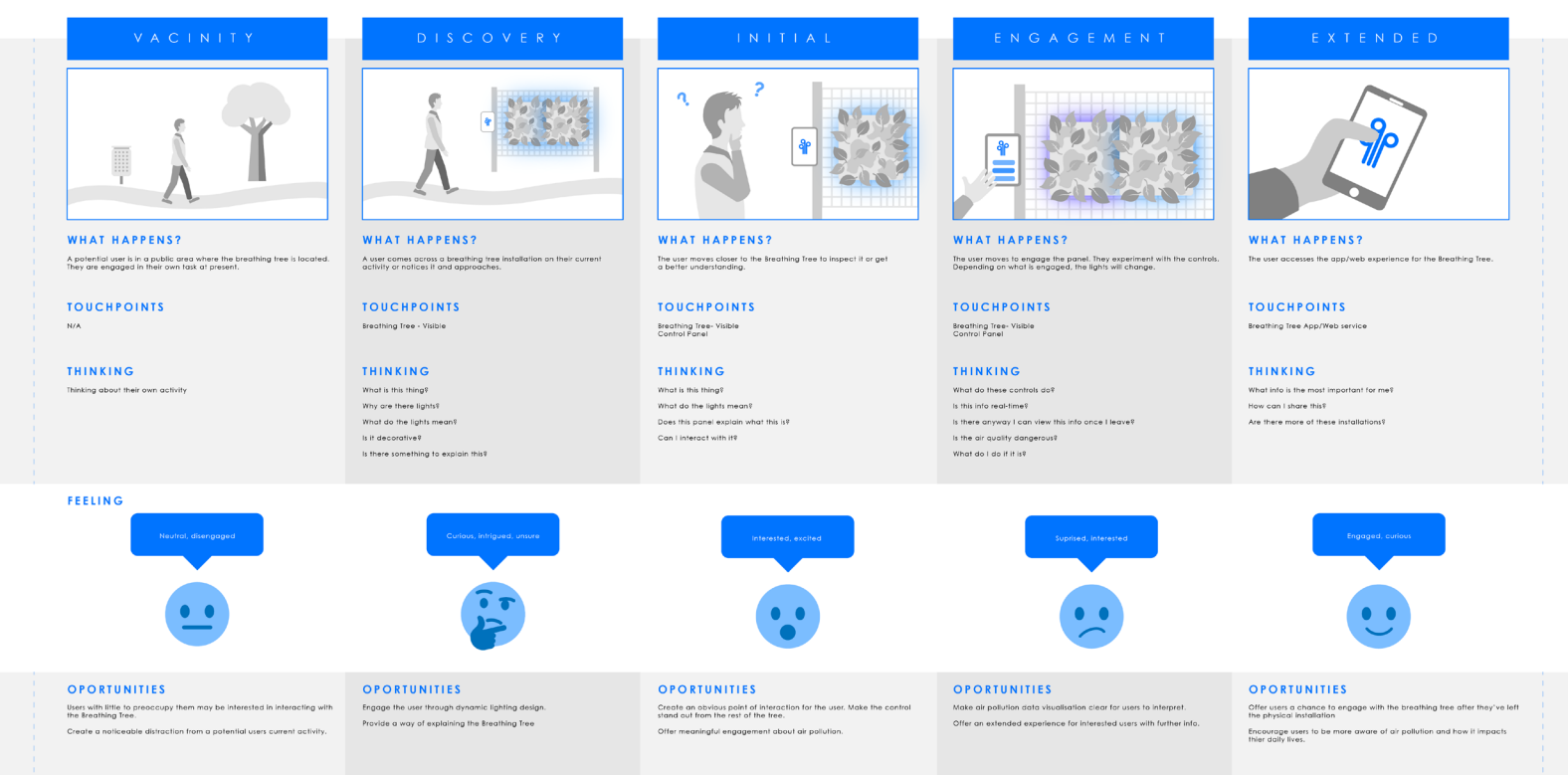
Brand Assets: Developing the materials that would form part of our concept as well as support the prototype was part of my team responsibility. Such assets included our concepts logo, supporting diagrams and a journey map visualisation. These assets proved essential in communicating our concept outside of its functionality. Our concept was beyond just a few interactions and as such required expansive brand assets to help formulate the Breathing Tree brand.





MY CONTRIBUTION

Journey map: Once our team had cooperatively determined what our concept would be and what the key interactions were, I was tasked with developing a realisation of what the user journey would look like. To do this I created a user journey map to communicate the key experiences at different touchpoints across the journey.



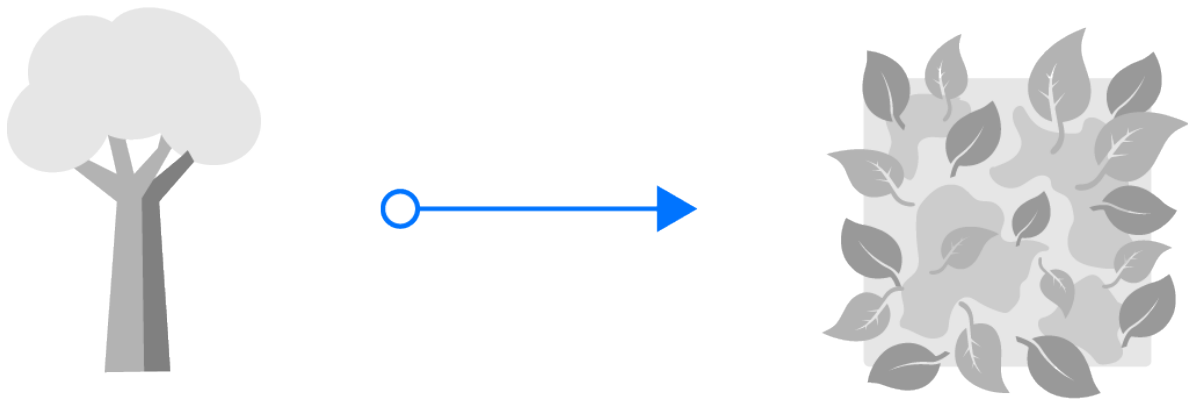
While I created this journey map, I was able to identify where some of the general pain points would exist across the experience. As a result, I was able to identify key areas of focus for our group as we continued to iterate the final design to ensure it would achieve its goal in both functionality and desirability.





PROTOTYPE DESIGN

As our group reviewed our testing and analysis results from our initial concept, I suggested that we migrate our idea to use a vertical plant wall instead of a tree for the purposes of feasibility and viability. Our group discussed this idea and it quickly became a collaborative effort to redesign our concept in this direction.

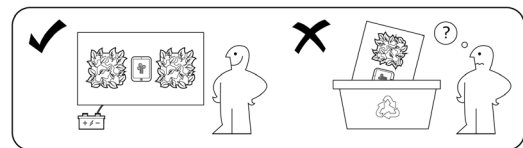
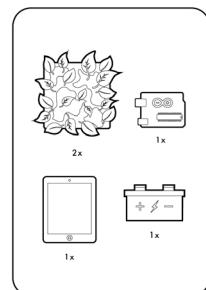
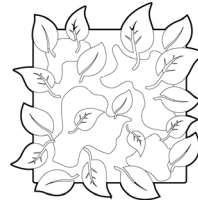


SET - U P

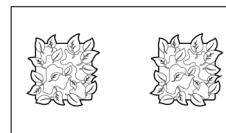
I was also tasked with ensuring the prototype could be easily set-up. Along with this I created a set of instructions to explain this to someone unfamiliar with the concept. These instructions were inspired by the IKEA plants we used within our physical prototype.

BREÄTHING TREE

IKEA

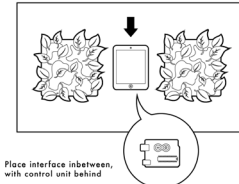


1.



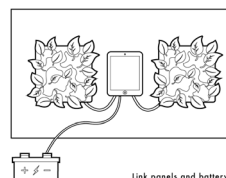
Hang on suitable surface

2.



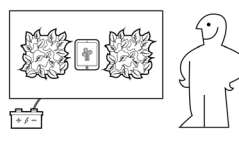
Place interface inbetween, with control unit behind

3.



Link panels and battery to control unit

4.



Turn on and enjoy



CHALLENGES

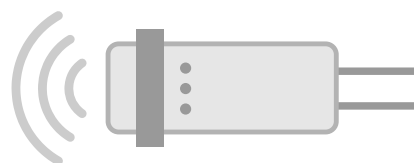
Initial Concept Decision: Our team spent extensive time deliberating on what area we wanted our initial concept to focus around. This was prior to even selecting a concept. We were heavily divided about whether we should focus on urban navigation, social interaction or environmental concerns. After extensive research, we filtered our context down to environmental impact, however we still had determined a specific area within this context. As a result, our initial concepts were highly different from one another which made it difficult to get well rounded feedback from our initial user research. This wasn't a major issue, we simply had to do an additional round of testing prior after concept selection to refine some of the design aspects. The only issue as a result of this was that it reduced the time we could have spent iterating the selected concept.

Interactions: Based on some of our early feedback we determined that the interactions of our concept were somewhat limited. While the concept itself could perform very well in an ambient reactive function, we required further direct interactions for the purposes of achieving the criteria. Going from a simple responsive lighting system, we expanded the features to include proximity sensors, control options and a digital experience through an independent web/mobile service.

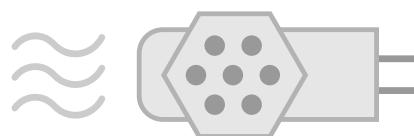


PHYSICAL CHALLENGES

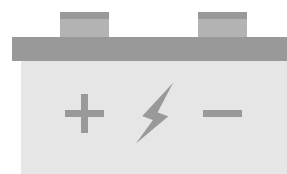
Proximity Accuracy: The proximity sensor struggles a little with highly busy areas, which is a problem since our design is for public spaces. Each panel has its own sensor to be responsive to a user's presence. To overcome this as best we could, we programmed the product to use an average of both sensors readings rather than them separately. Going forward the best option would be to invest in multiple higher quality sensors for each panel. This was unachievable for this prototype due to excessive financial constraints.



Air Pollution Accuracy: One issue we noticed with the pollution sensors is that while they function properly, sometimes the readings they take aren't representative of their larger environment only the very immediate area around the sensor. While this concern doesn't interfere with functionality, biased or unrepresentative data visualization might be of some concern. Similar to the proximity sensor issue, the solution for this is higher quality sensors.



Power Supply: Our final prototype was originally independently powered and could function without an external power source. However, we quickly realised that the lights were drawing extremely high amps and resulted in the failure of the first power source. We were able to operate the prototype, but required an external source to power it. Moving forward we will ensure the circuit has an adequate power supply for its requirements.





REFLECTION

Our team worked surprisingly well on this project. I say this because initially I was sceptical that a group of four designers would be able to get enough different perspectives to round out our design process, however we quickly realised each member of our group had very distinct specialities and skill sets in different areas. This meant we could comfortably entrust each member with leading a core part of the submission without much concern for competency or quality.

While there are many small little things I would have loved to have done differently, retrospectively I think the biggest change I wish I could have done is start on this project earlier. Our team quickly became very invested in our idea and would have liked to have fleshed out our idea beyond a high-fidelity prototype and into a minimum viable product. However, this is something that can still be achieved moving forward, albeit with less academic pressure. Looking back, the biggest problem was definitely finding the initial problem that we wanted to solve. Perhaps going into the unit with a pre-emptive understanding of the area of focus could have greatly increased the time spent designing.

Our overarching goal for the Breathing Tree is to create a fully synchronised city-wide system. The Breathing Tree was designed to be an adaptable product that could be situated across a range of public spaces. What we envisioned was numerous units across the city, each recording data in their own location, and feeding that back into a central system which users can access via the digital app/web service. As such, we intend to continue to work on this project.

In terms of viability, the Breathing Tree is a concept that could be packaged as a commercial product. An ambient lighting display for vertical surfaces that reflects air quality in its area could draw interest from a range of potential benefactors and potentially even as a personal product. Currently there is a high demand for smart home and IOT products, which further enhances the business opportunity for the Breathing Tree.