

Ruby Quail Folio

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Ruby is an Industrial Design graduate from Melbourne. She is interested in socially conscious design and achieving positive social change through the use of digital technology. She is transgender and uses she/her pronouns.

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cosm.os

2018, 6 month project

Research

Literary Research

Researched human behaviour towards changing social media landscape, and social network theory

Researched and experimented with data visualisation and graph visualisation

Researched and experimented with interaction with regards identity generation and communication

Development

Experimentation

Built and tested identity through friends experimental prototype

Built and tested identity through connections experimental prototype

Built and tested identity through communities experimental prototype

First Test System Developed

First Test System Coded

First Test System Debugged

Tested First Prototype system

Developed final system code

Designed and ordered PCBs for final objects

Developed final vessel prototype

Developed first vessel prototype

Exhibit and Presentation

Electronics practice

taught myself to use SMD LEDs and raspberry pi

thought myself to use OLED screens and thermal dot printers

Designed and produced test PCBs

Developed Interaction objects

Developed Maze Prototype

Soldered and assembled final objects

calibrated projector and mirror, constructed projection surface

Bamboo construction of housing and plinths done

Laser cutting and 3D printing for final interactive objects (Vessel and Maze) done

Physical Construction

Researched projector and exhibit housing and project presentation

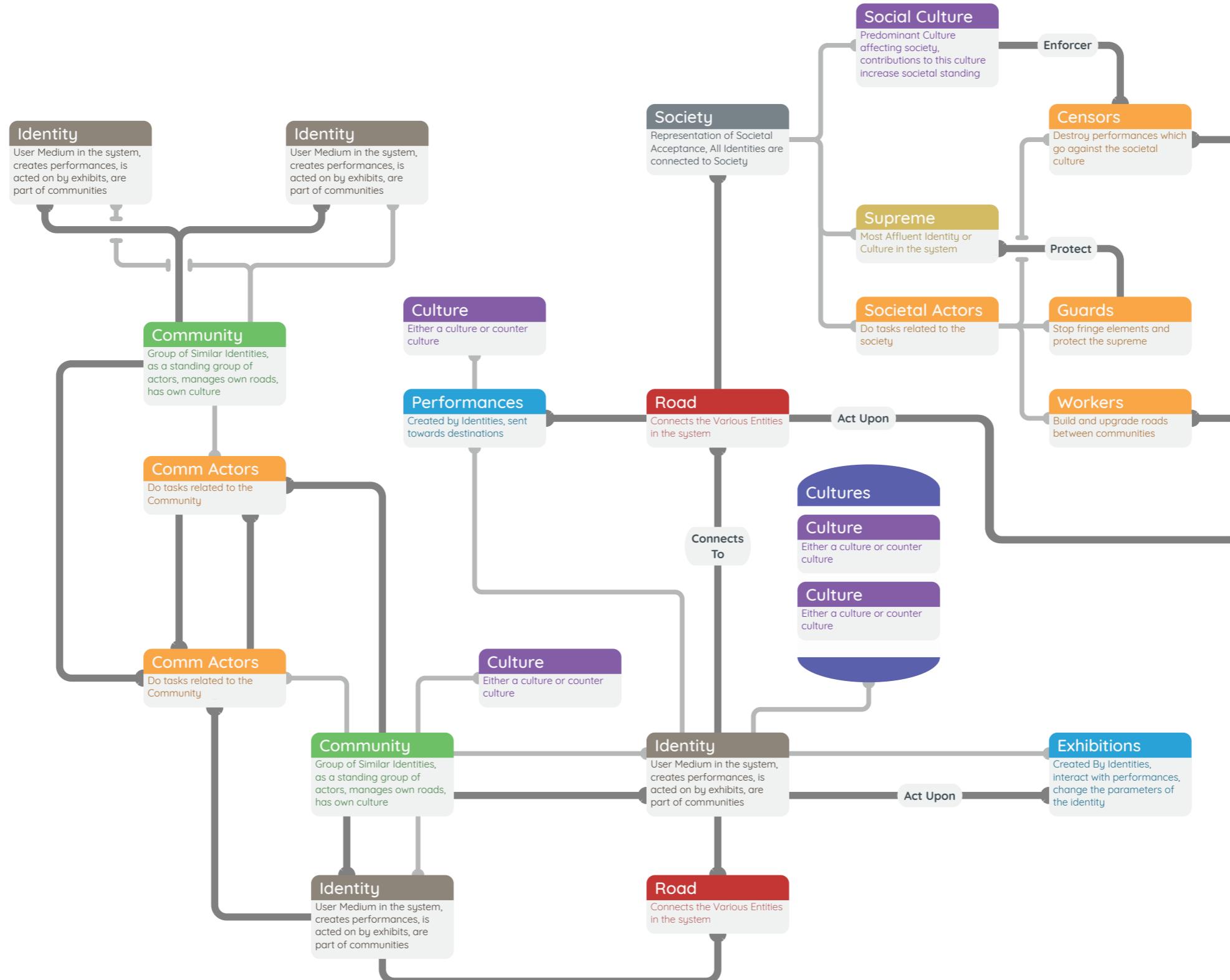
CAD designs of exhibit housing and plinths put together

“cosm.os” is a speculative digital simulation of a social network. cosm.os is made of many experiences designed to enable users to experiment and analyse how various social behaviours and systems affect one another.

The project was a year long industrial design honours project and incorporated a range of fields and methodologies, borrowing from speculative design, product design, electrical engineering, systems thinking, interaction design, exhibition design, and games design. While currently unfinished, a range of experiences and insights are contained in the project.

I based the elements on the concept of performance and exhibition as it relates to presentation. The community aspects I took from a series of community goals and values given to me by a professional community manager, the metaphor of actors as elements that act out the will of communities and identities is borrowed from actor-network theory.

This is an early graph looking at how various system elements interact with each other



System Elements

Settlements/ User Analogues



Settlements act as the user analogue in the system such as an identity. settlements have a set of behaviours that are defined and dictate how the settlement behaves in the system. settlements grow and shrink based on their social capital



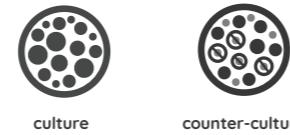
Settlements contain **Wards** which in turn contain **Buildings** which are built as part of the processor expression. the size of a ward is dependent on the number of buildings it contains. wards have a given culture and affect the cultural identity of the settlement.



Communities are computational elements that represent formed social communities and groups. Communities are based around a culture or counter culture, and have a standing force of agents depending on the disposition of their constituent settlements. Settlements can be part of multiple communities, and have different dispositions towards each, likewise the affects of a community on it's settlements also varies



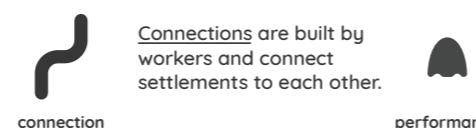
Cultures/ Counter-Cultures



Cultures act as a catchall to represent interests and ideas that bring people together. these could be anything from common tastes, to political and religious alignments. Additionally there are **Counter-cultures** that are functionally similar but instead form from shared distaste towards a certain culture culture



Connections, Performances, and Aspects



Connections are built by workers and connect settlements to each other.

Performances are generated as part of settlement expression and travel along connections to other settlements

Spoons are a measure of interpersonal energy and are replenished every day

Social Capital is a generalised measure of social power. It has a variety of uses from bolstering a settlements security, increasing it's spoons, or to support it's community

Society and Agents/ Computational Analogues



Society represents the broad opinions of the general populace of the system, and attempts to enforce the status quo. It nominates a supreme which is the settlement with the most social capital. Each settlement has at minimum a one way connection to society. Society also maintains a small amount of agents which maintain its connections, the status quo, and its supreme.



Agents are computationally controlled entities that complete tasks for communities or for society. they have defined goals that they work towards and adapt their behaviour in order to effectively meet those goals. there are four professions that agents can be...



Workers build and repair connections, as well as repairing and reinforcing settlements in their community



Soldiers attack other agents, attack settlements or defend agents or settlements from attack

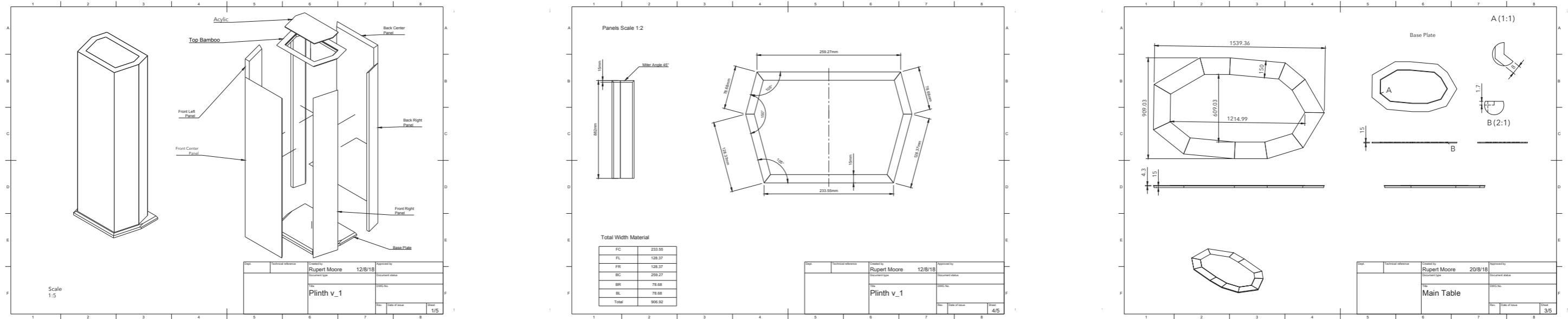
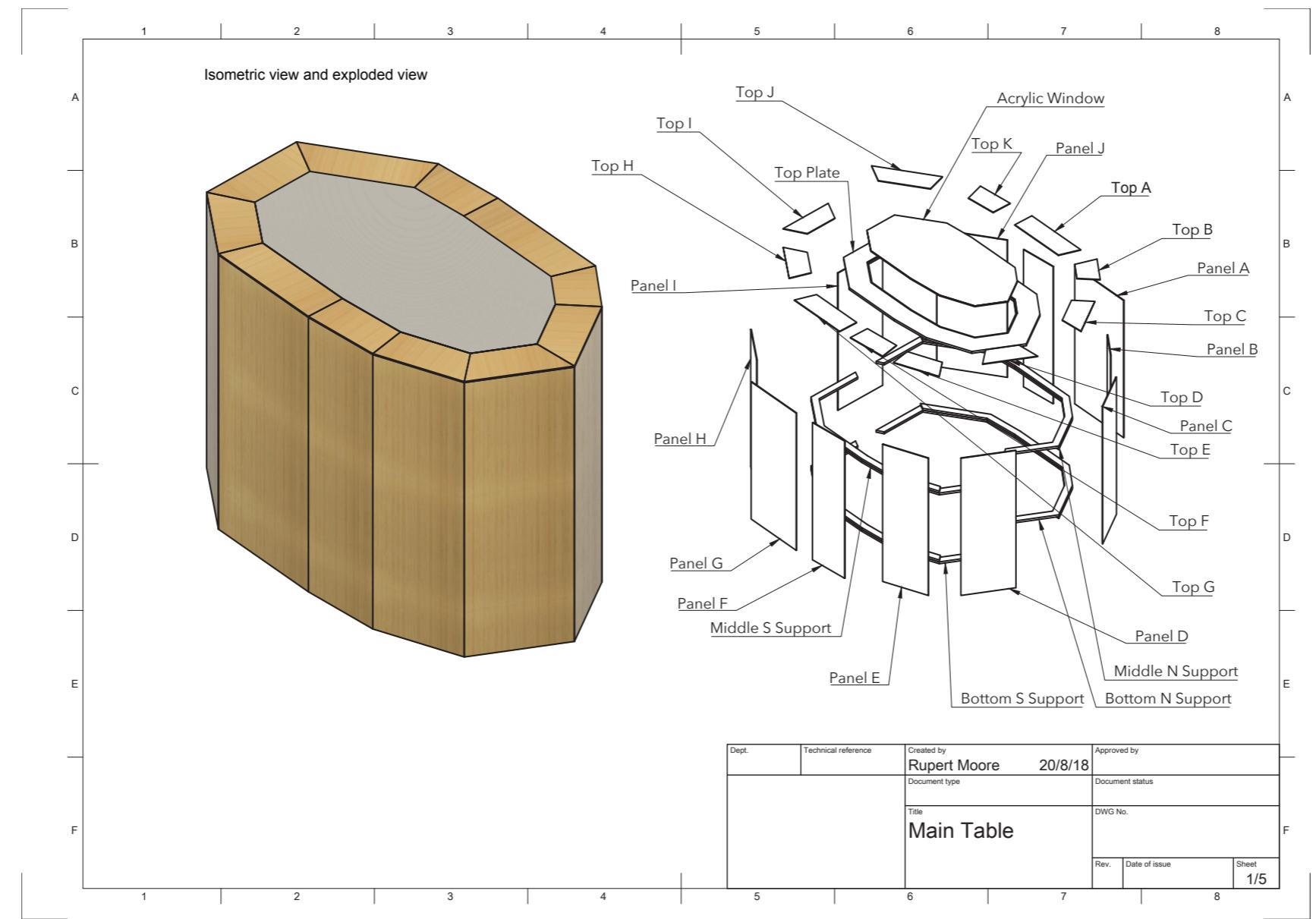


Missionaries are aligned with a particular culture and work to increase that culture in other settlements



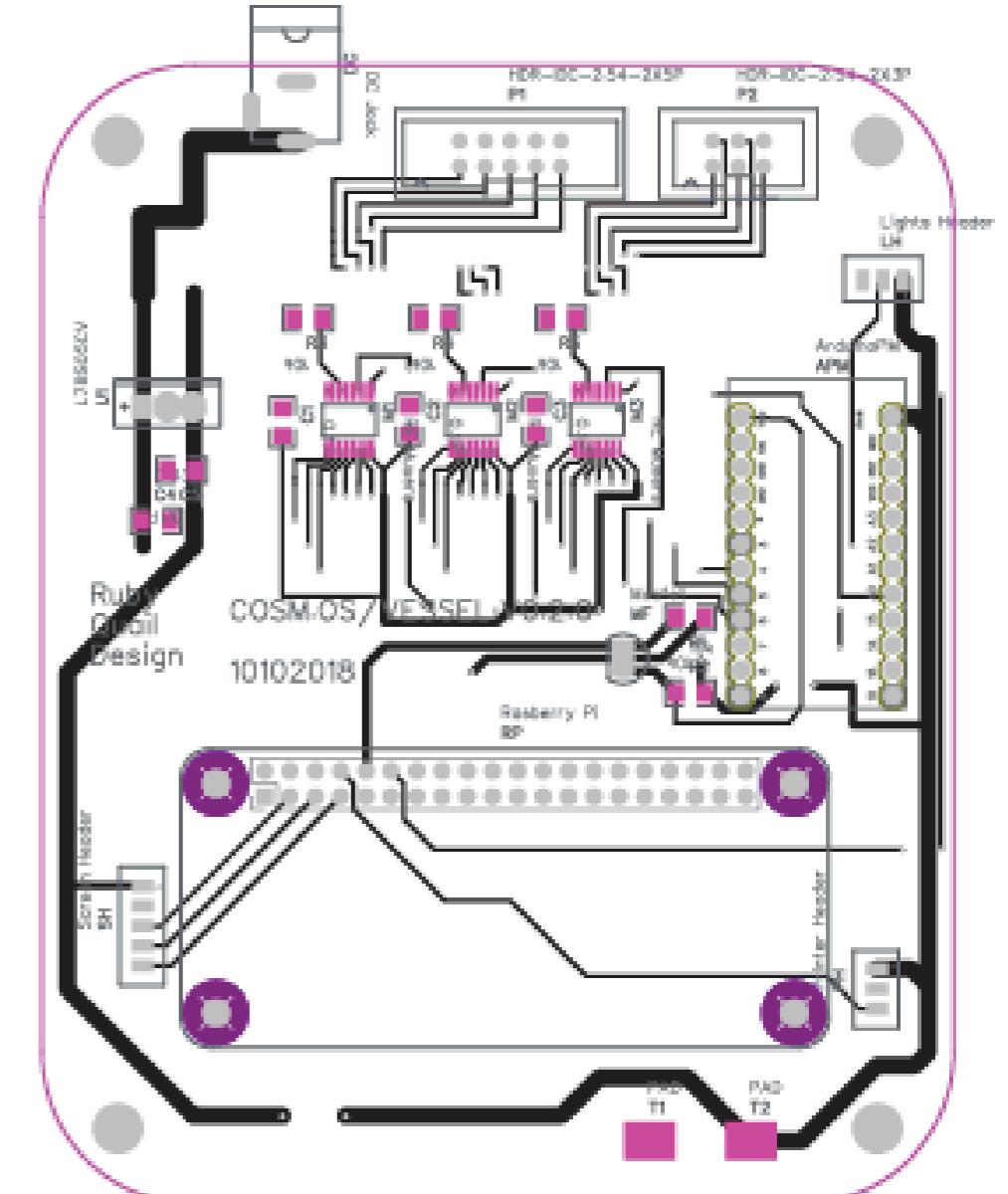
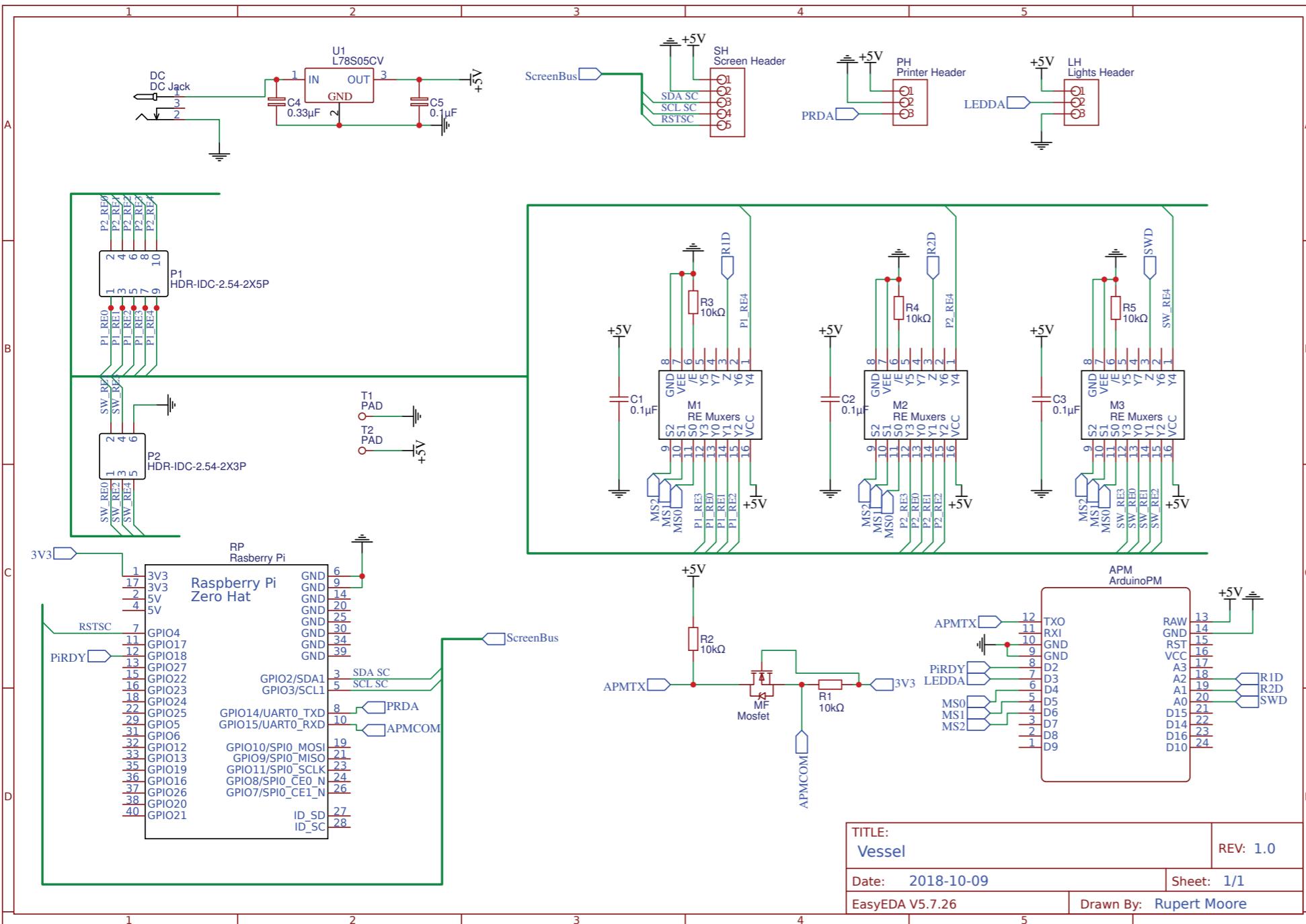
Censors are also aligned with one or more cultures, but their aim is to stamp out the performances and buildings of that culture

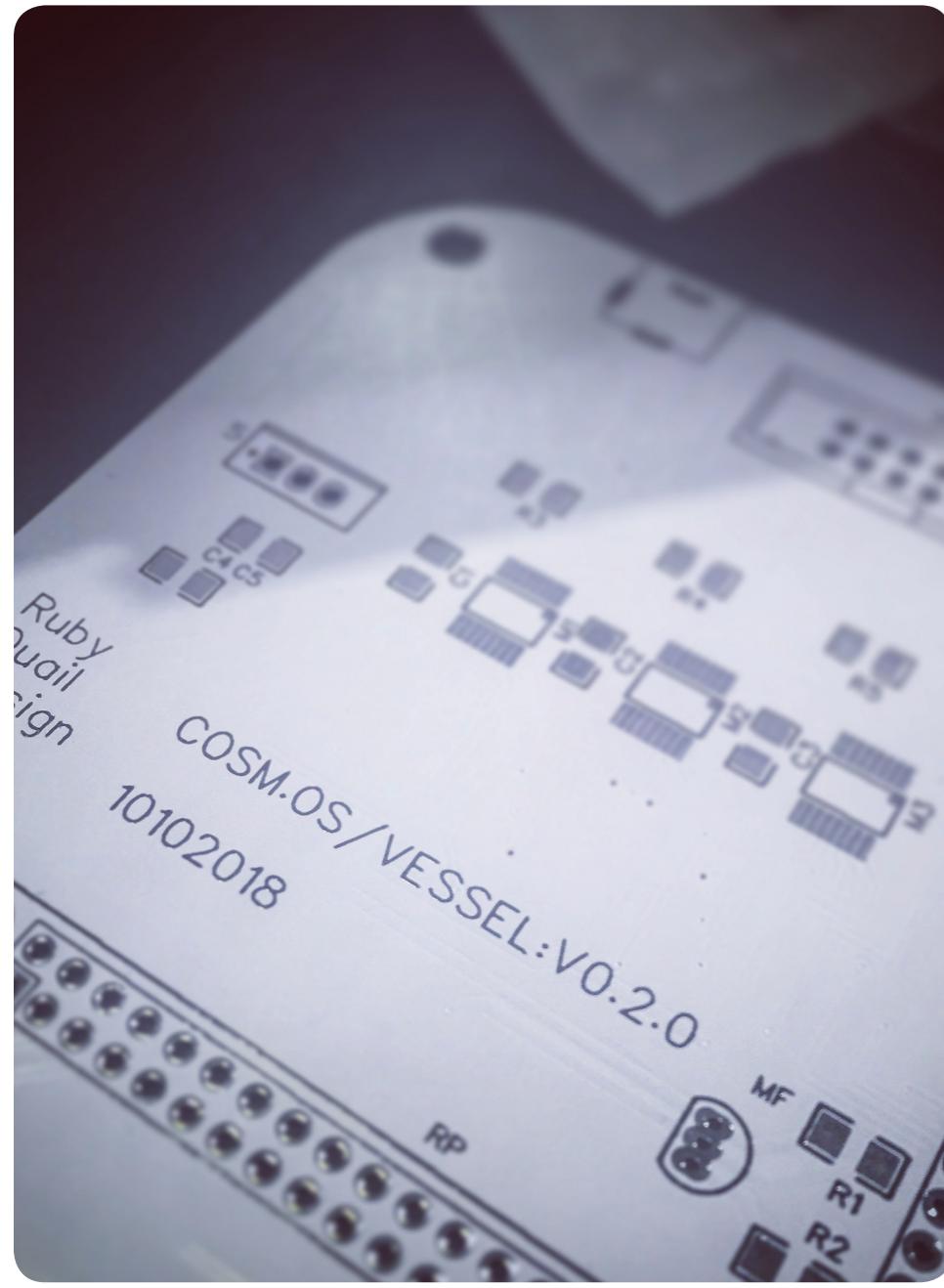
This document lists the system elements that need to be implemented for the final project. Again, these elements are sourced from my research into communities and social network theory. System code can be found at <https://github.com/Rupertofly/cosmosSystem>



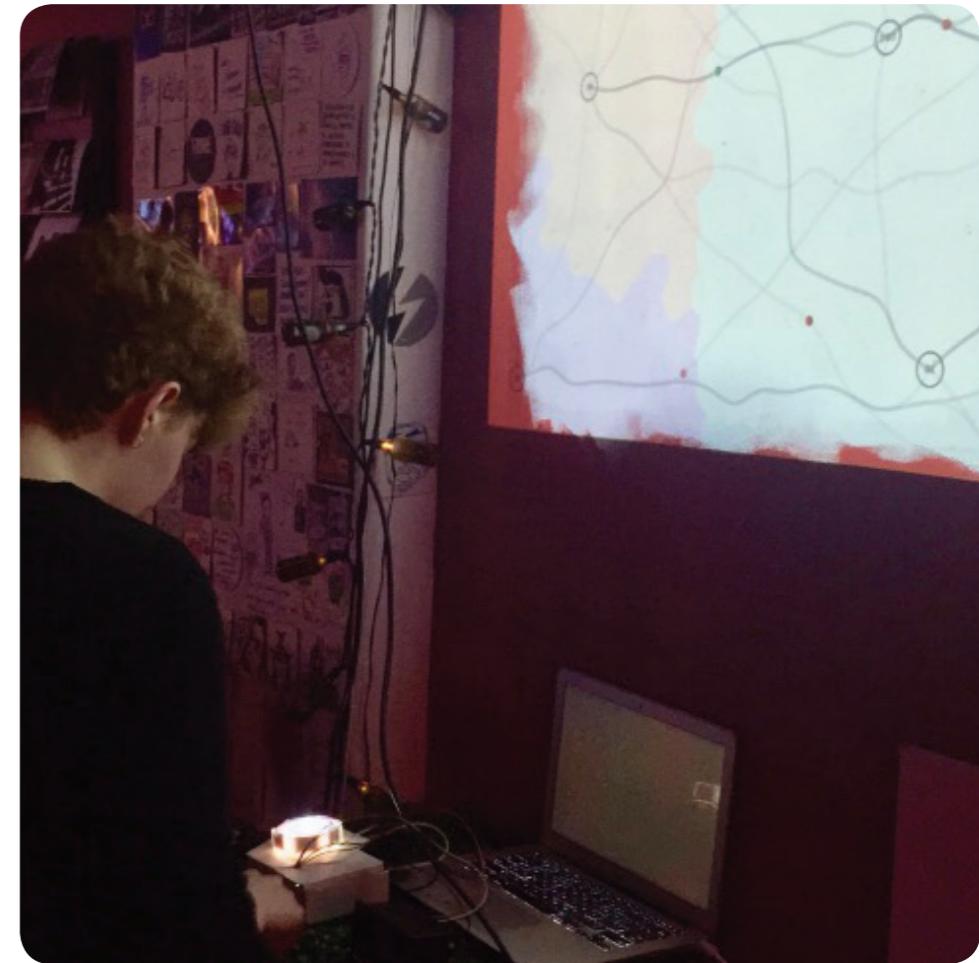
The body and large structure of the exhibit consisted of a bamboo structure housing a projector mirror assembly that projected the simulation onto the acrylic screen above. Two lit bamboo plinths designed for the final two interactive objects to sit upon sat beside the main piece. The pieces, for both designs, were CADed up and CNCed then attached to a hand-cut plywood frame that also supported the projector and mirror.

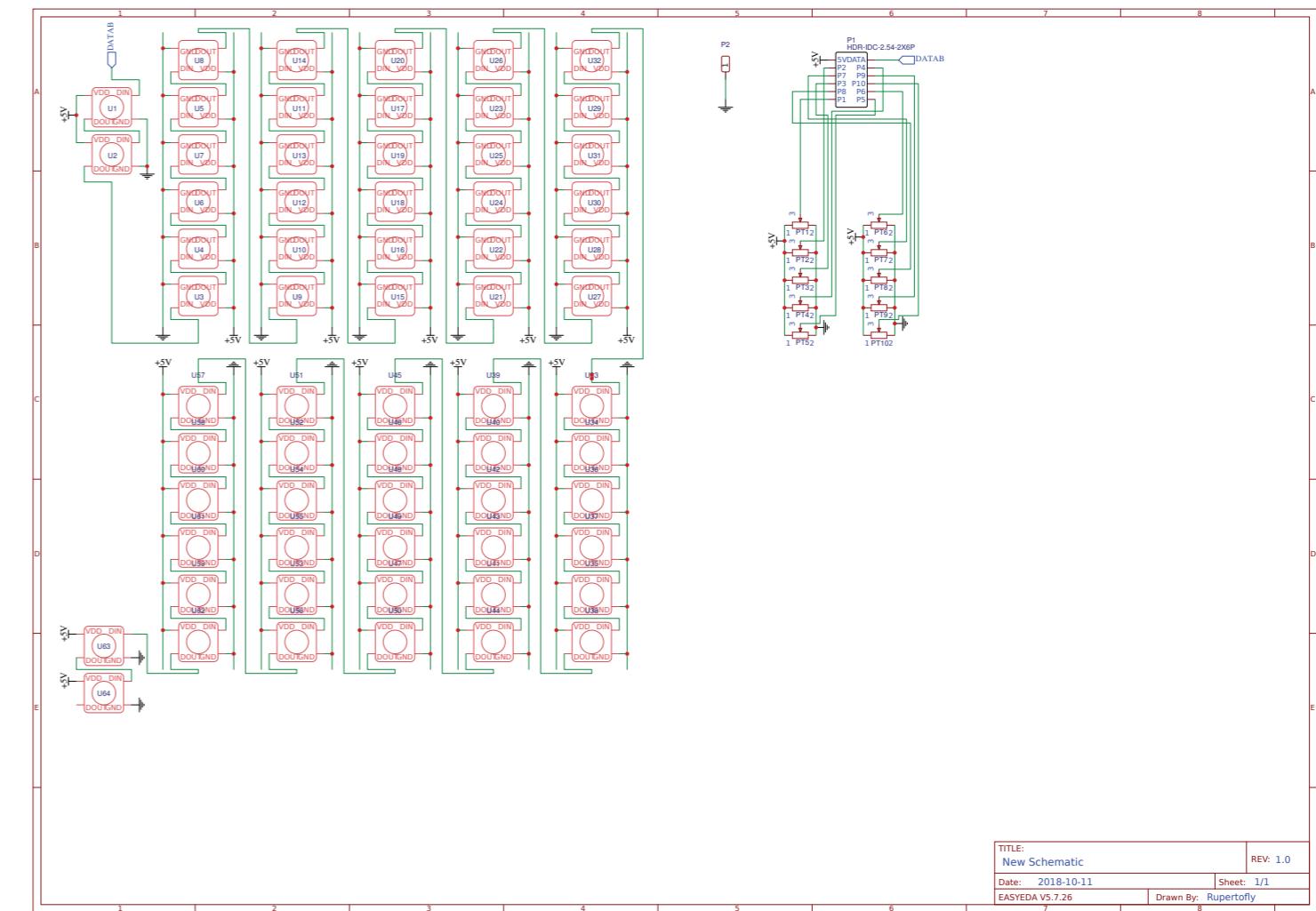
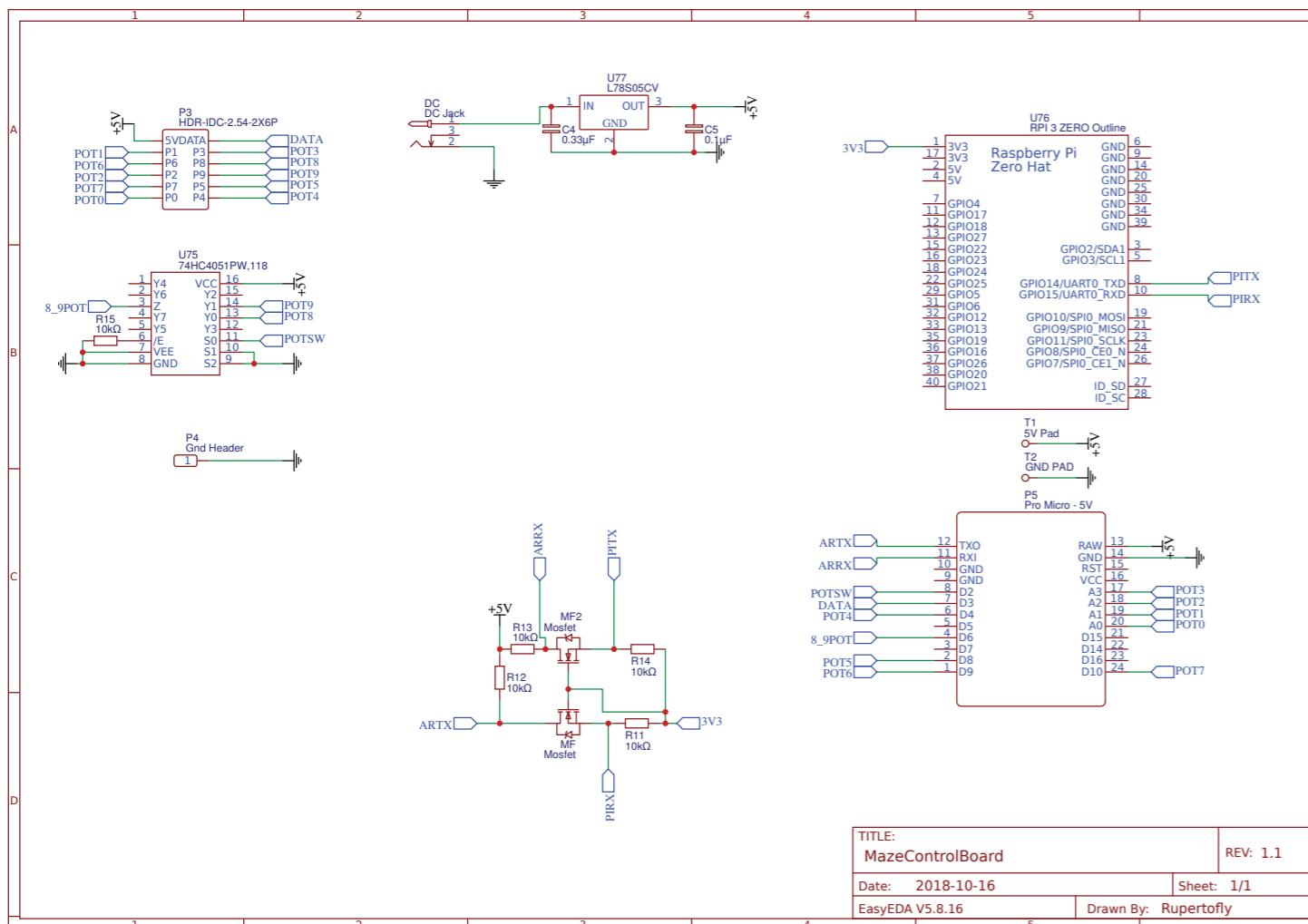


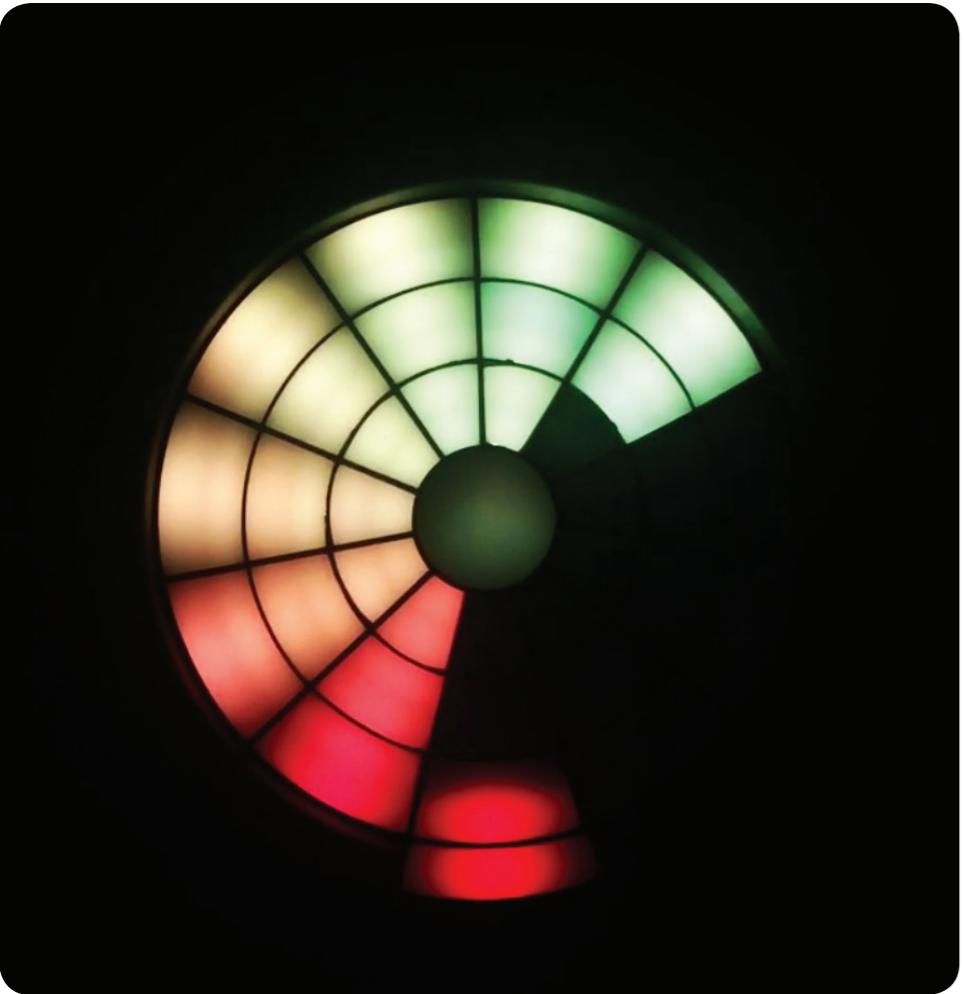




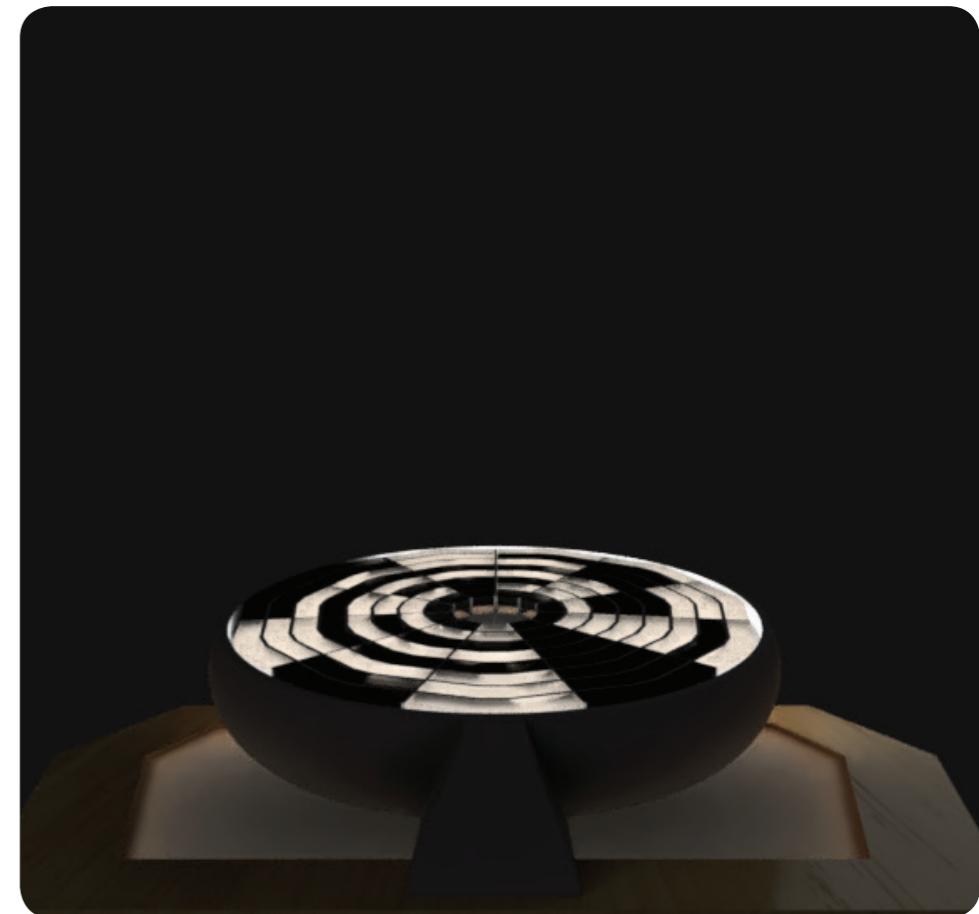
The first object, Vessel, was designed around being a point of identity generation, I was inspired by themes and stories around alchemy and the creation of life. The object empowers the user to pick hashtags or traits to apply to their identity and then sends it off into the simulation where it behaves, and it is treated based on the characteristics it is given. The traits were designed to be either vague and difficult to make sense of, or too general to be useful, this choice was an attempt to show how the way computers, algorithms and even modern machine learning systems make decisions about how social interests on traits and behaviours that users may not be aware of or see importance in. The object consists of an infinity mirror with custom LED boards, an OLED Screen, a set of 6 rotary encoders, a thermal printer, and a custom controller PCB, designed and made by myself. Code can be found at <https://github.com/Rupertofly/VesselArduinoCode/>







The second object maze came from an anecdote I was told to by a friend, they mentioned how navigating social situations, both online and offline, can feel like navigating a maze. Hearing this I thought about flipping that idea on its head and giving users the ability to design a maze as an interactive way to change the parameters and behaviours of the system. Maze consists of a custom LED array, a control board, and a set of 10 potentiometers allowing for a user to change the controls. Code can be found at <https://github.com/Rupertofly/cosmosMazeCCode>



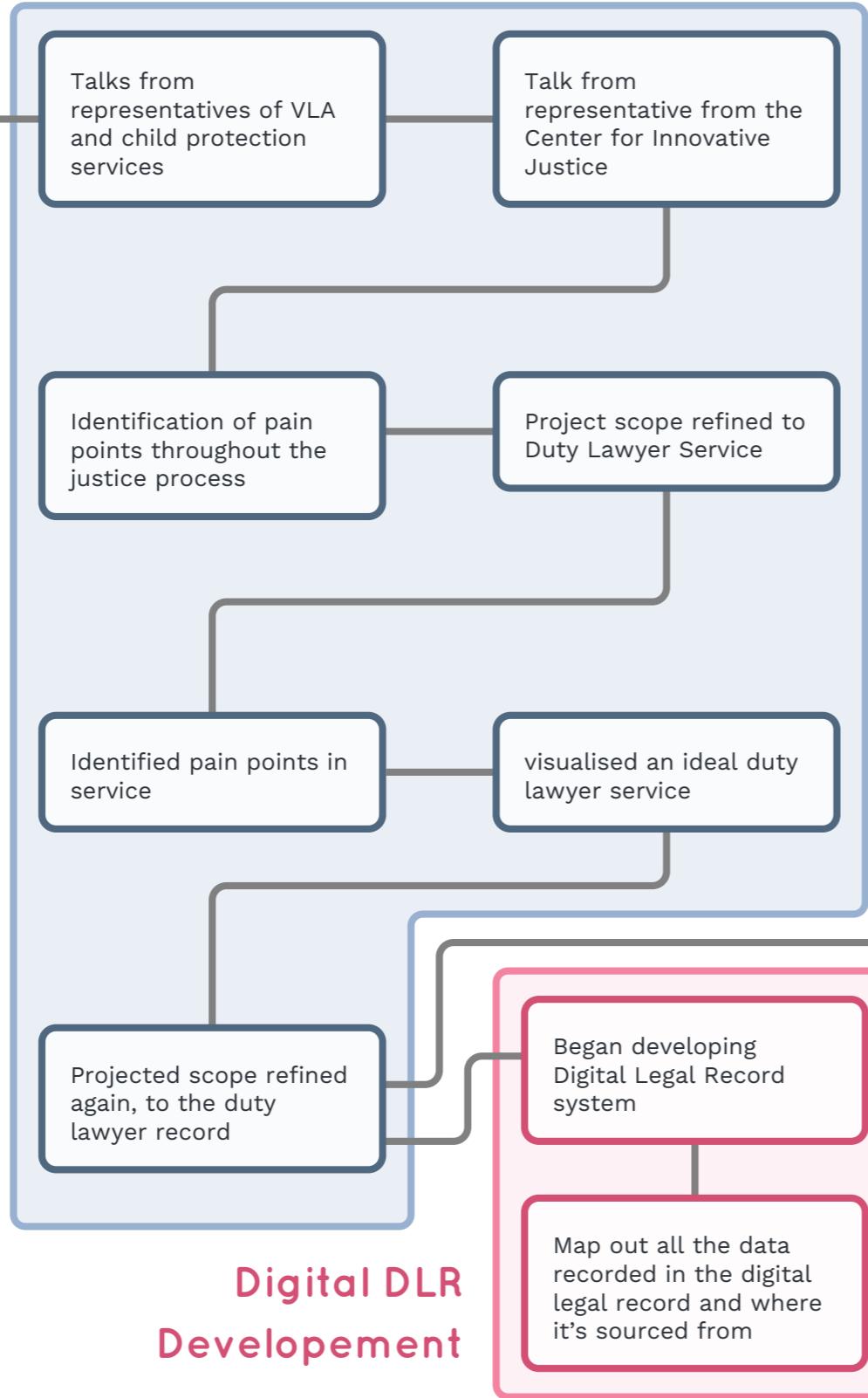
Digital Legal Record

2017, 3 month project

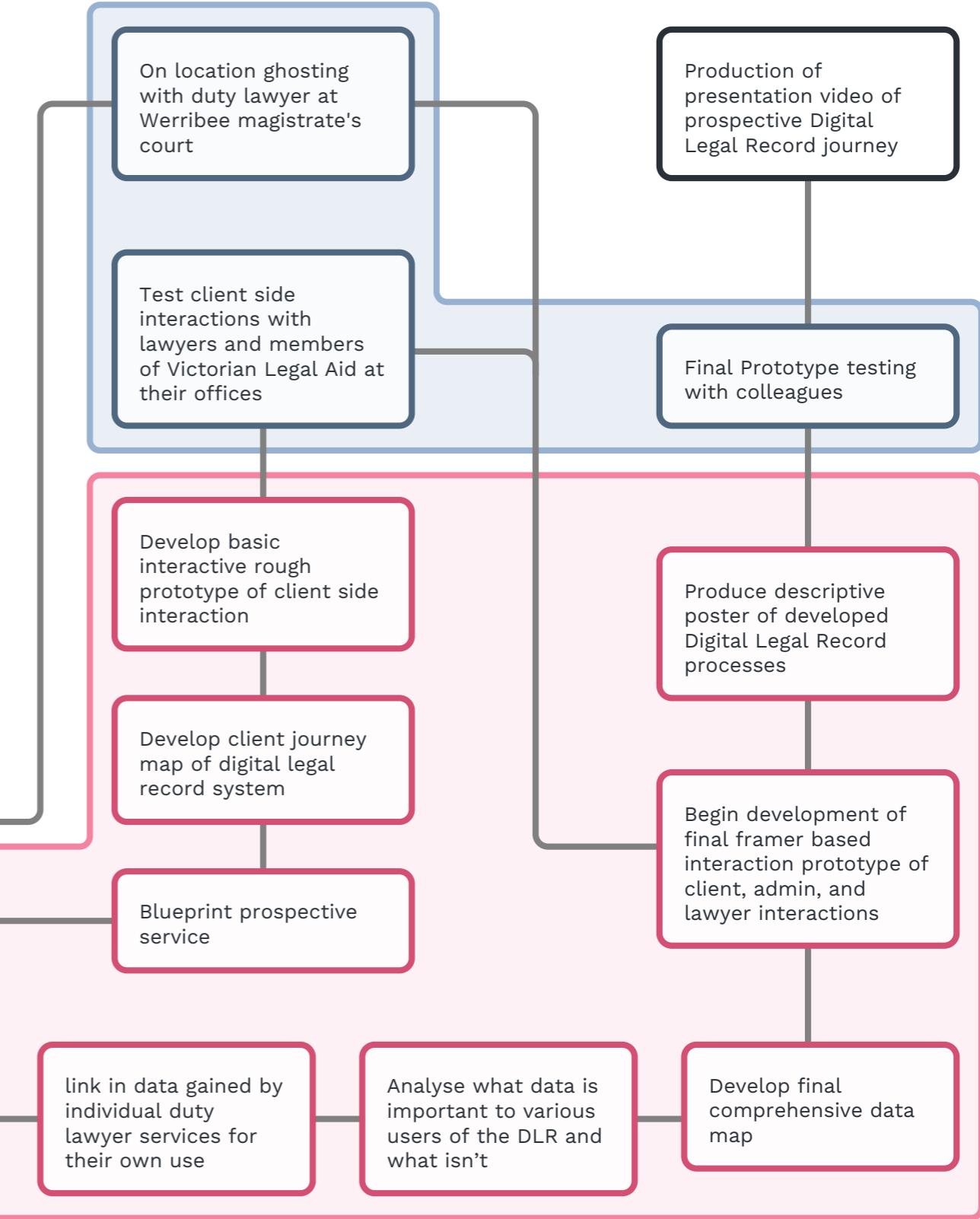
Early Research



VLA Intensive

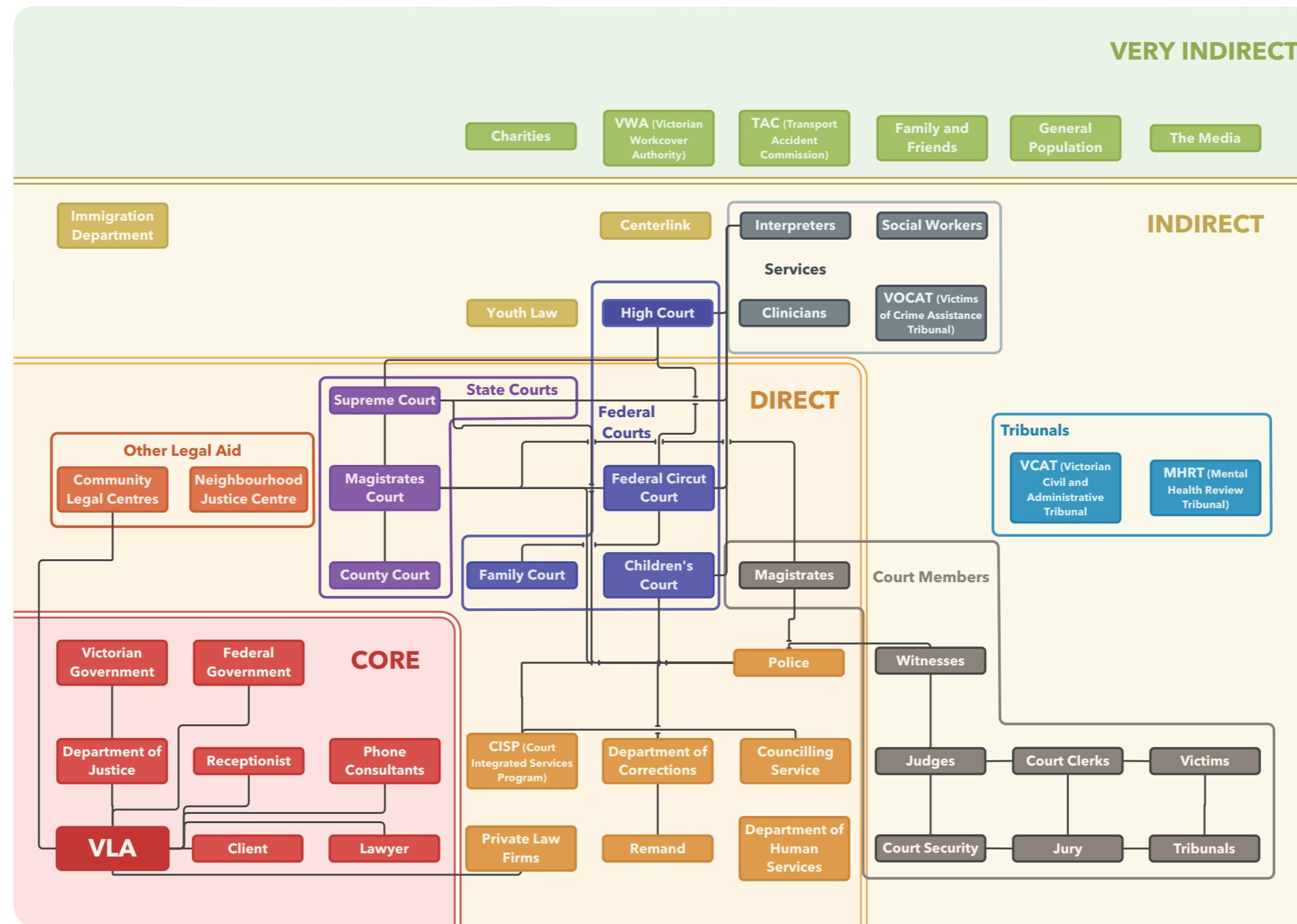


Testing and Additional Research



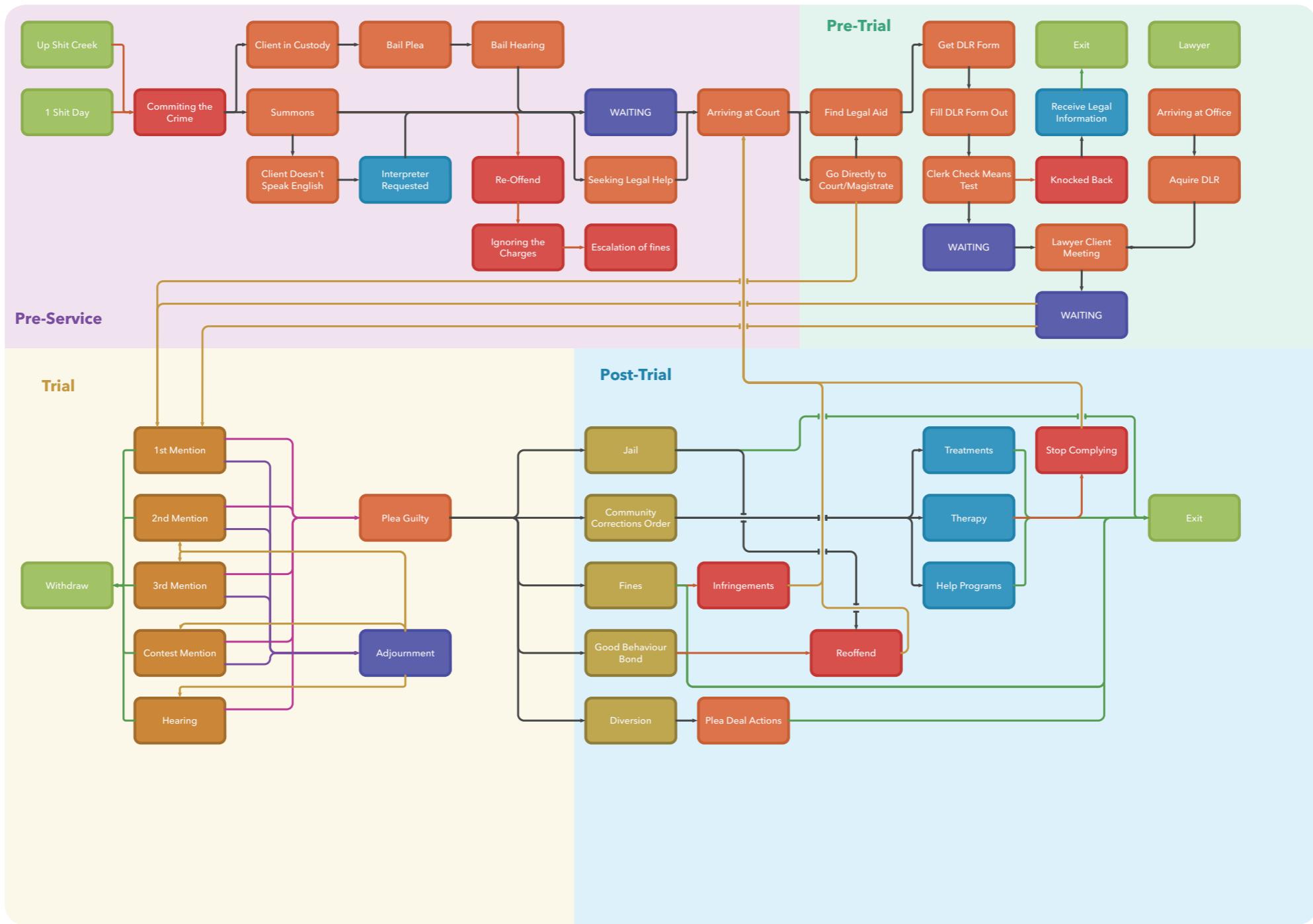
Digital Legal Record was a project undertaken with Victoria Legal Aid aiming to simplify and improve their duty lawyer service. A number of interventions were devised including digitisation and standardisation of record keeping and improved communication between various legal bodies.

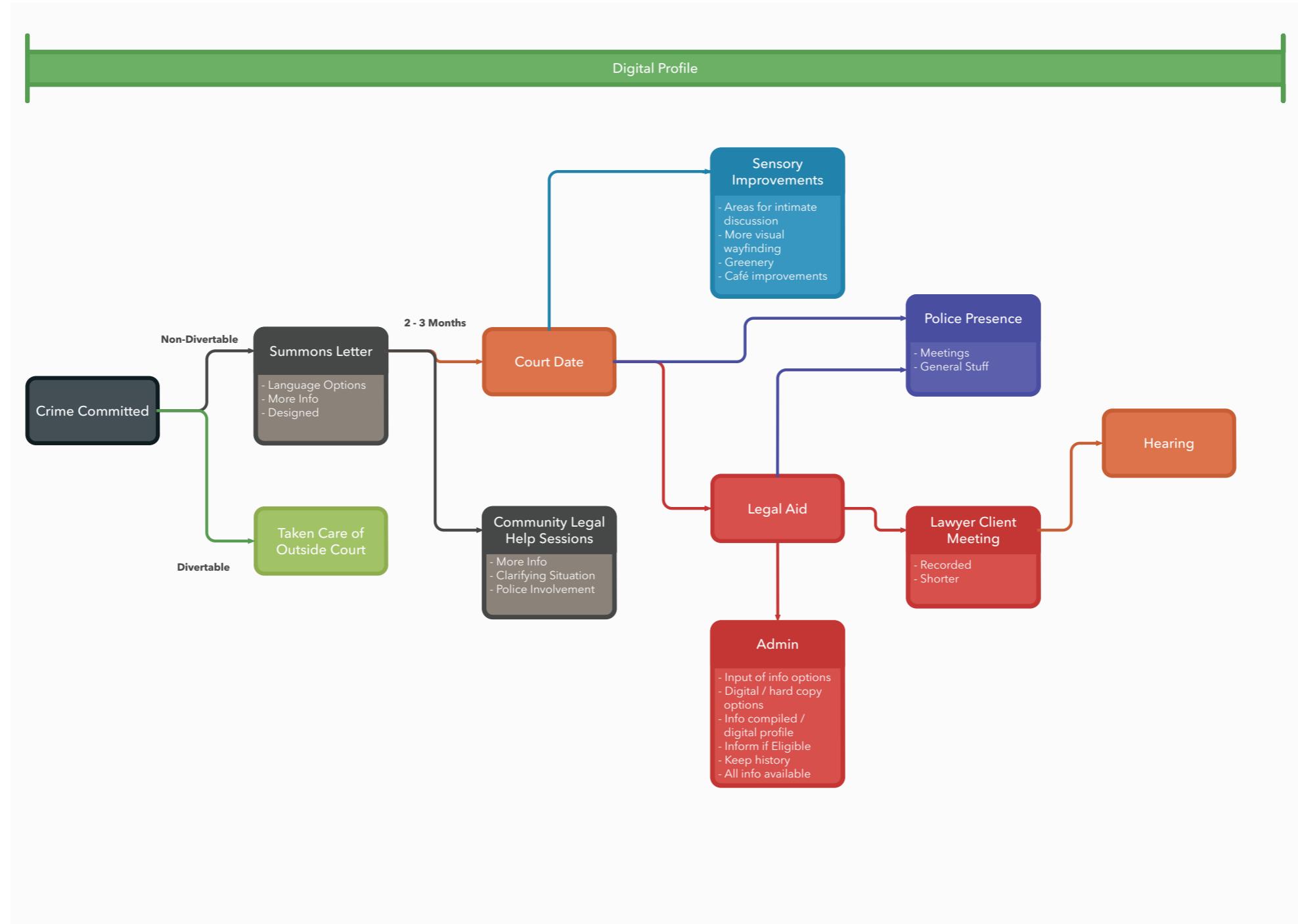
Due to the short 14 week length of the project, the outcome focussed on setting ground work for further development that could occur with collaboration with the courts and police.



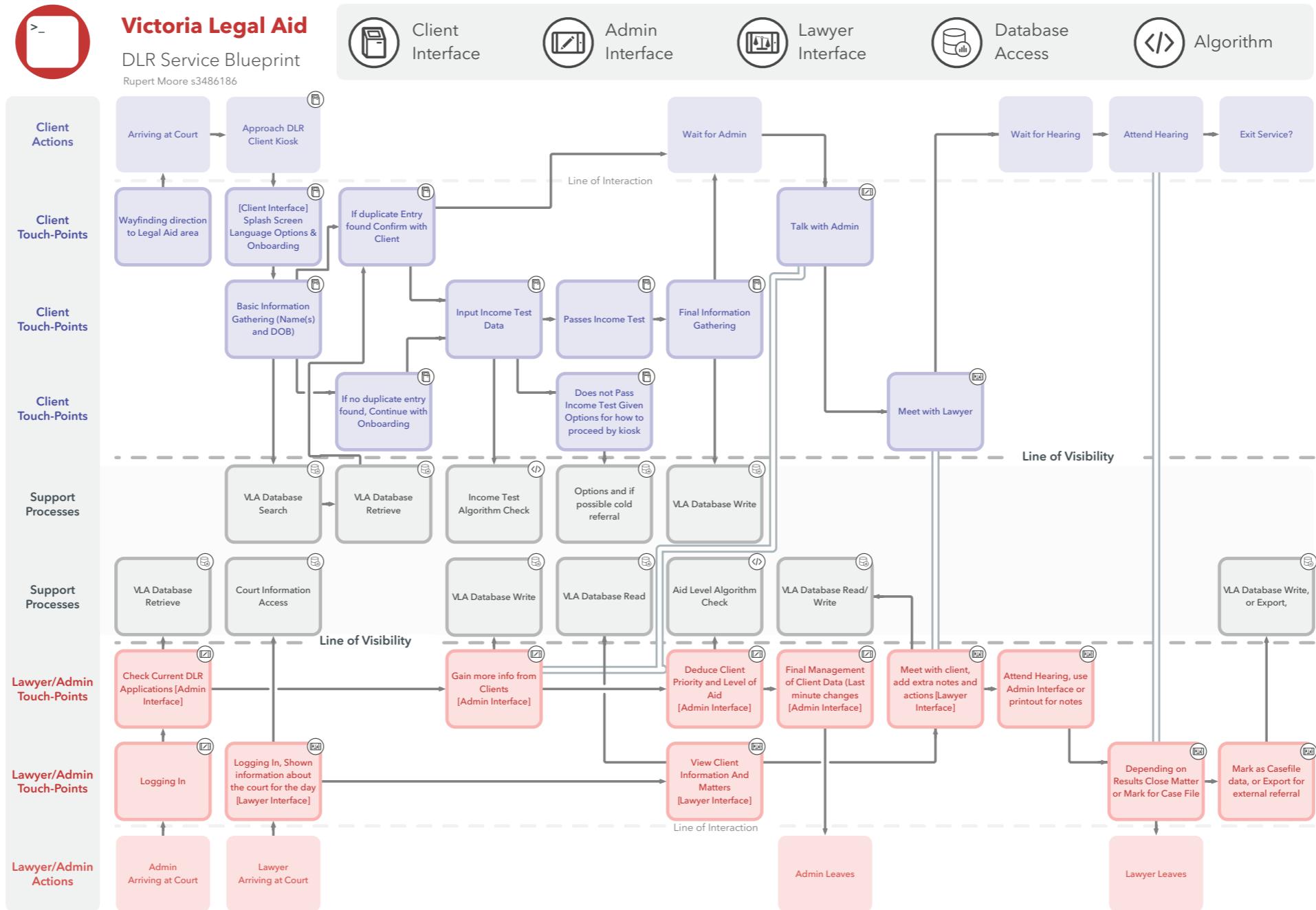
One of the first tasks of part of this project for VLA was to a full stakeholder mapping and categorising, we wanted to have as broad a knowledge of the field VLA was in before we started identifying and working on the problems it wanted solutions for

From there my team developed a journey map of the criminal justice system for the accused to understand where the pain points in their journey were.





From here we started drilling down into specifically the duty lawyer service and brainstormed together an ideal flow for the service, so we had something to strive towards.



My goal in this project was to look at how the duty lawyer service obtained, used, and managed information gathered from clients, courts, the police, etc. the current system was based around a single paper form that had the value of being centralised, but was slow, only available in English, and very difficult to read or fill in quickly. The solution I ended up working with was a centralised digital system that had different interaction solutions for various users of the service. After brainstorming and generating ideas with others working on similar projects with the duty lawyer service, I developed this working blueprint for the service.

Due to time constraints the amount I could properly prototype and test was reduced, so I concentrated on putting together a rough prototype of the client interface and tested it with VLA Staff, this was quickly assembled in sketch. From that feedback I generated an interactive Framer prototype (code available at https://github.com/Rupertofly/Final_DLR_Prototype), and a film (available at <https://vimeo.com/241820691>) and poster to help explain the project.



Victoria Legal Aid

Duty Lawyer Service

Application for Aid

Begin



Victoria Legal Aid

Application for Aid

English

عربى

Việt-nẳm

中文

Español

Türkçe

ไทย – ຖ່ານ

Ελληνικά

فارسی /

What Kind of Benefit(s) do you Receive?

ABSTUDY	Aged Pension	Austudy	Carer's Benefit	Disability Support
Newstart Allowance	Parenting Payment	Partner Allowance	Sickness Allowance	Special Benefit
Veterans /War Service	Widow Allowance	Widow B Pension	Wife Pension	Youth Allowance
Other				

Back

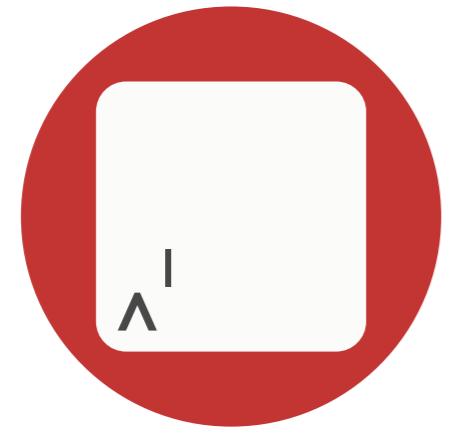
Done

What Kind of Disability(s) do you have?

Acquired Brain Injury	Intellectual	Hearing
Psychiatric	Physical	Speech
Mental Health	Visual	Other

Back

Done



Digital Legal Record

For Duty Lawyers

Current DLR (Duty Lawyer Record)

- Cramped and complex, difficult to read
- Only in English
- Singular, can only be read/edited by one person at a time
- Information lacking in clarity of purpose

The core of the new DLR concept is divided into three Interfaces/sections.

Each of these sections address a different area and user of the duty lawyer service...

Client Kiosk Interface

- Available In Multiple Languages
- Simply Worded Questions
- Smart: Doesn't ask questions if it already has the answer, or if the answer isn't relevant
- Allows booking accessibility requirements (such as interpreters) as early as possible
- Conducts income test, triaging clients who qualify for duty lawyer service
- Detects whether client is already on database and puts in relevant information
- Provides Relevant information and details of resources for those who don't qualify

Lawyer Portable Interface

- Access client and charge information in an easy to read format before meeting with client
- Access and add relevant documents and notes through handwriting or typing
- Portable, allowing to be taken into meetings and court.
- Organise information and create and mark off tasks as they are completed
- Information all stored allowing for easy export if client is passed off to different lawyer

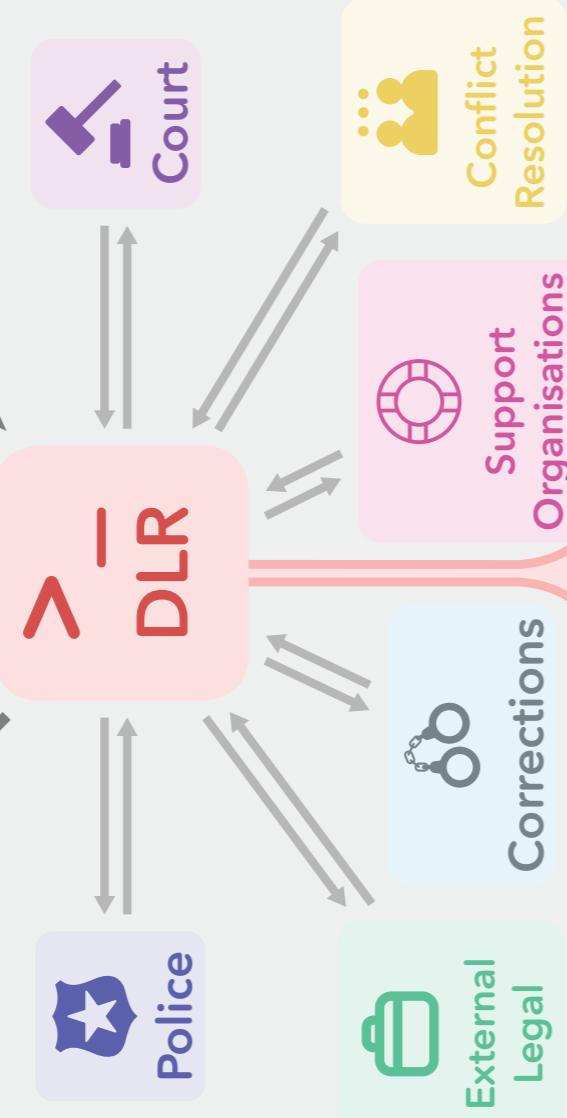
Admin Portable Interface

- Access Client Information As soon as possible
- Portable, allowing for a flexible workflow to cater to different environments
- Directly edit and add data specific to the matters the client is dealing with
- Add relevant documents and files to the case
- import information directly from paper documents using OCR (Optical Character Recognition)
- Administer means test to deduce level of service to provide
- Access client interface to enter clients who need extra help or are in custody



Crucially, All this information would be unified in digitally accessible database. This allows the information to be available at all of the courts. Additionally, Interfaces and connections could be developed between VLA and various external stakeholders, including the courts, police, and support organisations. This particularly could be useful if used with services

that use machine learning for conflict resolution or similar. These services require unbiased data in order to be fair. This means the data would be both useful for clients who use these services and the services themselves which improve due to increase in available data



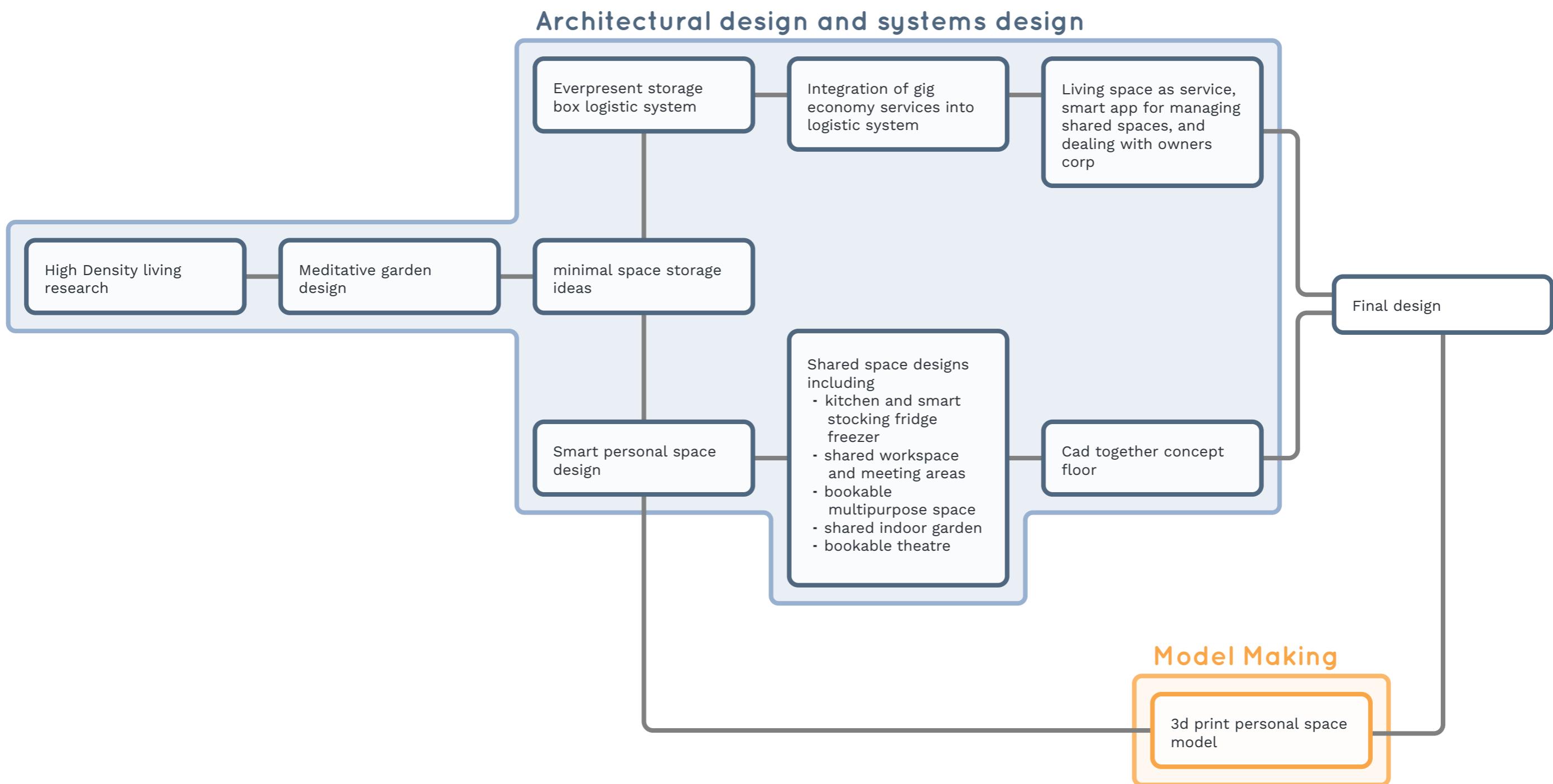
Data Structure

While this Dataset that is specifically relevant to the duty lawyer system is a good start, the system would by no means need to be restricted to these properties if more information becomes relevant.

</>		Generated		Admin		Lawyer		VLA	
Client	Write	Read	Write	Read	Write	Read	Write	Read	Write
	ClientID	Name	DLR ID	CLR ID	DLR ID	Date and Time	Lawyer Notes	DLR ID	Date and Time
		(first contact)	Client ID	Name	Name	Actions Taken		Referred From	Child
		Date of Birth	Date of Birth	Date of Birth	Date of Birth	Custody Details		Court Ref Number	Client Status
		Means Test	Means Test	Other Names	Other Names	Other Names		Court/Tribunal	Custody Details
		Passed	Passed	Practitioner	Practitioner	Referrer		Location	Practitioner
		Disability	Client ID	Client Type	CLR ID	From		Matters...	Matters...
						Court Ref		Judge	Judge
						Number		Magistrate	Magistrate
						Court/Tribunal		Prosecutor	Prosecutor
						Client Status		Informant	Informant
						Work Type		Means Test Part	Means Test Part
						Custody Details		Lawyer Notes	Lawyer Notes
						Judge		Actions Taken	Actions Taken
						Magistrate			
						Prosecutor			
						Informant			
						Court Ref Number			
						Court/Tribunal			
						Matters			
						Type/Charge			
						Outcome			
						Referral			
						Type			
						Fact Sheet Number			
						Adjourned Date			
						Other Referral			

Urban Courtyard

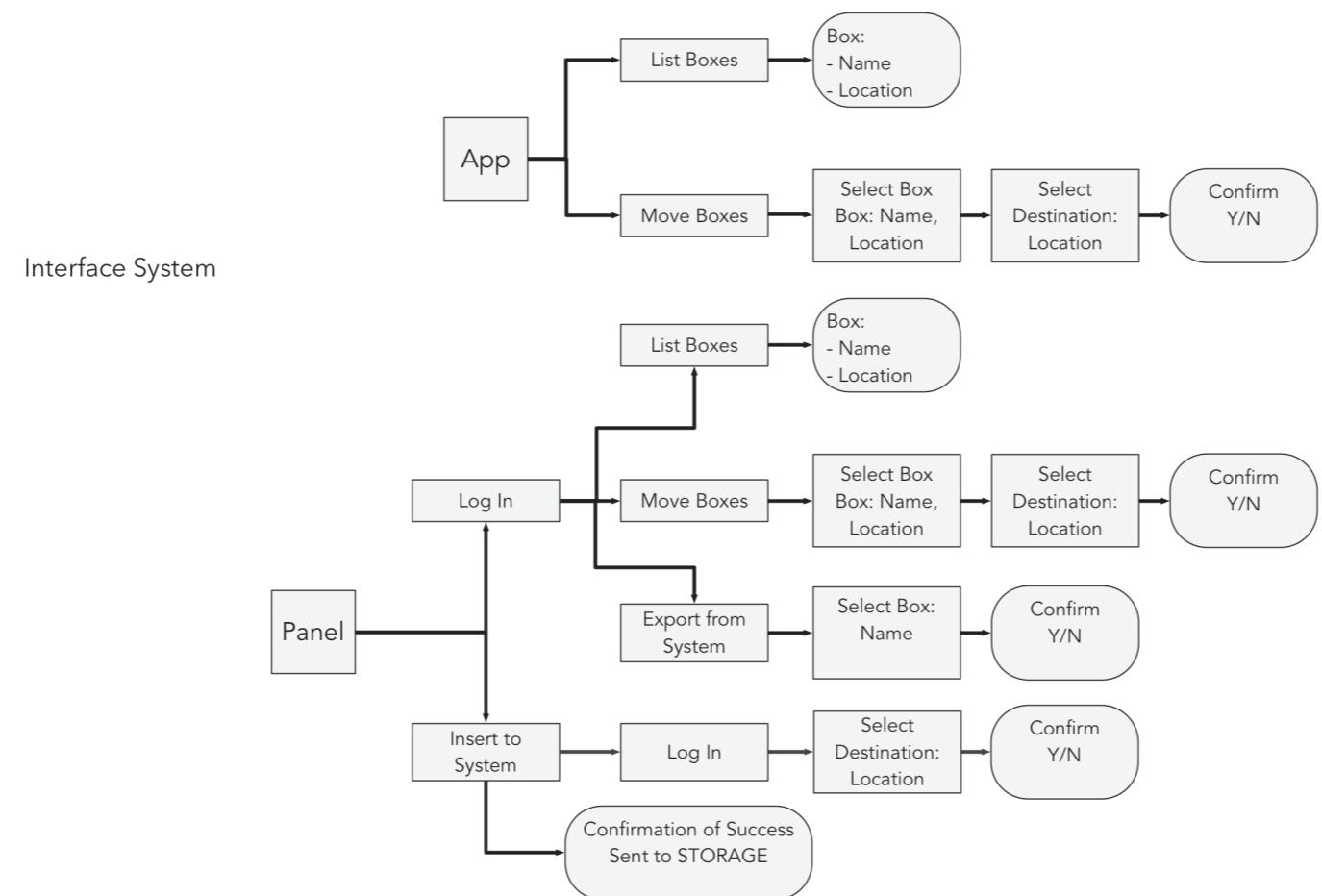
2015, 3 month project



Urban Courtyard is an architecture and industrial design project aimed at high density living in the near future. Urban Courtyard incorporated growing social trends such as the gig economy and new technologies such as IoT into a collaborative living space.

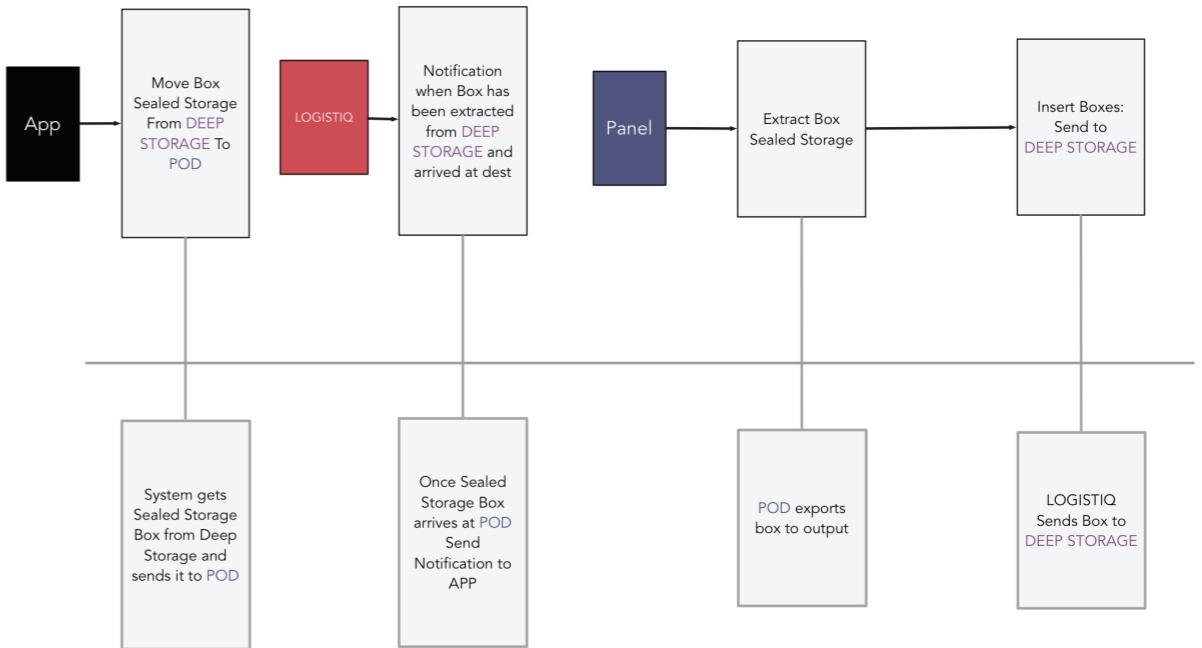
A Collaboration between designer Meegan Barone and Myself.

More Information at <https://theurbancourtyard.wordpress.com>



Use Case

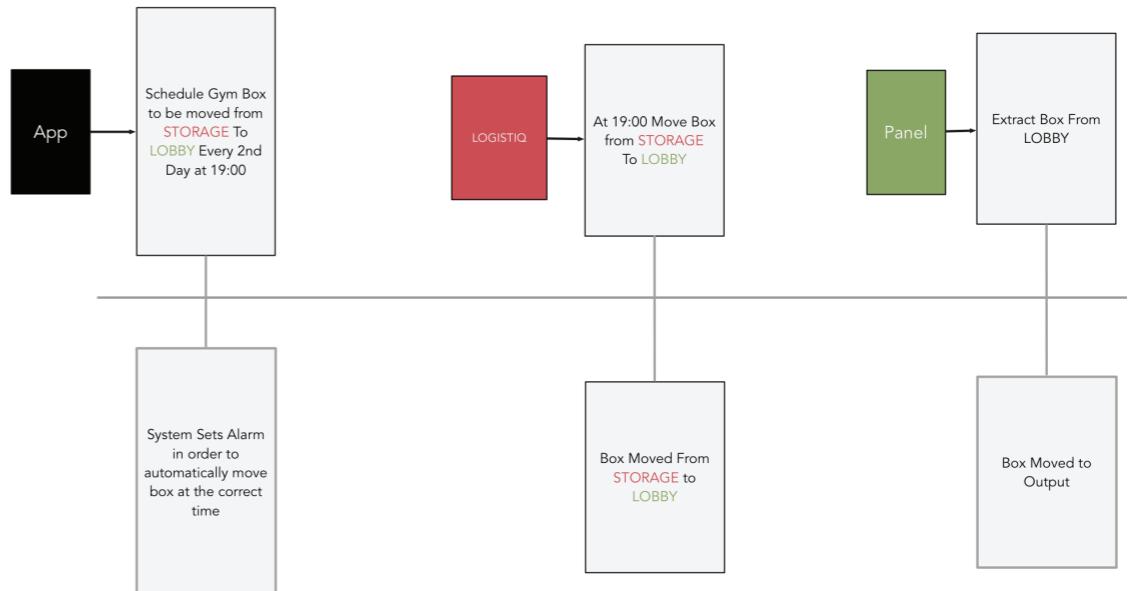
Extract Incense From Deep Storage

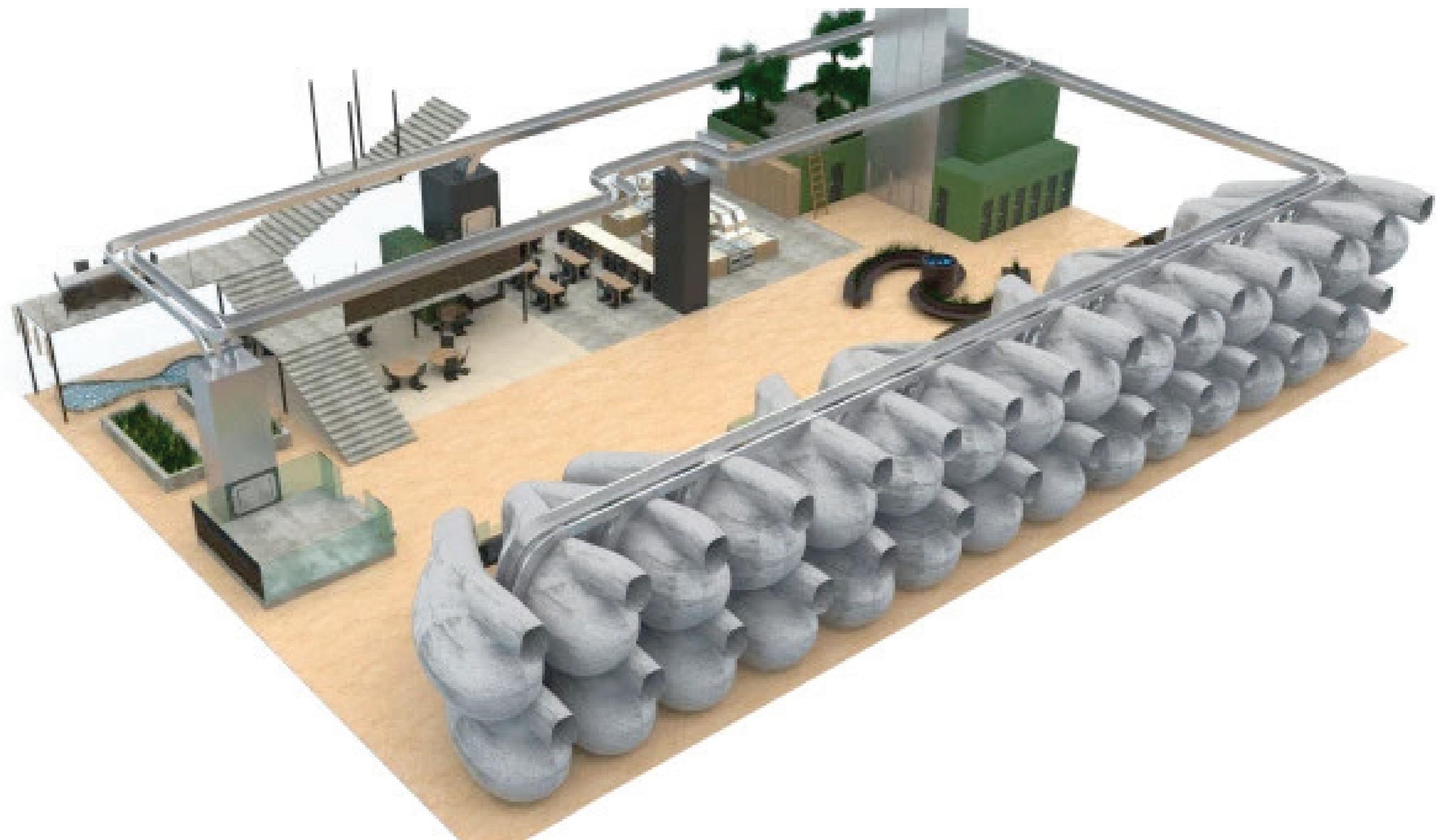


For the Urban courtyard project, my role was handling all the systems and interactions behind the smart storage system, the system was tiered allowing storage to be hidden away, saving valuable space, while still being accessible. The system was designed to link in with online shopping and gig economy services allowing ease in using and working with these services to save time and space.

Use Case

Schedule Gym Gear

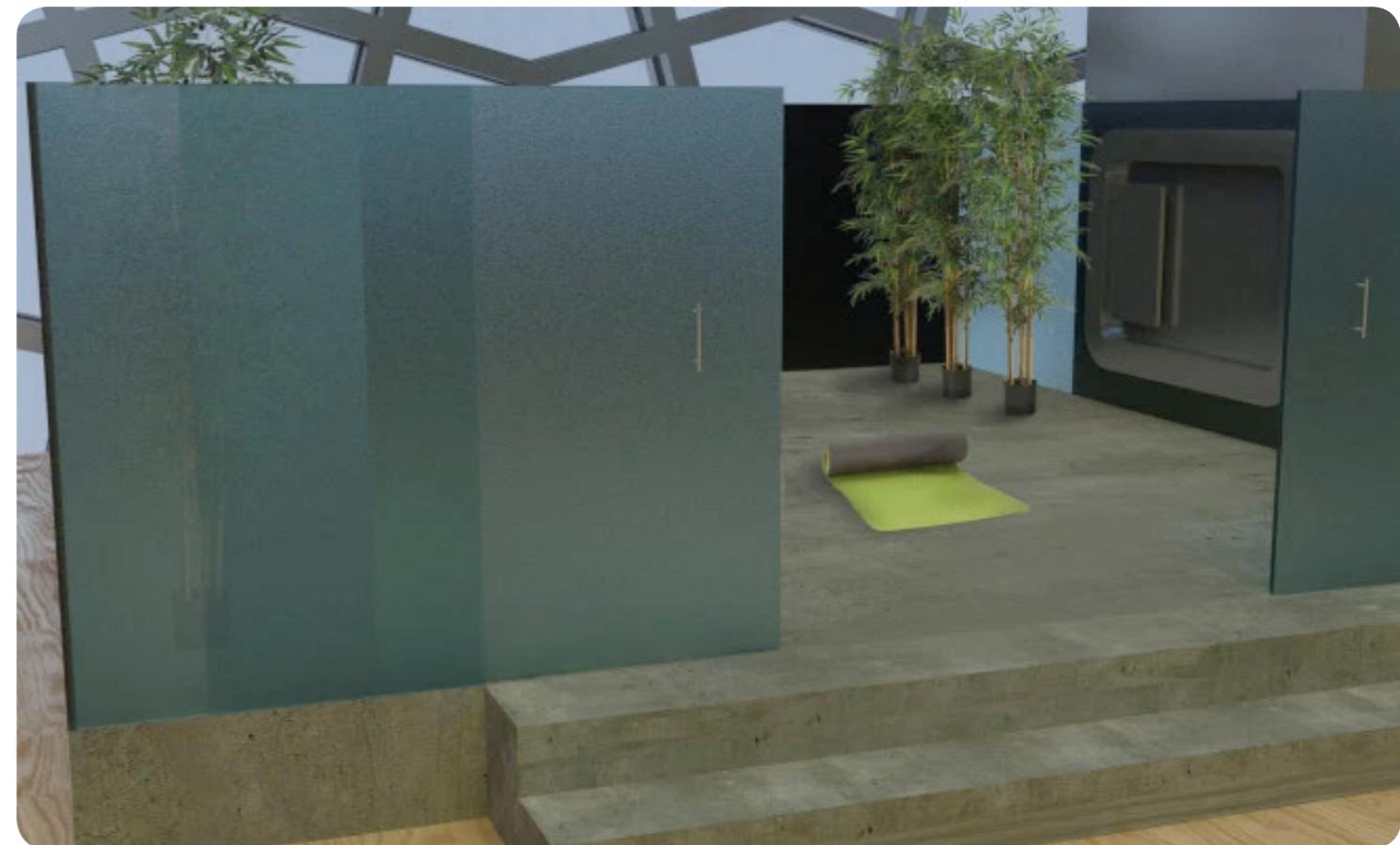




Urban Courtyard



The building was also designed with many shared spaces including bookable workspaces, large well-supplied kitchens, a shared urban garden, multipurpose space and theatre. these spaces were designed around a strong system of booking, and responsible care to ensure that they are well treated.



Urban Courtyard

Glove Project

2016, 3 month project

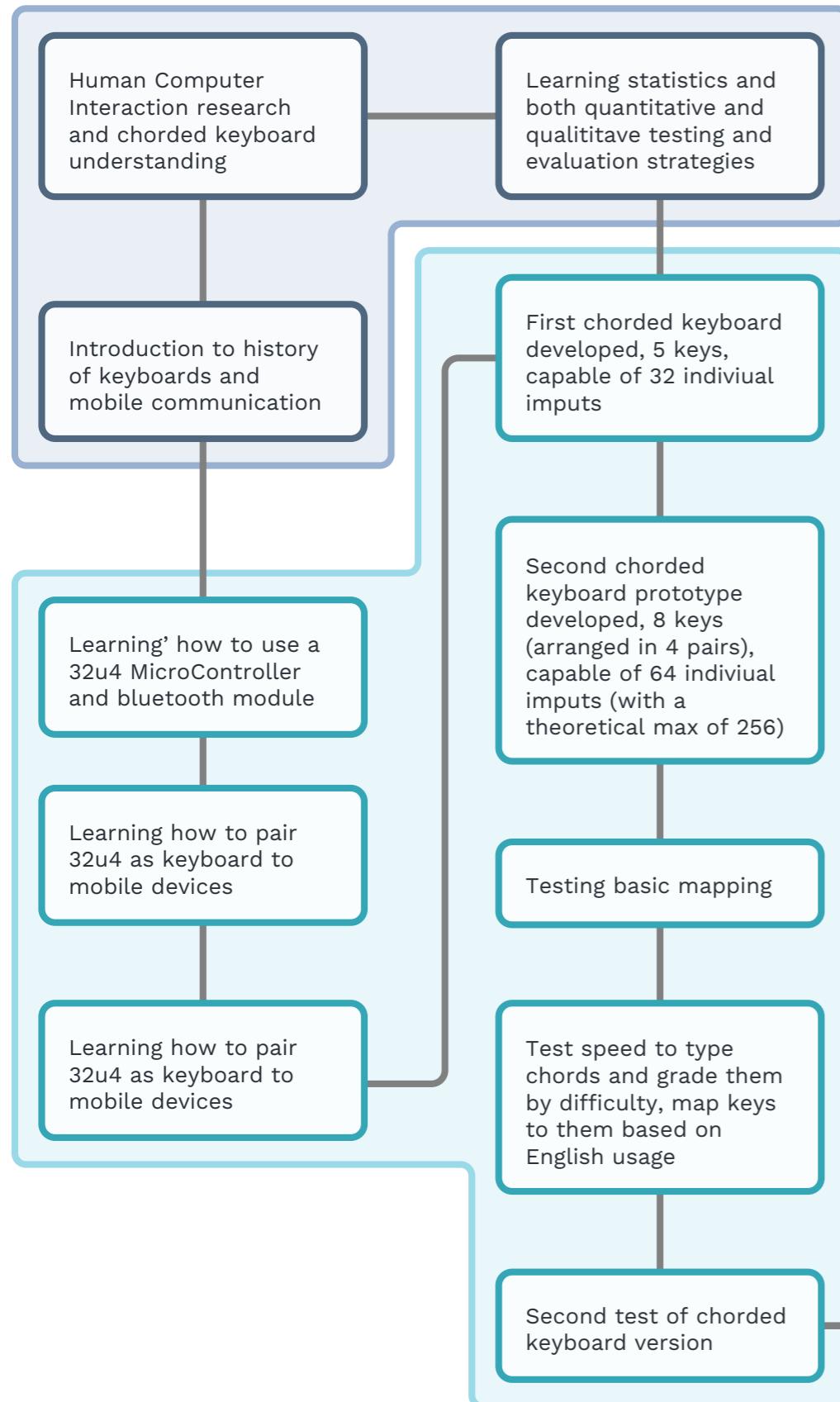
Research

Development

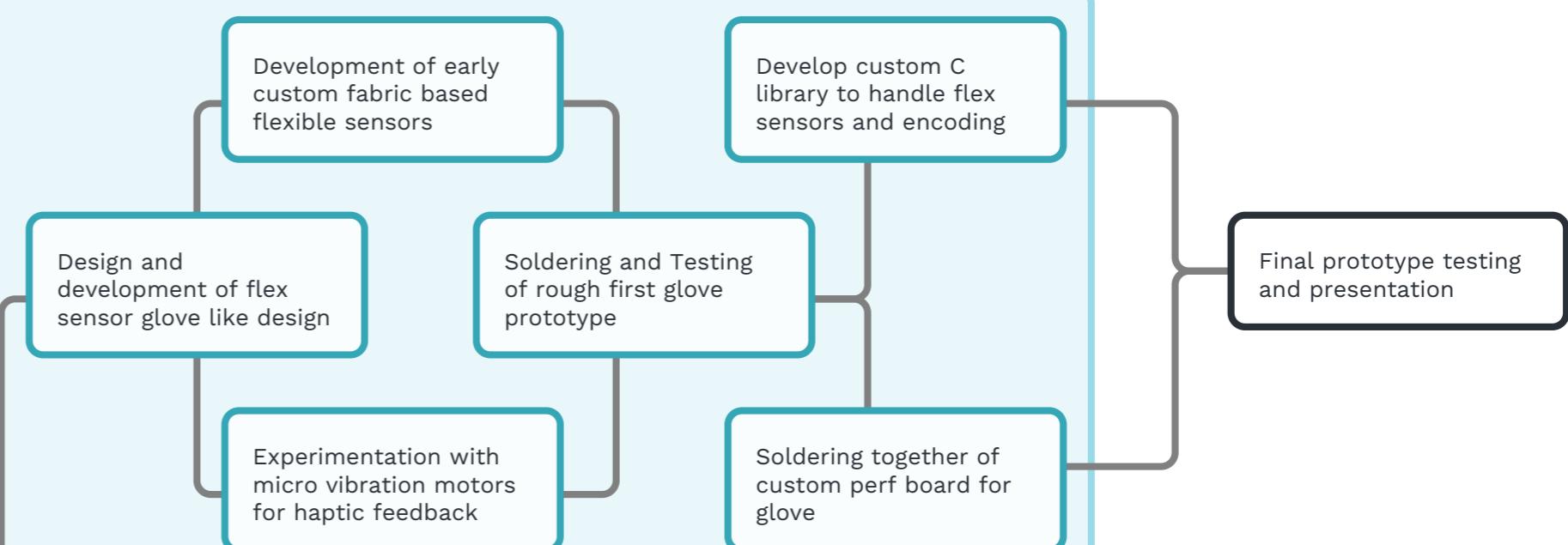
Refinement

Finalisation

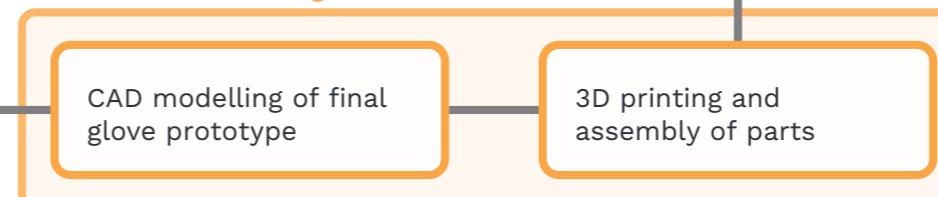
HCI Research



Electronics

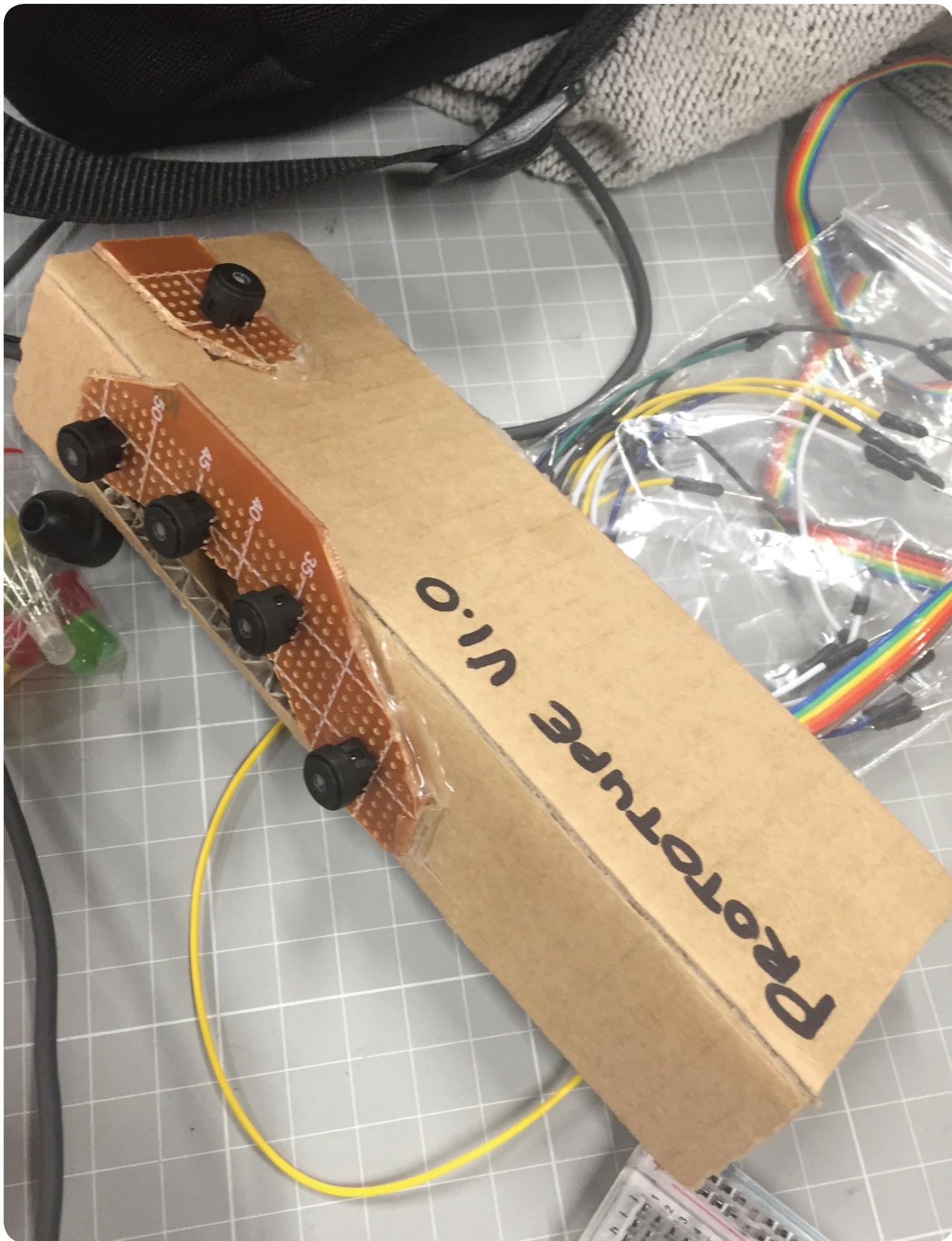


3D Modelling



Glove is a controller for mobile devices, allowing for non-visual,
private interaction in public..

A very basic prototype developed to explore human computer
interaction, and electronics



My first mobile keyboard design was based on a very simple 5 finger chorded keyboard, allowing for 32 inputs, this was mostly developed as an exploration of the technology to gain a better awareness of it.

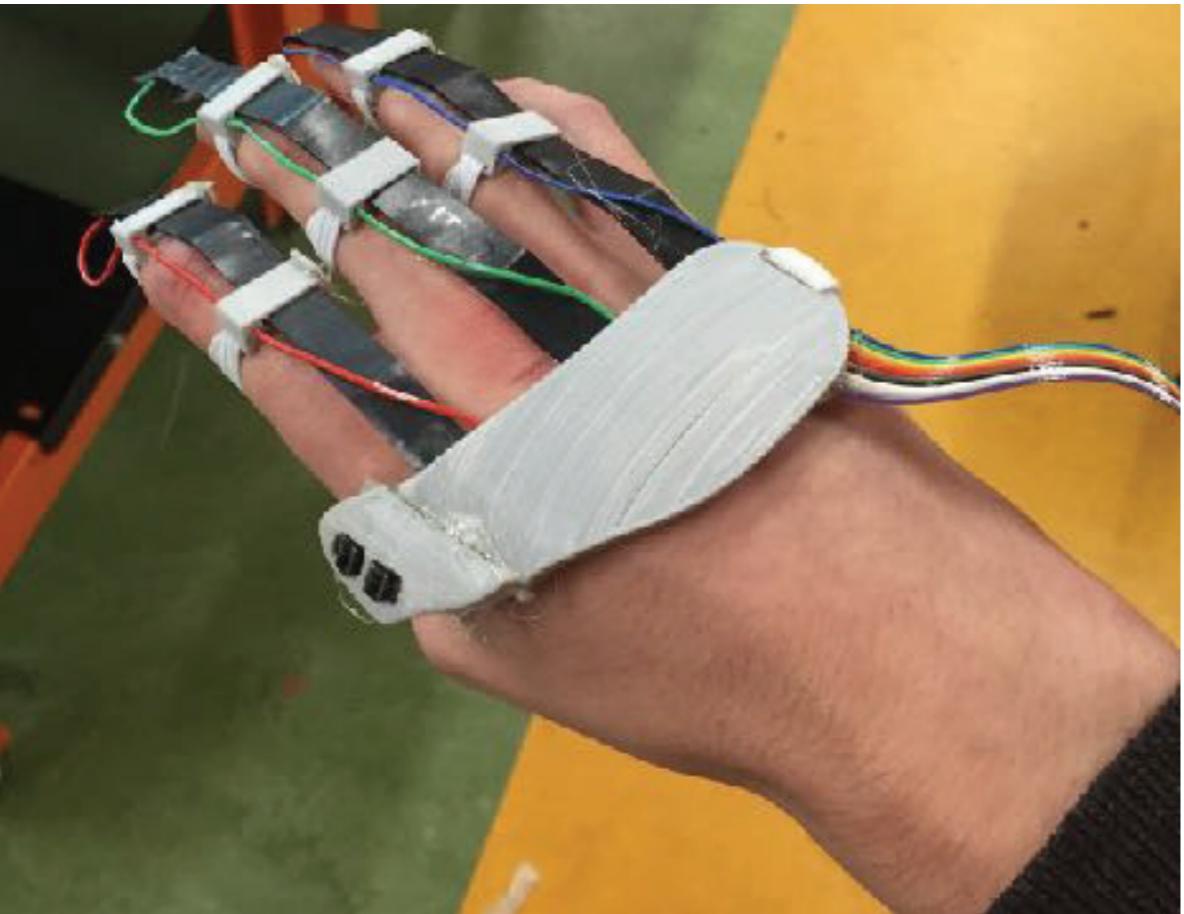
The second prototype had the same general idea as the first design with added capability, and some more human centered considerations, many of the chords for the first design were very difficult to press reliably, so a new version with 4 pairs of buttons was developed, this allowed a much greater set of chords and gave the freedom to cut out the difficult ones through user testing, to create a far nicer keymap.



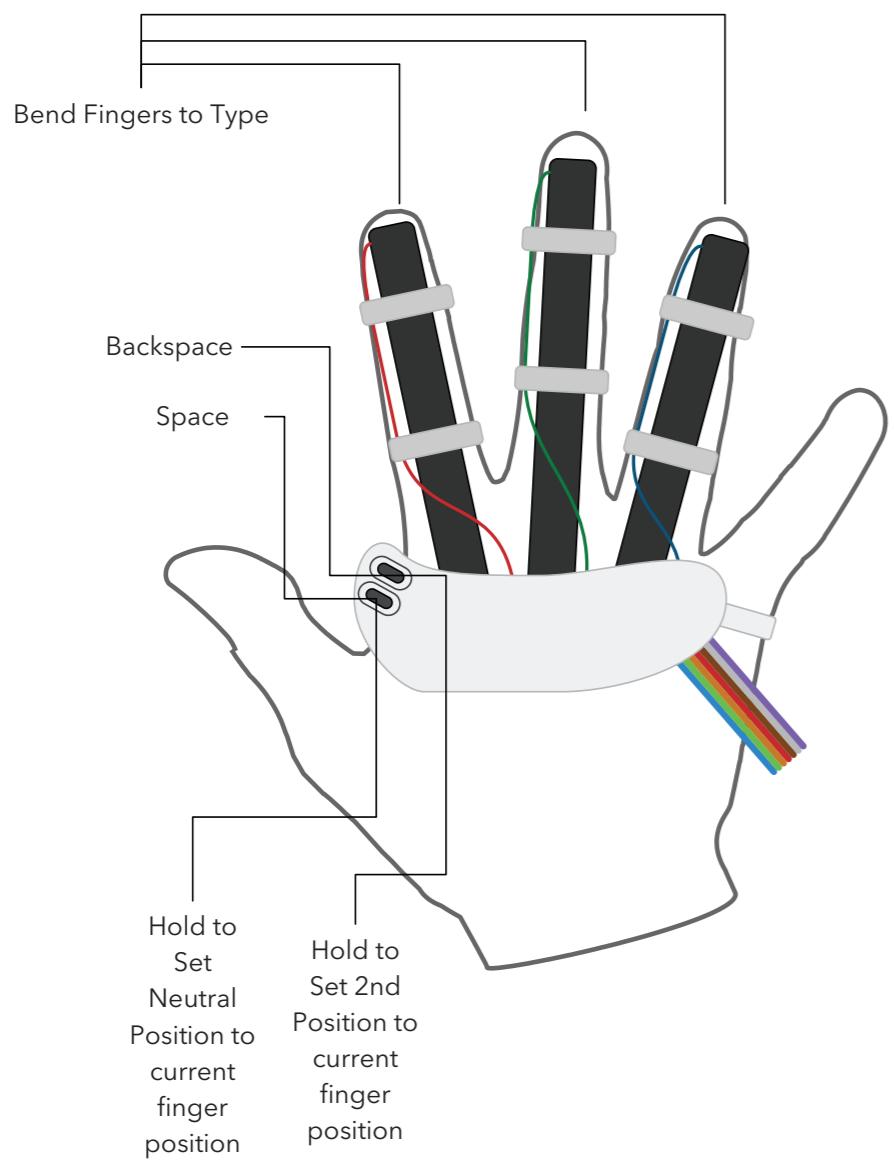
From there I moved to a glove based prototype, replacing key presses with gestures, this allowed typing to be much quicker but increased the difficulty to get up and running with the device. I ended up developing my own custom flex sensors to use with the system due to being unsatisfied with the options available to me, these worked well and were rewarding to produce, but ultimately acted as a bit of a time sink, reducing my ability to improve the design further in the time I was given. I also incorporated vibration sensors to give haptic feedback to the device which helped users get more familiar with its function quickly, the code is available at https://github.com/Rupertofly/Proto_v4_Tigress

Final Prototype

- Codenamed “Tigress”
- Higher Fidelity Sensors
- 3 Vibration Motors
- Lighter and More adjustable



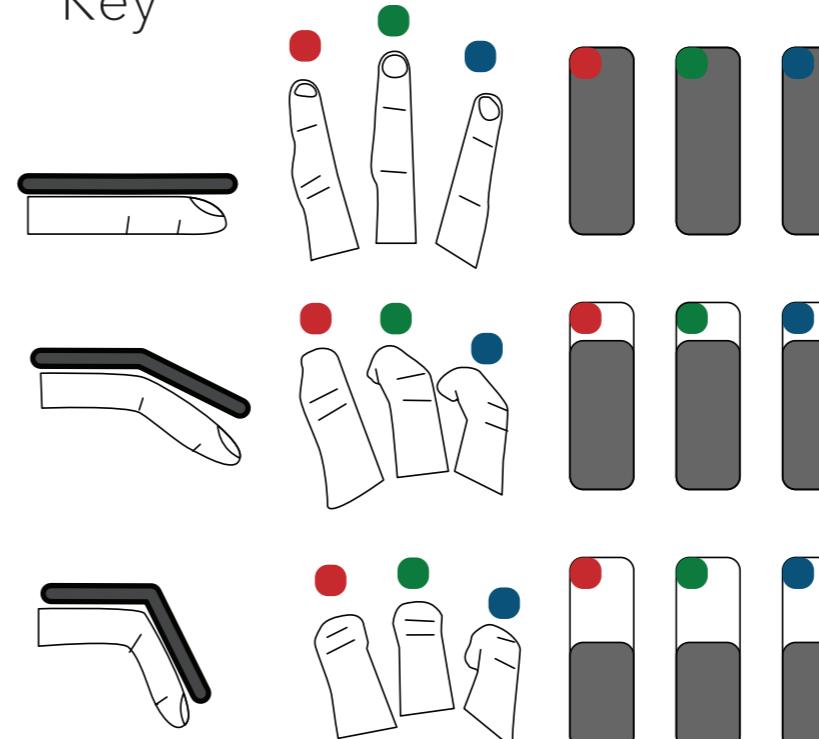
How to Use This Device



(○)
((○))
((○)) ((○))

1st Position Reached
2nd Position Reached
Character Send

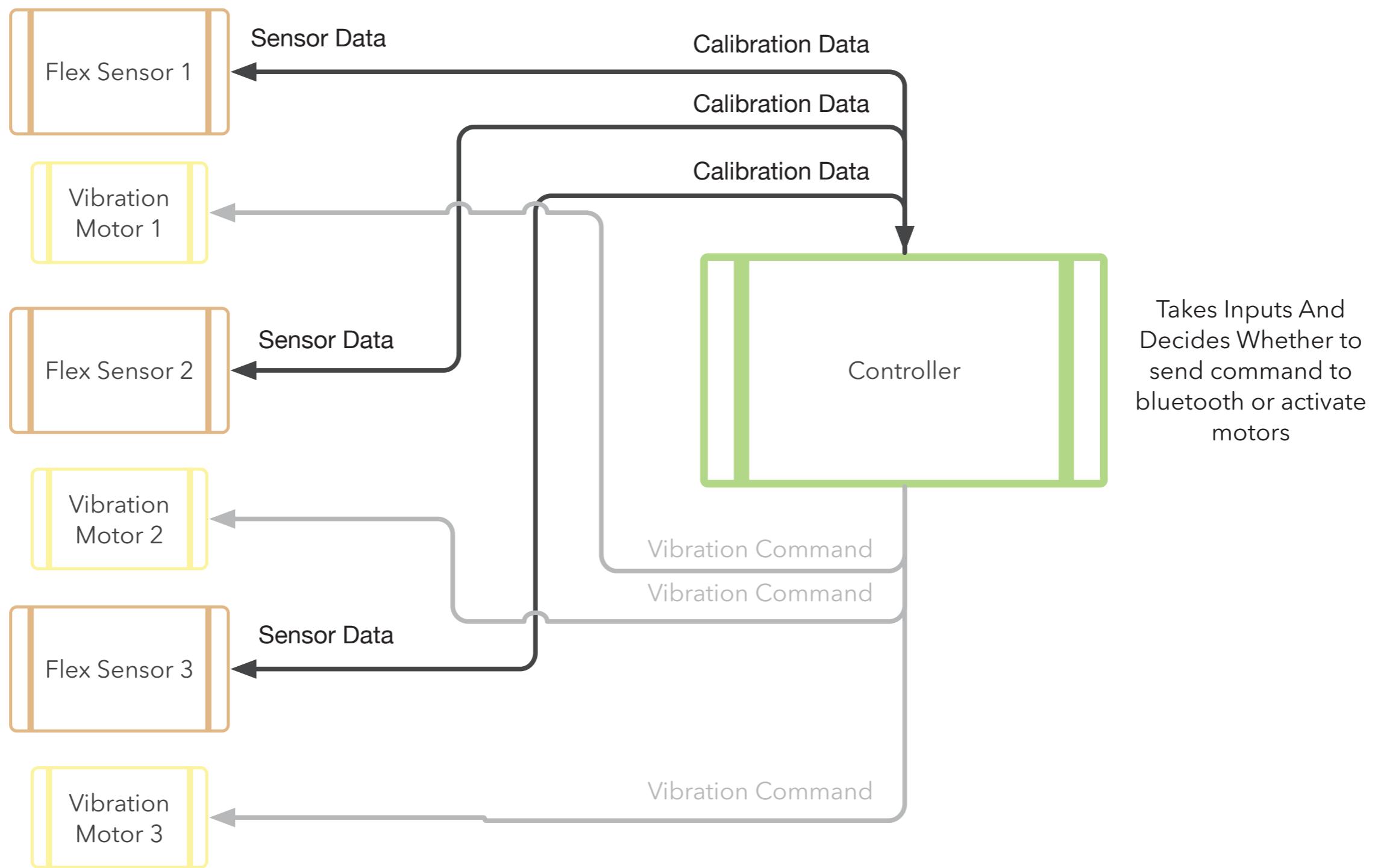
Key



Keymap

A		B		C		D		E		F			
G		H		I		J		K		L		M	
N		O		P		Q		R		S		T	
U		V		W		X		Y		Z			

Code



Other Projects

The screenshot shows the homepage of Traderillo. At the top, there's a purple header bar with 'Create an ad' and 'Search' buttons. Below the header, the word 'Home' is centered. To the left, there's a user profile section with a placeholder image and the text 'Hello Chris'. A 'Notifications' section lists items like 'You Sold Your Bathtub' and 'Lorem ipsum dolor sit amet, consectetur adipiscing'. Below that are 'Options' (Watchlist, My Ads, Account Settings, Log Out) and 'Recomendations' (Chair, Lorem, Lorem, Lorem). The main content area features a 'Featured' section with a blue stapler image and a 'Categories' section with a list of items including Furniture, Cars, and various Lorem ipsum entries.

Traderillo, 2015 (One month project)

Traderillo was designed as an online marketplace service that allowed its users to buy and sell secondhand goods and services. Traderillo had a clear focus on using machine learning and algorithms to analyse user preferences and behaviour. It offered suggestions to users based on their interests and included an extensive item tagging system to help people find products and services based on more details than just a name or short description, such as aesthetic qualities, materials, or object dimensions. This increased the functionality of the service by allowing users to better promote their wares, as well as find desirable goods that they would not come across otherwise.

More info: <https://rupertqmoore.wixsite.com/portfolio/traderillo-service-design>

The screenshot shows a service design concept for 'Mental Health in the 21st Century'. The top navigation bar includes 'Notifications' (with a dropdown menu for 'Unread', 'Seen', 'New Notifications', and 'Click here to View Them'), 'Search', and 'Home'. The main content area has a green header 'Mood last 7 Days' with a purple line graph showing mood fluctuations over the week. Below this is a 'Notifications' section with a list of items like 'You Sold Your Bathtub' and 'Lorem ipsum dolor sit amet, consectetur adipiscing'. The central part of the page displays a calendar entry: 'Your Next Appointment Is... August 15 Monday At 11:30 AM Don't Forget!'. On the right, there's a 'Contact Counsellor' button and a 'CBT' section with 'Current Module: Warpy Thoughts' and 'Continue' and 'Index' buttons. The bottom of the page features a 'Footer' section with links to 'About', 'Contact', 'Privacy Policy', and 'Terms & Conditions'.

Mental Health in the 21st Century, 2016 (Two week project)

Mental Health in the 21st Century was a two-week-long intensive course run by Sarah Drummond, co-founder of Scottish service design firm Snook. The studio had a focus on developing service concepts that would improve mental health in Australia.

I worked on finding ways that counselling services could be improved, using RMIT's counselling service as a starting point. Through working with Jeremy Cass, head of RMIT counselling, my group and I developed a service concept that addressed issues identified by Jeremy, along with problems found through ethnographic research such as difficulties booking appointments, and keeping track of work set by counsellors. The service relied on an online hub for arranging appointments, communication and staying on top of tasks and strategies developed through counselling and linking up with pre-existing third-party digital mental health services, such as MoodGym and Smiling Mind. The outcome of this studio was the development of a service that is easy to use and helps facilitate client engagement with the counselling service.

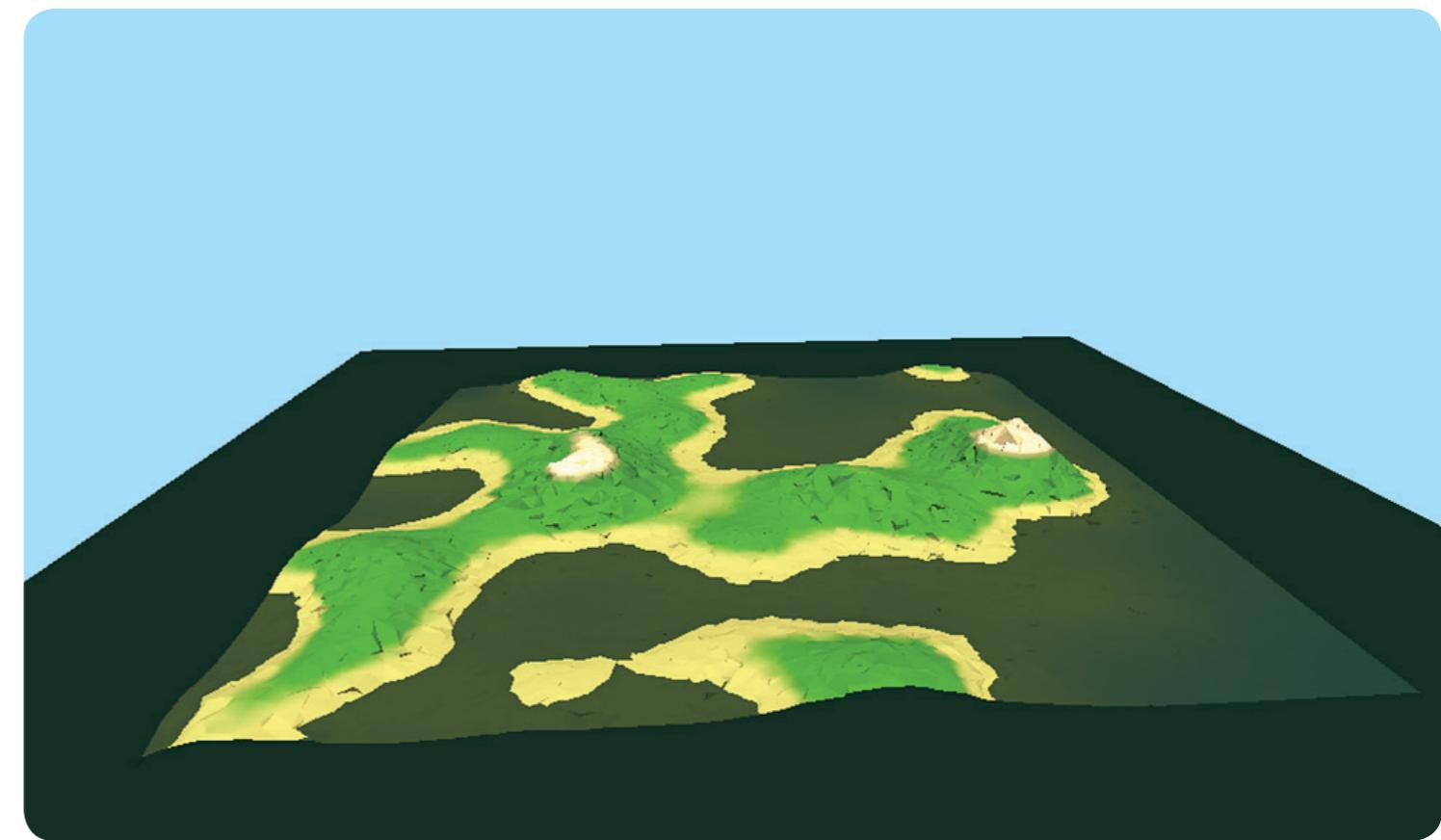
More information: <https://rupertqmoore.wixsite.com/portfolio/mental-health-in-the-21st-century>



Voronoi Music Visualiser, 2017 (One month project)

Voronoi Music Visualiser Was a project looking at creating a visual piece that reacted to audio. I'm fascinated with Voronoi patterns, particularly in conjunction with Lloyd relaxation produces a reasonably regular pattern with interesting randomness as well So I developed a way of adding sites to the diagram and colouring them based on rhythm and pitch. The Lloyd relaxation, when animated gives the pattern an organic fluid appearance. Originally put together in processing, the computational bottlenecks convinced me to lean open frameworks and port my piece to C++.

More information: <https://rupertqmoore.wixsite.com/portfolio/copy-of-traderillo-service-design>



3D Terrain Generation, 2016 (One month project)

My 3D Terrain Generator is an adaptation of Mewo2's fantastic map generation code to be visualised in 3D. The project was designed to be used with an Arduino based controller initially, but I've used datGUI to emulate the functionality. initially, I was planning on writing the project in processing, but after having trouble porting Mewo2's javascript code I instead decided to stick with using javascript, p5.js, three.js, and a few other libraries to accomplish the same result

More information: <https://rupertqmoore.wixsite.com/portfolio/copy-of-voronoi-music-visualiser>

