

Lloyd Richards Portfolio 2019

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mimirHome

Examples of UX /UI design for a product that examines environmental information. Several data visualizations from real world data that help the user to understand patterns and trends.

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Food Forest

Project started in 2015 that uses data and careful implementation to create a self sufficient ecosystem. Data visualizations used for both design and client reporting

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Coming Soon Visualization

Project as part of my time at Interactive Things, creating print data visualizations for a local restaurant that emphasised the cuisine and our companies specialty in data visualization.

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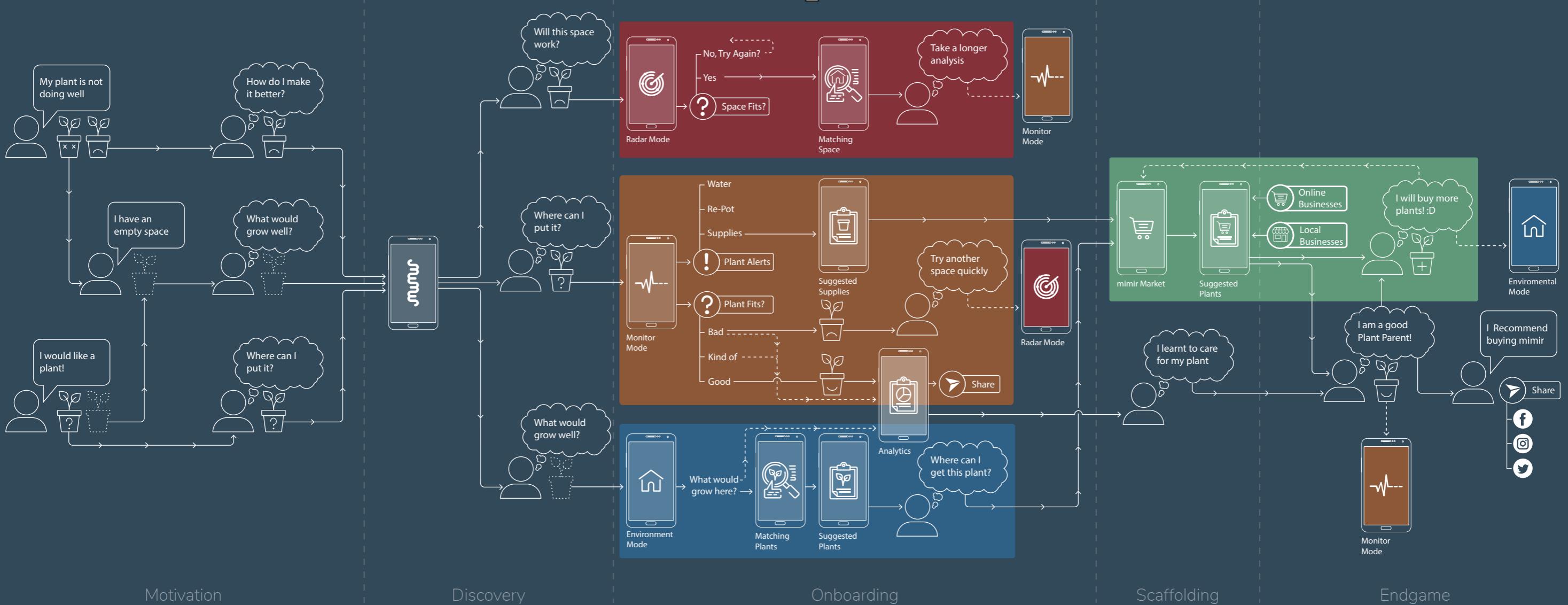
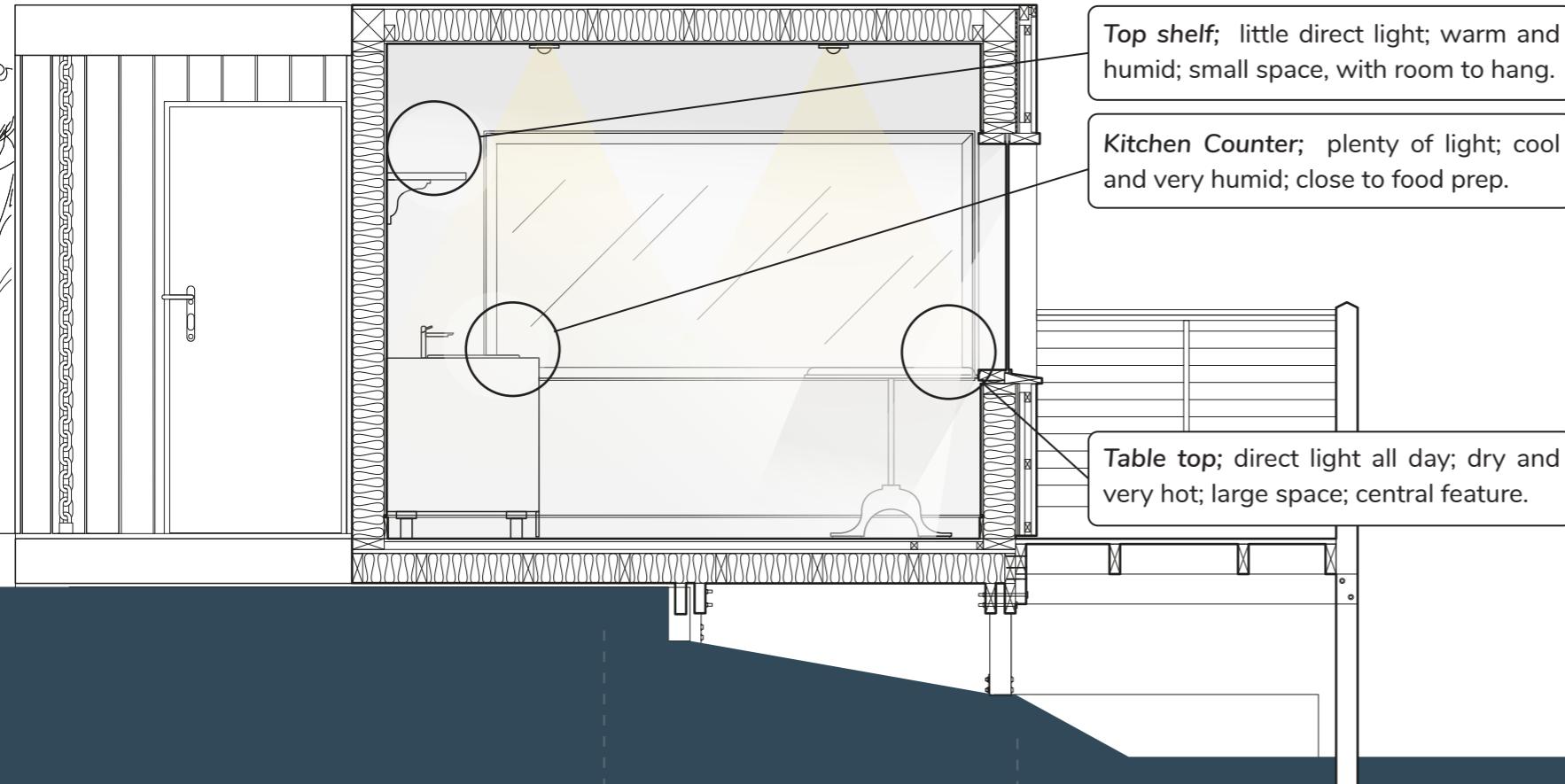
Interactive Things NYC

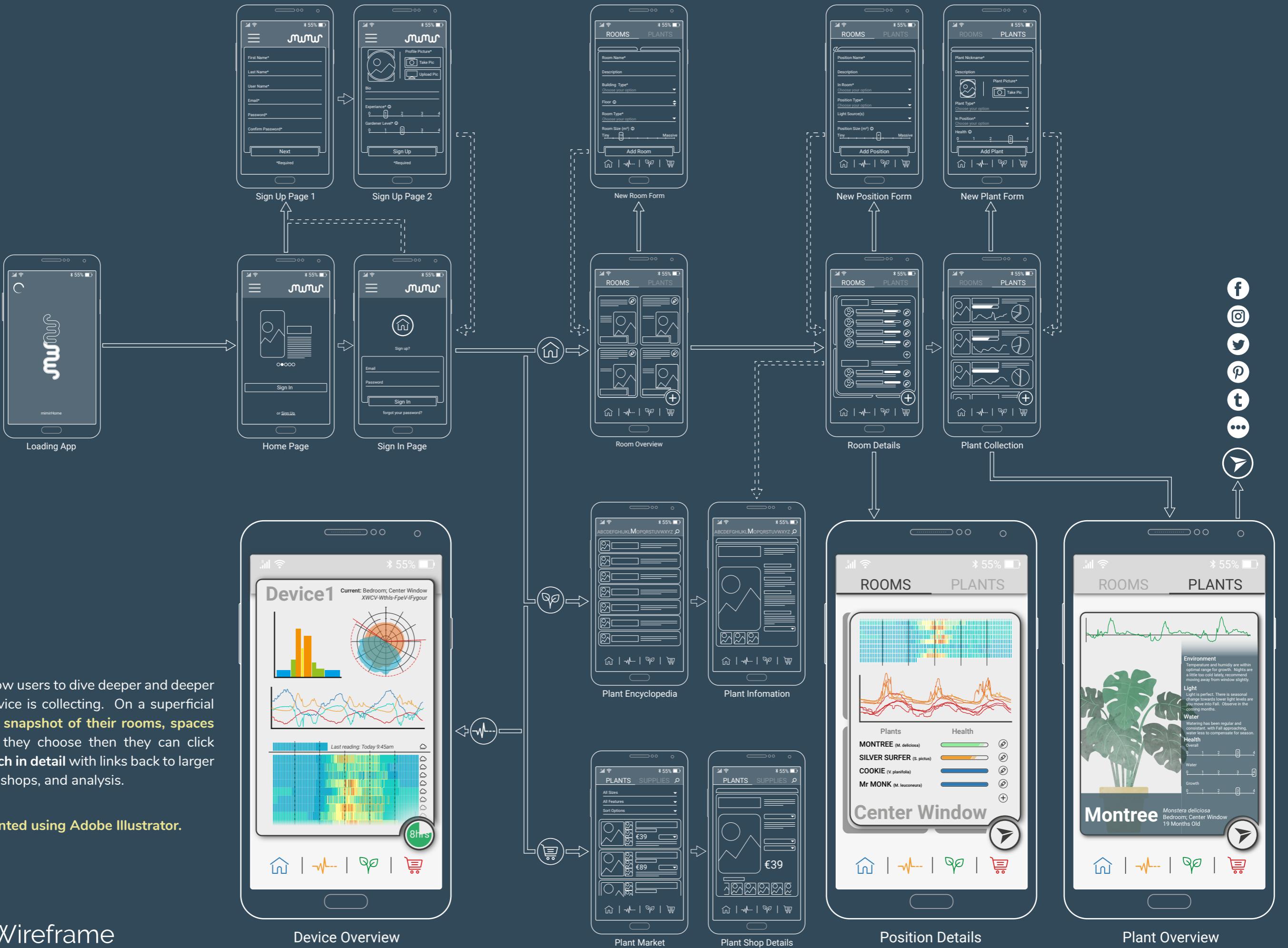
A farewell card for one of the partners turned into a data visualization project on examining the connection between Switzerland and New York City. Focusing on bring a sense of scale and relativity between each place.



mimirHome

What kind of house plant should I get?

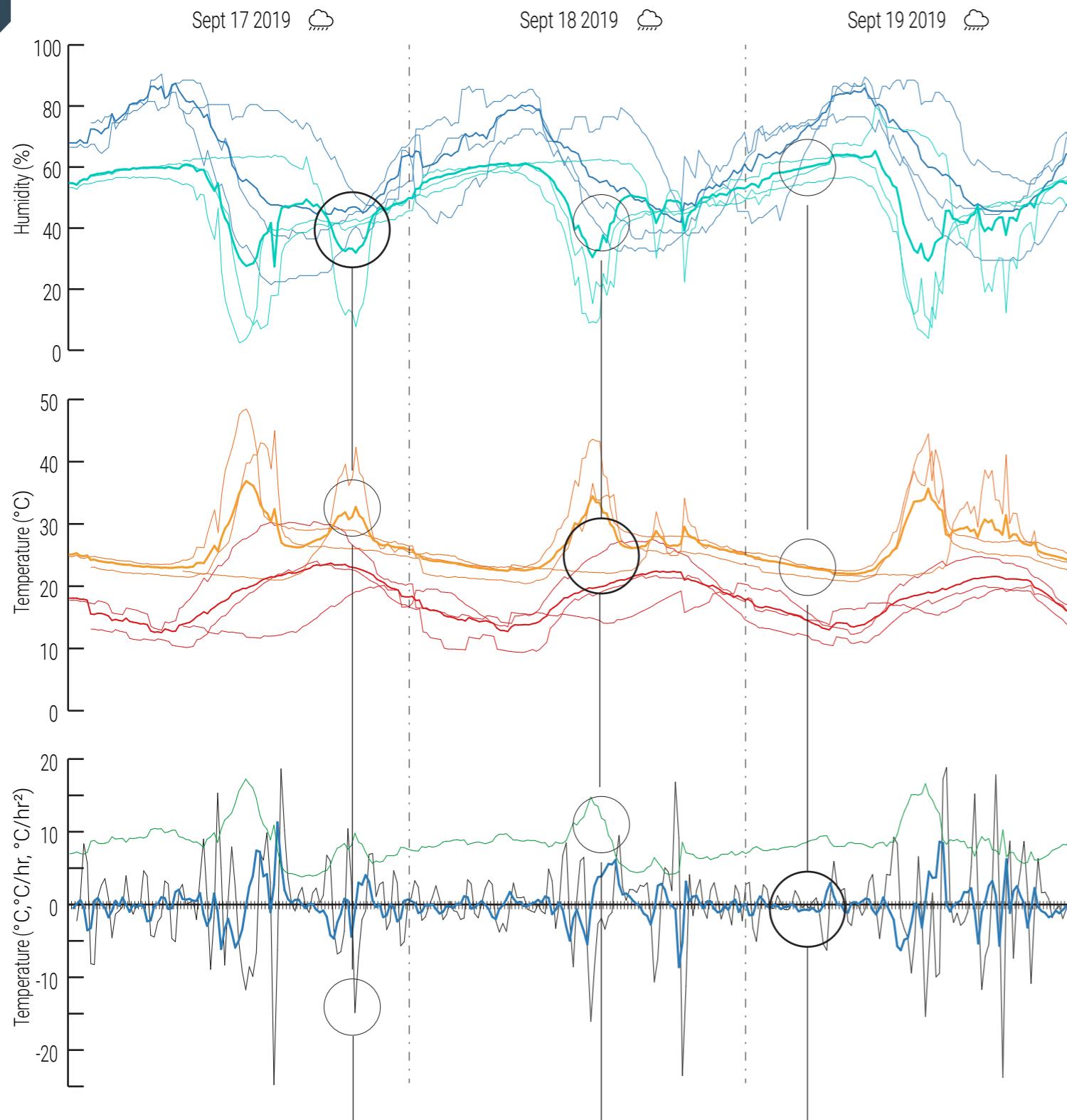




The app works to allow users to dive deeper and deeper into the data the device is collecting. On a superficial level they **can see a snapshot of their rooms, spaces and plants**. But if they choose then they can click further to **explore each in detail** with links back to larger databases of plants, shops, and analysis.

Designed and presented using Adobe Illustrator.

mimirApp Wireframe



20:45 !

25.4 °C	56.7%	214 lux
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Unusually large drop in humidity. At the same time there is small peak in temperatures resulting in a quick deceleration as temperatures normalize. Possible causes include closing of a window, or turning on of heating system.

13:15 ?

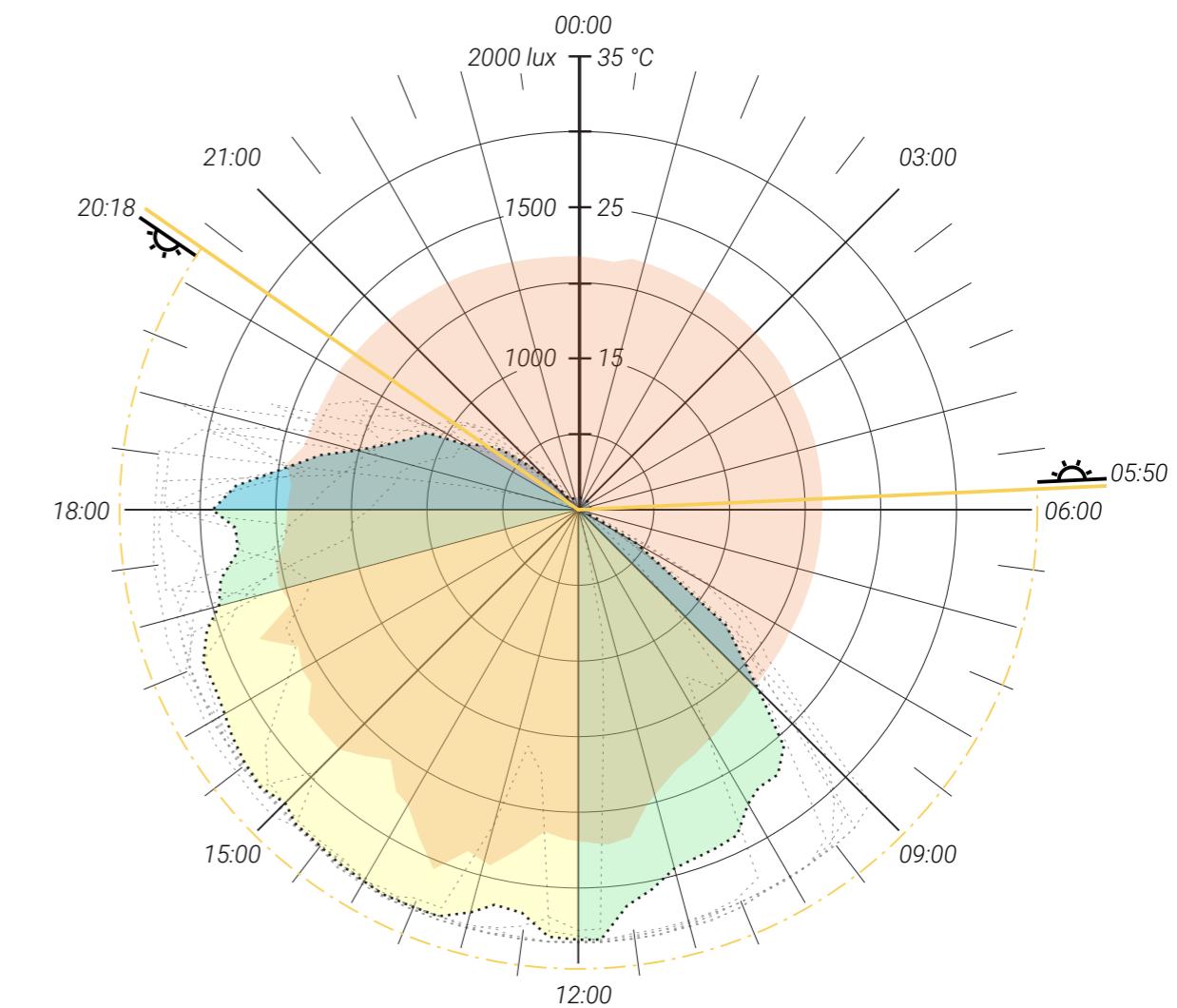
32.1 °C	38.6%	1630 lux
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Large difference between indoor and outdoor temperatures. Humidity drops sharply before bouncing back to outdoor levels. As this occurs regularly, possible causes could be increased sunlight or a heating system on timer.

04:00

22.3 °C	62.6%	11 lux
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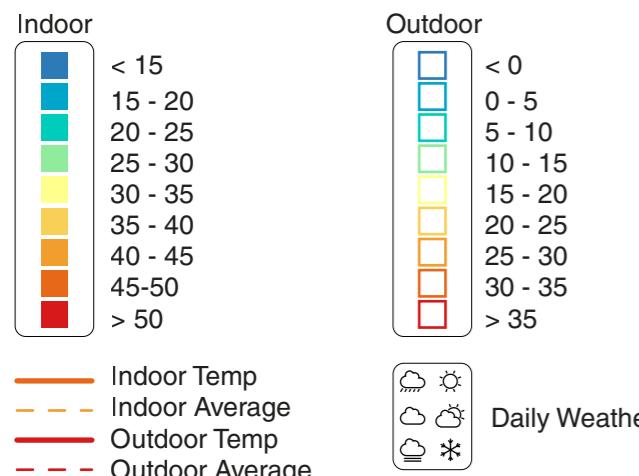
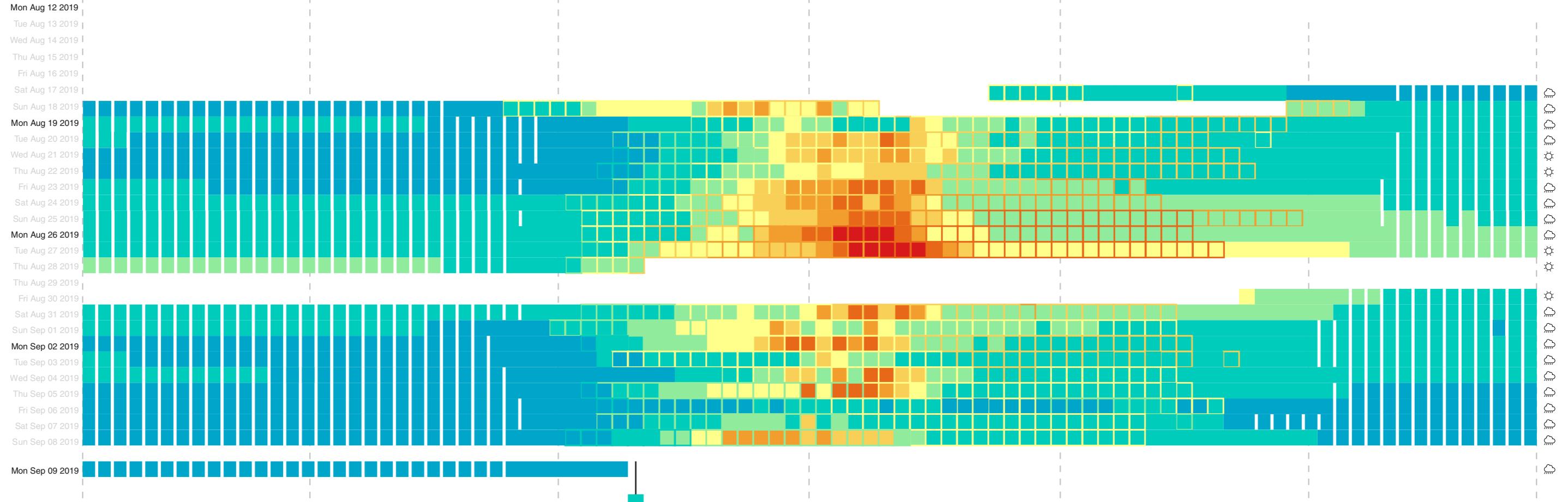
Stable indoor temperatures with little fluctuation for several hours. Humidity and temperature rise with similar coefficients to outdoor temperatures. Suggests little activity in the house with very few interferences to the building envelope.



- Outdoor Humidity Average
- Outdoor Humidity Data
- Indoor Humidity Average
- Indoor Humidity Data
- Outdoor Temperature Average
- Outdoor Temperature Data
- Indoor Temperature Average
- Indoor Temperature Data
- Temperature Difference
- Temperature Velocity
- Temperature Acceleration
- Full Sun
- Partial Shade
- Shade
- Light Average
- Light Data
- Day Time
- Sunrise
- Sunset

mimirHead Analysis

mimirHome Visualization



While a line graph is a conventional way of understanding the environmental data we were collecting, I wanted something more intuitive to **show the relationships between days**. Creating a sort of heat map, I laid out the data in rows to represent each day and colour coded the fill and stroke to show indoor and outdoor condition.

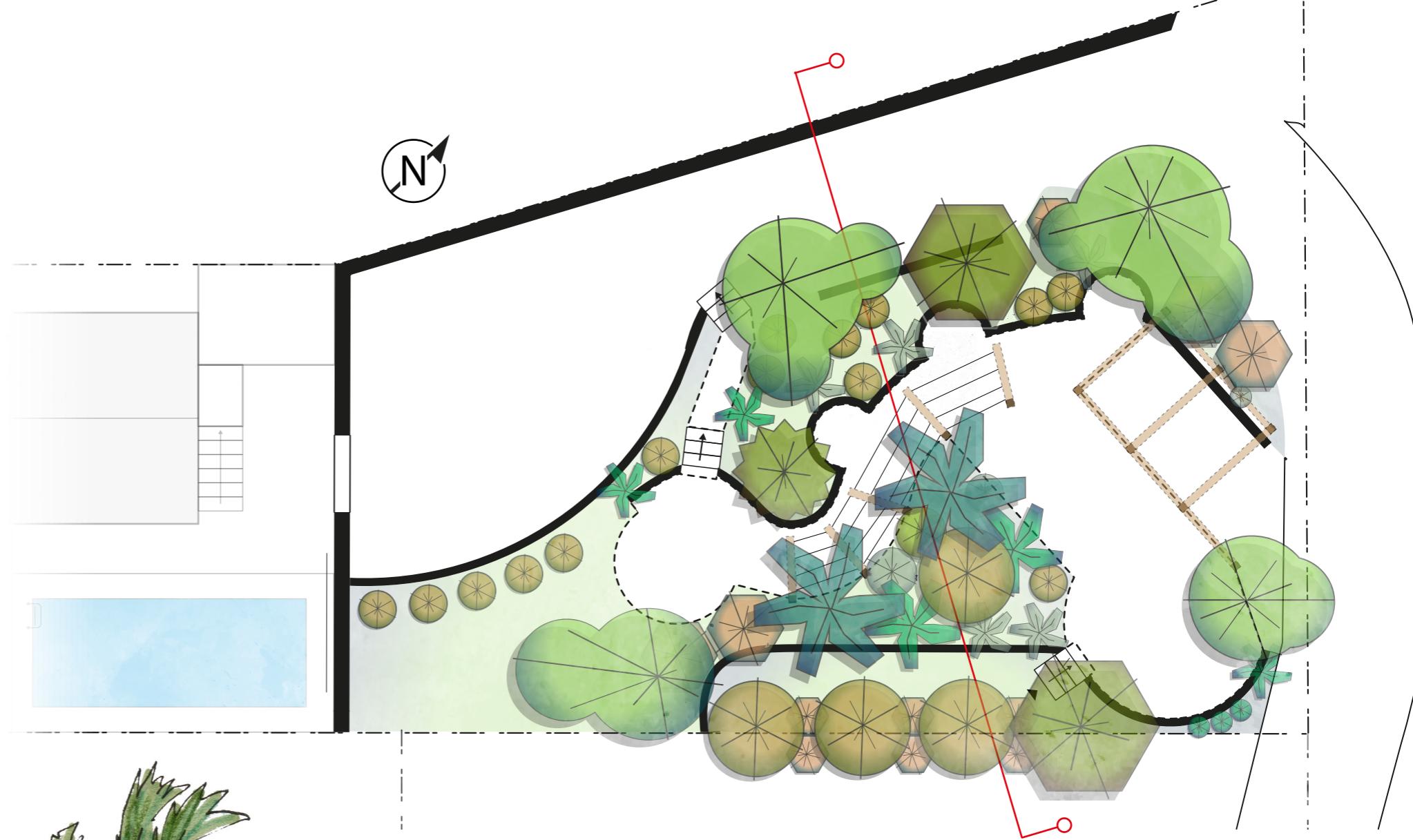
The data was downloaded from our server as a JSON object that could be read by a piece of **Javascript (P5.js)** I had written. I can quickly update the data to **show the reading in real-time or explore older data** to understand the changes experienced by the space

Food Forest

How to grow a forest in your garden?

In 2015 I created a Food Forest for a client in Spain. They wanted a low maintenance, yet sustainable garden for their property so using system and regenerative design, **I designed and implemented a garden that would become a full forest ecosystem.**

Focusing on plant data and ecological system thinking, **I reshape the ecosystem of the garden to allow for a higher diversity of plants.** Reforming the slope allowed for more water retention that provided water for larger species who would help shelter an understory of productive plants.



2015

2020

2025

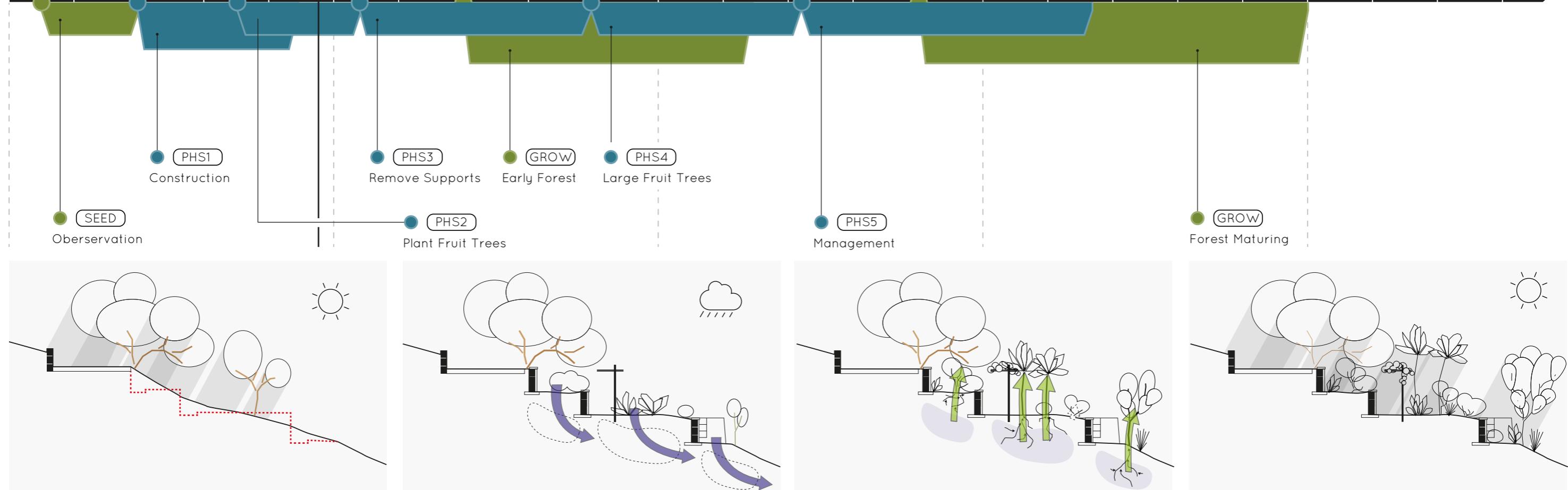
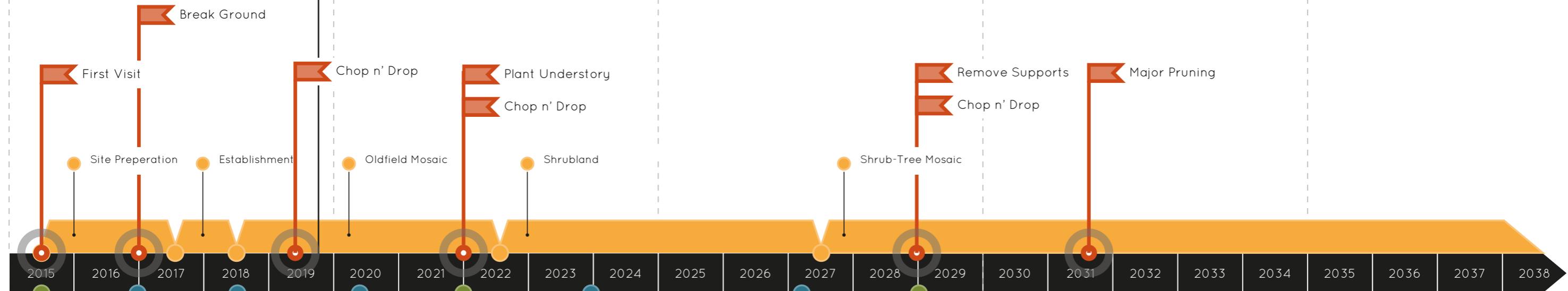
2030

2035

Currently

Each phase of the project is designed to establish, implement and develop the ecosystem of the garden towards an established forest. This is crucially measured by the garden being able to sustain nutrient cycling and moisture retention.

For the first few years the site development focused on retaining more water during the rainy season through earth works and increased vegetation. As plants grew larger, they provided needed shade for more tropical species that have a quicker nutrient take up.



Planting Visualization

One of the key principles behind Food Forest design is that you start with a lot of **Support Species that work hard to build soil**, enrich nutrients, and provide habitat for beneficial organisms. Productive Species are then inter-planted with the Support as the site improves. As Support Species age, they are chopped out (Chop n Drop), providing room for the established Productive Species as well as adding further nutrients to the soil.

When planning a planting schedule across multiple phases it was important to know when certain species would be nearing the end of their life and when Productive Species will need some more room to grow. Coding this information into data visualization was important for both planning as well as conveying to the client the rhythm of the garden.

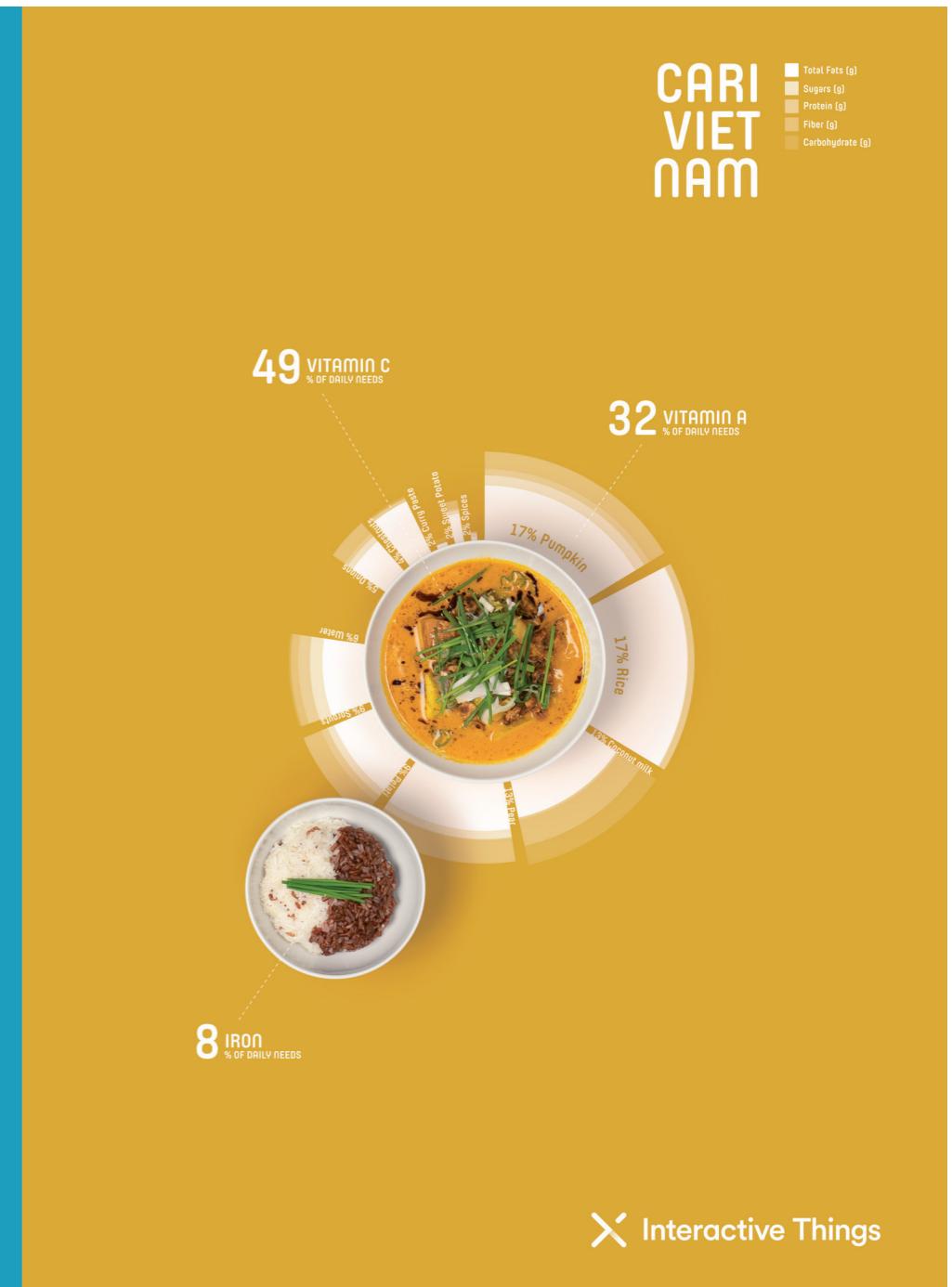
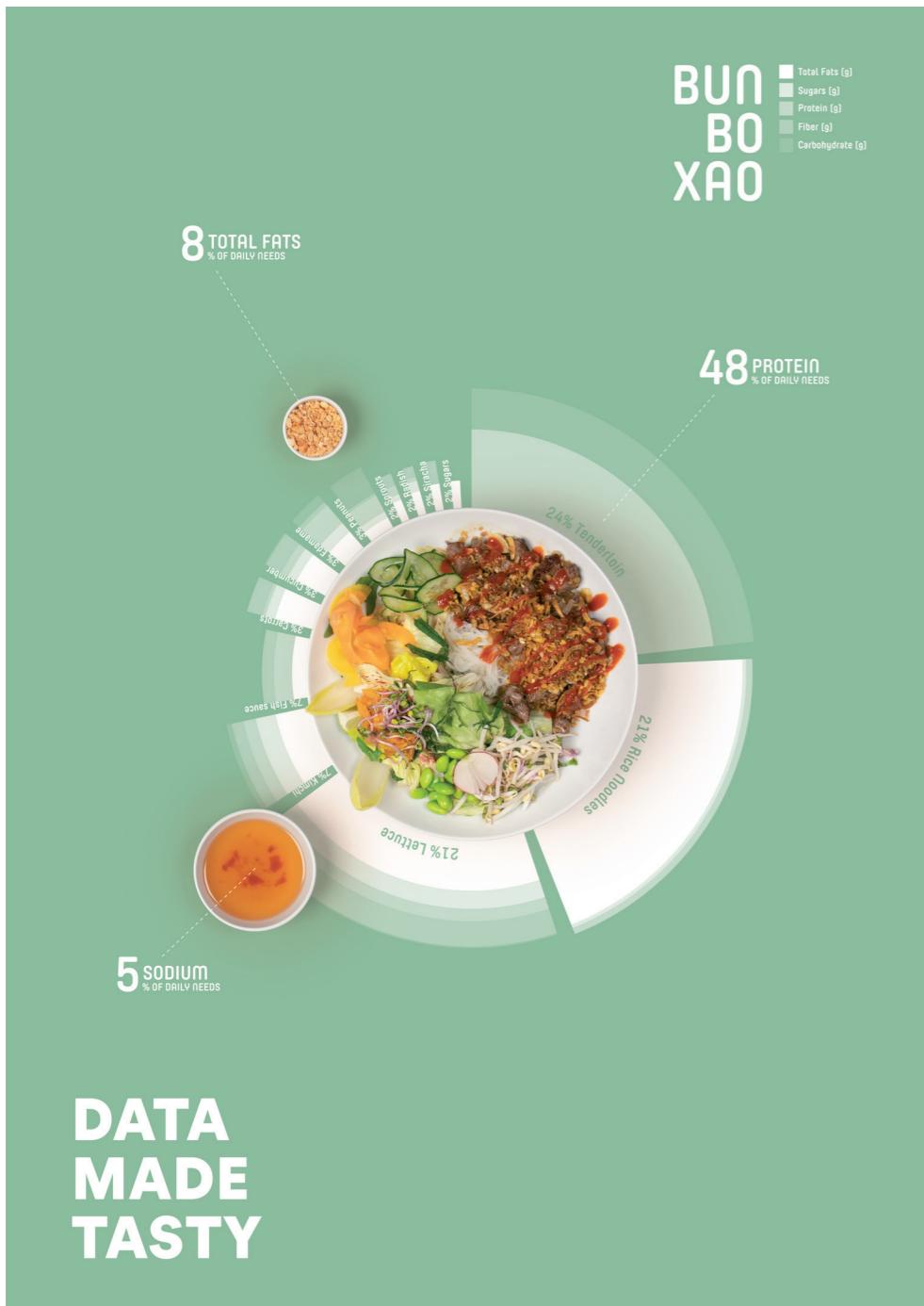
Using excel charts of data, this radial bar graph was **coded in Javascript (P5.js)** to show planting and chopping schedules. The colours of the bars represent the various sizes of plants with T'd ends to indicate when plants needed to be cut out.



Master Plant Palette

One of the most important parts of this project and a critical factor in its success has been the organization of a plant database that can be quickly read, filtered and customized for various design steps. This information needed to be displayed not only as technical reference for myself but also part of the main documentation for the client so that they could explore the data and understand what was in their new garden.

Several other projects in the area have used the same Planting Palette or expanded for different uses, so **keeping the database up to date has been a vital part of design process.**



Coming Soon: Data Visualization

Working with Annina Walker (Designer) and Christian Siegrist (Project Lead), we collaborated our skills to producing three large print data visualizations for a local vietnamese restaurnt. I worked on data collection and ideation to find a form that would be visually appealing for the restaurant as well as demonstrating of our company's value proposition. Through research and communication with the restaurant owner we were able to articulate the nutritional breakdown of their three most popular dishes.

Along with developing the data visualization, we also had to collect visual assets for the final product. For this, I organized a photoshoot at the restaurant to capture the pictures of the dishes at a high enough quality to be printed at B0. www.interactivethings.com/coming-soon-our-process

Interactive Things NYC

As a farewell card for one of the partners that was moving from Zurich to New York City, I was asked to **design a data visualization** for his farewell card. I researched and ideated several variations and consulted with our design team members on something appropriate. I wanted to create a visual link between New York and Switzerland as a way to connect the two.

The end result took the silhouettes of three of the most famous mountains in the Swiss Alps and compared them to scale to the Presidential Range on the Appalachian Trail as well to the NYC skyline. The relationship between their size creates an interesting perspective for someone living in a city, especially a city that you can't see the mountains from.

