ECM2434 Group 4

User Interface and Experience

UI/UX Design for Green Master

Group 4: Green Master

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1 Introduction

1.1 Overview

The following document contains an extensive deep dive into the design choices of the app, and how they relate to the intended user experience. It also illustrates the technicals behind the design guidelines to help you better understand the code from a technical aspect, making it easier for adapting or taking this project further. Additionally, included are design choices for the evolution of the app post the final prototype pitch.

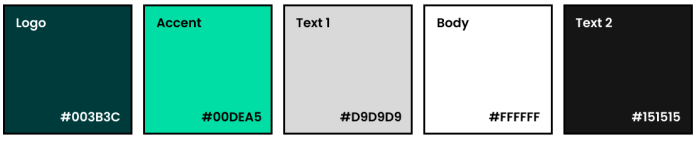
2 UI Design and User Experience

2.1 Key aims

When designing the UI we wanted to have three crucial principles that guided us, and that was that the app should look and feel **elegant, efficient and effective**. The design had to be aesthetically pleasing to initially pull users and then the experience had to be streamlined and flawless to keep a hold of users.

2.2 Intuitive Design

It was important that the design of the app made it so users could easily pick up the functionalities and not struggle with navigating through the app.
The colour scheme of the app is very minimal and simple, to not distract the user from the app. We have taken the two green colours from the Exeter logo, as it allows us to show that the app is for Exeter students and link with the Exeter brand image, as well as gives a sense of sustainability as green is closely linked to this. This promotes a positive impact for Exeter with the positive impact of the app and
our ethos.



The UI can be picked up by the user very easily; the menu is visible and we have on-screen prompts to direct the user. Please read **3.1** and **3.2** of this document to understand the user journey as this further explains this aspect.

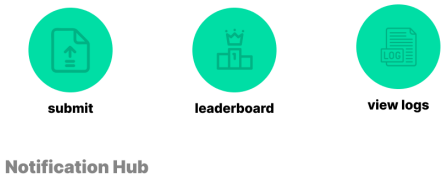


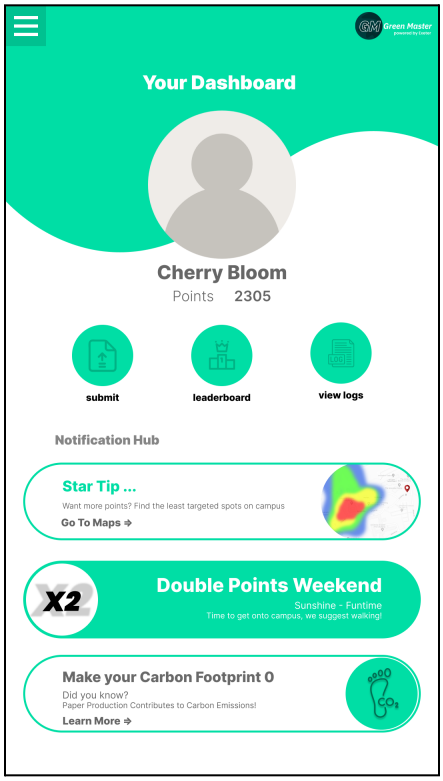
Figure 1: dashboard buttons

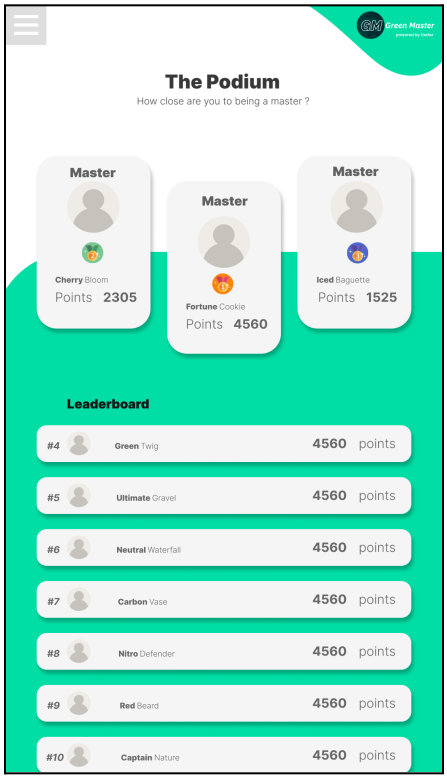
All user input fields are clearly labelled, and buttons have icons as well as sub-labels so users know exactly what they can do with them. For example figure 2 shows the dashboard buttons with intuitive icons and clear labels.

2.3 empathy integration for user experience

Empathy is a key emotion, that is hard to integrate into the user experience when designing an app, however, we achieved this by really thinking about how we can keep users engaged. Paired with our intuitive design is a user incentive, which is also a key aspect of the gamification of our app. Users have the ability to compete with each other through the leaderboard.

Additionally, we have a notification centre on the dashboard that has prompts for players. This gives them goals, and tips and makes the experience a bit more hand-holding, especially for new users. This also helps to ensure players use the app as they have things to complete.





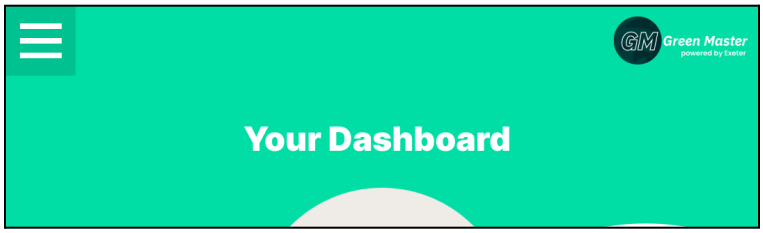
Each page has a tagline under the heading, an example being on the leaderboard page it says “how close are you to being a master.” This helps to add less of a boundary between players and the app as they are more welcomed.

3 User Interface Walkthrough

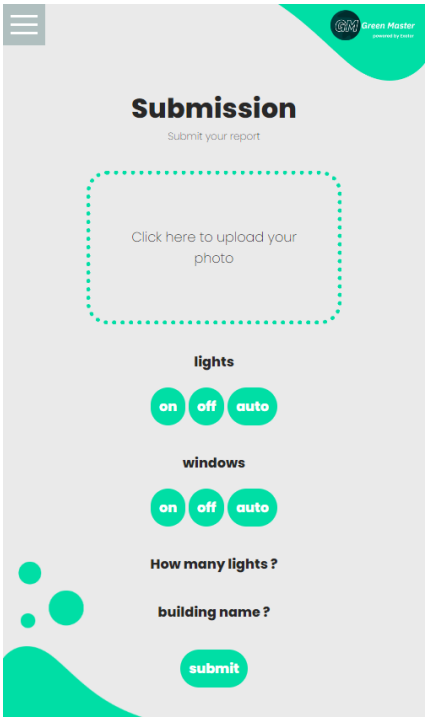
3.1 main user journey

At a basic level the key aspects of our app are the sign-in/signup and the submission page. We will explain the whole UI shortly however this is the core of the app. When the user comes to the app they are greeted by a welcome screen and told to sign in or sign up, as illustrated by the image below. This is important from the user's perspective as this will convert people that land on the app into new users. Additionally, by giving directions to the user in a friendly manner, they know what to do and this streamlines their experience.

Each page has a hamburger menu at the top left corner, which makes it easy to see all the pages in the app. By clicking or tapping on the menu, the menu then fills the screen with an overlay and headings to each page.



The player can then click or tap on the headings (submission) which will direct them to a new page where they can submit their report, the submission page is clearly laid out to make it easy for users to know what to do. The user can then click or tap to upload a picture, and when a picture successfully gets uploaded, they can see it in the box with a thumbnail. the user can then click or tap the toggles and input data into the box field, by clicking or tapping to bring the keyboard up. Once all the information has been inputted the user can then click or tap the submit button to upload their full report.



3.2 all pages

The app, as a whole, has 5 core pages

Welcome: Explained above, allows the user to sign up or sign in. For sign up there as fields that the users can click or tap in and type the required info. We have also implemented a feature that only allows users with an Exeter email address to sign up to reduce the chances of non-Exeter people being a part of the experience.

Dashboard: To get to the dashboard the user clicks the menu and then the link for the dashboard section. Here the user can see their points, some quick links to the core pages and notifications for each player that gives the daily tasks. This also helps them to see what they need to do. This allows players to be more active as they will have a goal to do, rather than use the app ad-hoc. The dashboard has 3 buttons that are clearly labelled, the user can click or tap each button which will direct them to the respective page. The 3 linked pages as the submission page, the leaderboard and the submission logs (a feature we hope to integrate in the future, see **appendix 1**).

Leaderboard: the leaderboard is an important feature for the user experience. Design-wise we implemented a podium that shows the top 3 players based on their points. Below these 3 cards is a list of all the other players and their ranks. We have made it so there is a limit to how many players can be on the leaderboards as this incentivises users to gain points to get some recognition. The users can also filter the leaderboards to see a ranking of the buildings on the Exeter campus based on co2 emissions. This can be done by clicking or tapping the link denoted by “click here”.

Submission: As explained in **3.1**, the submission page has a simple form that the user can fill out by tapping on the prompts to input information and upload a photo.

About: this page has no actionable items. This page mainly has two function experience wise which is to inform users about our environmental support and give learning resources for users. This gives users a sense of purpose so they have a bigger agenda to use our app as it is solely non-intrinsic.

4 User Interface Standards

4.1 Styling

The user interface implements a grid form for all components on the page. This makes the pages responsive to different mobile screen sizes and gives a nice structure for adding new elements. The HTML/CSS is laid out to incorporate this in the most effective way by containerising elements. The figure to the left explains this visually, however essentially the page is divided into sections and each element, they have an outer container that can be organised into the grid.

The CSS structure follows the order:

- Wrappers: This is the grid for the page, denoting attributes such as column and row dimensions. Each page has an individual wrapper, identifiable by the prefix of the wrapper class. For example ".d-mainwrapper" is the main wrapper for the dashboard page.
- common elements: The classes are for elements in the app that are non-page-specific, such as the menu, which needs to be consistent across all pages.
- page-specific elements: these are all the classes that are specific to a page. The CSS commenting divides all these elements with a heading comment open plus the page name and a footer comment of closed plus the page name. This helps to identify easier where the page contents are in the styling.
- All text elements have a suffix of txt and all button elements have a suffix of btn
- All elements are containerised within their respective grids, which are denoted by the suffix Bx to represent box. This gives structure to the page so moving content only requires moving the containers rather than individual elements.

5. Data Validation

5.1 Submission Data

The core of our app is the submission page, as explained above, users are required to submit the following items as part of their report:

- A photo: This data type is an image and we have restricted it to be image files only
- Lights (on, off, auto): these are in dropdown menus that returns a string with a max length of 48

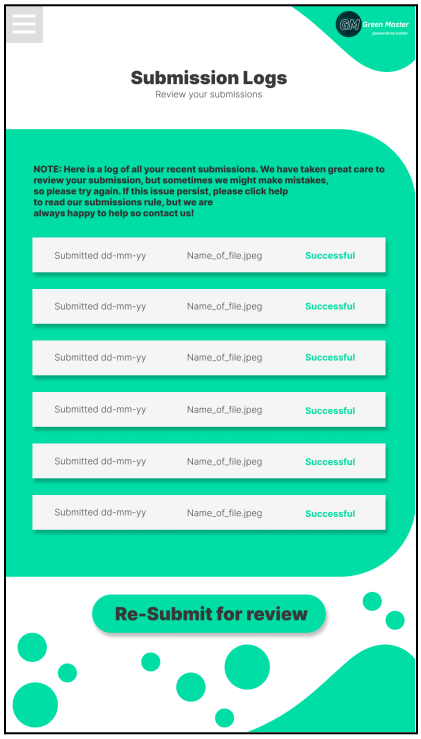
  these all follow the same dropdown menu that returns a string with a max length of 48

- Window (open, closed, auto)
- Building name:
- Room name

Appendix 1. Design Evolution

Thinking about our app, we came up with some ideas on how the project can be taken further and developed with some additional features to enhance the user experience.

Maps: We thought about integrating a map function within the app that allows players to see where they are on campus when doing their submissions. Additionally, the map would contain a heat overlay that could represent what areas on campus are being consistently targeted. This means that users can see what areas haven't been targeted yet and in return gain more points. This helps Exeter in ensuring that its sustainability guidelines are followed throughout campus and that the whole area is being looked after. To the right is an example of what this could look like.



Submission Logs: We also thought it would be good to have a dashboard for users to see a log of all their submissions. This would hold data such as when they submitted, what they submitted and whether it was successful or not. This helps to keep users in the chain as they can identify where their submission goes. Hence they can monitor the progress of their submission and not feel lost if they don't gain points and have no idea why. To the right is an example of what this could look like.