Google UX Design Professional Certificate

"Design a responsive cross-platform service to help local government affected by rising sea levels"

(Dedicated App and Responsive Website)

Case Study Project: CATCH*IT* (Councils Adapting To Coastal Hazards Interactive *Tool)*

Anna Gralton

January 2023

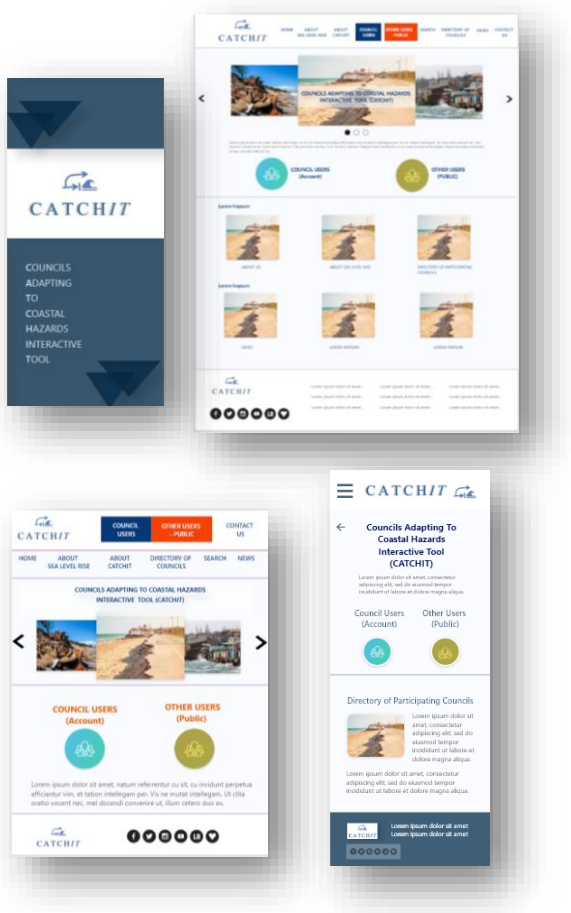
Google

Project Overview

CATCHIT
Councils Adapting To Coastal Hazards Interactive Tool

The Product:

As part of the Google UX Design Professional Certificate, I designed the *Councils Adapting To Coastal Hazards Interaction Tool* (CATCH*IT*). The brief was to design a service to help local government affected by rising sea levels in the form of a dedicated app and responsive website (desktop, tablet and mobile). The design is an interactive tool, whereby: A. Councils are able to input and edit information within a decision flowchart (i.e. exposure, background information, rationale and actions / responses taken to sea level rise adaptation) and B. Any member of the public is able to view the Council's decision-making process at any time. Councils are provided with a secure account, while local residents – such as at-risk property owners, consultants and state and federal government – are provided with read-only transparency and credible information. The result is an increase in Council's credibility and an informed public, particularly related stakeholders – thereby contributing to increased democracy in the form of discourse, debates and future decision making.



Project Duration:

Dec 2022 – Jan 2023

Tool:

Adobe Xd

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Project Overview

CATCHIT
Councils Adapting To Coastal Hazards Interactive Tool

The Problem:

The credibility of local government is often called into question. *"How on earth did they make that decision?", "Why haven't they acted on that issue?", How on earth did they come up with that response?"*. CATCH*IT* can overcome this problem in an interactive flowchart tool. A transferable tool that could be used for any highly-contensious decision-making process, Councils can put their position across, defend their actions, and demonstrate the rationale behind such decisions. All stakeholders can publicly view the flowchart, inspecting key aspects of the decision-making process. It offers transparency, credibility and informs public, ultimately leading to an improved and democratic decision-making process.

The Goal:

Develop a responsive website and dedicated app for local government councils that assists in overcoming mistrust of the decision-making processes surrounding highly-contensious issues, such as actions / responses to sea level rise, and to simultaneously promote the sharing and transparency of information.

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Project Overview

CATCHIT
Councils Adapting To Coastal Hazards Interactive Tool

My role:

UX researcher, UX designer, Information Architect, UX writer

Responsibilities:

Wireframe development (paper and digital), Prototype development (low fidelity and high-fidelity), User research, Competitor research, Secondary research and analysis.

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Understanding the user

- Secondary research
- User research
- Personas
- Problem statements
- Competitive Audit
- Ideation

User research: Summary

As this project involved developing a service to help local government affected by rising sea levels, I was particularly interested in digitizing a decision-making tool surrounding coastal hazards – whereby the decisions, rationale and resulting actions could be made publicly available. As such, my interviews were focused upon user experience and the decision-making flowchart I wished to digitize.

Interview participants noted that the on-paper Decision Marking flowchart (right) was “confusing”, “cluttered”, “unhelpful”, “hard to read”, “poorly laid out”, “oriented to discouraging people from pursuing it further”, and “misleading”. It was obvious that the inadequate presentation of such data promotes distrust, frustration and annoyance. The digital version would have to do much better and would include the interview findings in its design.

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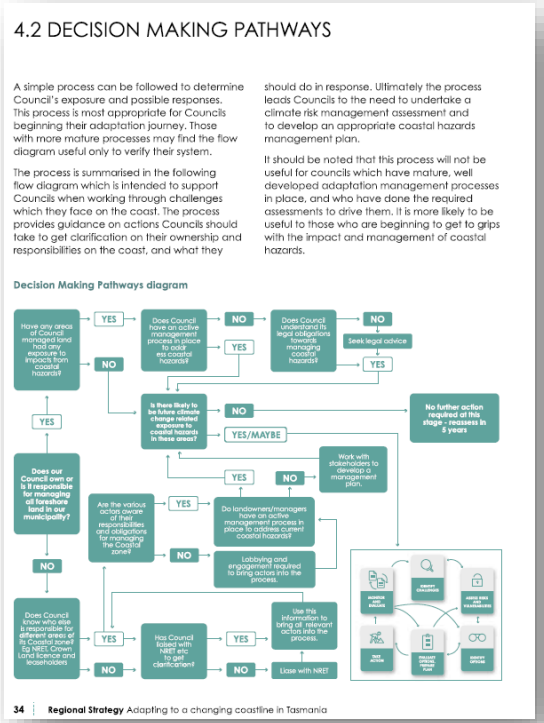

4.2 DECISION MAKING PATHWAYS

A simple process can be followed to determine Council's exposure and possible responses. This process is most appropriate for Councils beginning their adaptation journey. Those with more mature processes may find the flow diagram useful only to verify their system.

The process is summarised in the following flow diagram which is intended to support Councils when working through challenges which they face on the coast. The process provides guidance on actions Councils should take to get clarification on their ownership and responsibilities on the coast, and what they should do in response. Ultimately the process leads Councils to the need to undertake a climate risk management assessment and to develop an appropriate coastal hazards management plan.

It should be noted that this process will not be useful for councils which have mature, well developed adaptation management processes in place, and who have done the required assessments to drive them. It is more likely to be useful to those who are beginning to get to grips with the impact and management of coastal hazards.

Decision Making Pathways diagram

34 | Regional Strategy Adapting to a changing coastline in Tasmania

*Taken from: Southern Tasmanian Councils Authority (2022) https://www.brighton.tas.gov.au/wp-content/uploads/2022/08/Regional-Strategy-Adapting-to-a-changing-coastline-in-Tasmania-Aug-2022.pdf

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Persona: **Lachelle**

Problem statement:

Lachelle is a Social Worker who lives in a tight-knit community where property owners, including herself and businesses, are at-risk due to sea level rises. She is frustrated at how the Council is making decisions in terms of their responses / actions to sea level rises. She finds the literature that Council provides to community members is complex and confusing. Also, as a climate activist, she wants to share this information with fellow community members being impacted by sea level rises and wants to come up with collective ideas, presenting these to Council and participating in public consultation. However, not being able to understand how Council makes the decisions they do is preventing her and the community from offering any sort of layperson/ affected stakeholder analysis, input or recommendations.

Name: Lachelle

Age: 54
Education: Masters (Social Work)
Hometown: Nutgrove Beach, Hobart
Family: Married, adult children
Occupation: Behaviour Therapist

Requires app as she is in the community a lot and talking to them about the issue – requires mobility and ease of use.

"I'm blessed to live in a great community, where my friends are my family, and we are always there for each another."

Goals

- Get Council to make the information – *specifically decision-making process around sea level rises* – transparent and accessible for everyone.
- Motivate Council to do more when it comes to sea level rise responses.
- Encourage the community to engage in order to motivate Council to act on sea level rise responses.

Frustrations

- Frustration with Council about inaction regarding at-risk properties due to sea level rises.
- Lack of transparency / information about how and why the Council is responding / not responding the way it is to sea level rises in the area.

For Lachelle, social networks. connections and community are everything. A trained social worker, she is a volunteer and climate campaigner. Now her children have flown the nest, she has time to dedicate to strenghtening her community. One of the groups she is involved in campaigns for action to stop rising sea levels. This is close to home as her house is currently threatened by rising sea levels. She becomes frustrated that every tier of government isn't doing enough to combat rising sea levels, but particularly her local Council. Her goals are to work within her community to rally her local Council to do more and provide transparency about what they are doing / not doing to adapt to rising sea levels.

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Persona: **Peter**

Problem statement:

Peter is an Engineering Consultant who focuses on sea level rise adaptation solutions for local government / Council. He has two small children. He is time-poor and requires quick access to quality information, such as decision-making frameworks in which the Councils operate / act, to provide the most effective solutions to his clients. His projects are often time-delayed due to not being able to access such information or if he can access this information, it is unnecessarily complex and confusing.

Name: Peter

Age: 33
Education: Degree - Engineering
Hometown: Sandy Bay, Hobart
Family: Married, 2 small children
Occupation: Engineering Consultant

Requires responsive website as needs to access on a range of devices while working in the office or at home.

"I've worked incredibly hard to get a name as a top consultant in the Hobart area … I would have to say my top peeve is when I don't have access to the critical information I need to perform my role at it's highest level"

Goals

- Complete Consultancy project on time and on budget.
- Ensure recommended solutions are based on factual information.
- Understand frameworks in which clients operate to provide most effective solutions.

Frustrations

- Lack of information
- Complicated information
- Confusing jargon / terminology

Peter has been an Engineering Consultant for three years. He works in the Environmental Engineering field – often focusing on sea level exposure and responses – and often wins contracts with local government. A signficant part of his projects include research about the local government he is working with. Solutions must be tailored to the specific Council and the decision-making frameworks in which they operate. In his consultancy role, he requires immediate access to quality information and becomes frustrated when this contextual information is lacking or is unnecessarily complicated or confusing.

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User Pain Points

1

Time-poor

Time-poor professional users who need easy-to-use, streamlined online experiences / tools to minimise the amount of time spent on tasks.

2

Lack of Transparency / Available Information

Difficult to find formal / official information on how Councils make / made their decisions in relation to action / responses to sea level rises.

3

Information Provided is Technical Language / Confusing Information

Sea level rises are directly impacting user's properties – homes or business premises. When they manage to locate information relating to responses / actions their local Council is undertaking, it is complex and confusing technical jargon.

4

Frustration with local Council and Decisions Being Made

Frustrated and angry that council is not doing enough or taking the right actions / responses to effectively adapt to rising sea levels in order to save their properties.

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Competitive Audit

As this service does not have competitors, an audit of similar interactive tools was undertaken to identify opportunities and poor practice that should be avoided.

Competitive audit	Competitive audit goal (more of a benchmarking / best practice audit as no competitors): Compare similar decision or information flowcharts that are interactive and convey maximum information with minimum design footprint.							
	General information							
	Competitor type (direct or indirect)	Location(s)	Product offering	Price ($ - $$$$)	Website (URL)	Business size (small, medium, large)	Target audience	Unique value proposition
Gartner Interactive Tool	N/A	Global	Use this map to understand the connections among business functions (neighborhoods), applications (tracks) and providers (stations) so you can easily mediate discussions between marketing and IT.	N/A	https://www.gartner.com/en/marketing/research/data-tools/transit-map	Large	Digital Marketers	Interactive Gartner Digital Marketing Transit Map
CoastAdapt	N/A	Australia	C-CADS is an iterative decision support process designed to support adaptation planning and decision-making about all climate change related risks on the Australian coast. It is consistent with coastal zone management and adaptation planning approaches used by Australian states and territories.	N/A	https://coastadapt.com.au/coastal-climate-adaptation-decision-support-c-cads	Medium	Decision makers, organisations and other stakeholders.	supports users to identify and overcome potential barriers to adaptation by getting organisational buy-in, communicating and engaging effectively with stakeholders and understanding financing options.
ClimateAdapt	N/A	EU	The aim of the Adaptation Support Tool (AST) is to assist policy makers and coordinators on the national level in developing, implementing, monitoring and evaluating climate change adaptation strategies and plans. The AST was developed as a practical guidance tool for national level actors for all steps needed to develop, implement, monitor and evaluate a national adaptation strategy. It also supports sub-national actors and trans-national actors to prepare for, develop, implement and monitor and evaluate adaptation strategies. It refers to relevant resources and dedicated tools in climate change adaptation (CCA).	N/A	https://climate-adapt.eea.europa.eu/en/knowledge/tools/adaptation-support-tool	Large	National level actors, Sub-national level actors, trans-national actors	In its design, the Adaptation Support Tool borrows from the UKCIP Adaptation Wizard and various risk assessment frameworks.

UX *(rated: needs work, okay, good, or outstanding)*								
First impressions		Interaction				Visual design	Content	
Desktop website experience	App or mobile website experience	Features	Accessibility	User flow	Navigation	Brand identity	Tone	Descriptiveness
Outstanding + Visually appealing; easy to navigate and use; easy to find informaiton; clean design	**N/A**	**Good** + Easy to understand categorisation - easy to see and read. Significant amount of information present in minimal footprint.	**Needs Work** + Easy to read font - only in English	**Good** + Easy to find information	**Outstanding** + Very Easy to navigate	**Outstanding** + Strong brand identify + Consistent color scheme and font	Formal	**Outstanding** + Short and to the point + Easy to follow
Good + Key information is present; easy to find information; uncluttered - Boring design	**Outstanding** + Highly responsive, easy to use	**Good** - intuitive, easy to read	**Needs Work** -Website only available in English + Easy to read font	**Good** + Easy to find information	**Outstanding** + Very Easy to navigate	**Needs work** - Feels like outdated design / not reflective of brand / developer's colours	Formal	**Good** + Key information is present
Good + easy to use; informative; intuitive - boring design; visually unappealing	**Outstanding** + Highly responsive, easy to use	**Good** + Intuitive and easy to read	**Needs Work** + Website only available + Easy to read font	**Good** + Easy to find information	**Outstanding** + Very Easy to navigate	**Good** - Design is in brand's colours	Formal	**Good** + Informative, education, shows value

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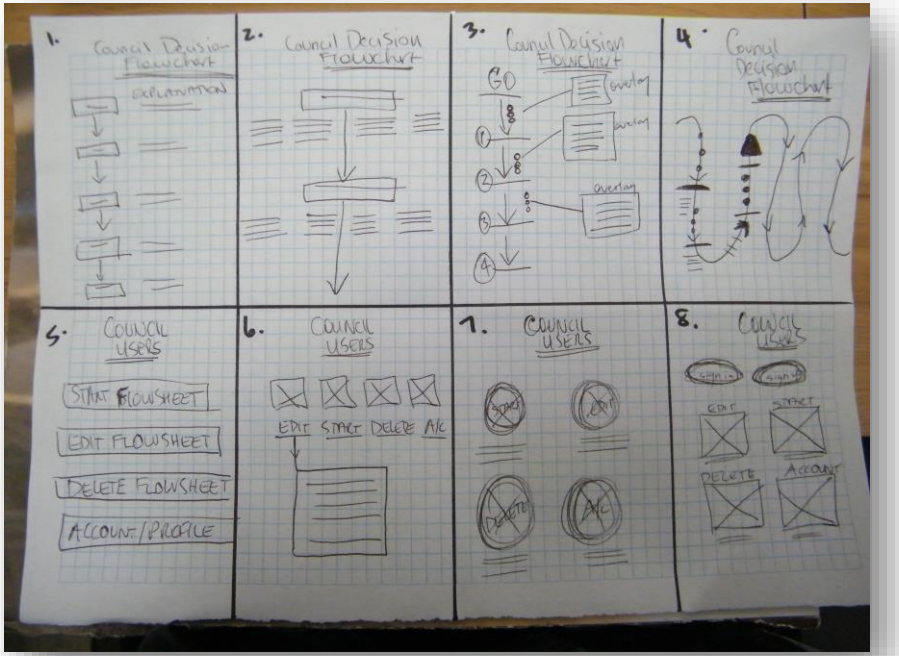
Ideation

I undertook a Crazy Eights exercise as part of the ideation process. This involved incorporating ideas / opportunities from the audit process into the design. The focus was on the Council Decision flowchart and the “Council Users” page.



Starting the design

- Paper wireframes
- Digital wireframes
- Low-fidelity prototype
- Usability studies

Paper Wireframes – CATCH*IT* Homescreen

The Home Screen was designed with simplicity in mind and to immediately direct the user to their journey.

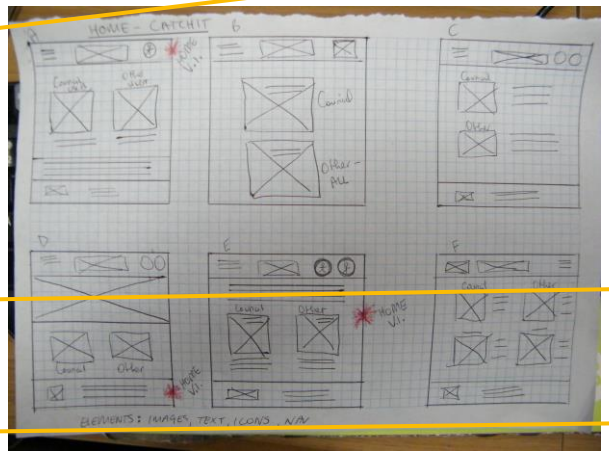
The two categories of users – Council and Other / Public is front and centre to ensure they immediately know how to move through the site.

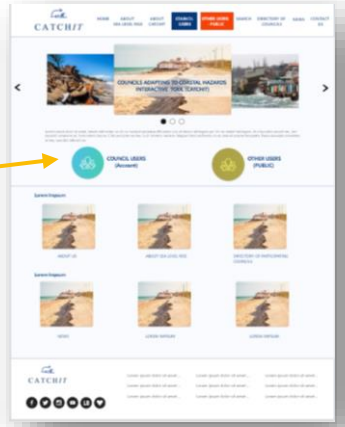
There is also another way for users to move through the site – with the two types of users being incorporated into different colour tabs in the navigation menu.

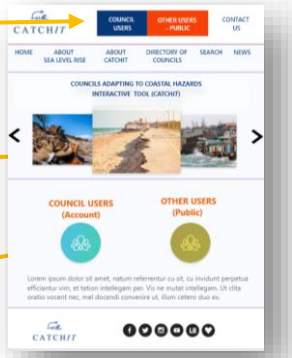
Visual imagery is used, along with the name of the product, to ensure users instantly understand the concept.

Simple tap gestures, large images and minimal text allow for an easy and intuitive user flow.

Cues, in the form of highly contrasted buttons, have been added to assist the two main users.







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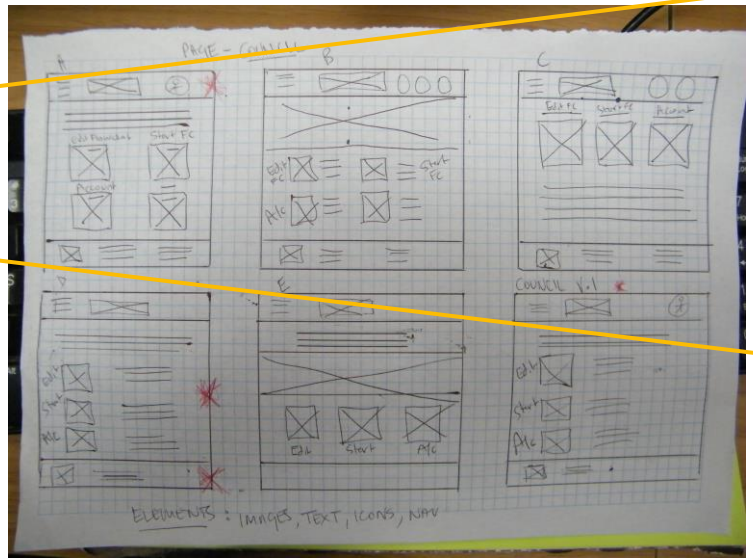
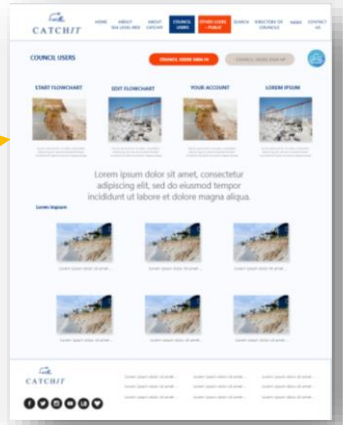
Paper Wireframes – CATCH*IT* "Council Users" Screen

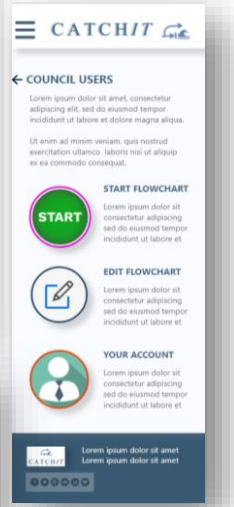
The "Council Users" page provides four core paths which users can take. All are located above the fold to ensure instant visibility.

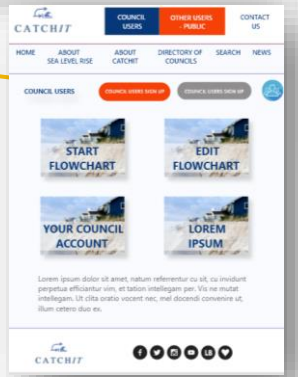
"Sign in" or "Sign up" is also located at the top of the page and in contrast colours to ensure instant recognition.

Simple tap gestures, large images and minimal text allow for an easy and intuitive user flow.









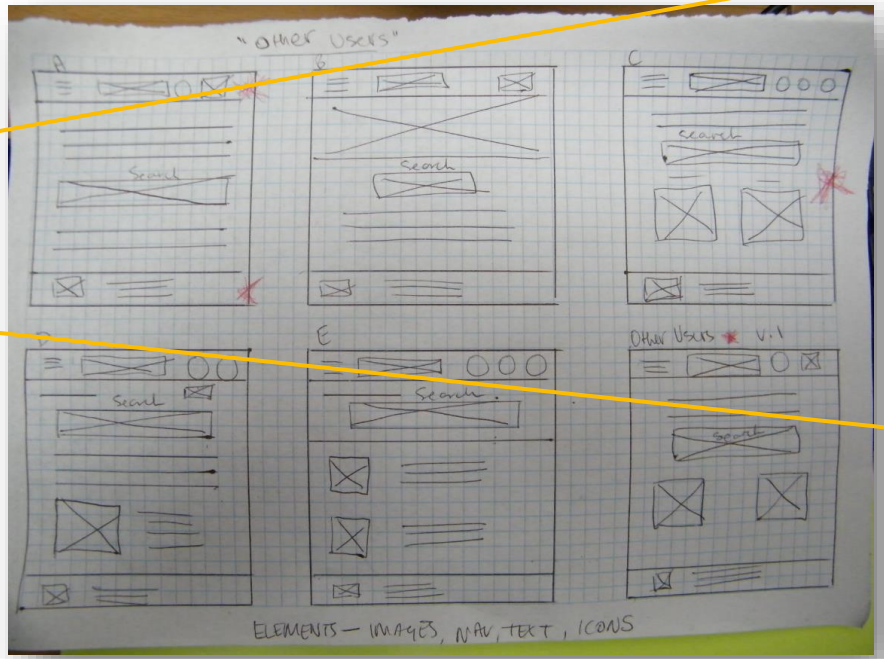
Google

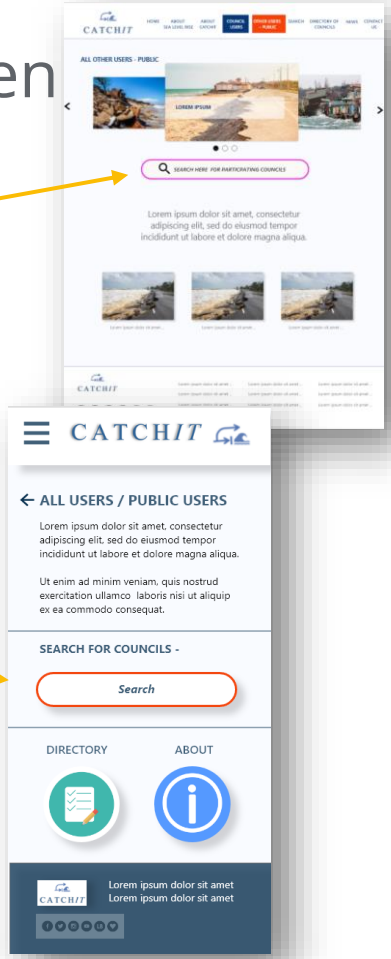
Paper Wireframes – CATCH*IT* "Other Users" Screen

The "Other Users" screen, which is simply a read-only version, provides the user with a search tool. This is all that is needed and indicates to the user that a search is required.

The search element is heavily contrasted to guide the user directly to it.

Large images and minimal text also ensure the search area is emphasized.





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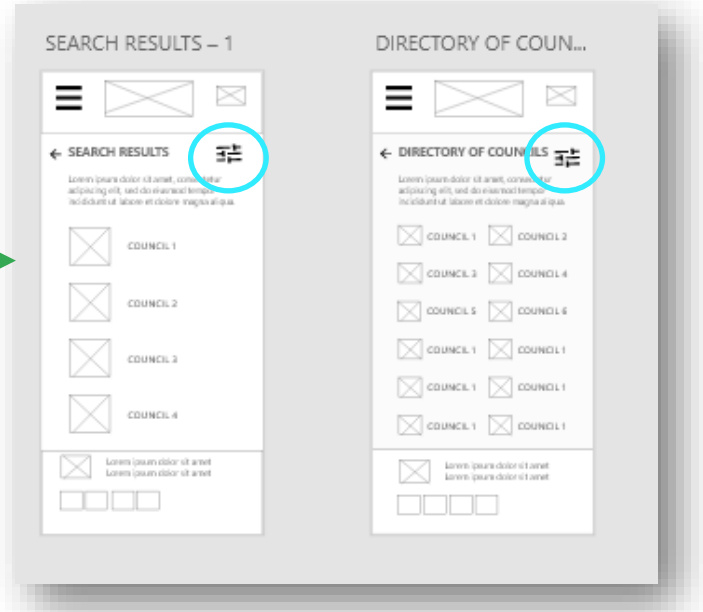
Digital Wireframes – CATCHIT Dedicate App (Pre- and Post- Usability Study)

Digital Wireframes – *Pre* - First Usability Study

Digital Wireframes – *Post* - First Usability Study



In the Usability Study conducted, users found the number of participating councils overwhelming and commented on how they were meant to browse. A filter element was added to the search results and directory of participating councils.

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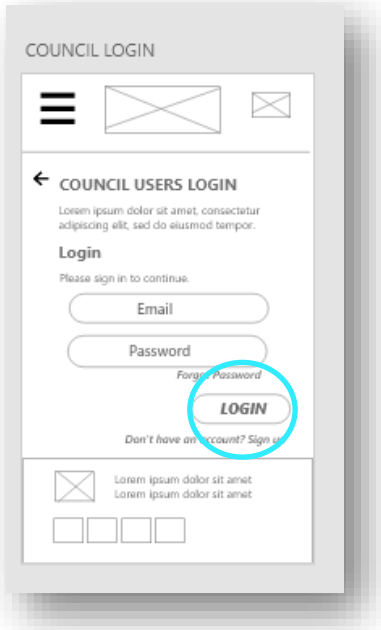
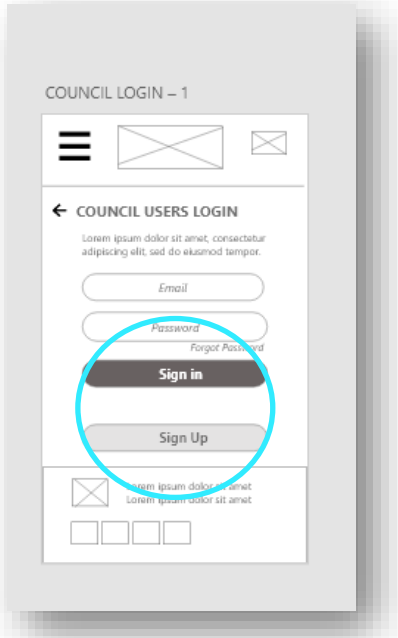
Digital Wireframes – CATCHIT Dedicated App (Pre- and Post- Usability Study)

Digital Wireframes – *Pre* - First Usability Study



Digital Wireframes – *Post* - First Usability Study



In the Usability Study conducted, users were confused with the sign in / sign in process. The redesign involved adding a contrasted “Sign in” and “Sign up” button to emphasise the features and removing the Login button.

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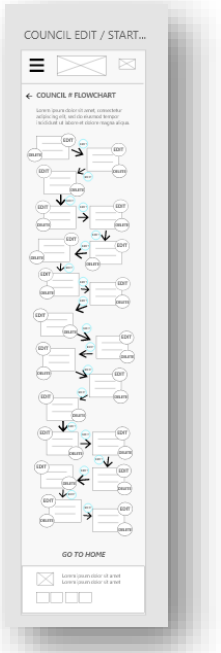
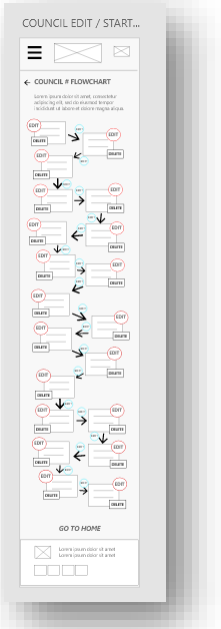
Digital Wireframes – CATCHIT Dedicated App (Pre- and Post- Usability Study)

Digital Wireframes – *Pre* - First Usability Study



Digital Wireframes – *Post* - First Usability Study

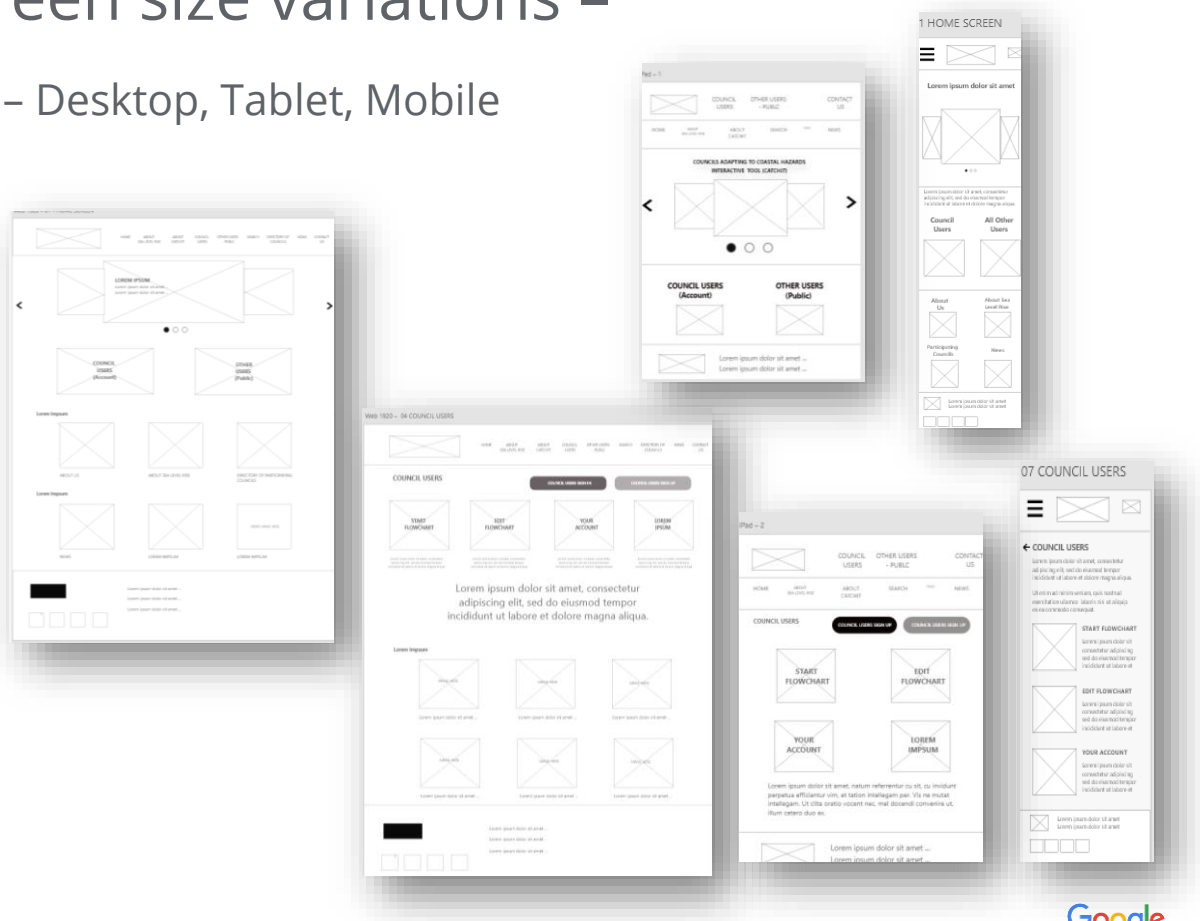


In the Usability Study conducted, users suggested the similarity between the edit and delete buttons to be a concern as they could mistake the buttons. As such, the “Delete” button’s shape was changed and different colours were introduced.

Digital wireframe screen size variations –

(Responsive website CATCHIT) – Desktop, Tablet, Mobile

The responsive website involved designing screens for a desktop, tablet and mobile. Designs ensured core elements vital to both users and their user journeys were present and design was customised to the particular type of user.



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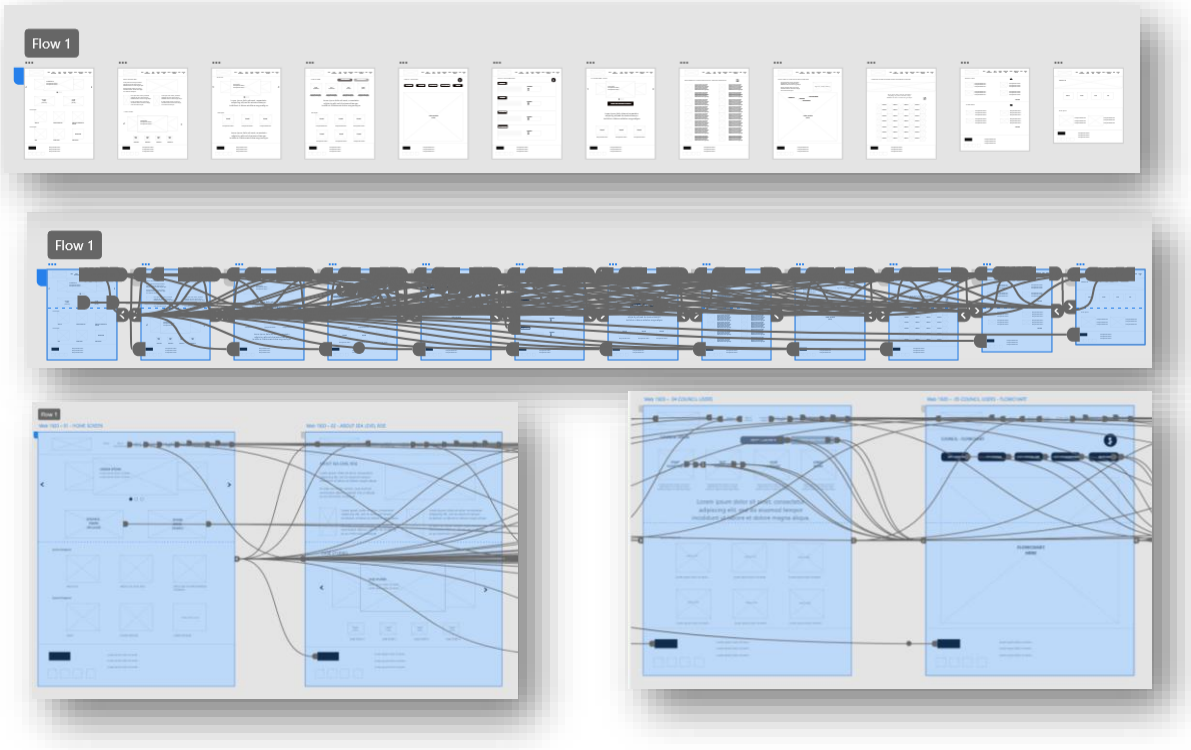
Low-Fidelity Prototype: Desktop - CATCH*IT*

The low-fidelity prototype design was developed and a usability test was conducted.



View the CATCH*IT* Low-Fidelity Prototype at: https://adobe.ly/3WunGN9

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Usability Study: Parameters

Study type:

Unmoderated usability study

Location:

Australia, remote

Participants:

5 participants

Length:

20-30 minutes

Usability Study – Findings

The Usability Study was conducted on the Low Fidelity Prototype. Findings were used to redesign the static digital wireframes.

1

Finding

A method to filter search results and participating councils was missing.

2

Finding

The Edit and Delete buttons on the Council Flowchart were too similar and were confusing. Users mentioned a risk of accidental deletion.

3

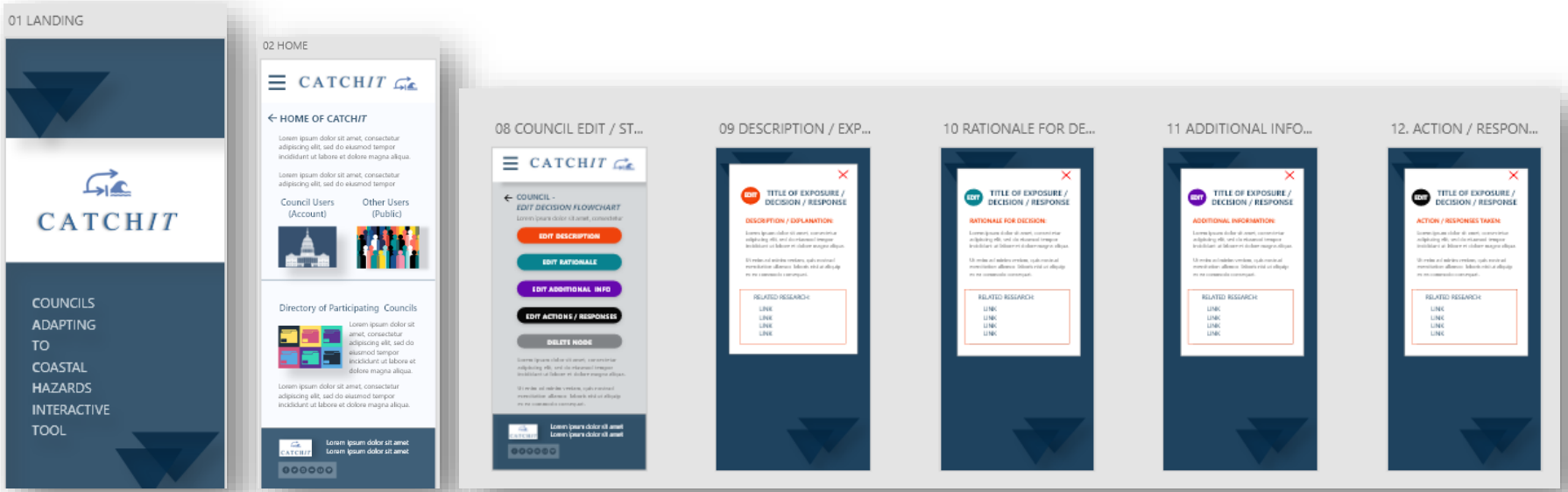
Finding

The Login / Sign in / Sign up page and elements were messy and confusing to users.

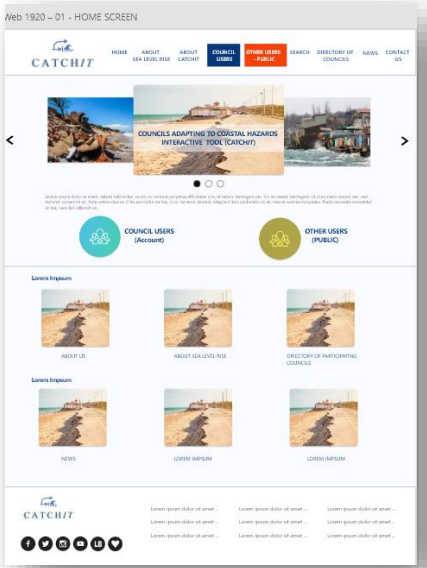
Refining the design

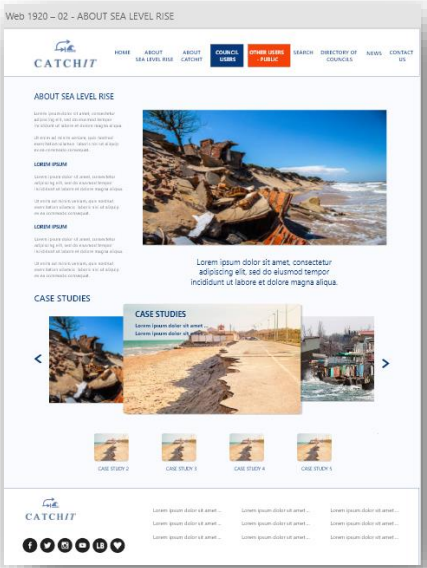
- Mockups
- High-fidelity prototype
- Accessibility

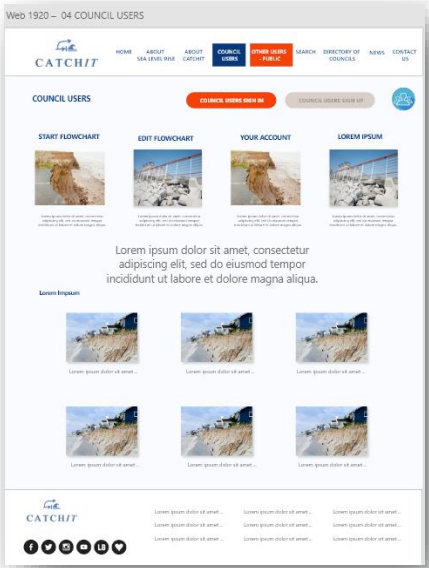
Mockups: Dedicated App - CATCH*IT*

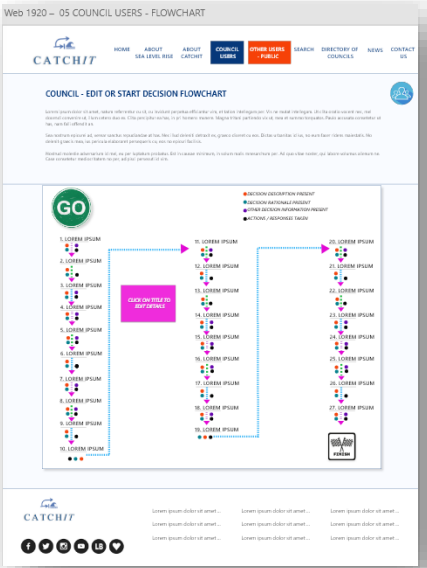


Mockups: Responsive Website - *Desktop Screen* CATCH*IT*

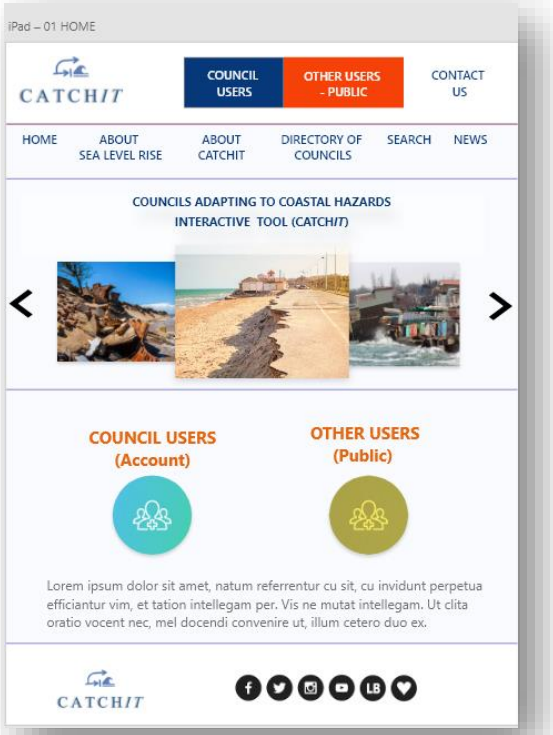


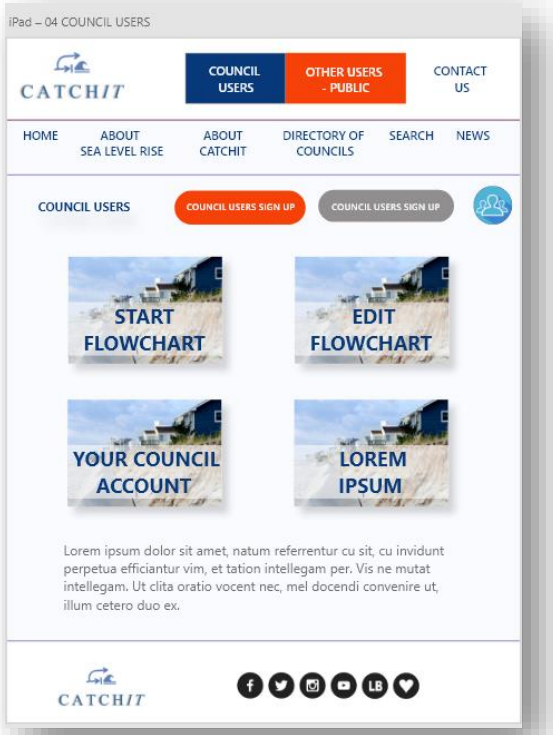






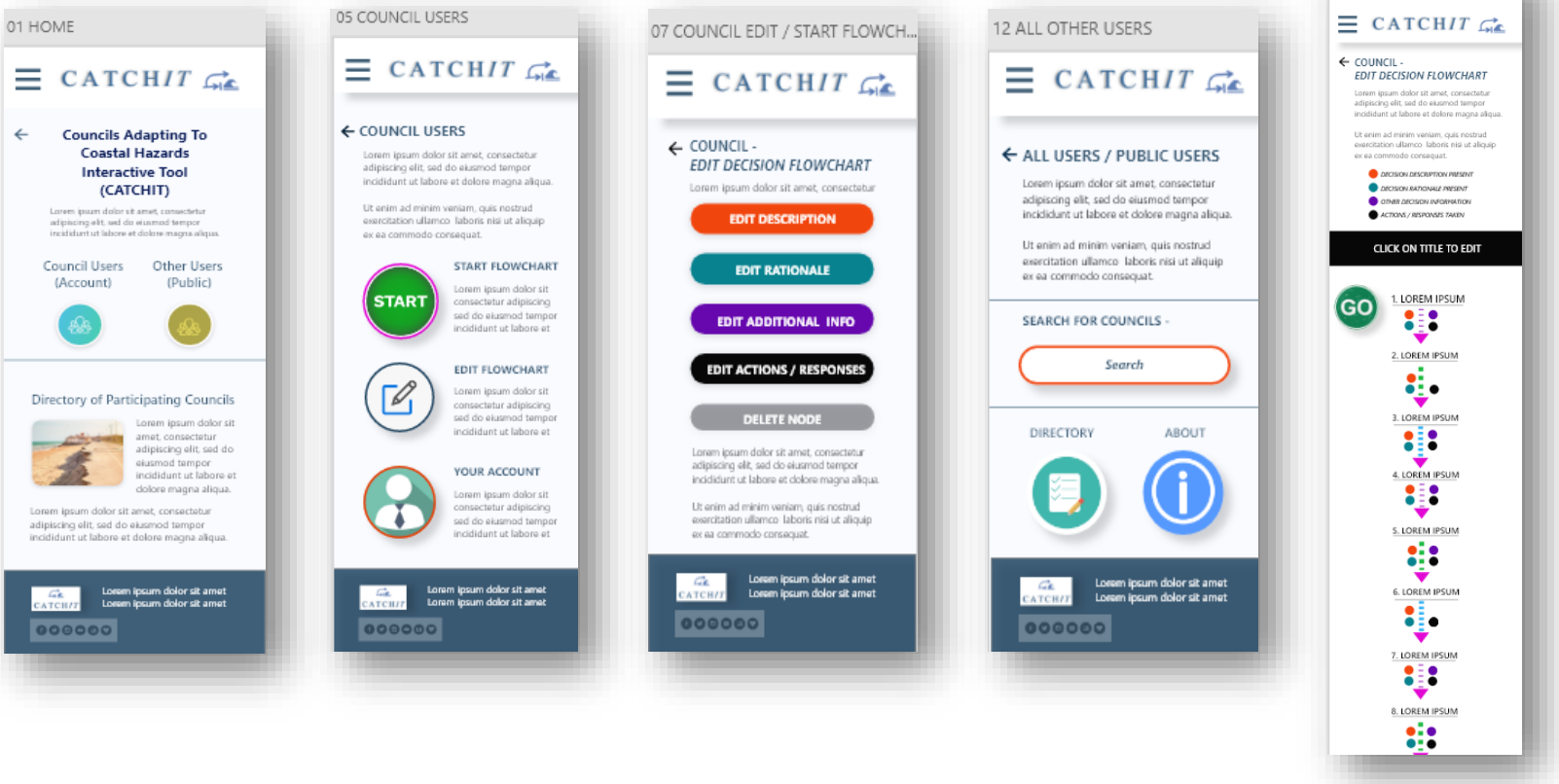
Mockups: Responsive Website -*Tablet Screen* CATCHIT



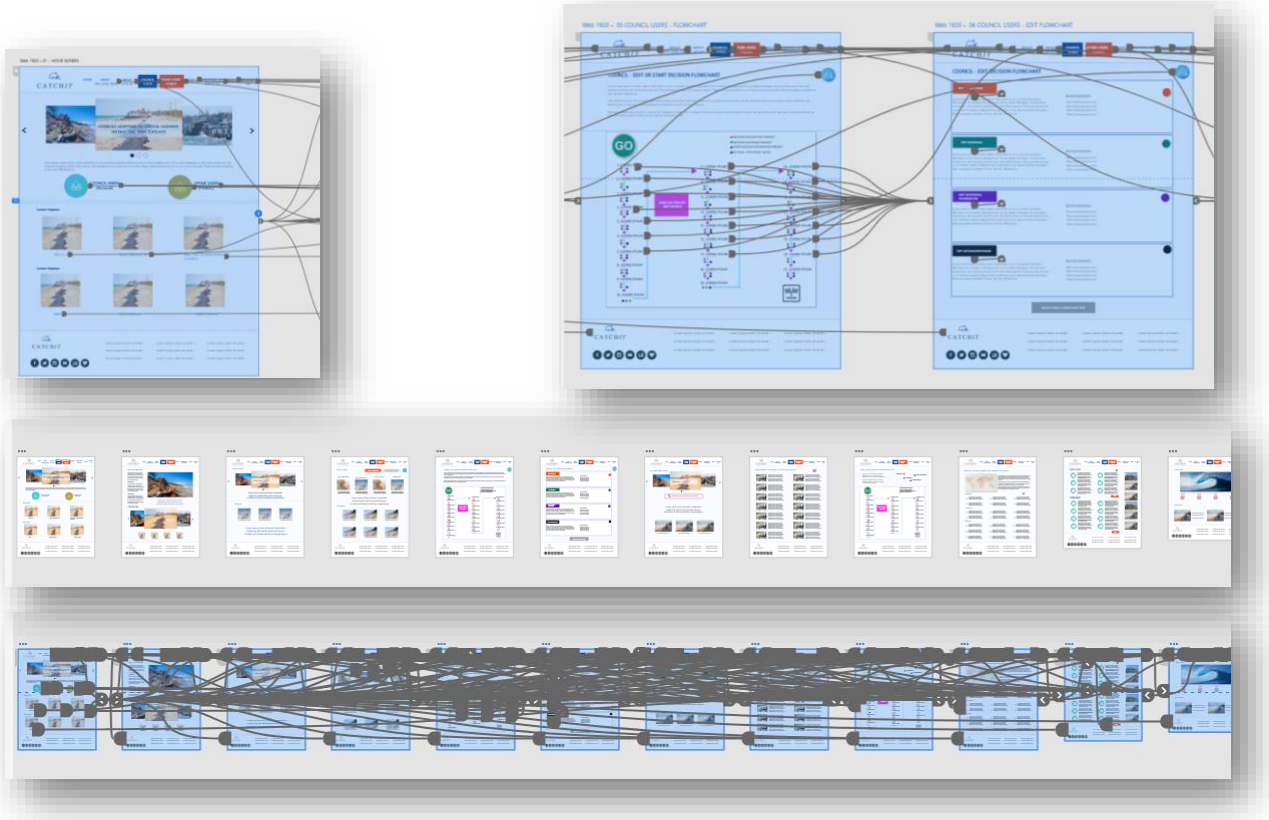


Google

Mockups: Responsive Website - *Mobile Screen* CATCH*IT*



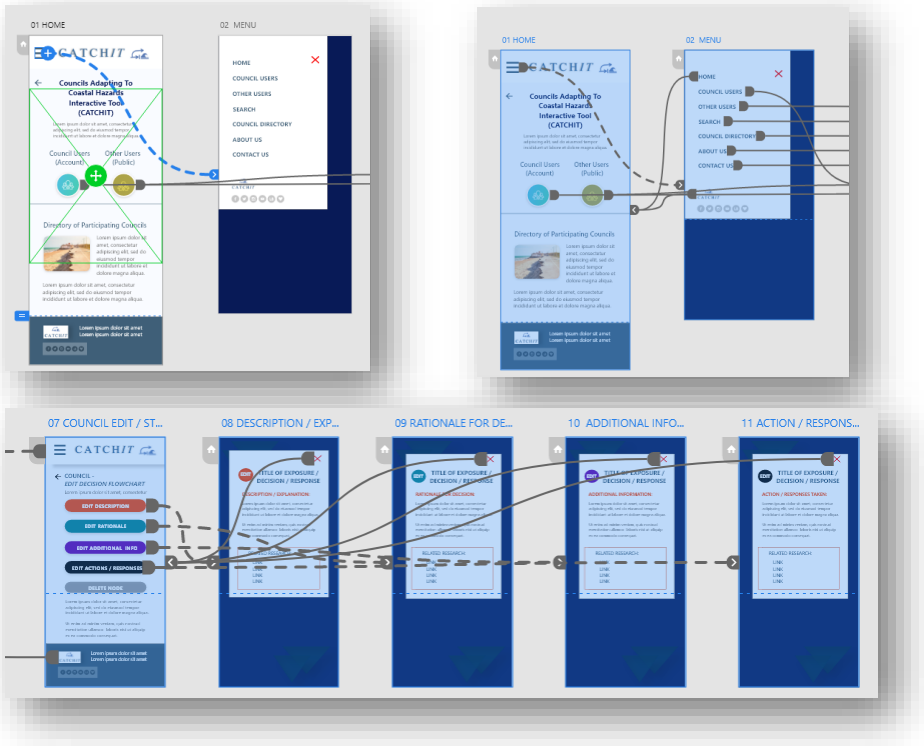
High-Fidelity Prototype: Desktop - CATCH*IT*



View the CATCH*IT* High-Fidelity Prototype at: https://adobe.ly/3H0HcLG

Google

High-Fidelity Prototype: Dedicated App - CATCH*IT*



View the CATCH*IT* High-Fidelity Prototype – Dedicated App at: https://adobe.ly/3HmodfK

Google

Accessibility Considerations

1

I used Hierarchical Headings with different sized text for clear visual hierarchy.

2

Landmarks were used to provide cues for navigation, including navigation bars, search boxes, and footers.

3

Buttons and text contrast was WCAG compliant (>3.1). Consistency was also maintained throughout the website.

Google

Responsive Design

- Information architecture
- Responsive design

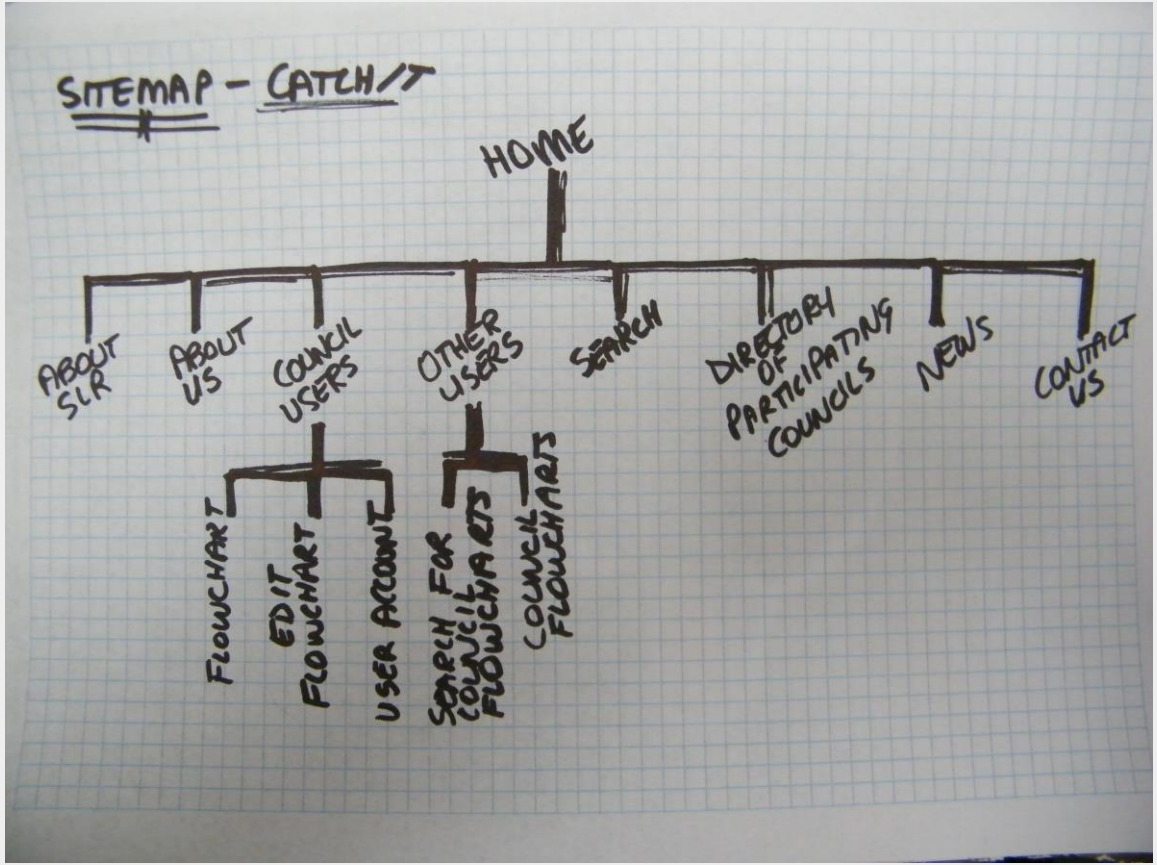
Sitemap: CATCH*IT* IA

The primary focus of the website's information architecture (IA) was ease of use through a basic / simple design.

The architecture was built around the two main types of users – Council Users and Other Users. The Council users required a secured account and the ability to edit the decision flowchart, while the other users were read-only.

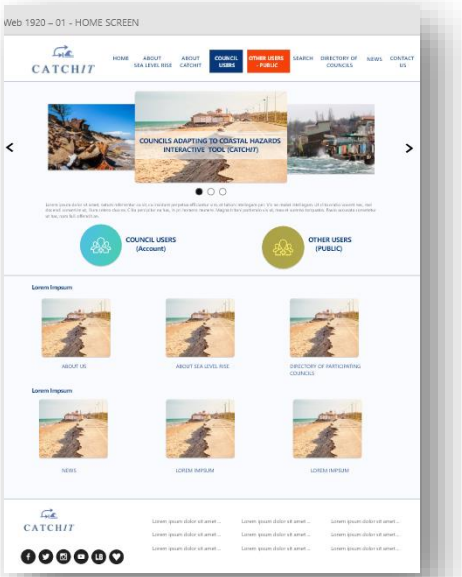
Other information deemed necessary was information about the topic – Sea Level Rise. This included a page About SLR and a News page.

The ability to search for a particular Council was also necessary, which involved including a Search page and the Directory of Participating Councils page.



Responsive designs: Desktop, Tablet and Mobile

The responsive website involved designing screens for a desktop, tablet and mobile. Designs ensured core elements vital to both users and their user journeys were present and design was customised to the particular type of user.



Going forward

- Takeaways
- Next steps

Takeaways

Impact:

Target users shared that the design was simple and uncomplicated. Once the users understood the concept behind the responsive website and dedicated app, they found it easy to use, navigate, understand, and felt guided by the site due to the layout and cues provided. This ease of use suggests that both Council users and the public would be able to use the site and app with ease, thereby increasing the probability that the service would be used.

What I learned:

I learnt that even though a user flow design might seem completely obvious to me and designed with accessibility in mind (e.g. contrast and cues), users can still have trouble navigating the design. The takeaway is that user research is pivotal to good design.

Google

Next Steps

1

Conduct additional user research in the form of a Usability Study on the High-Fidelity Prototypes to refine the design further.

2

Present ideas to stakeholders, obtain feedback, and conduct a redesign to incorporate their feedback.

3

As it is a responsive website project, consider designs for other common devices.

Let’s connect!

If you would like to view my designs, or would like to discuss a project, my contact details are:

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ACKNOWLEDGEMENT

AND

THANK YOU!

Google