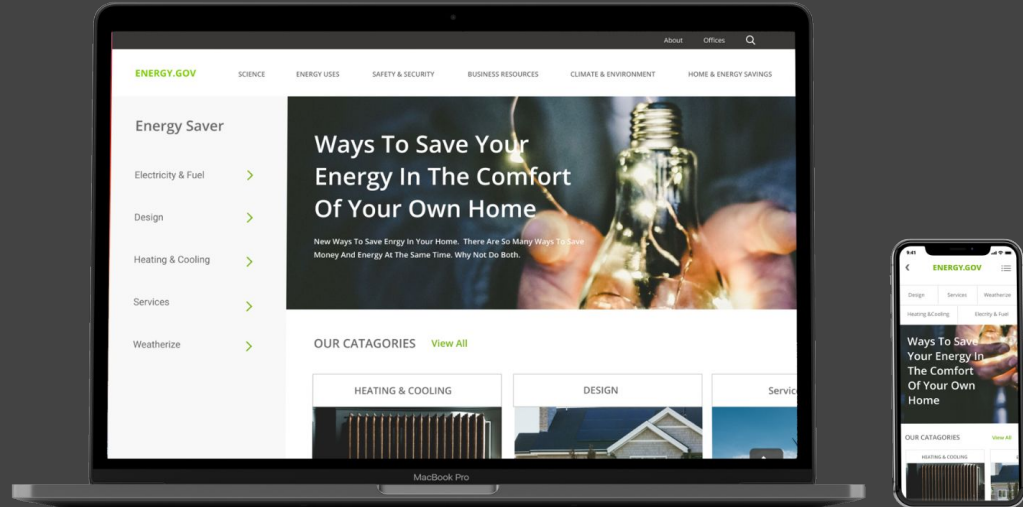# Department of Energy

Case Study

Madison Korteling

PROJECT OVERVIEW

THE PROBLEM:

Energy.gov is an official government site that addresses and informs users about America's security and energy, environmental and nuclear challenges. User found the site to be overwhelming, and confusing to navigate.

How might we make the UI more user friendly and have an overall easier flow when looking for specific information?

MY ROLE: User Research and Designer (Individual/ Group Project)

TOOLS: Figma, Miro, Photoshop, Trello.
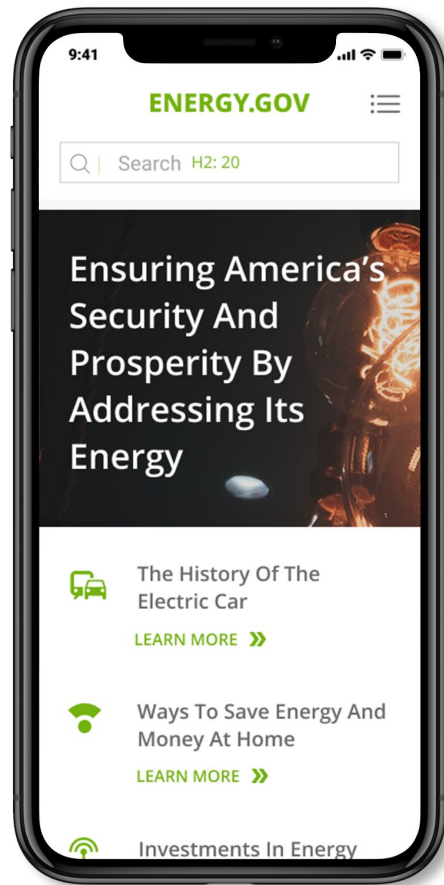
OUR SOLUTIONS

REMOVING THE BREADCRUMB BAR

The breadcrumb bar was confusing with too many drop down options. We took the tabs and made them into Cards to be easier seen and clicked by the user.

RE-SIZED/ADDED QUALITY PHOTOS

The photos and pictures on the site were pixelated and sized awkwardly which took up too much space on the page. We added quality photos and properly sized them to fit the site comfortably.

CREATED MORE WHITE SPACE

The site was cluttered with pictures and random links. We created space with cards and less pictures to create a cleaner more easy to navigate look.

FIXED FONT INCONSISTENCIES

Throughout the site, header and body typefaces range in size and style. We defined a consistent set of typefaces to be applied across the UI.

Energy.Gov Redesign

More about my role in the project:

As a team:
- All of the user research including heuristic evaluations, user testing, card sorting and etc.

Individually:
- All of the User Interface design for the website and mobile devices
- Style Guide
- Usability Testing

Proto-Persona

Name: Sara Collen
Age: 35
Loc.: Manhattan NY
Job: Engineer

Behavioral Demographics

- Works full time as Engineer
- Reads a lot
- Always looking for ways to improve the environment and her education
- Enjoys going for hikes
- Is a planner and well organized
- Goes to conventions for her job twice a month

Goals/ Needs

- Wants to save money
- Start an environmentally clean lifestyle
- looking to make changes in her house, car etc
- needs resources for more sustainable living

User Pain Points and Frustrations

- Wasting money on gasoline
- not enough reliable sources to find information
- wasting money on heating her house

Possible Solutions for Pain Points and Frustrations

- check out Energy.gov for information
- remodel house with energy efficient materials/utilities

User Testing Interview

Lauren
"…found it right where I would expect it to be - in the Navigation"

Mary Ellen
"I'll just use the search tool…Well, that didn't work"

Tom
"It was an overall confusing flow"

Sara
"There are a lot of hyperlinks on every page, and too much text to read"

Teresa
"Yeah…this site is not intuitive at all."
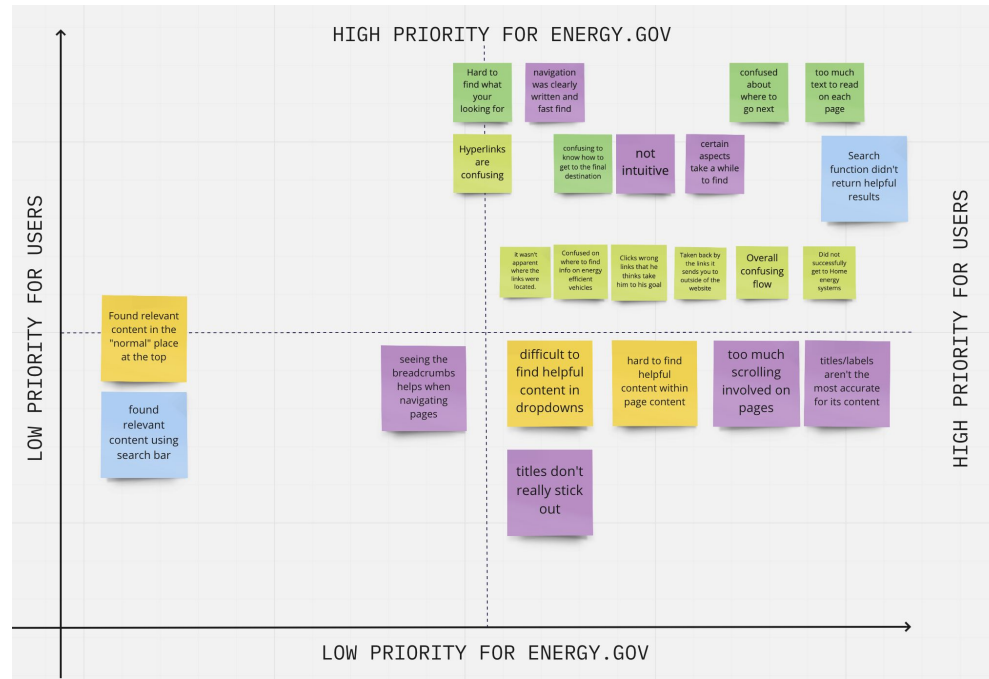
Habitat for Humanity Redesign

FEATURE PRIORITIZATION MATRIX

From our user interviews we were able to create an affinity diagram and categorize similarities in between interviews. This was important to us, because it gave a more clear focus on user pain points, and the key features to improve upon. The key elements we choose to focus on was simplifying the navigation, and making the site more intuitive for users.

Habitat for Humanity Redesign
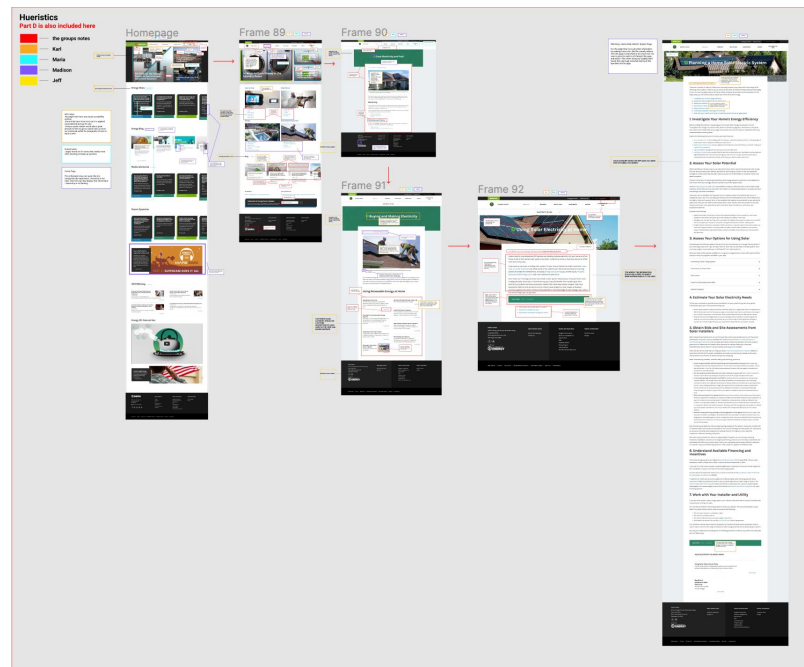
HEURISTIC EVALUATION AND RED-LINING

In order to fully understand Energy.gov, it was imperative to do a heuristic evaluation to understand our user frustrations. We went through the user flow of finding solar energy for your home, and found areas of were the site could above upon. Our main issues were with the layout of information, hierarchy, too many hyperlinks, and the overall navigation. These were areas that we knew we wanted to approve on when creating the user interface design.

Habitat for Humanity Redesign

Start	Next	Third	Fourth	Fifth	Last
Home Page	Energy Saver	Save Electricity and Fuel	Buying and Making Electricity	Using Solar Electricity at Home	Planning a Home Solar Electric System
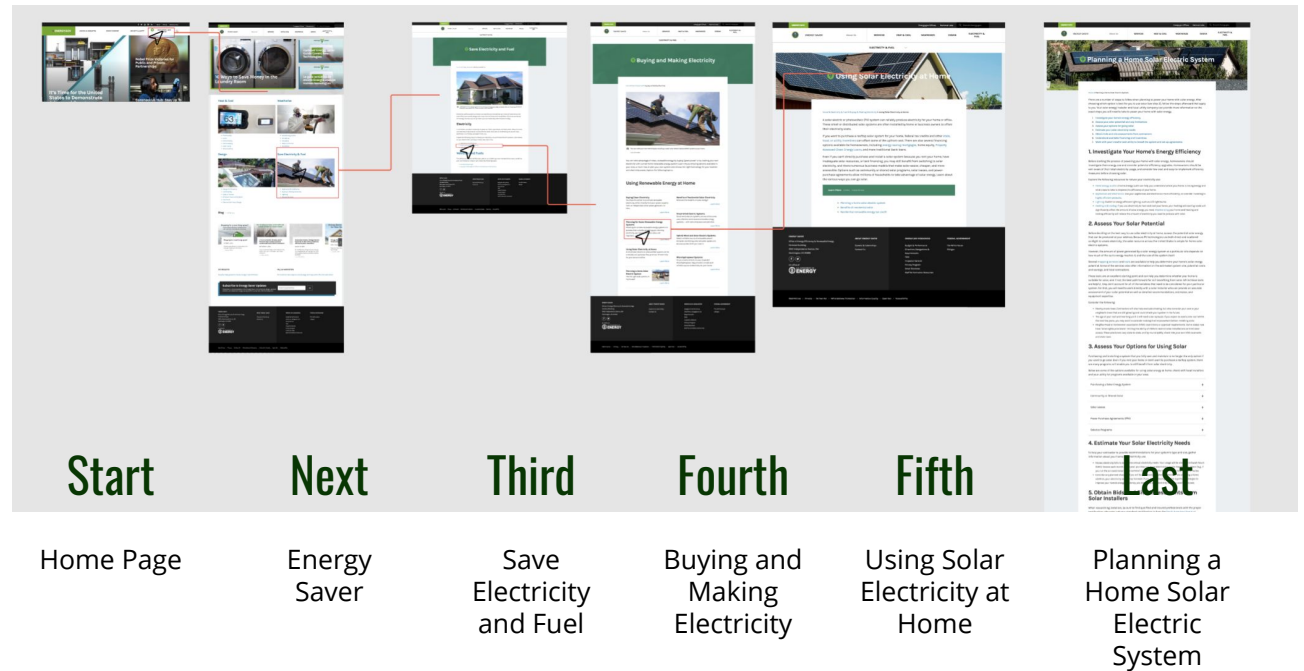
USER FLOW

For a user like our persona Sara Collen, an ideal path would be someone looking to save money on their home, more specifically planning a home solar electric system. We took the existing flow from the website to help us understand how Sara would navigate through the current path and took that consideration when making our own user flows.

Habitat for Humanity Redesign

Passes AA

Required contrast ratio: 4.5

Your contrast ratio: 4.91

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do...

Passes AA

Required contrast ratio: 4.5

Your contrast ratio: 4.52

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do...

Fails AA

Required contrast ratio: 4.5

Your contrast ratio: 2.56

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do...

Passes AA

if you change background color to #55830B

New contrast ratio: 4.53

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do...

or

Passes AA

if you change text color to #393939

New contrast ratio: 4.51

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do...
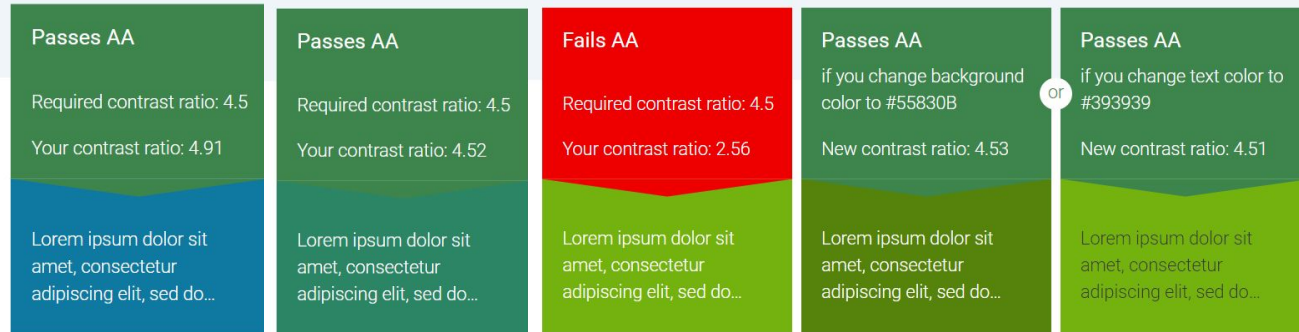
COLOR ANALYSIS

Something that we noticed right off the bat with Energy.gov was it's colors. To ensure that all user's would be able to excessively see and read the text, we did a color analysis to eliminate any further pain points. As you can see above, the color that has failed is the current color of Energy.gov's website. When moving into our design stages, we took this color analysis into perspective.

Habitat for Humanity Redesign
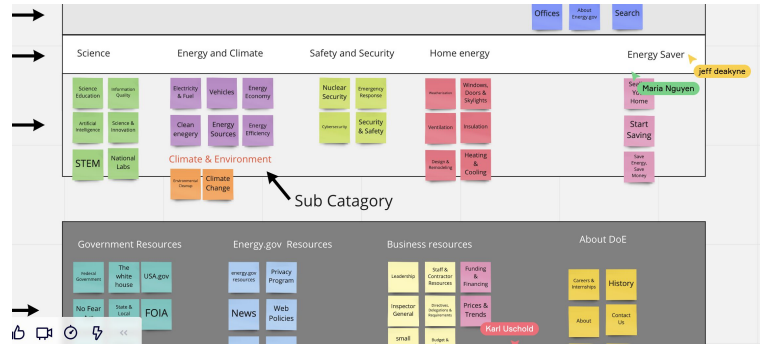
CARD SORTING PROCESS

One of our user's biggest frustrations was the current navigation of Energy.gov's site. Card sorting was one of our biggest successes to aid that problem to because it allowed us to have an unbiased look at all the sub-categories , and group liked categories together. Through this we were able to better prioritize the information, and overall create a better experience for our users.

Habitat for Humanity Redesign

Global

Primary

Secondary
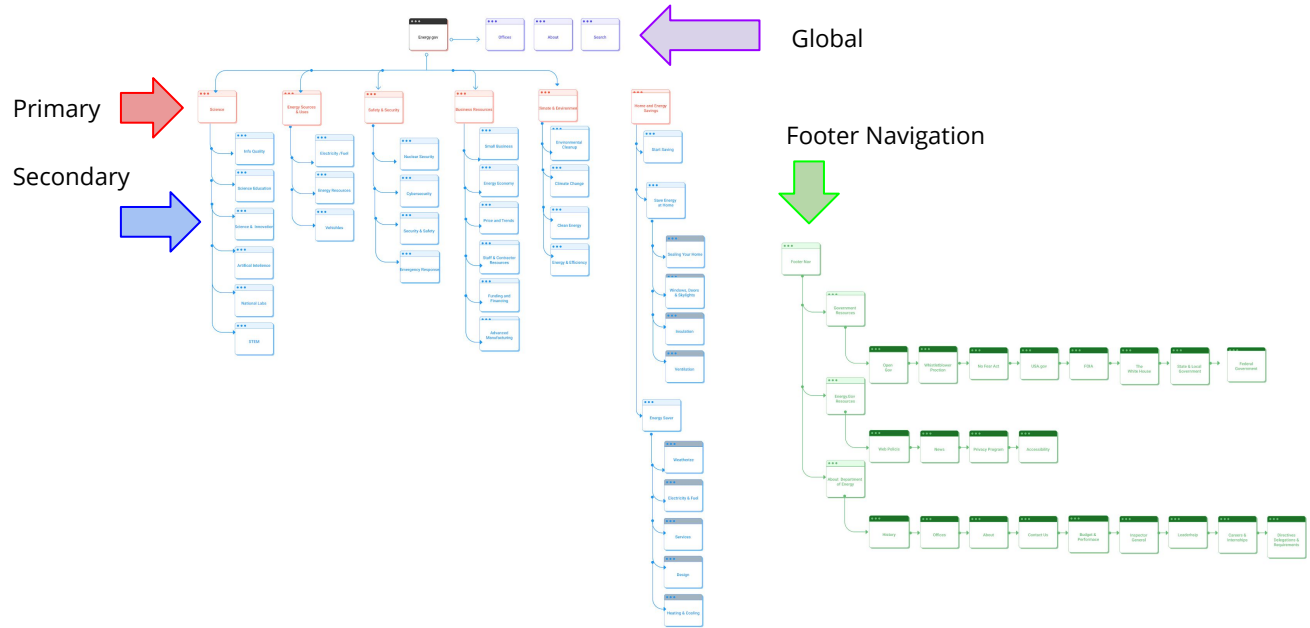
Footer Navigation

FINAL SITE MAP

In term, the card sorting helped us finalize a site-map for our users. We grouped our navigational elements into three categories: primary, footer, and global nav. This allowed us to create hierarchy and intuitive navigation.

Habitat for Humanity Redesign
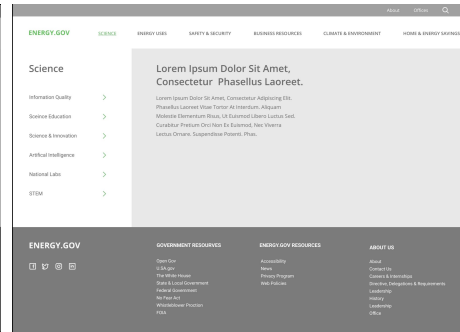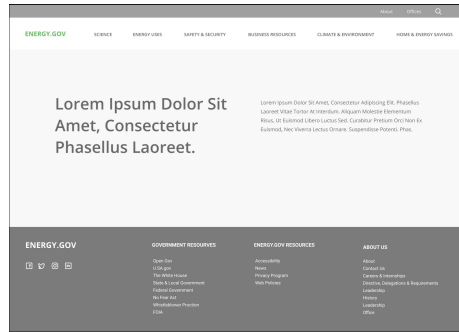
[View Prototype](#)
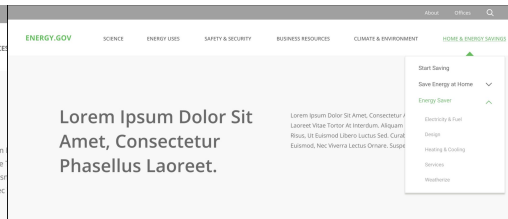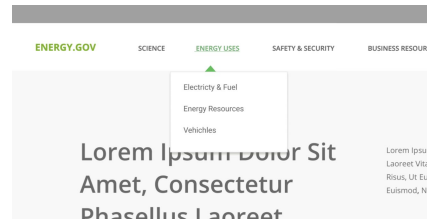
LOW-FIDELITY WIREFRAMES- DESKTOP

As a group we all did our own interpretations of our findings. In the next slides, you will discover my individual user interface designs and testing. For this process, I started off by creating low- fidelity wireframes, to determine the layout of information I wanted. What is featured above is my arrangement of navigational items in a low-fidelity setting.

Habitat for Humanity Redesign
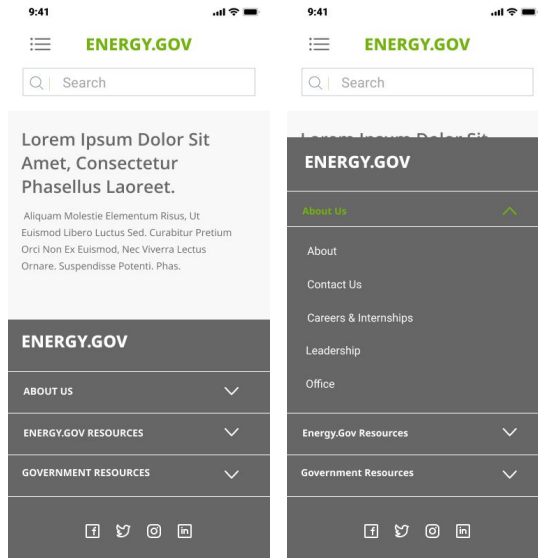
FOOTER
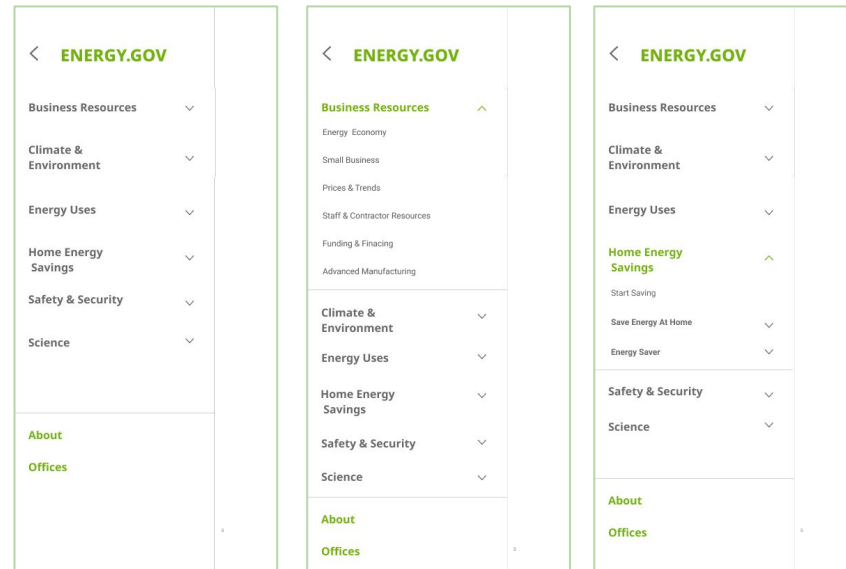
PRIMARY NAVIGATION

LOW-FIDELITY WIREFRAMES- MOBILE NAVIGATION

Like the desktop wireframes, it was imperative to pay a lot of attention to the information and displaying it in a way that would be easiest for our users to follow. To ease any pain points, I did an expandable navigation for the footer, and clearly spaced out all categories in the primary navigation, in turn this would allow our users to not feel overwhelmed with information on the app.

Energy.Gov *Design System*

Colors

Primaries and grays

https://yeun.github.io/open-color/

BLUE #4263EB	PURPLE #7048E8	#51CF66

#212429	#495057	#ACB5BD	#DDE2E5	#F8F9FA

Typography

Roboto set with the perfect-fourth modular type scale

https://fonts.google.com/specimen/Roboto
https://www.modularscale.com/?16&px&1.333

H1	Open Sans
H2	**Open Sans**
H3	Open Sans
H4	Open Sans
H5	OPEN SANS
P	Open Sans
SMALL	Open Sans

STYLE GUIDE

For the new style guide of Energy.gov, I wanted to choose a modern and clean color palette. I decided to keep a green color because it resembled a calm, and environmental feel that the brand was going for. For my other colors, I wanted them to be more neutral to stick to that modern look and not take away from the information. I choose Open Sans as my typeface because it wouldn't distract from all the information and it is a clean sans serif font.

Energy.Gov Design System

Buttons

DEFAULT	Primary	PRESSED	Pressed
HOVER	Hover	DISABLED	Disabled

Tabs

TABS   Tab Active   Tab Inactive

TAB BAR   Tab One   Tab Two   Tab Three   Tab Four   Tab Five   Tab Six

Icons

Feather icons at 24px height and
width with 2px stroke weight

https://feathericons.com/

STYLE GUIDE CONTINUED

Habitat for Humanity Redesign
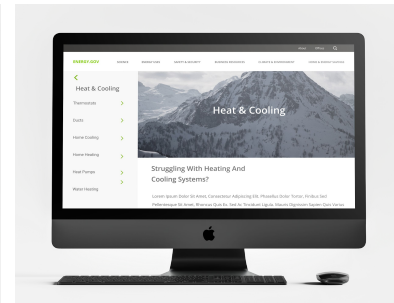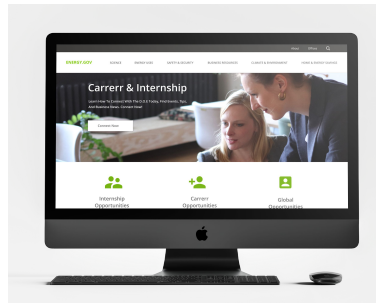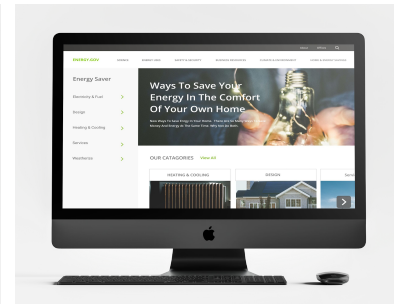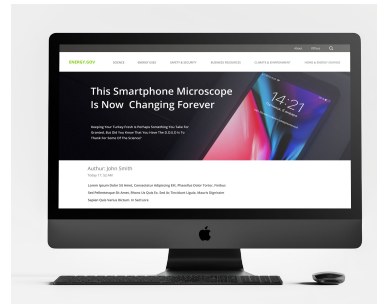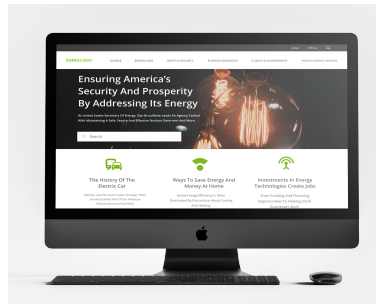
HIGH-FIDELITY MOCKUPS

Website Prototype

When moving into high fidelity, my goal was to create hierarchy, eliminate confusion, and overwhelming feelings for the navigation. I created large headers and cards of information categories to make users like Sara, feel comfortable exploring the site.

Habitat for Humanity Redesign
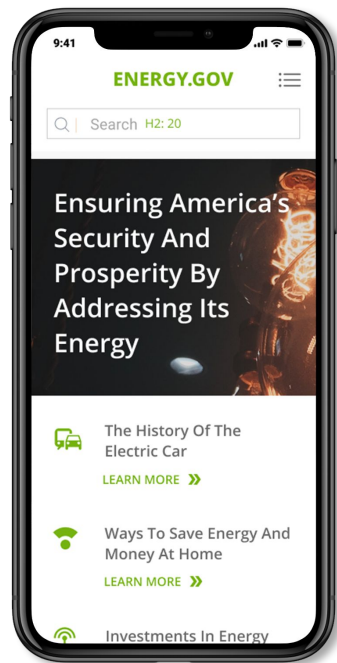
HIGH-FIDELITY MOCKUPS- MOBILE
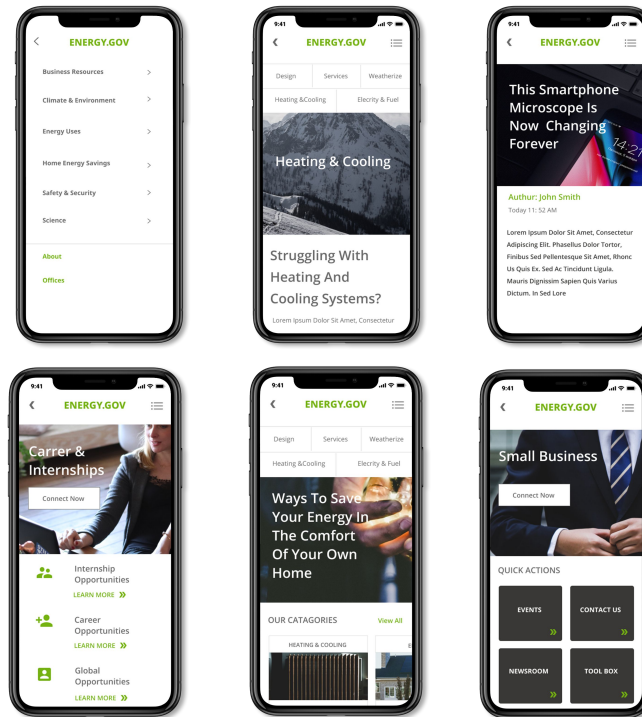
<u>Mobile Prototype</u>

Habitat for Humanity Redesign

Version A

Version B
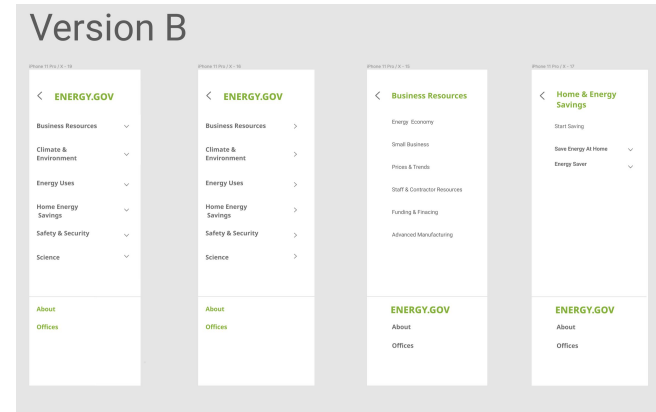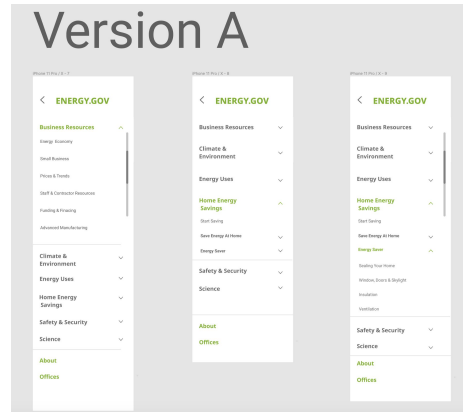
A / B TESTING- MOBILE NAVIGATION

For this A/B testing I wanted to test the different sizes of the mobile navigation. As I had mentioned before, it was imperative for our users to be able to successfully navigate through the site, which is why I choose the navigate to test. On the left the navigation does not take up the whole screen, and in version b it does. Additionally the elements of the navigation are more spread out in version b.

After testing, I found that users prefer version b and the navigation the whole screen on the device. This also allowed more white space and information to be less squished.

Habitat for Humanity Redesign

User Testing/ Testing Plan

In addition to A/B testing I also did a usability test on desktop and mobile devices on 5 different users.This tested the navigation, placement of elements and navigation to secondary pages.

Notes:

- Users had some difficulty navigating through the mobile version than the desktop
- The mobile version had too much text and users felt like they had to do a lot of reading
- The placement of the categories were easy for users to find on mobile and desktop
- Users felt like options stand out more, things were blending together

Iterations:

- Simplify the mobile homepage by taking away text on when needed.
- Making things stand out more on the mobile device

Habitat for Humanity Redesign
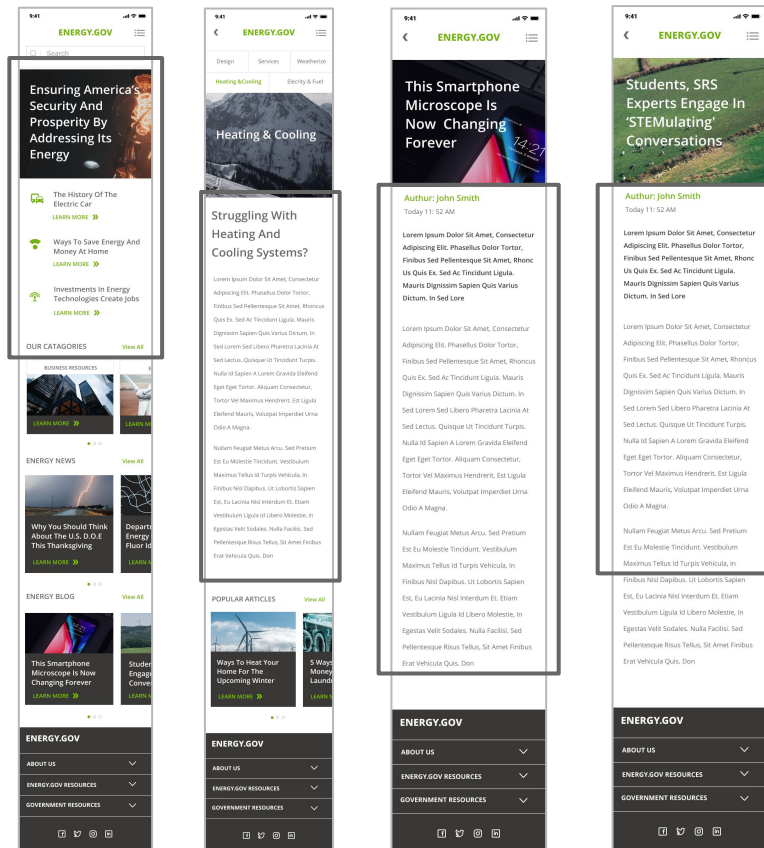
MOBILE ITERATIONS

From my usability testing, I found most of my issued to be in the mobile device. Shown to the left are some iterations I made, including the similization of the homepage and making text more readable for users.

Key Learning & Findings

This case study was very interesting to me because it allowed me to really drive into information architecture. By having a project so focused around this issue, it actually allowed me to connect more with my users and a better understanding of their frustrations.

If I had more time, I would have added more content to the homepage and secondary pages, in addition to add microinteractions.

The biggest challenge for me was categorizing all the content together. When dealing with a lot of information on a site, at times can get overwhelming itself. But through this challenge, it allowed me to create an overall better experience for users and eliminate frustrations in the app and website.

Additionally I learned the importance of simplifying mobile sites. Through my user testing I found users had a harder time navigating the site, than on the desktop version. Simplifying content and having a clear flow is very important on mobile especially. In the future I would simplify the mobile pages even more than what they are now. This project taught me the significance of card sorting and responsive web design.

Thank you!

Feel free to contact me with any questions or comments:
Makorteling@gmail.com