



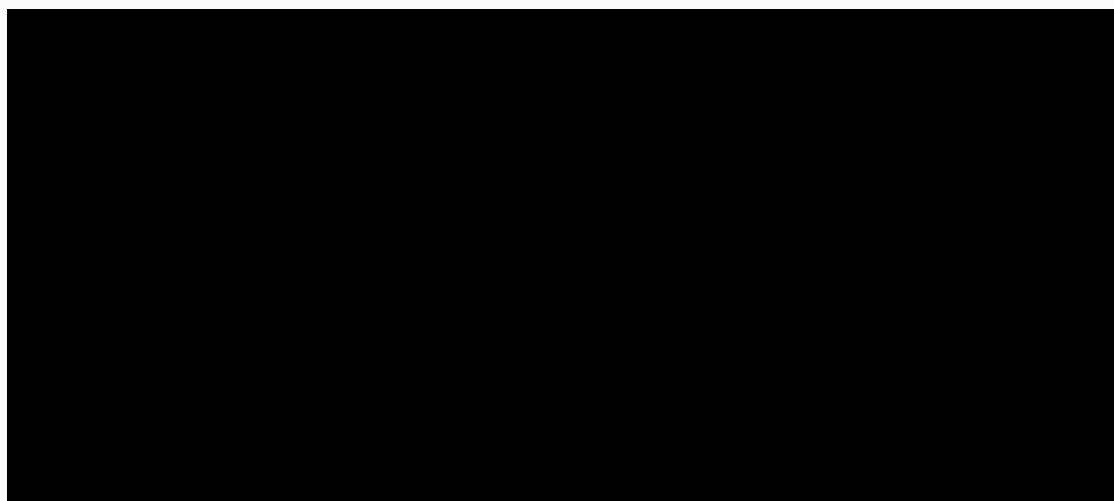
CALOR

Smart Shower Faucet

A simple, safe and water-saving shower

Calor is a smart shower faucet that safely and efficiently delivers your desired water temperature with a temperature sensor and through suggestion and reward system, it gradually guides you to the 5-min shower recommended by EPA to save water.

As seen on:



PLAYGROUND

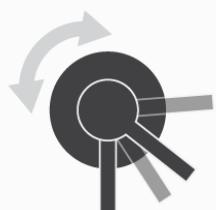
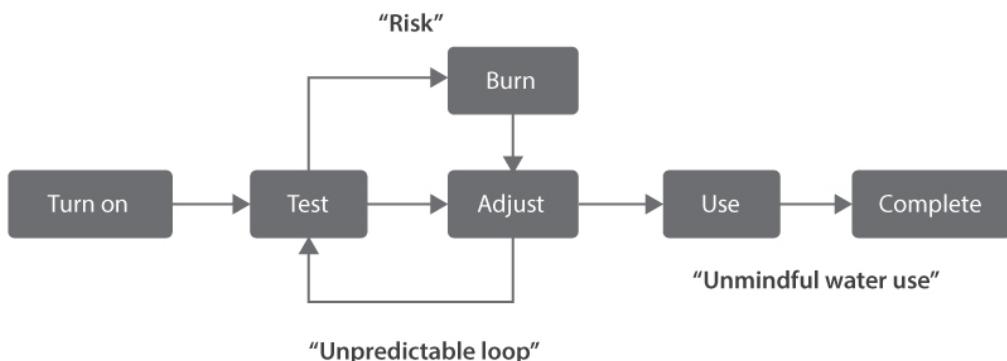
WORK

RESUME

ABOUT

Current Task Flow

Typical approach and use of a shower faucet



Unpredictable Adjustment

Adjusting for 2.7 times in average causes unnecessary time, effort and water waste



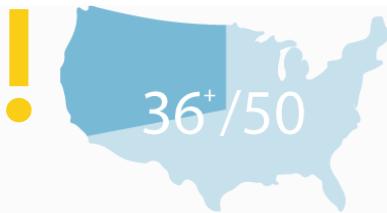
Chance Of Burning

There are over 3000 scalding cases each year and over 90% incidents occur at home



Underestimated Water Usage

Showers take up 17% of water households use for average Americans, 3rd usage after washing machines and toilets



A Growing Concern

More than 36 states are expecting water shortage in the next few years



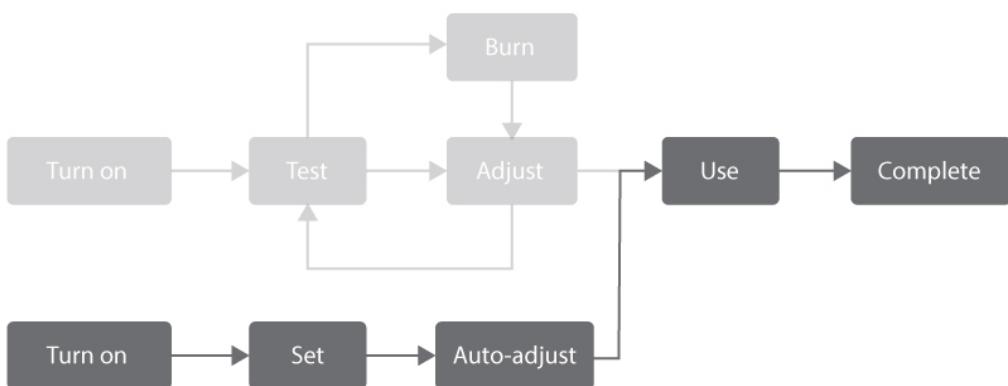
In response to recent [articles and news](#) on California drought crisis (SF has already had the water saving campaign all over the city), saving water becomes more important and inevitable.



How to elevate shower experience while promote a mindful water use?

New Task Flow

A more streamlined experience



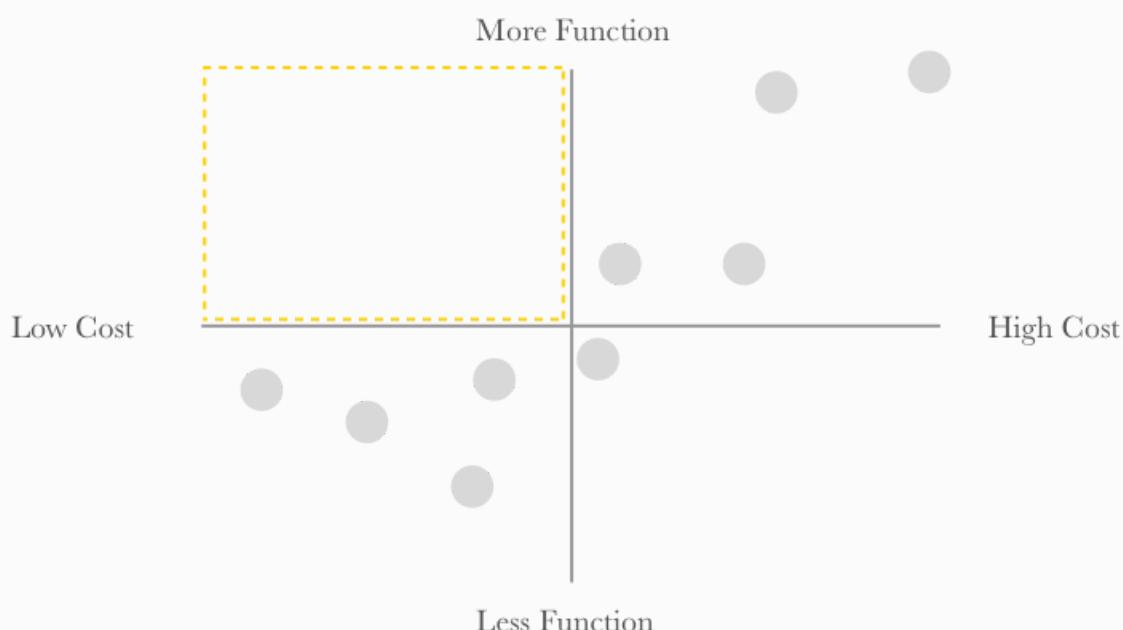
Devise a system that captures a more efficient shower experience with sensor technology

PERFECT COMFORT WITH TEMPERATURE SENSOR

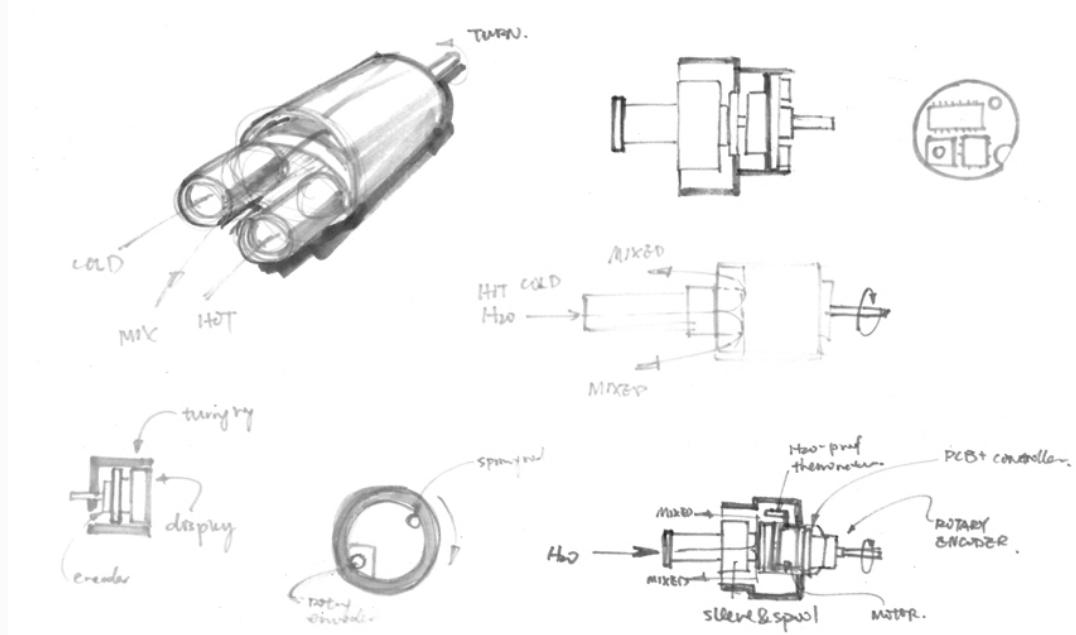


What you set is what you get. No more trial and error.

Current market offers faucet fixtures/systems with either simple yet limited functions at a low cost or high-end at a high cost up to \$5000, not including any cost for installing or pipe rerouting.



Disassembling a fixture and understanding how a valve and a cartridge work together result an approach: design for retrofitting.



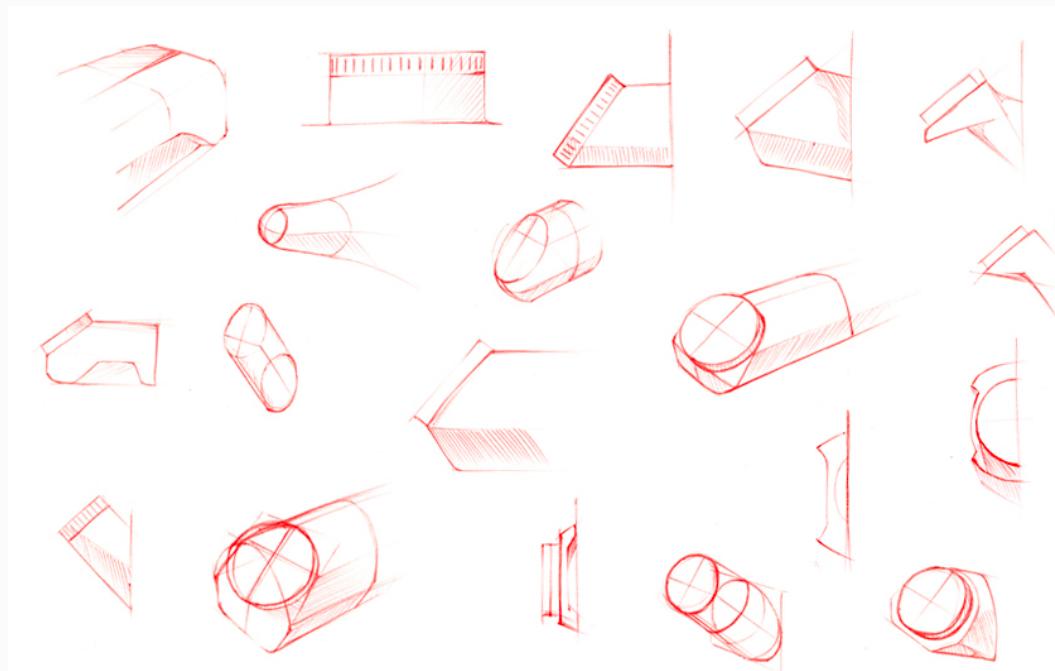
1. 1

2. 2

3. 3

• [Previous](#)

• [Next](#)



1. 1

2. 2

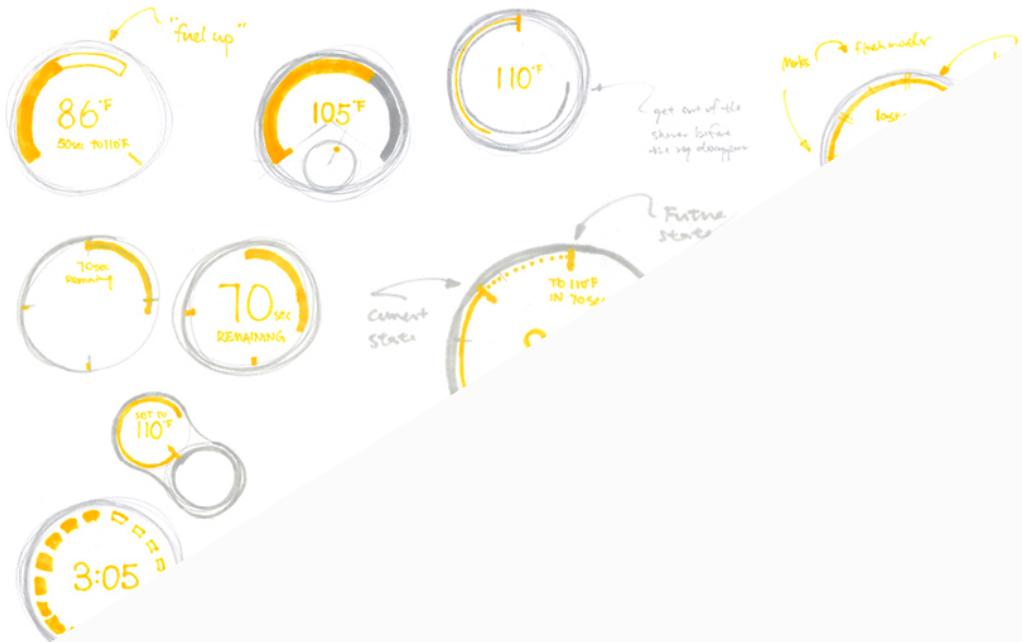
3. 3

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As the cartridge remains to be a hardware, I begin to explore some organic/dynamic forms that would give a break from the handle-

turning faucet fixture stereotype.

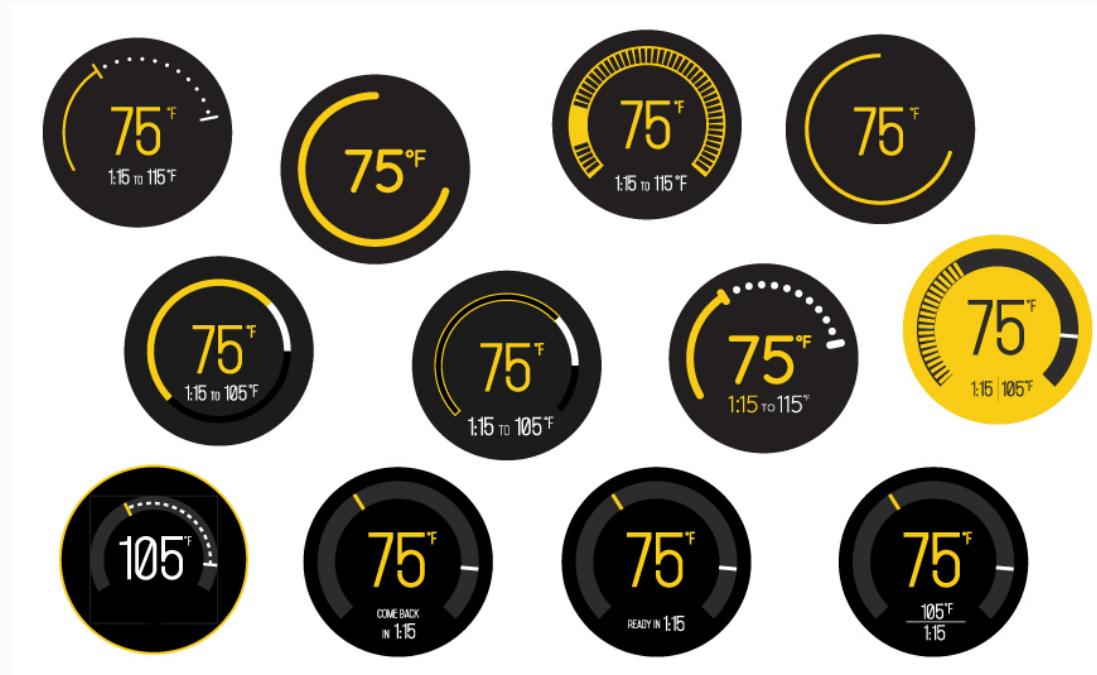


1. 1

2. 2

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Besides a physical form, an interface would be helpful in providing feedback to users as they set the temperature, so I quickly explore the information visualization as well as the interaction of the interface.



1. 1

2. 2

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I clean up the interface to display quick and sufficient information without adding too much complexity. I settled on the "turning-a-nob" style.

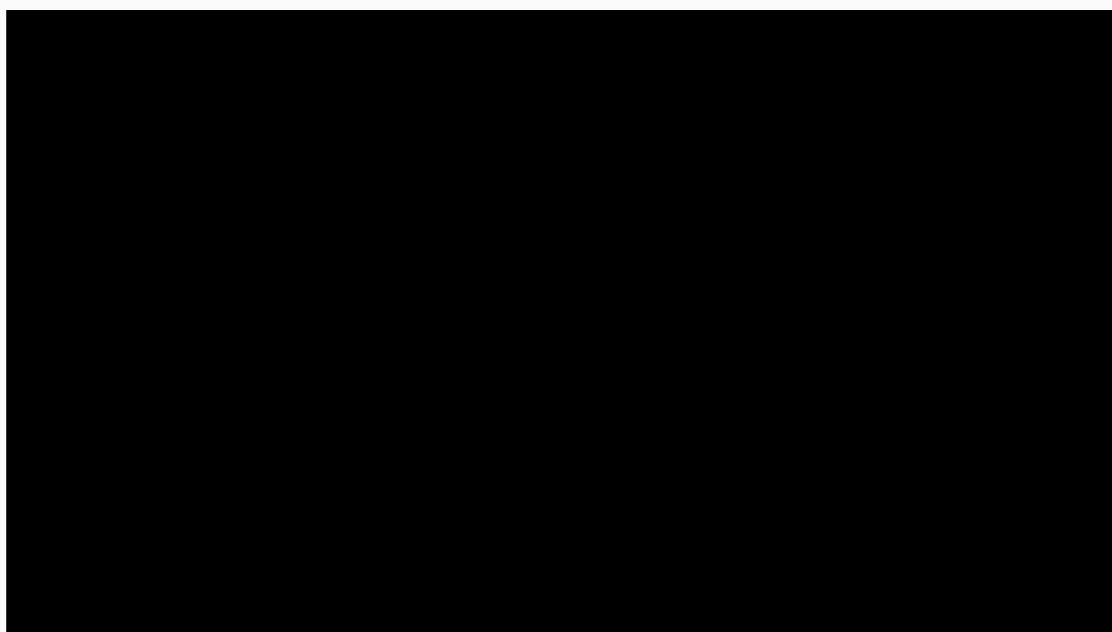
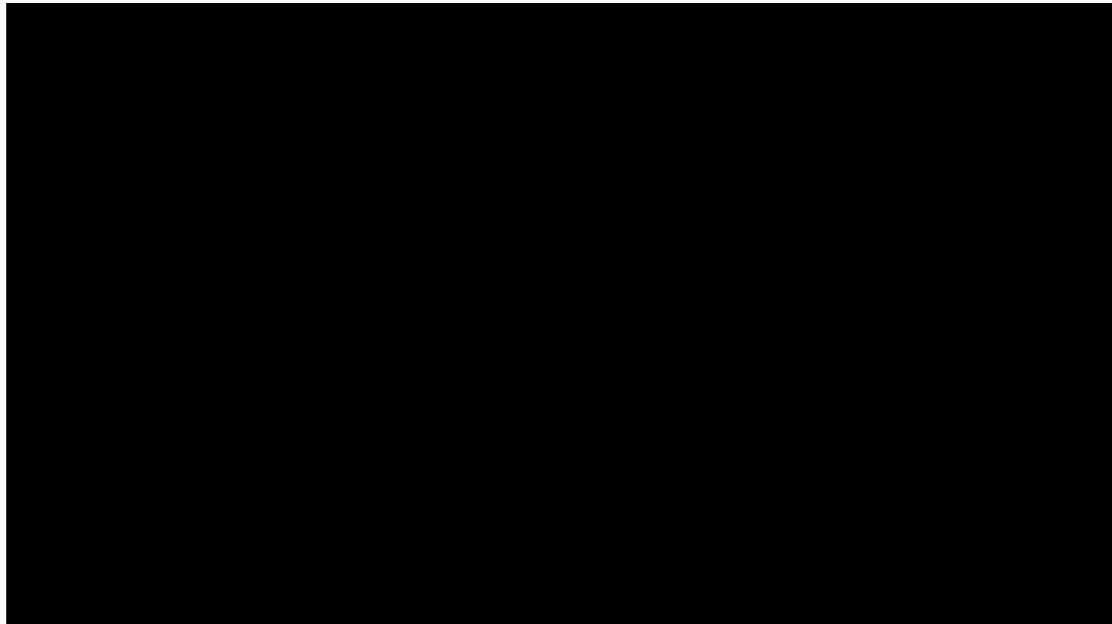
[PLAYGROUND](#)

[WORK](#)

[RESUME](#)

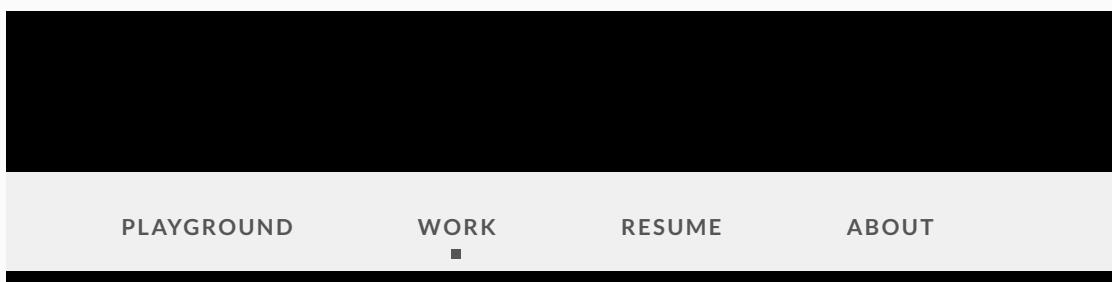
[ABOUT](#)

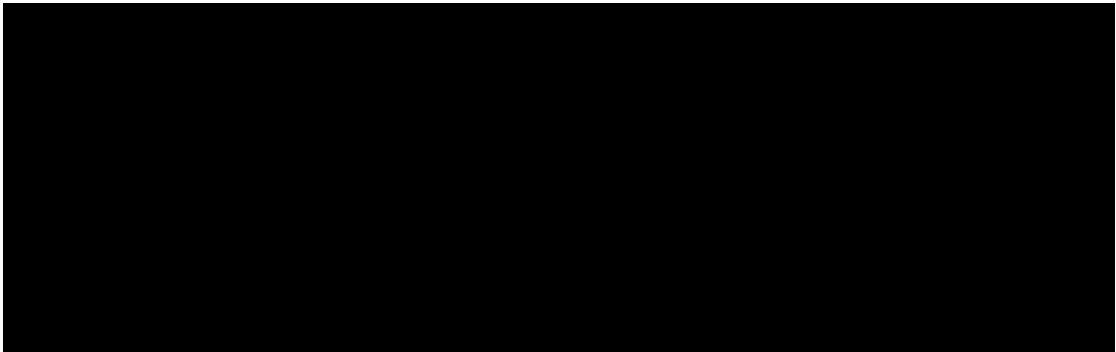
interaction for its familiarity of current interaction and remains its nostalgic and analogical feeling of turning a faucet handle.



With this attempt, I replicate the task of water-mixing with a 3D-printed cartridge prototype driven by a motor.

I also prototype the setting temperature interaction with Arduino to test the setting and counting down. Check out the code on [Github](#).





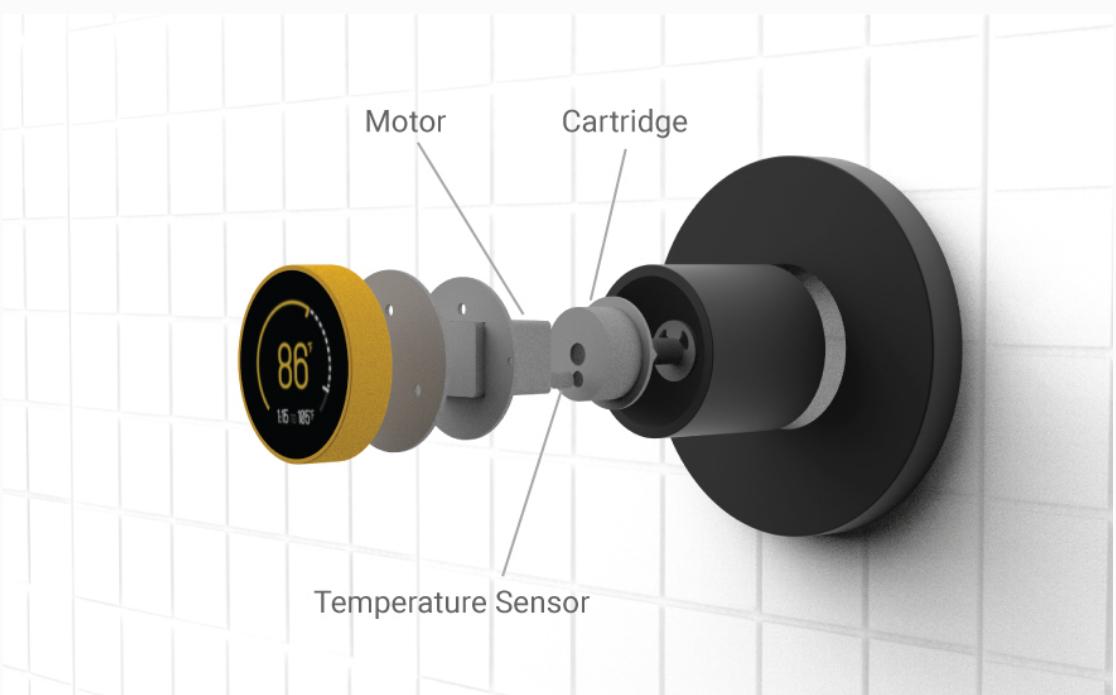
1. 1

2. 2

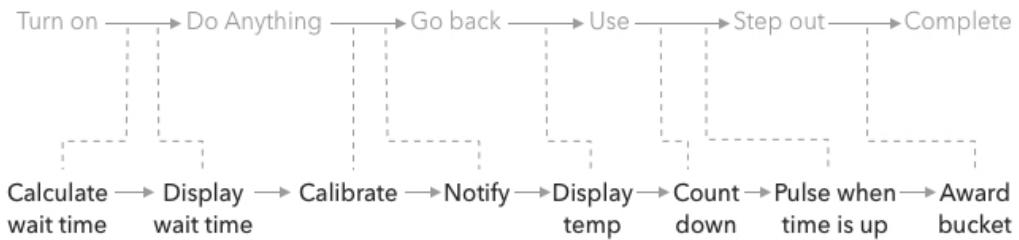
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New Task flow

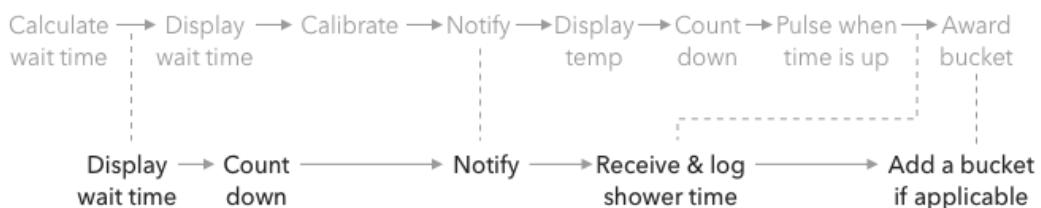


Faucet Response

CONNECTIVITY IN THE SYSTEM

The App connects with Calor to expand the function and service of a typical shower fixture even before and after the shower.

Faucet Response



APP Response

According to a survey I conduct, 1/3 of people keep their phone with them while they wait for hot water. Therefore I harness this result with this system response diagram, and make their phone more useful by informing suggestions and collecting/compiling data.

Calor App

Sync

Temp. Graph
Time Graph

Usage

Day View
Month View
Year View

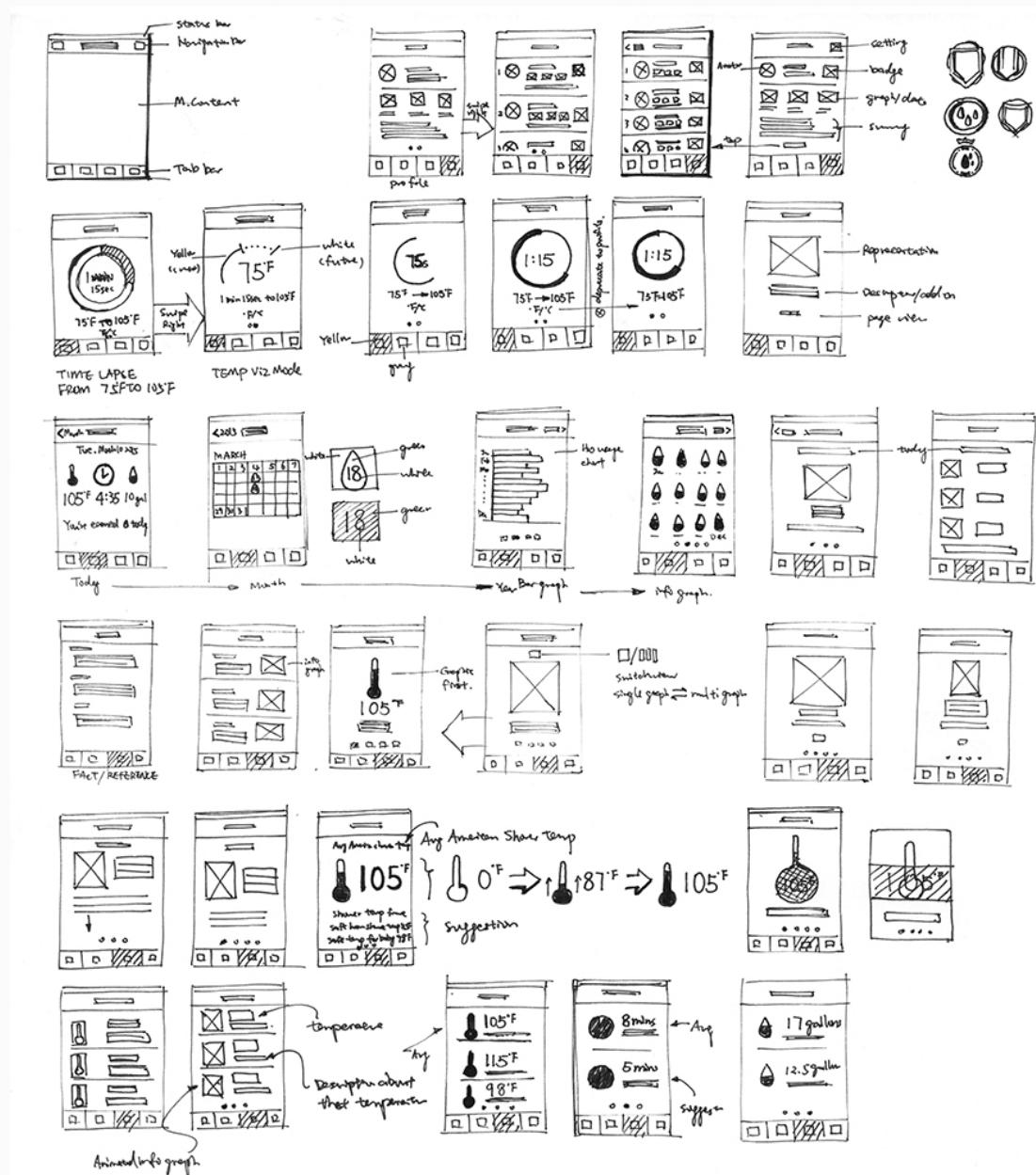
Stats

Temp. Ref.
Time Ref.

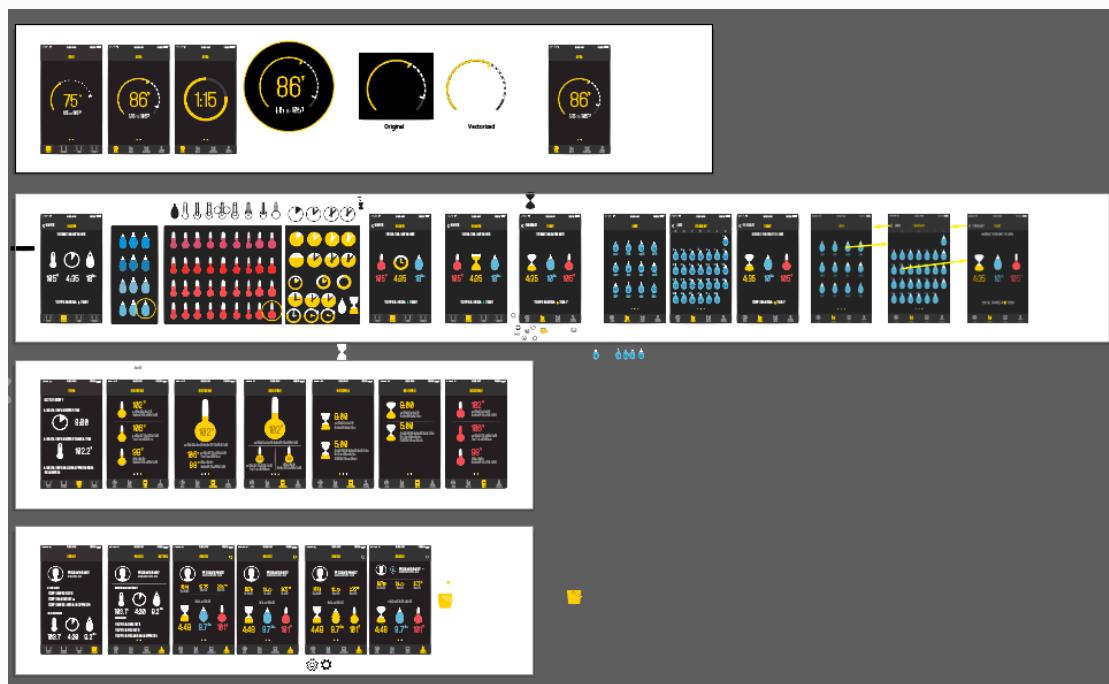
Profile

Temp Graph
Time Graph

Extracting functions from the diagram, I lay out the overall architecture for this mobile app and then begin to wireframe focusing on the composition and interaction.



Transitioning from wireframes to mid-fidelity mockup still requires some additional iterations and tests to create a clear information hierarchy and consistent visual language.



Sync

Set. Sync. Notify

A more efficient life style with notification, so you could grab your clothes, brush your teeth or respond an email and go back only when your shower tells you it's ready

Usage

Up-to-date anytime

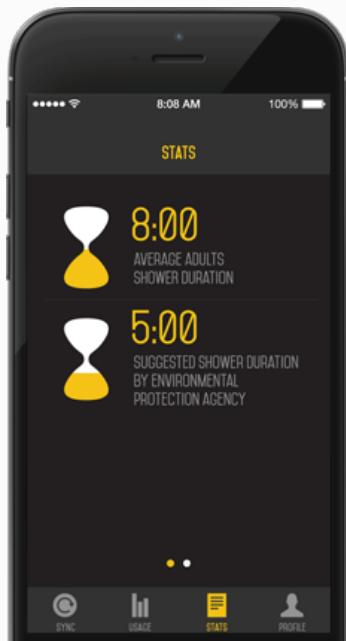
PLAYGROUND

WORK

RESUME

ABOUT

Track your or even your entire family water usage on a daily, monthly or a yearly basis on your phone in an engaging and delightful way.



Stats

Useful reference sheet

Leverage the recommendations and suggestions from professional organizations, and begin your green and active lifestyle.

Profile

Check your status

See how much money and water you have saved and how much you are ahead in your social circle.



1. JAMIE S.	108
2. YOU	107
3. ANGELA N.	95
4. TAYLOR M.	93
5. MIKE S.	86



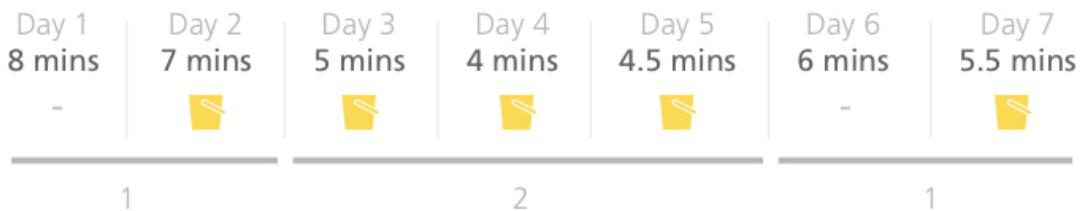
Make every drop count.

- U.S. Environmental Protection Agency



Water Bucket

The water bucket serves as an unobtrusive motivation that educates users to be mindful of water use and guides them to 5-min shower suggested by EPA.



Level Badges

Earning a bucket is easy at the beginning and gets more challenging. As you earn more, you will receive rare badges and see how your achievement stands among your friends or neighbourhood/community.



A system that transforms a typical shower experience into an efficient one that is more personalized, safe and predictable.



Date: 2015

Client: Studio Project

Team: Individual

State: Concept/Prototype

Next: Encapsulation

Sony Xperia and Samsung Galaxy S4/5 have already shown waterproof electronics, which demonstrates the plausibility of encapsulation for calor.

Designed and Handcrafted by Justeen Lee

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