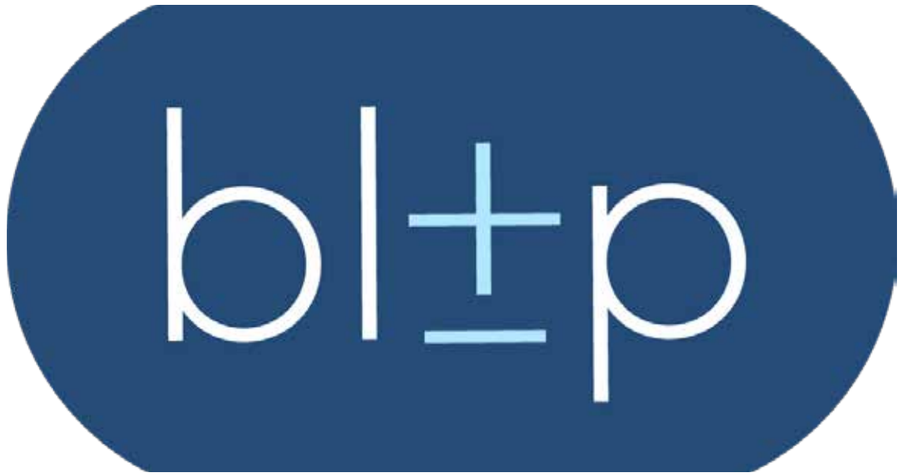
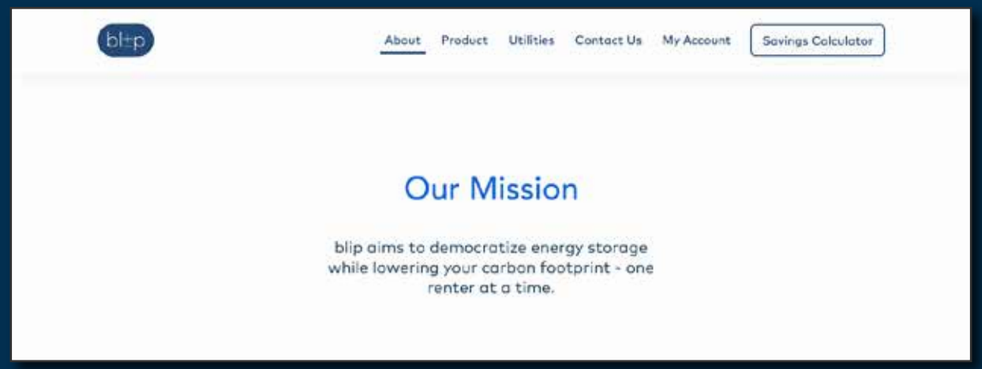
ELLE MARCUS

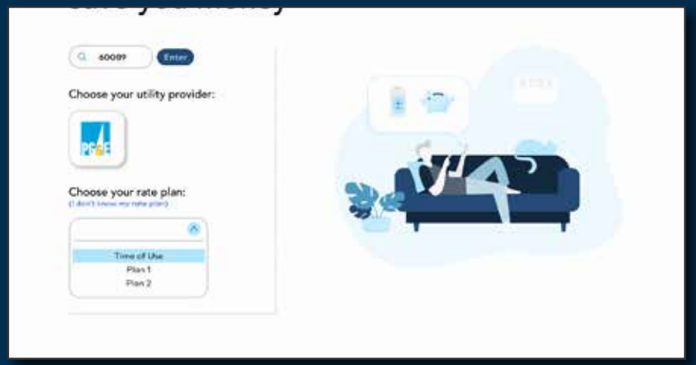


A startup that began in 2020. I had recently resigned my previous job as a mechanical engineer, and wanted to spend the summer before graduate school working on UX/UI projects. As the only designer, I spent 3 weeks prior to the internship reading books and watching YouTube videos to prepare for this role.

Description of blip

blip is an energy storage device. In some cities, the cost of energy is more expensive during “peak” times of 5PM-9PM, when people have historically been home from school or work. The cost of energy is cheaper during non-peak hours. blip will store the energy during non-peak hours to be used at peak times - saving people money. This also helps utility companies predict the patterns of energy usage and prevents them from running high carbon- emitting plants during the peak hours.





about blip

We supply enterprises, organizations and institutes of high-tech industries with modern components. We build long-term trusting relationships with our customers and partnes for further fruitful cooperations.

From year to year we strive to invent the most innovative technology that is used by both small enterprises and space enterprises.

clean energy is no longer just for homeowners

the where

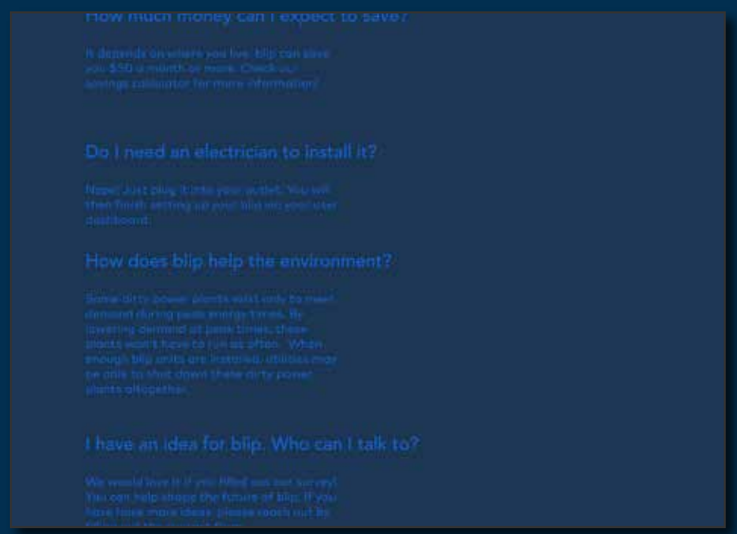
blip works in any home or apartment, and due to its portable design, you can bring it with you wherever you live

the what

blip charges overnight, when electricity is cheap, and dispenses power during the day, when electricity is expensive

the how

Set it and forget it: plug blip into any standard outlet and any appliance into blip. No professional installation required.



How much money can I expect to save?

It depends on where you live. blip can save you $50 a month or more. Check our savings calculator for more information!

Do I need an electrician to install it?

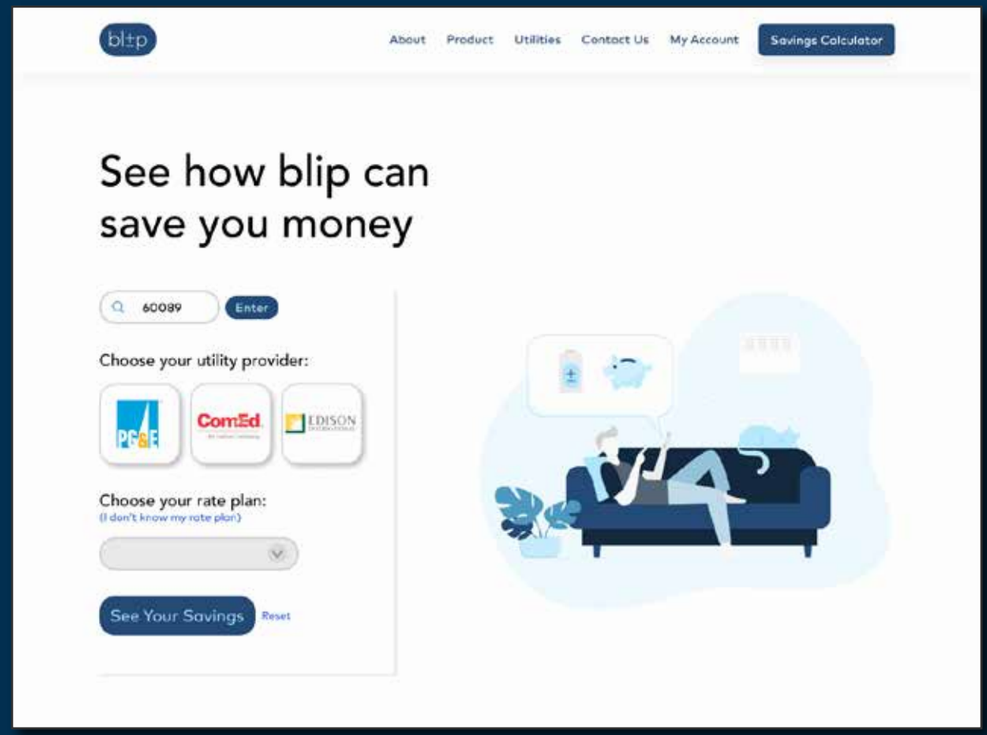
Nope! Just plug it into your outlet. You will then finish setting up your blip on your user dashboard.

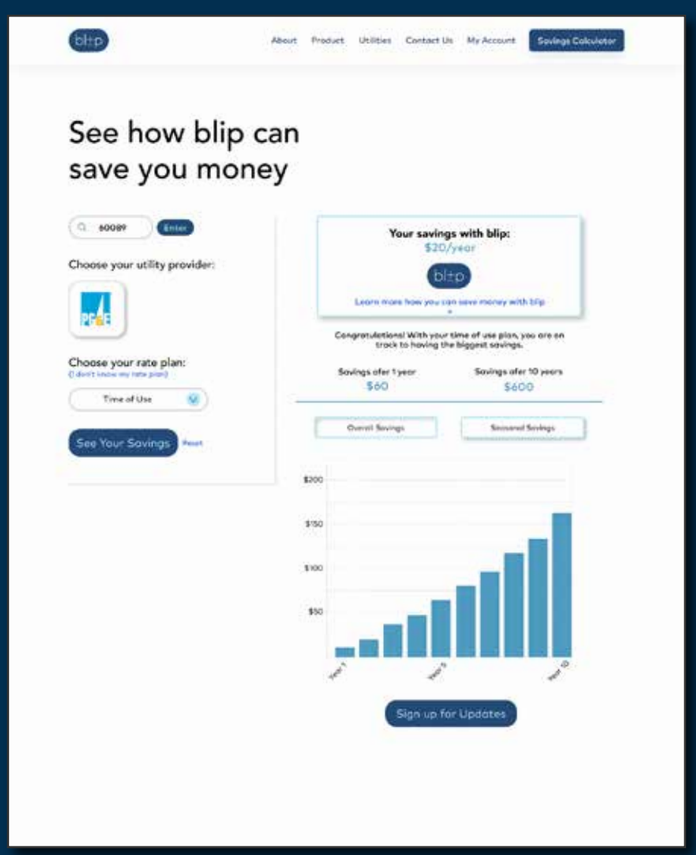
How does blip help the environment?

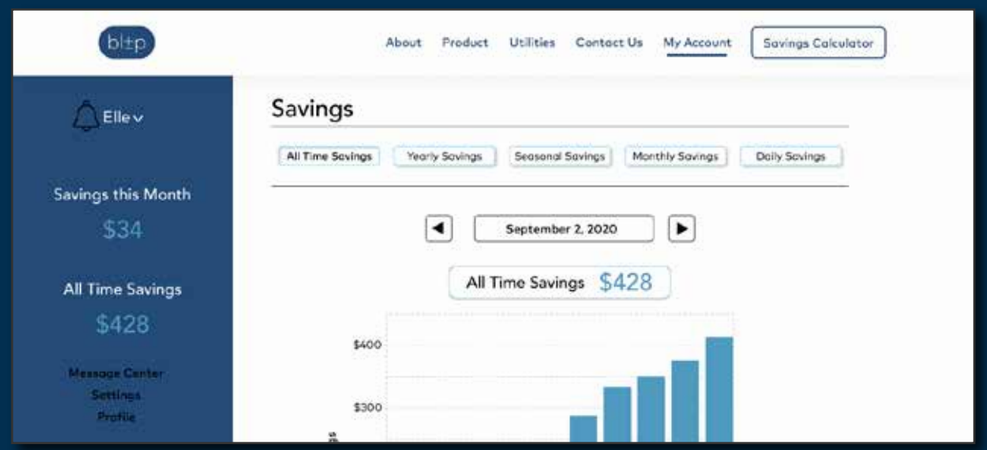
Some dirty power plants exist only to meet demand during peak energy times. By lowering demand at peak times, these plants won't have to run as often. When enough blip units are installed, utilities may be able to shut down these dirty power plants altogether.

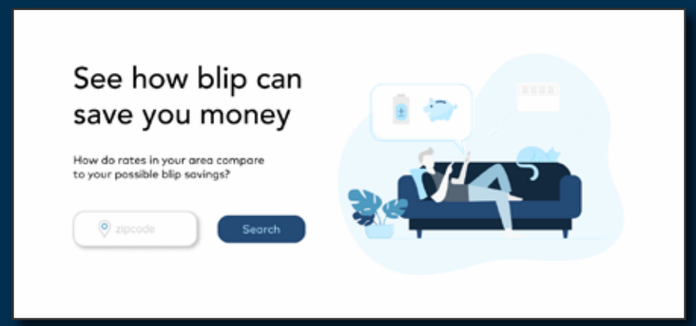
I have an idea for blip. Who can I talk to?

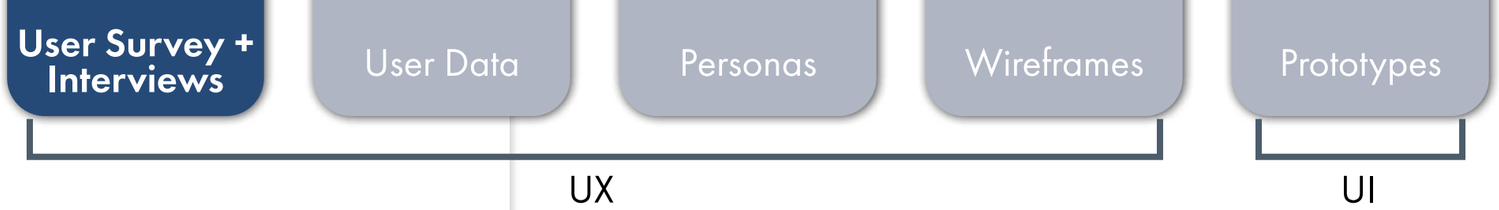
We would love it if you filled out our survey! You can help shape the future of blip. If you have have more ideas, please reach out to











Competitive Analysis

I analyzed over a dozen competitor apps and websites. I took note of their app's process flow and the information on their website. All apps displayed a minimal amount of data and had a clear frame by frame set up process. This aligned with the feedback in user interviews.

User Survey

How much are users willing to pay for this product based on income, demographics, and location?
I helped create survey questions. I worked with a data analyst to assess which demographics we should be targeting from 900 survey responses.

User Interview

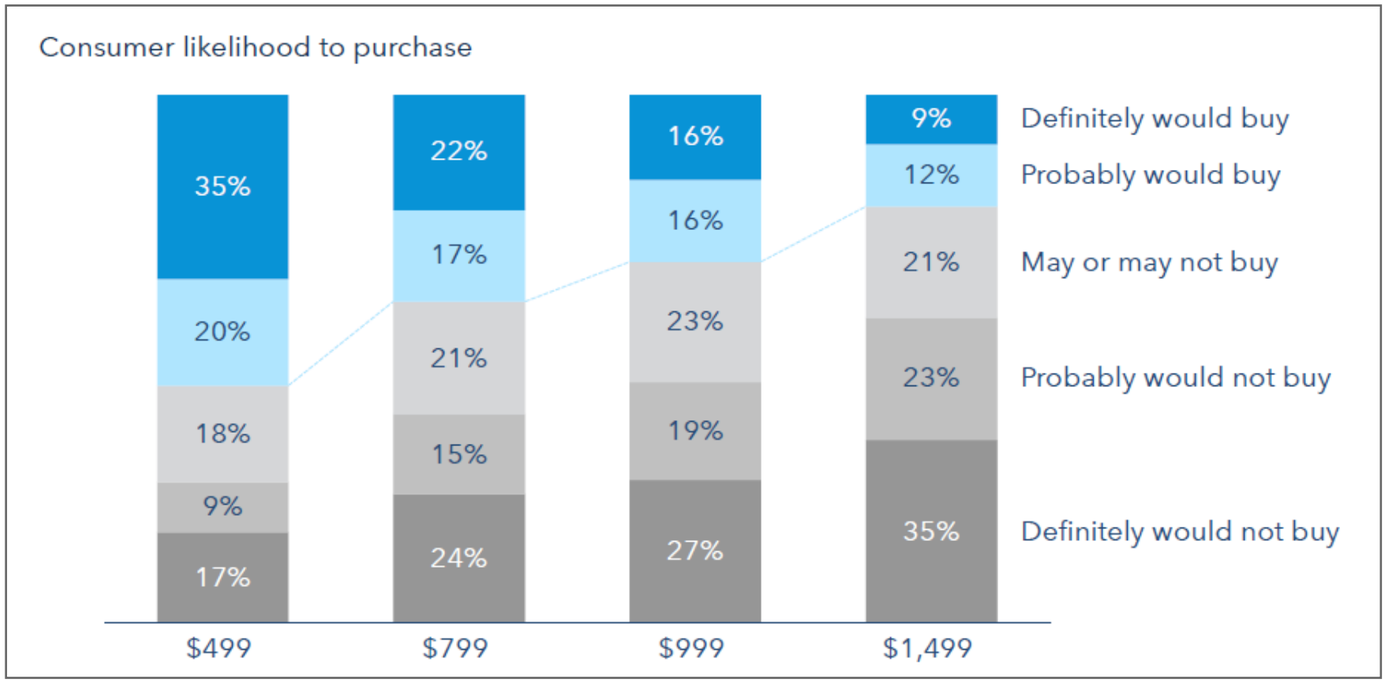
I wanted to know:
How can users see blip fitting in their homes?
How would they integrate blip into their lifestyle?
Do they feel like they have a place to fit it in their home?

In order to learn how users would want blip to fit in their home, I asked about their interactions with smart home products.
And finally, I asked interview participants to browse our current Squarespace website.

Goals

Provide feedback to engineering and industrial design team on product features and specs.

Design a new website, savings calculator feature for the website, and user dashboard.



Data analysis charts provided by James Kruse.

Revising the Interview

I wanted to learn what users wanted their relationships to be with their blip. My initial smart home questions weren't giving me a lot of insight.

What questions could I ask to learn how people wanted blip fitting in their home?

I decided to ask people about their relationships with the environment. Where did making environmentally friendly decisions rank in importance in their lives? Would they like that rating to be higher? If so, what's keeping them from achieving a higher rating?

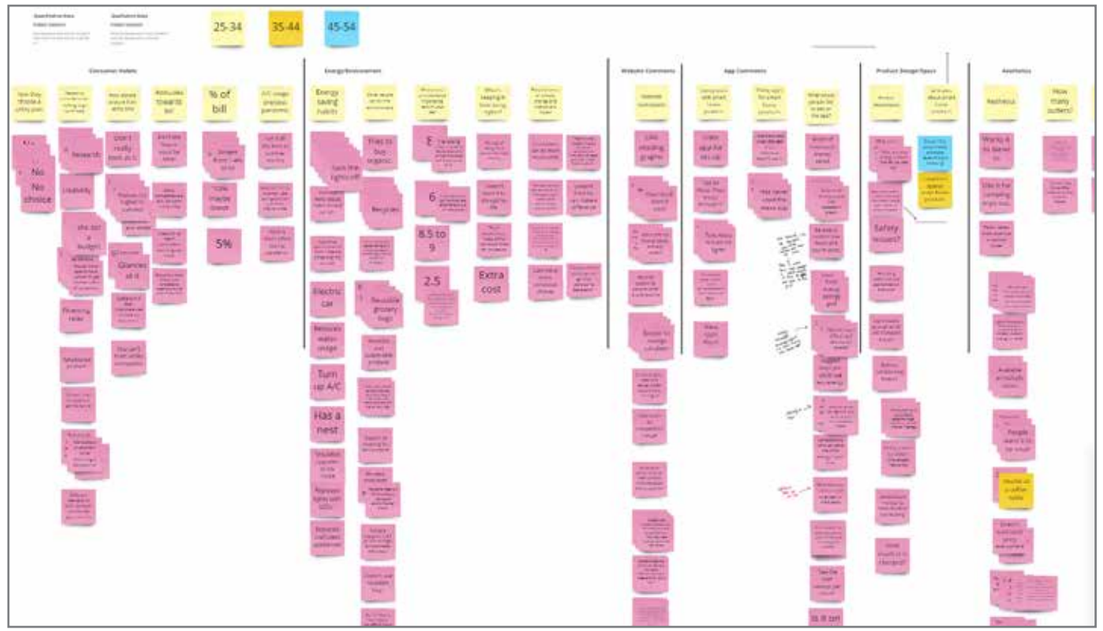
I learned that the biggest barriers to making more environmentally friendly decisions are money and time.

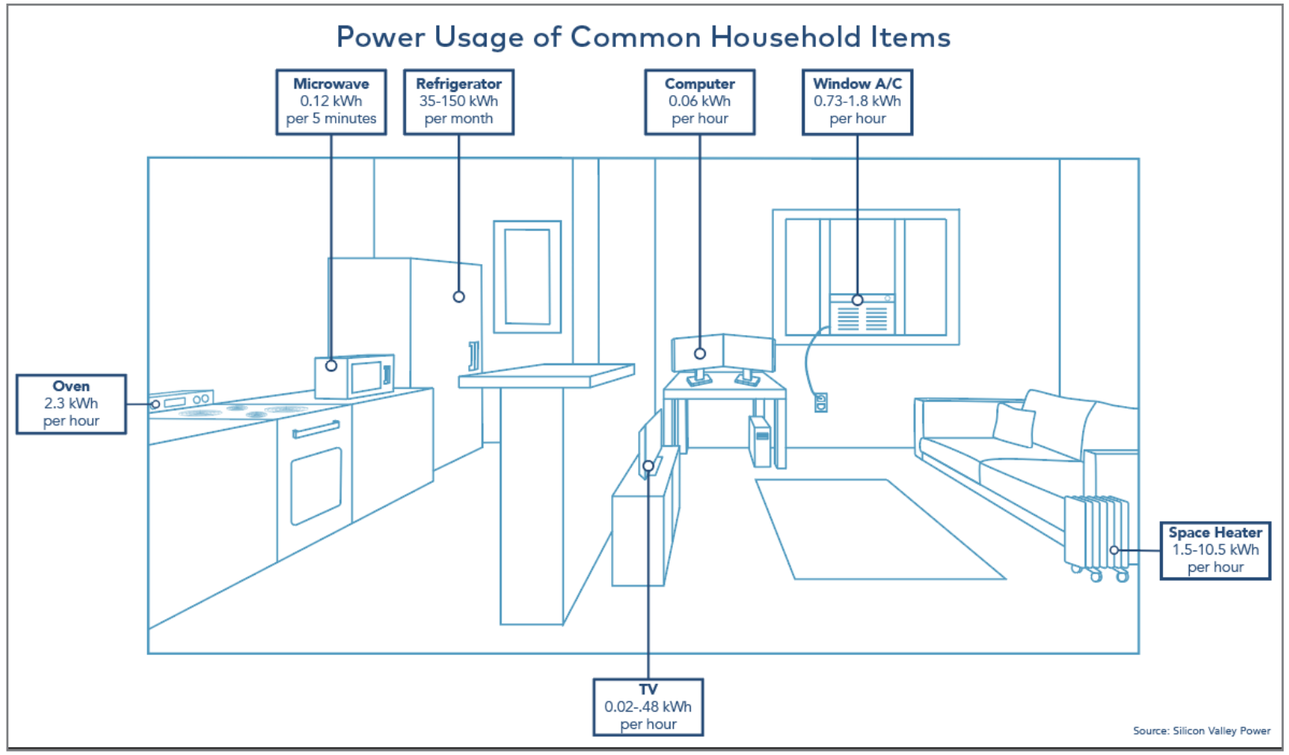
They want to help and they know they should help. That made me think they'd want blip to be very "set it and forget it", and the payback period shouldn't be longer than 24 months (how often the average millennial moves).

I also realized there was a knowledge gap about how much power is used by the electronics in your home. I made an infograph (right) to help educate users. blip works best when paired with a device that uses a lot of power (i.e. window A/C unit.)

Data Synthesis

I categorized the user data in Miro. Patterns I noticed: users wanted blip to be small, they wanted the website to educate them on energy savings, and they wanted the user dashboard to be very simple and straightforward.





Freepik

Cindy 23
Recent Graduate

Cindy's always loved the environment. She bought an electric car and selects products that are produced sustainably. She's always looking for the most eco-friendly option.

Pain Points

Her new job has got her working late nights, and she simply doesn't have time to choose the sustainable option. Biking and always packing your own silverware take time and energy.

Needs

Another way to help the environment that requires very little effort.

"I want to help the environment further, but don't because of the added cost and inconvenience."

"I think consumers have a responsibility to do their part and help the environment."

Freepik

Michael 37
Data Analyst

For years now Michael has fantasized about getting a house. He would love to have a big lawn for his dog. He's read about solar panels and thought it would be a cool way to save energy.

Pain Points

His apartment is in the perfect location near work and can't find the motivation to move, even though he wants to save energy and money.

Needs

He read about solar panels and thought it would be a cool way to save energy. He'd also love a way to save money since he doesn't want to buy a house yet.

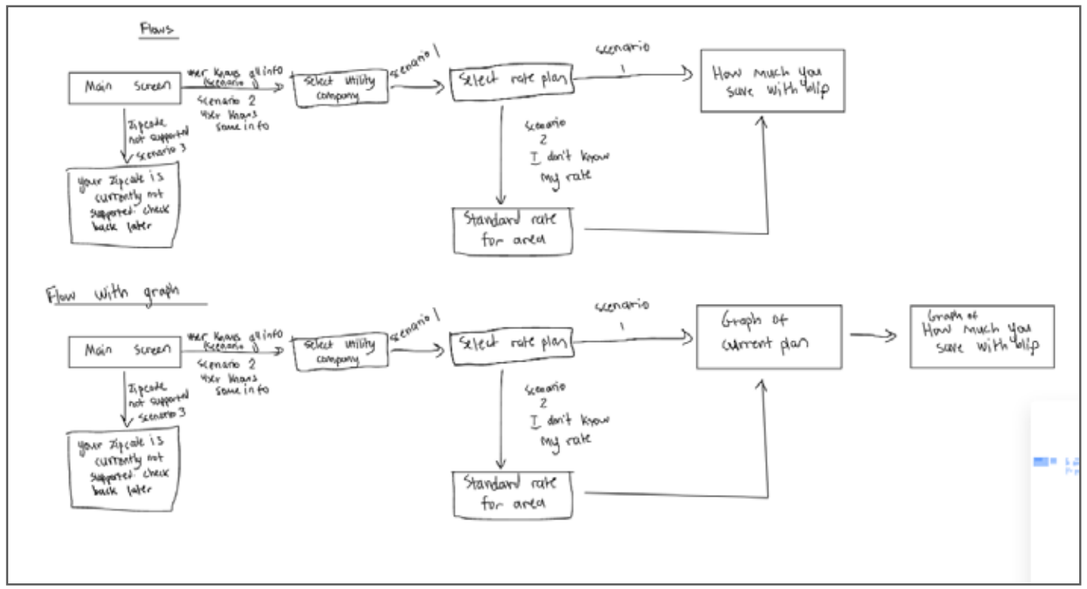
"I barely glance at my utility bill. I just know it's higher in the summer. I love how my Nest learns my habits and then I don't have to bother with it. It just delivers easy savings."

"I feel like I alone can't help the environment. There needs to be a bigger movement to make a real impact."

Savings Calculator

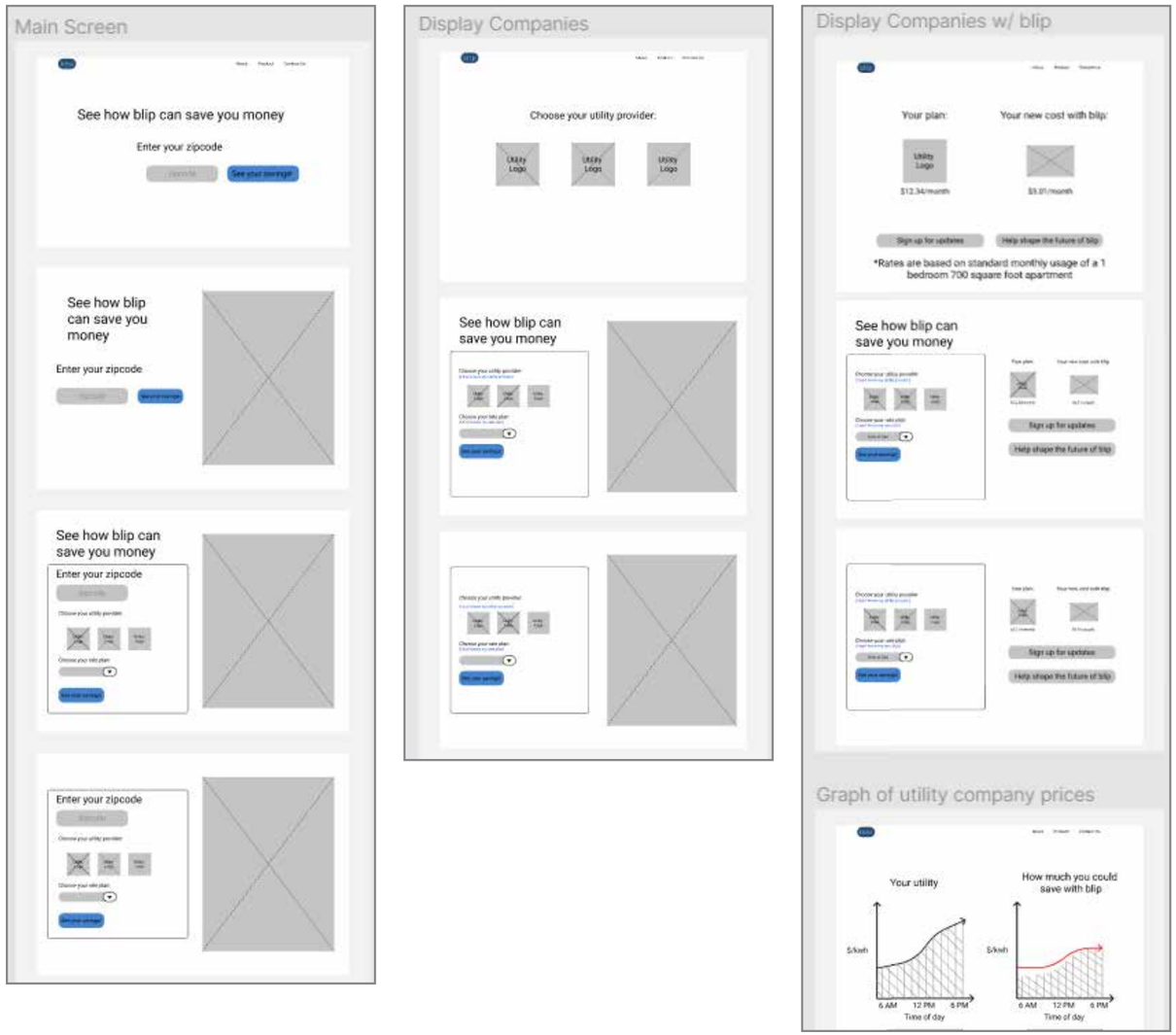
The goal of the savings calculator is to show users their predicted savings using blip based on their zip code and utility plan.

Process Flow



I needed to guide the user in case they didn't know their utility plan, and to inform them of how they can save money if they switch to certain plans.

Wireframes



If they weren't on a particular plan, a call to action will appear asking if they'd like to switch. This button will take them to their utility account.

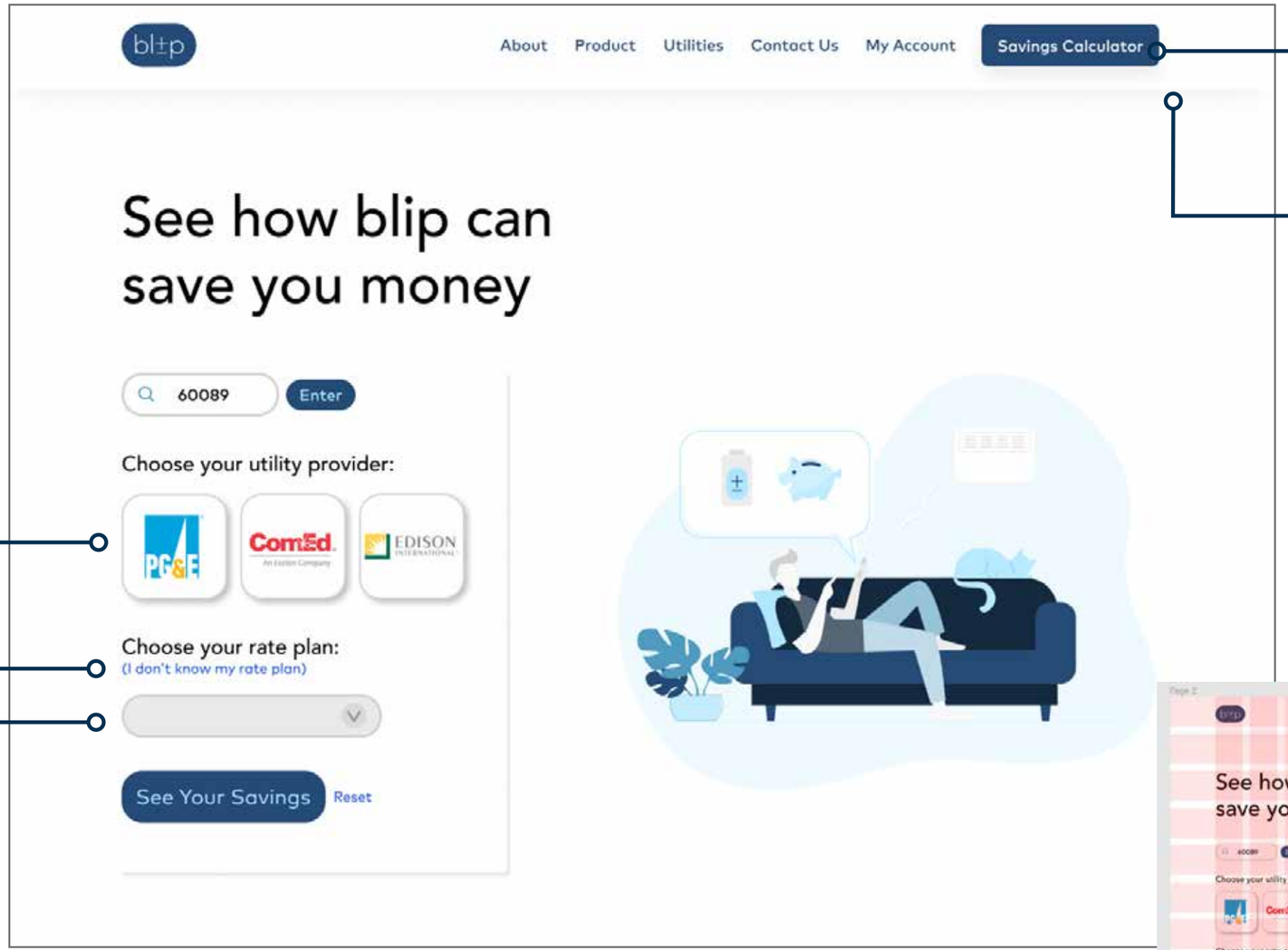
I wireframed multiple possibilities for each screen.

Savings Calculator

Logos have shadows to indicate buttons.

When clicked, information regarding which rate plan is suggested for the user will appear on the right.

Bar grayed out until preceding fields are populated.



Button is highlighted when user is viewing savings calculator. Other navigation bar items are underlined when clicked.

Shadow under navigation bar for separation from main page.

Utilized grids for uniformity.

Couch graphic by Lauren Vandeveire.

A 6 week event where teams of doctors, physical therapists, engineers, and designers come together to create a solution for wounded veterans. On Day1, the teams meet the veterans and begin brainstorming solutions. Then we have 6 weeks to design our solution on paper. The event ends with a 48 hour design sprint to build a working prototype.

Team Avi

Avi lost his hearing while serving and later became paraplegic from a work accident. However, he doesn't let that hold him back! He is the Director General of the Israeli Veterans Association and competed on the paralympics basketball team. While at work, he needs to lift his legs a few times a day to prevent leg spasms.

At home, Avi uses a chair or pillows to prop his legs up.

At the office, Avi can't reach under the desk to pick his legs up. He needs a way to **place his legs on a rest,** and **roll it under the desk** with his legs on it.
However, he frequently uses a hand cycle that also attaches to his wheelchair. Therefore, our device must be **detachable.**

It should **support** his calves.

And be **adjustable** to different heights.

Problem Statement

Design a leg rest that is portable, adjustable, detachable, supportive, and can move with his wheelchair.

What concepts can we pull from existing foot rests?

✔ **Cushion**
Supports the calves

✖ **Leg Rest on Wheel-chair**
Not easily removable

✖ **Foot Sling**
Hard to place legs in sling while in wheelchair

✔ **Adjustable Ottoman**
Adjustable, wheels can move with wheelchair

✔ **Folding Foot Rest**
Adjustable, collapsible, and on wheels

Design Direction

Make a folding foot rest with wheels. A cushion will be placed on top and there will be straps to attach the rest to his wheelchair.

We bought a small folding stool for Avi to handle.

Can Avi bend over while unfolding this stool? (He couldn't.)

How can we design a stool that Avi can collapse while sitting upright?

Which foot rest heights were comfortable for Avi?


DEWALT


Collapsible foot rest with wheels.
The first iteration didn't have adjustable heights.
Half expanded. See next page for fully expanded.

Lifting handle so Avi can collapse and expand the foot rest with one hand.

Cushions to support his calves.

Straps to attach the foot rest to his wheelchair.

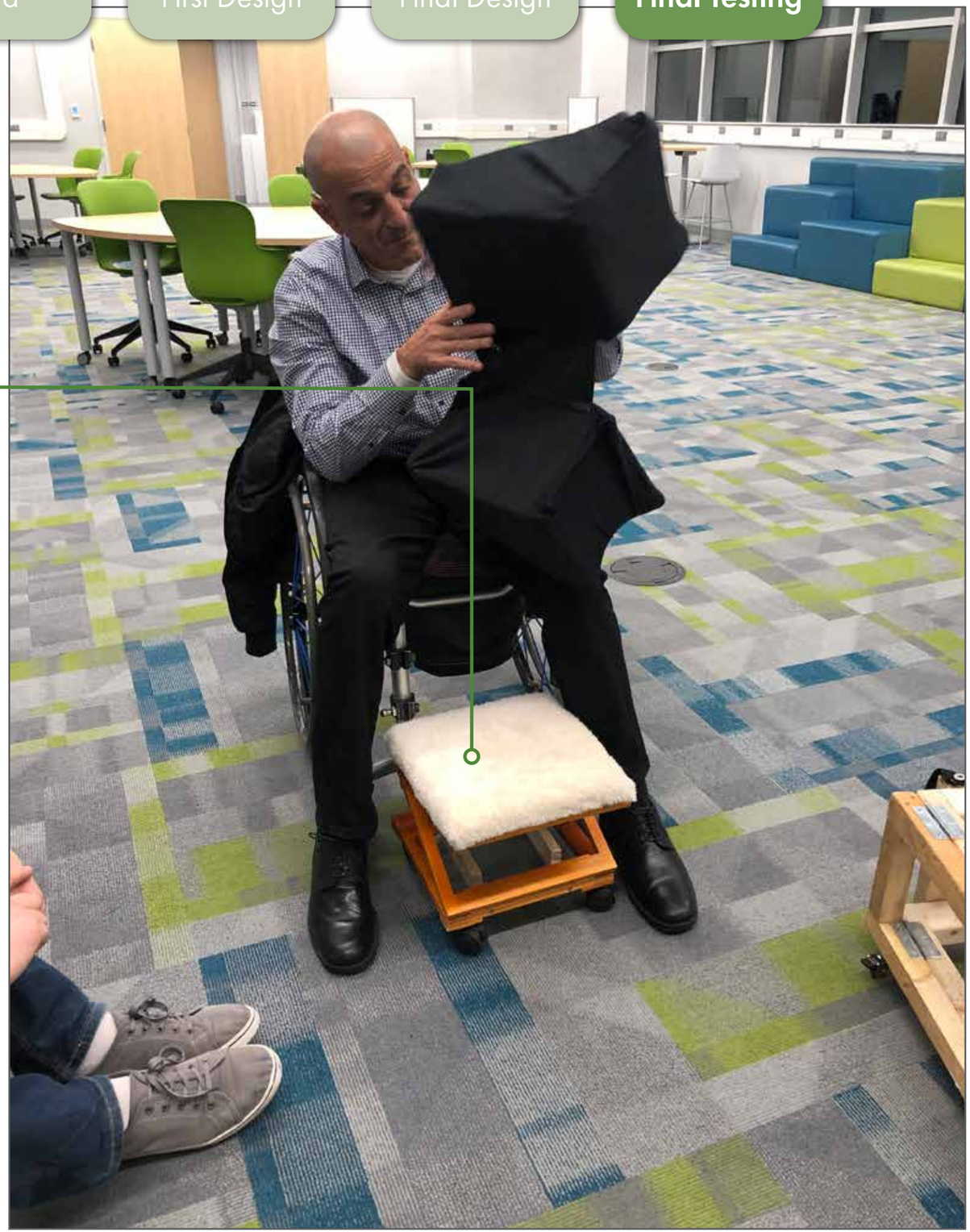
Ability to fold so it can be **carried easily.**

Casters so the foot rest will move with his wheelchair.

In the end, we failed to meet Avi's needs with the foot rest we built.

Avi preferred the purchased foot rest because of its lighter weight and compact size. We incorrectly assumed that Avi needed to unfold the footrest without bending over.

Our Design	Purchased Foot Rest
+ Correct Height	+ Low but still acceptable
- Not adjustable	- Adjustable, but not to proper heights
- Big and bulky	+ Lighter, easier to move



Lessons Learned

The initial requirements may shift after the user sees the first prototype. Consistent user feedback is important during the design process.

Requirements

The stone is large and bulky. James cannot grip and leverage it with one arm.

The device must be wearable. An external device may give the illusion that he's not involved in the lift.

He must be able to put the lifting device on with no assistance.

The device must be comfortable and safe to use.

Problem Statement

Design a device that James can use to lift and secure a heavy, bulky object with one arm.

Note: This is not James.

Brainstorming

Wearability

✗ **Exoskeleton**
He has no nerve signal in his arm to activate the device

✓ **Brace**
Can fasten around his body

Stone Retention

✗ **Net**
Can get tangled or caught on stone

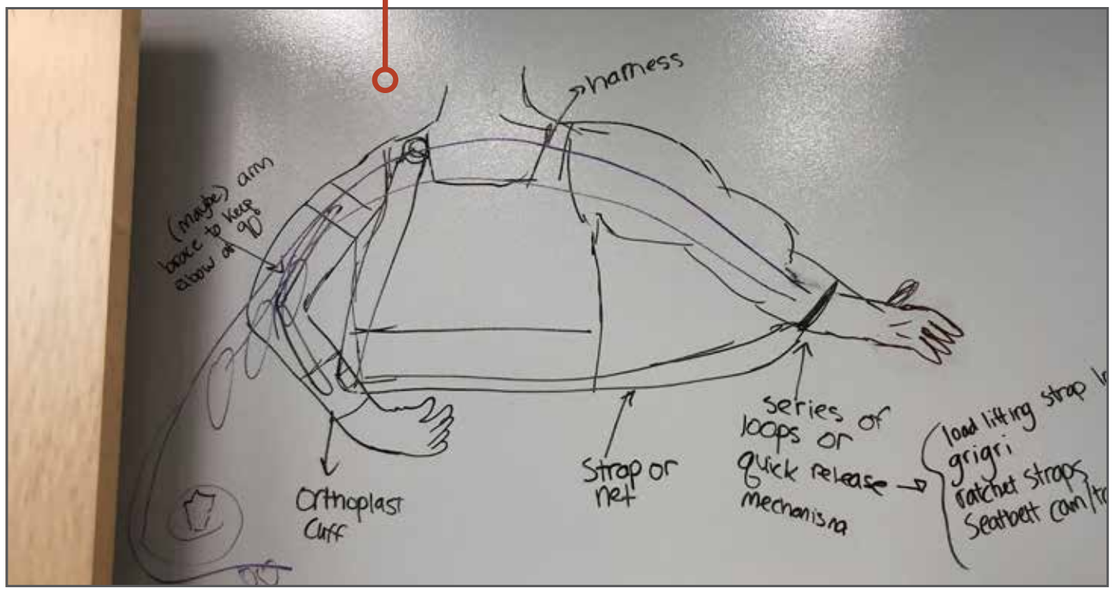
✓ **Load Lifting Straps**
Durable, rigid

Design Direction

Attach a load lifting strap to a harness.

Development

Where would the strap attach on the harness?



How would we design the handle for the strap?

Does the strap need rubber to grip the stone?

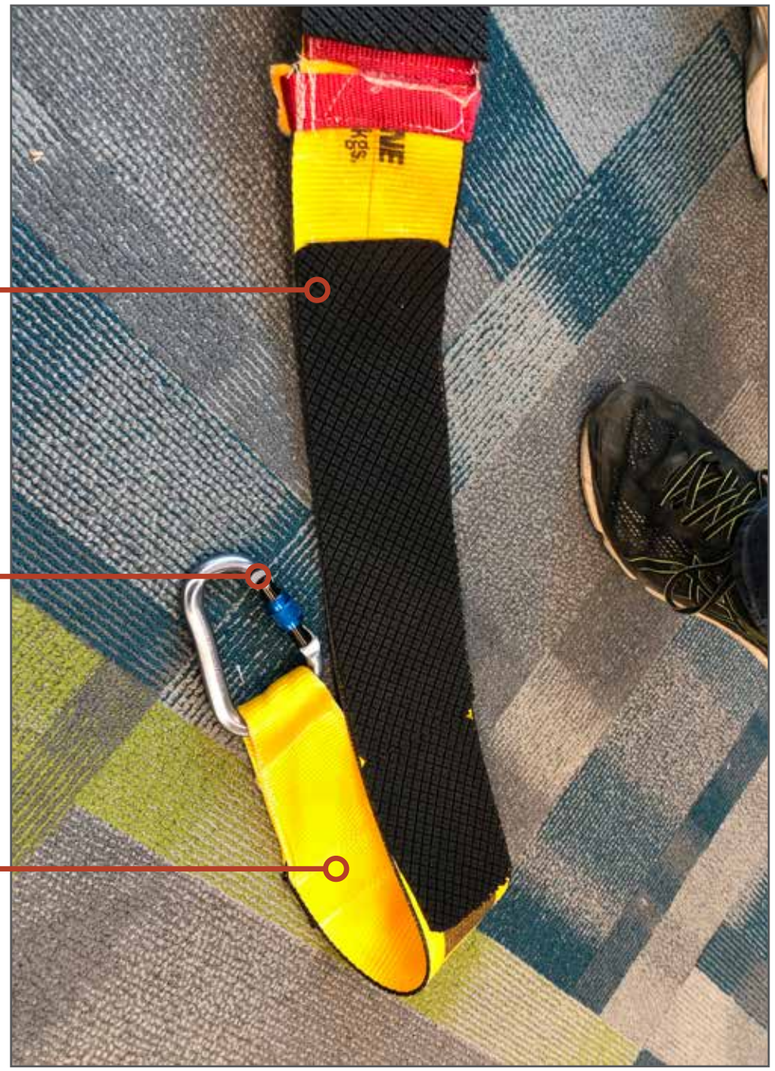
James practiced with a strap wrapped around a mock stone.

Design

Rubber grip

Carabiner to attach to harness

Load lifting strap

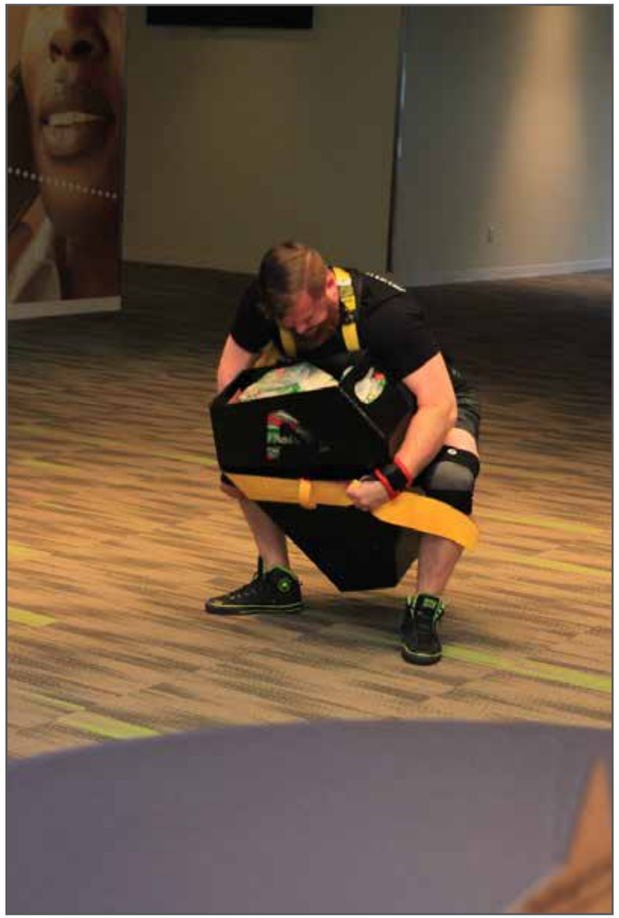


Adjustable strap

X stitching for load durability

Handle

Testing



The testing weight was 350 lbs.
James successfully and comfortably lifted the stone.