

Katherine Huffman

Industrial Design

In 2012, I graduated from the Auburn University School of Industrial Design, ranked 6th in the nation for undergraduate Industrial Design programs. During my time in school, I won a number of awards and worked on projects for companies as diverse as Char-Broil and Horace Small. My student portfolio, complete with additional photos and information, can be found on my website alongside my personal and work projects at www.katherinehuffman.com.

Pictured at right is one such personal project: sand-cast metal keychains of our department's logo.



sky design

In this project, we worked in collaboration with Sky Design in small teams to create a brand and develop that brand in a given space. The group I was part of was assigned a restaurant. We were tasked with creating the brand and expanding that brand into every element of the restaurant. From menus to signage, uniforms to coasters, we worked to create a full-fledged marketable brand.





While researching, I discovered many relevant elements from the era, including photographs, news articles, magazines, advertisements, and prescription pads for medical alcohol.



BLIND PIG
Fine Dining and Drinks

blind pig
Fine Dining and Drinks

blind pig
Fine Dining and Drinks

All elements of the design were inspired by the period they were to reflect. Uniforms were inspired by the style of the time while still being practical for wear and use in a restaurant. Font for the logo and signage was directly inspired by fonts of the time.

BLIND PIG
Fine Dining and Drinks

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Fine Dining and Drinks

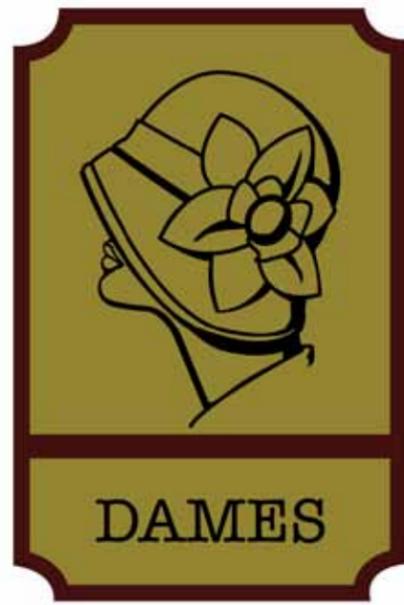
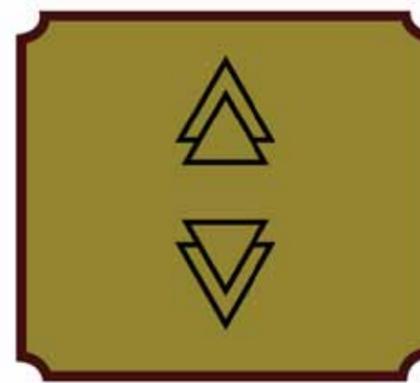
BLIND PIG
Fine Dining and Drinks



EMPLOYEES ONLY

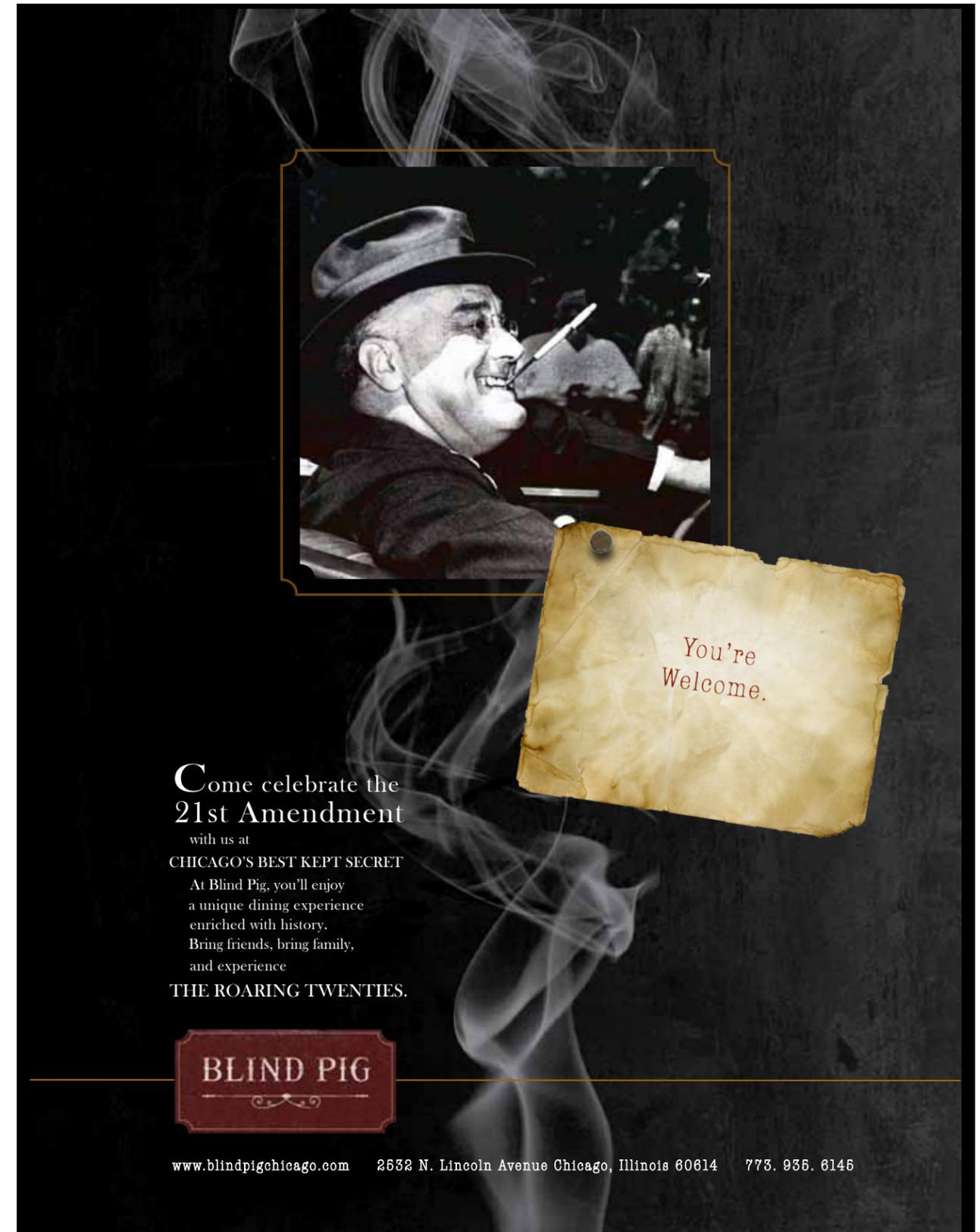
STORAGE

ELEVATOR



Advertising and graphical elements were inspired by news and events of the time. Matchbooks (at right) could come in many different variations with famous mugshots of the era.

Below: Matchbook
 Bottom: Blind Pig homepage.
 Far Right: Example of print advertisements.



As part of our final deliverables package I fabricated numerous elements, including wall signs, beverage coasters, keychains for our secondary brand, and a 1:4 scale outdoor sign.

Below: Gift certificate designed to resemble an historically accurate alcohol prescription pad.



Johnson & Johnson

This brief project involved package redesign for Johnson and Johnson. Our class was given various Johnson and Johnson products and tasked with researching the problems and potential of the current packaging. The packaging I was to research and redesign was Listerine travel-size bottles. The purpose of this project was to utilize the lessons learned in our Methodology class. Johnson and Johnson also offered a prize for the solution that best reflected the problems discovered. For my packaging redesign, I won 2nd place out of a class of 54.





"I pretty much just ripped the cap off."



"Yeah, I normally get two uses out of these."

Right from the start, two problems became immediately noticeable. First, no one knew precisely how much mouthwash they were supposed to use. Most people simply took a large mouthful of it, using anywhere from a third to a half of the bottle.

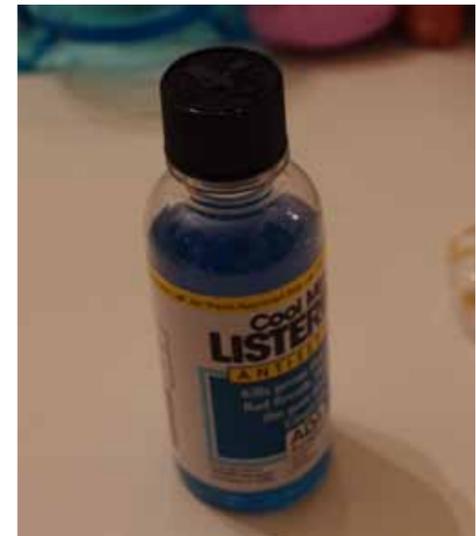


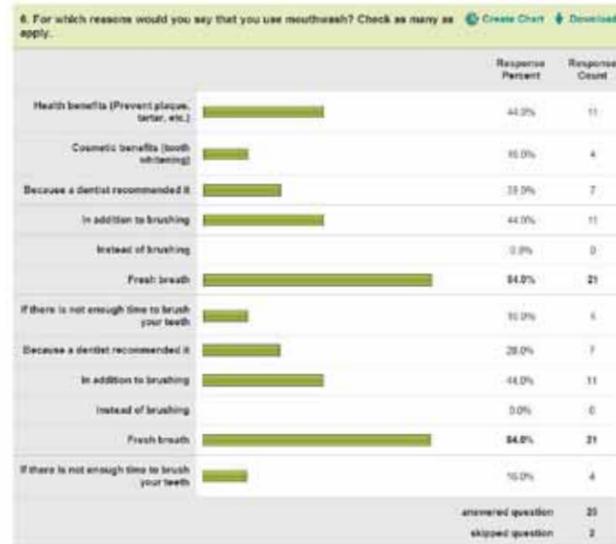
"How much am I supposed to use?"



"Ack! I can't get it open!"

The second most common problem was that people were having difficulty with the child-proof caps.





"Ugh...It's childproof..."



"So how much of this am I supposed to swig?"



"Really? I hate childproof caps..."

LISTERINE®

POCKETRINSE

This style of packaging allows these to be sold as either multi-packs of one flavor, or in packs of different flavors to give consumers the opportunity to try the many flavors of Listerine that they may not be aware of.



These would come packaged in a slim, convenient, and easy to carry plastic pack that could be reused. The plastic case could come in a smaller starter pack or as a bonus in a multi-pack to encourage consumers to try a different pack with different flavors.



AeroGrow[®]

With this project I was tasked with designing a product to compete with the existing AeroGarden units. AeroGarden is a self-contained home hydroponics system. It is marketed as an easy to use, friendly, self-explanatory system, though through research I found that many people were not pleased with having to spend so much money on the proprietary pieces needed to operate the system. This research defined the scope of the project: create a unit that could realistically be produced for sale, that was as easy and straight-forward to use as the AeroGarden while offering greater options, less expensive non-proprietary parts, and a unique profile that would not be mistaken as part of the AeroGarden line.



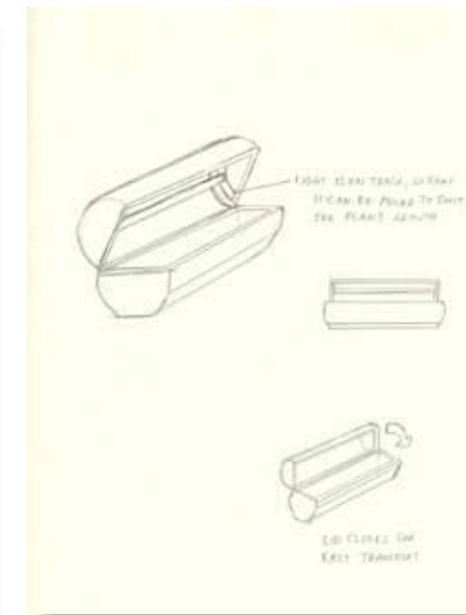
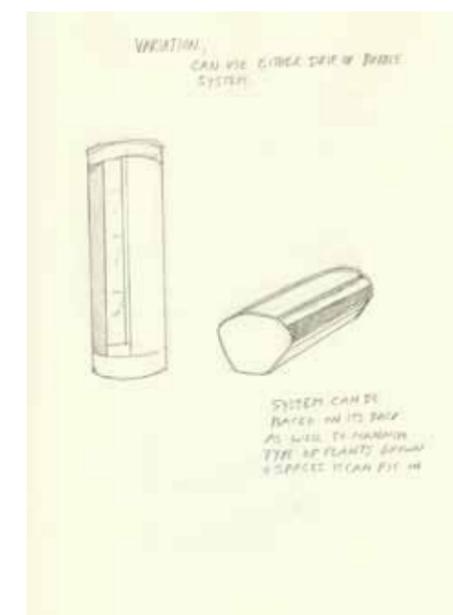
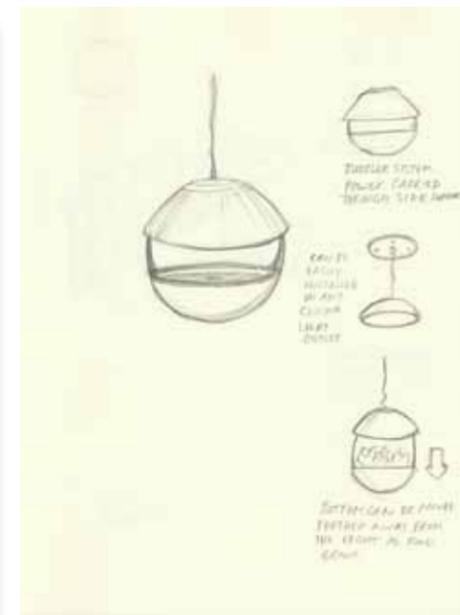
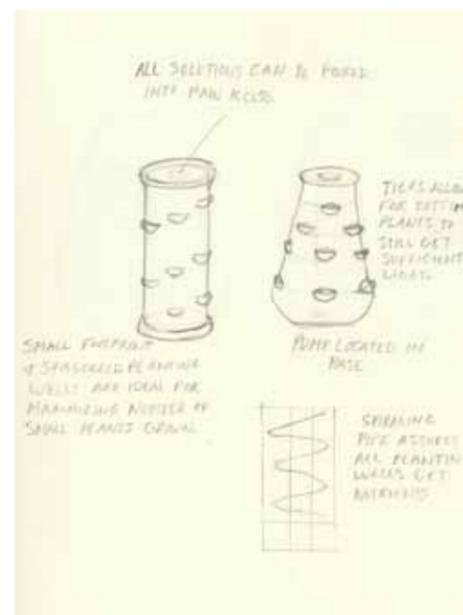
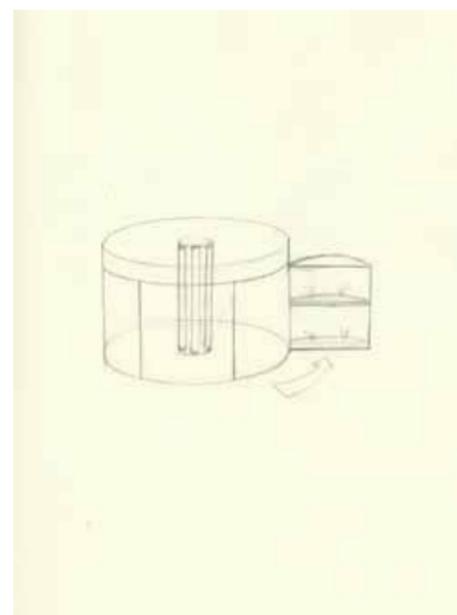
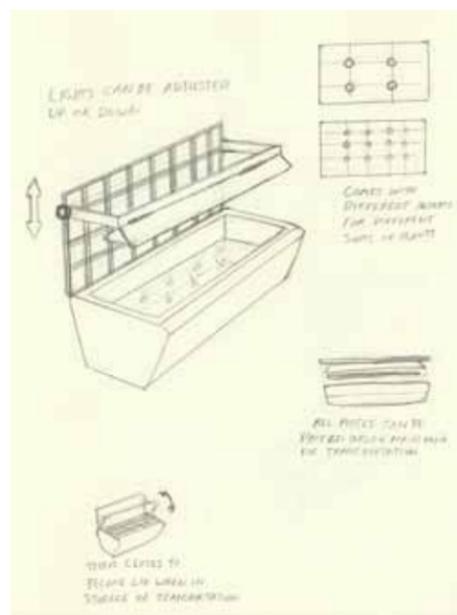


I was charged with designing a competing product to the AeroGarden, taking into consideration customer praises and complaints for the existing products and models.



Common complaints discovered:

- Pets get into plants in unit.
- There is a limited variety of plants that can be grown in the spaces given.
- There are few solutions as to where it can be placed.
- Many people find the grow lights to be unpleasantly bright.
- AeroGarden units require proprietary products such as brand-specific grow lights, nutrients, and grow material that are expensive and cannot be bought at local big-brand retailers.

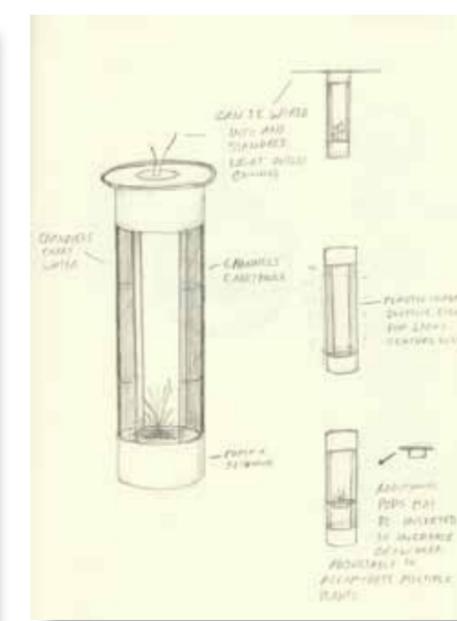
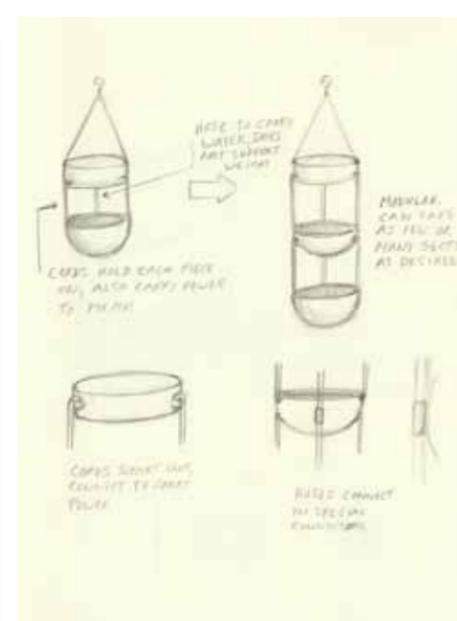
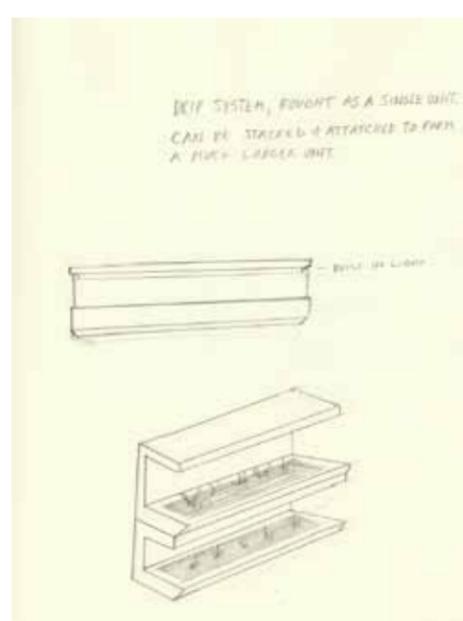
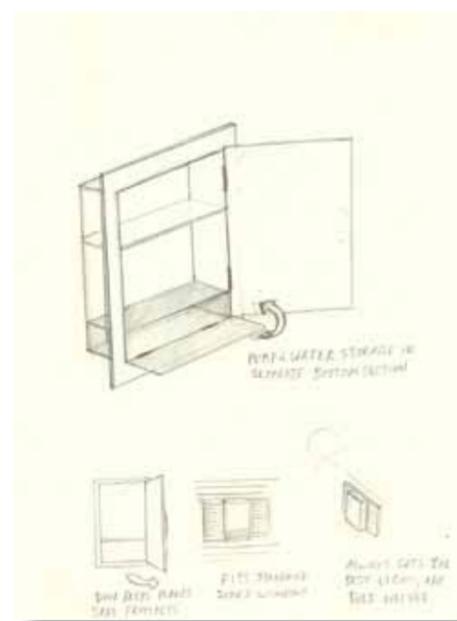
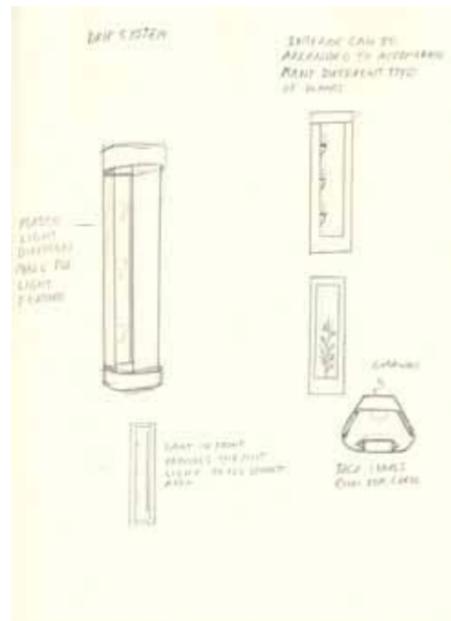




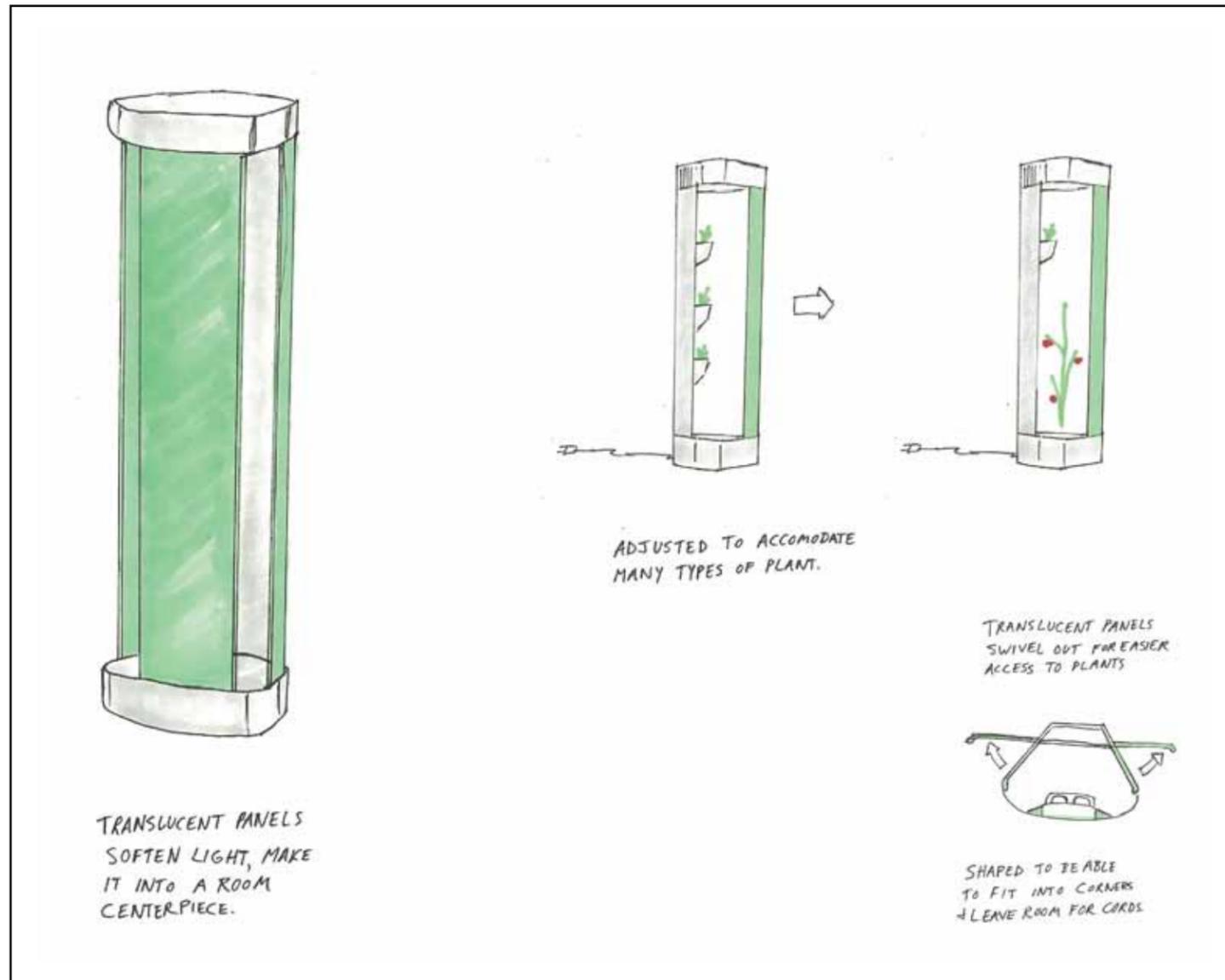
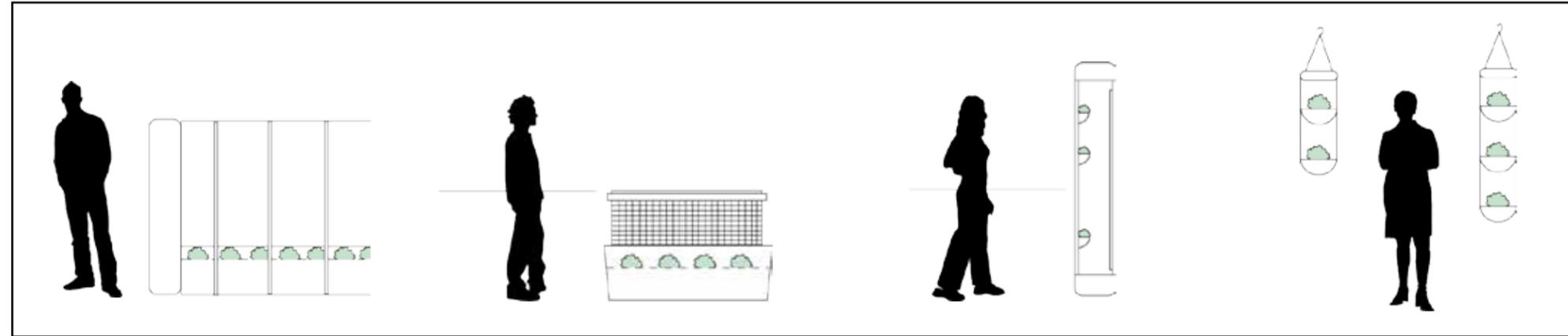
With this information in mind, I began experimenting with possible forms and features that would address customer complaints.



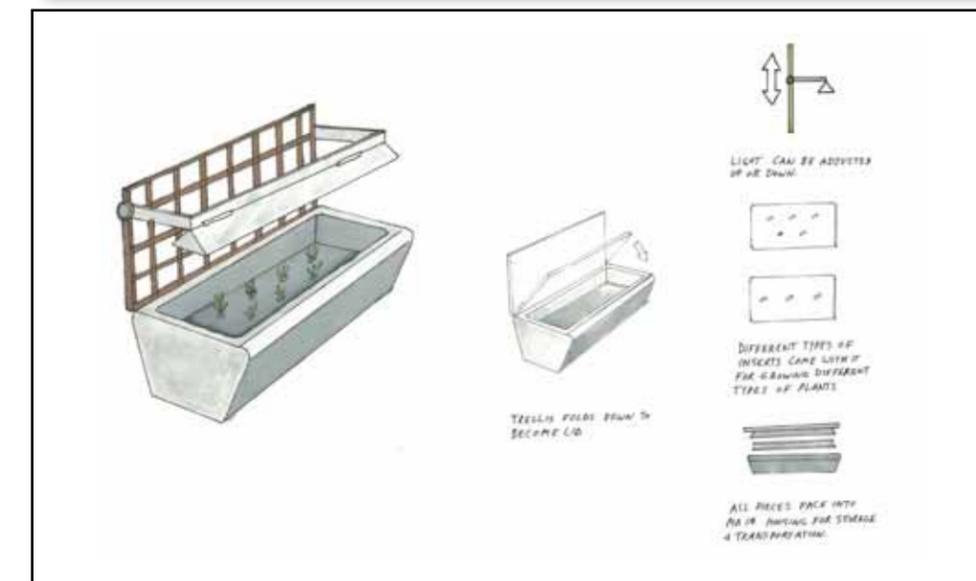
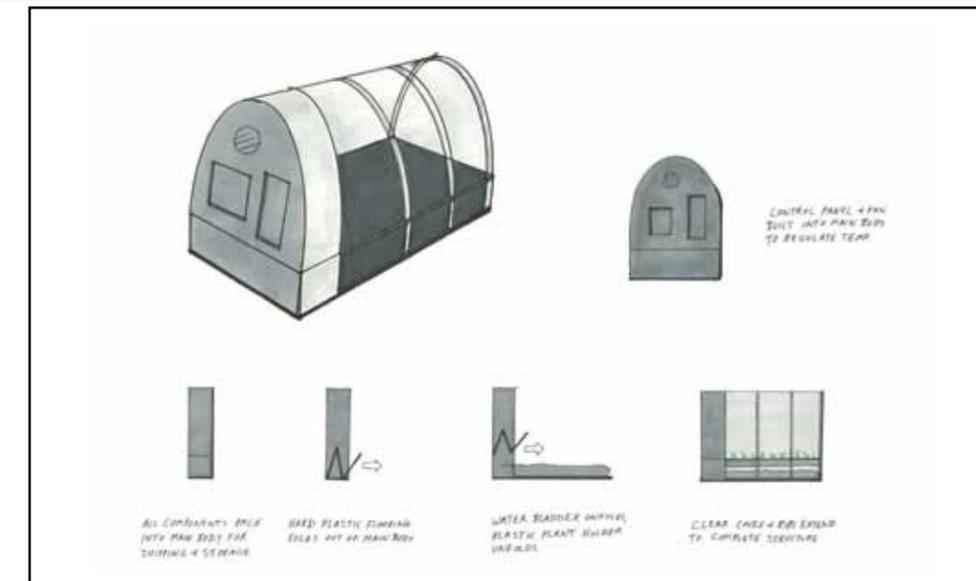
Primary areas I focused on were non-proprietary refills and replacements, ways to keep the plants protected when not being tended to, adjustable grow spaces to accommodate a wider range of plants, and ways to make the light an added benefit aesthetically rather than a nuisance.

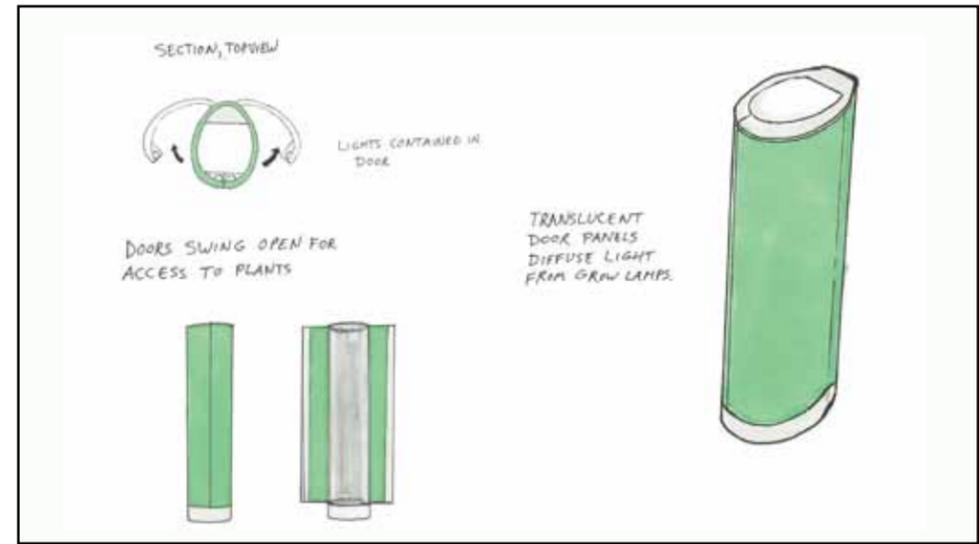
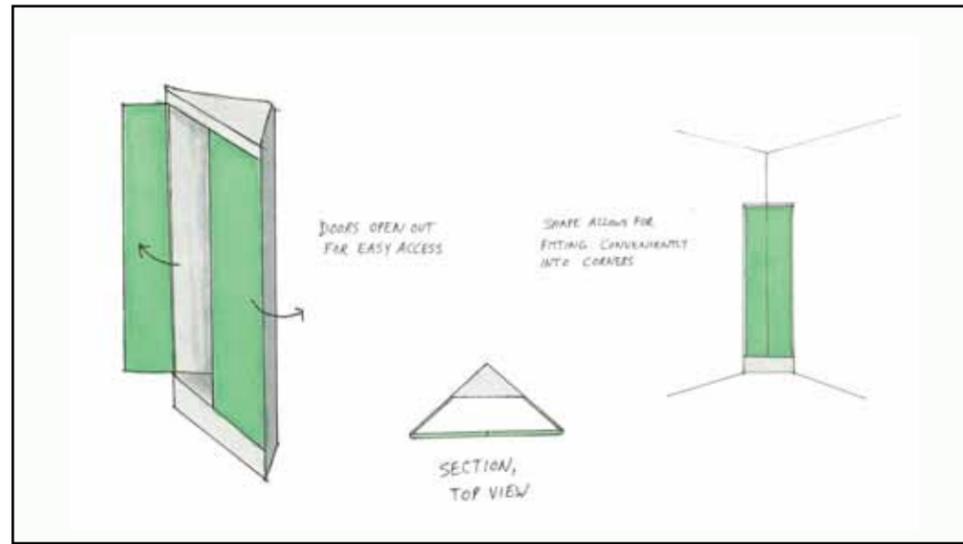
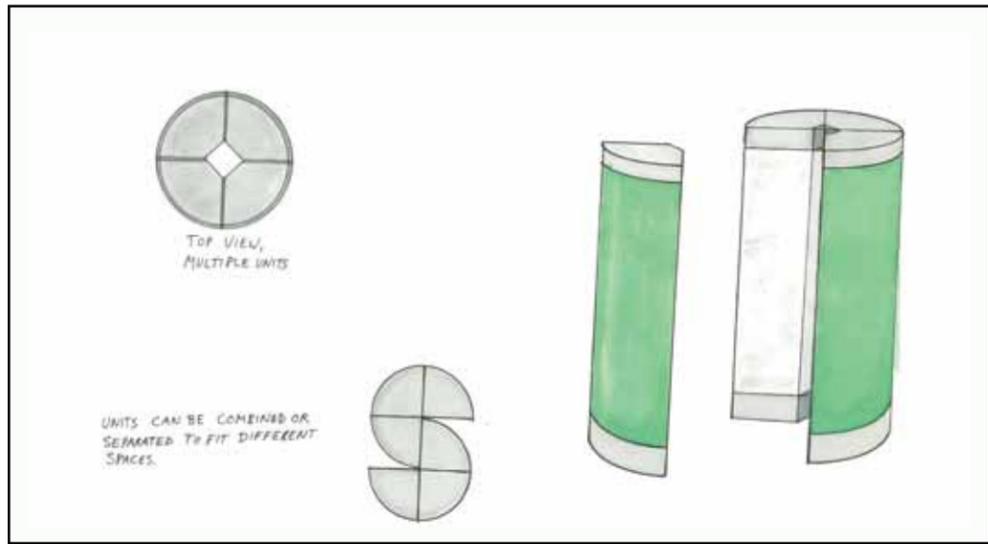


Many sizes, forms, and setups were considered during the design process. Throughout, the most important considerations for this product were to address the complaints and concerns discovered through user reviews by Aerogarden customers.

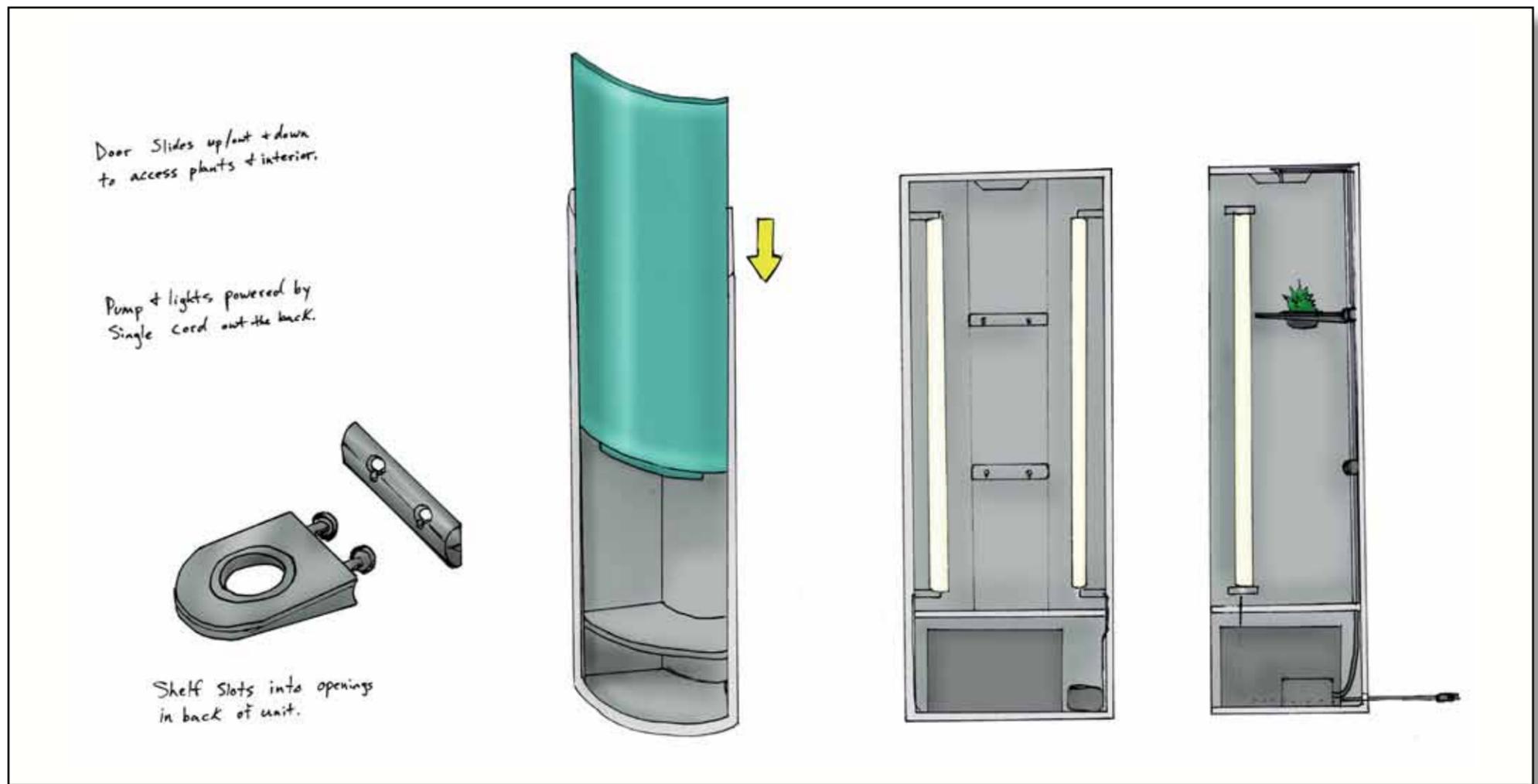


Some issues that were repeatedly voiced were the cost of proprietary materials such as grow lights, seed kits, etc. Also limited capacity and being limited in the ability of what could be grown in the unit were issues.



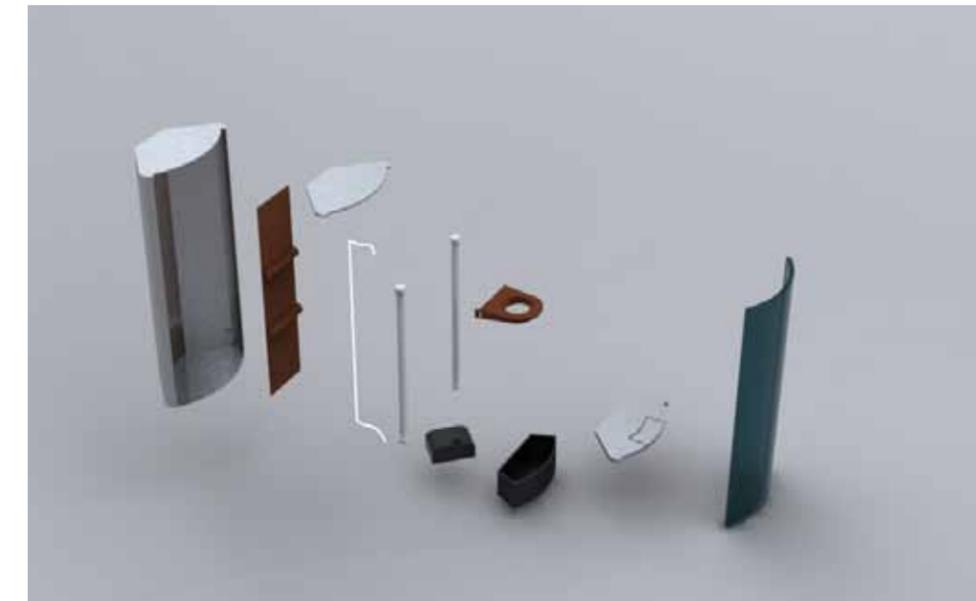


The main complaints that this line of development began to address were using all standard internal components that could be purchased at most big box retailers, finding an aesthetically pleasing way to diffuse the light from the grow lamps, and having an internal capacity such that a wide variety of plants could be easily grown.



To address consumer complaints, I designed a hydroponic grow system that incorporates non-proprietary parts available at most big-box retailers such as Wal-Mart, Lowe's, and Home Depot.

As the parts are non-proprietary, many different variety of plants can be grown in the Corner Conservatory without the necessity of buying expensive pods and other brand-name grow material.



Since the shelves of the planter can be adjusted or removed, different sizes of plants can also be grown.

There are also relatively few pieces, making it simple, straightforward, easy to access and inexpensive to produce.

The Corner Conservatory was given a much different profile than existing AeroGarden units so as not to be confused with their line of products.

Two repeated complaints were that with the traditional AeroGarden unit, pets would get into the growing plants, and lights were unpleasantly bright. To address these issues, I designed a translucent door which would protect the plants when they were not being tended to, and also diffuse the light, making it a more aesthetic element.

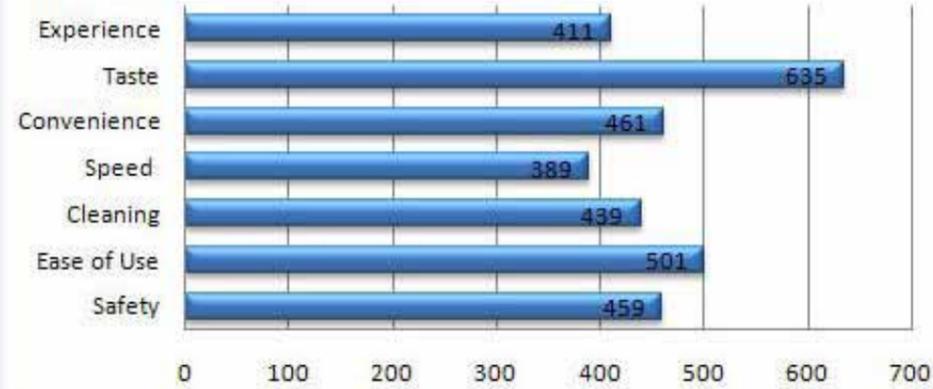




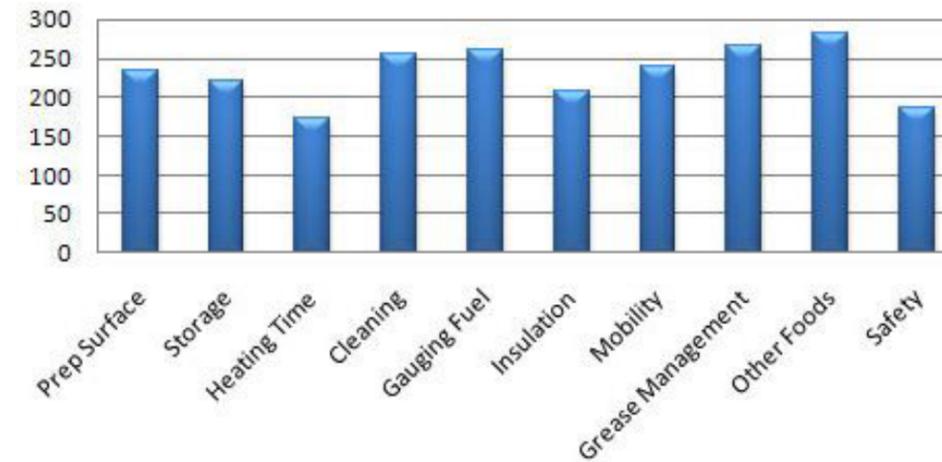
In this collaborative project with Char-Broil, our studio was tasked with designing new innovative features for Char-Broil grills. We were asked to consider what the future of grilling would look like, with the parameters that what we designed must be able to be realistically produced, with available technology. To discover more about our market, the process of grilling, and what was already available, we engaged in many types of research, from surveys, interviews, product comparisons, watching people grill, and grilling. We presented a first set of concepts then refined our designs based on feedback received from Char-Broil. Char-Broil then picked from our final designs one they would most like to see developed. Lastly, we each built full-sized models of our selected design.



How important are the following things?



What areas need improvement?



The earliest phases of our research involved surveys and user interviews. When asked what items were the most important, while all items were important to those asked, taste clearly won out. Ease of use came in second.

When asked what areas of grilling needed improvement, grilling surfaces for other foods, ease of cleaning, and a way to gauge food were all consistently mentioned.

The majority of people who have a grill and responded to this survey, grill frequently. They also grill a wide variety of foods, from the tradition steak and burgers to vegetables, breads, pizza, and even some deserts.



Regardless of what type of grill you use, what are some features you feel are missing? What are some areas of improvement that you would like to see?

"The **cleanup is horrible**. Very difficult to clean the inside of grill and the baskets!"

"**More work space** and it would be nice if parts didn't rust. How about a more durable cover as well."

"Most grills sit out side and are subject to all types of weather. I'm disappointed in how they hold up. Whether it has been a cheap one, or the expensive stainless steel model I have now, things have failed too soon. i.e. electronics starters, rusted out drip pans, rusted out burners, etc."

"**Storage, mobility**, a couple of grilling surfaces that are interchangeable would be nice."

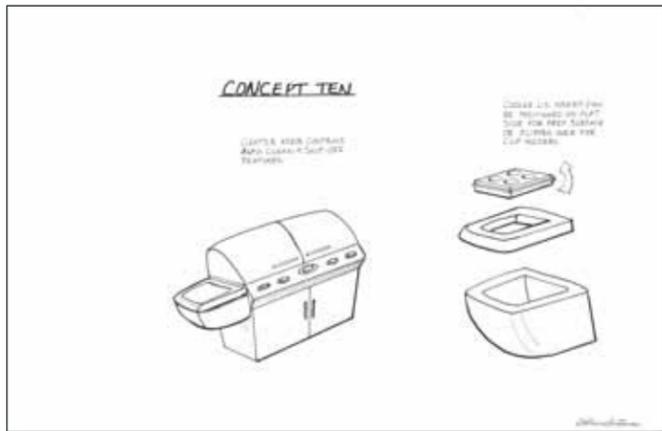
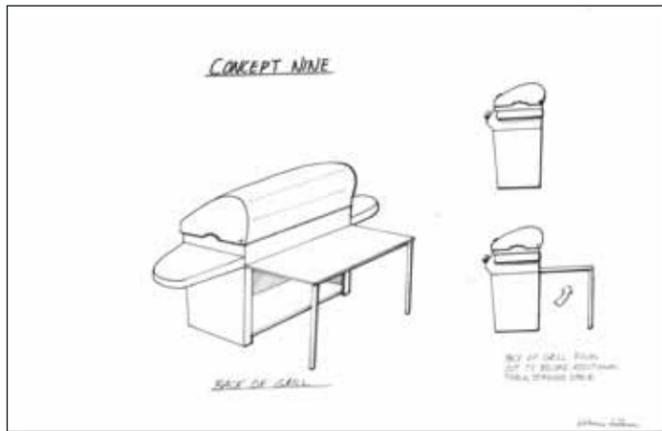
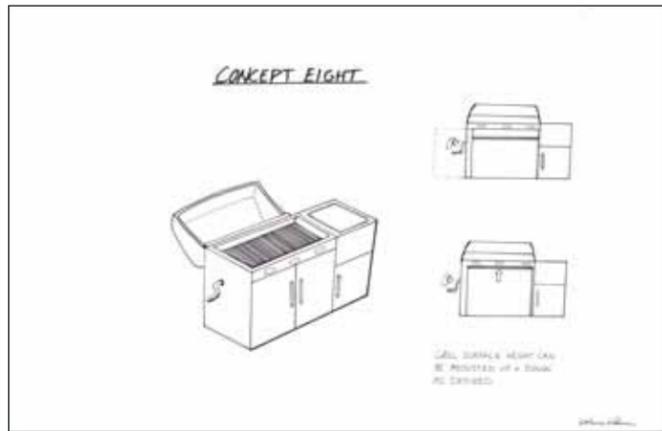
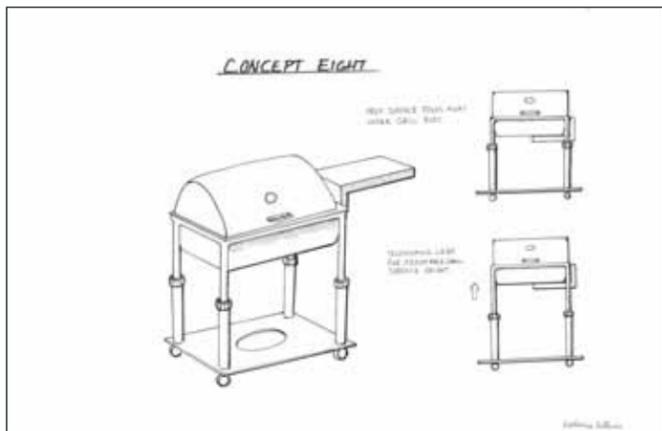
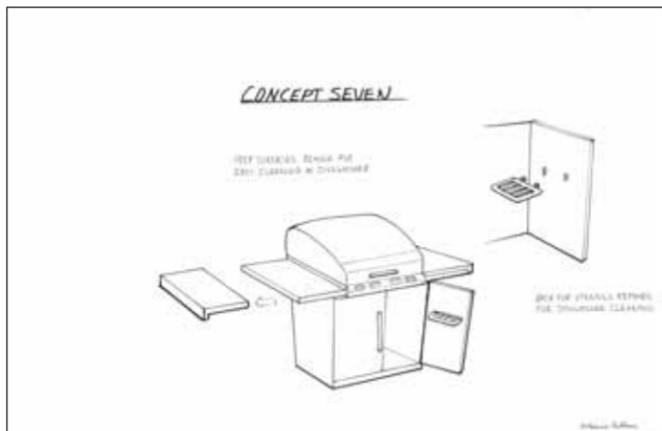
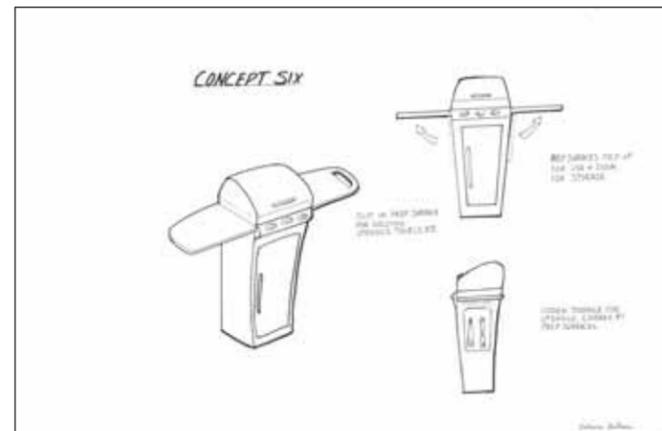
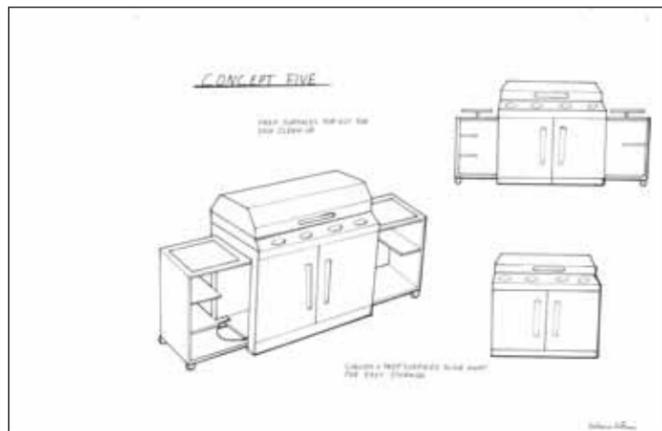
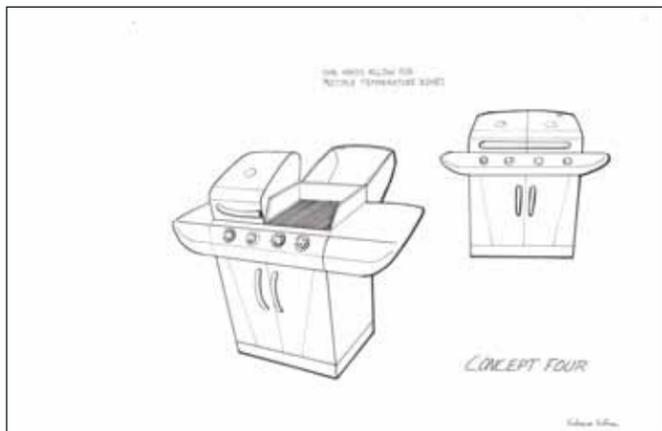
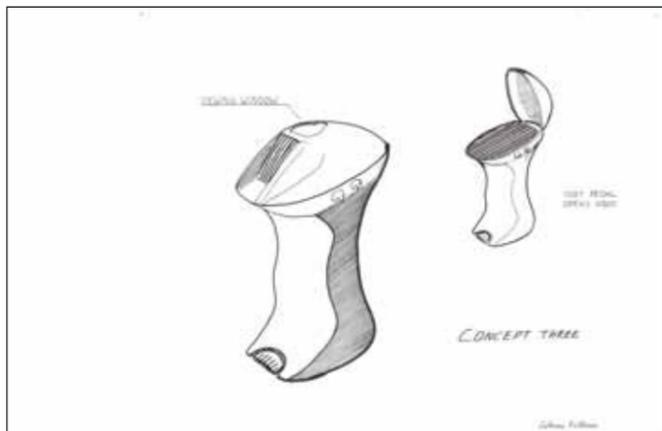
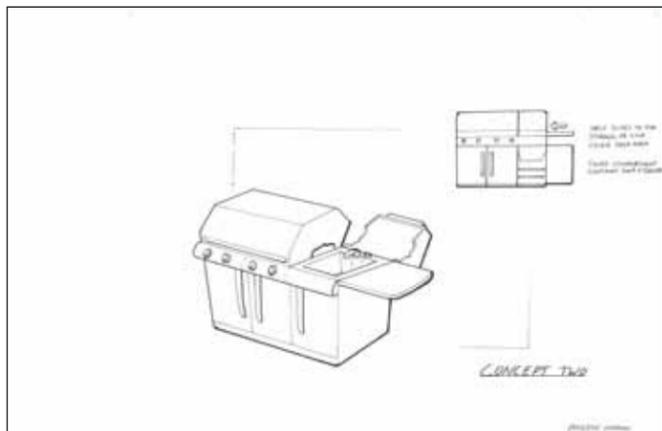
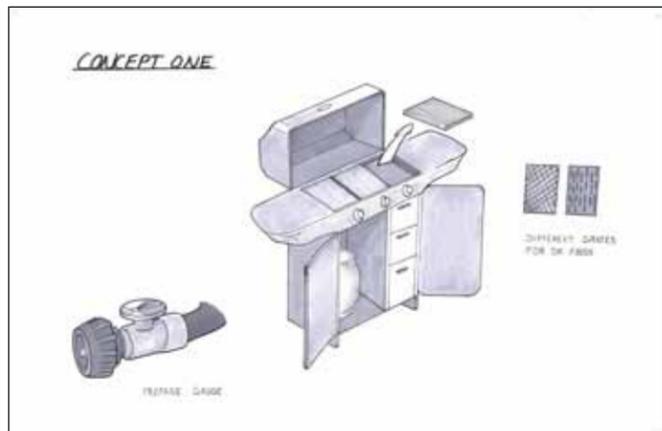
"**Lights!** I often grill after dark.. Always have to rig lighting to see what I am cooking. Built-in, fire resistant lighting, or ability to attach external lighting after coals burn down, would be optimal."

"If I'm going to use gas, a **built in propane level gauge** would be handy."

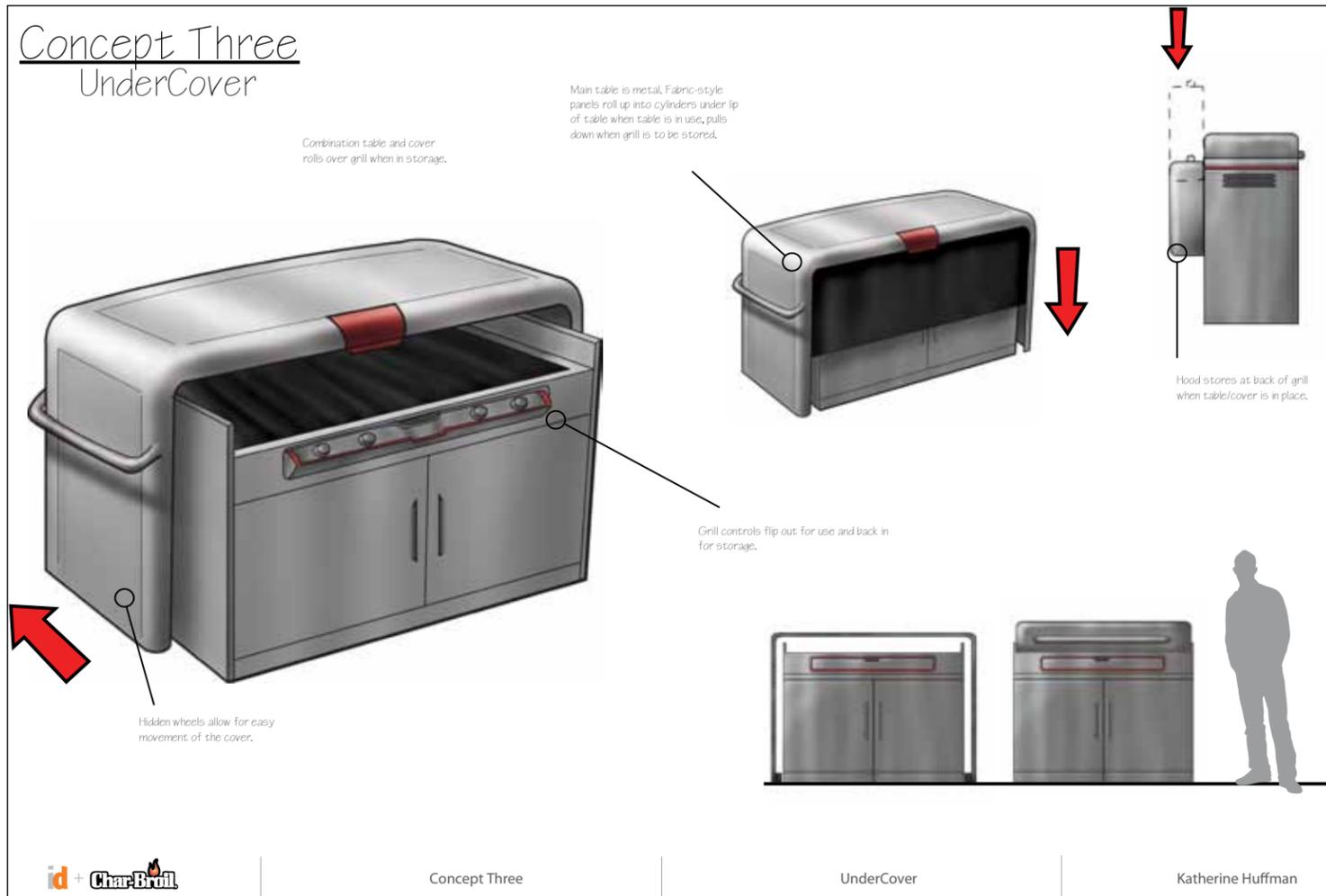
"An **easy cover** or coverless grill set up"

"**Cover on back of grill base**. Storage shelves/cabinet for cooking utensils. (May be available as accessories, but not sure)"



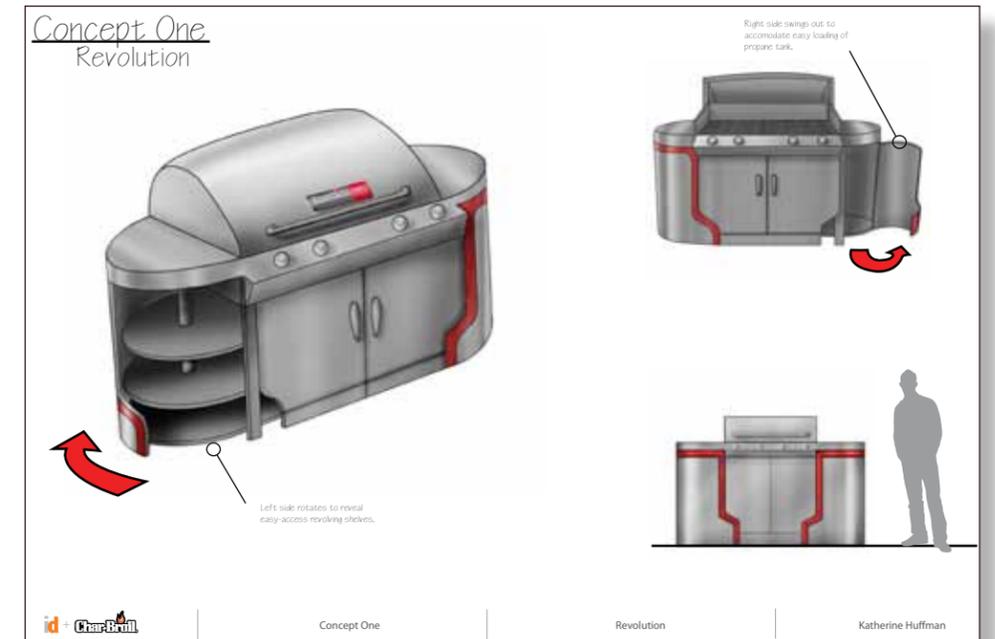


Concept Three UnderCover

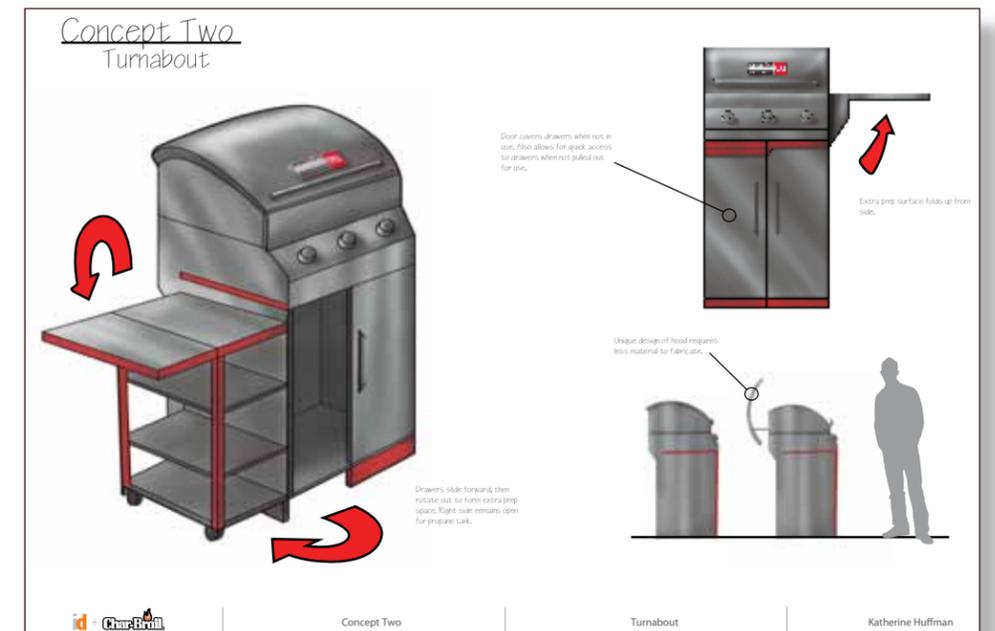


Following the initial design stages, I was given feedback and a new set of criteria to work with. In design phase two, I refined my concepts to better reflect the criteria I needed to address. Ultimately the client chose concept three, "UnderCover," as the direction that they would like to see pursued.

Concept One Revolution



Concept Two Turnabout





For our final deliverable, we were to produce a full-sized mock up of our concept. After adjusting some of the dimensions, the first step was to build the grill itself. Next came the cover. Since an integral part of my concept was having an easy-to-use cover that doubled as prep space, the cover had to easily roll forward to fit over the grill, and still be at a reasonable height for using as a preparatory area. The grill cover has two pull-down inserts to cover the front and back of the grill. Pull down to cover the grill, pull down and release and the cover rolls back up under the lip of the grill cover.



Openings cut in the grill cover allow the grill to easily slot into place. It also keeps it on track while rolling in, keeping it from knocking about. The handles of the grill cover slide in on either side of the grill's handles, locking the grill in place, allowing both units to be moved as one when the grill is not in use. Control panel on the front folds away so the grill fits seamlessly under its cover.

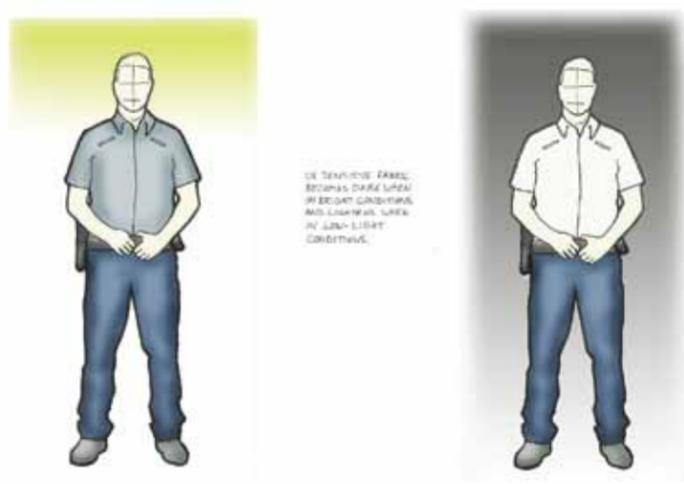




In this studio sponsored by Horace Small, we surveyed, interviewed, and rode along with police officers and fire fighters to get a sense of what they needed out of their uniforms and equipment on a day to day basis. It was important for Horace Small that we provide useful and innovative solutions to the challenges that we discovered. Each student chose a key area to work on crafting concepts. After running through a number of iterations and ideas, presentations and feedback, we settled on our respective final deliverables. Then we got to learn how to sew...



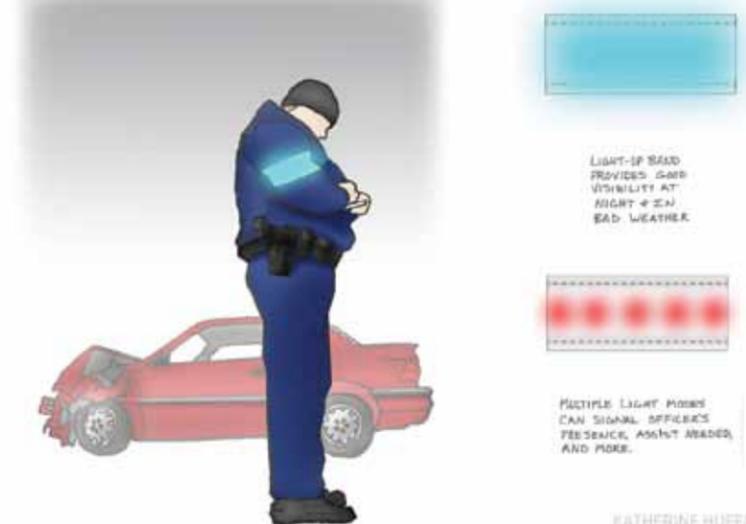
id NIGHT AND DAY



ON TRANSPARENT PANEL, BECOMES DARK UNDER BRIGHT CONDITIONS AND LIGHTER UNDER LOW-LIGHT CONDITIONS.

KATHERINE HUFFMAN

id MULTI-ALERT



LIGHT-UP BADGE PROVIDES CLEAR VISIBILITY AT NIGHT + IN BAD WEATHER.

MULTIPLE LIGHT MODES CAN SIGNAL OFFICER'S PRESENCE, ASSIST WARRIORS, AND MORE.

KATHERINE HUFFMAN

id TURN SIGNAL



REGULAR REFLECTIVE MATERIAL

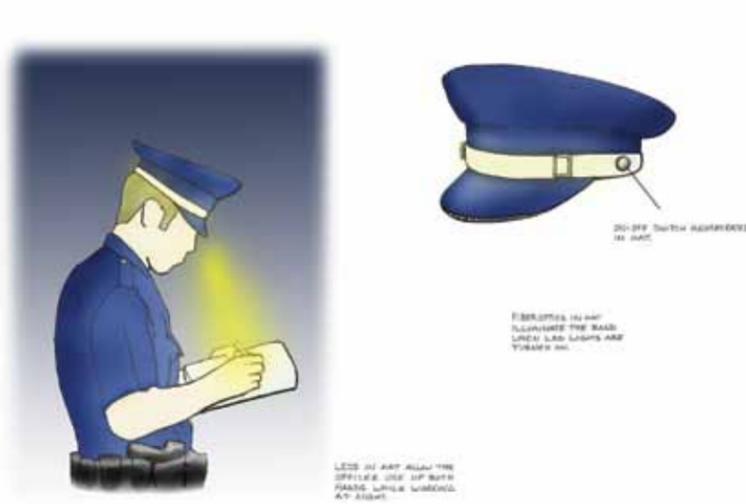
LEDS ON SLEEVES LIGHT UP REINFORCING DIRECTION

BUTTON INSIDE CUFF ACTIVATES SIGNAL

LIGHTS ON BACK INDICATE TURN DIRECTION

KATHERINE HUFFMAN

id HANDS-FREE



LEDS AT END ALLOW THE OFFICER USE OF BOTH HANDS WHILE WORKING AT NIGHT.

SO-DEF TIGHT ADJUSTERS AT HATS

FIBEROPTIC IN HAT ILLUMINATE THE BARD UNDER LOW LIGHTS ARE TURNED ON.

KATHERINE HUFFMAN

id HIDEAWAY



BACK SUSANPS, FILDS DOWN TO REVEAL REFLECTIVE MATERIAL. SHIPS IN PLACE OVER FOLDED DOWN.

FRONT SUSANPS, FILDS DOWN REFLECTIVE MATERIAL UNDERNEATH.

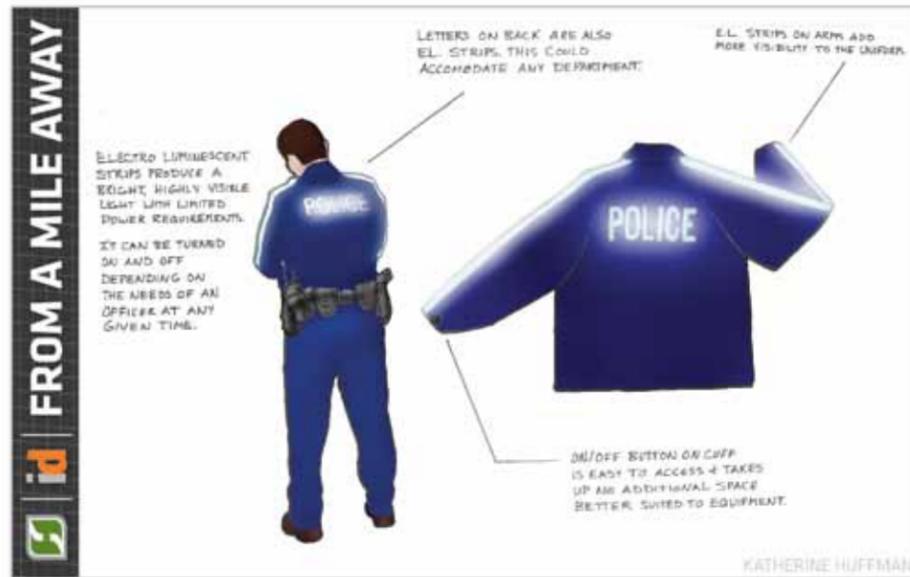
KATHERINE HUFFMAN

id SPOTLIGHT

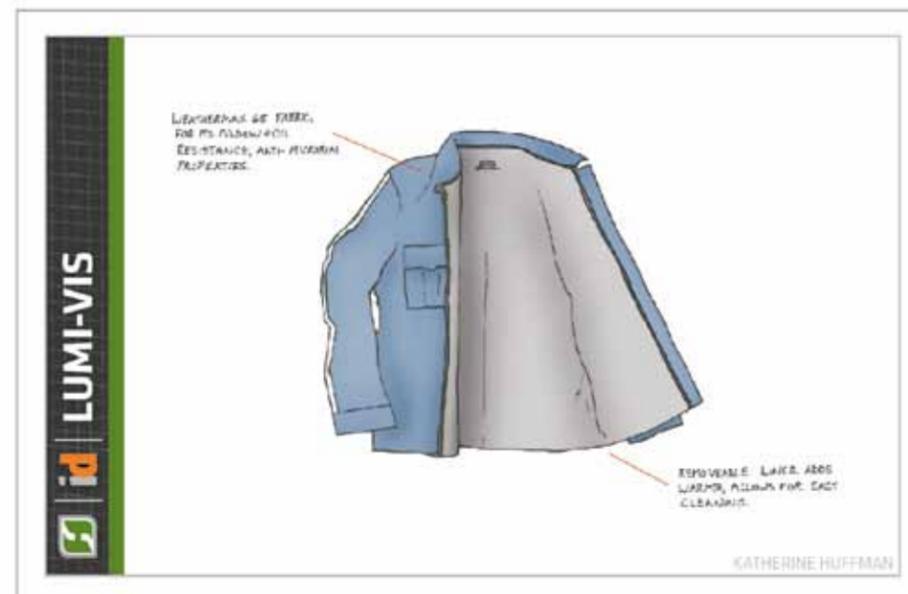
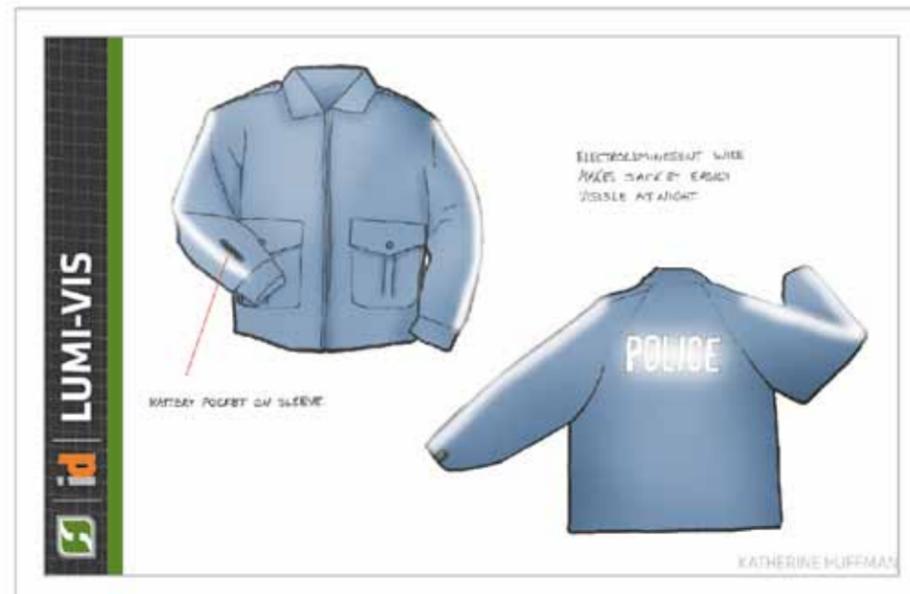


LEDS IN ARMS + CUFFS PROVIDE BETTER VISIBILITY FOR EMS PERSONNEL.

KATHERINE HUFFMAN

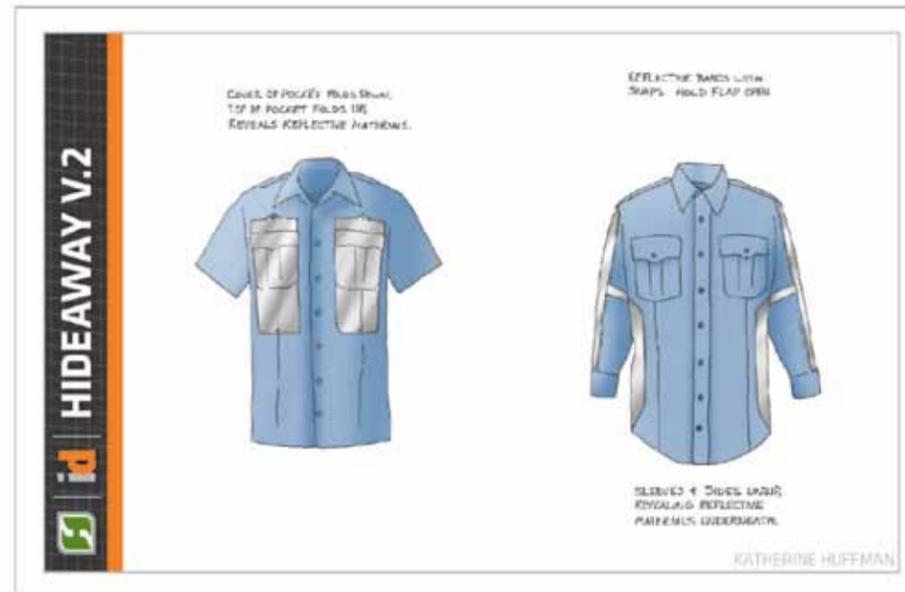
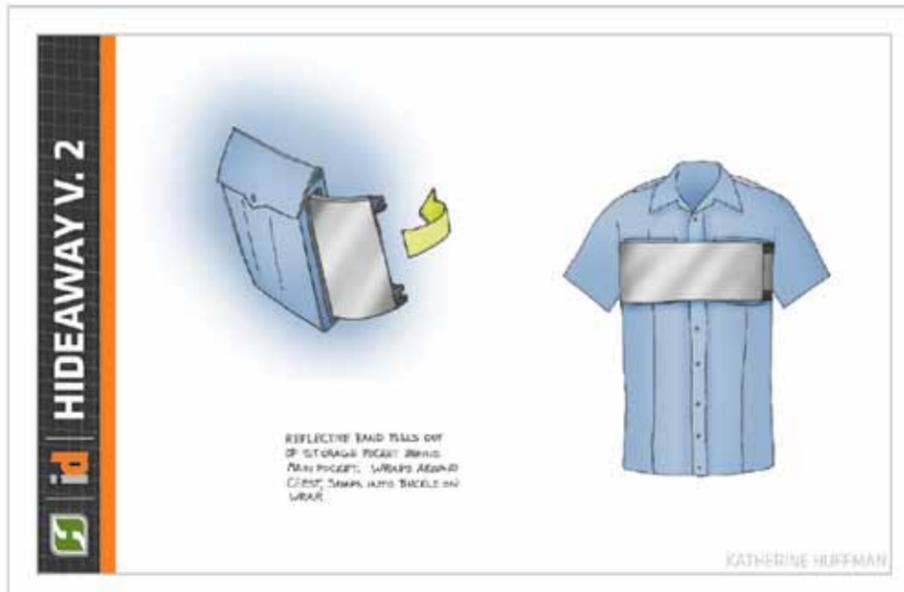


After a first round of feedback, representatives from Horace Small picked a number of concepts that they would like to see further developed, or expanded upon. For this concept, they were interested to see how a number of things would be handled, such as how to power the EL wire, where the power source would go, and how would such a jacket be cleaned.



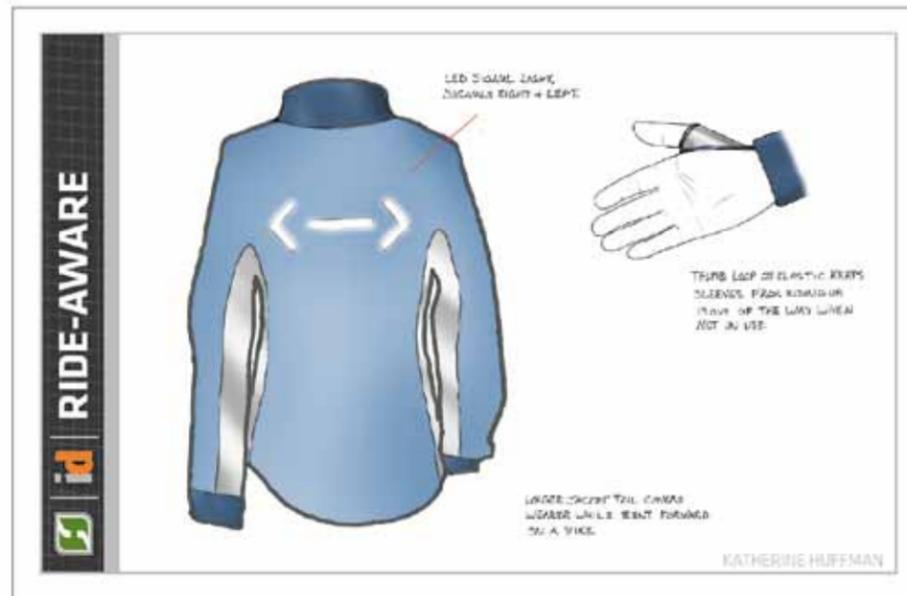


For this concept, Horace Small was interested in the initial idea, but wanted to see it developed in a more compact, portable way, for times when a jacket either was not necessary, or would be specifically problematic. I explored multiple ways of solving this challenge, including fold-down panels and stow-away bands.

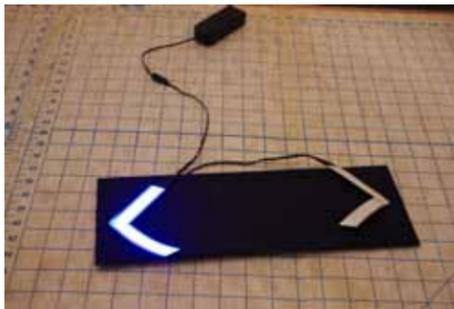
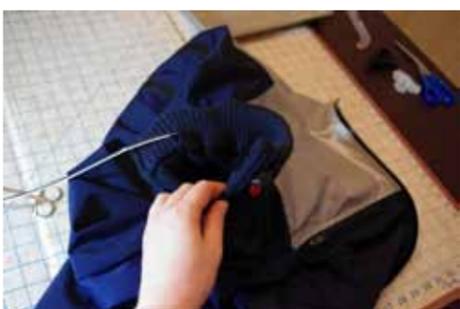




Here again, Horace Small wanted to see an expanded version of an existing concept. They were interested in different materials, how to power the turn signals, and how such gear could accommodate police equipment and maintain an official appearance.



For the high visibility vest, I made the patterns in Adobe Illustrator. For the jacket, I modified an existing jacket plan to accommodate the EL wire panel and switches. Jacket and vest were test fit on a standard medium-size model.





When not needed, the high-visibility vest can remain closed and covered, though easily accessible when the need arises.



With this attached design, officers never need to remember extra gear.



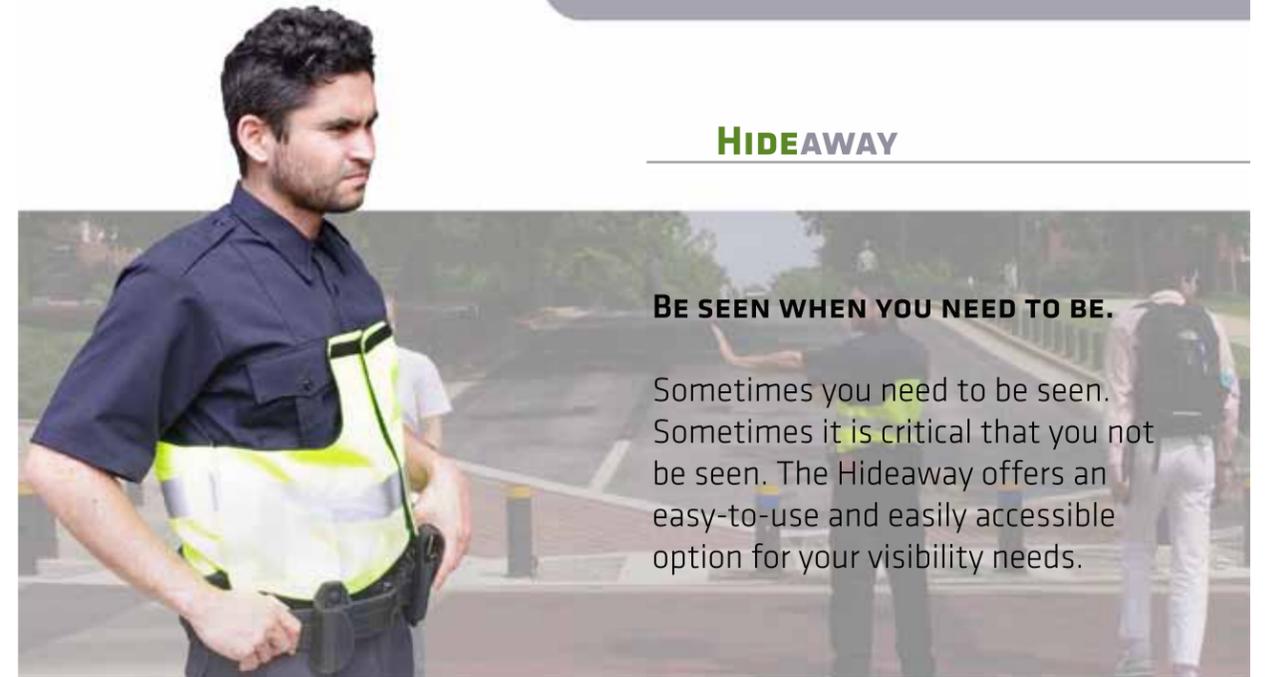
The vest can easily be velcroed in place, and just as easily returned to closed position when it is no longer needed.

One of the key takeaways from the survey of hundreds of police officers was that visibility is generally a secondary concern of officers. It's important, but a lot of times it can be specifically inconvenient. Also, the high visibility vests are just one more piece of gear to remember and keep up with. Both vest and jacket prototype included visibility solutions integrated into existing gear.



HIGH VISIBILITY OPTIONS

HIDEAWAY



BE SEEN WHEN YOU NEED TO BE.

Sometimes you need to be seen. Sometimes it is critical that you not be seen. The Hideaway offers an easy-to-use and easily accessible option for your visibility needs.

RIDE AWARE



You can see them, but they can't always see you.

The Ride Aware provides officers with a high-quality, all-weather jacket with built in electroluminescent tape-lighted turn signal.



Thank You.

KATHERINE HUFFMAN

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EDUCATION

5/2012

Auburn University, Auburn, AL

- Graduated with a Bachelor's in Industrial Design (BIND) from the number-six ranked Industrial Design school in the nation, as ranked by *DesignIntelligence*.
- Coursework included user research, user experience, rapid prototyping, problem solving, collaboration, marketing, presentation, sketching, concept communication, materials, fabrication, Adobe Creative Suite, and multiple 3D modeling suites.
- Won 2nd place out of 54 students in a research and design methodology packaging redesign contest sponsored and judged by Johnson & Johnson.
- Team won 3rd place in annual Designing Green competition, 2009.

WORK EXPERIENCE & BRAND COLLABORATION

11/2015 - Present

DAQRI, Redmond, WA *Model Maker*

- Running an EOS 3d printer, printing prototype and final parts for DAQRI's augmented reality construction helmet. Painting and finishing final pieces for production and prototype models. Finished pieces have been shown at CES.

8/2014 - 11/2015

Rauda Scale Models, Seattle, WA *Entry Level Model Maker*

- Create scale-accurate 3D models from existing products, while ensuring their water-tightness for 3D printing. Fabricating an array of scale models for varied clients including Oregon Caves National Monument, Oregon Zoo, and Kemper Development.

8/2014 - 10/2014

EMP Museum, Seattle, WA *Internship with Fabrication Department*

- Worked directly with the Manager of Exhibit Services and the Fabrication Department helping to install a new exhibit. Completed the weekly walkthrough to monitor the condition of the existing exhibits, and performed maintenance where necessary. Participated in weekly planning and meetings.

3/2013 - 9/2013

2Bot, Redmond, WA *Commercials and Web Development*

- Worked with one other team member on a contract to design, create, and implement an assortment of marketing and communications pieces, including a set of animated infographic commercials utilizing Adobe products such as Flash, Illustrator, and After Effects. Reported directly to the CEO.

1/2012 - 5/2012

Horace Small, Nashville, TN

- Designed and prototyped police and first responder uniforms for Horace Small. Involved in extensive research of officers and existing uniforms, and personally responsible for generating a nation-wide survey gathering hundreds of responses. Worked with and presented final deliverables to numerous decision-makers at parent company VF Imagewear in Nashville, TN, including the presidents and vice presidents of marketing and design.

8/2011 - 12/2011

Char-Broil, Columbus, GA

- Worked for Char-Broil researching, designing, and prototyping innovative grill concepts and discovering potential directions for the future of grilling. This was an intensive studio that included both team and individual assignments. Personally responsible for generating a nation-wide survey gathering hundreds of responses. Final deliverables included a full-size grill mockup. Presented each phase of the project directly to the Director of Innovation.

8/2010 - 12/2010

Sky Design, Atlanta, GA

- Collaborated with Sky Design and students from Auburn University's Graphic Design program designing brands and branding spaces and pre-existing buildings. In this fast-paced multi-disciplinary studio, I was responsible for research, design, presentation and production of a vast array of deliverables on a tight timeframe while coordinating all group members' highly varied schedules.