

LITTER BAG

the chic way to raise environmental awareness

design  *diary*

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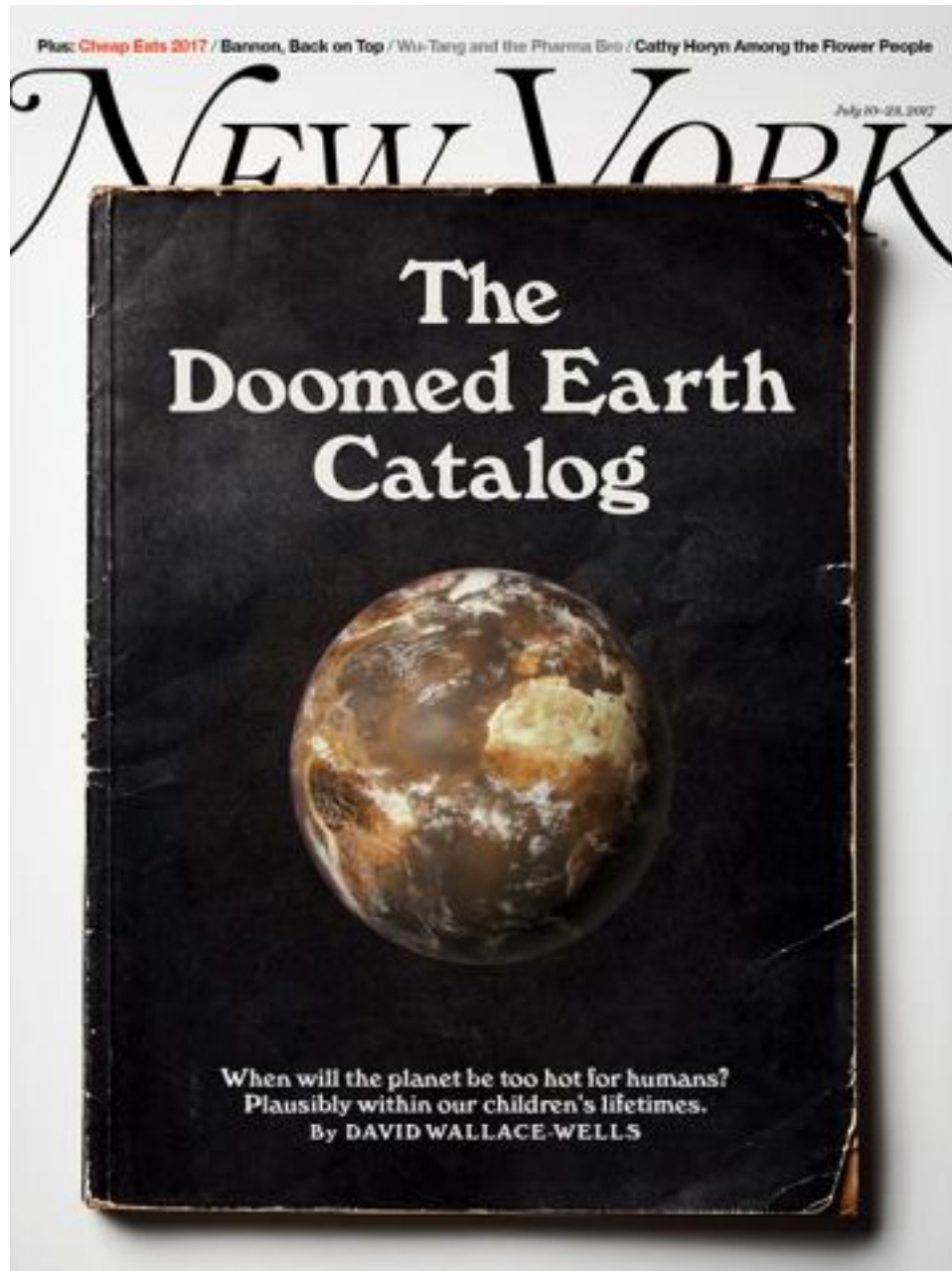
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8.23.18

week 1

course organization and definitions



"designers are engaged in process, not an end"

read the doomed earth catalog, and discussed the issues associated with climate change.

8.28.18

8.30.18

week 2

group formation / ideate / mind map



what we learned

Insert: Design Cycle

1. Analyse: design goal/problem
2. Synthesize: possible solutions
3. Simulate: draw & model ideas
4. Evaluation: design criteria
5. Decision: acceptable or not

List of Requirements (requirements should be constantly updated and changed)

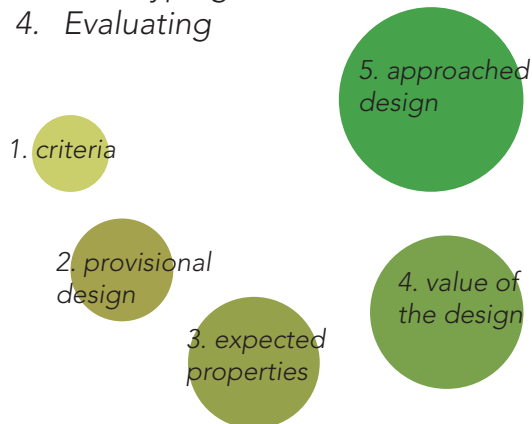
1. Structure based checklist
2. Define requirements
3. Identify knowledge gaps /: distinction between demands & wishes
4. Eliminate repetitive requirements /: high/low level

3 Principles of IxD

1. Early focus on users & tasks
2. Creative design & empirical measurement
3. Iterative design

4 Basic Activities in the IxD Process:

1. Establishing Requirements
2. Designing Alternatives
3. Prototyping
4. Evaluating



what we discussed

In the first week our group was formed.

Before we began to ideate we decided on what subtopic of global warming we were going to tackle. We decided to focus on the problem of pollution, a subset of the larger issue of reliance on fossil fuels, plastic waste, and polluted ecosystems. From here we broke down the issue of pollution into the the macro parties who cause it: personal, industry, and medical. Next, we broke each of those categories into three more based off of what is this source made of (see next page). After it was all mapped out we honed in on personal since this is something every person can easily be involved in, while having a positive impact. And out of the personal category we chose the issue of litter because it provides a way to do something positive, require a thoughtful action, and raise awareness all at the same time.

Out of this web of thoughts came the manifestation of the litter bag: a pouch with all the following qualities that would enable people to pickup litter, store it, dispose of it properly, earn benefits, and teach other people.

- modular: fany pack, back pack, duffel, storage pockets
- transparent: customizable, raise awareness, display pollution
- inexpensive: affordable, accessible, subsidy
- sustainability: recycled materials, donations, positive impact
- portable: stickers, relatively small, light-weight

8.28.18

8.30.18

week 2

group formation / ideate / mind map



9.04.18

9.06.18

week 3

generate precedents / mood board



what we learned

Part 1

- Ideation (aka conceptual design)
- Generating Prototypes
- Physical Computing

List of Strategies:

1. Mindmapping
2. Storyboards
3. Sketching
4. Co-design
5. Moodboards
6. College
7. Analogy & Metaphor
8. Morphological Chart
9. SCAMPER

what we discussed

Precedents:

Before starting we listed some ideas of how we could raise awareness for the global climate crisis

We decided to focus on tackling the problem of pollution, a subset of the larger issue of reliance on fossil fuels, plastic waste, and polluted ecosystems. In order to achieve this we decided on creating a wearable that would not only allow users to have a place to pick up and store litter they may find, but also a simple way of displaying their actions in order to raise awareness and create a global trend. We wanted to do all of this, while offering an item that is chic and couture so that users would want to purchase it. It is from here that we derived our precedents:

Luxury Fanny Packs: Gucci Bag, Balenciaga Bag, Patagonia Hip Pack



gucci fashion

balenciaga fashion

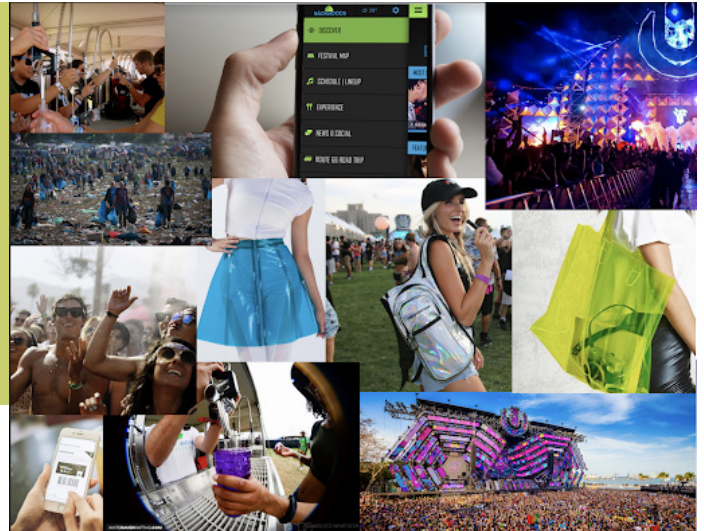


patagonia apparel

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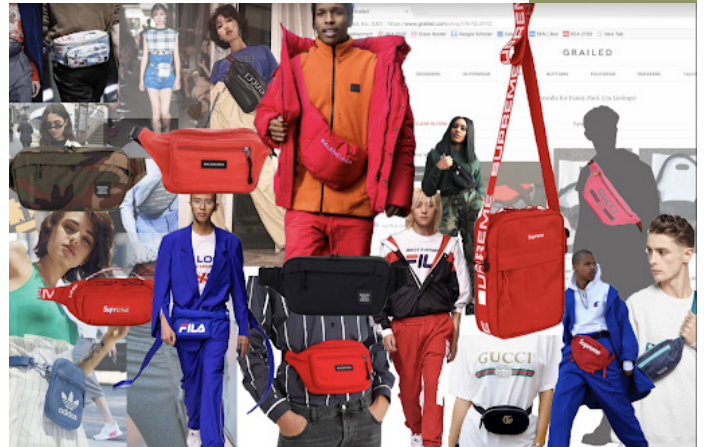
week 3

generate precedents / mood board



hoak

diliberto



harvey



patagonia apparel

free people fashion

9.11.18

9.13.18

week 4

sketching / storyboard



what we learned

Storyboards

- Series of sketches showing how a user might interact with design product

Sketching

- Don't be inhibited about drawing ability

Automatic sketching

Co-design (aka participatory design)

- invite target users to help design the project

Mood boards

- Capture the desired feel of the envisioned design
- Develop an aesthetic (i.e. edgy, organic)

Collage

- Create an image of your design from found images (or physical things)

Prototyping

- Different kinds: low versus high fidelity
- Make things visible
- Stakeholders interact

What to Prototype

- form
- technical aspects
- expected "behavior of the artifact"
- display, controversial, critical aspects

what we discussed

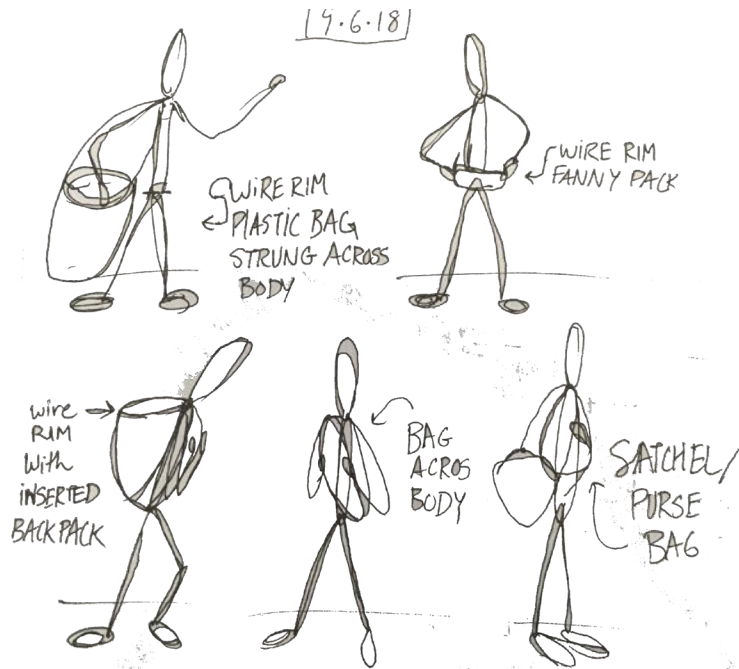
Sketching was an imperative impart in conveying to each other what we envisioned our product to look like. Each of us developed our own sketches, each with their own individual features. Francesca added the detail of a hole built for the insertion of a water bottle, while Brandon displayed multipurpose performances through slim wire molding. Although neither of these features were incorporate dinto the final product they gave us a lurching point for communication.

Along with the skething we developed storyboards. The storyboards extended the sketches in that they allowed for in action user to be seen. This was taken in two different directions as Hannah displays a triptic of city culture and its easy and chic obsession with such bag, acclaiming a mass following. On the other hand Julia's storyboard shows the litter bag in action as someone scoops down to pick up a piece of trash and put it in the bag. Additionally

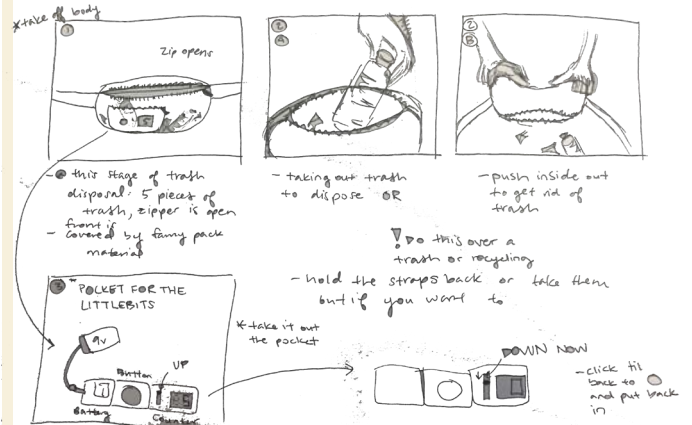
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week 4

sketching / storyboard

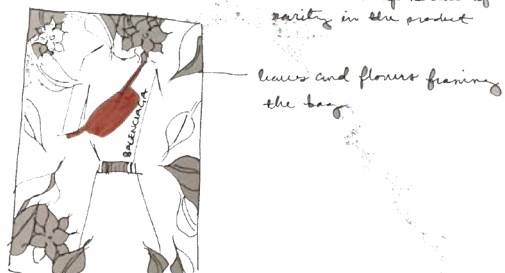
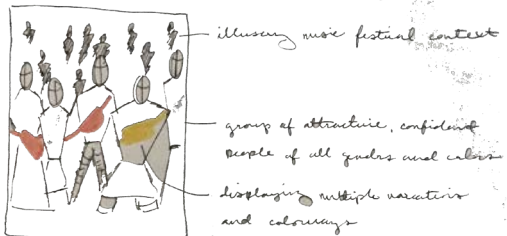
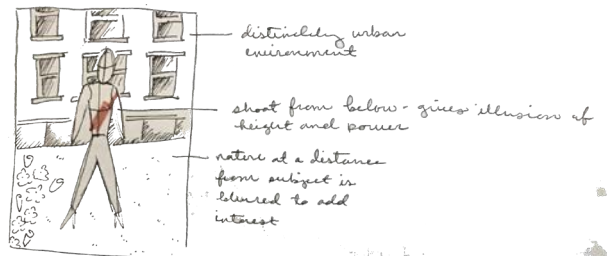


STORYBOARD | WASH / DISPOSAL

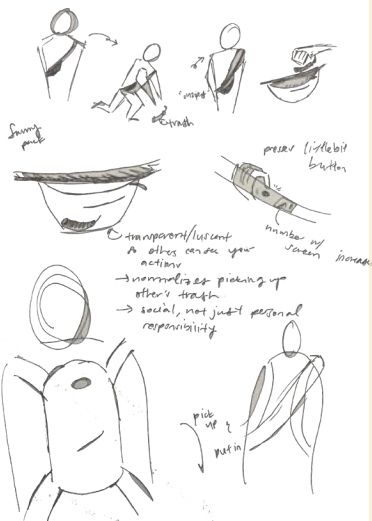


above (clockwise): sketches of form, hoak; storyboard of little bits, kan; storyboard of market, harvey; storyboard of possible iteration, diliberto; sketches/storyboard of product in action, kan

STORYBOARD



Storyboard, how to use



9.18.18

9.20.18

week 5

sort out options / morphological chart



what we learned

IRB - Institutional Review Board for Human Participants

- "Protect rights and welfare of individuals"
- Application form
- Consent
- Recruitment
- Participants rights / getting consent
- Informed consent forms, what's being done, how data will be handled
- Design researchers must act responsibly

Interior Designers | Architects | UX Designers

52,000	61,000	80,000
24,000	77,000	100,000

Design Firms

- IDEO - positive impact through design
- Frog Design - human centered
- Siemens
- Foster & Partners
- Apple: human factors
- Google
- Facebook
- Agile UX - quick UX

what we discussed

In order to construct the best model we began to use the ideation strategy of morphological chart. The morphological chart allowed for us to see a comprehensive set of multiple features and their variations. By breaking the model down into this fashion we opened up possibilities of not only how each aspect would function, but what combinations would also function best. Our options consisted of four major categories: shape, material, incorporation of little bits, and the reward given through participation.

- For shape we broke it down into five subcategories to choose from: bucket backpack, rectangular backpack (both backpack forms are specifically chosen due to their large openings up top), fanny/hip pack, sling bag, and satchel.
- For materials we broke it down into five subcategories to choose from: transparent plastic, translucent plastic, opaque canvas, opaque cloth, and opaque leather.
- For the incorporation of Little Bits we broke it down into our subcategories to choose from (each combination uses a button input and battery): number counter, MP3 player, light sensor, and light meter.
- For reward we broke it down into five four to choose from: cash prizes, coupons, spotify, and raffle tickets






Ultimately we chose to go with the outcome of a transparent fanny pack that uses the button and number counter with the reward of "spotify points."

9.18.18
9.20.18

week 5

sort out options / morphological chart



component	option number				
	1	2	3	4	5
a. shape	 bucket	 rectangular	 fanny pack	 sling bag	 satchel
b. material	 transparent	 translucent	 canvas	 cloth	 leather
c. little bits b = button	 b + # counter	 b + mp3	 b + light sensor	 b + light meter	
d. reward	 cash prizes	 coupons	 spotify	 raffle tickets	

Number outcome we liked:
 hoak & kan: A3 + B1 + C1 + D3
 diliberto: A2 + B2 + C1 + D1
 harvey: A3 + B5 + C1 + D3

Final outcome:
 A3 + B1/B5 + C1 + D3

Co-design (hoak & kan):

- took 3 littlebits bags: cut 2 to fit each other for a bigger pouch [transparent front] - opening at top. taped.
- added little bag with opening/transparents for little bits [battery, button, & number counter]
- cut slits (2) in top of bag on either side and used a lanyard rope - slide through, made adjustable w/ paper clip!

9.25.18

9.27.18

week 6

analogy & metaphor / personas & scenarios



what we learned / discussed

Analogy & Metaphor was - to my surprise - my favorite ideation strategy. It gave me an individual way to creative problem solve specific issues. More so, it opened options in the way our product can be viewed. For each example listed to the right we gave a specific problem: location to store litter, place to display litter, and way to track impact. For each of these we chose to identify similarities in the solution through each problem with an object/body part: a human mouth, insect wings, and an alarm clock.



persona



persona

Name: Professor Thompson | Age: 60
Occupation: Professor of Natural Resources (NTRES), and Resource Inequality
Additional info: Married; 2 kids in college

Name: Stacey Xu | Age: 21
Occupation: Undergraduate Student in FSAD
Additional info: Looks for sustainable fashion

scenario

Dr. Thompson is a professor at Cornell University specializing in NTRES and teaches courses focused on resource inequality. On his walk to Fernow Hall he often sees litter on the sidewalk. He tries to pick up litter, but often doesn't have enough hands or finds that it is too dirty and it will soil his work clothes. He'd put it in his bag, but it will not fit, thus he needs the litter bag. Now that he is using it he enjoys its lightweighth, accesible pockets, and has modelled good behavior for his students. Now some of his student s in SNRC and ECO are using them for activism projects.

scenario

Stacey Xu loves new fashion and follows both high end brands such as Gucci and Free People, but also loves the push towards sustainability such as Everlane Saitex Jeans. After seeing some of her Theta sorority sisters who is in ESS wearing the bag she purchased her own. She now uses it everday to keep her consistency points and earn free music! She plans to wear it this summer, while she interns at Levis in NYC.

9.25.18
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week 6

analogy & metaphor / personas & scenarios



A Mouth:

- sensual / round / flush
- a TALKING point
- visual connections to hip culture: Rolling Stone's Tongue, Roy Lichtenstein
- swallows trash / litter
- idea of transformation

problem: location to store litter



A Wing:

- clear / sleek / dynamic
- fly!
- chic and natural
- accentuates curves

problem: place to display litter



An Alarm Clock:

- alarming / vibrant / commotion
- a "wake up" call
- classic design
- attention grabbing - alert importance
- sleek

problem: way to track impact

10.02.18

10.04.18

week 7

data gathering - survey



what we learned

5 Key issues of any HCD study

1. setting objectives for your HCD study
2. identifying participants who to gather data from
3. relationship with participant - informed consent
4. triangulation - collect more than one type
5. pilot studies

Observation:

- Direct Observation
 - field notes
 - controlled environment
- Indirect Observation
 - users records
 - written diary
 - audio & video recording & photos
 - smart phone "logging" app

Planning & Conducting Observations

- How involved (passive/active)
- Gain acceptance
- Handle sensitive topics
- How to collect data
 - which equipment to use?
 - when to stop observing
 - data to collect

Ethnography - is a philosophy w/ a set of techniques that include participant observation and interviews; immerse themselves in the culture; outside to inside

- Example: Keith Greene w/ Graffiti Artists in Newark

what we discussed

Quantitative Analysis

Data expressed as numbers

Qualitative Analysis

- Data primarily not expressed as numbers
- Interviews, short answers

Pilot Studies

- occurs early in research process before the main study
- small number of participants
- determine research protocols
- use vast amount
- can't participate in the main study

Robust

- "functioning without failure under a variety of conditions"
- research "sound" in its methods / "confident" in approach

Research experiment

- help us predict the relationship between two or more variables

Validity

- extent to which a concept, conclusion, or measurement is well founded and corresponds to the real world

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week 7

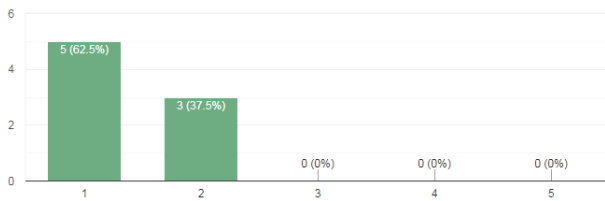
data gathering - survey



positive results!

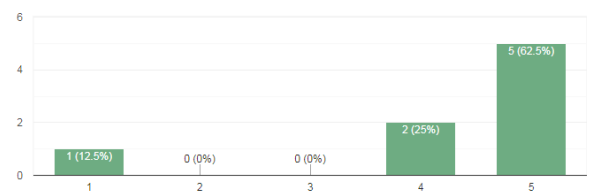
I found this prototype unnecessarily complex.

8 responses



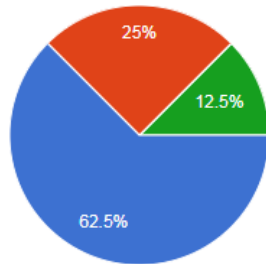
The Litterbag should have a liner.

8 responses



What Size Bag Would You Be Willing To Carry...

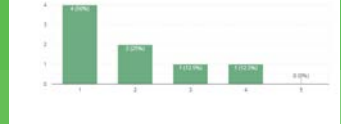
8 responses



- S
- M
- L
- i would not carry any trash on me

I would want to store personal items in the Litterbag.

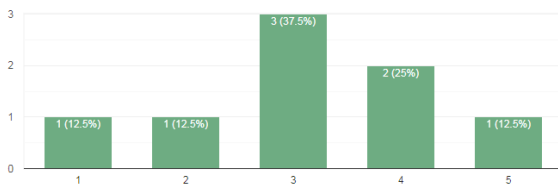
8 responses



issues that need to be resolved...

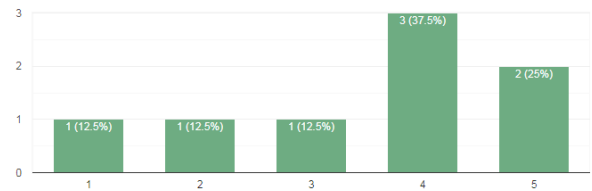
I think that I would like to use this prototype frequently.

8 responses



I feel comfortable showing others that I pick up litter.

8 responses



will people actually use it consistently?

will people actually pick up the litter

should we just focus on the needs of the people who responded to using it?

10.09.18
10.11.18

week 8

moneyshot!



what we learned

The Ground Rules of this Course:

1. No answers in Design: lot about playing around (in the "sandbox")
2. Designers embrace this unknowing. It's what we do: this may unsettle you at first, but you may become a designer
3. Over many weeks, design an artifact - think, make, and test in different ways
4. P1: 9 ideation strategies (ways to think and make design)
5. P2: 9 evaluation methods (ways to design)
6. Over many weeks: a. Offer 1 example of 9+9 b. Curate what you think is best c. make many, very quick, very cheap prototypes
7. Quizzed on basic concepts

Brilliant Designers are Good Communicators

Questionnaire Procedure:

1. Based on your research questions, determine the topics you want to address
2. Choose the form of response per question, for example, closed, open or categorical
3. Formulate the questions
4. Determine the question order, group similar questions and make a clear layout
5. Pre-test improve the Questionnaire
6. Invite right respondents depending on the topic: a random sample or selected respondents those who are knowledgeable about the topic and vary in age and gender
7. Present the results by reporting percentage for answer options or using statistics to report mean results & test relationships between variables/questions

what we discussed

This was the week of the first presentation. In order to prepare Julia and Brandon met at Human Ecology Building and compiled ideation strategies, ideas, and photos to create the presentation. We filmed a video in which Brandon is seen walking down the HEB hallway and finds a piece of litter. With the litter bag on his hips, he picks up the trash, storing it, and clicks the little bit attachment button to decrease the overall number of pieces he must pickup today to pick his goal.

The photo to the right is an example of the money shot. It is the original prototype made out of reused little bit packages.



10.09.18
10.11.18

week 8

moneyshot!



10.16.18
10.18.18

week 9

prototyping pt.1



what we learned

Research through Design (R+D)

- How to report on this process?
- How to make design activity understandable & informative to others?

What is design research?

“Work directed towards the innovation, intro, and improvement of products or processes.”

What does design research deliver?

- Something “outside the person” doing the research
- Something that can help another designer design

3 categories of design research

1. Research for design
2. Research into design
 - historical
 - aesthetic
 - theoretical perspectives
3. Research through design
 - Materials
 - Development work (tools & processes)

Action research - where a research diary tells a step-by-step way

By ‘design research’ - research endeavor to produce knowledge to create artifacts of careful process of making (i.e. designing , prototyping, and & testing) contribution to knowledge

“Design precedents” (for architects)

Iterative design process is informed by “design thinking”

- Grounding - understand problem
- Ideation
- Iteration
- Reflection

what we discussed

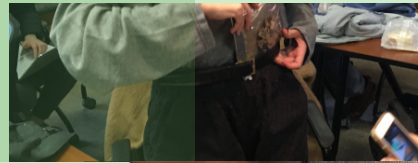
During this week, we ran an inclass prototyping session in which our team utilized duck tape, plastic bags, and cardboard to create two different iterations of potential sizes for our final prototype. We generated these two different kinds because most people differed on opinions with size. With these prototypes we were able gauge a more accurate opinion as well as observations as to how the user functioned with our device.



10.16.18
10.18.18

week 9

prototyping pt.1



prototyping
with ziploc
bags and duck
tape: Hannah
models with
prototype in all
the pictures:
attaches to her
belt



10.23.18
10.25.18

week 10

prototyping pt.2



what we learned

Evaluations:

- continuous process
- methods for evaluation are many of the same methods we used earlier for identifying users' needs (e.g.) observation, interviews, & surveys)
- evaluations can focus on usability (US), experience (UX) & or other performance (efficacy)

Think-Alouds (Talk-Alouds): talk a loud as they interact with a prototype

- whatever comes to mind as they interact w/ the prototype
- Researchers can ask (not many) wuestions along the way
- researchers take notes of what users say w/out judging the user (tell me what you think)

Cognitive walkthroughs

- compared to talk alouds [specifically identify usability issues] w/ the prototype
- aim to track the user
- focused on ease of use

Why: ensure users can use the product and like it

What: sketch /drawings, physical prototypes (whole designs or part)

Where: labs or natural setting

When: throughout the decision process

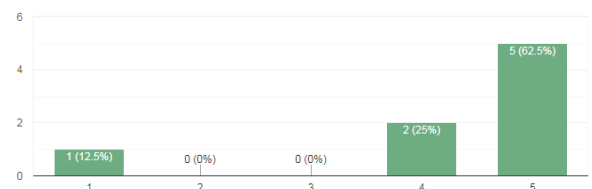
what we discussed

When constructing our final prototype we looked at every single detail of the piece to ensure that it reflected what users desired as well as matching our goals of the project. Going clockwise in relationship to the diagram on the page adjacent:

1. the adjustable waist band allows for maximum comfort and maneuverability as different body sizes for interact with the product. It also opens up possibilities in wearing it in different ways such as around your waist or across your torso.
2. the zipper on top creates ease for the user in storing the litter, while locking in odors.
3. the translucent material shows laypeople the litter in the bag, which raises attention and conversation for enviornmental issues at hand
4. the zipper on bottom is a specially added detail generated by our talk alouds and solidified by our adelphi study and survey results; its purpose to easily empty out the collected litter without reaching back in
5. the little bits help track the user's goal, while showing others their incredible progress
6. fashionable/designer exterior allows for the user to alternate between style and activism and brand the trendy item

The Litterbag should have a liner.

8 responses



10.23.18
10.25.18

week 10

prototyping pt.2



fashionable designer
print compliments the
translucent material

adjustable waist band for
comfort and security



Zipper on
top, for easy
storage of
litter

Little bits button and
number counter. The
number helps you
keep track of the dai-
ly goal you set, while
showing your positive
impact to others

Zipper on bottom, for
easy release of litter

Collect Litter can
be seen through
translucent mate-
rial for maximum
awareness

Talk Aloud w/ Group 6 (Olivia Heim & Abigail Brown):

- kind of skeeved
- liked a goal & go down: 2xns: beginners
- figuring out
- notification on app when goal is reached
- likes size: on waist
- they LIKE it!
- needed help to push button
- solutions: out of bag/ directions to click

10.30.18

11.01.18

week 11

app design



what we learned

Usability studies - Why does this matter?

- Have prototype & want to make sure people can use it
- A usability study will suggest whether typical users can use your prototype

2 kinds of heuristic evaluations - identifies problems in using

- # of errors & kinds / how long it takes to perform task
- comparison of alternate types

- Field studies (in the wild)
- Usability studies (U.S.)

- Take place in a controlled lab
- Focus on performance measures

- Nielsen's heuristics for usability (10)
 1. visibility of system status
 2. match between system and world
 3. user control and freedom
 4. consistency and standards
 5. error prevention
 6. recognition rather than recall
 7. flexibility and efficiency of use
 8. aesthetic and minimal design
 9. help users recognize
 10. help and documentation

Test 5 Users and will get 75% of problems

- In card sorting: test 15 users
- In eye tracking: test 39 users if you want stable heat maps
- In quantitative studies: test at least 20 users to get statistically significant #'s

what we discussed

The app design done by Julia shows the beautiful effect keeping our earth clean has on nature. The motif of the app is the juxtaposition between pieces of litter and leaves; for both these small, lightweight things hold magnitude in their role in the environment in two completely different ways. We then took this theme and ran with it for the app. The tracking feature for daily goals uses pieces of litter forming a pile to give a visual representation of the user's progress (Nielsen's heuristic for usability - visibility of system status / and match between system and world). These principles were also applied to the track your progress calendar (in addition to consistency and standards). The flower that the user helps grow allows for them to recognize and document the progress on larger scale and more fun manner.

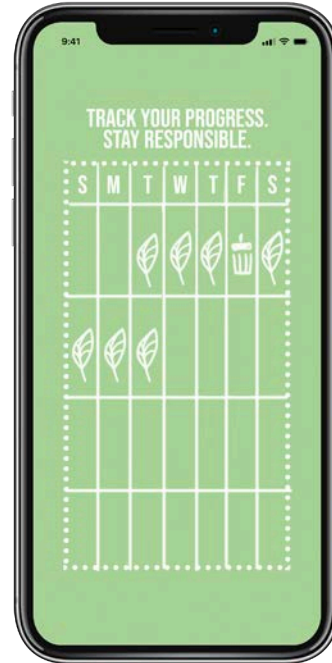
The app as a whole, acts as a basis to get tech users to engage with our product. It appeals to younger generations, and opens up possibilities and branching opportunities to take the product in. Showing environmental facts about global warming and other environmental concerns can help broaden users' knowledge.

We took our app's design theme and translated it over into our logo. Our logo shows pieces of litter falling into the litter bag and coming out the bottom zipper as leaves; a direct translation of how the user's actions will have a direct positive impact on the environment.

10.30.18
11.01.18

week 11

app design



clockwise starting above: calendar to keep track of daily goals met (leaf symbolizing goal met & trash-can not); flower that translates progress into live action; environmental facts; goal tracker with pieces of litter falling; home screen with music logo surrounded by trash and nature

11.06.18
11.08.18

week 12

adelphi study



what we learned

Delphi Method: you are developing a prototype and you want a group of people to converse on their response to it (to reach a consensus about it)

Quasi experiment: you might design and test an artifact that requires some understanding (com. literacy): when you test it you will need computer literate participants - not anyone

Adelphi Study - 5 Questions

1. What size bag would you prefer?
 - a. S - fanny pack
 - b. M - avg. backpack
 - c. L - duffel
2. What shape bag would you prefer?
 - a. Rectangular
 - b. Square
 - c. Circular/Oval
3. What exterior would you prefer?
 - a. 100% Designer - fashion
 - b. 100% Transparent - activism
 - c. 50/50%
4. Would you want a place to store other stuff in the bag?
Yes or No
5. Would you want the bag to have a liner?
Yes or No

what we discussed



11.06.18

11.08.18

week 12

adelphi study



E

1. *small, easy to carry, can carry other things additionally (like backpack)*
2. *circular/oval to be more ergonomic on body*
3. *half designer/half clear good for fashion/good for awareness*
4. *could be useful, but probably not necessary since you would already have storage for phone*
5. *5*

M

1. *duffel, hold at the side of your hip, easy to access w/ trash*
2. *square?*
3. *blend! 75% designer, 25% clear*
4. *yes, place to store other stuff*
5. *2, should have a liner --> doesn't need to be removable*



S

1. *backpack*
2. *rectangle, in the same shape as an average backpack*
3. *all designer, don't really want to see the litter*
4. *don't imagine myself carrying this around everyday so the additional pouch may not be necessary*
5. *yes, have a liner (5 strongly agree)*

K

1. *small*
2. *circular*
3. *aesthetic (i.e. designer)*
4. *yes*
5. *yes to lining (removable)*

11.13.18
11.15.18

week 13

final prototyping



what we learned

Analytics and Big Data
-The user's interactions are logged

Evaluation using analytic method for evaluating user traffic through a system or part of a system

Crowdsourcing
-running experiments online: quick, inexpensive, capture a large number of participants
-generate big data
-google forms, qualtrics, surveymonkey, amazon mechanical turk

Pitfalls: who is doing the survey?

SONA
-predictive models - test usability
-helpful in company different design alternatives
Example Fitt's Law - law that predicts time required to rapidly move

The LitterBag

Abstract
This LitterBag combines users with a convenient and affordable means to collect and properly dispose of trash and litter. The design is both functional and aesthetically pleasing. It is made from a durable, lightweight material and is easy to use. It is designed to be used in a variety of settings, from outdoor recreation to urban environments. The LitterBag is a simple, effective solution to a common problem. It is a product that is both useful and beautiful.

Author Keywords
Sustainability, Environmental Awareness, Pollution, Design, Social Action

ACM Classification Keywords
H.3.1 Information Systems and Information Systems; H.3.2 Information Systems and Information Systems; H.3.3 Information Systems and Information Systems

Design Motivation
The goal of this project was to create a product that is both functional and aesthetically pleasing. It is a product that is both useful and beautiful. It is a product that is both useful and beautiful. It is a product that is both useful and beautiful.



Introduction to Prototyping
The LitterBag is a simple, effective solution to a common problem. It is a product that is both useful and beautiful. It is a product that is both useful and beautiful. It is a product that is both useful and beautiful.

Early Concept and Initial Feedback
The LitterBag is a simple, effective solution to a common problem. It is a product that is both useful and beautiful. It is a product that is both useful and beautiful. It is a product that is both useful and beautiful.

Design Motivation
The goal of this project was to create a product that is both functional and aesthetically pleasing. It is a product that is both useful and beautiful. It is a product that is both useful and beautiful. It is a product that is both useful and beautiful.

Design Solution
The LitterBag is a simple, effective solution to a common problem. It is a product that is both useful and beautiful. It is a product that is both useful and beautiful. It is a product that is both useful and beautiful.



Design Solution
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Design Story
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Design Solution
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9.04.18
9.06.18
week 3
generate precedents / mood board

what we learned

- Part 1
- Ideation (aka conceptual design)
- Generating Prototypes
- Physical Computing

List of Strategies:

1. Mindmapping
2. Storyboards
3. Sketching
4. Co-design
5. Moodboards
6. Collage & Metaphor
8. Morphological Chart
9. SCAMPER

what we discussed

Precedents:
Before starting, we listed some ideas of how we could raise awareness for the global climate crisis

We decided to focus on tackling the problem of pollution, a subset of the larger issue of reliance on fossil fuels, plastic waste, and polluted ecosystems. In order to achieve this we decided on creating a wearable that would not only allow users to have a place to pick up and store litter they may find, but also a simple way of displaying their actions in order to raise awareness and create a global trend. We wanted to do all of this, while offering an item that is chic and cute so that users would want to purchase it. It is from here that we derived our precedents:

Luxury Fanny Packs: Gucci Bag, Balenciaga Bag, Patagonia Hip Pack



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9.06.18
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Left: Design Diary
Above: Final Paper
Right: Final Poster

11.13.18
11.15.18

week 13

final prototyping



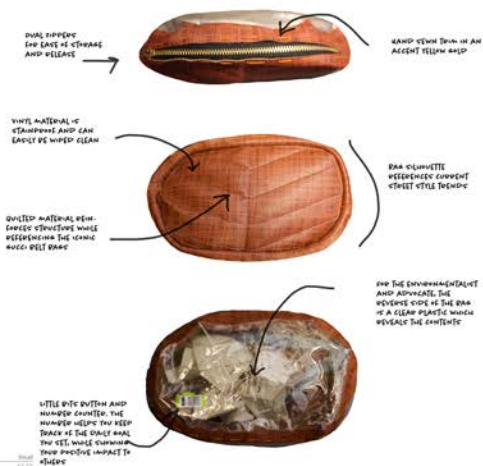
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Litter Bag

Abstract

The LitterBag provides users with a convenient and affordable accessory to collect and properly dispose of trash and litter. Its design is both fashionable and transparent, thus making a clear statement to spectators about environmental pollution and framing the user as a silent activist. Accountability and other positive behaviors will be rewarded by inputting each piece of litter collected as a point to be added on to the app. The app will focus around musical rewards and environmental education in hopes of spreading awareness and creating action.

Anatomy

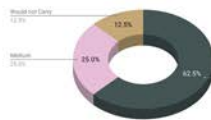


Objectives

- 1. Modularity:** The fundamental qualities of a LitterBag can be applied to many sizes of product
- 2. Transparency:** Allows for customizability, awareness, and the mitigation of pollution.
- 3. Affordability:** The minimal design of the bag makes it affordable, accessible, and mass producible.
- 4. Sustainability:** To clean up and reduce waste, it is important that we make our bag out of sustainable, recyclable materials. Our app would also offer the option to use the user's points collected as monetary donations to sustainable charities.
- 5. Portability:** LitterBag is relatively small and lightweight. The LitterBag

Survey

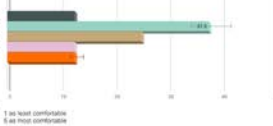
Preferred Size



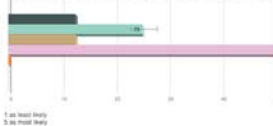
Preferred Shape



I am comfortable publicly picking up litter



I would use this product frequently



App Interface



Gallery



11.20.18 -

present

presentation

deliverables & evaluations



what we discussed

The conclusion to this long journey was our IRB training, presentations, and evaluations. The IRB training will be particularly useful in the future. The presentation went well, given the circumstances, and showed resilience in group effort among the three of us: Julia, Hannah, and Brandon. The evaluations reflect the hardwork and help us keep in mind what we can do to improve.

rating

9.4 Problem & Proposal: Rate how well they explained why the design is needed & what the design does

9.3 Evidence: Rate how well the team made the case for their design, based on their research finding

9.4 Design Quality: Rate both the (2D, 3D, 4D) prototypes and the slide presentation

8.9 Video: Rate how compelling, convincing, and well done was the video

9.4 Poster: Rate how compelling, , and well done was the video

Comments:

- is there a better way to make sure that people are being honest how much litter they pick up // because you could cheat the system in order to get rewards
- loved it~
- Shorten presentation
- Your trash can looks like a cupcake :). Also- more explanation how photo is processed by app (ik it's wizard of oz, but need that connection!)
- good explanation of why product is needed and app idea of growing plant is really cool to me. actual graphic design of app a little simple, not sure if i like the only green and white
- The presentation is a little bit long, but the product model is cool!
- I like the annotated prototype in the presentation. Very clear! I love the hierarchy and white space in the video
- Add more context into the video.
- i like the homeless people and government subside idea
- Good Graphics!
- this rocked
- Presentation can be more concise
- Loved idea, app design and presentation layout
- I like the homeless reward idea!!
- keep things more concise by saying the same information in less sentences.
- distribute speaking more. explain more of the prototype not the app.
- size options?

11.20.18 -
present

reflection

thoughts & details & thanks



Dear Keith & Jasmine,

Overall we are very proud of our project and hope to pursue it in the future as an entrepreneurship ambition. It embodies positive social impact, behavior change, and consideration for the world community. This class gave us very useful tools to continue this pursuit such as the ideation strategies as well as the evaluation strategies. We have already begun to apply them to our own life. I personally just attended an environmental conference and was able to be knowledgeable when adults in the room spoke of heuristic evaluations and Cornell's IRB. I am very thankful for those skills the class taught me. Thank you Keith and Jasmine for helping us learn to develop our own project in a very professional and holistic manner.

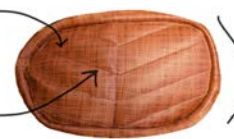
*Best,
Team 5*

DUAL ZIPPER FOR EASY STORAGE AND RELEASE



KANG KENNY TON IN AN ACCENT YELLOW HUED

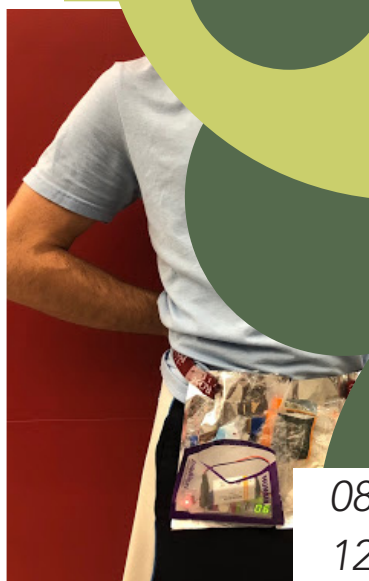
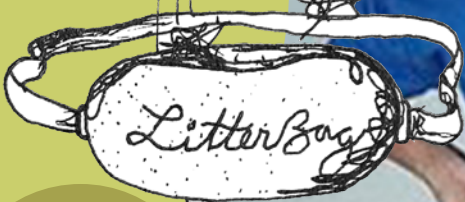
VINYL MATERIAL IS STAINPROOF AND CAN EASILY BE WIPED CLEAN



RAA QUILTED INSPIRES CURRENT STREET STYLE DESIGN

QUILTED MATERIAL WITH EASY STRUCTURE WHILE INSPIRING THE NAME WHICH WILL STAY

FOR THE ENVIRONMENTALIST AND ADVOCATE



08.23.18
12.12.18

