IEOR 170
Team 3
Oskiosks

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EDUCATION
emergency blue light redesign and interface educational experience

our focus

emergency preparedness

to increase

ACCESS TO INFORMATION

AWARENESS THROUGH INTERACTION

PROXIMITY

EDUCATION EXPERIENCE

Current Campus Emergency

OEP - Outdated, latest news June 2012

WarnMe - Insufficient information, only during/after emergencies

Emergency procedure signs - Little user interaction

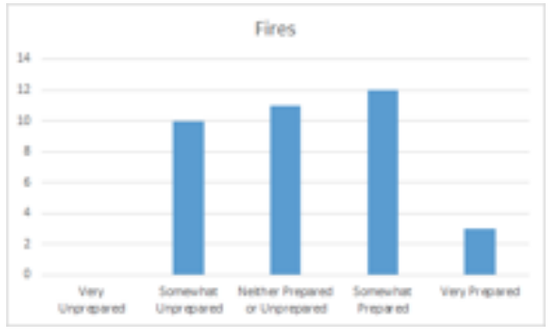
Siren system - Useful but difficult to understand

Blue light phones - Tend to be ignored, lack of features

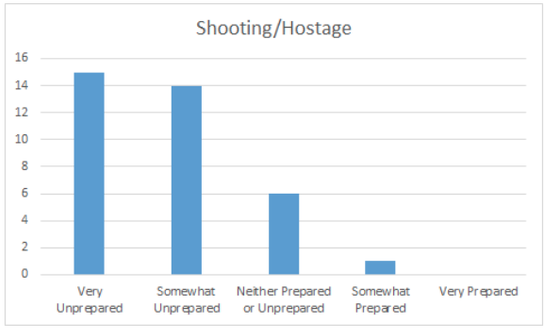
NO COMMONLY KNOWN EDUCATION PROGRAMS

SURVEY RESULTS

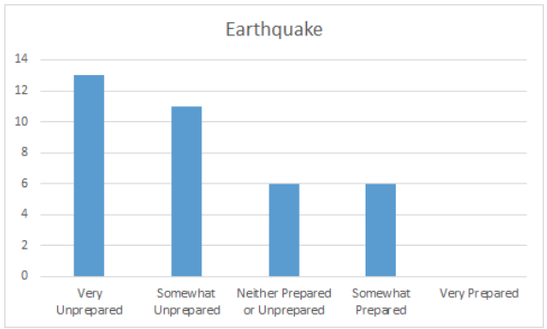
For the 4 following options:
On a Scale from 1-5, how prepared would you feel if one of the following emergencies occurred while you were on campus at some point during your daily routine?



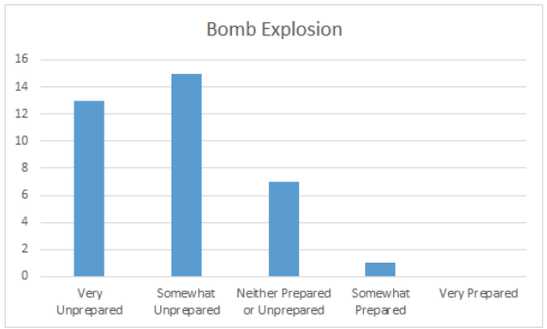
Fire Average - 3.2



Shooting Average - 1.8



Earthquake Average - 2.1

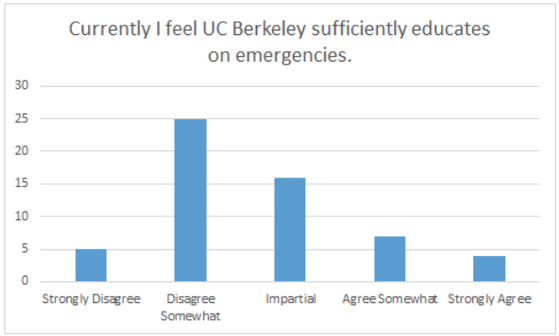


Explosion Average - 1.9

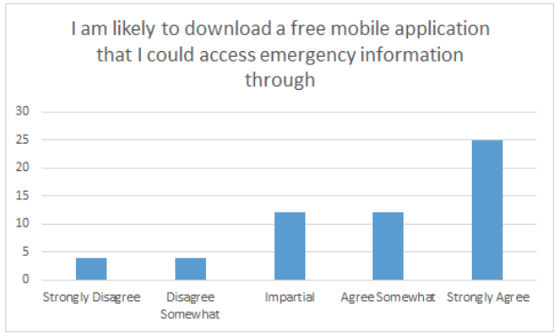
MAIN TAKEAWAYS

The majority of students don't feel UC Berkeley sufficiently educated on emergencies.

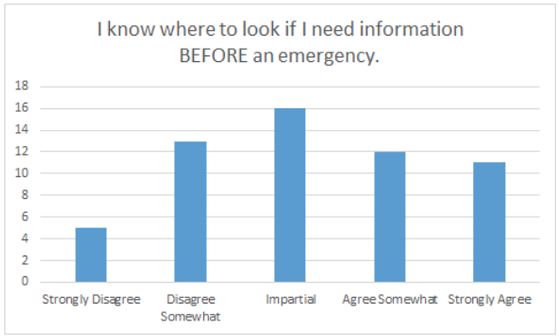
A fair amount of student have not received education about emergencies in the last 3 years



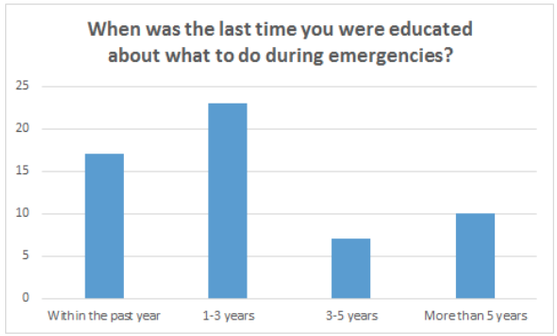
Average - 2.6



Average - 3.9



Average - 3.2



Detailed Problem Definition and Scope

PROBLEM DEFINITION

Campus lacks knowledge of emergency procedures

30% campus community have been educated in the last year

17% received current knowledge on emergencies from UC Berkeley

93% seen the sign

35% have read the sign

OBJECTIVE

Double campus interaction with emergency education

- % of campus community that have been educated on emergencies in last year
- % that learned at UC Berkeley

Double proximity to the individual during both pre-education and real-time disaster education.

INITIAL BRAINSTORMING IDEAS

Idea 1 - Using SOCIAL MEDIA to forecast entertaining, but informative, videos and other media on popular sites.

Idea 2 - Install a VIRTUAL REALITY VIEWING DEVICE in various campus locations. This device would replicate a viewfinder.

Idea 3 - REDESIGN CAMPUS SIGNAGE to make it more appealing for student, staff and faculty on campus.

Idea 4 - Prior to entering campus, students, staff, and faculty will go through a REQUIRED interactive short DISASTER EDUCATION COURSE.

Idea 5 - Transform abandoned building in Clark Kerr into EARTHQUAKE SIMULATION AND INFORMATION CENTER.

Idea 6 - Make a SCAVENGER HUNT DURING CALSO, that would serve as a bonding activity and an introduction to parts of campus.

Idea 7 - A RE-ENACTMENT OF A SCENE FROM A DISASTER where STUDENT VOLUNTEERS would be 'affected by the disaster' (ie hurt or killed).

Idea 8 - Developing a MOBILE APP is downloadable to smartphones/tablets and would have both online and offline mode to inform students during an emergency.

Idea 9 - Similar to the sexual education week that occurs annually on campus, an EMERGENCY PREPAREDNESS WEEK.

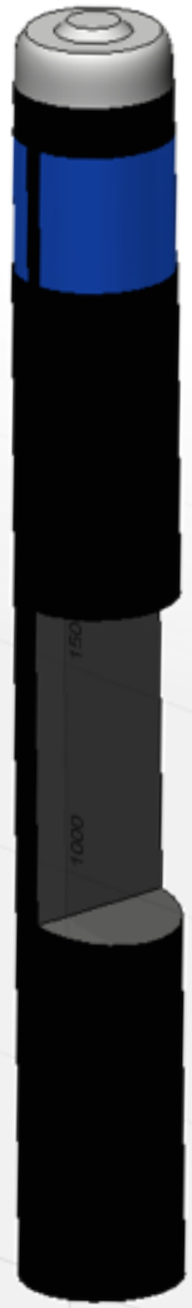
Idea 10 - Education through THE DORMS is one of the surest ways to reach a large portion of the community.

Focusing Brainstorm

REDESIGN OF EMERGENCY BLUE LIGHT PHONES

GOAL

Change currently existing campus infrastructure to both raise awareness about emergency resources as well as educate the campus community on emergency preparedness



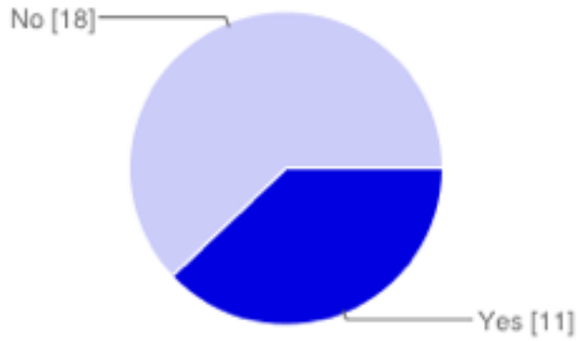
Research: Blue Lights

CODE BLUE

RAMTEL

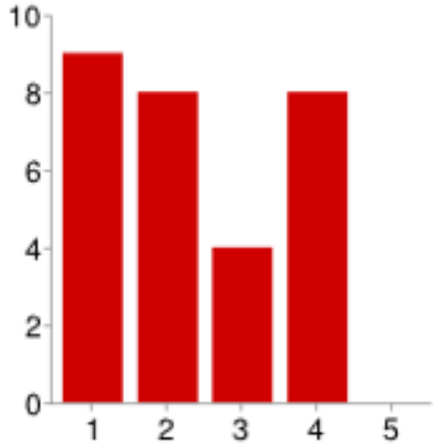
SURVEY RESULTS

Have you ever taken a closer look/inspected the blue light emergency phones?



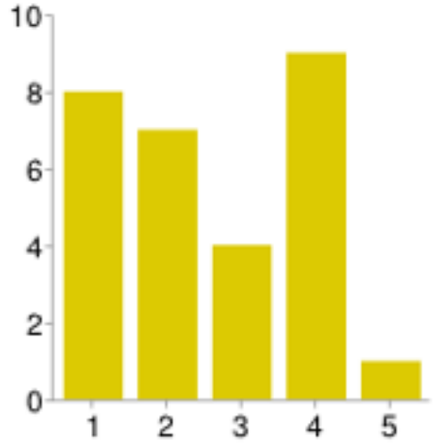
Yes	**11**	38%
No	**18**	62%

How well do you know the locations of the blue light emergency phones in your typical area of campus?



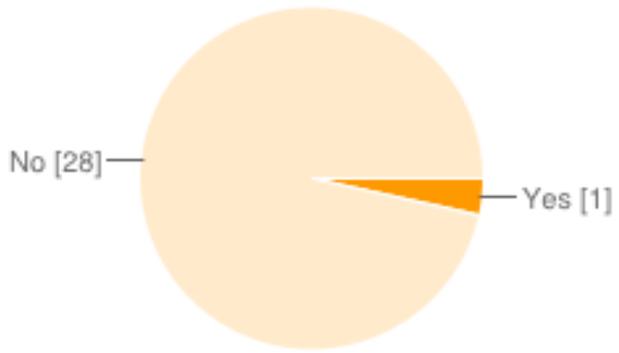
1	**9**	31%
2	**8**	28%
3	**4**	14%
4	**8**	28%
5	**0**	0%

Does the presence of the blue light emergency phones make you feel safer on campus?



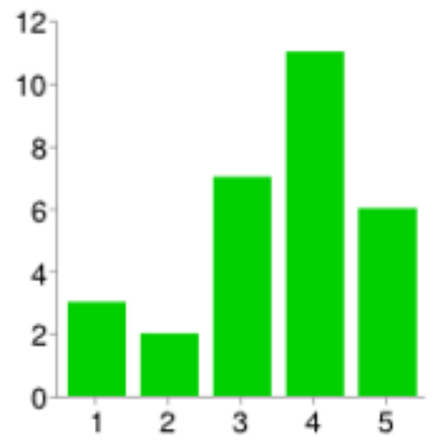
1	**8**	28%
2	**7**	24%
3	**4**	14%
4	**9**	31%
5	**1**	3%

Have you ever used one of the blue light emergency phones? If yes, what for?



Yes	**1**	3%
No	**28**	97%

Assault/Robbery?



1	**3**	10%
2	**2**	7%
3	**7**	24%
4	**11**	38%
5	**6**	21%

Usability Testing

What do we intend to test with?

- CAD models (Basic + Detailed)
- Live and built bench for interaction
- 2 Versions of interface using an interactive webpage
- Tested 5 people in each iteration to efficiently find our largest problems as shown by the 1-(1-p)^n model.

What do we want to measure?

Learnability	Efficiency	Error Properties	Satisfaction

Educational Interface

summary

1.SEARCH CAMPUS MAP

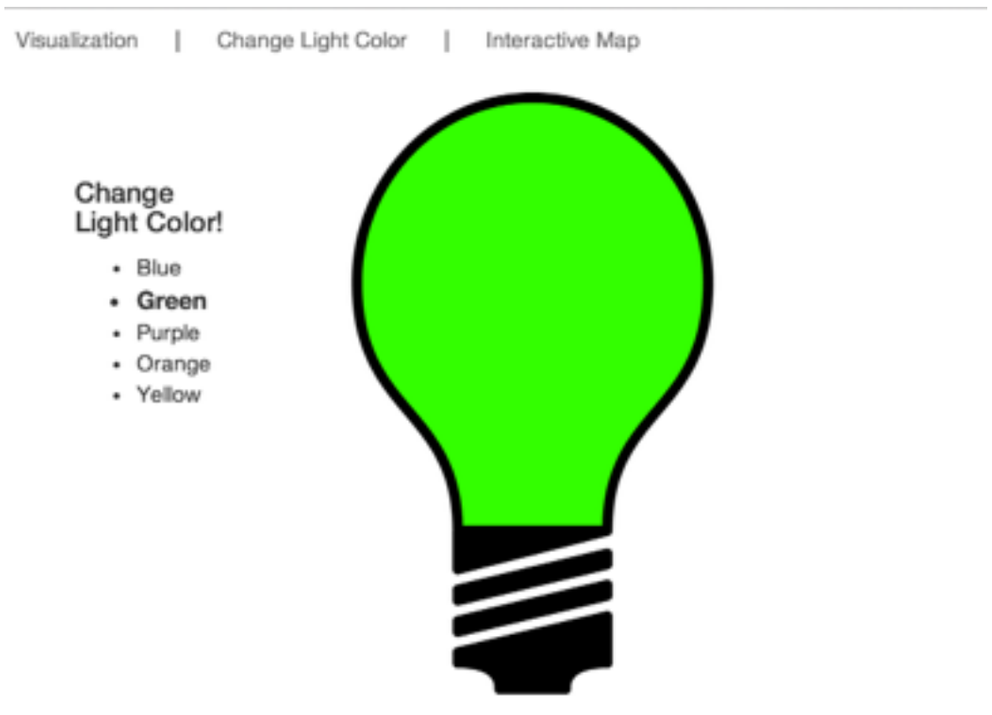
- Ability to see where you are on campus
- Search different buildings, etc.

2.ART VISUALIZATIONS

- EX. Earthquake simulation

3.INTERACTION

- With light colors to create interest



Usability: Interface

Julian V	Jackson L	Nancy P
22/yo Cal student, majoring in Political Science	21/yo Cal student, majoring in Economics	55/yo UC Berkeley Alumna

OBSERVATIONS

Struggled to navigate interface using only top navigation bar.	Didn't quite understand the changing colors of the light bulb and how it correlated with function of Blue Light.	When taken to the map of campus, user didn't know where she was specifically on the map.

KEY TAKEAWAYS

Add a menu page where the user can clearly see all possible options on Blue Light Phone Interface.	Provide more of an explanation of the functionality and instead of a light bulb make it an actual blue light phone.	Not intuitive where user is on the map section of the interface especially if not familiar with area.

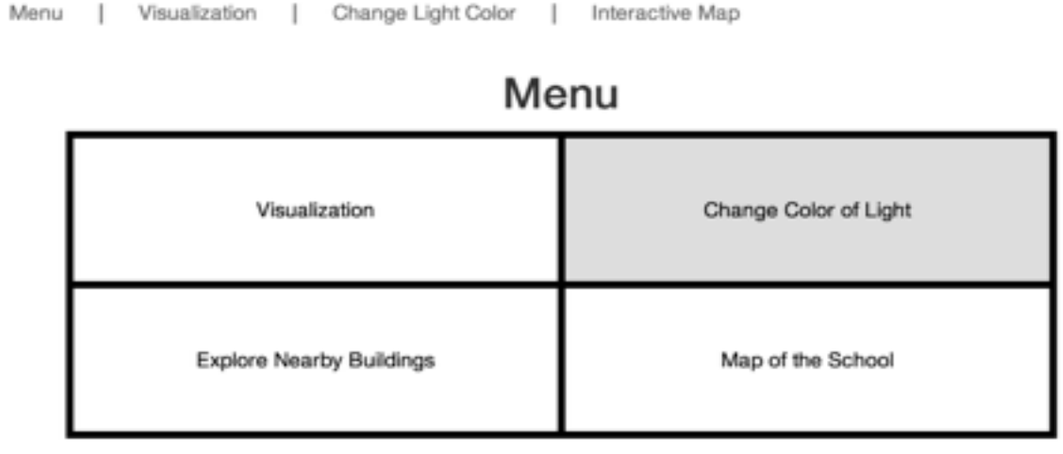
Interface Prototype 2

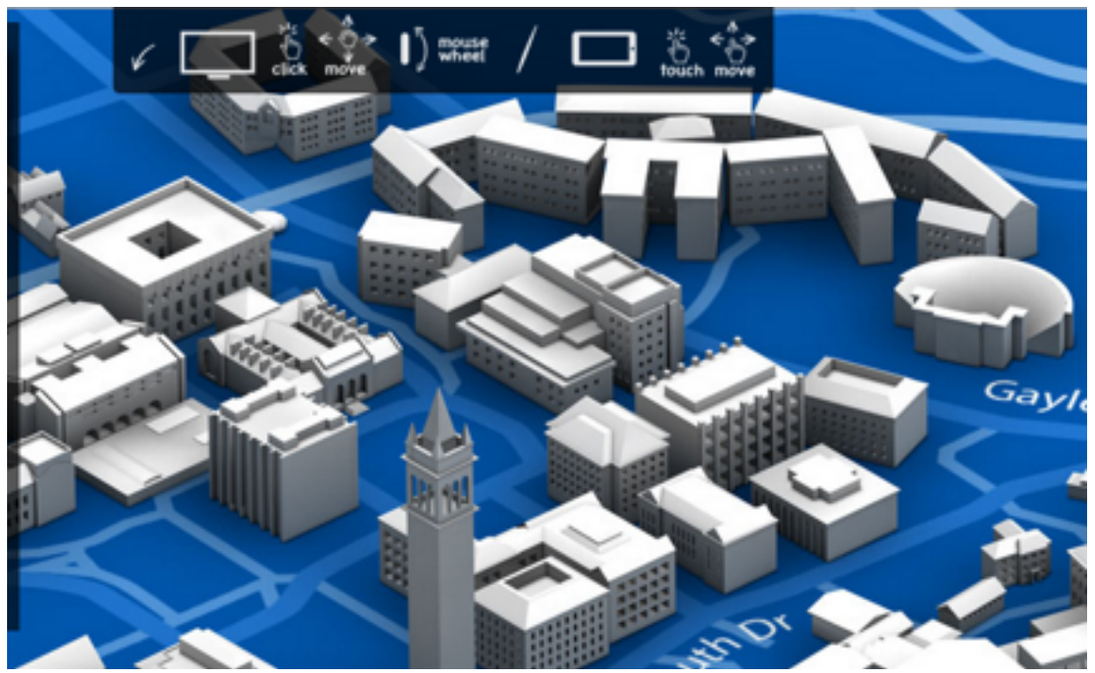
additions

1.3D MAP
- Interactive!

2.MENU
- To add guidance through the interface

3.COLOR MENU
- Removal of Lightbulb





Usability: Interface V2

Zoey Z	Vicky J	Jimmy O
21/yo Cal student, majoring in Integrative Biology	19/yo Cal student, majoring in Business	24/yo Cal alumni, major in Chemistry

OBSERVATIONS

Tried to click on the buildings on the find nearby buildings page.	Couldn't find buttons and wondered why you would go back to visualization.	Visualizations are cool.

KEY TAKEAWAYS

Add Interactivity to when a user clicks on a building and show in words which building it is. Not just when you click on the building name you get where that building is.	Make the buttons more noticeable and just make the visualization a screensaver.	The light and rhythm of the visualizations draw people in. The initial optic response is a key entry point.

Experience: Current

DURATION: What draws you in? How long will you stay? When will you be back?

INTENSITY: Is it a reflex? How well are you able to use it in an emergency?

BREADTH: How broad is the blue light experience? What is the context?

INTERACTION: How many people interact with the phones? What is their interaction when they do?

TRIGGERS: When do you recognize it? What do you associate it with?

SIGNIFICANCE: What is it for? What do I have to invest? How does it make you feel? What does it mean to me? Does it match my world view?

CAD Design

Dana M. Z.	Paris M.	Marcus A.
23/yo Cal student, majoring in Political Science and Sociology	22/yo Cal student, majoring in Ethnic Studies and minoring in Global Poverty	21/yo Cal student, majoring in Mathematics

OBSERVATIONS

“What does it do?” “Benches are great on campus to sit a relax on a nice day” “Outlets would be very useful between classes” “You could make it a wifi spot”	“Why do you need a bench? Wouldn’t sit there unless there were outlets nearby” “An interactive map would be extremely helpful, and knowing there is a map there would make people feel safer”	“Are you envisioning people sitting there in between their walks?” “What the purpose of this?” “Perhaps a way for people to learn something from this about emergency preparedness would help too”

Physical Prototype: Bench

Matilda F	Nelson M	Peter A
68/yo Cal professor of Mechanical Engineering who parks on campus	23/yo Cal student, majoring in Electrical Engineering and Computer Science	28/yo Graduate student instructor, working at the BLUM Center for Developing Economies

OBSERVATIONS

"What's it for?"
"I need to move my car here through here"
"Everyone is walking by, who would need to sit here?"
"I could drink my coffee here"

"What does it do?"
"its hard to work here since i usually work on my laptop and need a table"
"Also, as far as working goes, will there be ***enough light*** *here since the street lamp is far away?"*

"I like the idea of increasing people's awareness of emergency response and preparedness but ***how will people learn from this****?"*
"The main purpose of this things is safety right? so ***how will they prevent an assault*** *from taking place?"*

Experience Design

DURATION - Relatively short interaction . Could conclude poorly.

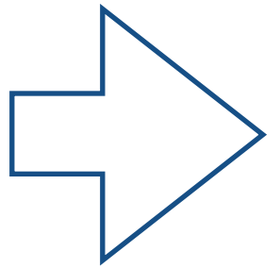
INTENSITY - Not a reflex or a habit. Only used in an emergency when it requires intense engagement

BREADTH - Blue Light itself narrow in breadth but ultimately connects students to UCPD. They are a brand for the UCPD

INTERACTION - Passive for most students most of the time. Forced to interact when agitated which causes mistakes

TRIGGERS - Panic, Fear, Human senses

SIGNIFICANCE - Insignificant for most students most of the time. Significant for a few but evokes negative emotions



DURATION - Short period of time between classes/time to check the map. Ability to drop in and become immersed by answering a question

INTENSITY - Bench provides useful place to sit while navigating the app. Familiarity with the system makes it habitual and a better reflex.

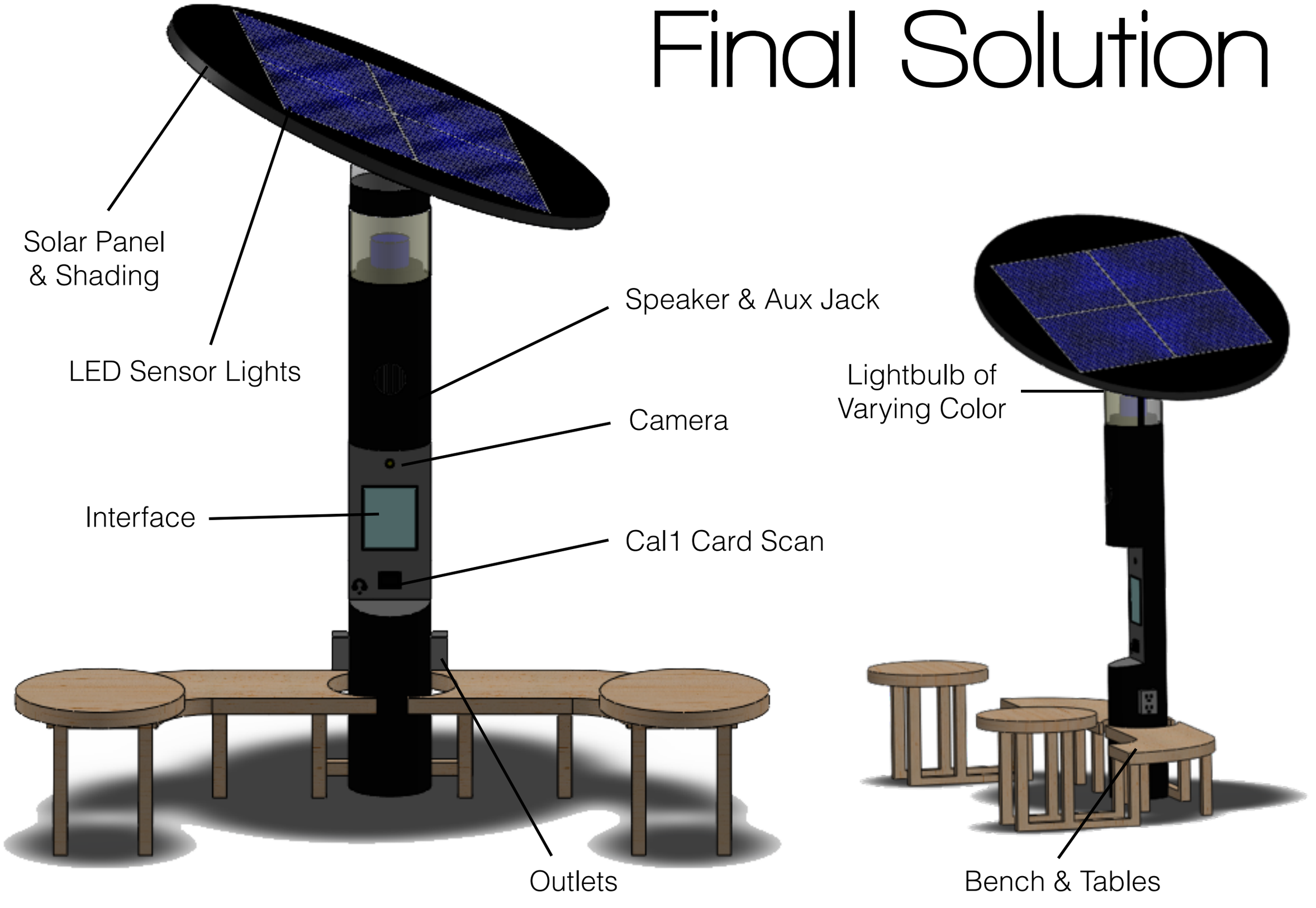
BREADTH - Blue Light itself narrow in breadth but a map embeds it in the campus; Bloom embeds it in the geography of the region

INTERACTION - Transformation from a passive artifact on campus to an interactive study space

TRIGGERS - Sight, Touch, Maps provide symbols of buildings

SIGNIFICANCE - Provides a safe-haven for individuals, while simultaneously providing a place to sit a relax on campus. Useful for outlets and wifi

Final Solution



Intellectual Property Considerations

COPYRIGHT

Audio Sharing

Art Showcase

Integration

PATENTS

US5587704 A

Add-ons

Licensing

terms and concepts

Design References

HICK'S LAW: Limit interface to two options initially, touchscreen and emergency button

FITTS LAW: Interface buttons are large and close together

VISIBILITY: Color changing light to attract attention, red reserved for emergencies

PERSONAS: Interface and physical model designed for different archetypal users

FIVE HATS RACK: Interface organized logically by category

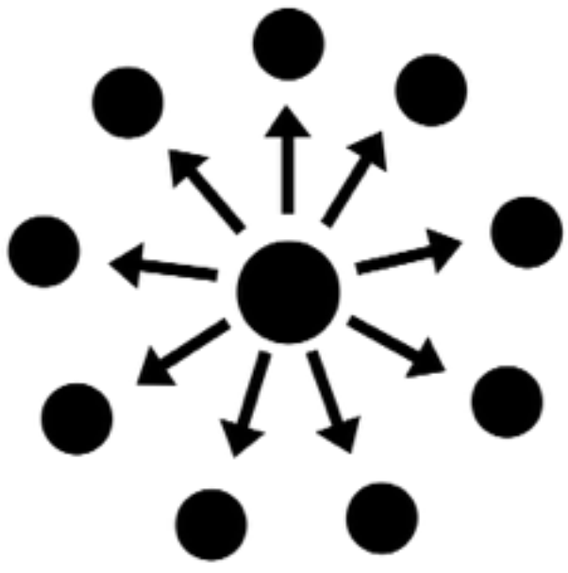
ERRORS: Interface has clear navigation, limiting the consequences of slips or mistakes

AFFORDANCE: Heights/shapes of the tables and benches afford sitting and storing

GOLDEN RATIO: The form of the touchscreen and solar panel adhere to golden ratio

Future Direction

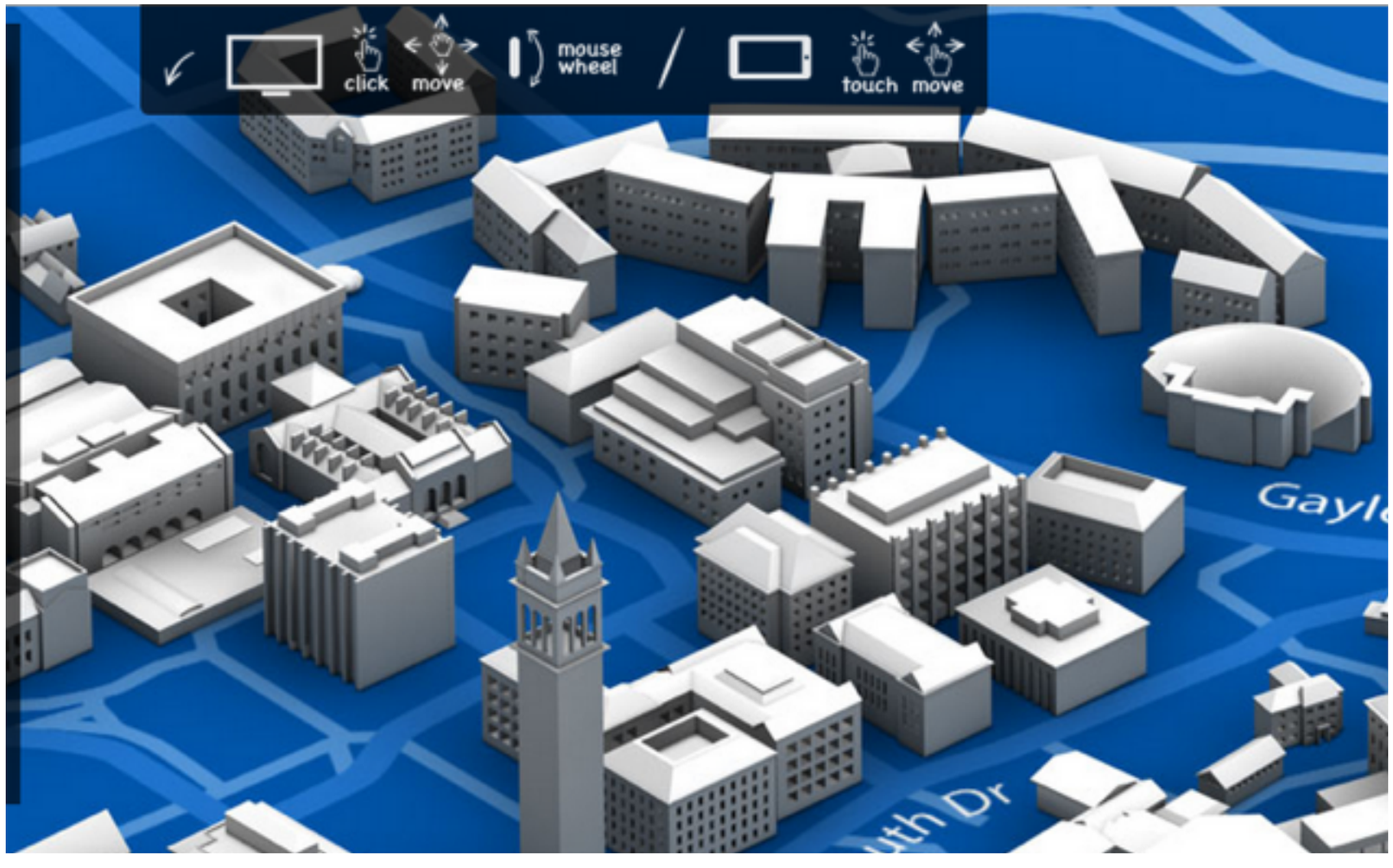
1
Scale



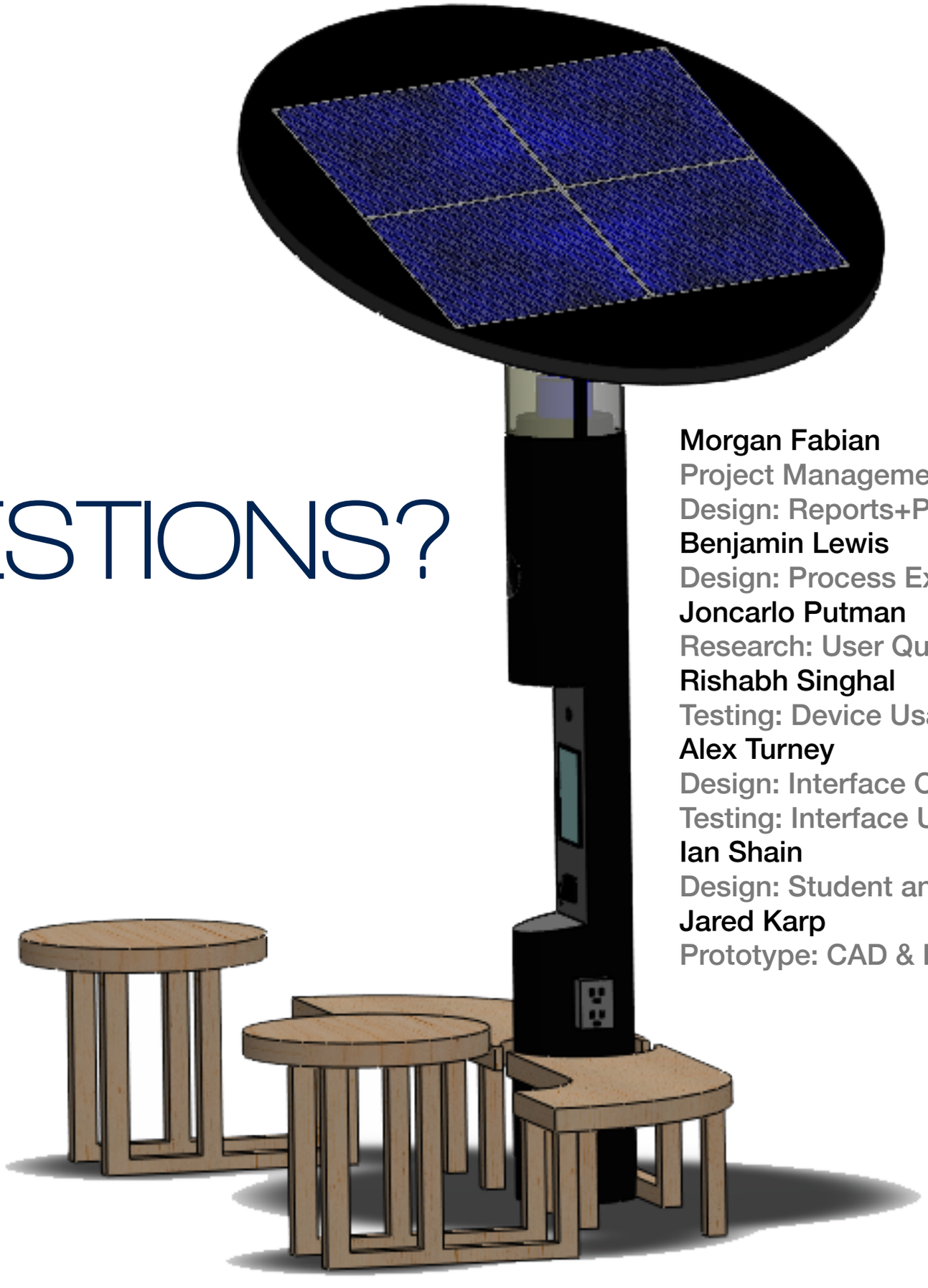
2
Gamification

3
Association

LIVE DEMO



QUESTIONS?



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Design: Reports+Presentations
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Research: User Questionnaire & Field Lead
Rishabh Singhal
Testing: Device Usability Lead
Alex Turney
Design: Interface Creation
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Design: Student and IP Research
Jared Karp
Prototype: CAD & Build