

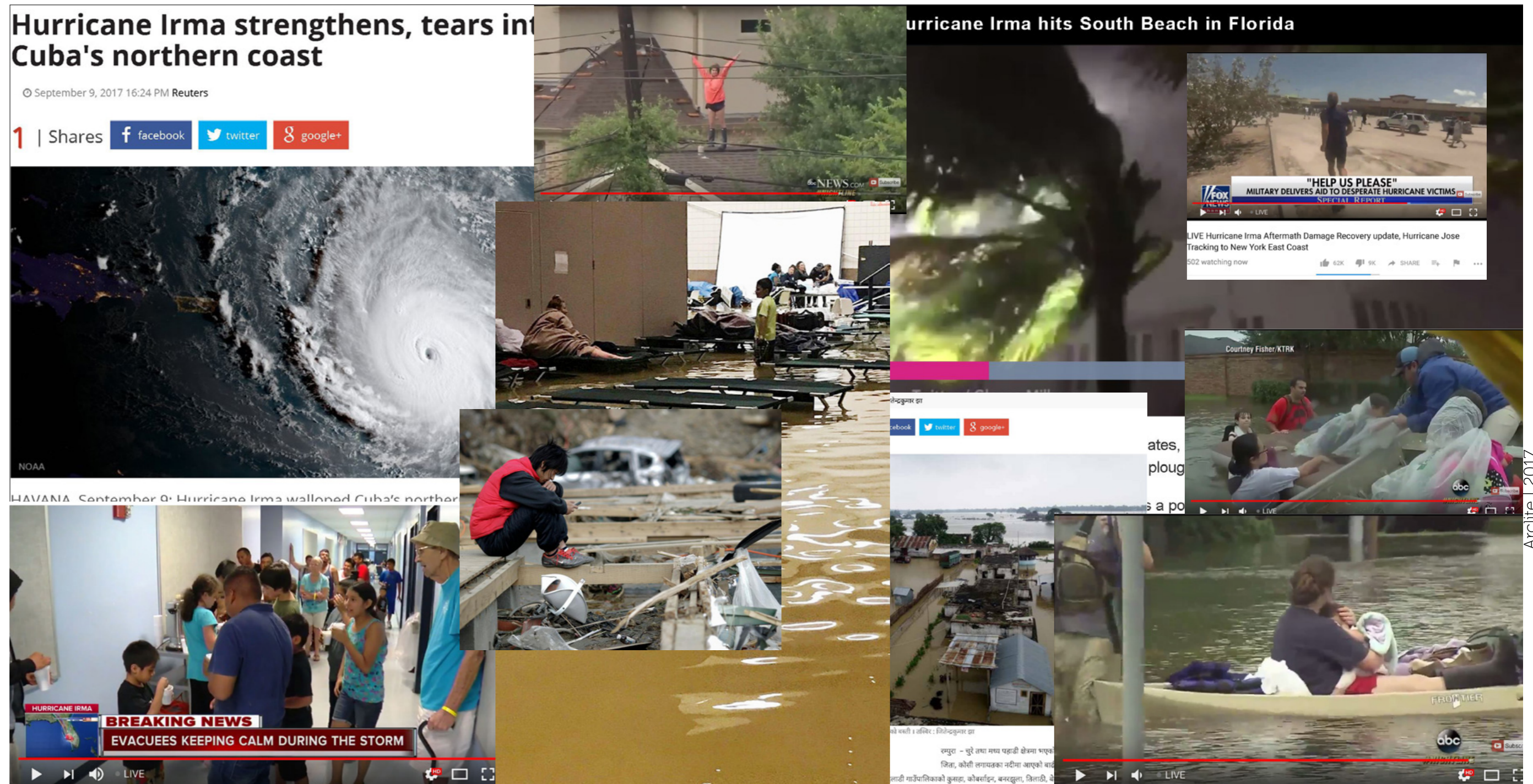


ARCLITE

RETHINKING THE IDEA OF DISASTER PREPAREDNESS

Research

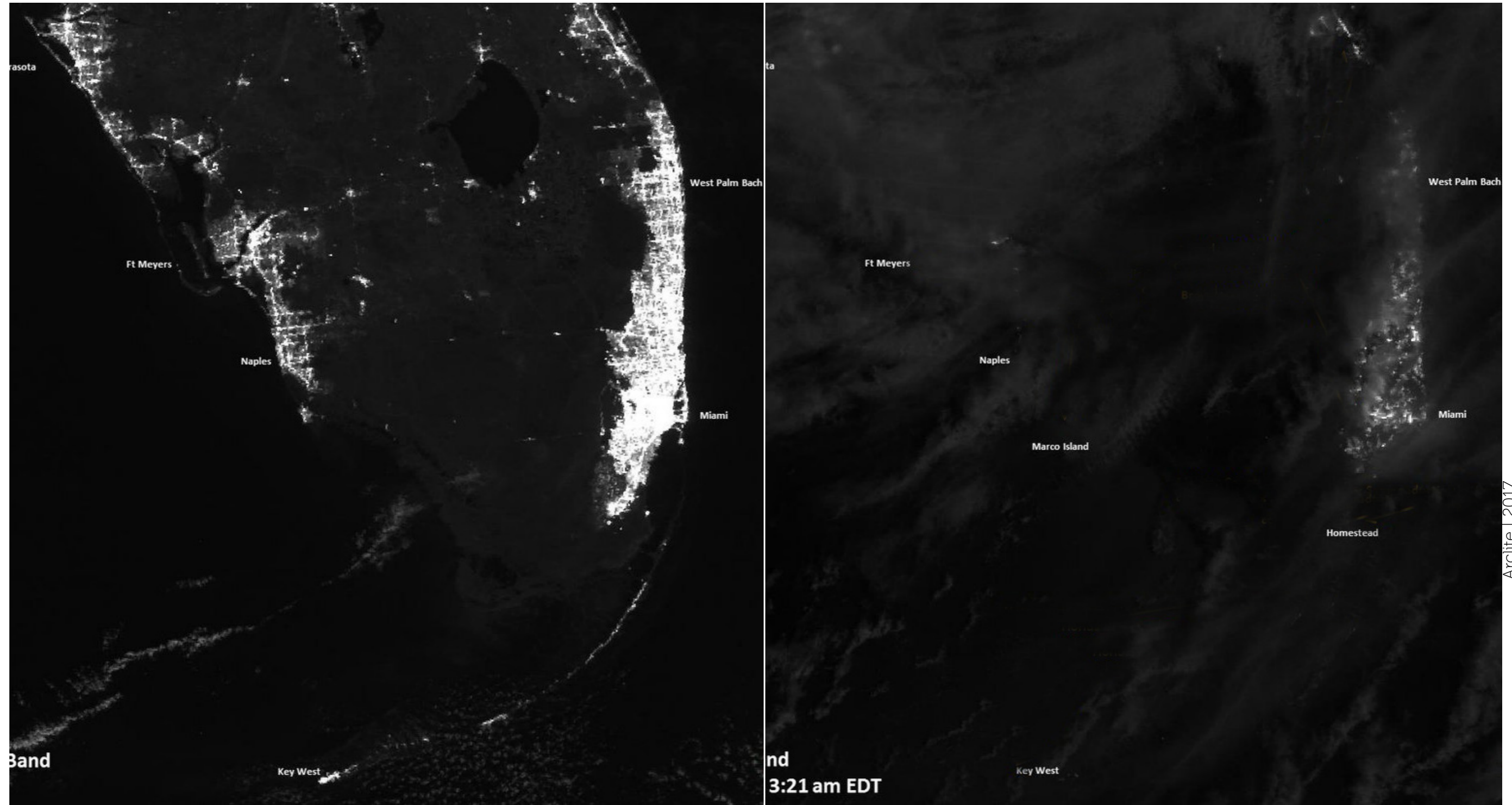
Literature Review



Fall 2017 gave rise to record-breaking hurricanes and unprecedented devastation. The resulting damage to the power grid impacted victims near and far. Some were prepared, yet many were not.

Research

Literature Review



There were a lot of devastation in American cities like in Texas, South Carolina, Florida, Louisiana and Puerto Rico.

While hurricanes cause extensive damage, it is the power outages afterwards that impact a far greater number of people. Those in the

pathway of natural disasters are frequently caught off-balance and unaware when the power goes dark.

Satellite images of Florida peninsula shows the impact of the power outage visually before and after Hurricane Irma.

Research

Ethnographic



We didn't have power for 6 days... makes you feel so isolated...so that was the hardest part.



RENEE M | Florida

To get first hand insight, I connected with a number of people affected by these hurricanes and interviewed them remotely.

Renee lives in Jacksonville, Florida. She lost power almost immediately which took six days to restore. While her home was undamaged, she found herself completely cut-off and isolated. She was able to charge her phone once by going out and finding a business with a generator, but otherwise she had no way to communicate with friends and family once her phone died.

Research

Ethnographic



I wish I had better emergency lights. The power just came back about two hours ago. Oh my gosh, it's a blessing! my whole family is here now.



CATHLYN THOMPSON | Florida

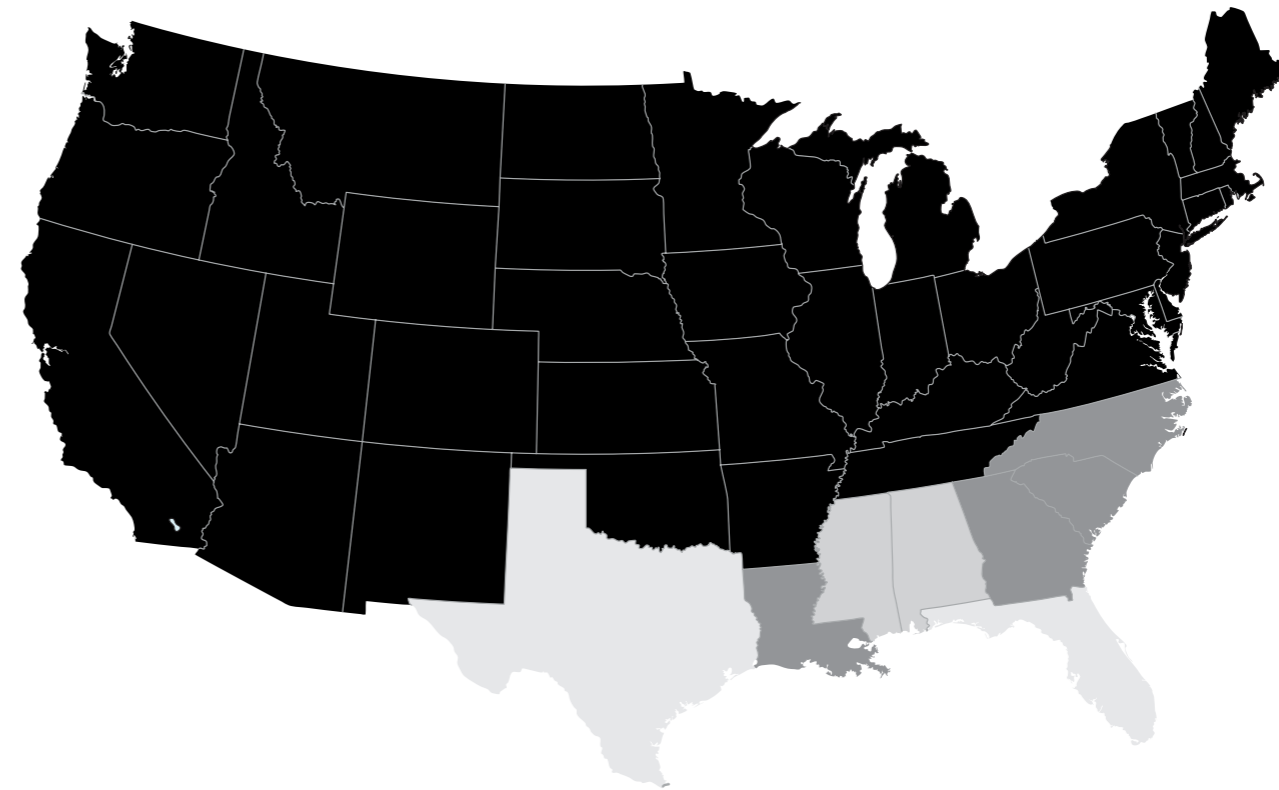
Cathlyn Thompson had flash lights in her closet organized in a clear boxes. She had 16 family members. Everyone wanted a flash light. They were missing the ambient light to give everyone a sense of ease.

Power outages affected about

20 MILLION people

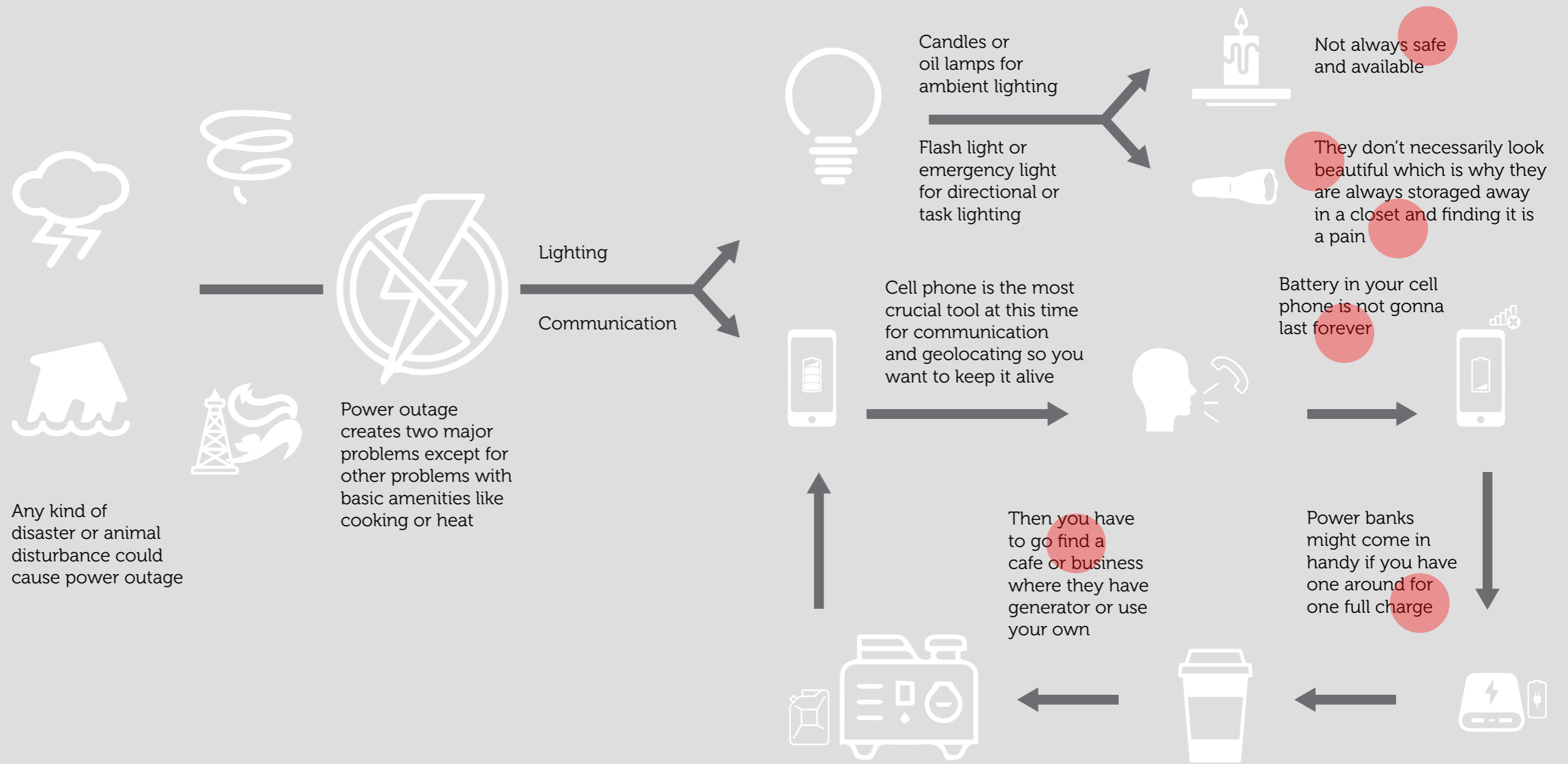
8.7 MILLION customer in total of Southeast US.

Florida	15 Million
Georgia	1.5 Million
South Carolina	270,000
Texas	107,000
North Carolina	75,000
Alabama	23,000



Research

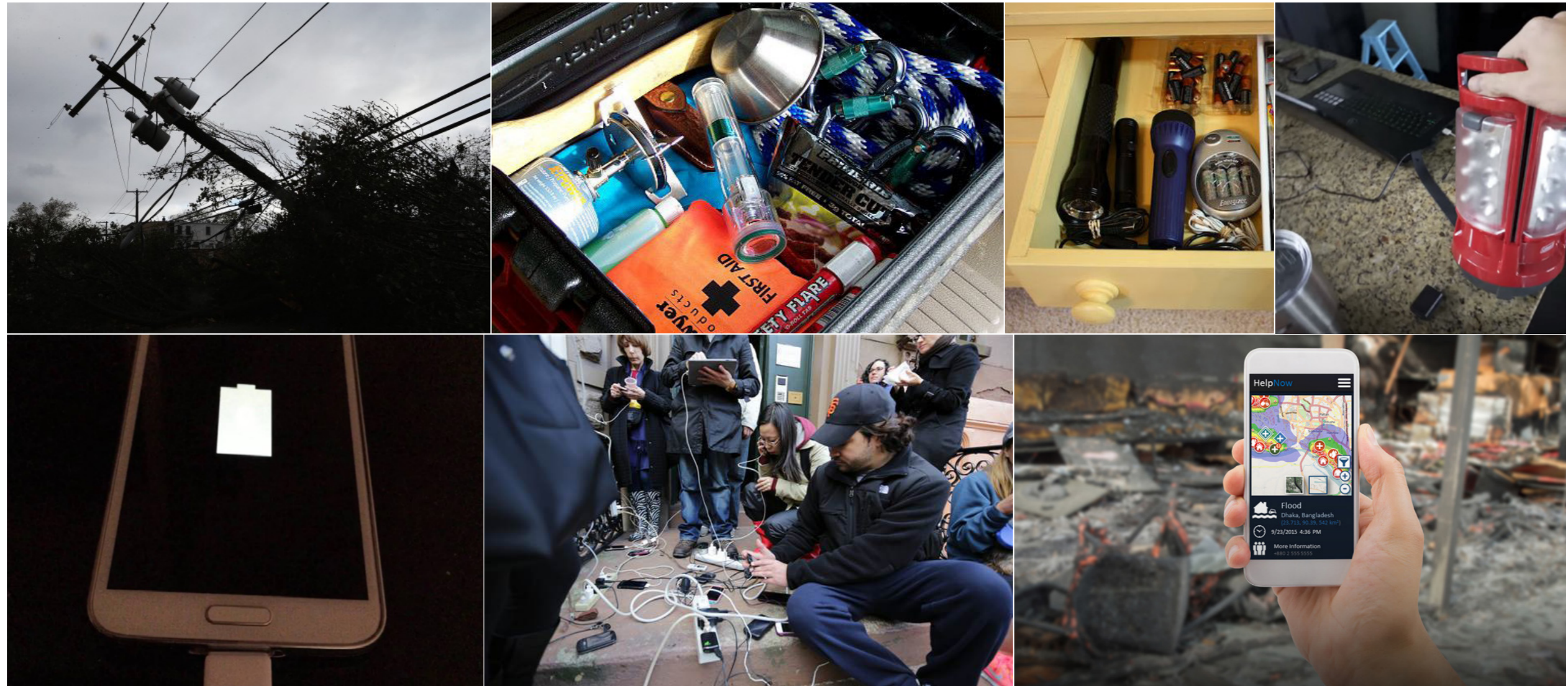
Journey map & Pain points



Journey map of a larger chunk of population who are not displaced and are just affected by power outage in general is a lot different than the immediate victims.

There are a lot of pain points in the journey which leads to the two major critical insights that drove the project. They were realized after connecting with the people from the disaster hit areas in Florida.

Critical Insights



Most people are often unprepared for disasters and caught off guard when they strike; even those prepared struggle to find emergency supplies and tools.

In an emergency and disaster situation, a cell phone has become a lifeline; the primary tool for communication, information and geo-locating in the initial aftermath and long term recovery.

Goal

Re-envision consumer understanding during actual emergency preparedness while providing for critical charging and lighting needs.

Design Principles

Provide a product for everyday life that transforms in times of need to eliminates the additional cost associated with buying specific tools and supplies for emergency use only.

Develop a contemporary aesthetic that encourages prominent placement and use within the home rather than hidden away.

These principles went hand in hand with the benchmarking of the product.

Benchmarking

Flashlights



Battery packs



14000mAh

\$1999.99

2200mAh

\$24.00

Two different products were looked into emergency flashlights and different kinds of battery packs all of which had the common aesthetic that fits in the garage rather than anyone's living room. Bulkiness was the overall form of each of them. Battery pack that lasted for a week would cost exponentially more than normal battery packs.

ArcLite wants to be in the range of \$100 to be competitive in the home consumer goods category.

ArcLite will give 5 evenings of ambient lighting and 2 full cell phone charge each day for 5 days.

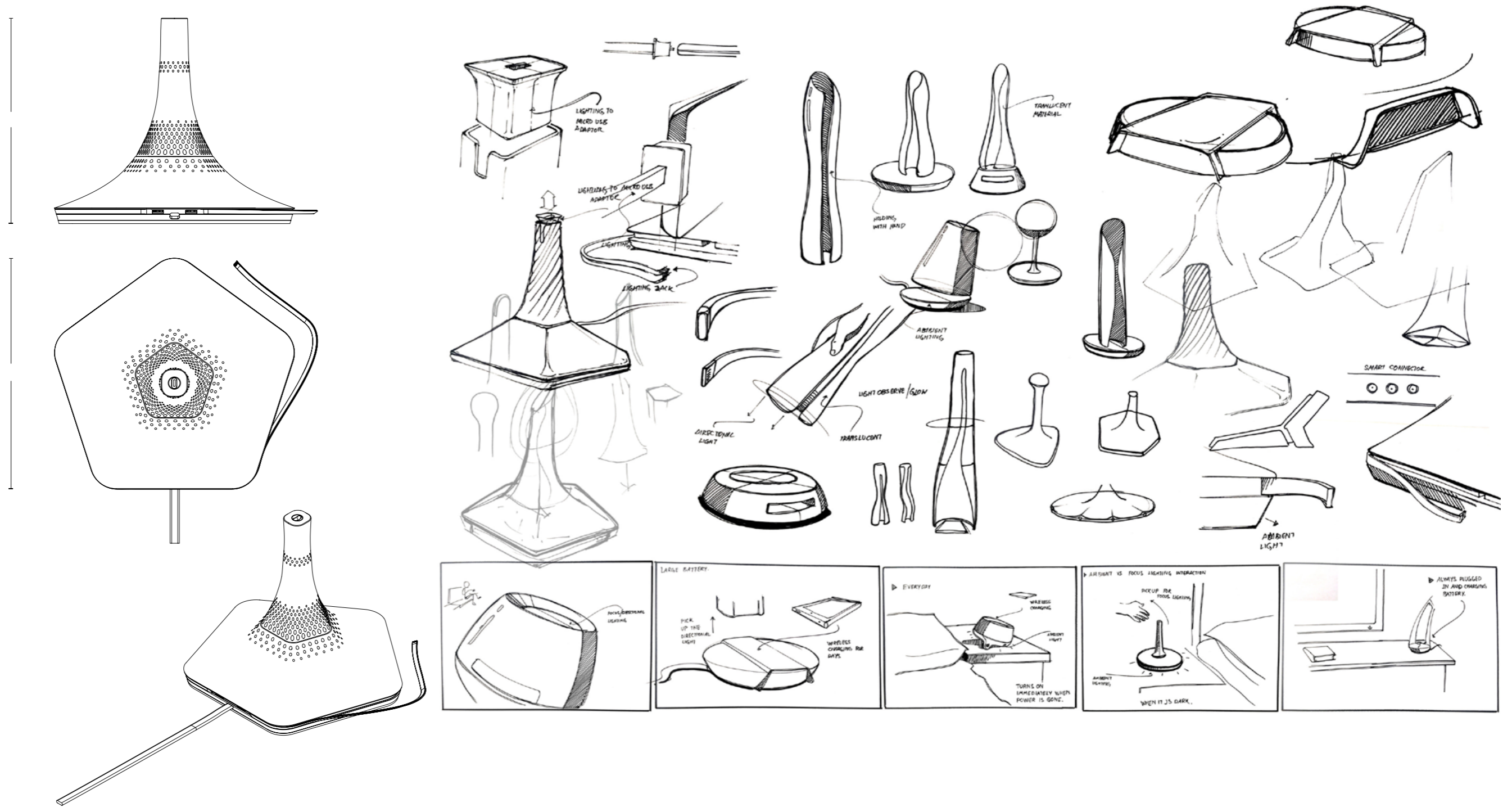
Mood Board



Clean geometry, minimal forms and subtle texturing inspired Arclite.

Ideation

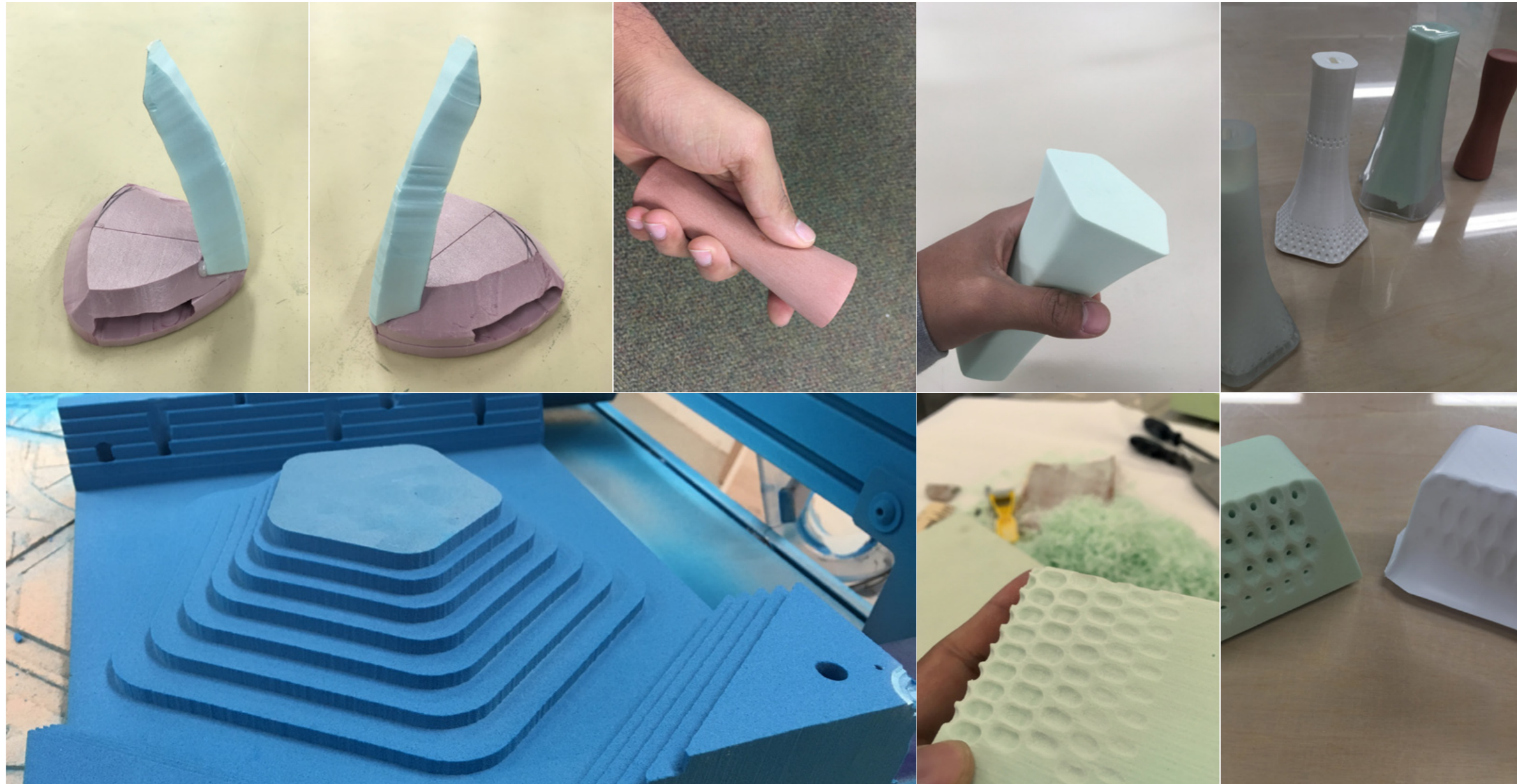
Function
Exploration



Pentagon base was chosen for stability. It measures 8.24 inches high and 9.74 inches in diameters.

Details like charging cables wrapping around the base, the magnetic smart connector charger for the flash light on top were added. To make it more universal to all cell phones, apart from the existing two charging cables, two more USB ports were added.

Prototyping



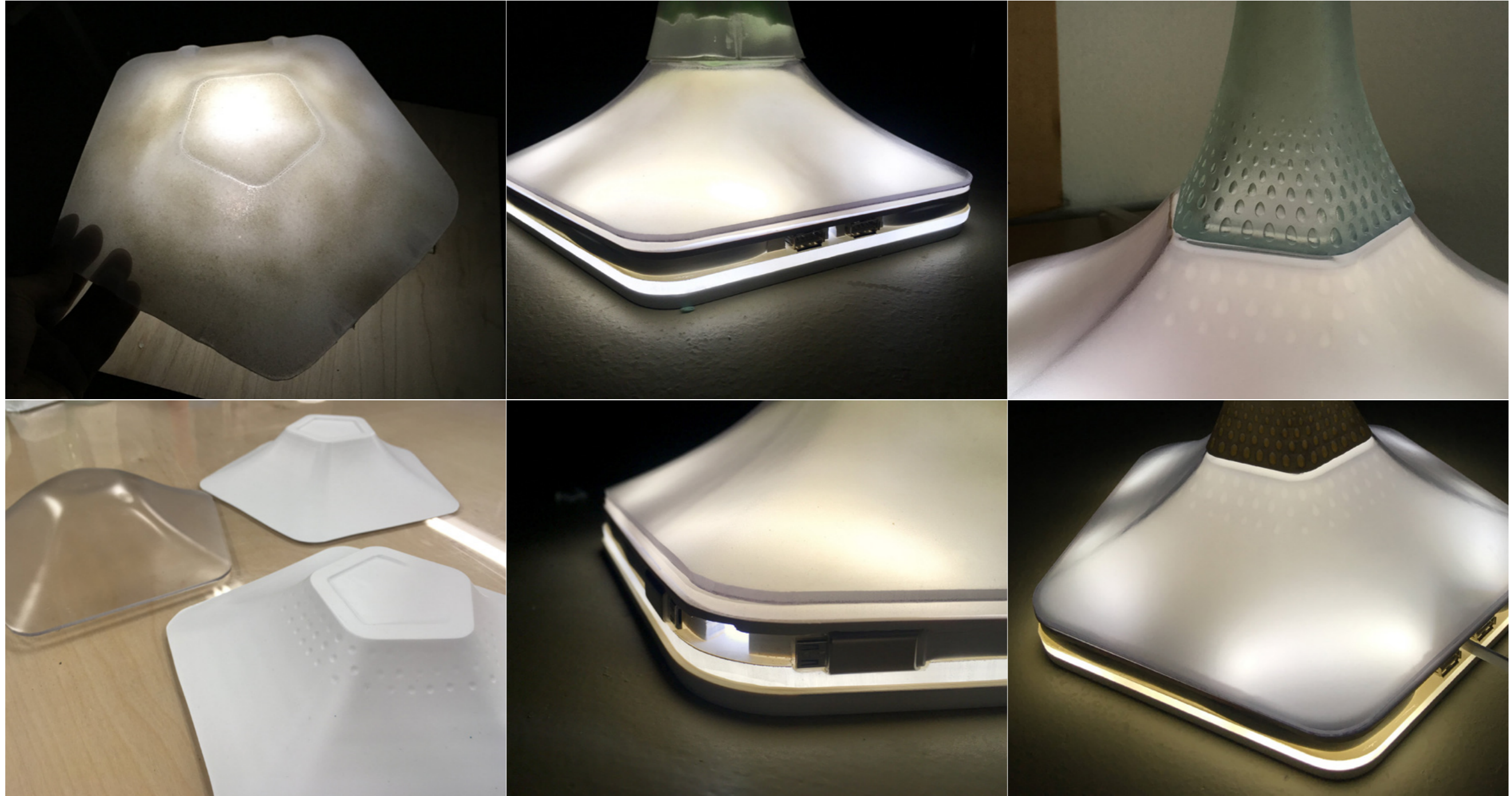
Prototyping began with various shapes, investigating flashlight ergonomics, the base and its charging outlets and cords, and surface texturing and patterning.

Prototyping



CNC Router and Vacuum forming machines were used to achieve the desired curves of the base. Electronic components were housed to make it ready for the user testing phase.

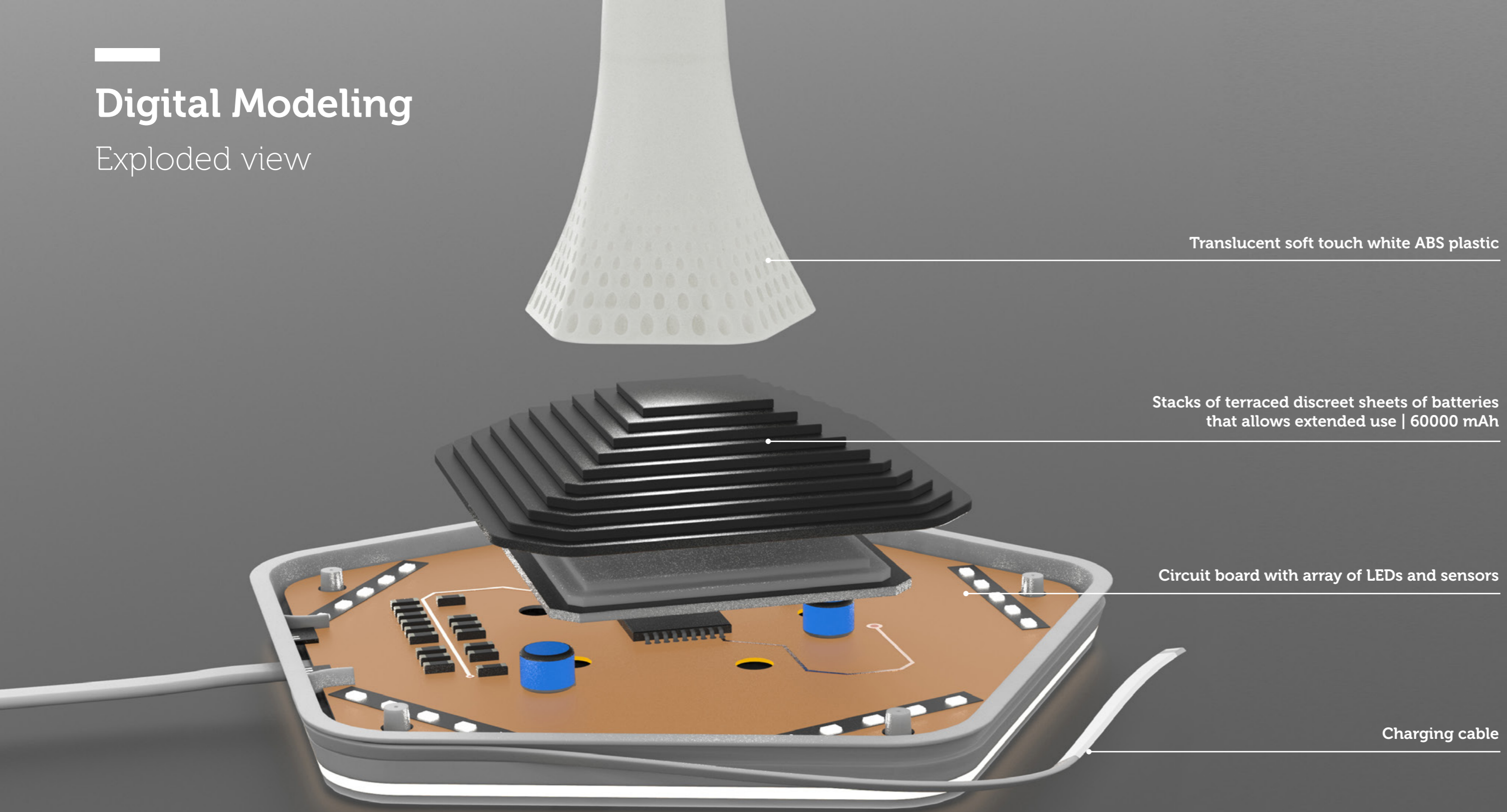
User Testing



The ambient lighting was tested with different materials and finishes to have the most efficient illumination. The flash light was 3D printed with clear resin to maintain the transmission of the light through out the product.

Digital Modeling

Exploded view



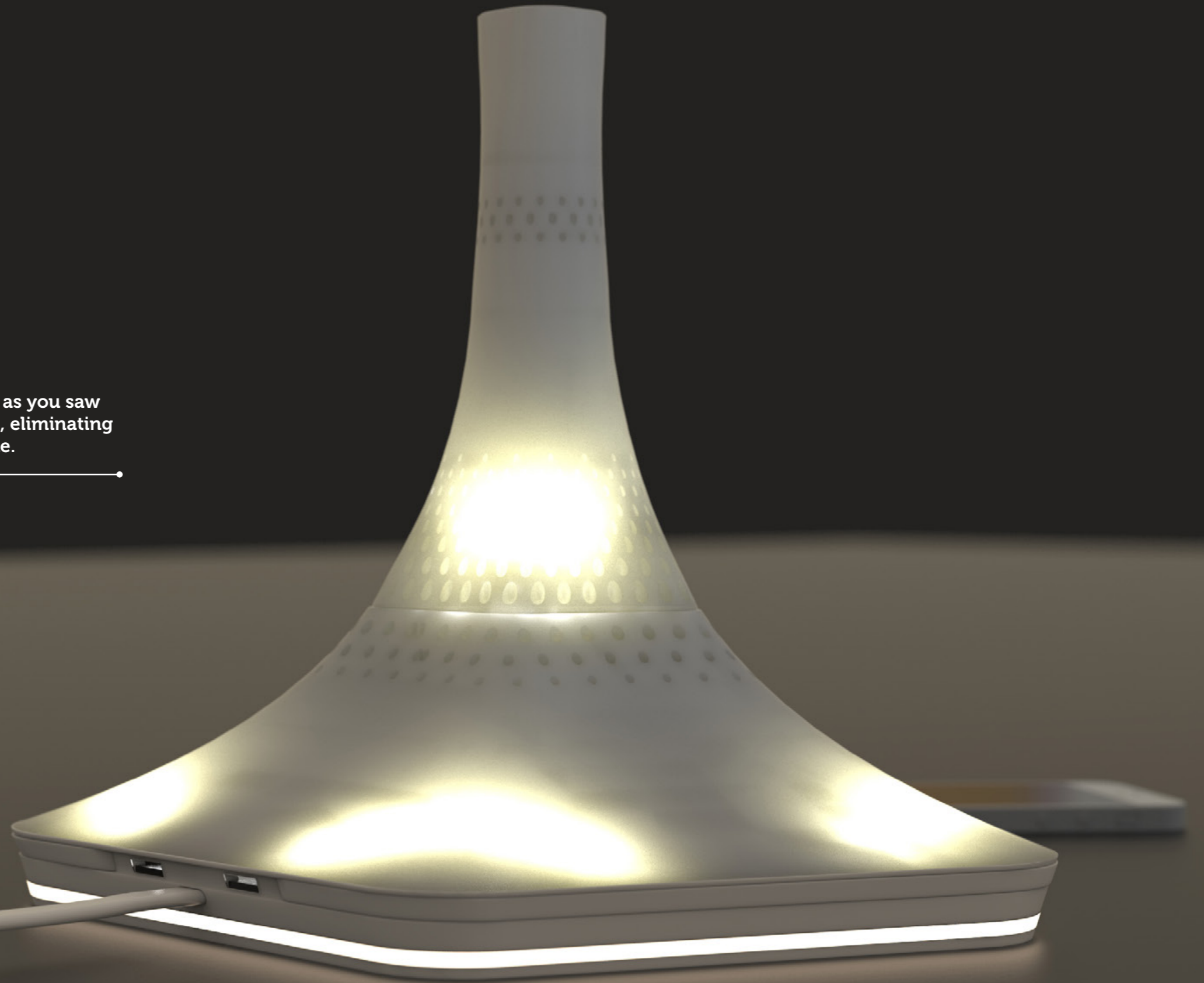
Translucent soft touch white ABS plastic

Stacks of terraced discreet sheets of batteries that allows extended use | 60000 mAh

Circuit board with array of LEDs and sensors

Charging cable

If power is suddenly cut in the evening hours, Arclite as you saw demonstrated will provide an immediate light source, eliminating the typical fumbling around until you find your phone.

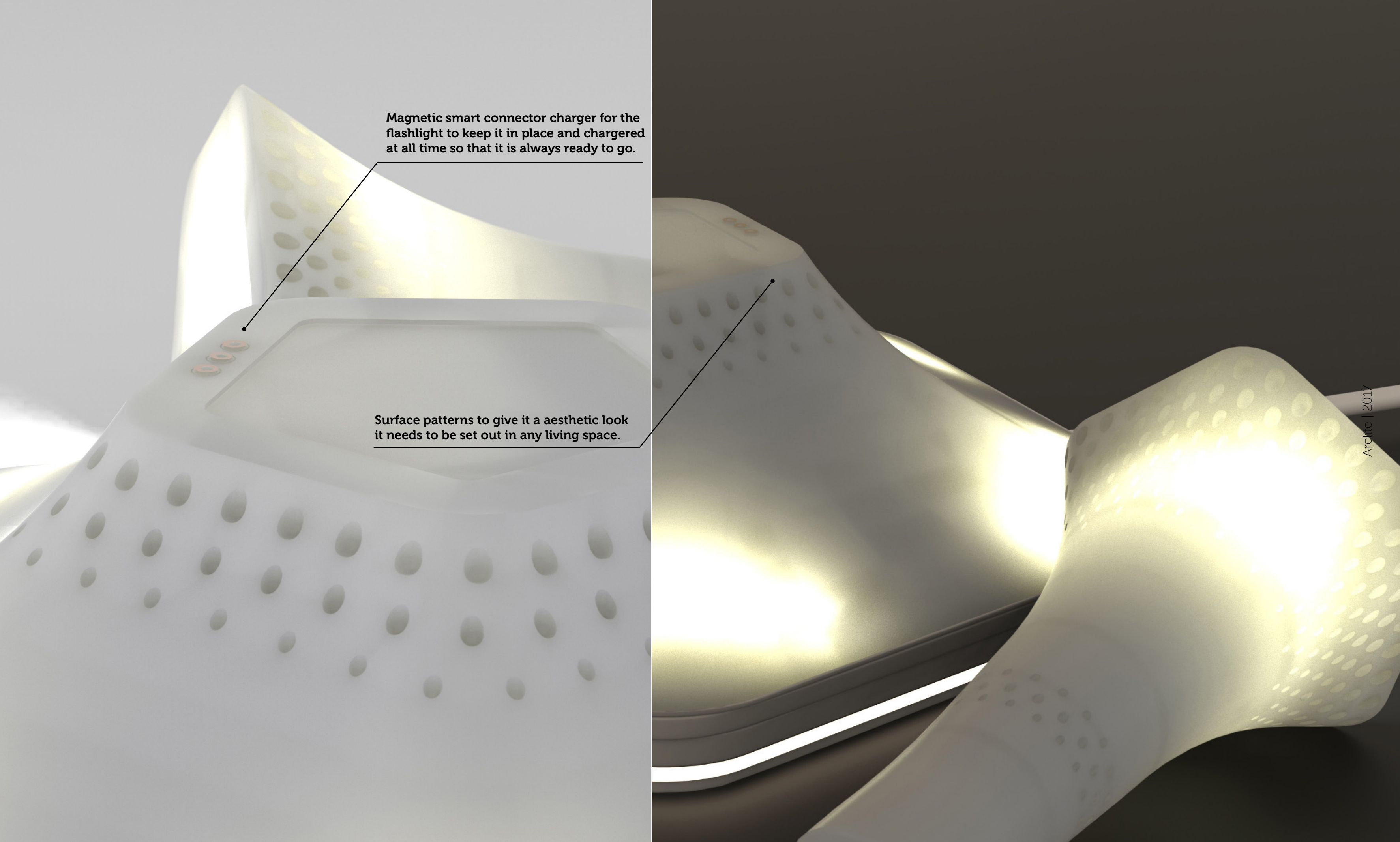


Sensors in the housing will light up the flash light as soon as you lift it up and turn off as you set it down.

Arclite | 2017



Options on lighting cable or micro USB for the charging cable to universalize the product.

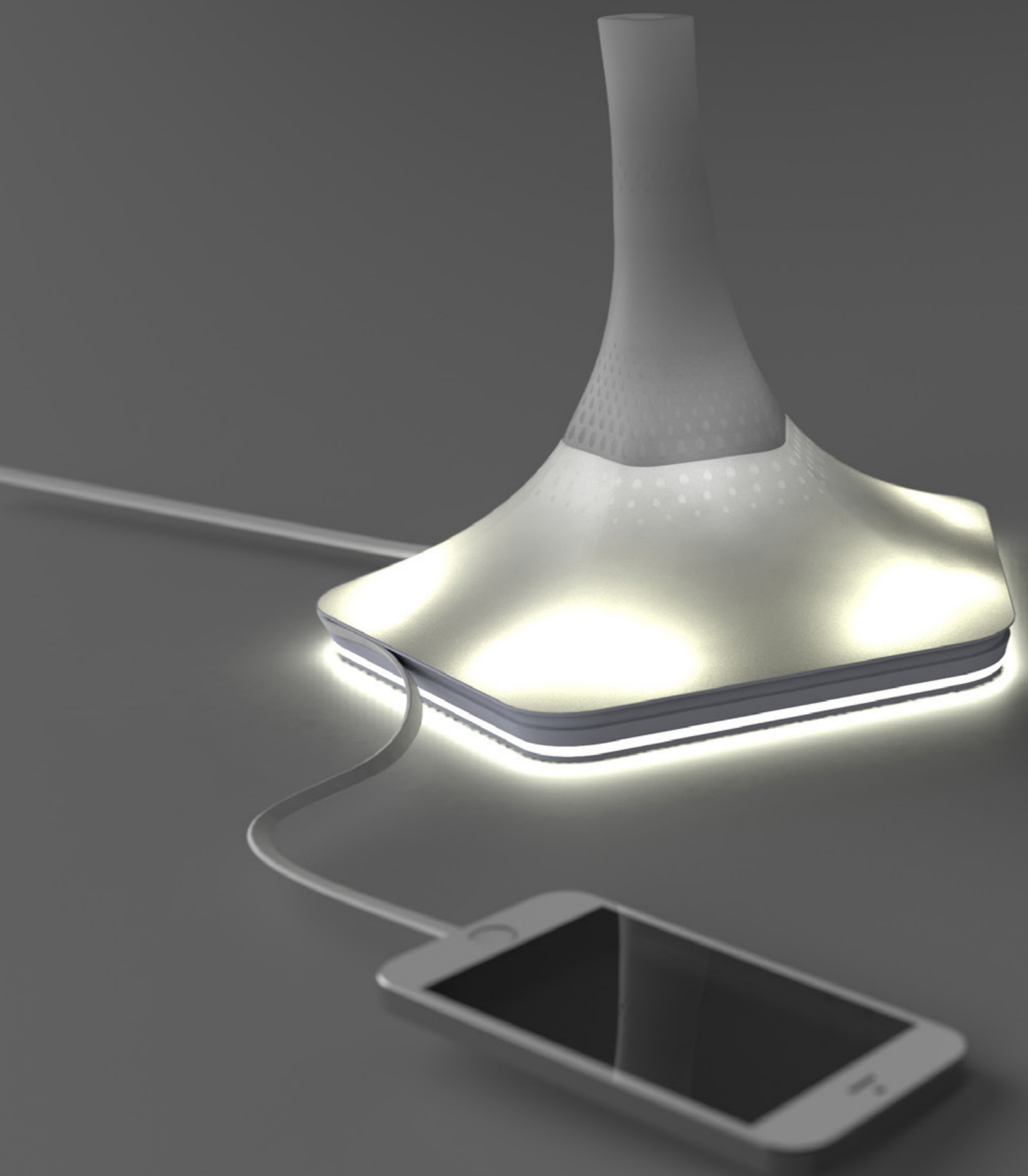


Magnetic smart connector charger for the flashlight to keep it in place and charged at all time so that it is always ready to go.

Surface patterns to give it a aesthetic look it needs to be set out in any living space.



It will be able to know day or night time. When your phone is fully charged it will indicate you with changing color at the base.



ARCLITE RETHINKS THE IDEA OF DISASTER PREPAREDNESS BY MAKING IT A PART OF THE EVERYDAY.