



# LEAVE

---

for LAX

NOTE: This is a student work. Not an actual product or service of LAX. Used for demonstration purposes only.





# Reimagine LAX

Airport is a place full of emotion where people meet and apart;  
How people experience and feel the moment of being together or separated?

**Research.**

# About LAX

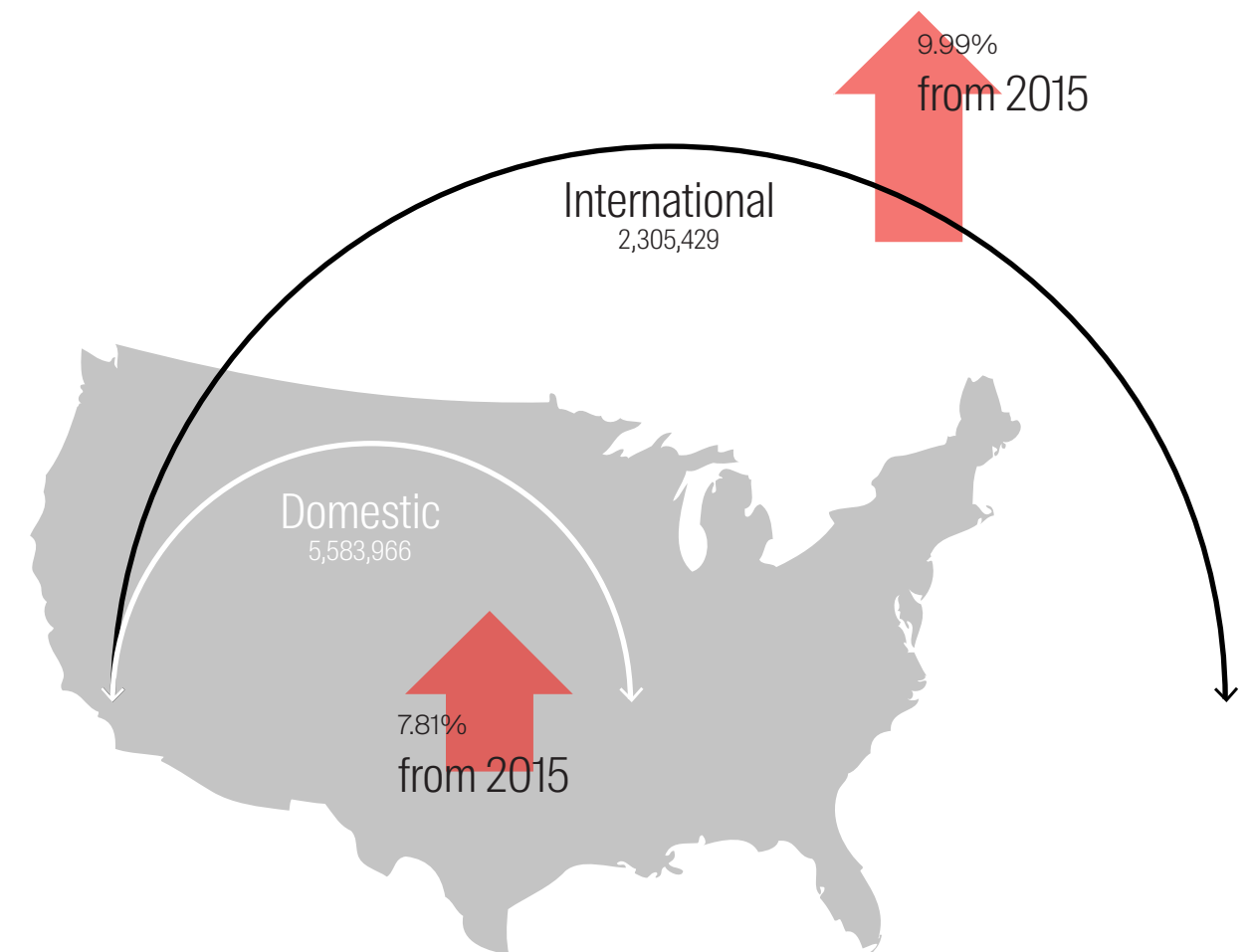
## Top 10 Carriers

in 2016

1 American Airlines	19.97 %
2 Delta Air Lines	16.82 %
3 United Air Lines Inc	14.71 %
4 Southwest Airlines	11.51 %
5 Alaska Airlines	4.39 %
6 Virgin America Inc	4.13 %
7 Spirit Airlines Inc	2.76 %
8 JetBlue Airlines	1.77 %
9 Air Canada	1.66 %
10 Qantas Airlines	1.35 %

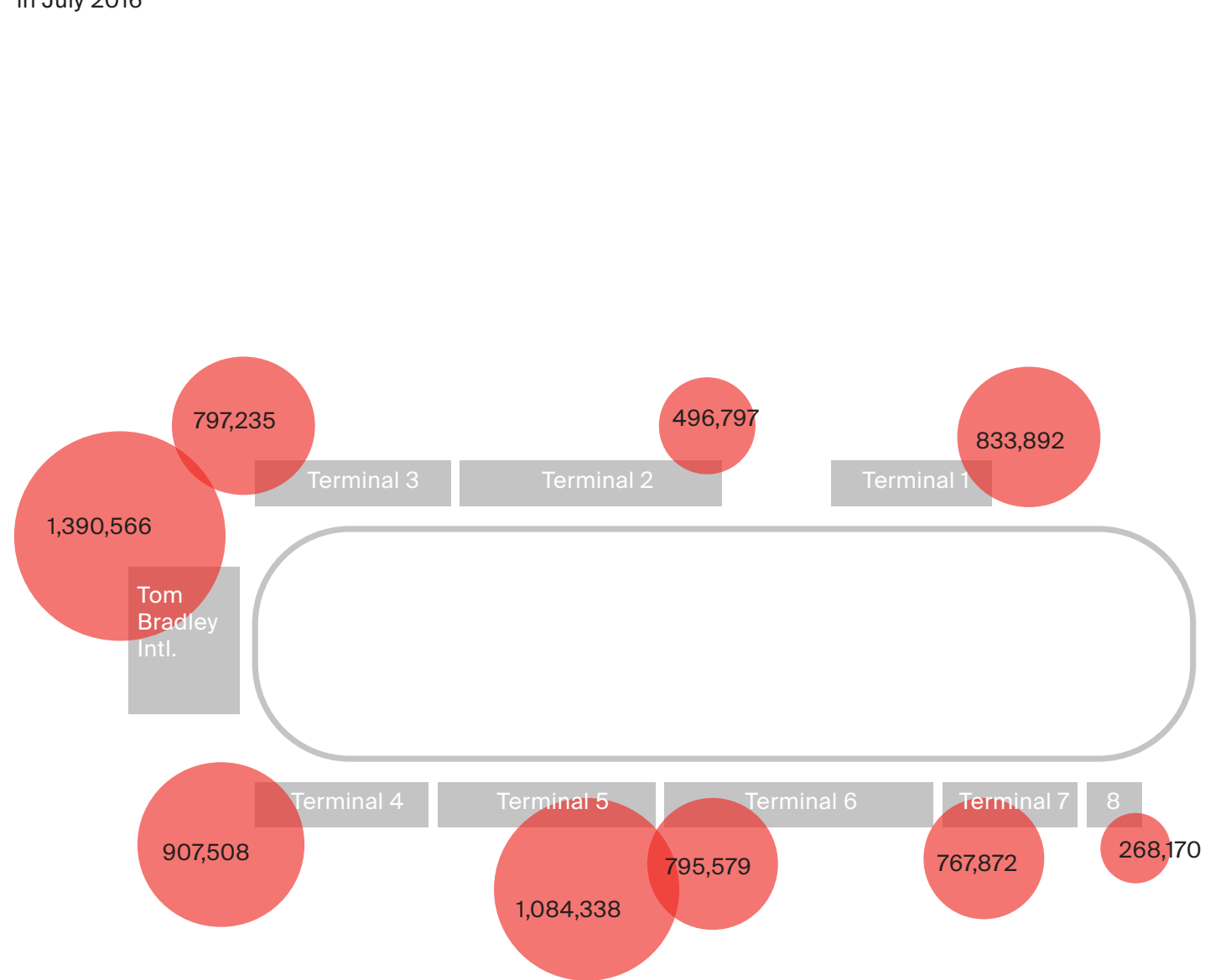
## Passenger Traffic

July 2016



# Traffic by Terminal

in July 2016



Terminal 1  
Southwest

Terminal 2  
Aeromexico Aer Lingus  
Air Canada  
Avianca  
Hainan Airlines  
Hawaiian Air  
Interjet  
Qatar Airways  
Southwest (International)  
Sun Country  
TACA  
Thomas Cook  
Virgin Atlantic  
Volaris  
WestJet  
XL Airways France

Terminal 3  
Allegiant Air  
Boutique Air  
Frontier  
JetBlue  
Spirit  
Virgin America  
Virgin Australia (Departures)

Terminal 4  
American

Terminal 5  
Delta

Terminal 6

Alaska  
American Eagle  
Copa (Departures)  
Great Lakes  
Mokulele Airlines

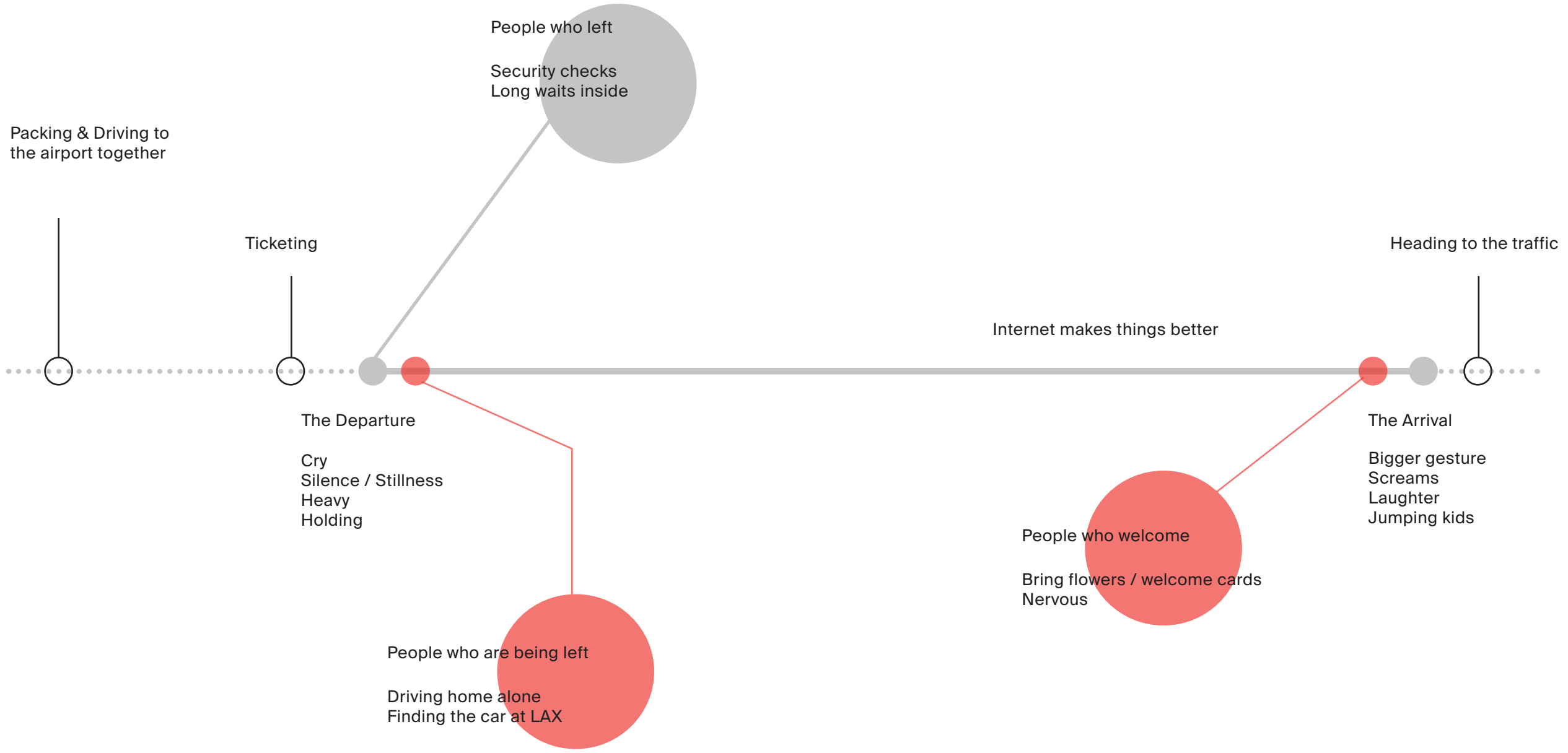
Terminal 7,8

United  
United Express

Tom Bradley International

Aeroflot  
Air Berlin  
Air China  
Air France  
Air New Zealand  
Air Tahiti Nui  
Alitalia  
All Nippon Airways  
Asiana  
British Airways  
Cathay Pacific  
China Airlines  
China Eastern  
China Southern  
Copa (Some Arrivals)  
El Al Israel  
Emirates Airlines  
Ethiopian Airlines  
Etihad  
EVA Air  
Fiji Airways  
Iberia  
Japan Airlines  
KLM  
Korean Air  
LAN Airlines  
Lufthansa  
Norwegian Air  
Philippine Airlines  
QANTAS  
SAUDIA  
Scandinavian Airlines  
Singapore  
SWISS  
Transaero Airlines  
Turkish Airlines  
Virgin Australia (Arrivals)  
WOW Air

# Emotions at an Airport





Lots of "WAITING TIME" at airports for both travelers and pick ups.



Shuttle worker's modified chair, and how they are locked in place.



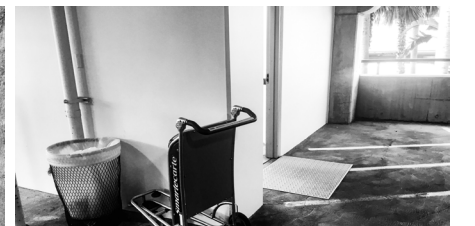
People are packed where suitcases come out.



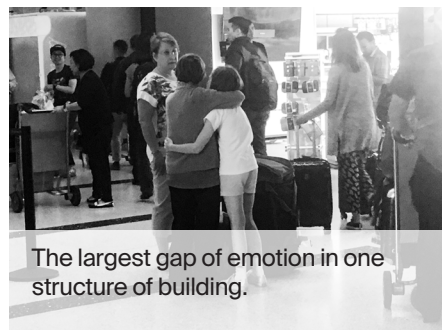
Construction stuff left behind make LAX look more complicated.



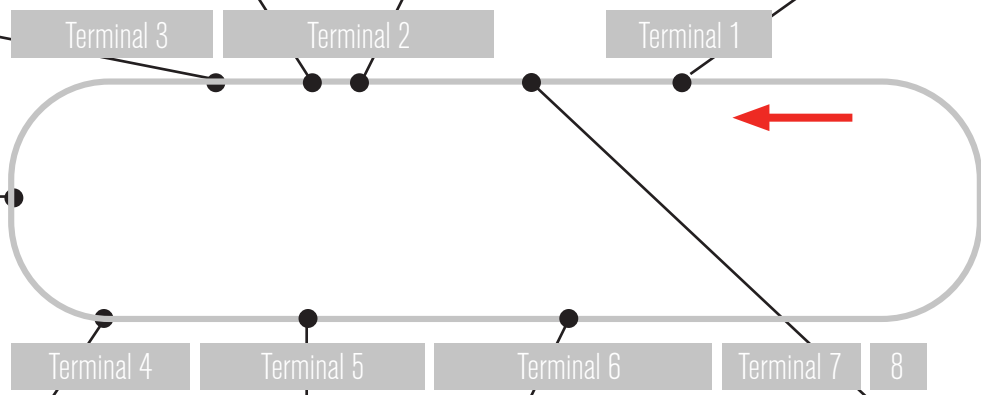
One of the bike driver covered the bike for longer trip.



People left smartcarts everywhere in the parking lot after using them.



The largest gap of emotion in one structure of building.

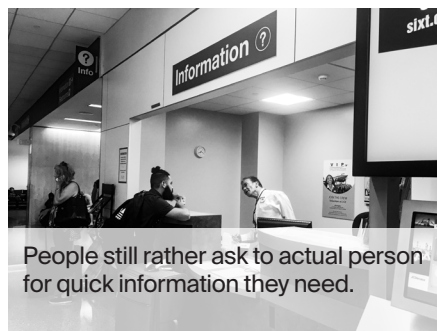


# Field Research

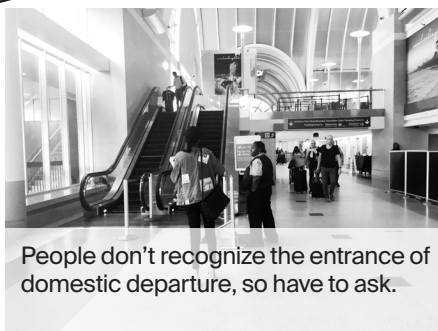
Sun, Sep 18, 2016



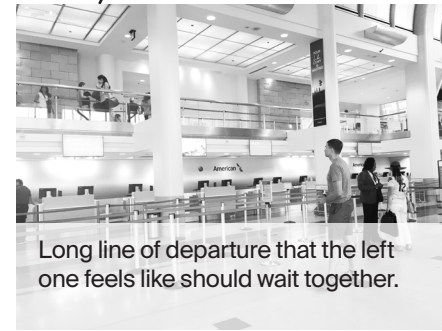
Nobody uses this interactive info monitor around the airport.



People still rather ask to actual person for quick information they need.



People don't recognize the entrance of domestic departure, so have to ask.



Long line of departure that the left one feels like should wait together.



Tiny pet area found in between two construction sites. Almost abandoned.



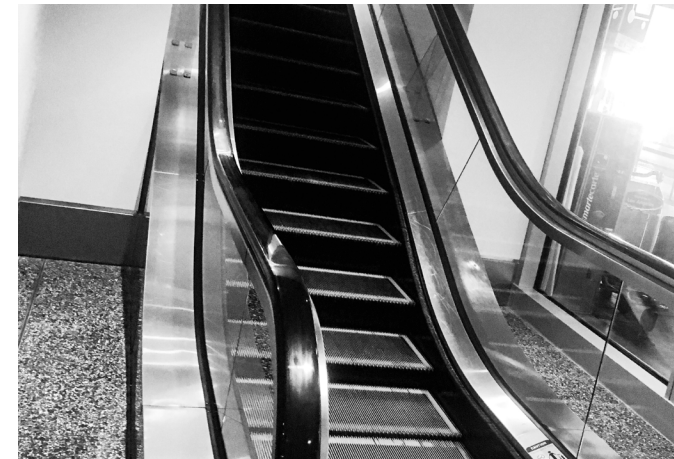
Only pigeons get to use the space.



# The Arrivals

## Domestics

Not much of emotions are shown because of the distance of relationship / frequency of visiting, but also all of the focus goes to finding their suitcases.



This is where people meet.  
Lots of times, people miss each other.



What these benches are for when people are all standing to find their suitcases?



Few people meet during their walk to the baggage claim area.



People using cellphone to find out where the pickup persons are after finding their baggages.



# International

People show raw emotions of meeting their loved ones.  
Gesture seem bigger than when people are sad for being apart.



Because the emotion was very raw and sensitive,  
they looked like they were in their own world.

Not enough time to enjoy the moment of first  
meeting as people get clogged with very narrow  
space.



# The Wait

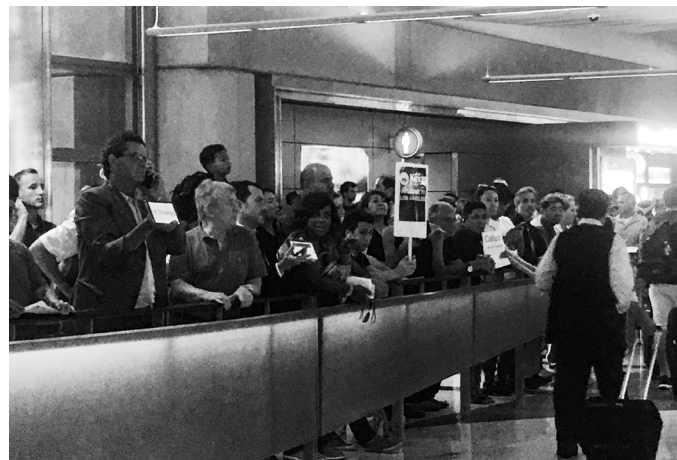
Waiting in the international terminal is much longer than domestic. The diversity makes the place into a unique melting pot.



People get more anxious when other people start to meet their friends and family.



Devices help people a lot to kill their waiting time.



There were only few handmade welcome cards. Instead, lots of people used iPad.



Flowers and balloons, and lots of people actually buy them at the airport store.

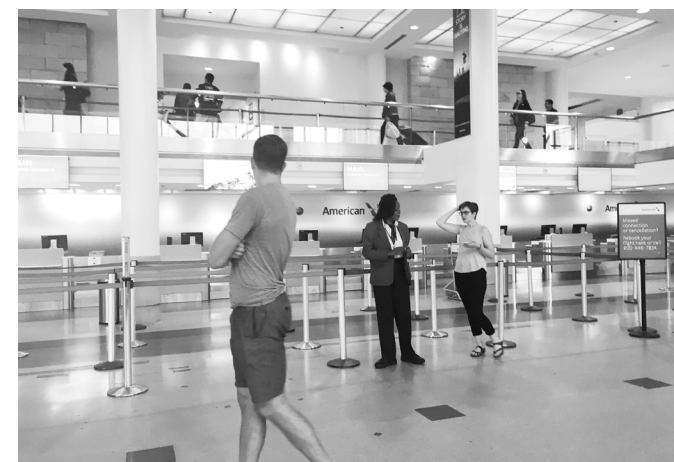




# The Departure

## Domestic

Both parties are still sharing same open space. When there is a long line to wait for the gate entrance, it feels bad to just leave.



Saying bye seems easier than international case. It was quick and short with one big hug and a kiss.

The boyfriend following his girl in line, and waiting together until she is out of his sight.

# International

Calm, but sad farewell of an old couple

## Interview 1

- Her husband lives in Sao Paulo for his work, while she lives in Los Angeles for their children.

- It has been more than 5 years, "But it never gets easy" she said.

- He visits about once in a year.

- What is the hardest thing to be apart at this specific moment in the airport?  
"It is hard because I still feel his temperature."



She waved her hand with smile until when he looked back, and started cry after she let him completely go inside.



# International

Old parents and a daughter without a promise of next time

## Interview 2

- Hungarian parents who let their daughter to leave them first.

- Their daughter has been studying here for 2 years now, and it was the first time of meeting again.

- Don't know when they will meet again, and the father's health is not very well.

- "Why did you let her go first?"  
"Because she will be all alone here at the airport if we leave her first."



The daughter hugged her parents again and again crying a lot. Mom started tearing after letting her go, white dad stepped back a little not showing much of emotion.



# International

Some people take off alone

## Interview 3

- He travels a lot for his business, and it is a nature thing for him to be alone at airports.

- Arrived little too early today from Culver City using Uber.

- Reads or sleeps to kill the waiting times.

- He said he enjoys to watching people in the airport because it makes him think about his families and friends.

- "Don't you need one too, then?"

"Sometimes. When I come out from international arrivals, I often walk fast pretending I am so busy, because I feel little weird when I have nobody to hold and hug just like others."



# International

Additional findings



## Tough guys

Mens show less emotion then women, so father and the son moment was the most awkward goodbye.



## Looking back

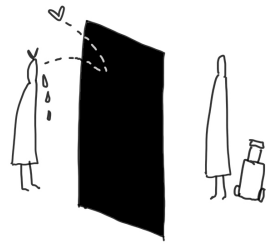
After keep saying goodbyes, people still look back and check even if they cannot see.



## Capturing the moment

There are lots of people taking pictures whether it is arrival or departure.





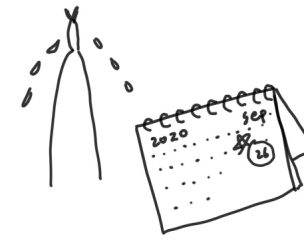
When people cannot see the others anymore, people finally feel they are gone. The anxiety of disconnection starts from there.

there is a way for people to feel that they are still connected even though one party is inside.



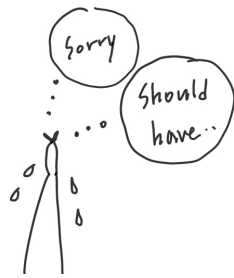
The emotions get interrupted by others easily. Awareness of other's presence makes people to wrap up their emotion quickly.

people have their own space to fully enjoy the moment and emotion?



It makes people hard to say bye when they don't have any promise of next time meeting.

people can set their next time promise that gives little hope?



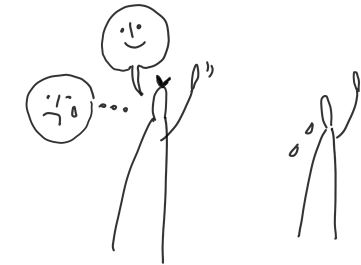
Sorriiness, things that they did wrong, or didn't do well becomes very regretful at the moment of saying bye.

they could get a chance to make up their regrets before letting them go?



While waiting the others to come out from the gate, people get ready to meet them not just physically, but emotionally as well.

the airport helps the people to get prepared to meet their loved ones during the wait time?



People think the other part will feel better if they see themselves in smile while saying bye. People think about the other part more.

the one who leave can make the one who are being left feel better at the LAX?



The Goodbye moment with an elderly is painful for age can reflect the time that is left. There is certain anxiety that it can be the very last time of seeing them.

LAX can make the elderly and their family think that they are not old.



Arriving alone at international terminal without friends or families waiting can feel awkward and lonely by the specific airport environments.

the airport can help them to feel less isolated in the environment?



Lots of people try to do both enjoying the moment and capturing the moment, but often it is hard to do both at the same time.

LAX takes picture for you so that you can just enjoy the moment.

# Insiants.

# Relatedness

## Strategies for relatedness



Awareness

Artifacts that create a feeling of cognitive awareness and continuity by sharing different types of (ambient) information about current activities or moods.



Expressiveness

Artifacts that emphasize the affective and emotional aspect of intimacy. They enable partners to express their feelings and emotions in a wide variety of ways, such as developing an own language or to use language in an ambiguous way.



Physicalness

Artifacts that mediate a feeling of physical intimacy. They simulate either secondary effects of physical proximity (e.g., body heat, heartbeat) or meaningful gestures.



Gift Giving

Artifacts that demonstrate caring and valuing the other person by gift giving.



Joint Action

Artifacts that allow for carrying out an action together, which usually requires being physically collocated.

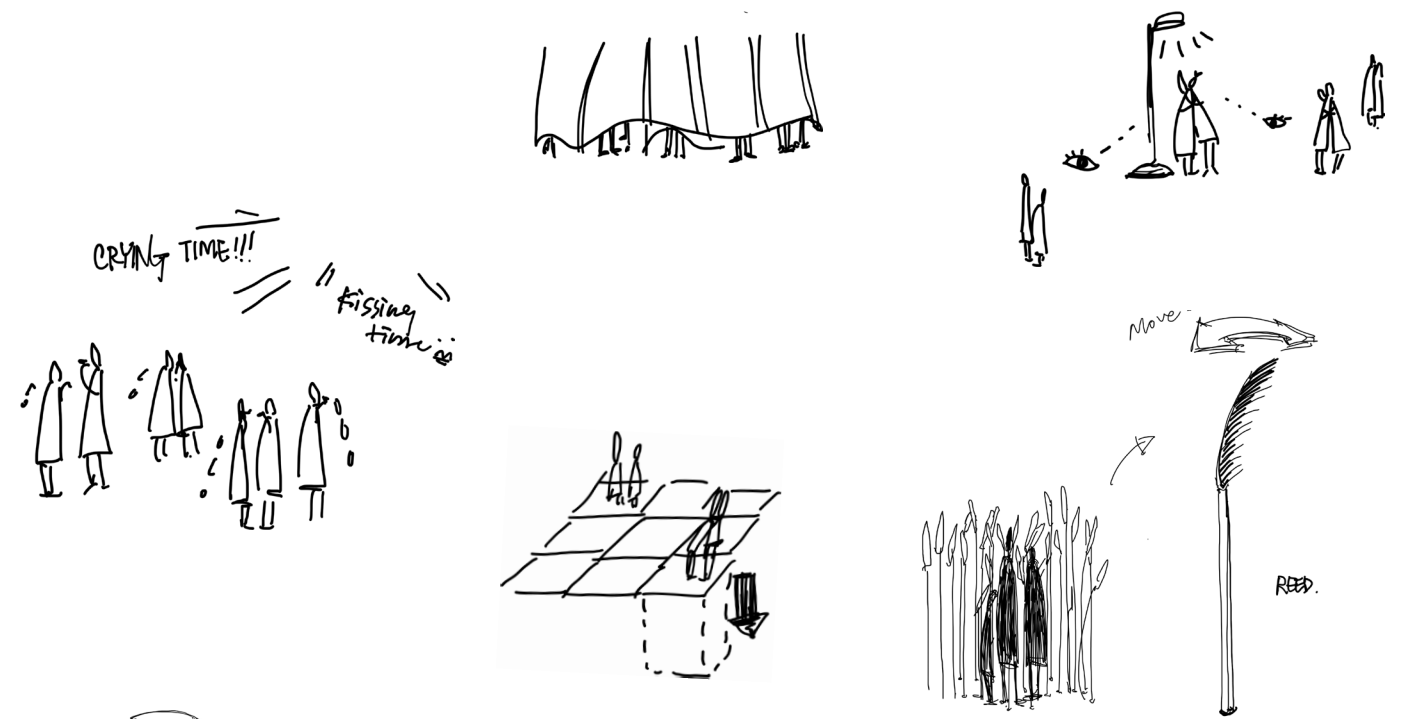


Memories

Artifacts that keep records of past activities and special moments of a relationship.

**I  
n  
a  
s  
i  
n.**

# The Arrival / Joy of Meeting



1. What if people can have a temporal private space to sincerely sense what they feel at the moment.

People have perception that airports have certain romances about meeting and being apart.

Tom Bradley arrivals has dimer lighting.

People's emotions get cut off when they recognize the presence of others.

People quickly wrap their emotions up for they have to move from the gate way.



# The Wait / Expectancy of Reunion



## 2. What if people can use their waiting time to get ready for the reunion.

Waiting time for the ones who welcome is often feels too long.

While waiting the others to come out from the gate, people get ready to meet them not just physically, but emotionally as well.

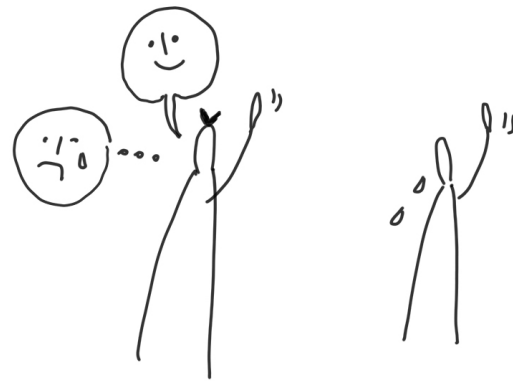
People prepare gifts by thinking about the one who will receive them.

Hugging is one way of giving too

Lots of people use ipad for welcome poster.



# The Departure / Connection of You and Me



## 3. What if people can have little bit of relief about being apart at the moment of departure.

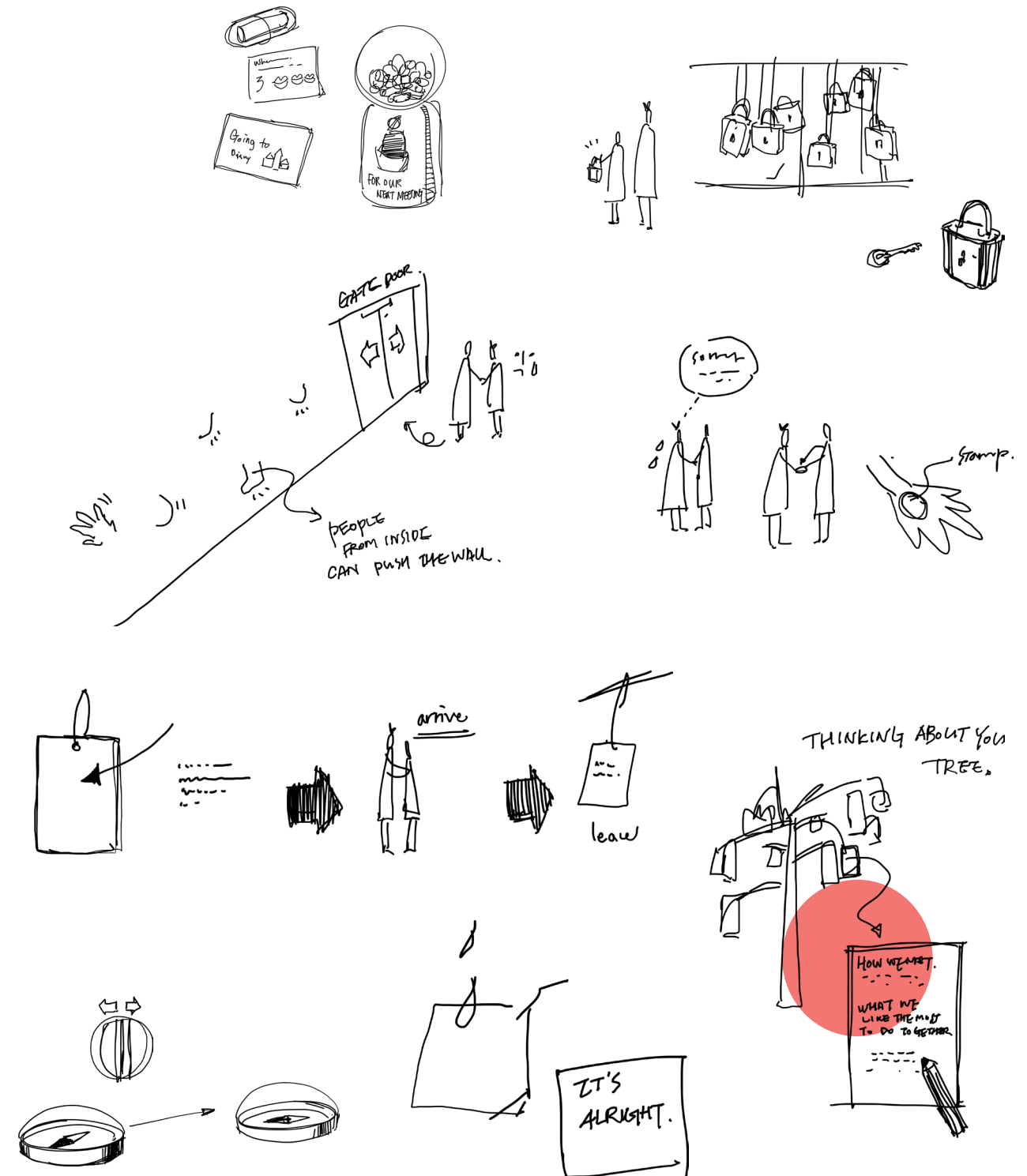
People think the other part will feel better if they see themselves in smile while saying bye. People think about the other part more.

Disconnection is what make people feel sad and anxious.

Lack of physicality brings the disconnection as well.

Knowing when will be the next time make people feel better.

More regrets = more tears.



The

Department.



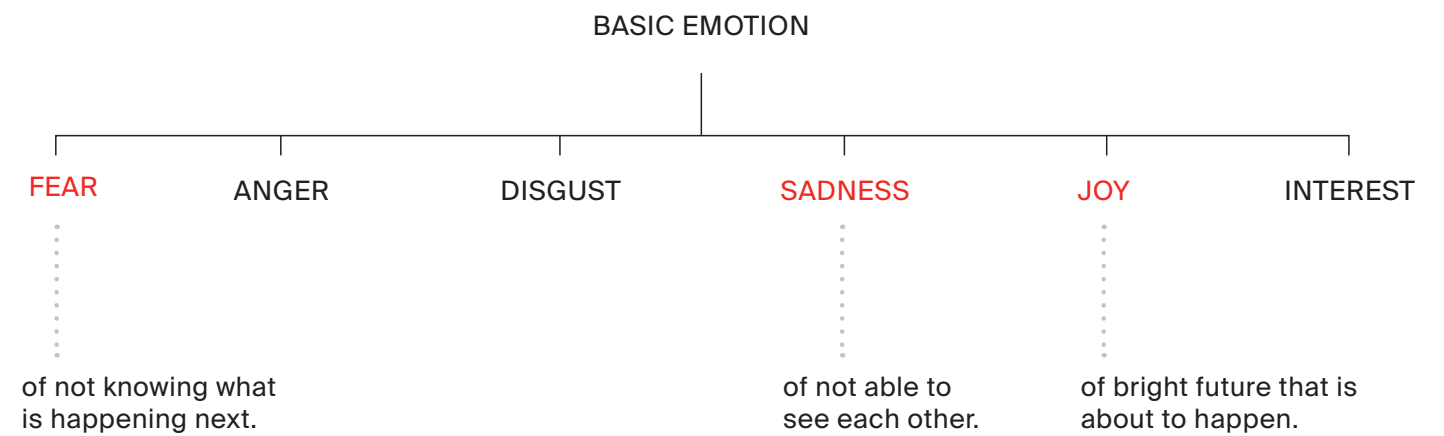
# The Bittersweet Momen

"It is sad that I cannot see her often, but I am happy for her new chapter. I know she has a wonderful life waiting for her."



# Aspects of Emotion

@ the Departure



# Scenarios

## Making wishes

Mom prays for her son to make wonderful college life, little girl wishes for her dad to be safe for his business trip. We make wishes for our loved ones.

## Letting them go

Even though it is sad to say good bye, it is sometimes a must for the choice that has to be made. Celebrating what is coming can be part of saying goodbye.

## Noticing their presence

Sometimes, not seeing them is just too hard, yet it is not that people just disappeared. They will still carry on in the other side of world.



## Mr. & Mrs. Jones

It has been only 3 years of marriage, but her husband has to go to France for his work, while She has to stay in the U.S. for her work. She at first didn't agree for his decision, but eventually following him for it was his old dream.



## Olivia & Parents

She got accepted a college in London, so she is getting ready for the new life. Her mother seems very worried for her, but she knows that her daughter will have great new days.

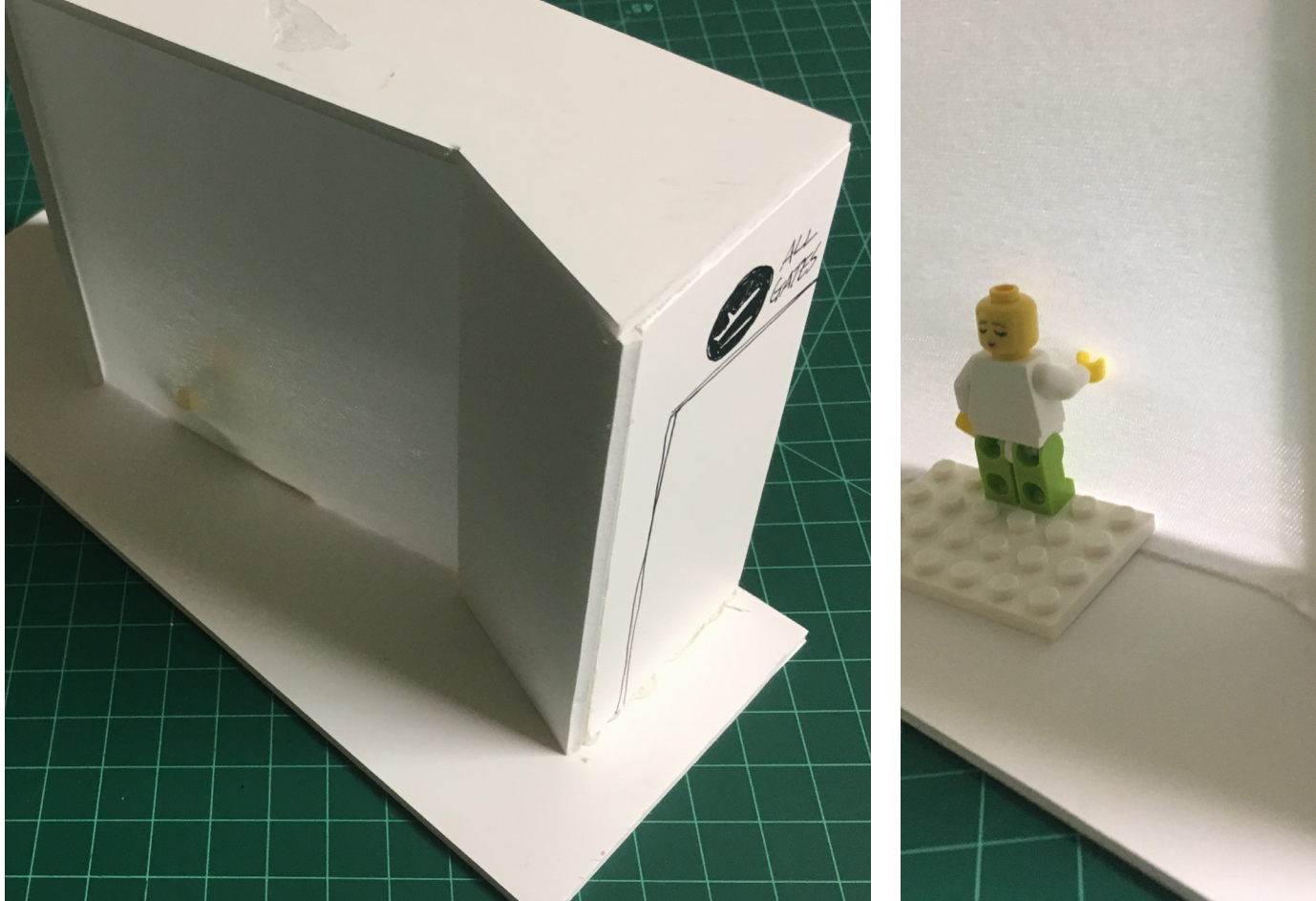


## Emma & Grandpa

It has been a while visiting her grandparents, so that last few weeks were like a gift for both. Now to say goodbye, she feels scared for her grandpa's health is not well.

# What if people can interact using flexible wall after they enter the departure point?

Flexible wall made out of fabric let people feel the other side of the hallway. Just a slight presence of the other side will still make them feel connected.



# What if people can let their loved one go by blowing flower petals for them?

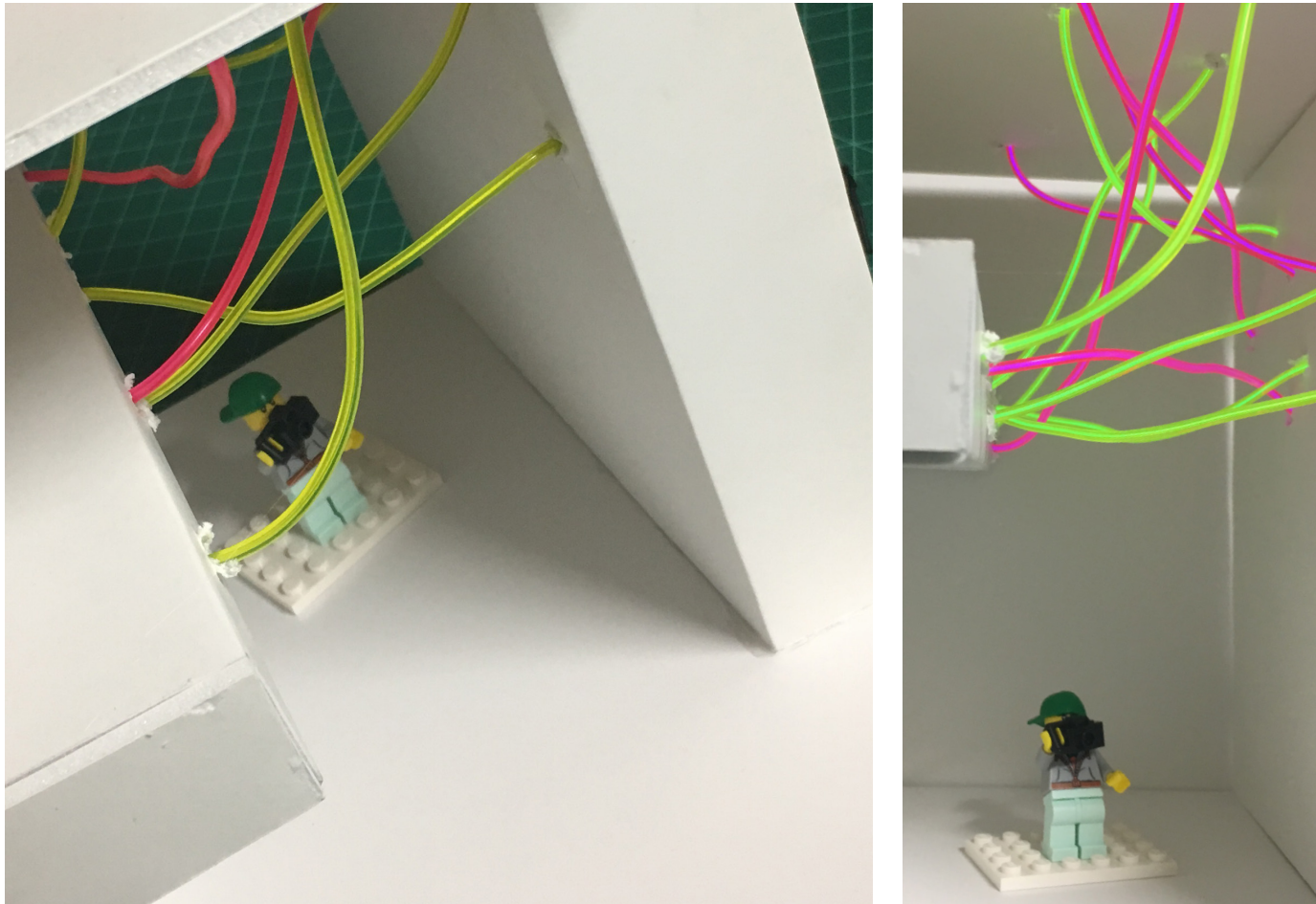
Using breath technology (often used for apps), people can let their loved ones go with their blowing action just like how people let dandelions go. People can choose different graphics that will show and move on the screen of entrance, which is now an escalator.





## What if people can make wishes for their loved ones looking at shooting stars?

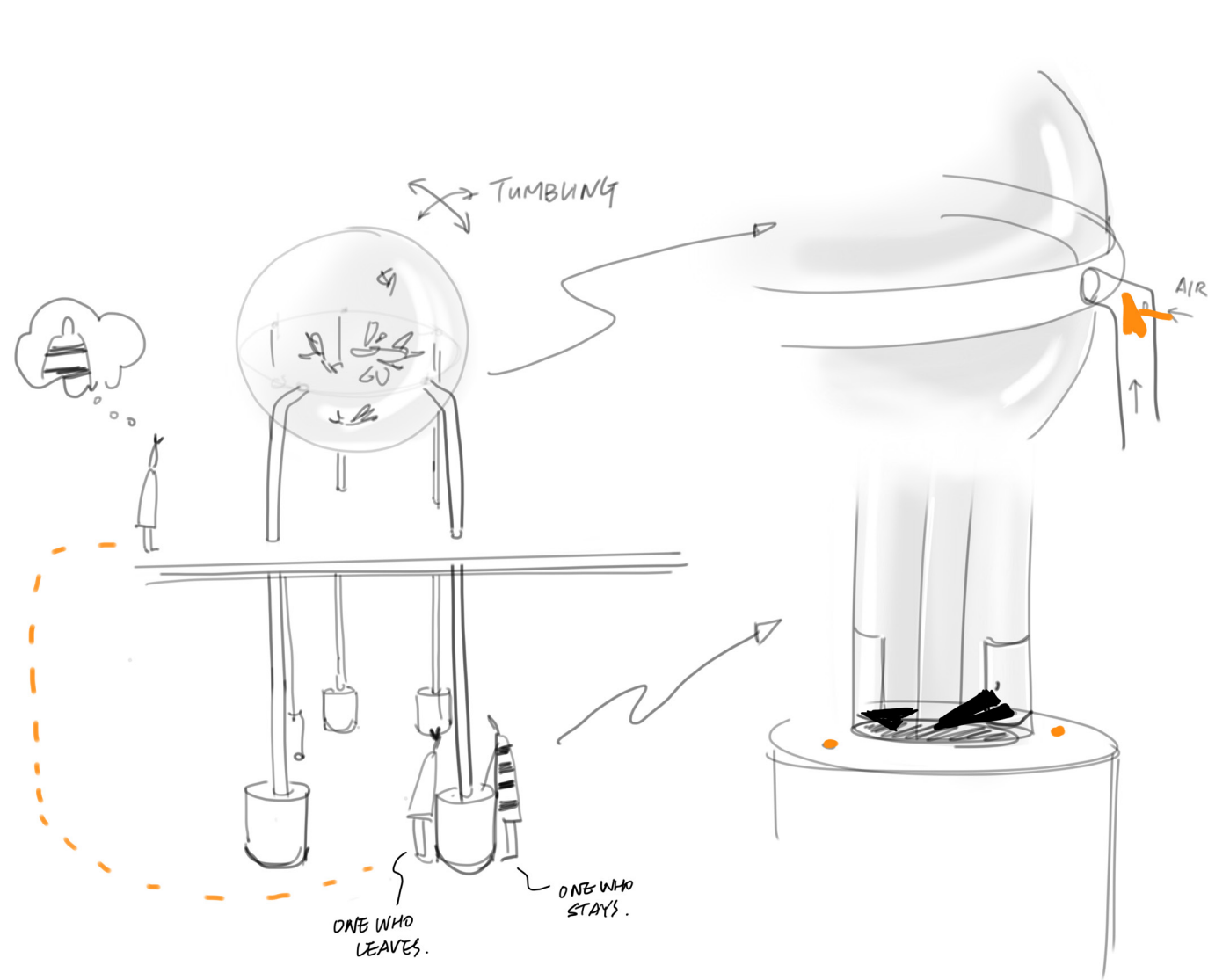
Light installation which has airline colored lights traveling across. They will remind of shooting stars, so that people can make wishes for their departing ones.



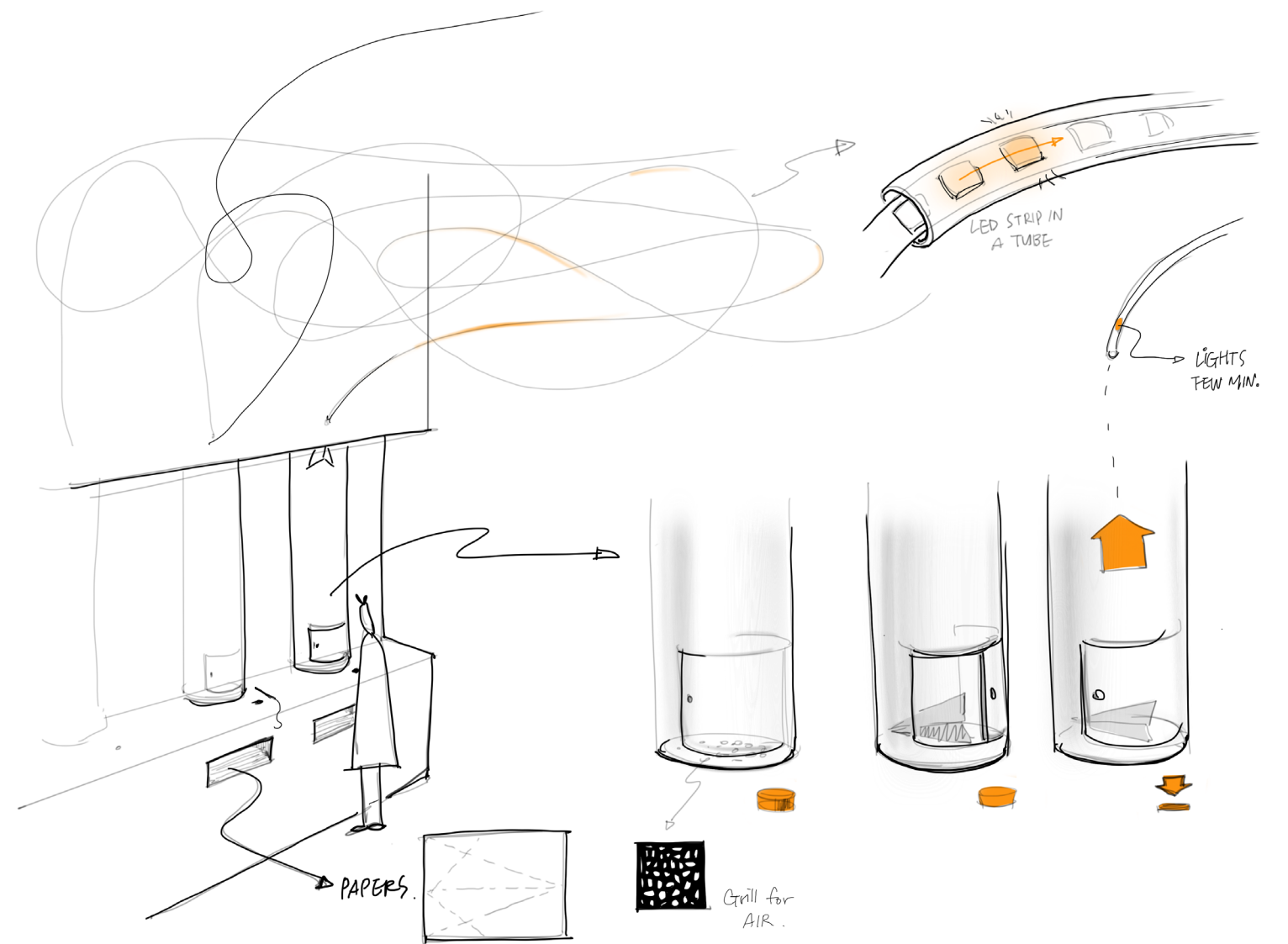
## What if people can fly their own airplane with wishes?

Paper airplane station where people can write their wishes and fly the paper airplane. Air blowing inside the tube will fly the paper airplane and people who departure will be able to see them upstairs.





Both parties together can fly their airplanes with wishes written, and let them go in the air tube. Then the one who is leaving will see the full of wishes when he or she is alone after the check point.

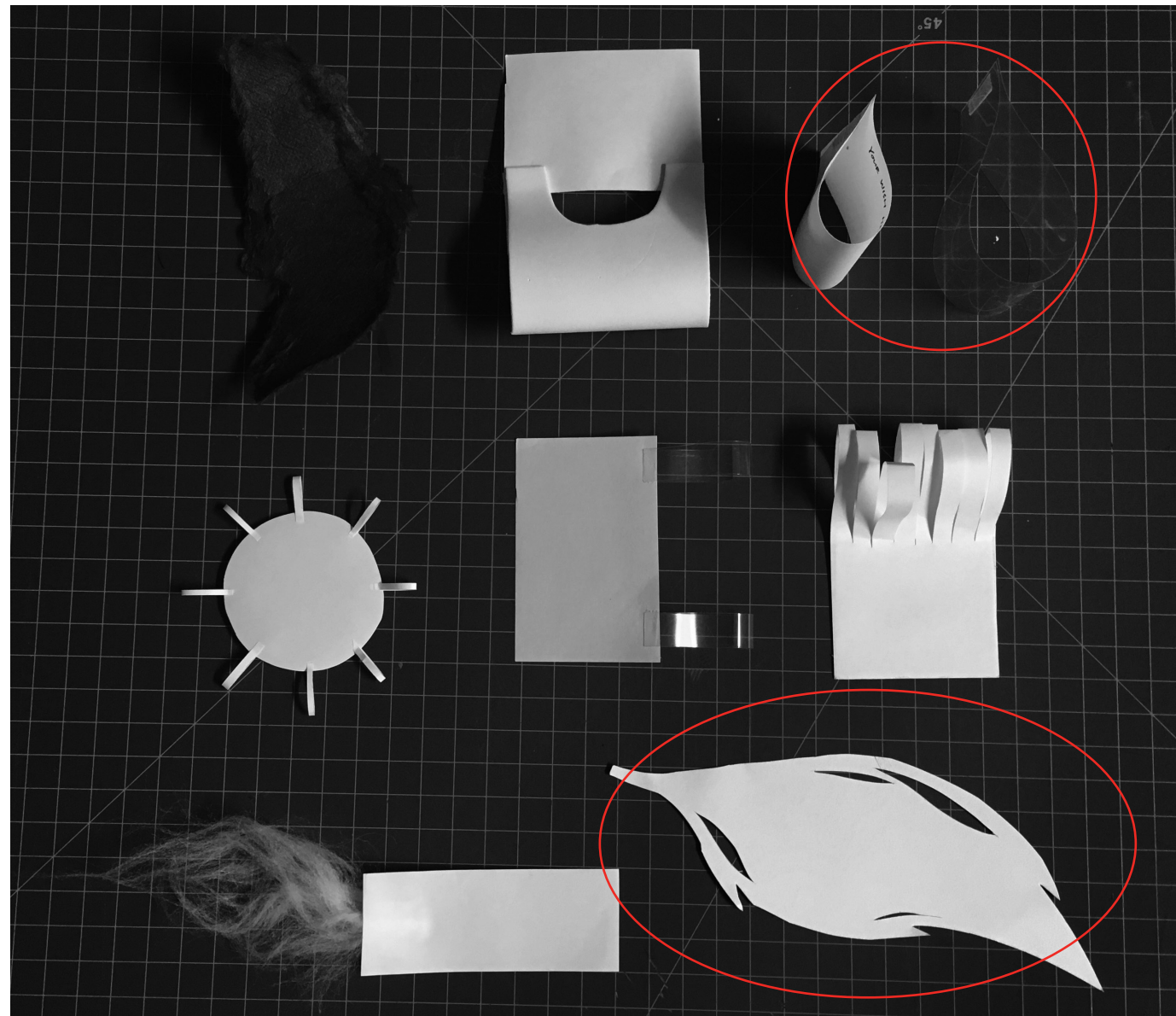


Reimagine the telephone booth. People write and send their wishes for the loved one who is leaving. Then it lights up and flies as if the wishes / messages are being released to the air.

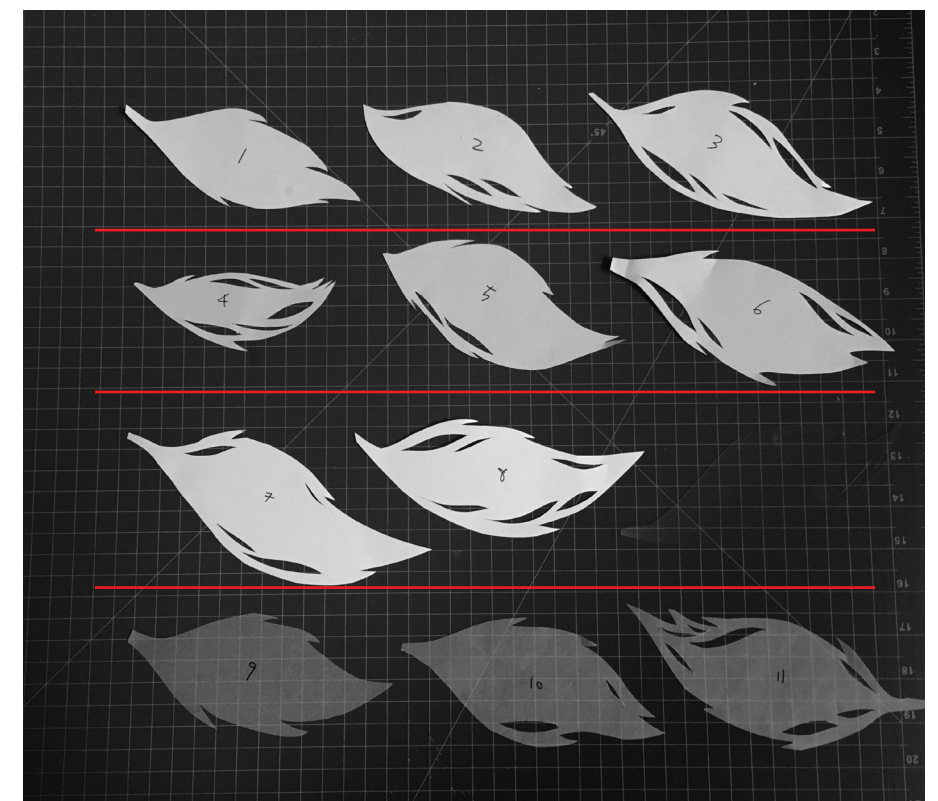
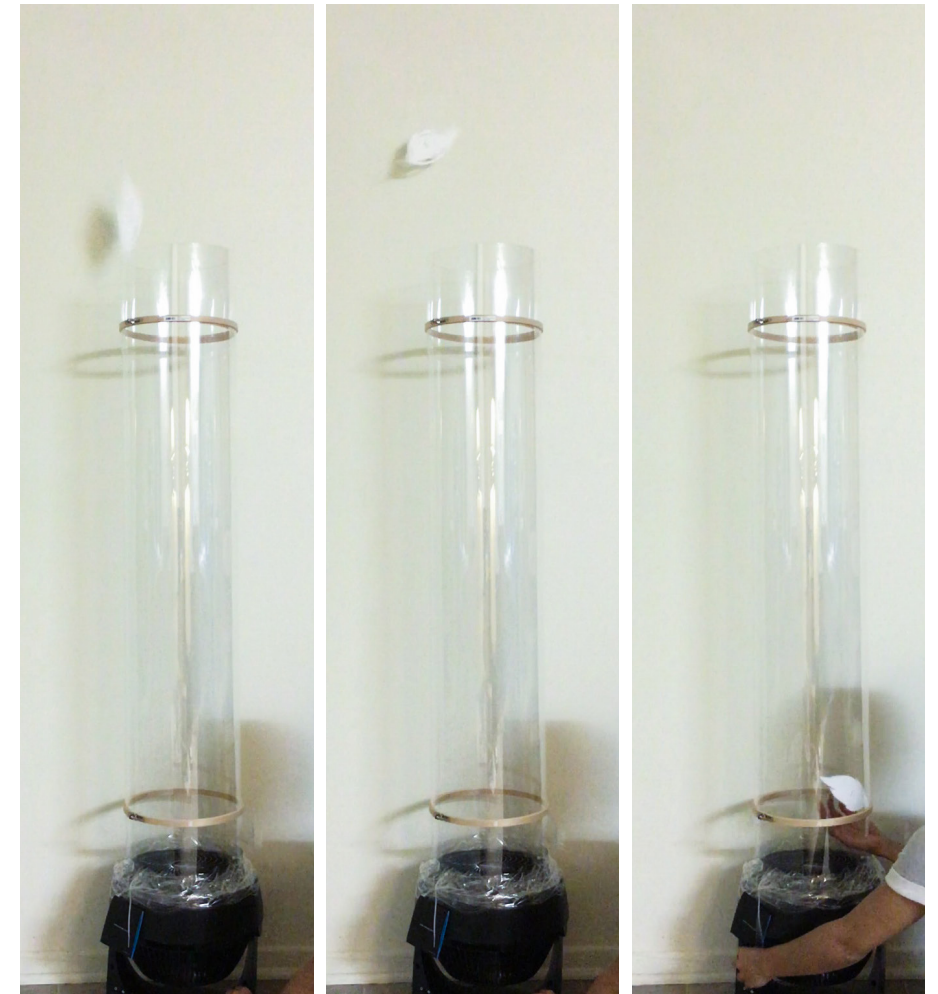
# Design.



# Flying Test



Shapes with negative spaces fly the best.



marker paper

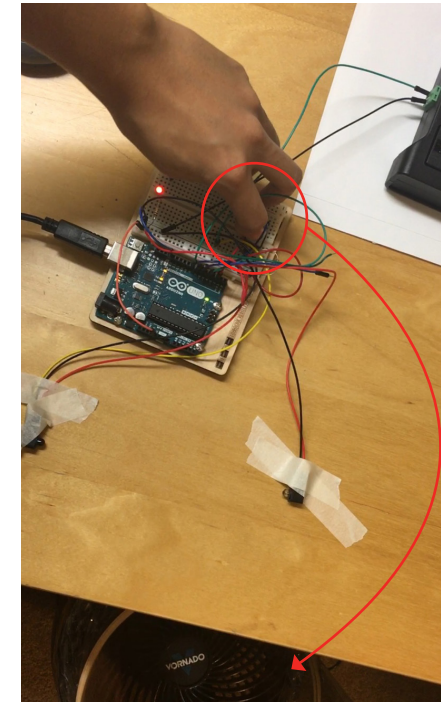
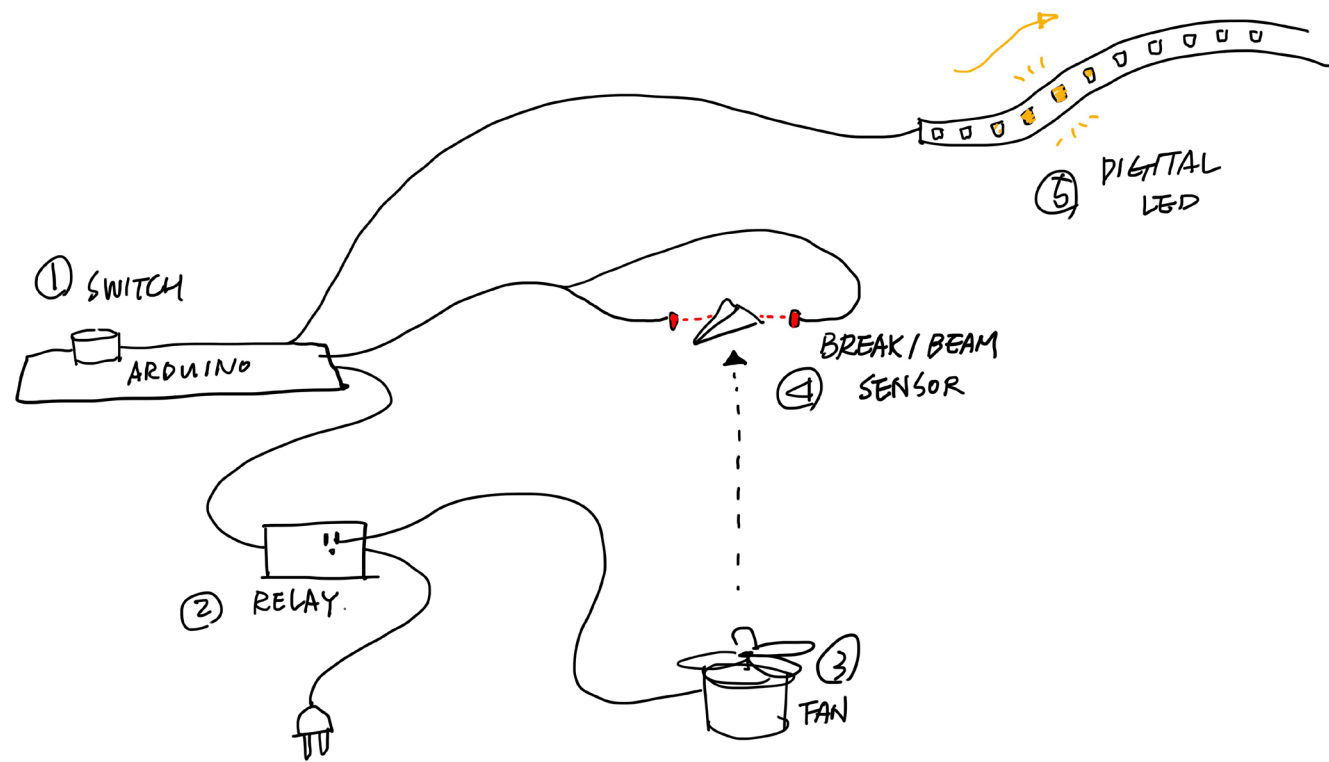
news print

watercolor

tracing paper



# simple flow chart

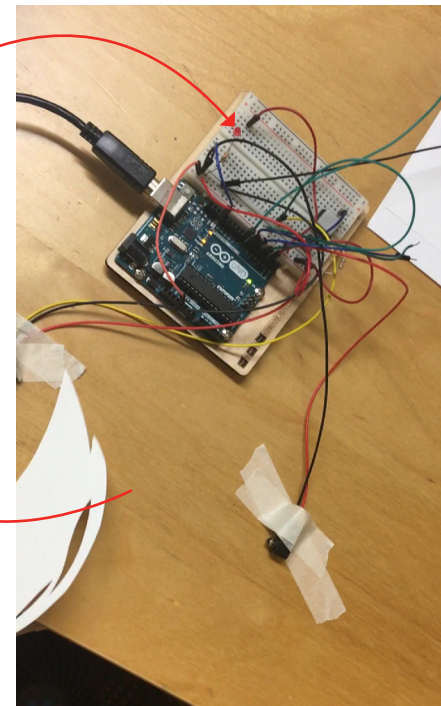


button

fan & sensor  
turn on for 20 sec.

LED turns off

breaks the beam





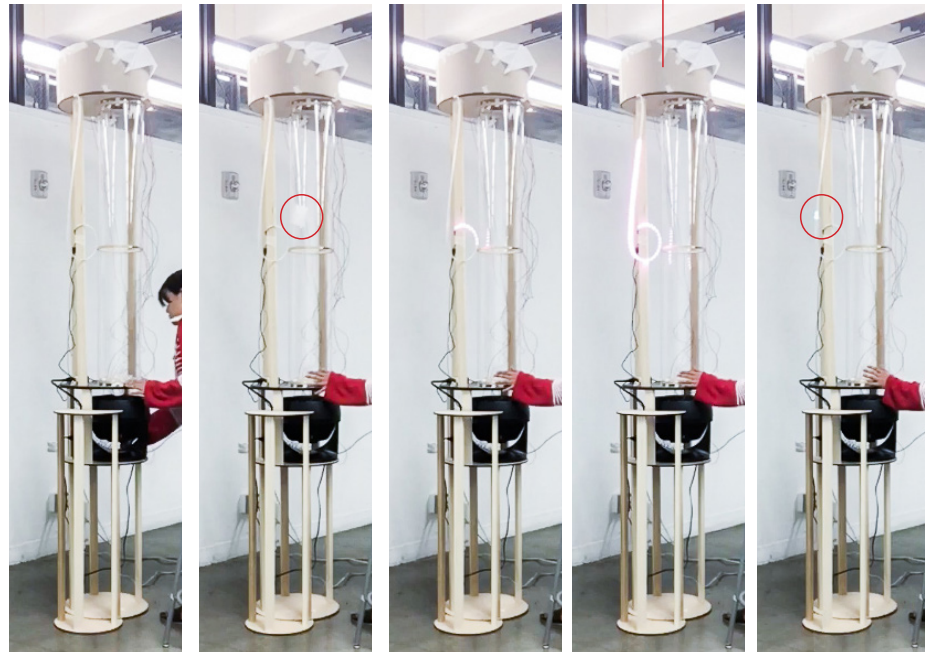
# Proof of Concept

full scale working mockup.



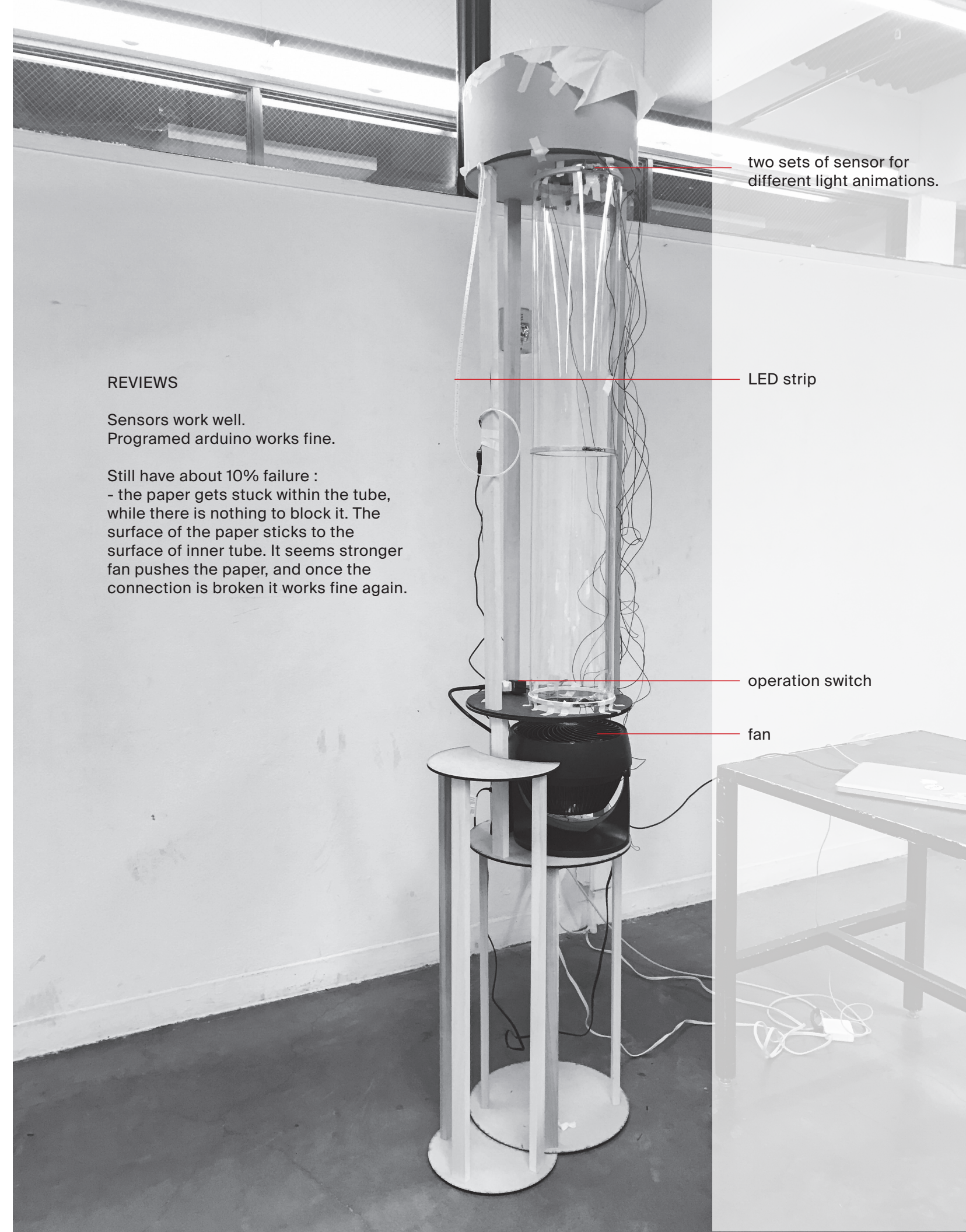
Flying test with loop shape

papers are stored here.



loop shape works better than flat feather design.

random light animation from different sensors.



## REVIEWS

Sensors work well.  
Programed arduino works fine.

Still have about 10% failure :  
- the paper gets stuck within the tube, while there is nothing to block it. The surface of the paper sticks to the surface of inner tube. It seems stronger fan pushes the paper, and once the connection is broken it works fine again.

two sets of sensor for different light animations.

LED strip

operation switch

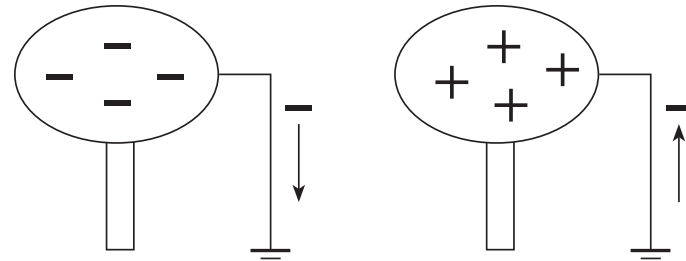
fan



# Possible issue #1 / Static Charge

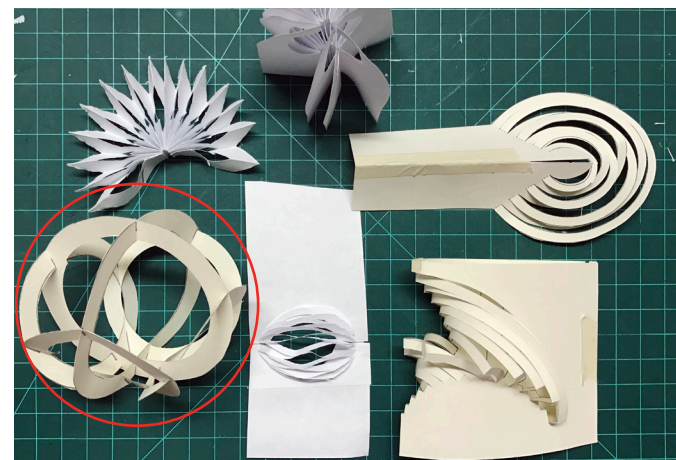
## Solution Test A

Grounding the tube:  
taping a jumper wire to the tube and connecting it to ground on the Arduino. That will possibly help dissipate the static charge on the tube.



## Solution Test B

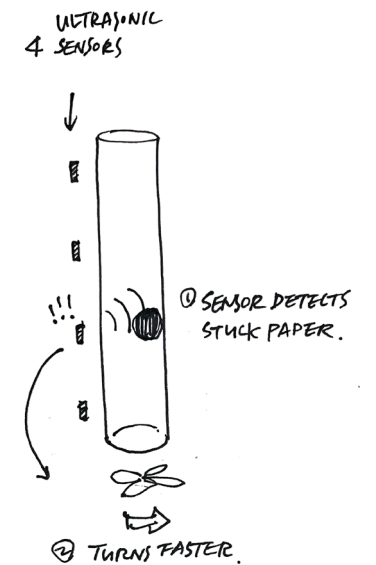
Redesigning the paper:  
What if the paper is revised in a way there is no flat surface to touch the tube?



# Possible issue #2 / Fan Power

## Solution Test A

Tracking the height of flying paper:  
each sensor has fan power set up, so the fan turns faster when the flying paper doesn't hit the next sensor.

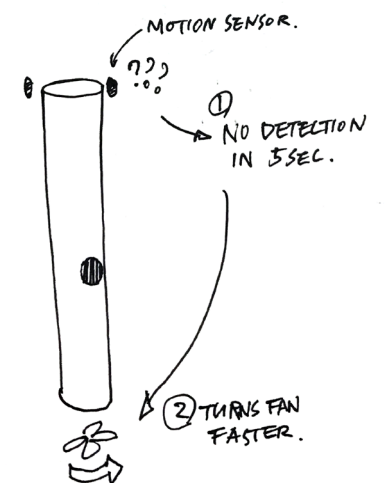


## Solution Test B

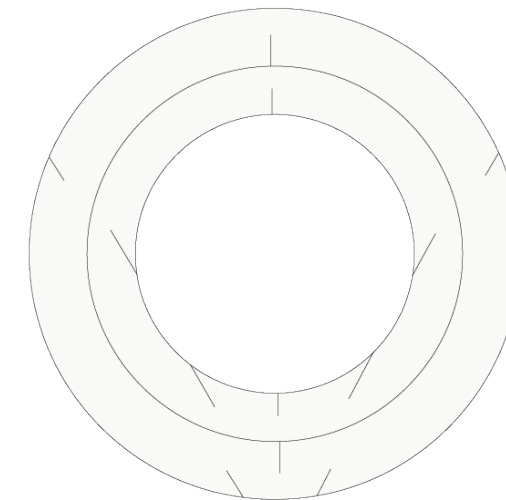
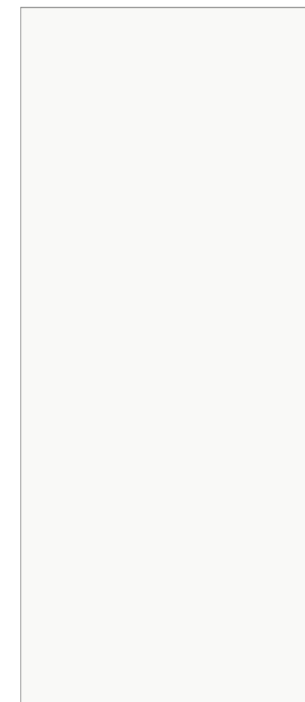
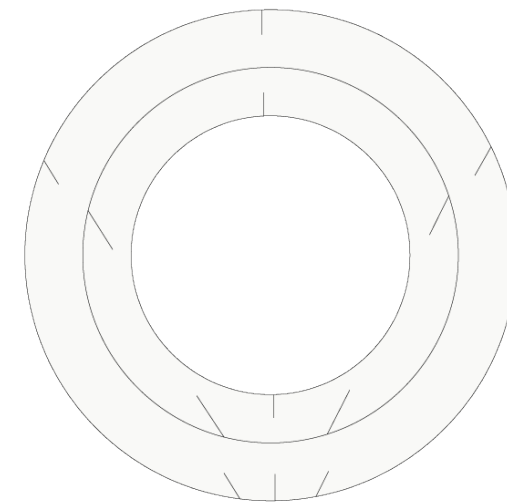
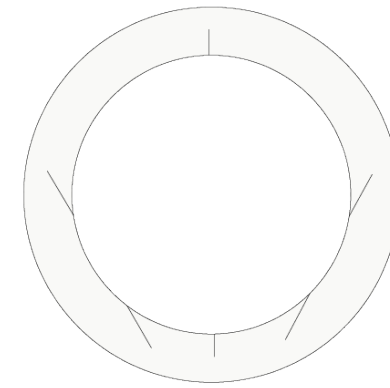
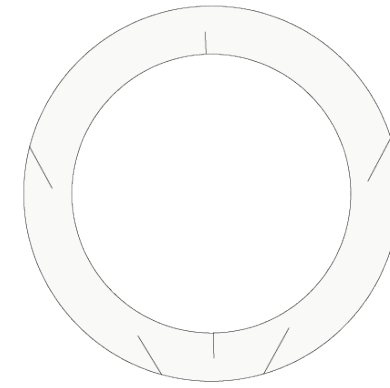
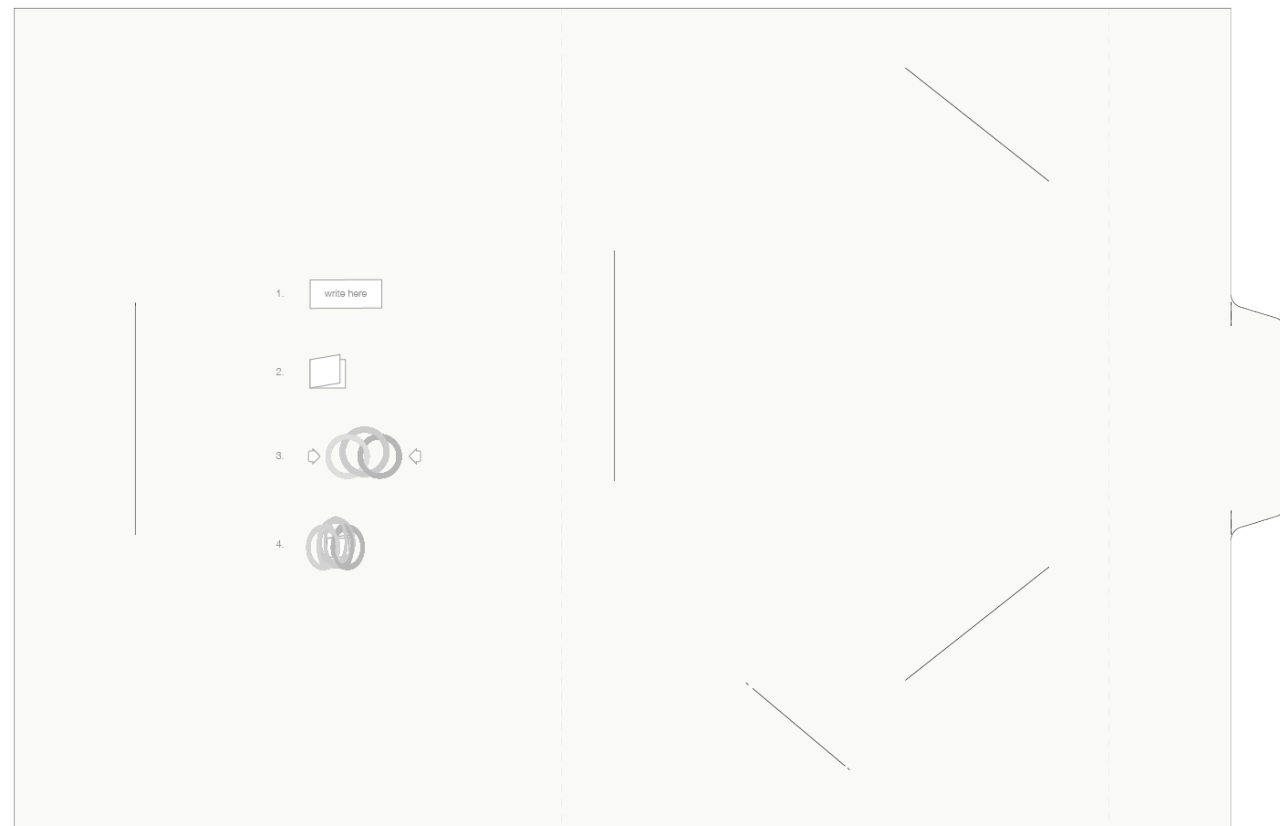
Boosting the fan speed if no paper is detected at the top of the tube within a certain amount of time.

- Three status when fan is on:
- 1: fan on, no paper in tube
  - 2: fan on, paper floats majestically skyward
  - 3: fan on, paper sticks, majesty thwarted

Knowing the paper takes an average amount of time to reach the top in the ideal second case, I could program the system to boost the fan speed if there is no detection within that ideal timeframe.







Paper package cutting plan

