

The image shows a long, empty, elevated walkway, likely the High Line in New York City. The walkway has a wooden plank deck and is illuminated by blue light fixtures mounted on the ceiling. On the left side, there is a wall made of large, rectangular panels, some of which are illuminated from within, creating a glowing effect. The walkway extends into the distance, where a small group of people can be seen. The overall atmosphere is modern and artistic.

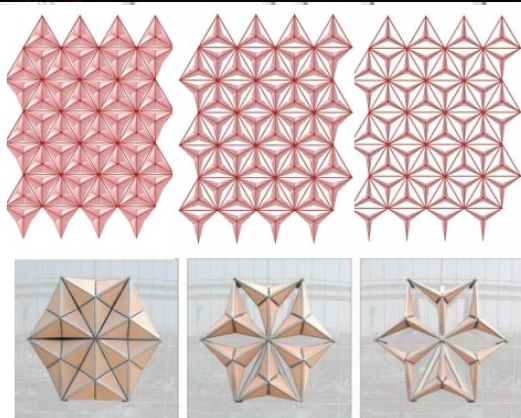
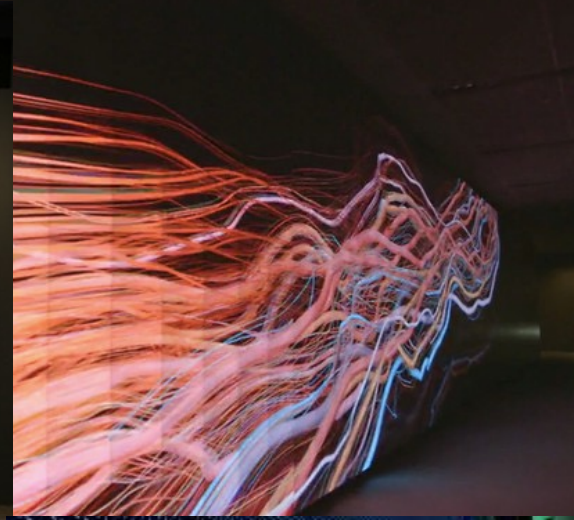
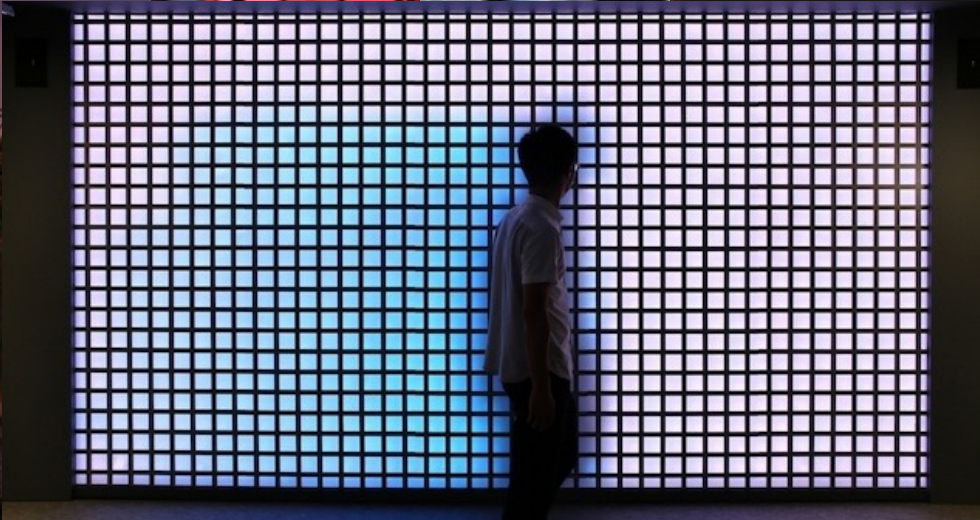
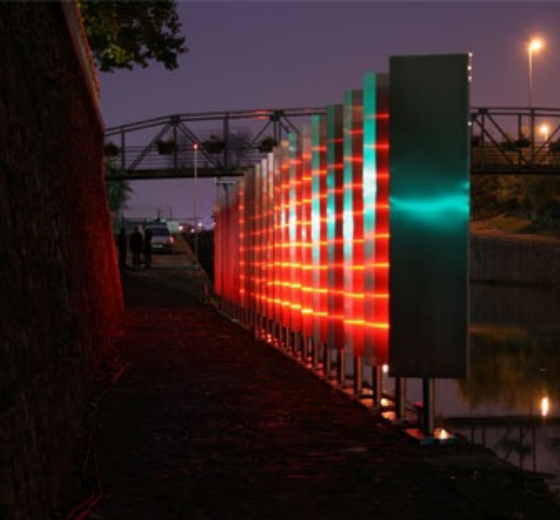
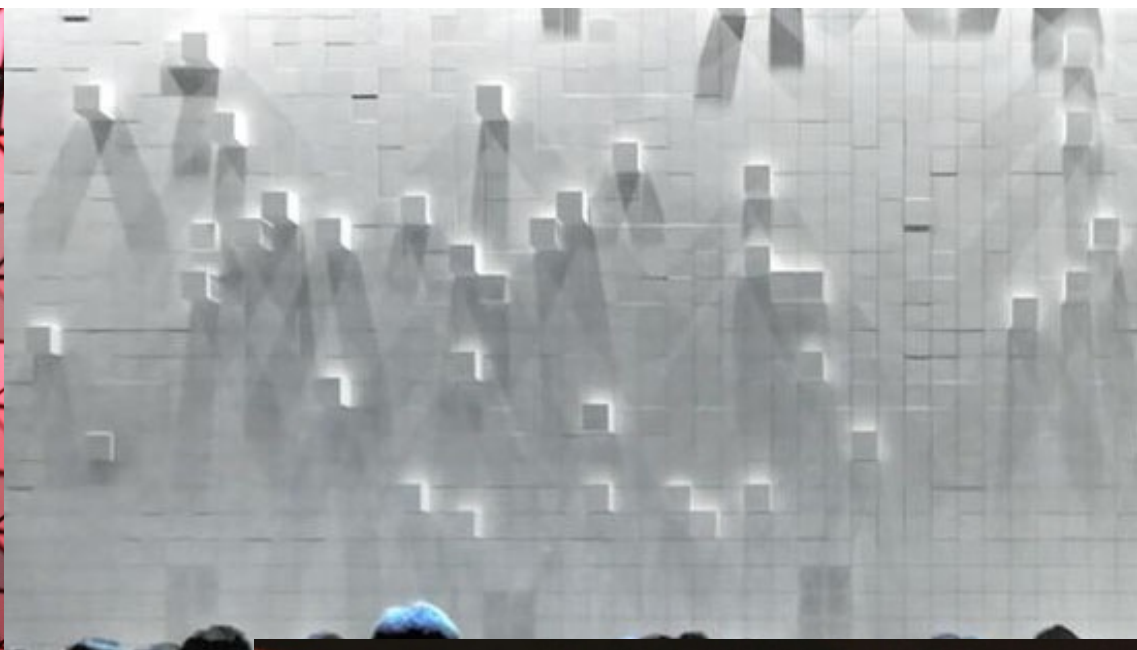
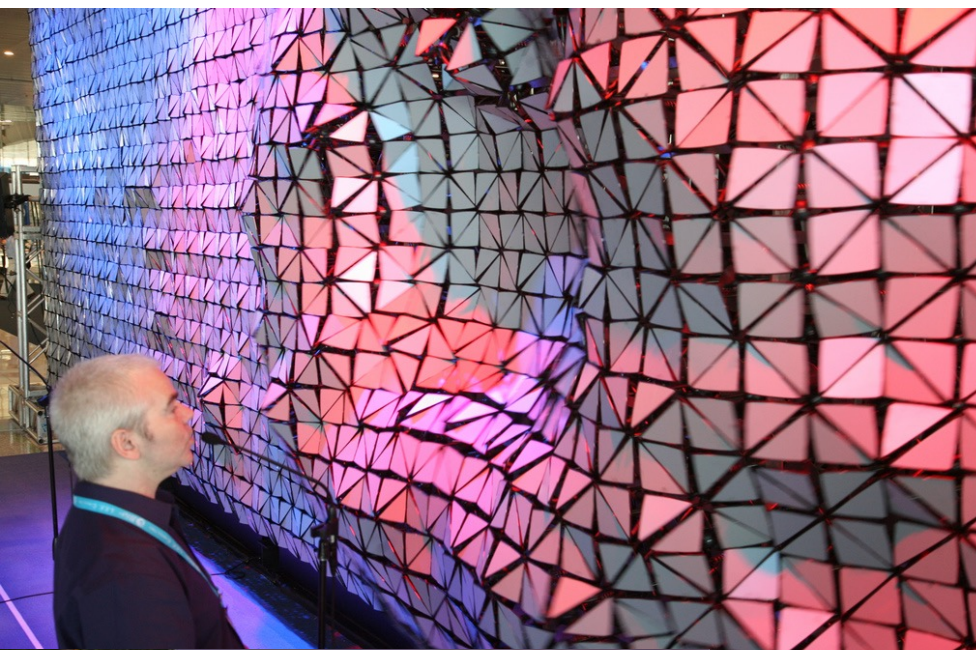
TECHNOLOGY IN PUBLIC SPACES

THE HIGH LINE KINETIC WALL


JENNA DEMCHUK | REGINA FLORES | JAS RANDHAWA
ASSIGNMENT 1.5
INTERACTIVE SPACES

REFINED IDEA: KINETIC WALL

- The High Line Kinetic Wall is an interactive installation that will attract visitors to the High Line at night.
- Using LED lights and motion sensors, we will create a wall that reacts to the movement of passersby.
- The wall will be covered with geometrical shapes. Each shape will be responsive to the users movement. It will "open" as the user gets closer and "close" as the user goes farther away.



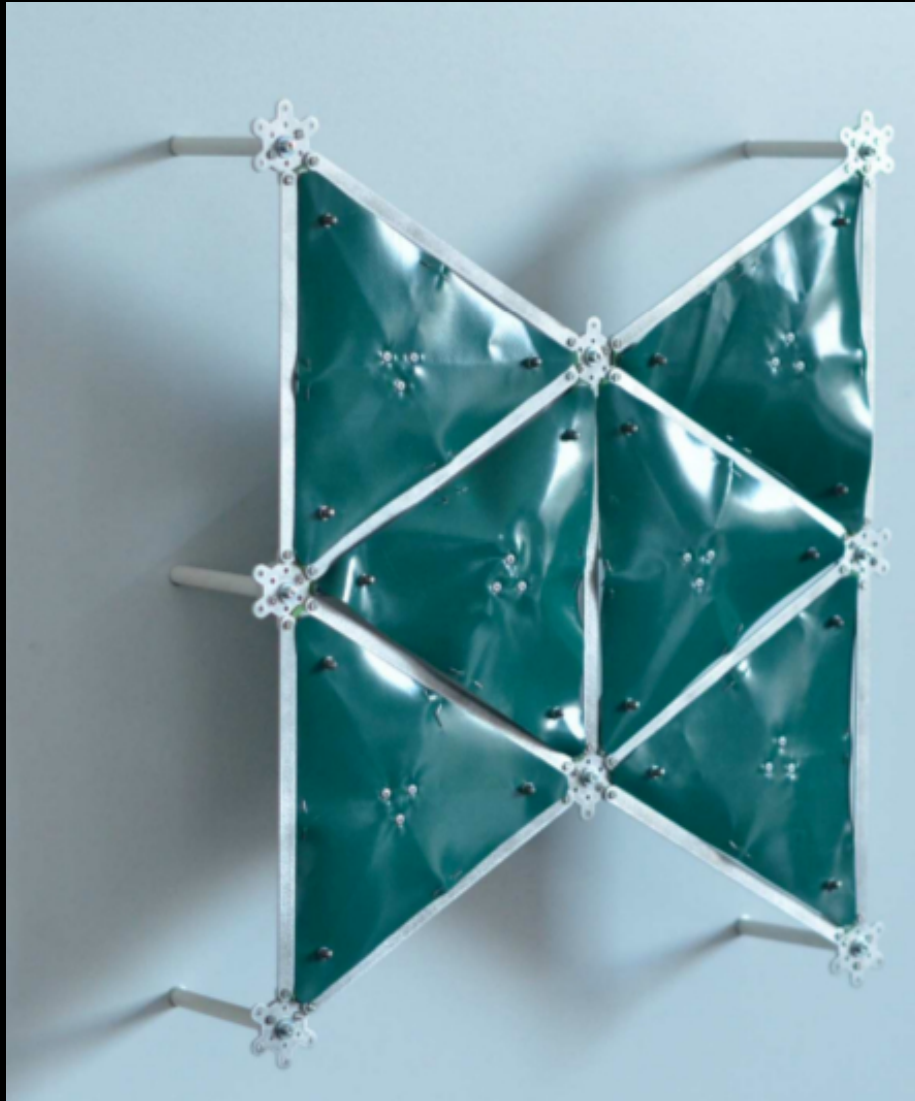
PRECEDENT: "KINETIC WALL" FROM THE 14TH INTERNATIONAL ARCHITECTURE BIENNALE



Kinetic Wall

Elements of Architecture, Wall Section
Barkow Leibinger

PRECEDENT: MAKER FAIRE PARAMETRIC HYBRID WALL



Software Optimization for Responsive Surface
by Cecilia Lalatta Costerbosa

3D MODELING

RHINOCEROS



GRASSHOPPER

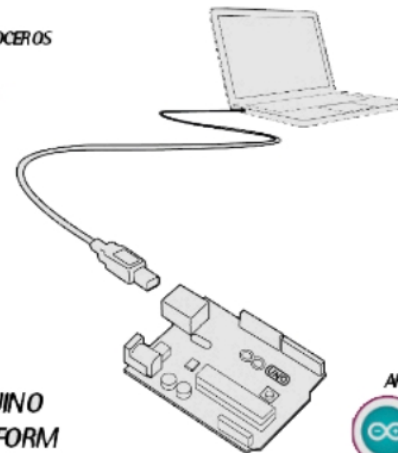


FREELY

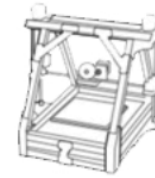


PARAMETRIC
MODELING

ARDUINO
PLATFORM



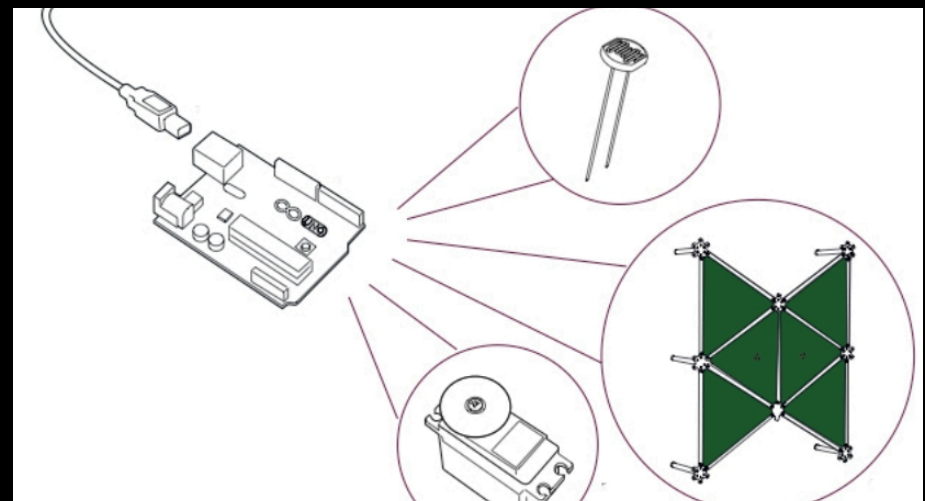
ARDUINO



SLICER



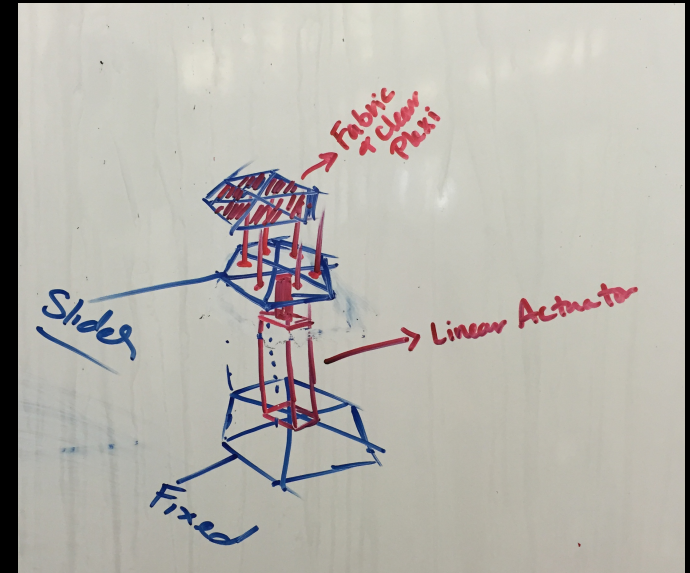
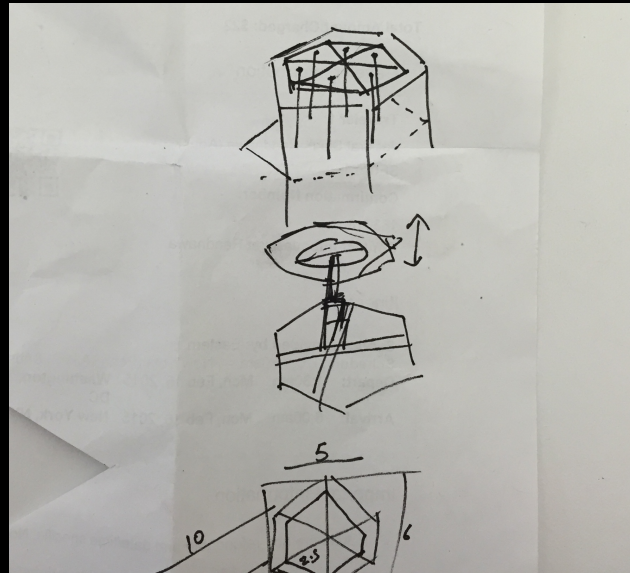
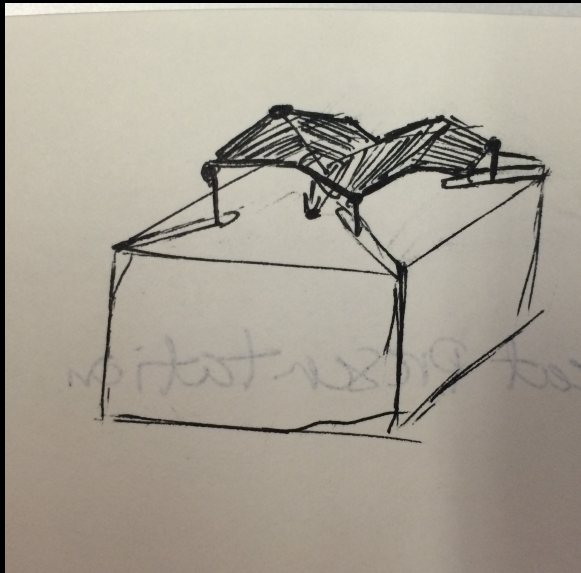
PROTOTYPING
3D PRINTERS



CHALLENGES: TECHNICAL & EXPERIENTIAL

- How will the panels move on the wall? Linear or rotary motion?
- Will the components of the wall be 3D Printed?
- Can we make this wall interactive to other types of movement?
For example, reacting to users touch?
- How can we make lights responsive to users interaction/motion?
- How can we create lighting that is flat rather than point source?

SKETCHES: HEX POD DESIGNS



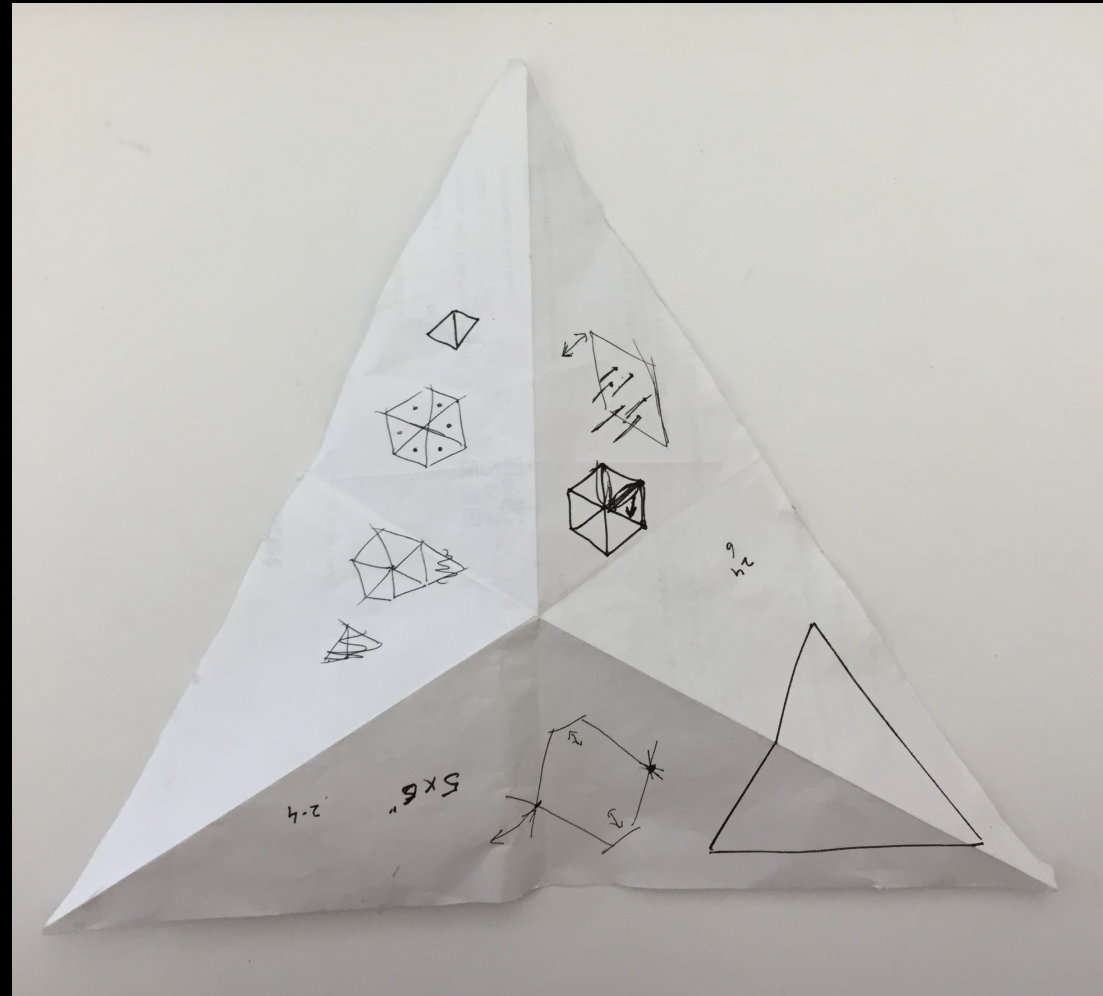
PAPER PROTOTYPE I

WE BEGAN WITH SIMPLE
PAPER PROTOTYPES TO
EXPERIMENT WITH
DIFFERENT GEOMETRICAL
SHAPES TO SEE HOW
THESE SHAPES MOVE



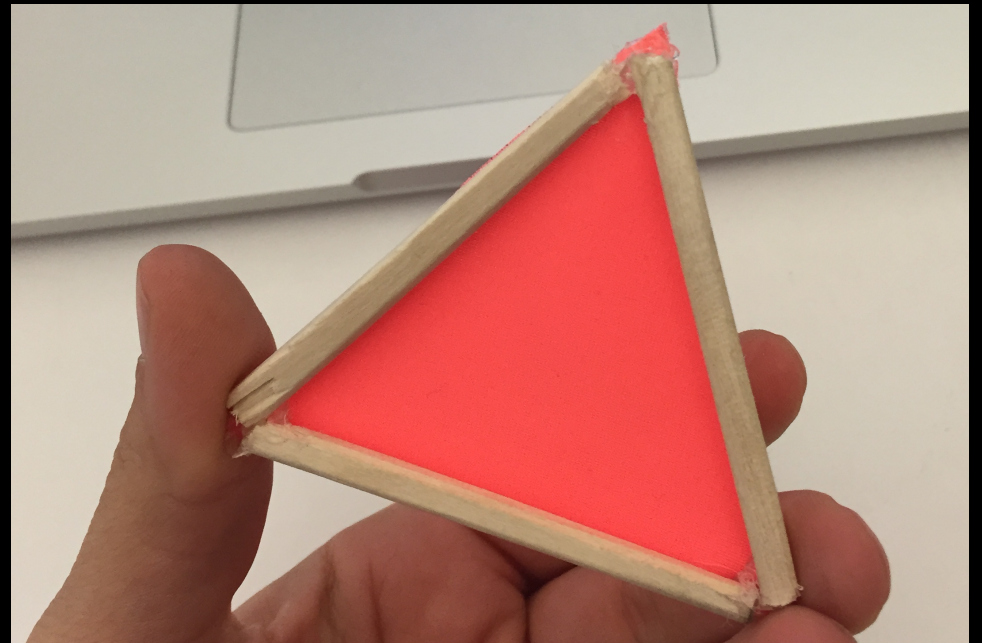
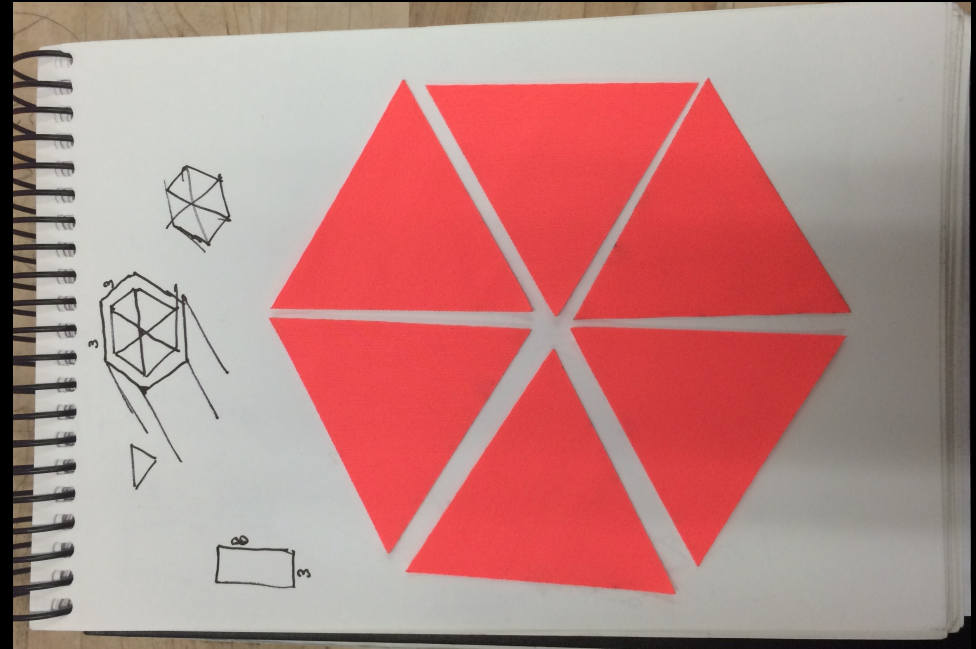
PAPER PROTOTYPING II

THE FINAL PAPER PROTOTYPE BECAME AN EQUILATERAL TRIANGLE THAT WILL BECOME 1/6 OF A HEXAGON. THE FOLDS OF THE TRIANGLE CAN BE PUSHED UP AND DOWN IN A LINEAR MOTION.



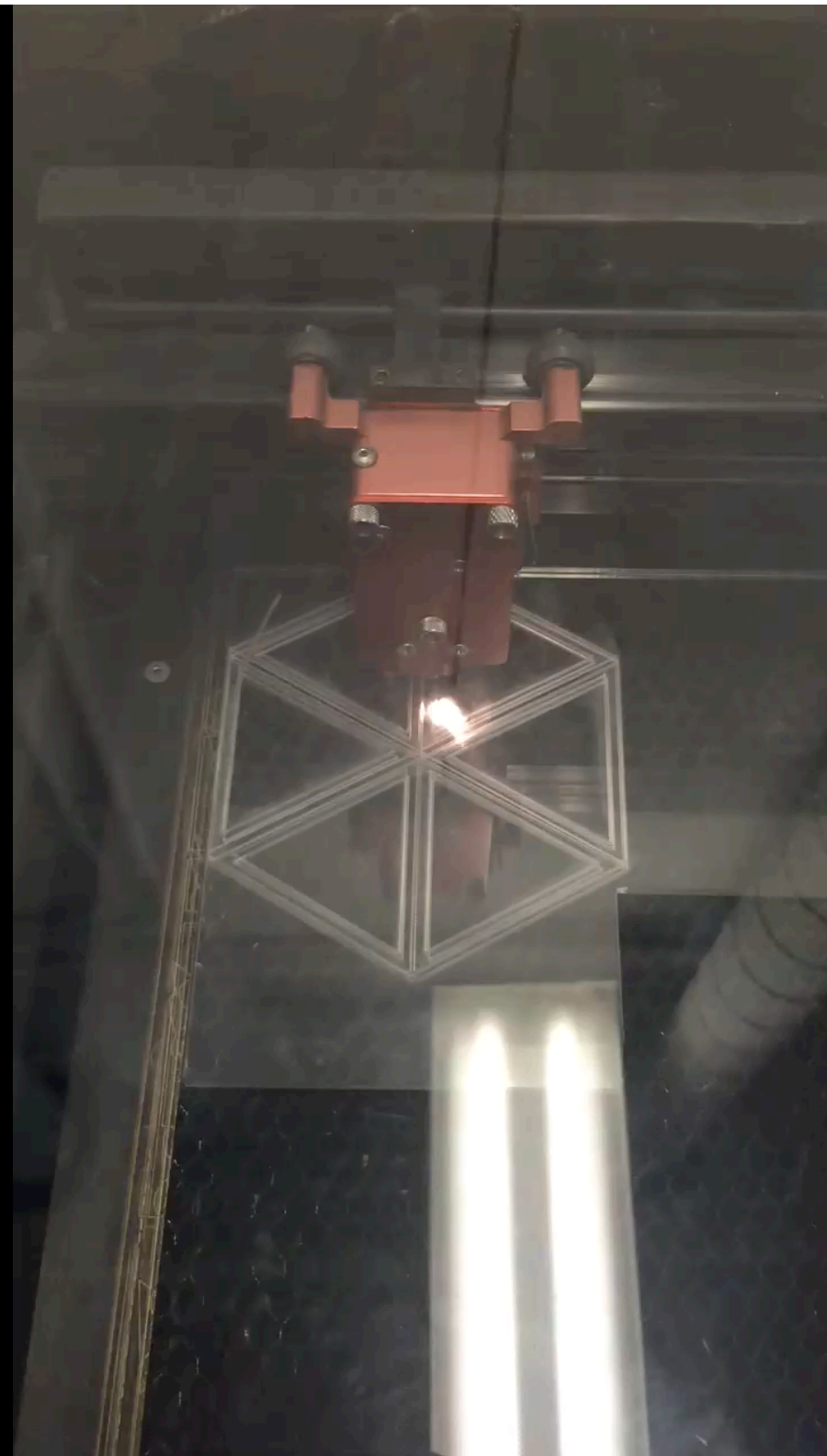
PHYSICAL PROTOTYPE I

WE DECIDED TO USE
FABRIC FOR OUR NEXT
PROTOTYPE AND CHOSE A
STRETCHY NYLON
MATERIAL THAT WOULD
ALLOW FOR MOVEMENT
WITH OUR ELECTRICAL
COMPONENTS



PHYSICAL PROTOTYPING II

USING THE LASER CUTTER WE CUT PARTS FROM PLEXIGLASS TO BUILD THE FINAL PROTOTYPE. EVERY COMPONENT IN OUR FINAL PROTOTYPE WE MADE AND CONSTRUCTED USING A LASER CUTTER.





CONSTRUCTION PROCESS

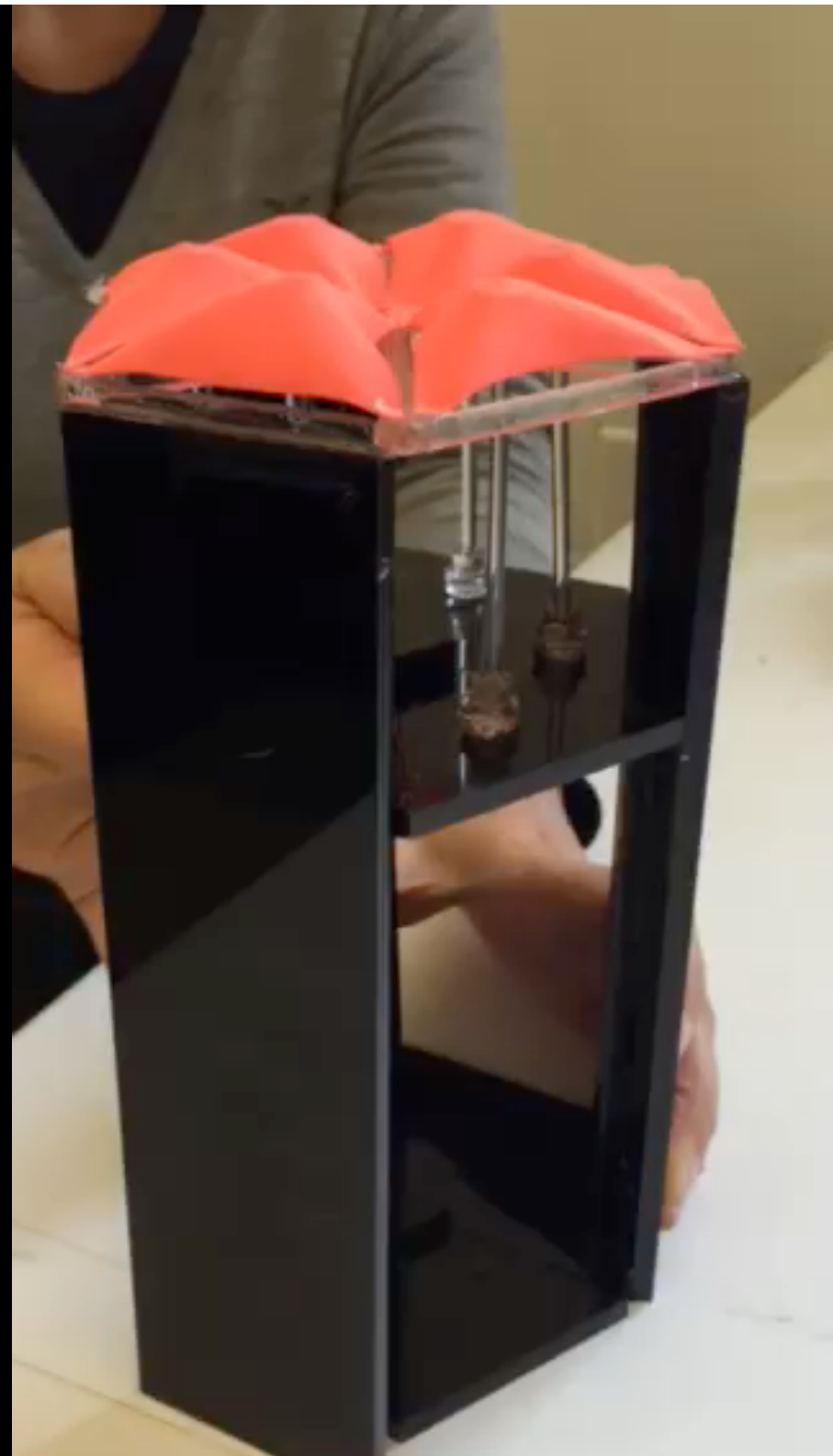


LINEAR ACTUATOR SPECS



FINAL PROTOTYPE I

USING OUR HANDS
WE HAVE SHOWN A
PROOF OF
CONCEPT FOR OUR
FINAL PROTOTYPE



NEXT STEPS

- Develop plan for physical computing component to get the linear actuator and LED's working in the housing unit
- Test actuator and LED's in the unit
- Finish attaching final side panels
- Reassess materials selection and iterate design in order to make additional units to complete wall