

STUDIO JOURNAL

DESIGNING MIGRATORY
STRUCTURES

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SUSTAINABLE SYSTEMS

PARSONS THE NEW SCHOOL FOR DESIGN , SPRING 18
INSTRUCTOR: CAROLIN MEES

GLUE STRIP

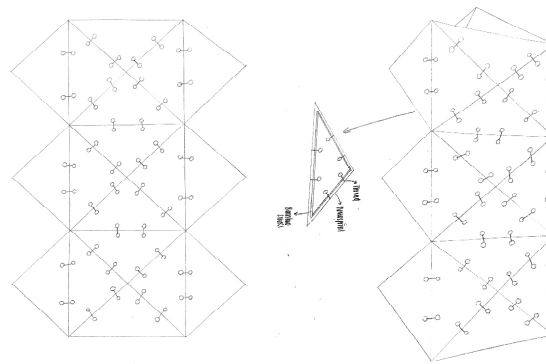


SOCIAL & SYSTEMS

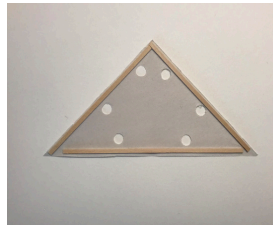
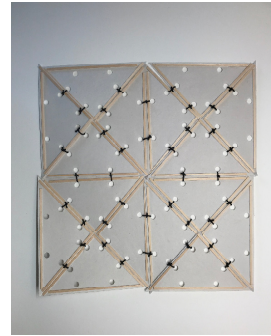
GLUE STRIP

For our Studio Project 1, we had to create a structure using newsprint, paper and bamboo skewers. I created repetitive triangular patterns representing my perception of the city's social urban systems. I connected each triangular module with strings of thread, then measured the appropriate length and width of the linked modules to firmly secure

it on my head. However, along with its ability to tightly fit on my head, this design also has the ability to manipulate multiple different forms by itself as a collapsible structure.



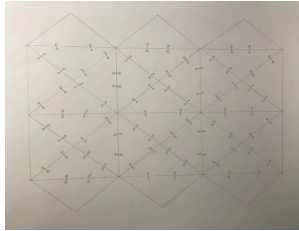
GLUE STRIP



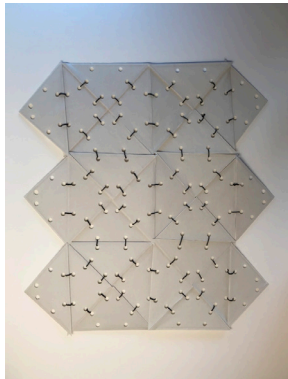
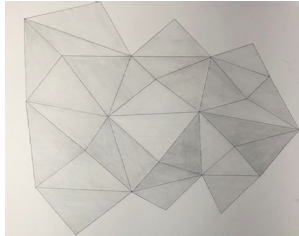
Above is an image of each triangular pattern along with an image of the incomplete design created by the links of each module. Creating a rectangular design, this unfinished model can easily take the shape of almost anything. However, at the same time this piece, although it may

mirror different shapes, it is still a collapsable and deployable structure by itself. Reflecting the design of the social urban systems, each triangular pattern created a larger body of repetitive patterns representing my view of the city space.

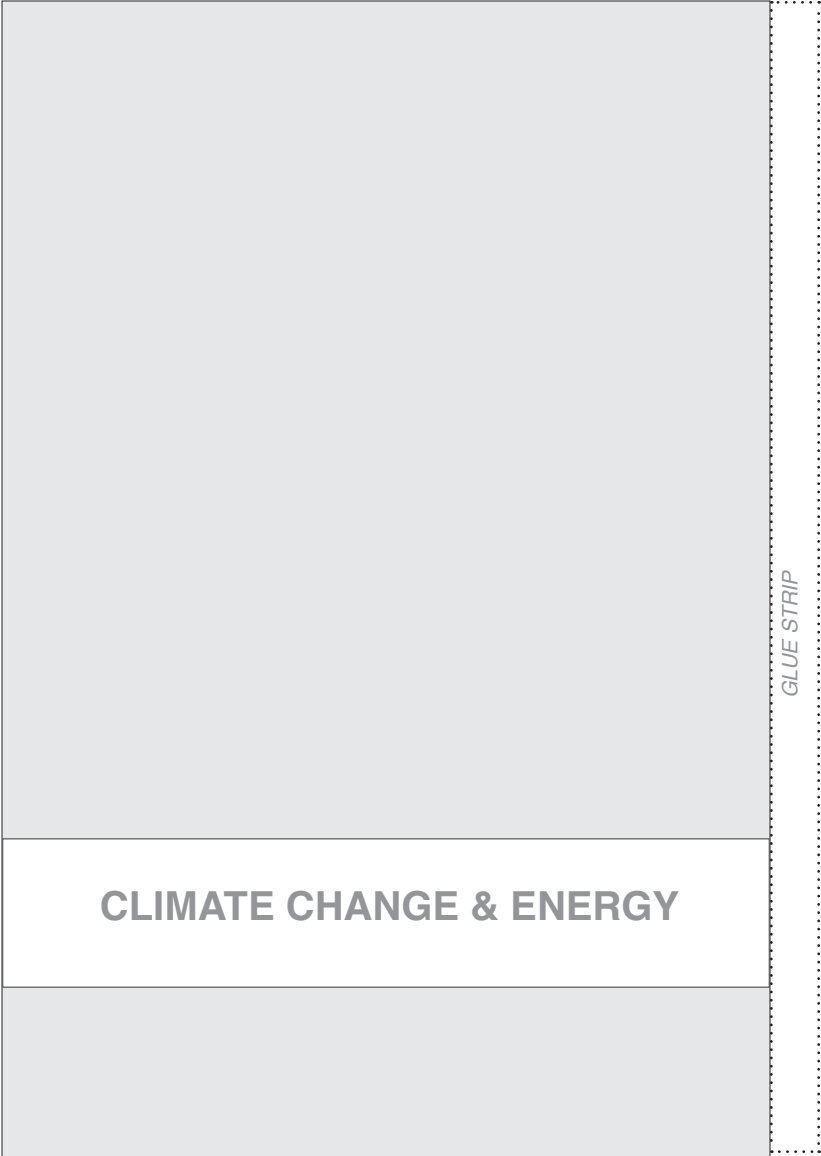
GLUE STRIP



Below are my final drawings along with my final structure, laying flat and also standing up. This irregular shaped module of urban structures corresponds to a hat, a flat plane and lastly multiple irregular shaped collapsible structures.



GLUE STRIP



CLIMATE CHANGE & ENERGY

GLUE STRIP

Bio leather is a sustainable material, growing popularity in the fashion world made simply with a few ingredients. We begin by combining tea, sugar and SCOBY (a type of yeast containing several different species of bacteria), then placing it into a large, air tight plastic container in a warm dark area to allow the bacteria and yeast to grow. As it grows, the

mixture includes millions of microscopic bacteria that build the cellulose fibers that eventually grow in size. Therefore, resulting in a large, wet sheet of fibers that can be molded into any shape then later dried down to create the leather.



Credit- textile-academy.org



Credit- futurity.org

GLUE STRIP



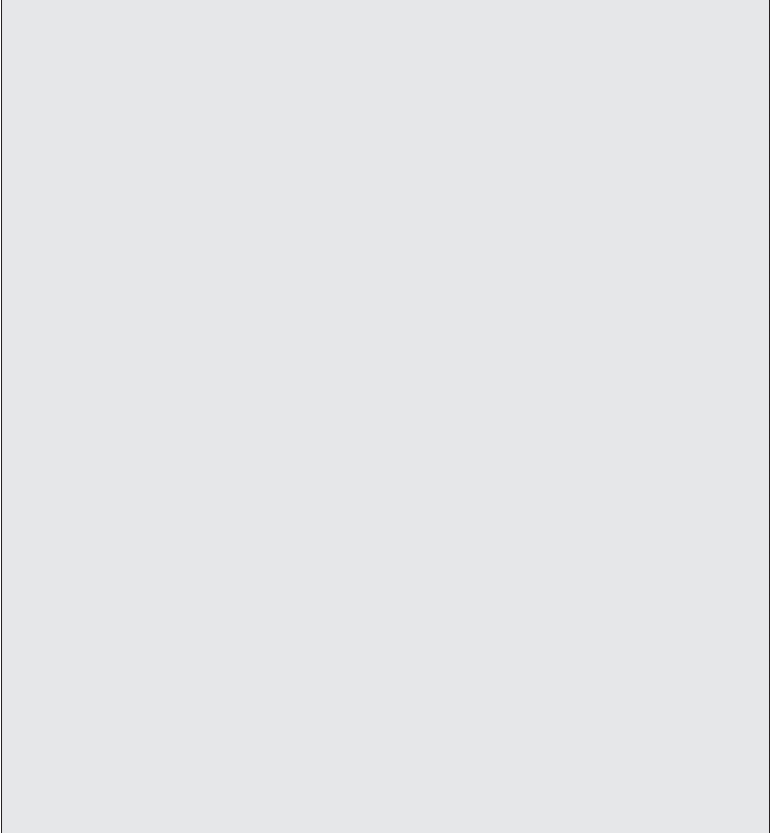
For this project, we had to document our process growing a wheatgrass plant. I began by leaving the seeds in a damp paper towel overnight in order to soak them before beginning the planting process. After planting the seeds, I consecutively watered them every morning and kept them in the sun since the beginning.

GLUE STRIP



For this project, we began growing our wheatgrass in a recyclable paper cup, which was a great thing to begin with as the seeds begin to sprout, however, as the plant begins to grow and require more and more water it slowly becomes less and less effective. This plant grew relatively quickly therefore it was probably not the best idea to use a small paper cup as firstly it is not at all water proof so

if the plant was accidentally over watered it could eventually cause a rip or tear into the cup. Moreover, since the plant grew relatively quickly the tiny cup doesn't allow the plant from growing over a certain point since after a while it would not be able to hold down the weight of the lengthy plant. However, at the same time the cups we used are effective for temporary use as it is made up of recycled paper that can be easily recycled once the plant grows. A more effective option could probably include a ceramic or biodegradable clay pot since it would come in a variety of different sizes and more importantly it would be waterproof.



WATER & MATERIALS



GLUE STRIP



Credit- englishgirlathome.com

Sources of natural dye can be found almost anywhere, in plants, fruits, vegetables, etc. Although, it may be considered a more natural colorant, the natural dying process requires the use of a chemical known as mordant. Some example of mordant dyes include cochineal, madder, fustic and logwood, these chemicals are combined with the dye to form an insoluble compound that binds the dye with the fibers to create a long lasting, bright pigment. Textile dying leaves some of the largest

footprints on the planet by not only draining local water supplies but for depositing untreated discarded water into their streams and rivers. It is a challenge remaining to be solved for water-friendly technologies. One of the ideas brought up were increasing the ratio of water to dilute the dye to decrease the number of toxins, however, that would simply waste more water and create multiple other problems during the dying process. Another method was waterless dying and although it should be

considered as one of the most effective forms of dying, it is not very likely to be adapted by the textile industry anytime soon. This is because the waterless method would be feasible for specific materials such as polyester while for other more natural materials such as cotton and wool it would damage the fibers. Natural dyes are always perceived as harmless as they are derived from natural resources, however, this is not always the case. Logwood for example contains harmful toxins

that may cause irritation and inflammation once inhaled. Synthetic dyes, however, contain worse chemicals that have harmful effects on not only people but the environment as well. Moreover, both methods are harmful but natural dye is the more sustainable option as well as the more genuine method as it is extracted from natural resources.

Credit- theworkroom.ca



Credit- kathryndavy.com



List of Natural Dye Sources-

Plants/ Trees:

- Alder
- Butternut Tree
- Lilac
- Dandelion
- Fennel
- Acorn
- Sunflower
- Hibiscus
- Rose
- Basil
- Chamomile
- Grass
- Spinach

Fruits/ Vegetables:

- Carrot
- Onion
- Pomegranate
- Raspberry
- Cherry
- Avocado
- Strawberries
- Blueberries
- Elderberries
- Grape
- Red Cabbage
- Mulberries
- Artichoke
- Plum
- Beetroot

Other:

- Coffee
- Teabags
- Saffron



Credit- fruitandveggie.com



Credit- seamwork.com



Credit- cozyhomemaking.typad.com

My 2 Final Sources-

For this assignment, I decided to use strawberries and carrots as my 2 sources for natural dyes. I chose these two sources since not only were they convenient to find in New York but also because I was intrigued to learn the outcome of using something I eat daily for a different purpose.

Waterproofing Wool and Bioleather



Credit- instructables.com



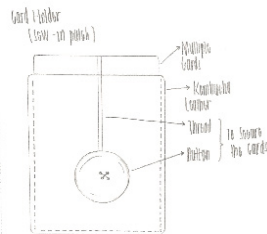
Credit- instructables.com

Wool is already a seemingly water-resistant material, however, bio leather is the complete opposite whereas if it comes in even slight contact with water it would immediately absorb it and eventually return to a wet, slimy and heavy material. Therefore, one way I believe would effectively work to waterproof both materials is a silicone seal. This process would be done by diluting silicone into a watery substance thin enough to either paint it on the desired material or even dip the fabric in. Although the process is time consuming as it includes a significant drying time, this method would work well for both these materials as it would not affect the texture, flexibility or color of the material.

For this design proposal, I decided to create a small, simple addition specifically to make my life and possibly many other university students' life a little simpler. Using the bio leather, I made a sew-in cardholder that you could potentially sew in anywhere on your jacket, your shirt, your pants, etc. This design will also include a button along with a thread to wrap around for the sole purpose of holding the cards in case it falls out. Moreover, I will paint a coat of a silicone solvent to seal in the design and waterproof it.

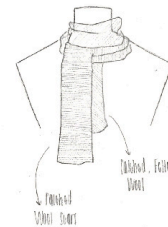
Next for my wool design, I drew out a basic but very useful wool scarf. I was inspired by the colorful results I created after the dyeing process along with the texture of the material. Therefore, my vision for this design includes natural, soft dyed wool, felted together into a scarf. Although wool itself is somewhat of a water resistant material, I could possibly coat this in silicone as well to once again seal in the color, keep the design long lasting and waterproof.

Waxed Leather
Design Proposal:

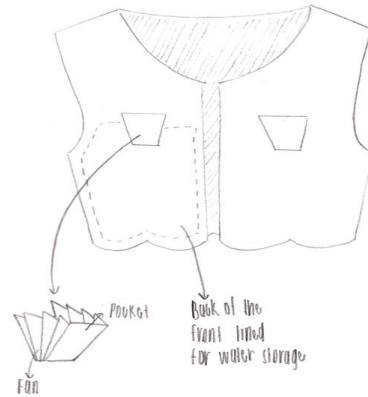


Wool Design Proposal:

Sketch:

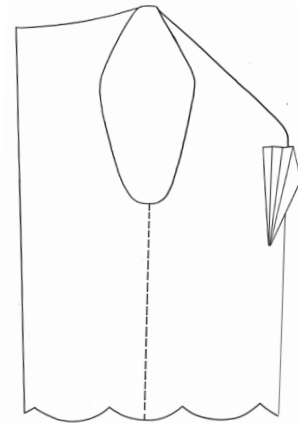
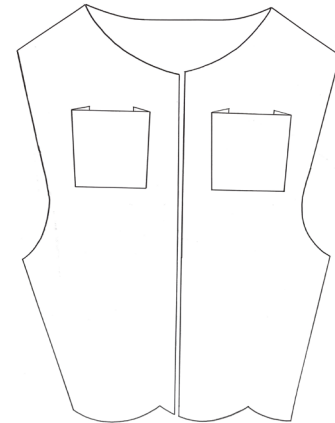
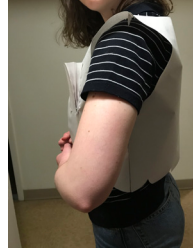
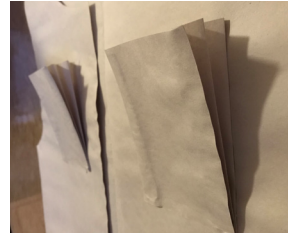


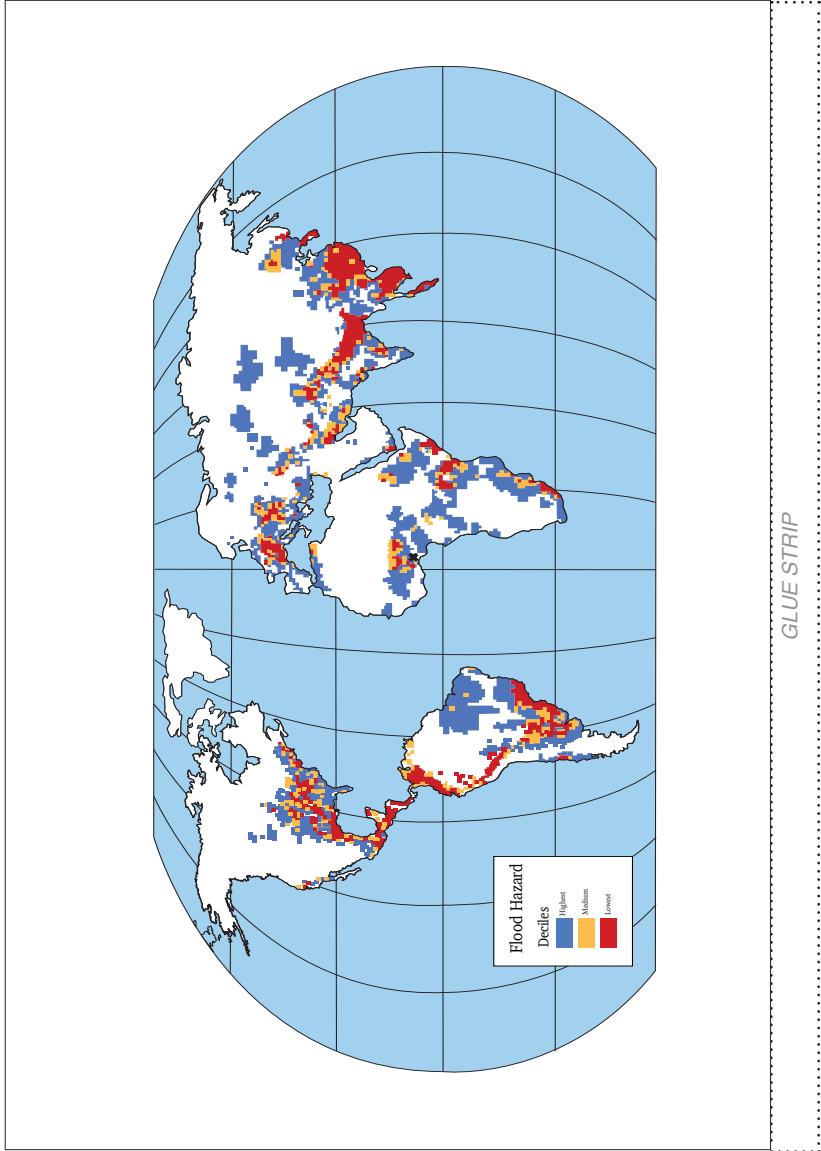
Zombucha
Leather
Design:



For my last design proposal, I drew out a vest made out from the bio leather, coated with silicone to keep it water resistant. Regarding the rain water collecting aspect, I created a sort of a fan like piece to attach to the sides of the pocket as a way to keep it open for the rain to enter. Moreover, each pocket includes

a small hole to allow the rainwater to enter its storage place, which is the lining inside the vest.





Heavy rains and thunderstorms cause massive chaos in the city of Lagos, Nigeria. Residents all throughout the city were awakened to find their streets and homes completely flooding, along with their properties, cars and other treasures entirely immersed in the water. Due to the non-existing drainage system and unfortunate infrastructure in Nigeria, the continuous rain soon became a threat to not only the

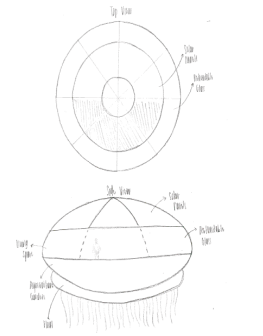
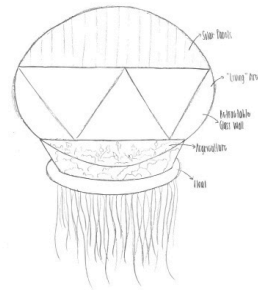
people's valuables but also their lives. Since there is no immediate solution, the people of Lagos resort to kayaking. Which lead me to an idea for temporary shelters during such situations, temporary floating homes that consist of a sturdy base that has the ability to link one floating home to another, along with an overhead covering.



Credits- QZ.com

GLUE STRIP

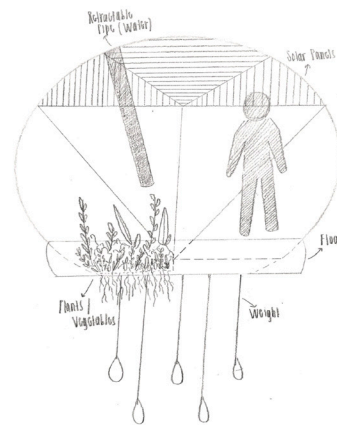
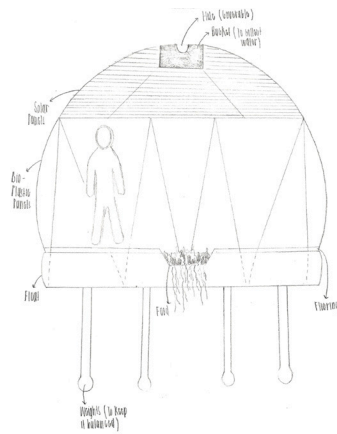
Jellyfish "Biomimicry" Structures



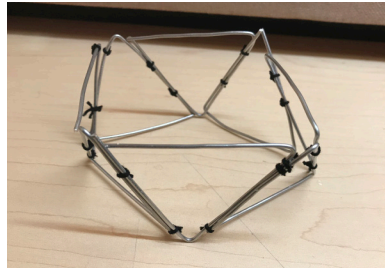
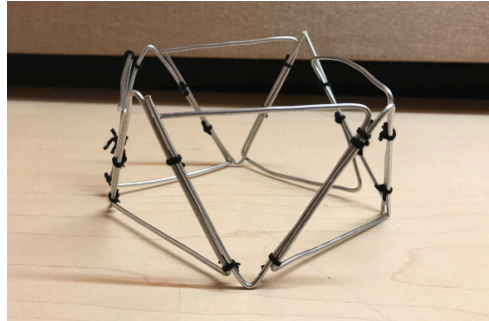
Jellyfish are soft bodied, free swimming aquatic animals with gelatinous umbrella shaped tops with sting like tentacles at the bottom. Jellyfish use their bell-shaped tops for movement purposes, however, they use their tentacles to capture prey or defend themselves against predators and from that I got the idea of using jellyfish as a movable, deployable structure used during extreme flooding while at the same time clean the environment. Moreover, this structure consists of repetitive parts of solar panel along with a durable

glass connecting to create a retractable top inspired by the bell shape on the jellyfish. As for the inside, it would consist of 2 sections (top and bottom) where the top would be the living space and the bottom would consist of somewhat of a garden for food purposes. The tentacles of the jellyfish structure, it would consist simply of the roots of the plants as well as that, the structure would also include a float like object wrapped around the bottom.

GLUE STRIP

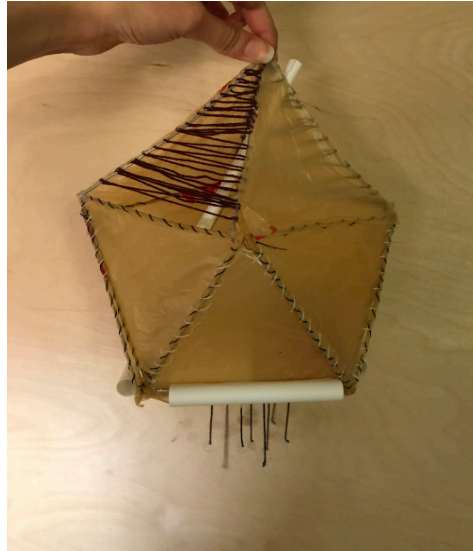


For my final drawings for the design of my migratory structure inspired and in relation to a jellyfish, employing the biomimicry concept. Using the basic structure of the jellyfish, I sketched out a repetitive pattern along the shape in order to close the structure into a smaller, more compact configuration. The majority of the structure would be made from bio plastic along with other materials to keep the structure intact. The structure will include solar panels at the top along with a miniature garden on one side of the structure with a long retractable pipe at the top in order to water the plants as well as for human consumption of water. As for keeping the structure stable, I included a float around the shape along with weights at the bottom of the structure similar to those on the jellyfish.



For my first iteration of the migratory structure used specifically for floods, I experimented with the construction since unlike a normal jellyfish I was unable to create a patterned or stable object in a circular shape therefore I used mut-

liple triangles to depict it. Moreover, for my iteration, I decided to create the main pattern in the structure to see whether it would be stable and adaptable, which it was.



For my final prototype of my model I created a 10" model of a migratory structure used in extreme flood zones, specifically the place I focused on, Lagos. My structure inspired by the jellyfish includes a large almost circular top with sting-like parts at the bottom, however unlike the jellyfish, my structure is meant to float above the water with the weights and the slight roots of the agriculture (food) underneath the water.

Moreover, the structure consists of solar panels at the top (represented by the maroon thread, bioplastic walls, represented by a brown plastic bag, retractable water pipe at the top to water the plants and to drink off of, an empty space to sleep on, a float surrounding the top half of the structure and lastly some weights at the bottom to keep the shelter stable.



One of the biggest problems I faced in this project was creating the bioplastic, which went perfectly at the beginning however broke into tiny pieces once it dried (and this happened to the 4 times I attempted it), therefore for the final shelter I substituted it with reused plastic bags.

