



PORTFOLIO

KANATCH KEMTHONG

time machine studio

01 FIBER CLIFF HOUSE

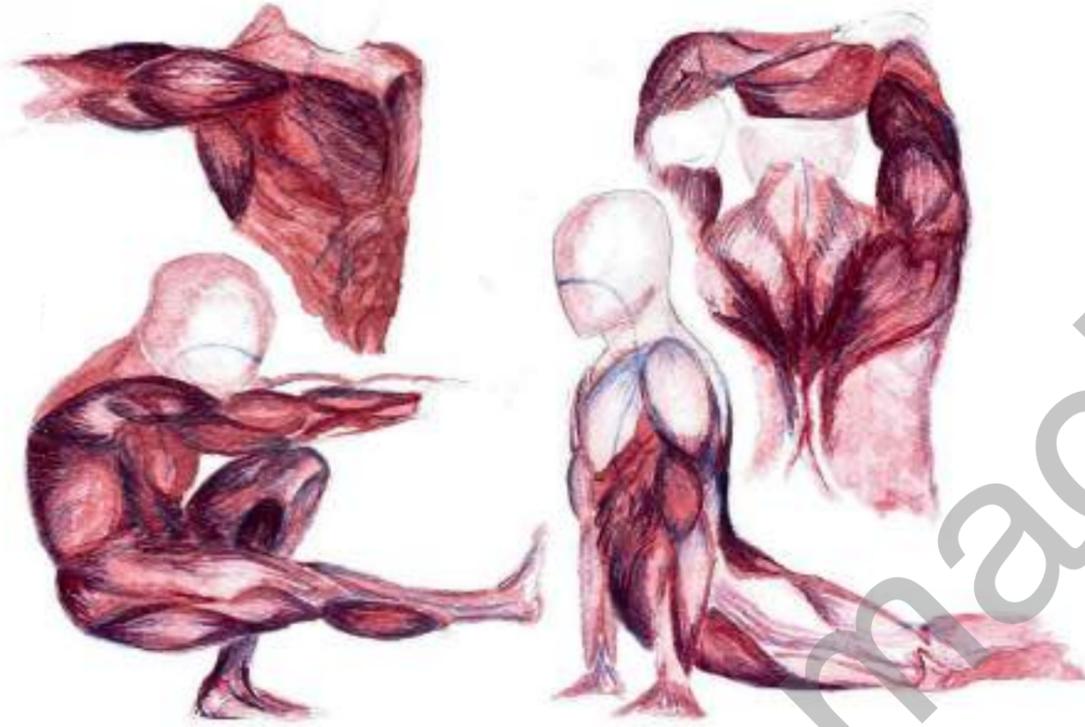
PROJECT CONCEPT

The project concept began with an analysis of how yoga poses incorporate oxygen and cell fusion, in order to stimulate muscle growth and development within the body. This created a concept of expansion, in which was applied to the creation of a new living space.



OXYGEN FLOW

Oxygen mainly plays a role in providing the muscles in the body strenght and flexibilty whilst doing yoga, as well as other activities that include the extensive use of muscles. During the use of these muscles, oxygen is carried to the specific muscles via red blood cells, as well as other satelite cells that contribute to the growth of the muscles. The oxygen flow through out the poses, are distrubuted to the parts that are most active, and therefore are the parts retaining most of the damage and growth. I selected the most active areas most common in each of the poses, and explored deeper into the specifics of how muscles grow.

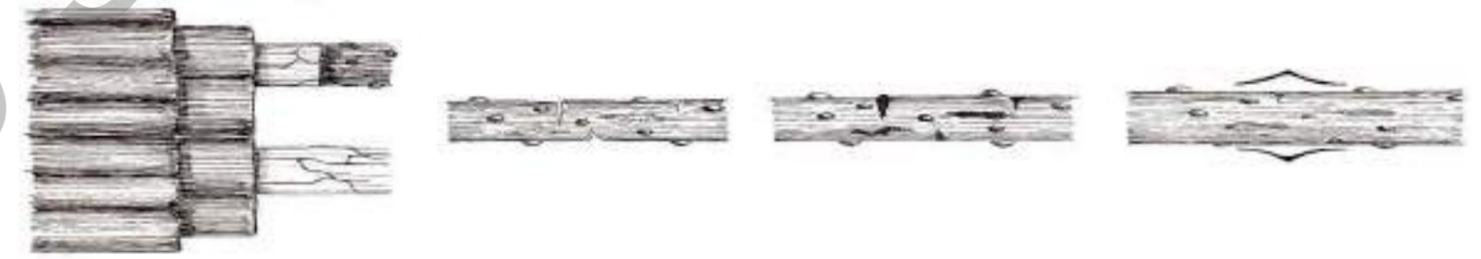


MUSCLE GROWTH & DEVELOPMENT

As muscles get used more and more during yoga, it stretches and damages are cause within the fibers of the skeletal muscles. These fibers are individual strands that are bundled up within a fiber bundle, where each strand is damaged during exercise.

Over time, it gradually fills in the tear using cell fusion by satellite cells and red blood cells during the body's resting period. During the resting period, the muscle increases in size by a small amount, though the repairments to the tears within the muscle fiber make it stonger and larger.

By using this biological research, I later on altered the concept into geometrical shapes, that represented a living space in its process of expanding out from a single-function room, into a multi-function home, as well as applying this concept to the structural integrity of the roof.

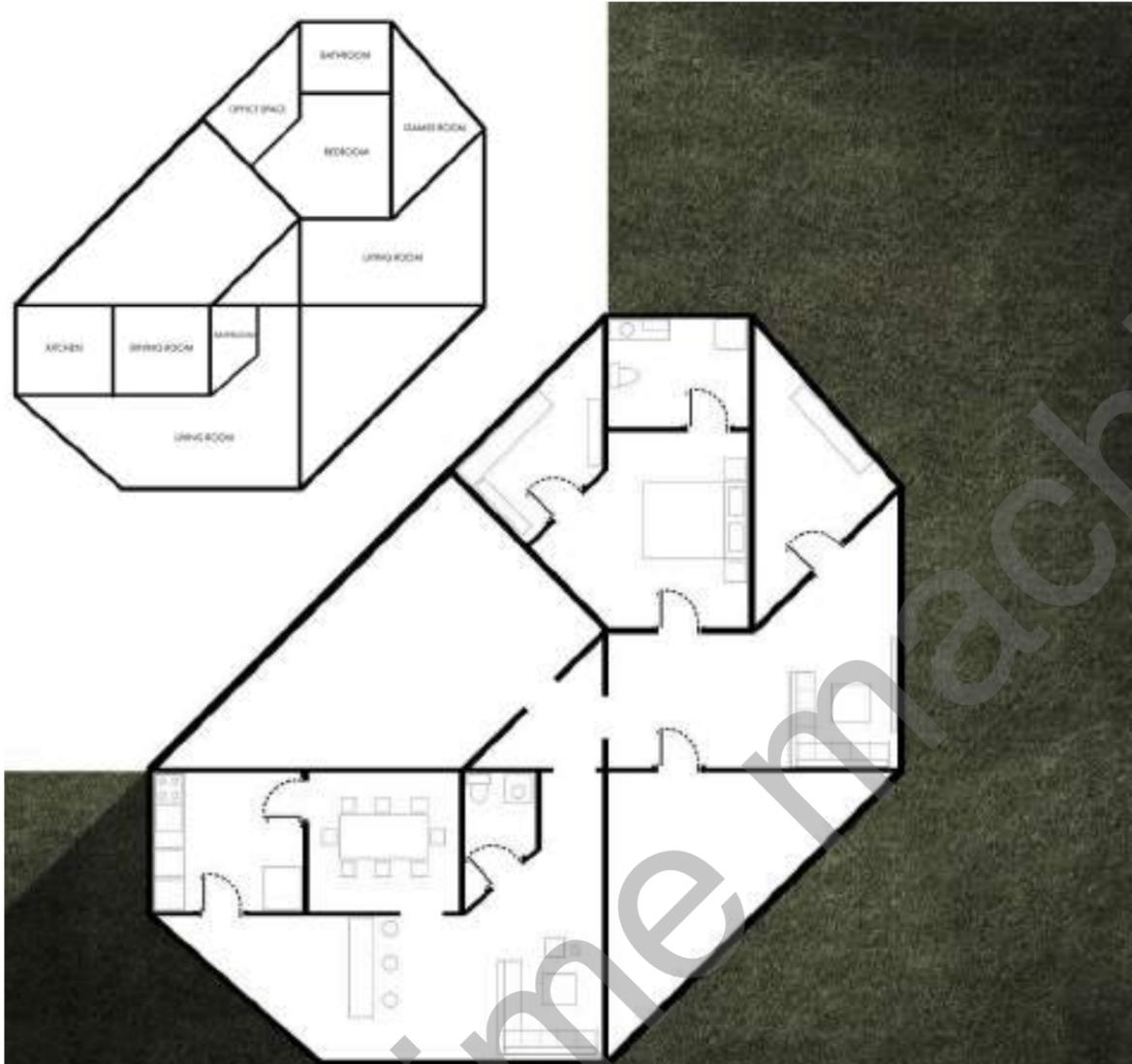
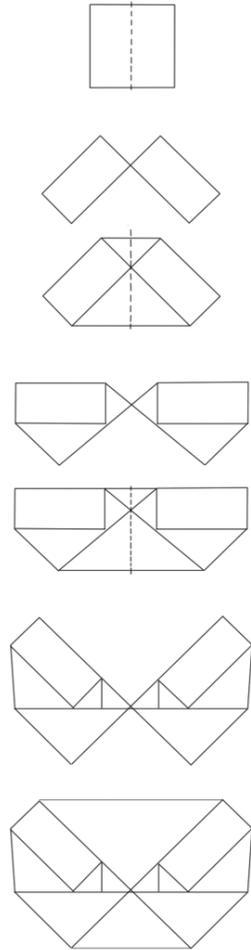


EXPANDING GEOMETRY

The geometry begins with a floor plan of one square-dimension room. Then similarly to a muscle, I applied the concept of expansion and growth, the room is first split into two, then is rotated 90 degrees, connecting at one shared vertice. The empty space in the middle of the two shapes, is then filled in from the top and bottom spaces created by the split.

The initial square carries the function of being the bedroom, then furthermore as the geometry expands, more and more rooms are created, making way for an increase in function, relative to the original room. As each stage progresses, a room is added that carries a complement function, and where either adds on extra rooms or circulation.

Using the resulting shape, I then created a floor plan of the house, incorporating the different rooms with complementary functions next to one another, then from that, the details of the plan was added. The floor plan was then later extruded up, allowing space for a 1 level home.

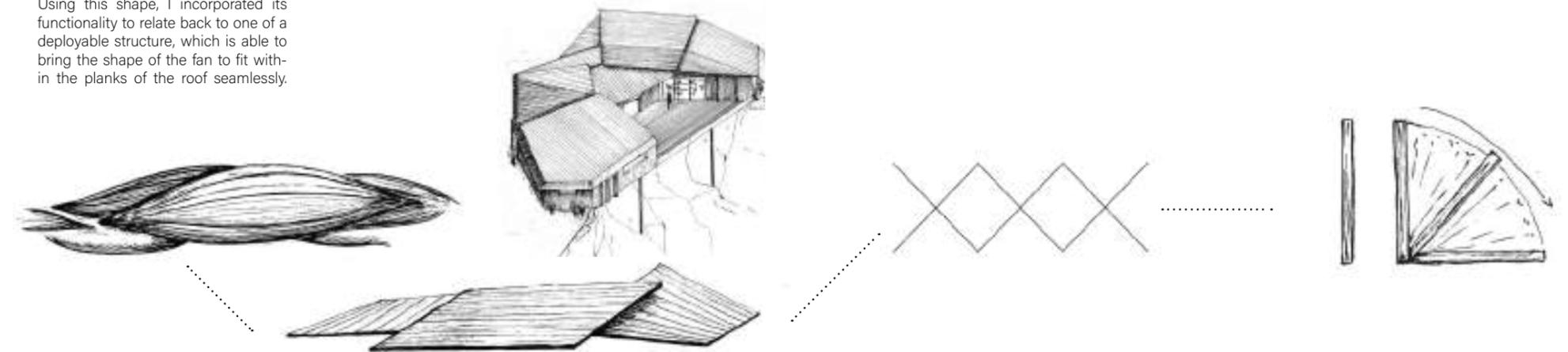


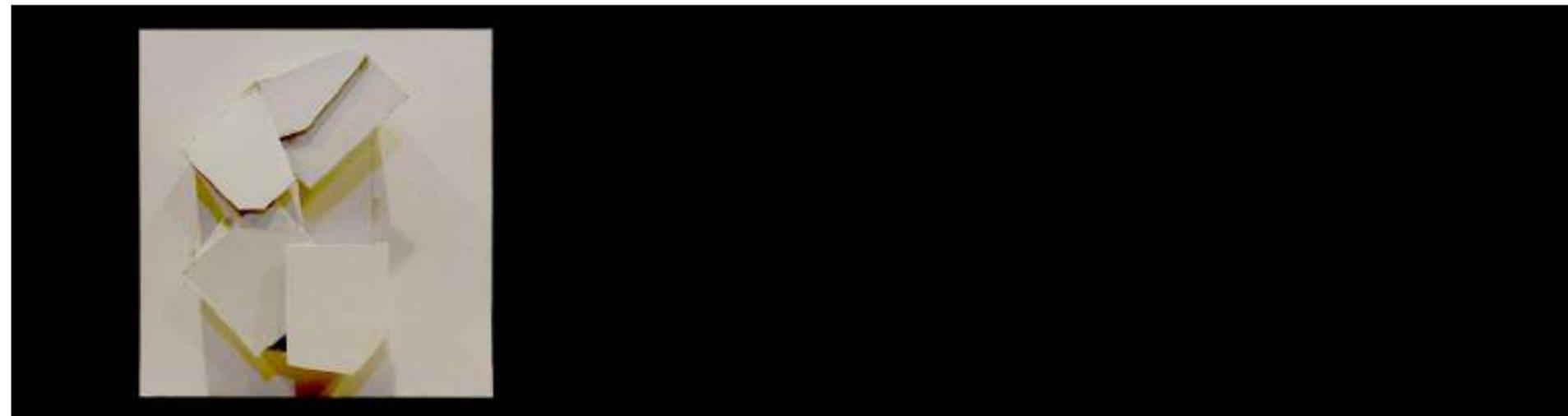
EXPANDING ROOFTOP

The roof had first been decided to have a form which is similar to that of a muscle fiber. Using the arrays the strings of fiber, along with the different layers that build up the muscle, I ended up using simply planks to design the roof, while splitting and layering it into different sections, mimicking the layering of the muscle layers.

The concept also goes as far as the roof of the building, where I wanted to incorporate the dominance of the building by having the roof expand beyond its original space. The initial idea was brought up from samples of different types of deployable structures, however what came to mind in terms of form, was the mechanism and overall shape of chinese fans, which in a way shares a similar structure and shape to a muscle fiber with the elongated and stacked up layers.

Using this shape, I incorporated its functionality to relate back to one of a deployable structure, which is able to bring the shape of the fan to fit within the planks of the roof seamlessly.







02 BEAUTY WITHIN CHAOS

PROJECT CONCEPT

This project aims to analyze the chaos that lurks within the city of Bangkok. The idea of this project is to turn what is known of the chaotic mess that Bangkok is, into art pieces that contrast the evergrowing instability of the city's mess as an idea.





THE BUTTERFLY EFFECT

The butterfly effect, where the saying goes that a butterfly flapping its wings may cause a hurricane in the pacific ocean. Stating that within chaos and disorder, the way we perceive its form, may be because of a small beginning principle, that in the end, results in a larger and more chaotic form of what it initially was.



CHAOTIC BANGKOK

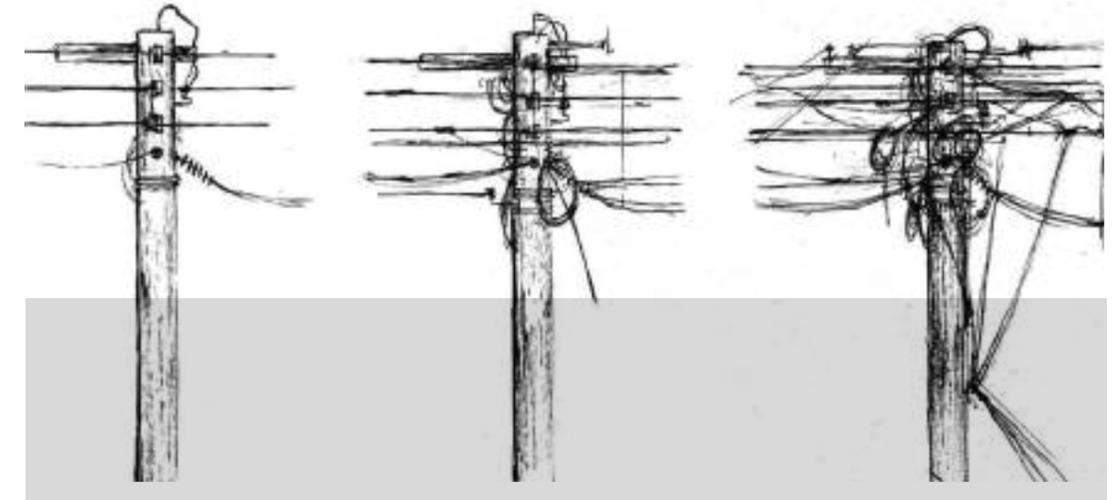
I wondered as to why Bangkok, my home town, has such a dirty and messy feel to it. It then led me to begin my research as to the cause and source of this problem, since it is something that stands out to the people of Thailand, yet not so certain as to the origin of the problem, with the inclusion of many elements of everyday city life.

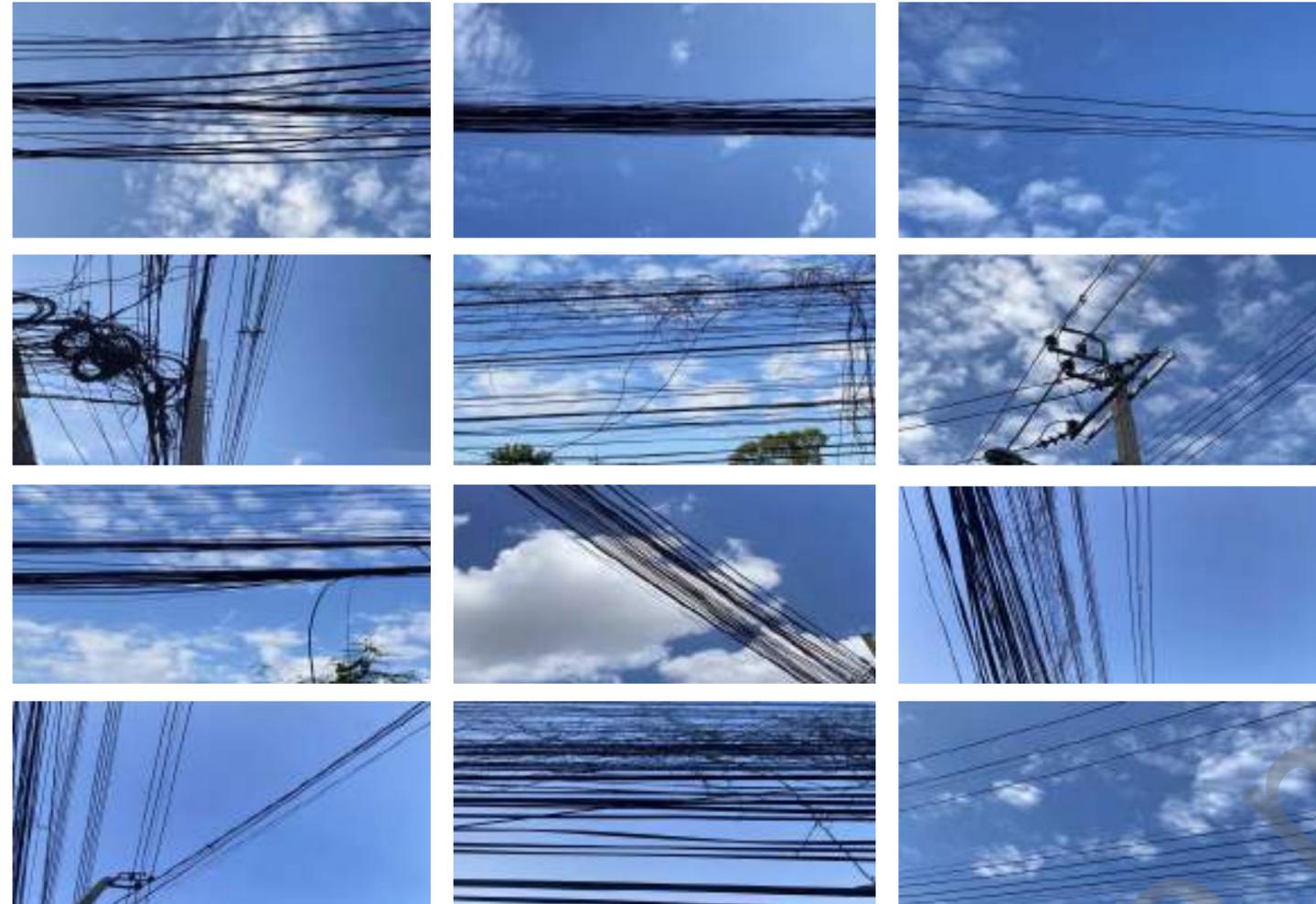
This concept hit me as being one that is comparable with Bangkok's image, as the little cans of sodas on the street, or plastic bags floating around in puddles, they all begin with one single element, that overtime, piles up into the image of Bangkok as it is today, a messy chaotic mess that is also pretty dirty where ever we look

LAYERS

Continuing from the concept of the butterfly effect, I've expanded upon the concept of having something big gradually built up by smaller things. This resulted in having a representation in the form of layers. Each layer may hold a small part, but as they stack up, the final result will be a combination of all the layers.

On the right shows my impression of one of the most chaotic elements of Thailand, electric cables. The illustrations show an example of having the concept of layering apply a real life scenario, where gradually, the image becomes more messy and unclear as more and more cables and wires are being stacked amongst previous cables.





CABLE COLLAGE

Applying the cable example, I started collecting images of different cables and wires around Bangkok. The results show a variety of cables, ranging from different numbers and sizes, all of which to be used in composing the first art piece using this concept.

The images were then stacked onto each other, resulting in a final art piece that resembles a portrait of myself. As stated before, the concept of layering, is present here, as an individual wire/ electric cable would not be able to form a large art piece, but instead with having multiple layers that show difference in value and opacity, allowing for an impression of myself to be shown

I also chose to do a self portrait for this first piece, as a way to show personality and exaggeration in the way i perceive people in general, as everyone has their own problems, with chaos hidden behind an image of beauty.



CHAOTIC COLLAGE

The second piece of this project follows a similar path as the collage in the previous page. Though this time, I had not only focused on the cables, but the many other elements that contribute to the chaoticness of Bangkok.

However, I still kept the same concept of layering, as it seems to me to be one of the ideas that people automatically understand as being a contributor to why Bangkok, Thailand, is so messy and "dirty".

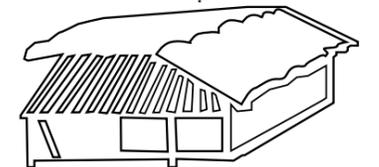
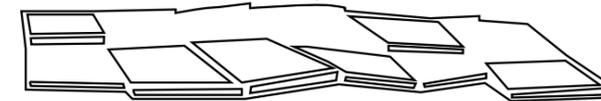
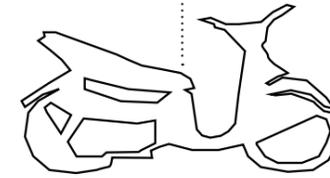
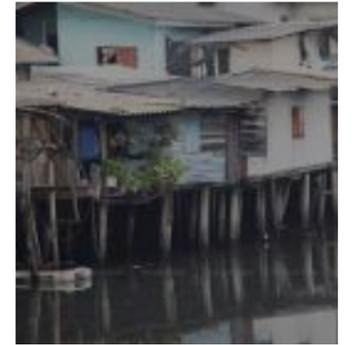


CHAOTIC COLLAGE

I had first identified the different elements that we see everywhere, and that contribute to the overall image of Bangkok, making it look dirty and chaotic, while still symbolizing "Bangkok:

This includes and ranges thorough out the every day objects and features we see along ithin the city, like craked footpaths, messy wires, traffic, pollution, etc.

I then had drawn and cut out simplified shapes according to the things that had the most emphasis and effect on the areas of Bangkok, while purposefully leaving out white spaces for objects we dont neccessarily see everyday, but know that is a contributing factor to the image of Bangkok, like the pieces of trash hidden beneath piles of garbage, or wild rodents hidden underneath vendors and sewers

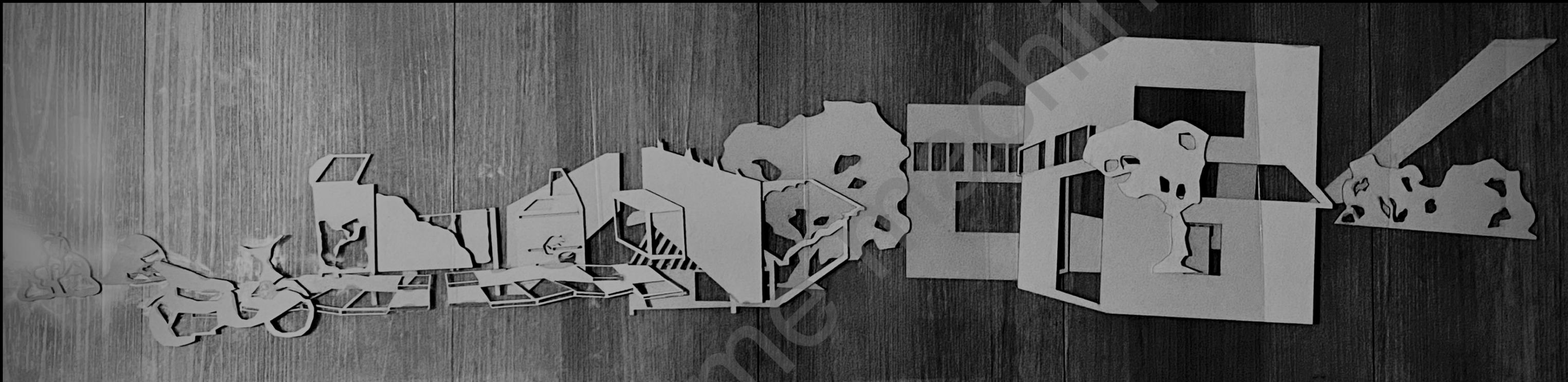


The sheets in the front show elements on a smaller scale, and ones that are typically known as being a contributor to the image of chaos

I had then arranged the cut outs onto transparent sheets, which was layered on for the different objects at different perspective points

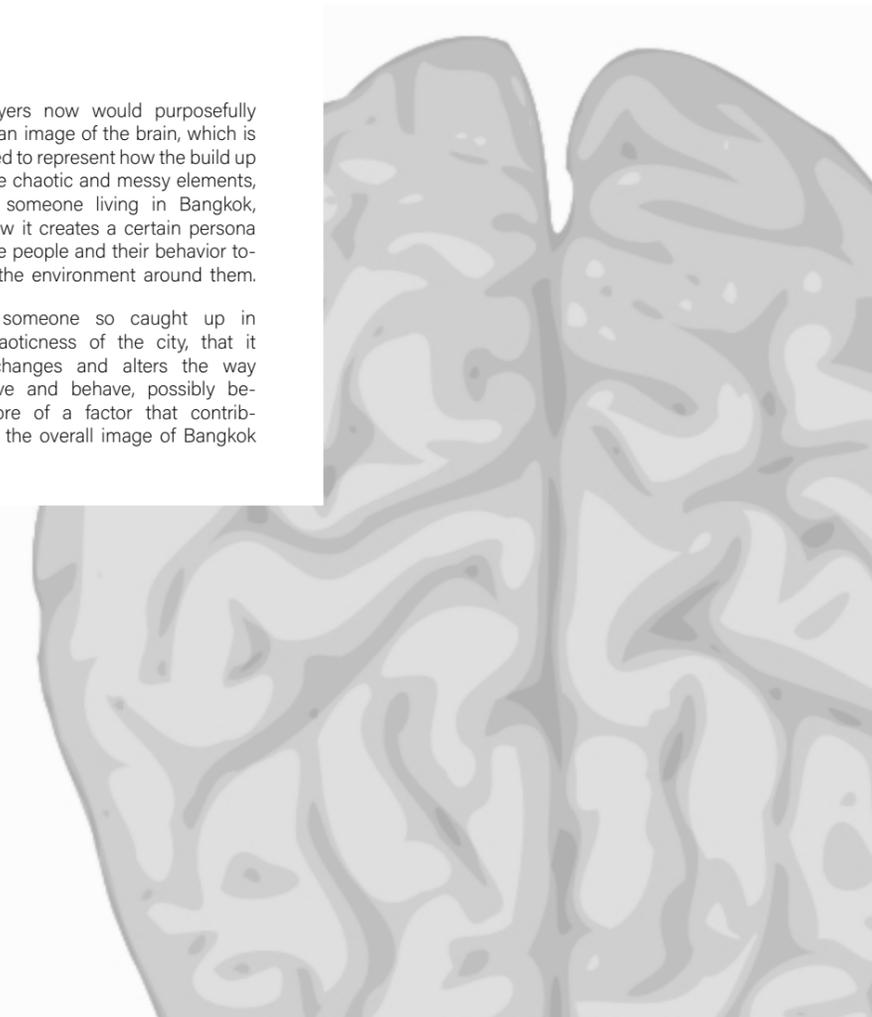
In total, i had arranged 12 layers, where each layer had its own objects arranged from a view-point of a two dimensional plane

As we move along further back, the objects start getting larger, as well as things that are less obvious, but still a big factor in this layering theory

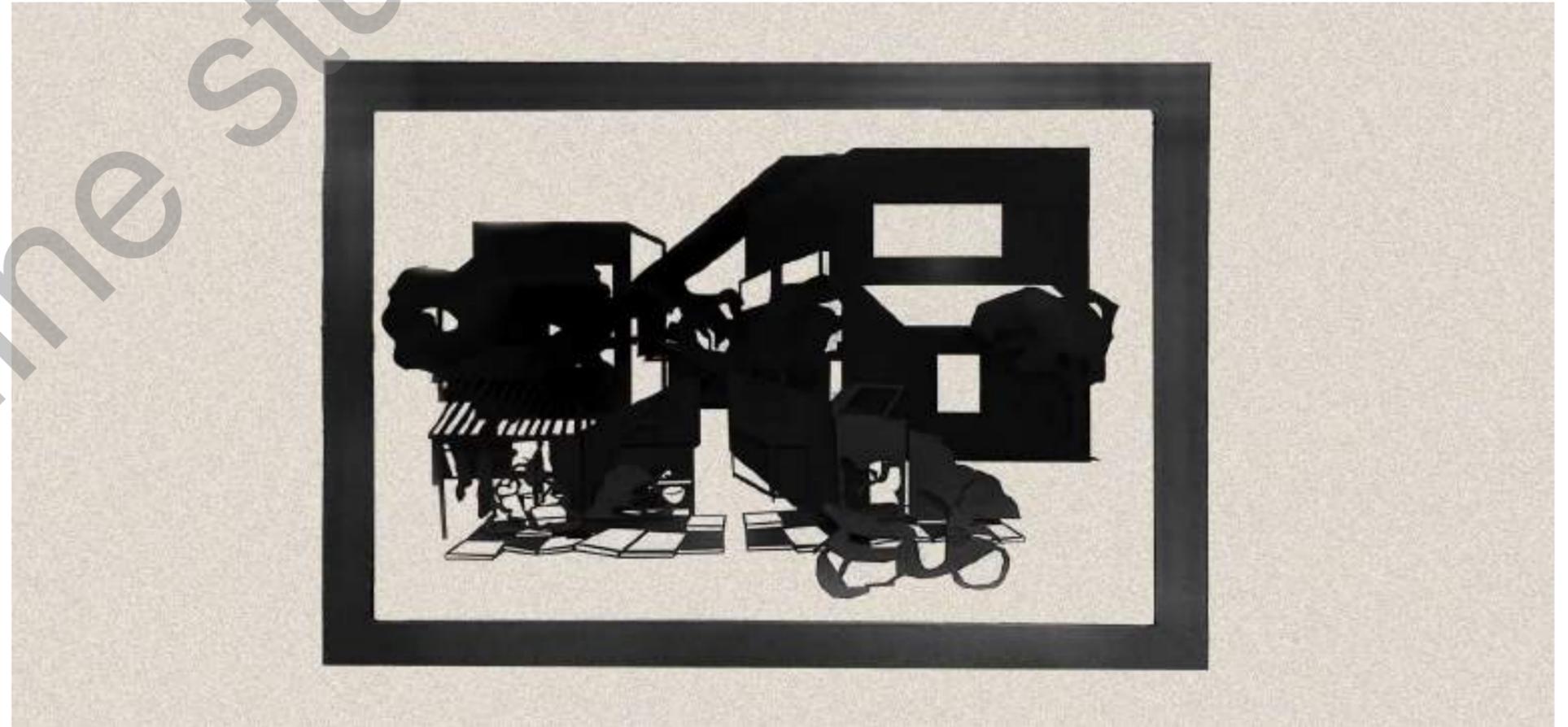
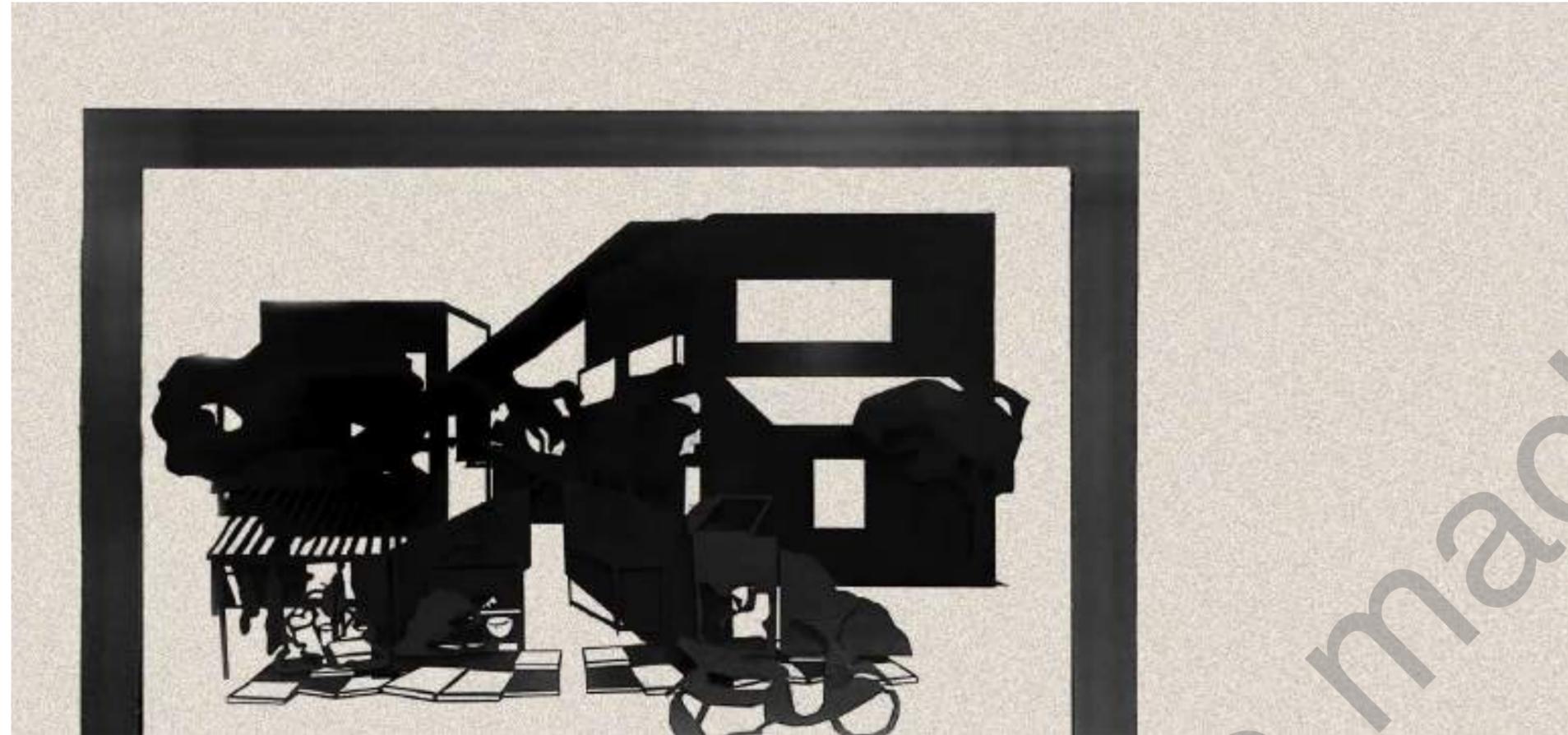


The layers now would purposefully create an image of the brain, which is intended to represent how the build up of these chaotic and messy elements, affects someone living in Bangkok, and how it creates a certain persona of some people and their behavior towards the environment around them.

Being someone so caught up in the chaoticness of the city, that it itself changes and alters the way they live and behave, possibly being more of a factor that contributes to the overall image of Bangkok







03 CINNIBAR GYM

PROJECT CONCEPT

This project is based off of Cinnibar Island, an island in the game series "pokemon". The Idea is to create a space and circulative structure that allows for the interaction of people and the harsh environment of a volcanic terrain, while keeping the elements of the circulation and appeal, relevant to the original games



POKEMON ROUTES

In the pokemon games, it would normally follow the same system from version to version, as mainly forcing the players to face certain trainers in one specific path. This also applied to the gyms in the game, this is where I wanted to change and conceptualize a different way of playing, while keeping the same atmosphere of the arena

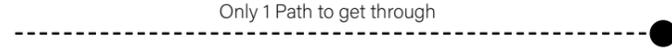
I had first thought of applying a human element to the paths, visualizing the different ways people may react to the gym if it were something that actually existed in real life. This then had taken the initial formula of the gyms within the games and changed it to be more convenient and accessible for actual people and make it more enjoyable

I then used the concept of the path, then expanded it on a bigger scale, applying it to the overall layout and circulation of the gym. Also aware of using the main factors of the gyms, I had done the same thing and repositioned the pokecenter and final gym leader to places that would make sense in real life, as well as to include rest spaces after each checkpoint

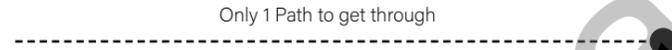
Trainers were also stationed within gyms, however for the purpose of being a sort of amusement park, I took them out and had them be the attraction that makes the routes somewhat more diversified.



Original Cinnibar Island Gym, from Pokemon FireRed

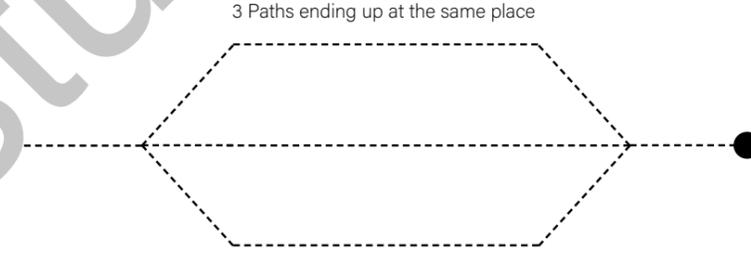


Newer Cinnibar Island Gym, from Pokemon FireRed

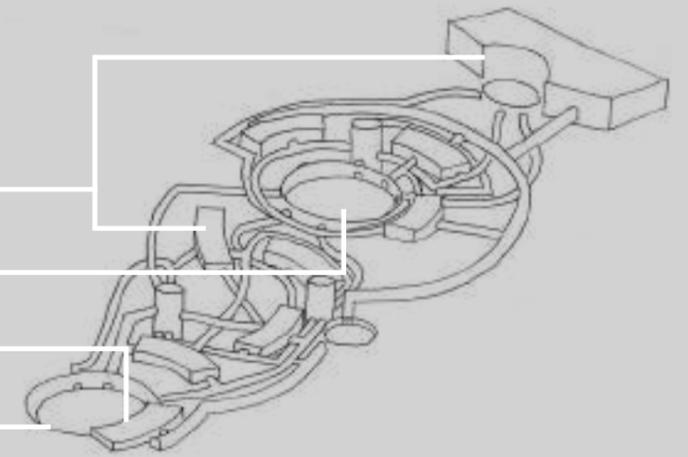


POKEMON ROUTES

The diagram on the right shows my altered vision of the original style of pokemon routes. By adding more pathways and routes to the structure, I planned that it would help with the overall experience of the arena, whilst still keeping the same elements and also to end up at the final gym as planned

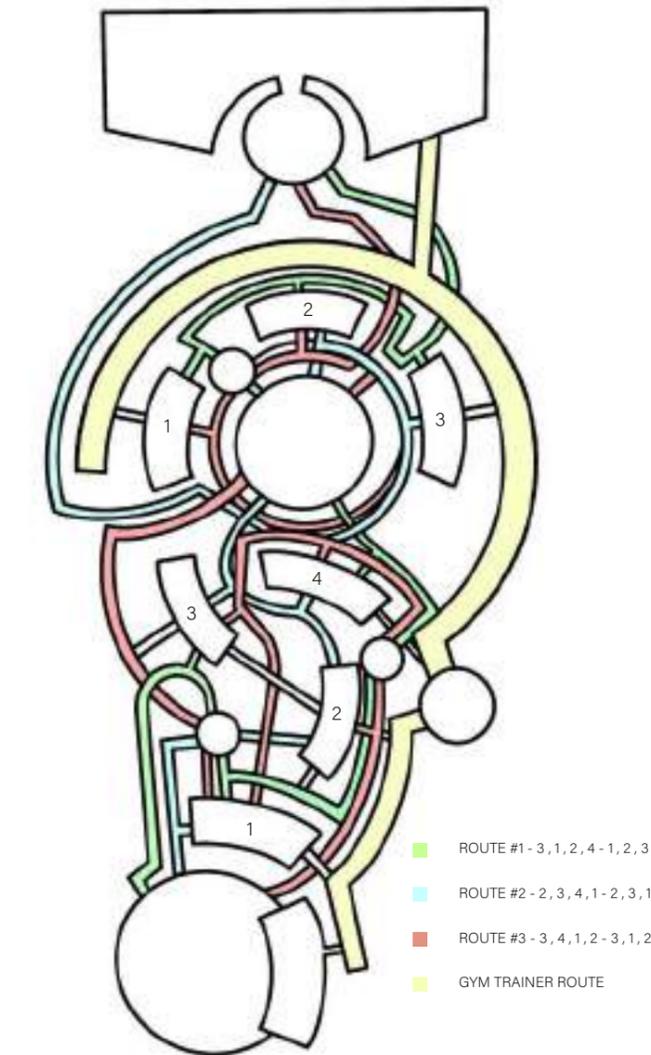


- GYM TRAINERS**
- REST AREAS**
- POKE CENTER**
- ENTRY POINT**



Below is the design I ended up with. The structures in the design here, have been directly referenced by the original Cinnibar Island from the Pokemon games, while the form, shape, and circulation also is slightly inspired by the original, as well as certain real life structures like the Paul Getty museum, in addition to my own design

The original structures I had chosen revolve around the most interacted with from players in the pokemon games. Where the more important buildings are the poke center, and the final gym trainer, in which I have isolated and taken out the amount of trainers within the gym (7), and had made them hold their own battle room instead of share one whole building



STRUCTURE PLAN

The top view of the gym here provides a different perspective to how the routes connect for both the player and the trainers. As well as the rest areas, marked by the larger circles, as well as the exhaust vents which are represented with the smaller circles.

The shape and form of the structure was initially thought of to be similar to pokemon's futuristic and in a way retro theme, which gave way to these circular shapes for the overall paths. As well as having the circulation of the routes to be inspired by the J. Paul Getty Museum, which focuses on the way people walk and interact with the structures within

The routes highlighted, are purposefully placed so that non of the paths intersect at any given trainer's room. This was done as in the pokemon games, the player had always had to follow one route, when entering a gym. Now with multiple routes, people can circulate through the gym, without having to crowd on only one path, as well as to have the rooms all connect to all 3 routes, which ultimately satisfies the people.

Ultimately, I had also thought of how the gym trainers would interact in the function of the structure, which is why I also included a larger isolated route that runs all the way through the route, connecting individually between the trainer rooms, which created an individual pathway for the gym trainers to walkthrough easier



REST AREA/LOBBY



USER ROUTE

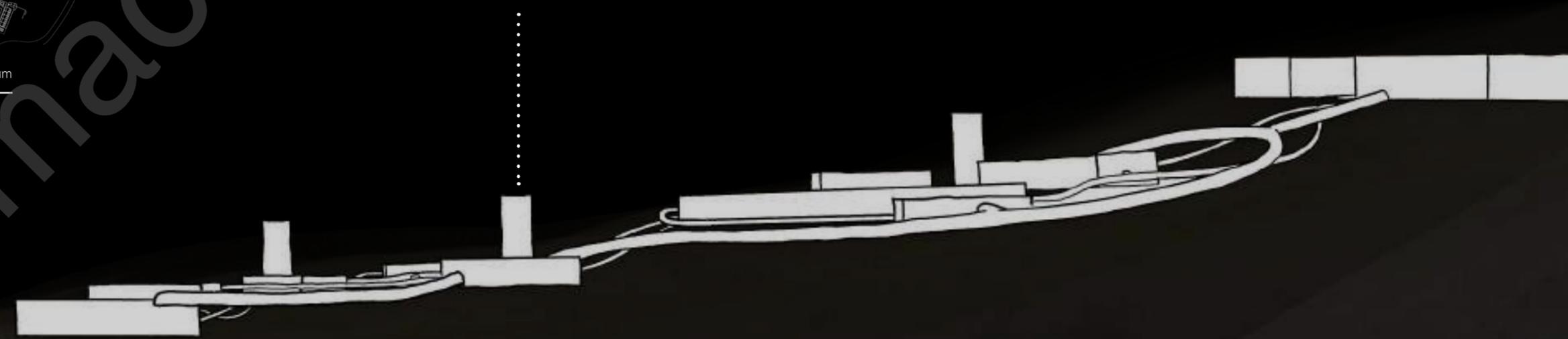
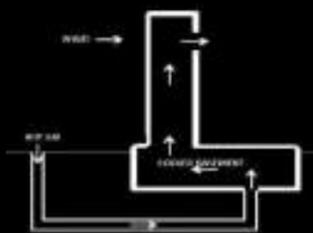


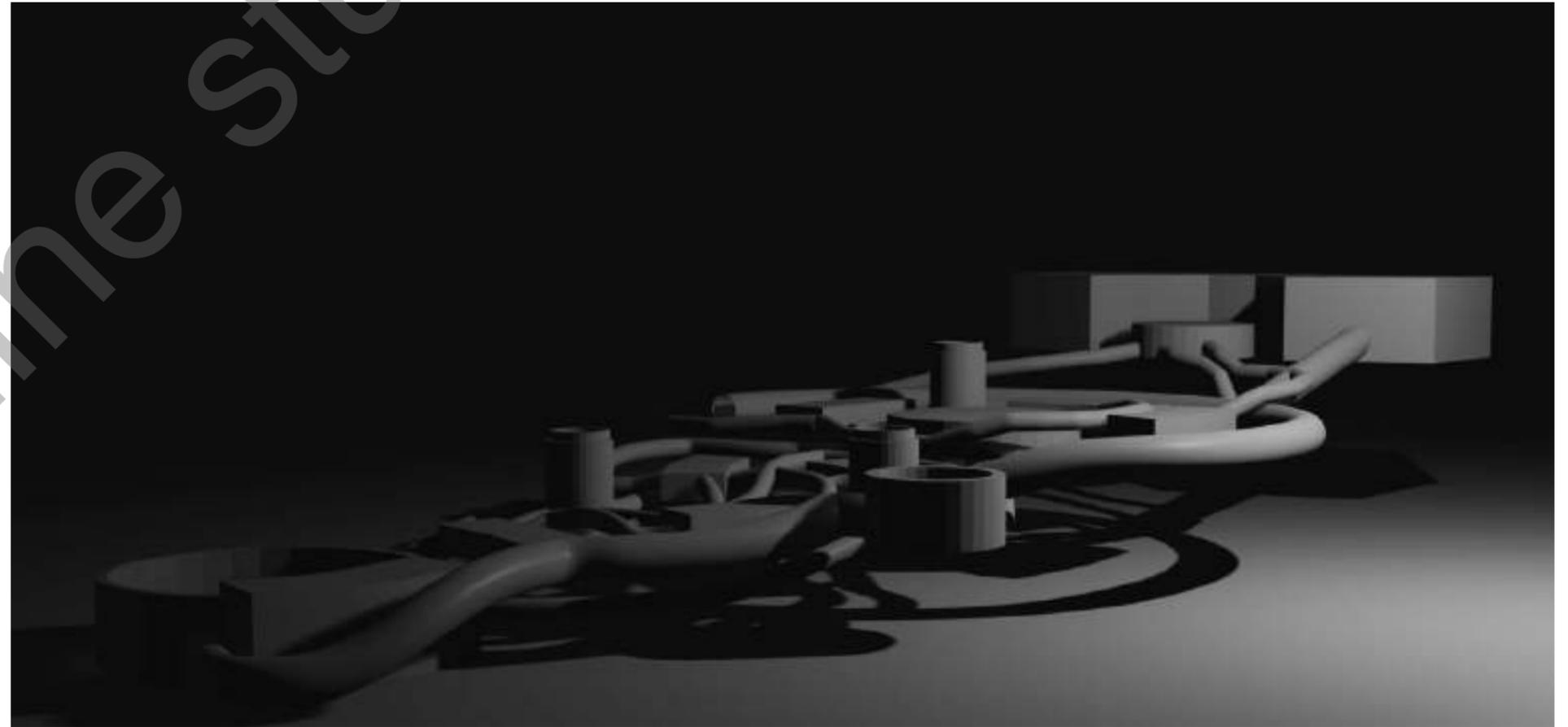
TRAINER/BATTLE ROOMS

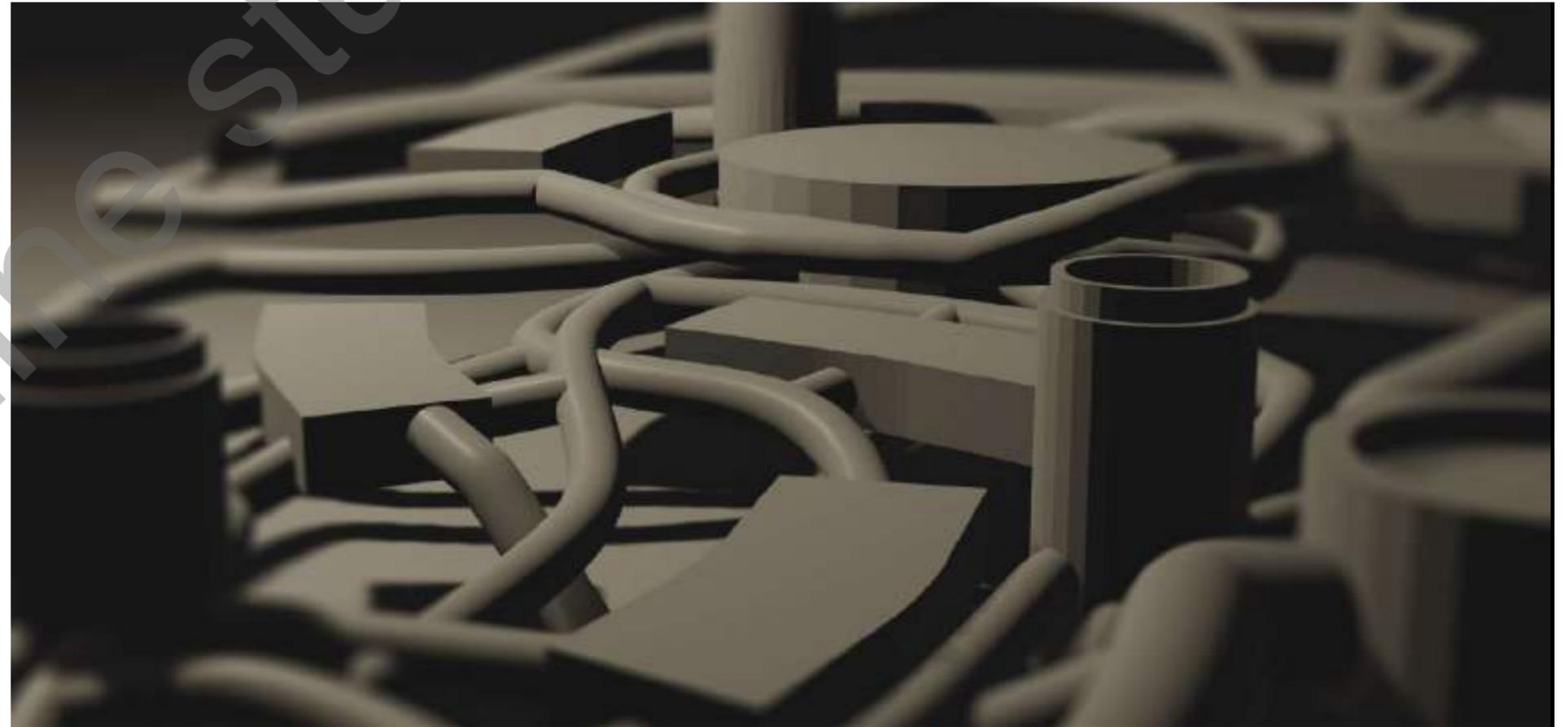
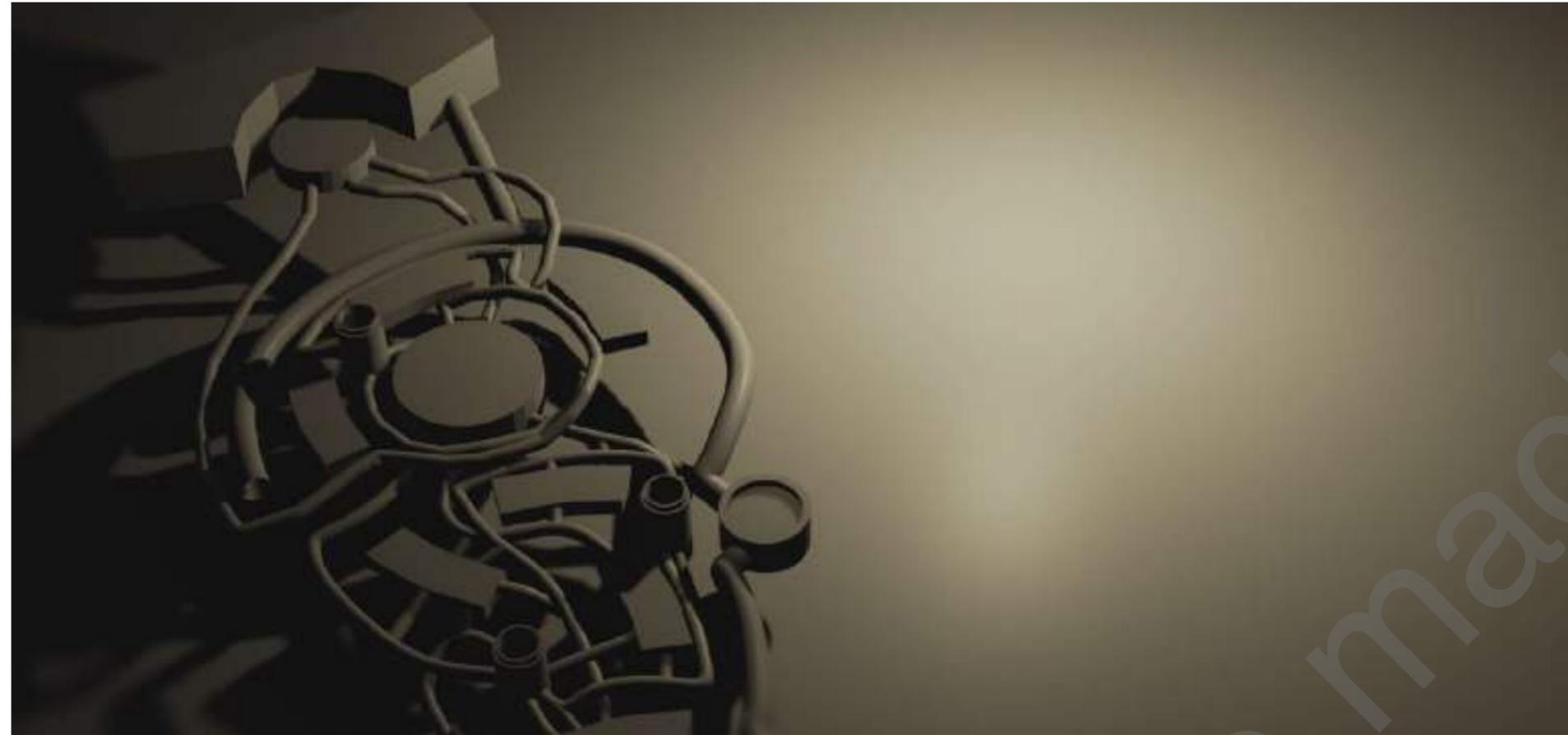


The towers stationed at the three points here, are modeled off of real life structures called wind catchers. Wind catchers are structures that work with hot and cold air, trapping the hot air through the structure, while keeping the cool air within the spaces confined in the structure. The towers work are planned to work off the hazardous temperatures of the volcanic terrain

The towers have also been placed intentionally when designing the circulative paths, and where if at any point three routes intersect, a tower will be placed there. This is because I thought of the ventilation within the structure, and how it would increase temperatures if there as no sort of exhaust present, so at the popints where the temperatures would rise most, a tower is placed







04 PARASITIC ARM LOCKER

PROJECT CONCEPT

The idea touches back on the pokemon games, using the relationships between the species within the game, and applying the concept to a locking mechanism off of the idea of symbiotic relationships within the world of pokemon.

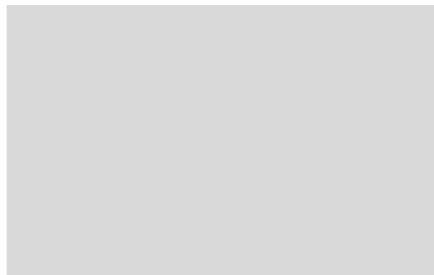
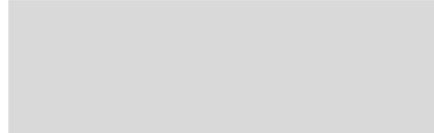


SYMBIOSIS

The project is again inspired by pokemon, this time specifically revolving around the symbiotic relationships of the pokemon with other humans or between the different sub species of pokemon, more specifically pokemon that fall into the 2 in 1 category

MUTUALISM

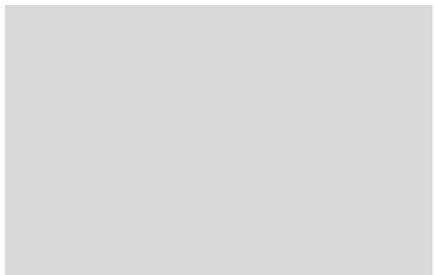
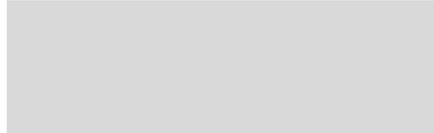
Symbiotic relationship where both parties are benefited from the relationship



The idea also scales down from the Cinnibar Gym project, focusing on more on symbiotic the relationships between the organisms of the pokemon world, rather than a relationship between the structures and the terrain within the surrounding environments

COMMENSALISM

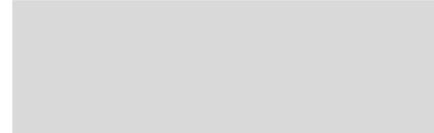
Symbiotic relationship where only one of the organisms receives a benefit, while the other isn't affected



For this specific project, I had chosen one specific type of symbiosis out of the three, which is parasitism, due to the rarity of the relationship within the pokemon world, as well as how I thought the project concept would be more interesting revolving around it

PARASITISM

Symbiotic relationship where only one of the organisms receives a benefit, while the other is being harmed or altered negatively



PARASITISM

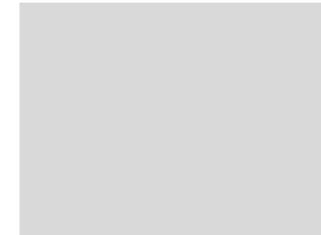
I then had found one of the few pokemon that associates with a parasitic relationship. Slowbro is one of the few parasitic type relationship pokemon within the pokemon world. The Shellder (shell) attached to the tail of the slowpoke, is the parasitic organism in this relationship

Originally, Slowbros are able to utilize their tails as a device that is used to catch smaller aquatic organisms within the pokemon world. The tail is one of the most important parts of the Slowpokes (the first form of the Slowbro) daily life, as it is stated that they would normally be lazy and would do little to hunt for their food.

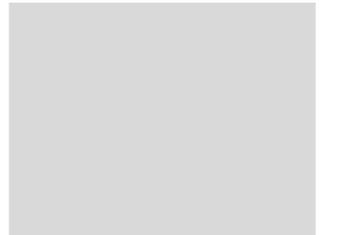
This results in other types of pokemon to latch on to the tail, where as in this case the water pokemon, Shellder. The Shellder acts as a parasite between the relationship of the two, as it drains the nutrients off of the Slowbro's tail, as well as being the obstruction that disables Slowbro's ability to use its tail normally. In addition to already draining out the Slowbro's ability to utilize its tail, it is also said to hypnotize the slowbro, as well as cause hallucinations



The tail of a Slowpoke, is originally used for fishing. The Slowpoke is said to often wait and sit on rocks while leaving its tail stationed in the water for other marine life to grab onto the it, as it acts as its arms or a grabbing mechanism for its survival



The Shellder, or in this case the parasite, attaches itself onto the tail of the Slowpoke, disabling the ability of the tails fishing function for its own nutrient-gaining benefit. A case of basic parasitism where one organism is disadvantaged, while the other gains one



ARM ANALYSIS

I then compared the human arm to represent the tail's ability to act as a grabber, which is similar in slowbro's way of using his tail to catch fish.

I then conceptualized in creating something similar to shellder, which has the function of taking away slowbro's ability to use their tails

Beginning with analyzing the arm, i identified the main joints that are most functional to people, which is at the shoulder, elbow, and wrist

The first joint lock was at the shoulder joints, which limits the movement of the arm forward, backwards, and up sideways

The second lock, locks the elbow joint, restricting movement of the elbow and on bending

The last lock is for the wrist, locking the movement of the wrist from the top of the hand and wrist joint

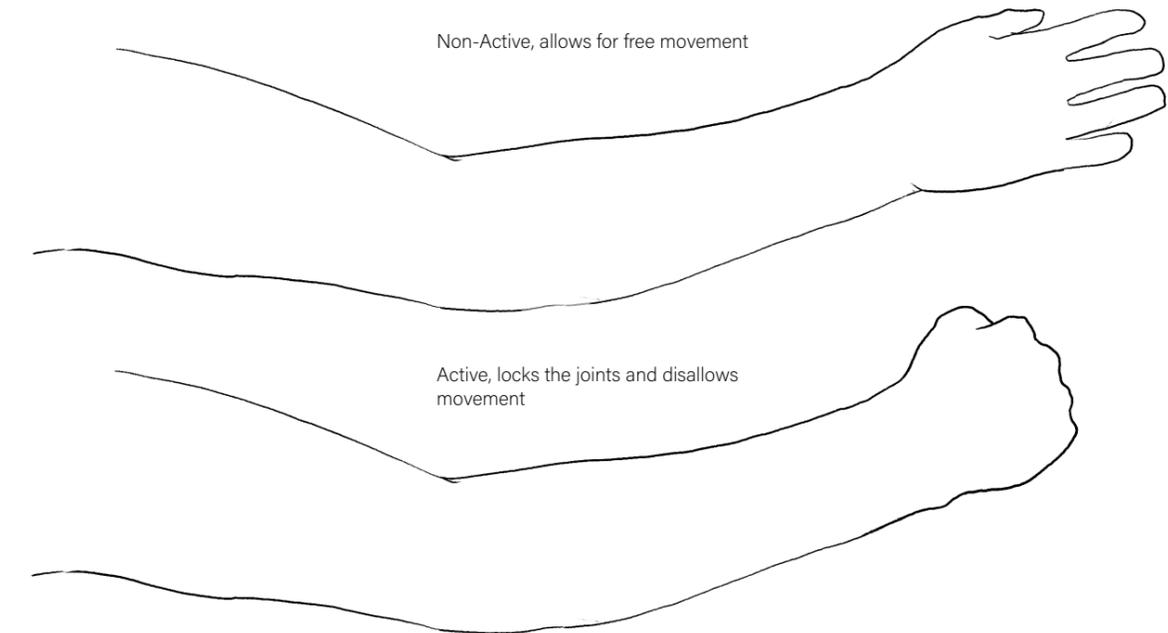


ARM ANALYSIS

I then decided that the device would wrap around or block the joints in order to lock them in their respected place, limiting movement

I also aimed at making the lock occur as the hand was about to preform an act of grabbing something, which further restricts the ability to utilize the function

Which again, aims at mimicking the parasitic relationship between Slowbro and Shellder, where now slowbro's ability to catach fish using his fish is taken away, is like us not being able to use our hands

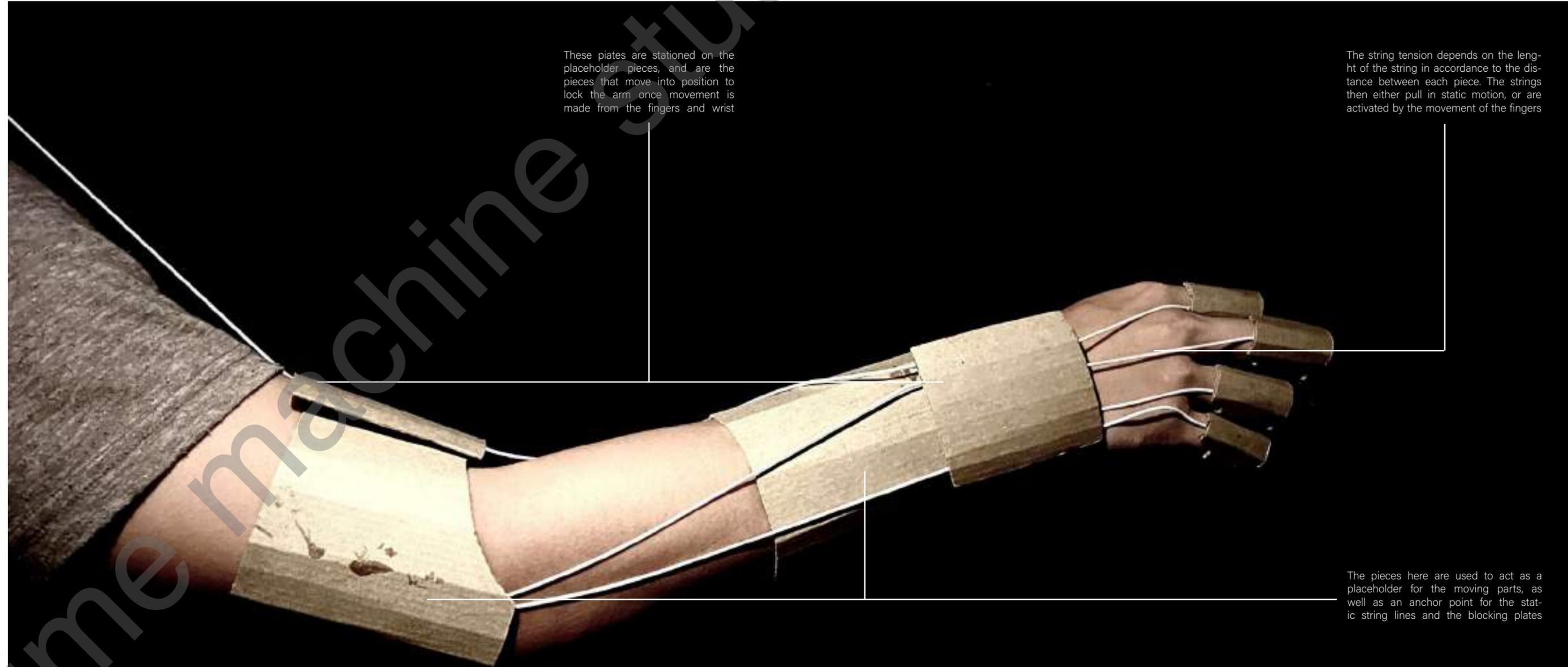
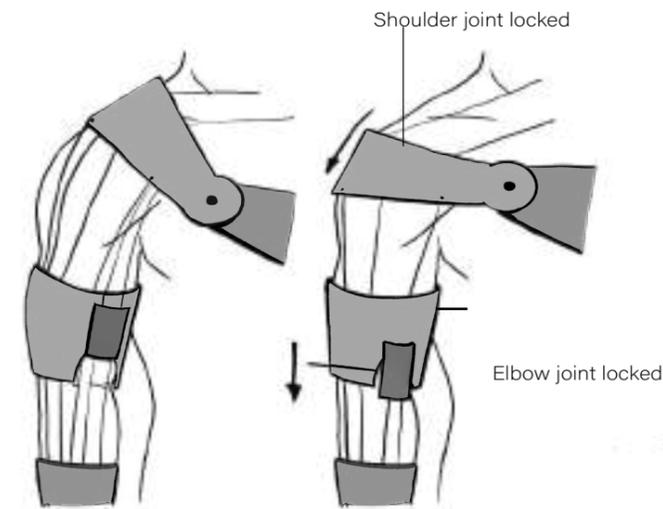
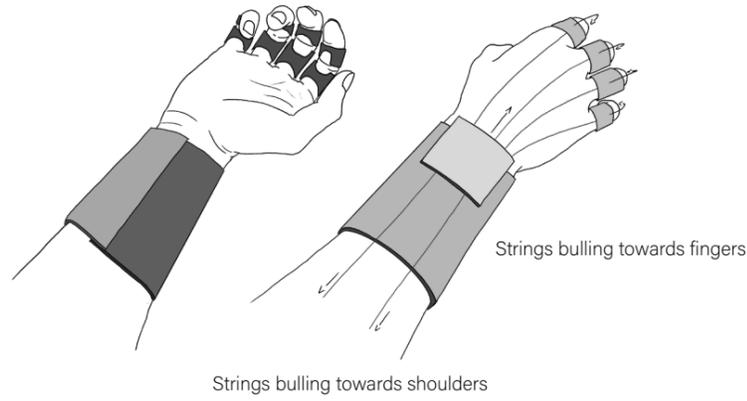


DEVICE ANALYSIS

The mechanism's function deals with elastic strings, in which activates when the hand grips, which pulls the plates upwards to the repective joints they have been assigned to lock onto. Upon release, the plates slide back via the elastic string that is pulling towards the body,

The string is intended to move throughout the whole device, all the way from the wrist joint to the shoulder joint. In which it pulls tension to opposite sides, theoretically allowing for an automated system where the device is pulled back into its original position

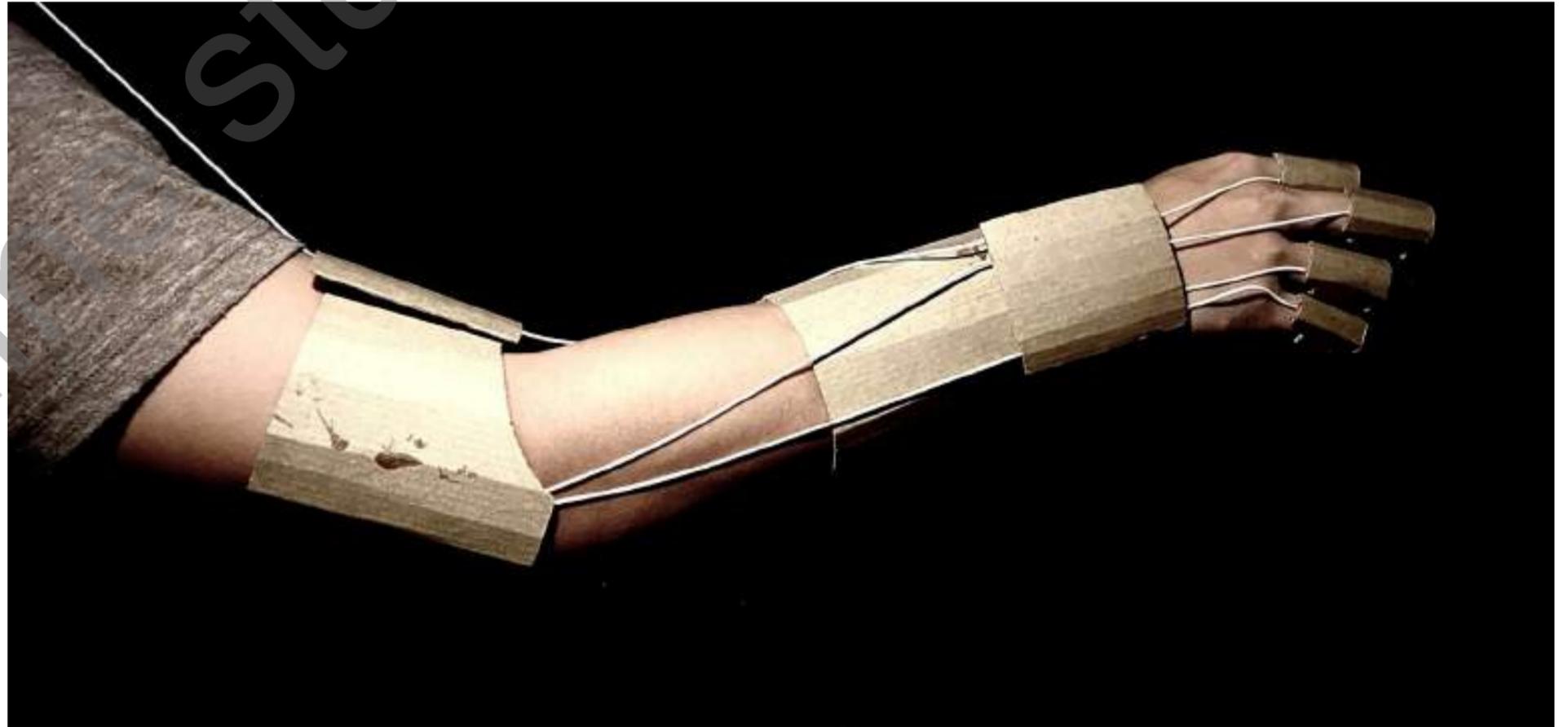
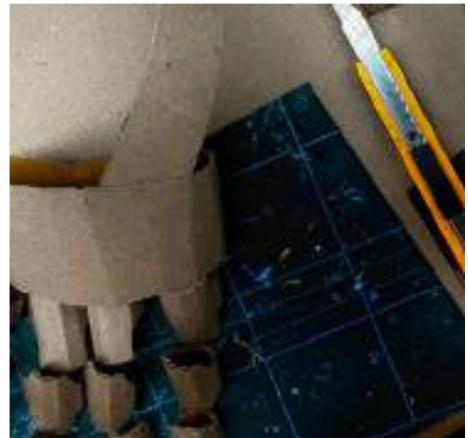
The strings are controlled by the movement of the finger tips,, as when the hand grips, the strings ontract towards the hand, locking the joint, in this case the wrist joint. However as the hand lets go, there is another set of strings that pull the plate back to its original position

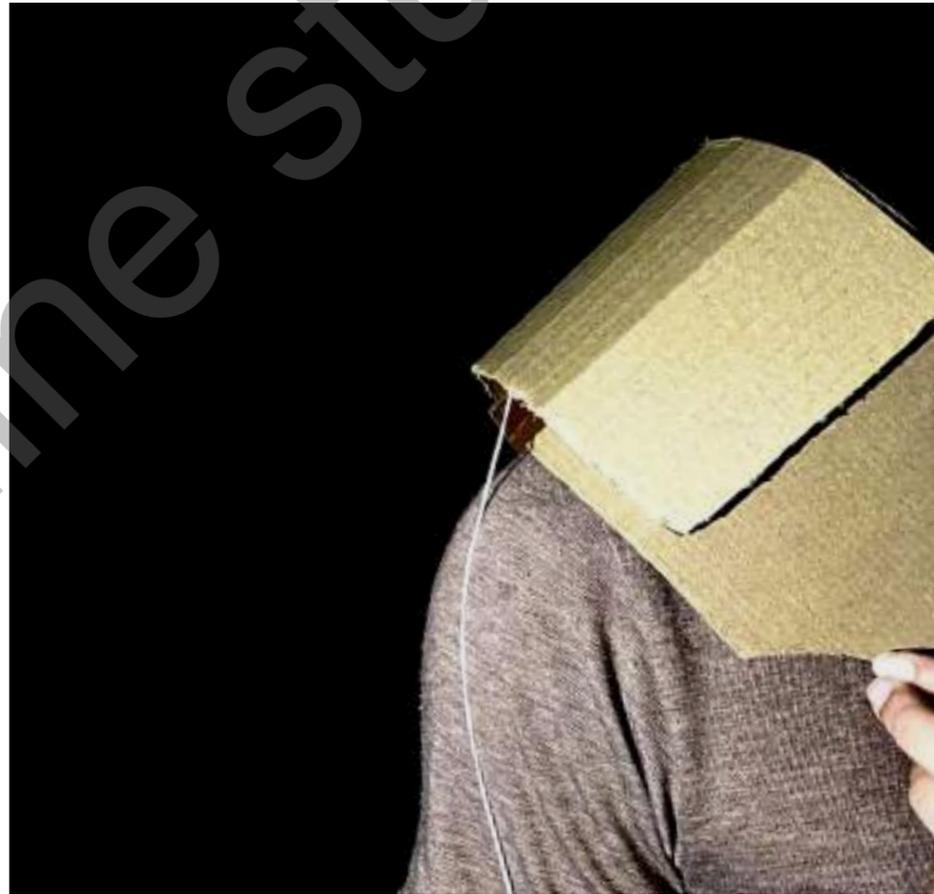


These plates are stationed on the placeholder pieces, and are the pieces that move into position to lock the arm once movement is made from the fingers and wrist

The string tension depends on the length of the string in accordance to the distance between each piece. The strings then either pull in static motion, or are activated by the movement of the fingers

The pieces here are used to act as a placeholder for the moving parts, as well as an anchor point for the static string lines and the blocking plates





05 CAUSTIC LIBRARY

PROJECT CONCEPT

Due to the many negative side effects of people with the visual condition of astigmatism, I had taken the overall concept and anatomy of having a distorted lens, and had applied it to a more positive result of a reading and thinking space equipped for relaxation, focused work and reading spaces,

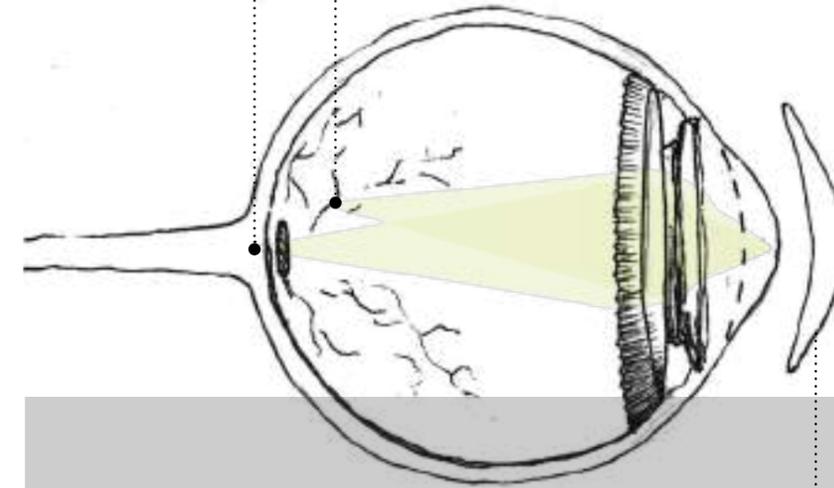


AGSTIGMATISM

The project begun with me questioning of the lens flares in which people experience through the windows of a car during the day and night. With a little research, I had found out that this is often a direct result of the car mirrors, as well as a natural symptom caused by an alteration of the lens within our eyes, called agstigmatism. This led me to more resarch on the topic of agstigmatism, and how vision can be affected by it. Vison could be blurred, and shift in ability to view objects at certain distances, or with more common examples where flares can be caused by such distortions within the eyes, causing negative effects like severe headaches



multiple focal points are created of an agstigmatic eye, causing the blurred vision



Agstigmatic cornea elipse more than a cornea of a normal eye

AGSTIGMATIC EYE

The left shows a diagram of the basic anatomy of someone with agstigmatic vision. We can see that the the front of the eye, the cornea's shape is distorted, becoming more of an elliptical shpe rather than round. This causes the cornea (the glassy material surrounding the eye) to convex further out, which causes direct light entering the eye to distort into multiple focal points, which results in the blurred and layered images that people perceive

As I previously analyzed, agstigmatism causes almost only negative side effects for people who have it. Whether it is significant or not, symptoms still cause people with agstigmatism to experience discomfort, headaches, eye-strains, and constant squinting, just like someone with short or long eyesight, but just more random and inconvenient the worse the condition gets

Because of this I wanted to combat the negative factors of this, and somehow turn it positive in the context of designing a space suitable for functions that relate to the use of the eye and our vision.



READING SPACE

I then had chosen to correlate the anatomy of the eye in relation to reading books, as it is an activity that immensely utilizes the functions of the eye in a more natural way

This resulted in me wanting to design a reading space, suitable for reading in a natural environment, as well as to relate back to the distortions within the lens of someone with astigmatism, and turn that concept into one with a better purpose and to create something useful rather than destructive

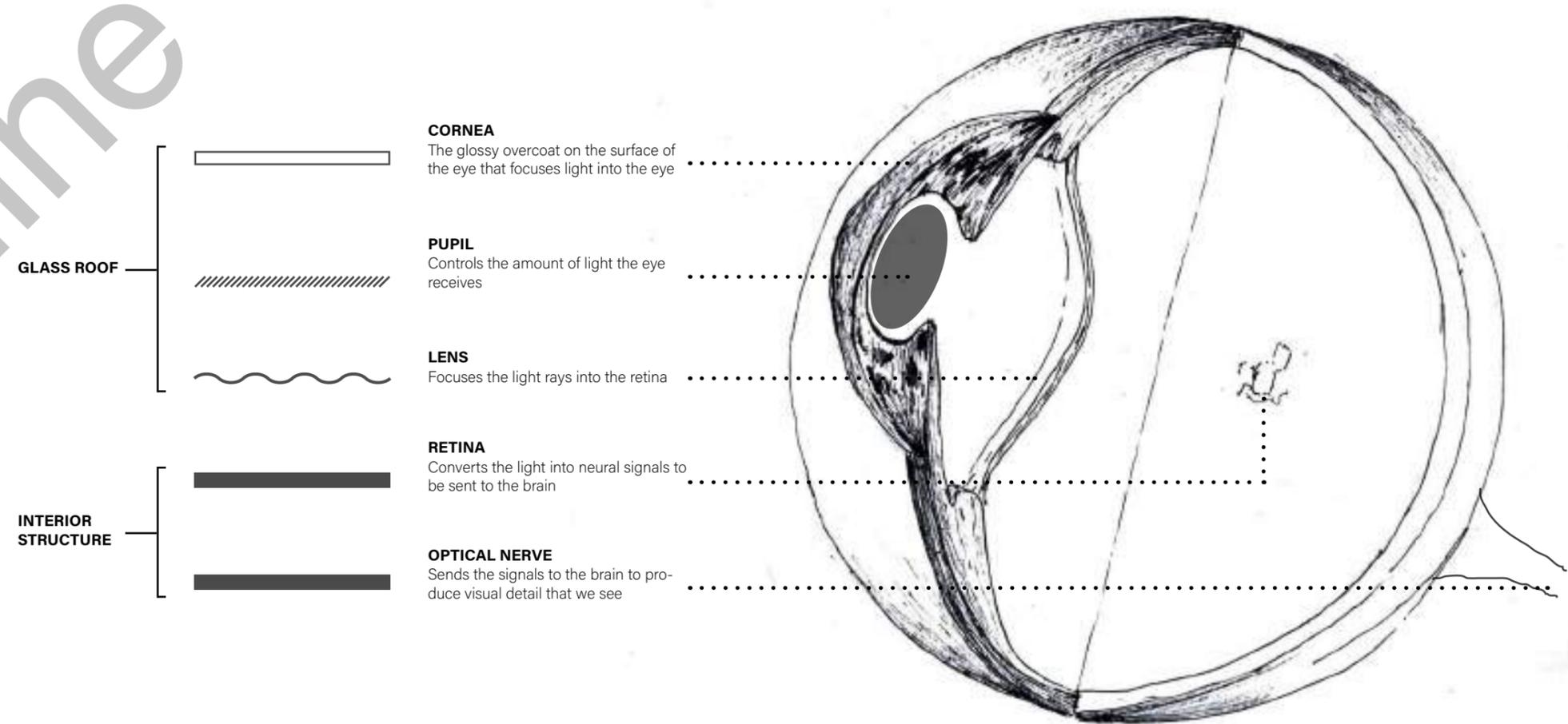


THE EYE

I first identified the basic important functions of the eye and how it works in turning light into images

The steps here would be used to represent how different parts of the structure function in relation to the anatomy of the eye, as well as to how well it functions in creating an atmosphere suitable for a library and reading area

For example, the retina acts as the part of the eye that converts light into neural signals to be sent to the optical nerve, which then sends these signals to the brain where it is converted into signals. This relationship would act as the part of the library that stores books and information



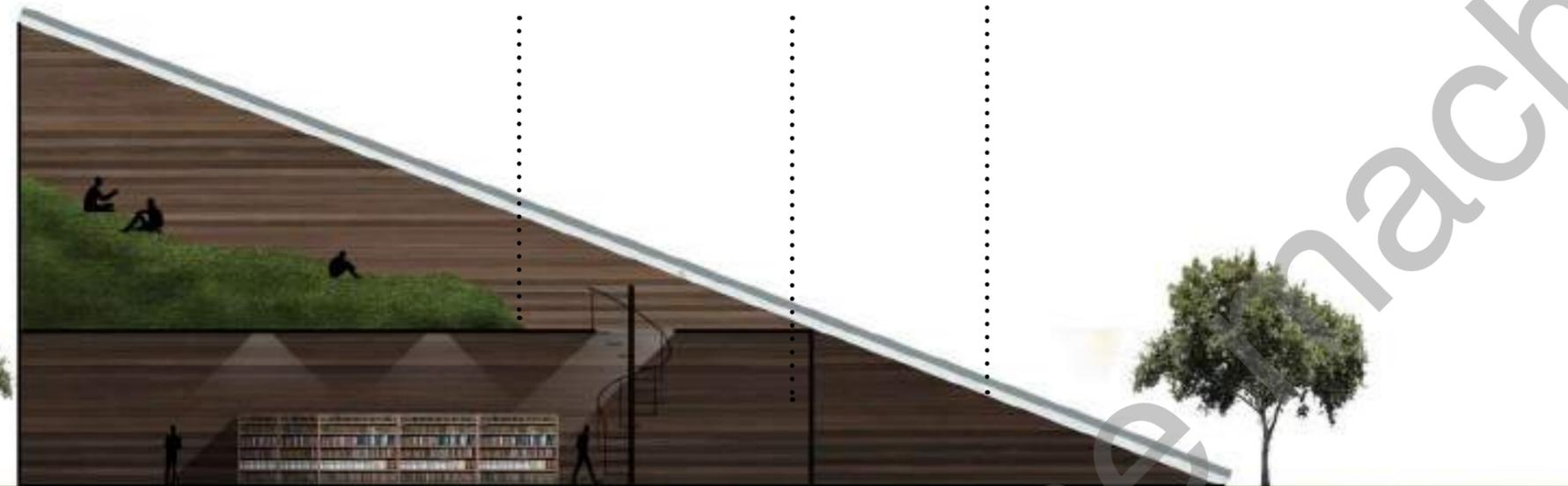
SECTION

The section below shows rough view of the interior structure of the building. Here, the retina and optical nerve from before is represented as the first floor and second floor rooms, the library being the optical nerve as it is the area in which stores information and knowledge, like how the optical nerve sends information and visuals to the brain.

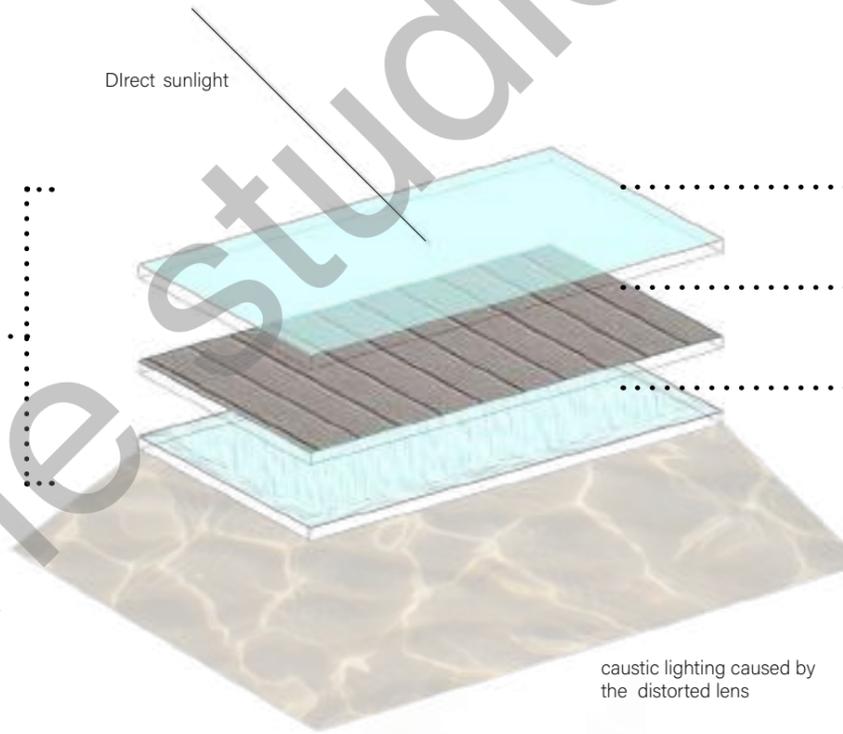
The remaining rooms represent the retina, more specifically the top area as it holds the most light and is guided by the modified glass roof to circulate the light rays into scattered but organized light patterns

The top floor of the library, receives natural sunlight in the form of geometrical caustics, and provides a more natural seating area of artificial grass hills

The bottom floor, holds the rooms for traditional libraries. Having enclosed spaces for more silent and focused reading, and an option for people who chose not to use the space above



Direct sunlight



caustic lighting caused by the distorted lens

The top panel represents the cornea and acts as a transparent glass material that protects the people inside from the sunrays and takes in the light for the panels below



The second layer represents the cornea, and determines the amount of light that enters through the glass roof



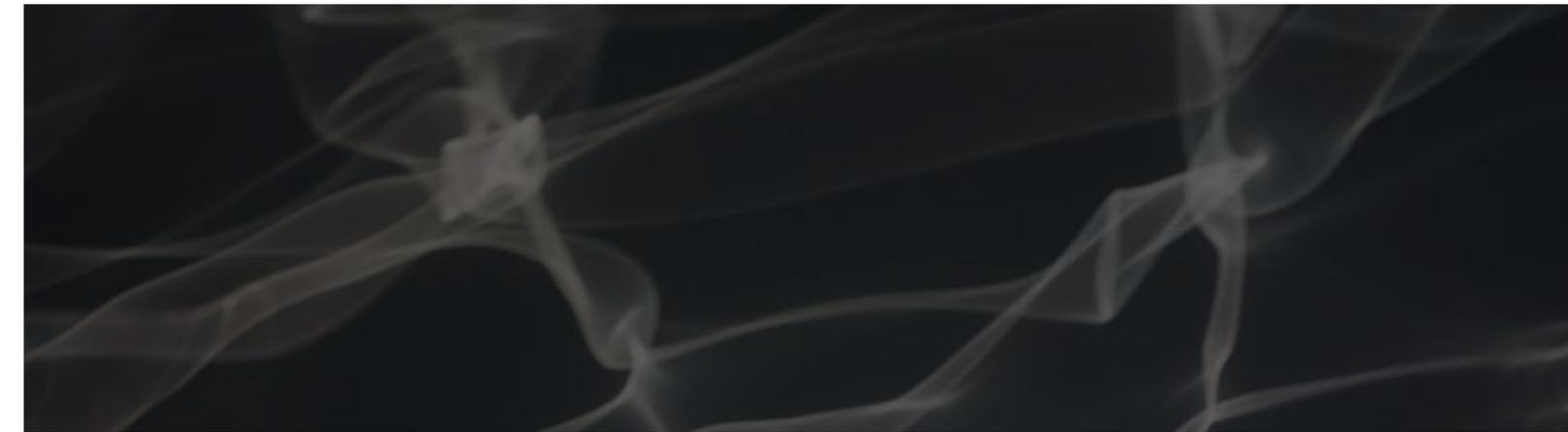
The last panel here represents the lens, and is the main plate layer that causes the effect I intended to have, as the glass would have caustic and rough surface to cause this



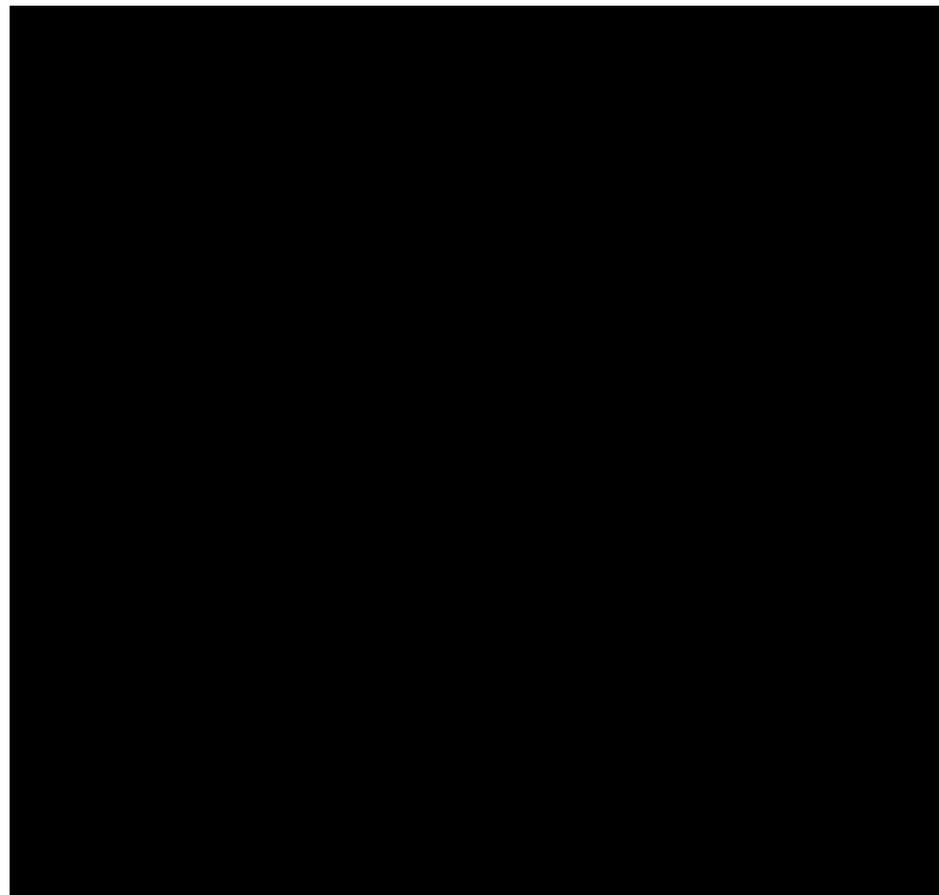
CAUSTIC LIGHTING

The reason that the last panel is most important, is because the panel is the one that causes the caustic like effect. an example of this is shown below, where light rays are tweaked and distorted by the lens, scattering in random but natural and relaxing patterns

The reason for specifically aiming at using the caustic lighting, is because of its natural form, being able to express randomness, while still maintaining a natural feel to it. As well as to scatter natural sunlight of the top floor, which helps with activities overall, and is better for the body and eyes whilst reading.



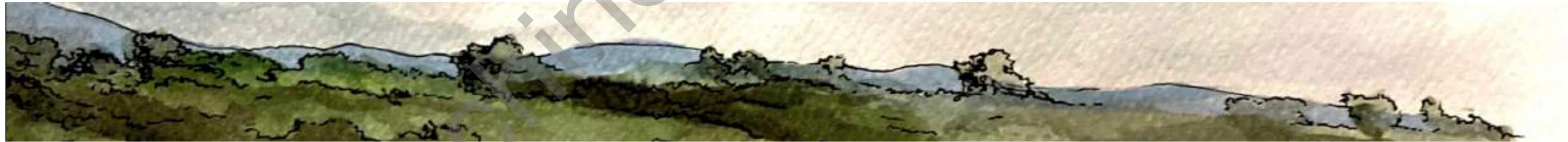




SKILL WORKS

COLLECTION

A collection of my works through out the years, selected from a variety of different mediums





Forest Tranquility, Pen & Ink, 210mm x 297mm



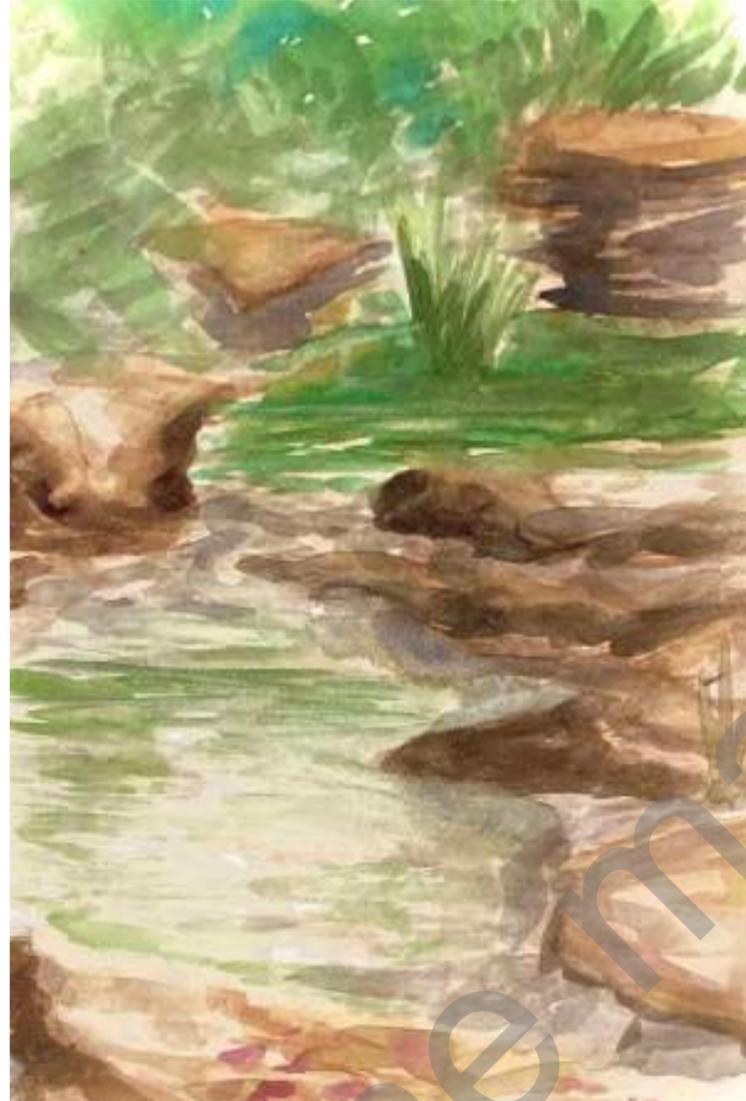
Life's Worker, Pen & Ink, 210mm x 297mm



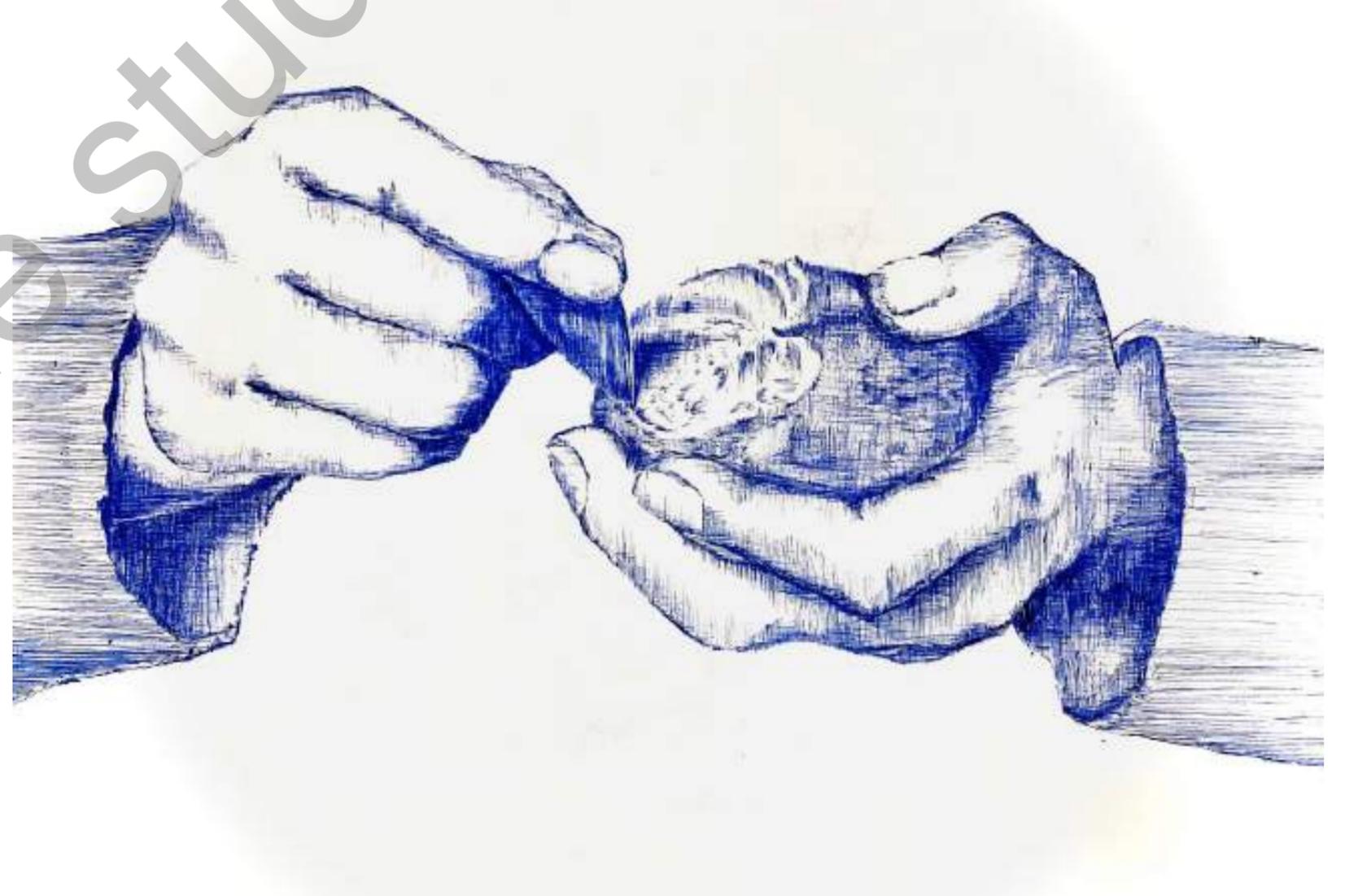
Floating Market, Pen & Ink, 297mm x 210mm



Cafe spot , Pen & Ink, 210mm x 297mm



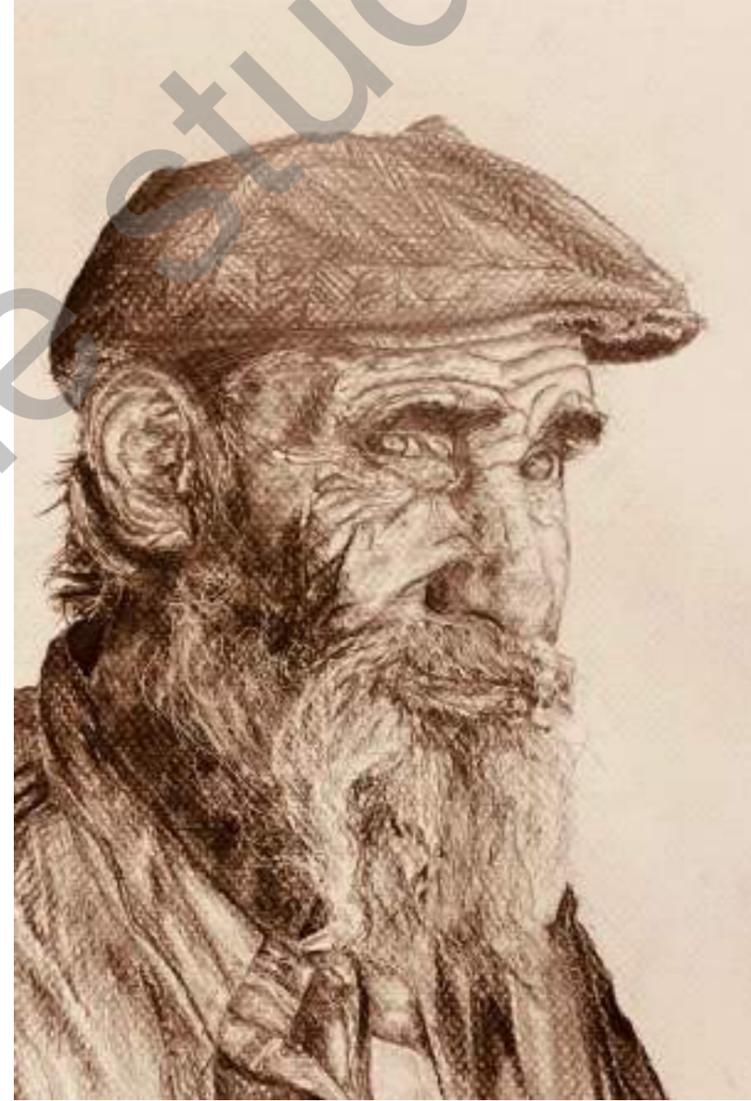
Pond, Watercolor 297 x 210mm



Ballpoint Pen, 297 x 420mm



Ricefields, Watercolor 297 x 210mm



Old Age, Pencil, 297 x 420mm



Digital Painting, iPad Pro



Archetype, Digital Painting, iPad Pro



VENOM, Digital Painting, PC Mouse

time machine studio

time machine studio