

# Component 1 Three-dimensional Design

## Standard Mark – 24

	A01	A02	A03	A04	TOTAL
<b>Mark</b>	5	5	5	9	24
<b>Level</b>	2	2	2	3	
	Mostly basic ability	Mostly basic ability	Mostly basic ability	Fully emerging competent ability	

### Examiner comments:

The candidate's investigation is focused on organic architecture and demonstrates a simplistic and methodical critical understanding of sources which leads to a three-dimensional realisation (AO1). The understanding and exploration of ideas and concepts is superficial (AO2). Visual experimentation with materials presents a deliberate application of the formal elements (AO3). The candidate creates an emerging competent response (AO4) in which they demonstrate a broadening application of the formal elements.

### Keyword descriptors from the taxonomy:

Deliberate                      Simplistic  
 Methodical                    Broadening  
 Superficial

**Subject:** Three Dimensional Design - Architecture

**Module:** Component 1

## **Project 1**

**Theme:**

# **ORGANIC ARCHITECTURE**

**Context:**

To create a building that fulfils a purpose in society. The design must incorporate the theme of 'NATURAL STRUCTURES' as the main inspiration. You will also need to consider sustainable design as an other important aspect of this project.

The design will need to consider the specific environment/location it will be situated and considerations on suitable structural and material factors should be addressed.

A prototype model of the building, along with technical drawing and realistic 3D visualisations, will need to be presented as part of the final proposal.





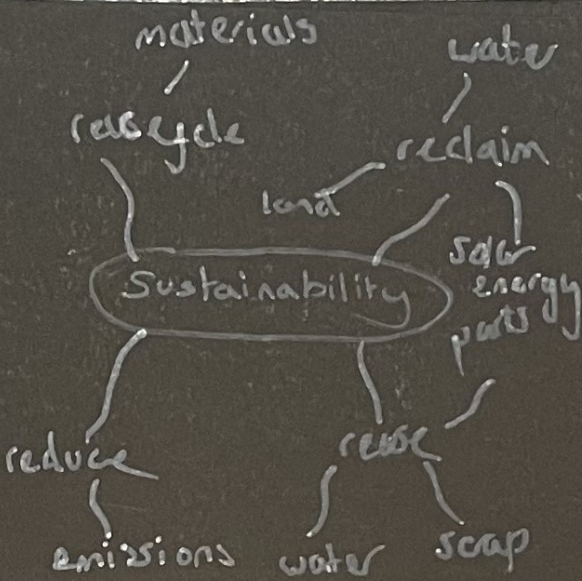
PERSONAL  
RESPONSE

I think organic architecture is a good project because of how much freedom we can have because of the broad spectrum of nature. From sea to land, there is so much possibility. I can base my designs on flowers, water, plants ect. I already know I want to focus on greenery and plants. For my project I want to focus on stems and leaves. My initial thoughts are greenery where mental health sufferers can go to calm down as studies show that greenery helps. My ideas are for my building to be situated in an urban area. The secondary idea is for nature such as bugs, birds and plants to live on it's green living walls. The roof will be about like a forest floor for creatures to live in.

My building will aim to have 0 carbon emissions by using sustainable power sources.







NATURAL  
 DESIGNS

re.  
 I want nature  
 I can  
 an rounded  
 ape of  
 make  
 building.  
 help

Small plants



water  
 coral  
 textures  
 animals  
 reptiles  
 scales  
 ge.

PURPOSE IN  
 SOCIETY

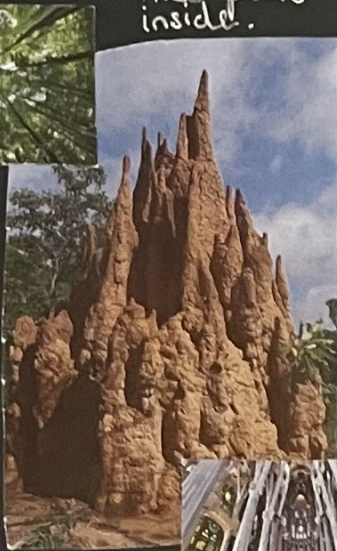






architect -  
Antoni Gaudi

I like the tree-like posts inside.



Gaudi's Sagrada Familia looks to be based on termite mounds, this could be the case but we'll never know because he's dead.

It is based on tree canopies, this is apparent while inside as the posts mimic trees.

SEGRADA  
FAMILIA

I like the way it is essentially a termite hill.  
Barcelona  
Spain



I like this design because they've folded the steel to really replicate the design of the birds nest. I also like that they have spaced out the steel for a view inside of the building.



Ai Weiwei's stadium design is based on a birds nest and twigs.

I love the way steel is folded to mimic branches in a nest.

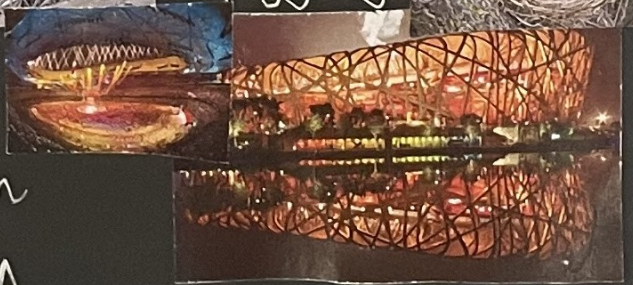
It works well because a birds nest is circular in shape, perfect for a birds nest based stadium.

Architects -  
Ai Weiwei  
Li Xinggang



BEIJING  
STADIUM

Beijing  
National  
Stadium  
BEIJING  
CHINA







Architect -  
Norman Foster.

I don't really like the building as a whole, but it does have a nice use of glass.



The Gherkin

Norman Foster has used a gherkin as his inspiration.

It has the same shape of a gherkin by the way it gets narrower as you get higher up the building.

THE GHERKIN

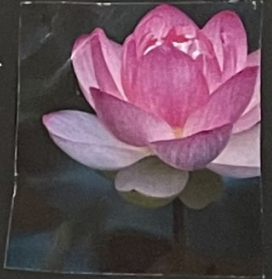


could develop my research by researching other organic structures.

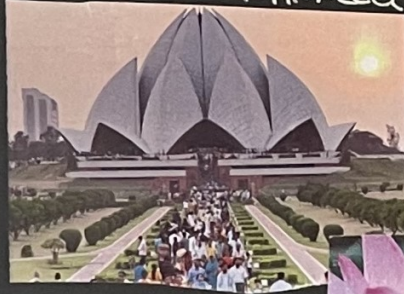
London.

this picture is great because it has captured the shape of the lotus petals very well, even if I didn't know it was based off a lotus. I'd know those were petals.

I like the way that the way the petals are mimiced.



the purpose of this page is to identify the natural design techniques used in famous architecture world-wide. I will further research the architect and their work so I can gather inspiration and take it forward for my own designs.



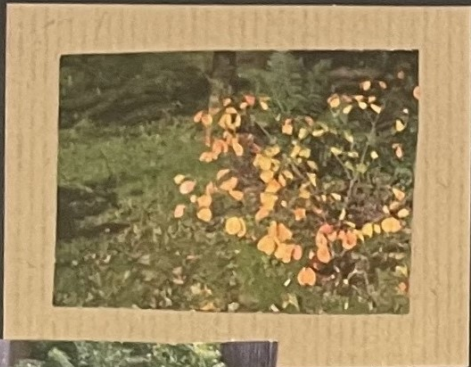
Architect -  
Fariborz Sahba.

Lotus Temple.  
Dheli.  
India.

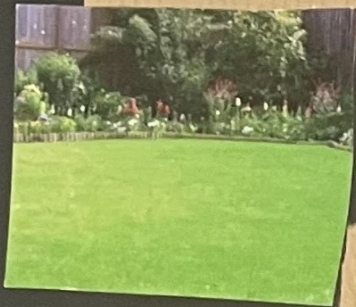




Rigid, non-symmetrical



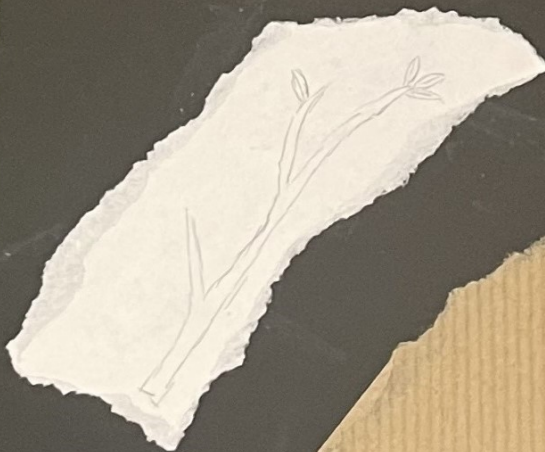
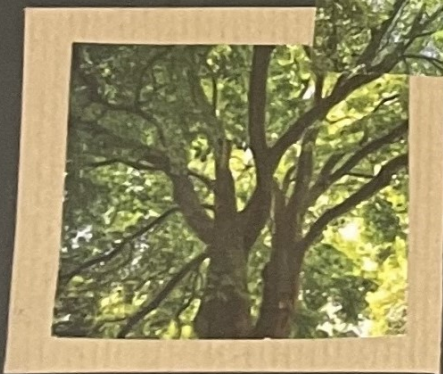
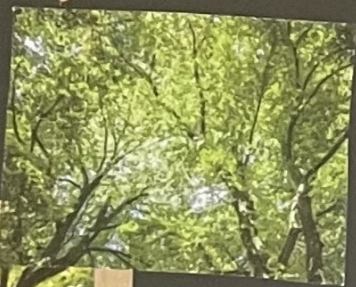
I have chosen to take these pictures of tree canopies and branches and clusters of trees. I did this because it links with my critical study on Antoni Gaudi. Antoni Gaudi focused on these natural forms.



Observational Photos

This will help me in the future as I can see how branches form in a canopy and in turn help me design

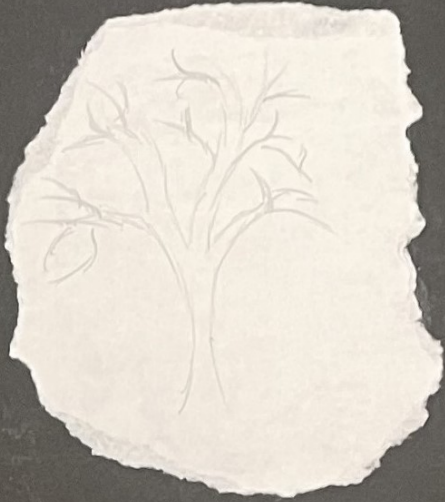
Patterns of curvature



branch







Sketch of tree  
curves in shape  
like the photos  
I included



Sketch of  
branch

more  
curvature  
in shape



# CRITICAL STUDY



Bolegas Güell



Park Güell



Antoni Gaudí was born on the 25<sup>th</sup> of June 1852 in Reus. He came from a family of boiler makers, a fact that allowed the young Gaudí to accumulate a unique talent for working with things as he worked with his family in the workshop. His talent for design grew until he later became the 30 genius he is now.

Segrada Família



Casa Milà



With this page, I hope to discover the natural forms Antoni Gaudí uses in his architecture that I could take forward in the project. I can take the natural forms I find from researches into Gaudí and take it forward

Algeria	Sunny	28	Paris	Cloudy	28
Amsterdam	Cloudy	25	Prague	Sunny	25
Athens	Sunny	29	Rome	Sunny	29
Auckland	Fair	18	Seoul	Sunny	20
Bahrain	Fair	27	Shanghai	Sunny	27
Barcelona	Fair	23	Singapore	Sunny	23
Beijing	Cloudy	23	Sydney	Sunny	23
Bombay	Sunny	30	Taipei	Sunny	28
Buenos Aires	Sunny	20	Tokyo	Sunny	20
Calcutta	Sunny	27	Yokohama	Sunny	27
Cairo	Sunny	30			
Canton	Sunny	27			
Cebu	Sunny	27			
Colon	Sunny	27			
Hankow	Sunny	27			
Hongkong	Sunny	27			
Kobe	Sunny	27			
London	Sunny	27			
Lyons	Sunny	27			
Manila	Sunny	27			
Peking	Sunny	27			
Shanghai	Sunny	27			
Singapore	Sunny	27			
Sourabaya	Sunny	27			
Tientsin	Sunny	27			
Yokohama	Sunny	27			



Casa Batlló



Cumbria, 0c (32). Wettest: Leek, 0.94ins. Stafforcsire, 0.94ins. Sunniest: Leuchars, Fife, 10.8hrs.

hotel no 2016

Farah's spokesperson says the claim is 'utter nonsense' and that she has never met her.

MORNIN

Farah

World yesterday

to ease the trapped local national devel- goingh to divert the of their. A diplo for foreign put on forelgn devel- ment (DRI) cono and local We r

Sees in

Murra pain- eyei

long w around 100. The money can't be taken home, denying their children's the

Eight years ago a wider sug- resented that the state should impose a cap on the value of people stepping in to pay the state. The cap has not been implemented.

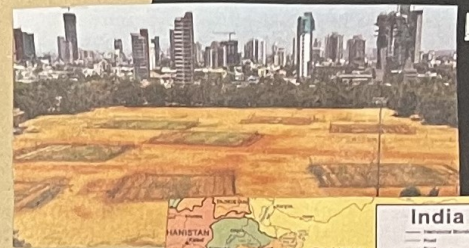
Victoria Allen  
Science Correspondent

are above a healthy weight at a heightened risk of developing ten out of 12 severe conditions. These include stroke, failure or an irregular heart rhythm, sleep apnoea



# Shivaji Park

My proposed building is a recreational community centre space designed for anybody to use, my building will be designed to be eco-friendly in a dense urban environment. I feel this is important in an urban environment to keep people happy. The type of people who will be using my building will be nearby people with jobs as it can be somewhere they go during their break or after work.



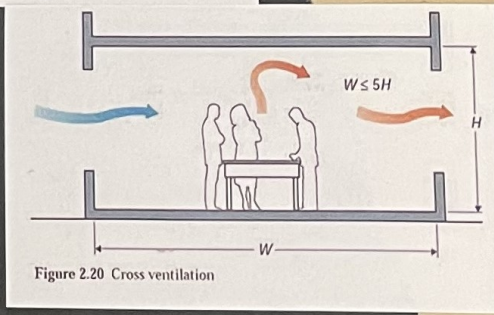
My building will have a positive impact on society, as it will providing an essential space for people to socialise, work, volunteer and learn new skills. It will be a space for community events and opportunities, this will positively impact people living near by.



My building will be located in Mumbai, India. This is because it's a densely populated area so my buildings function and usage would work well here. In Mumbai, It will be located in a small park dividing the city centre and the residential areas. This will allow anybody to come to the community centre no matter where they are in the city as it will always be a short distance away.

My building will be sustainable as it will incorporate many essential features, such as insulation to prevent using central heating in the winter, cross ventilation for free ventilation in the summer, energy efficient appliances inside, energy efficient LED bulbs inside, water collectors on the roof to use as much natural water as possible and multiple skylights to promote natural sunlight use.

# Mumbai



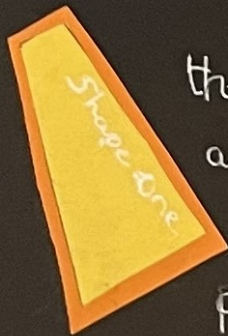


for my building design  
I will make a Young  
space in the slums of  
Mumbai. It will be a  
place for people to eat  
and rest between  
their shifts.

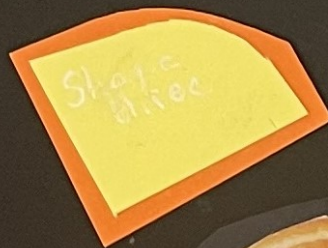


## Focused Inspiration

I have chosen to focus on orange segments because I can extract some of the many geometric, natural shapes of the orange and implement them to my floor plan. As you can see my shape 1 is the shape of a single segment, shape 2 is in the shape of an entire orange slice or a half but side view

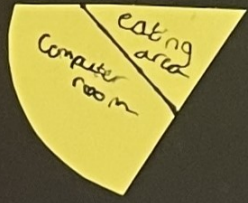
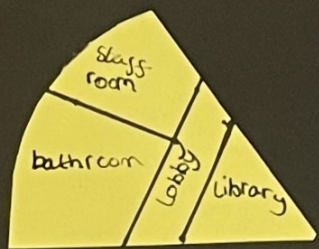
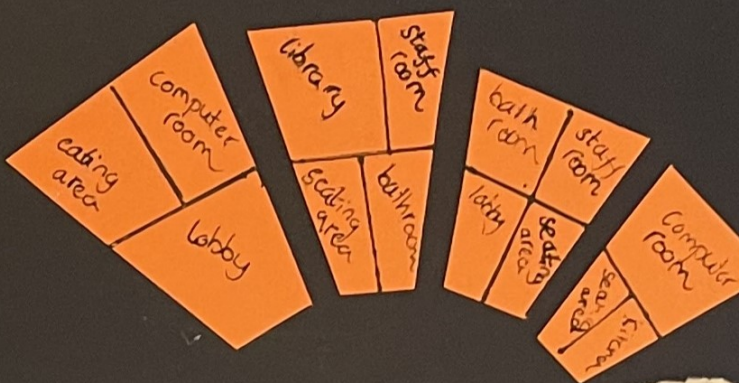
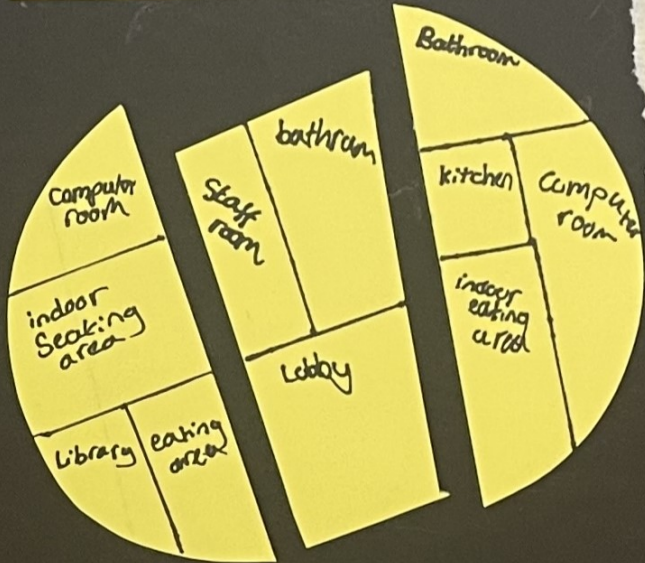
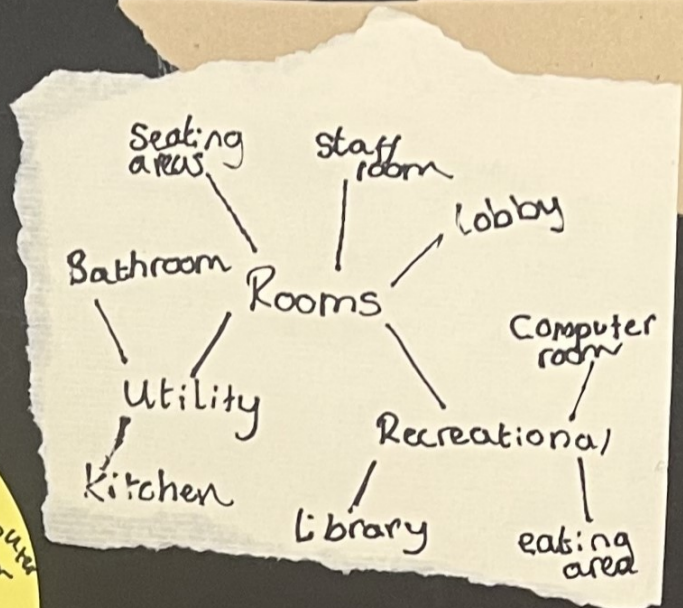


these two shapes are what I have extracted from pictures of orange segments





# Footprint Layout Experiments





Internal  
Layout  
Experiments

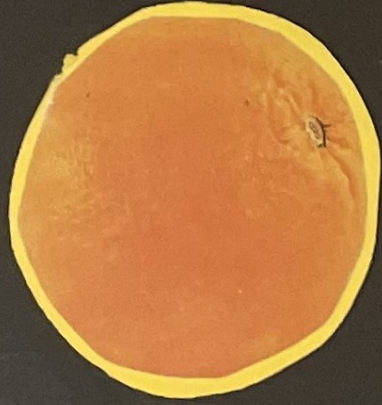
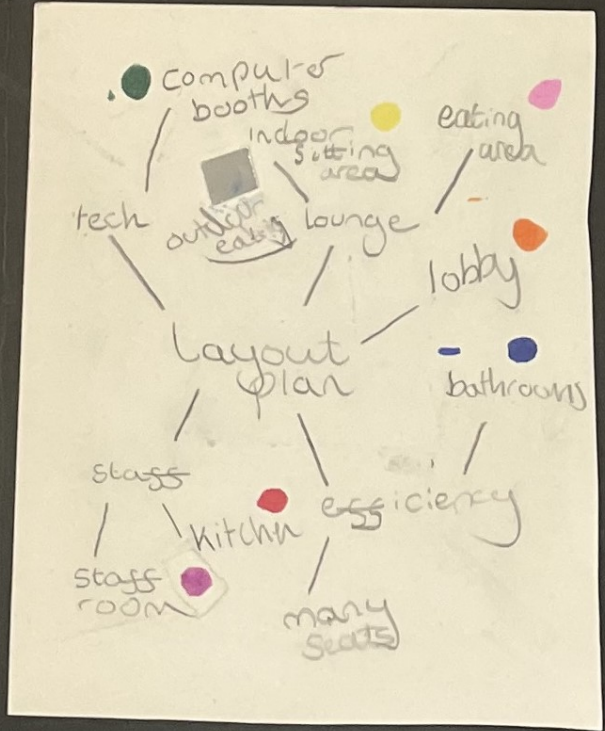


My favourite design by far has to be the one below. I like it because it consists of just triangles. It's inspired by slices of oranges

I inspired my designs all on oranges. I took the shape of individual slices into account when coming up with my layout



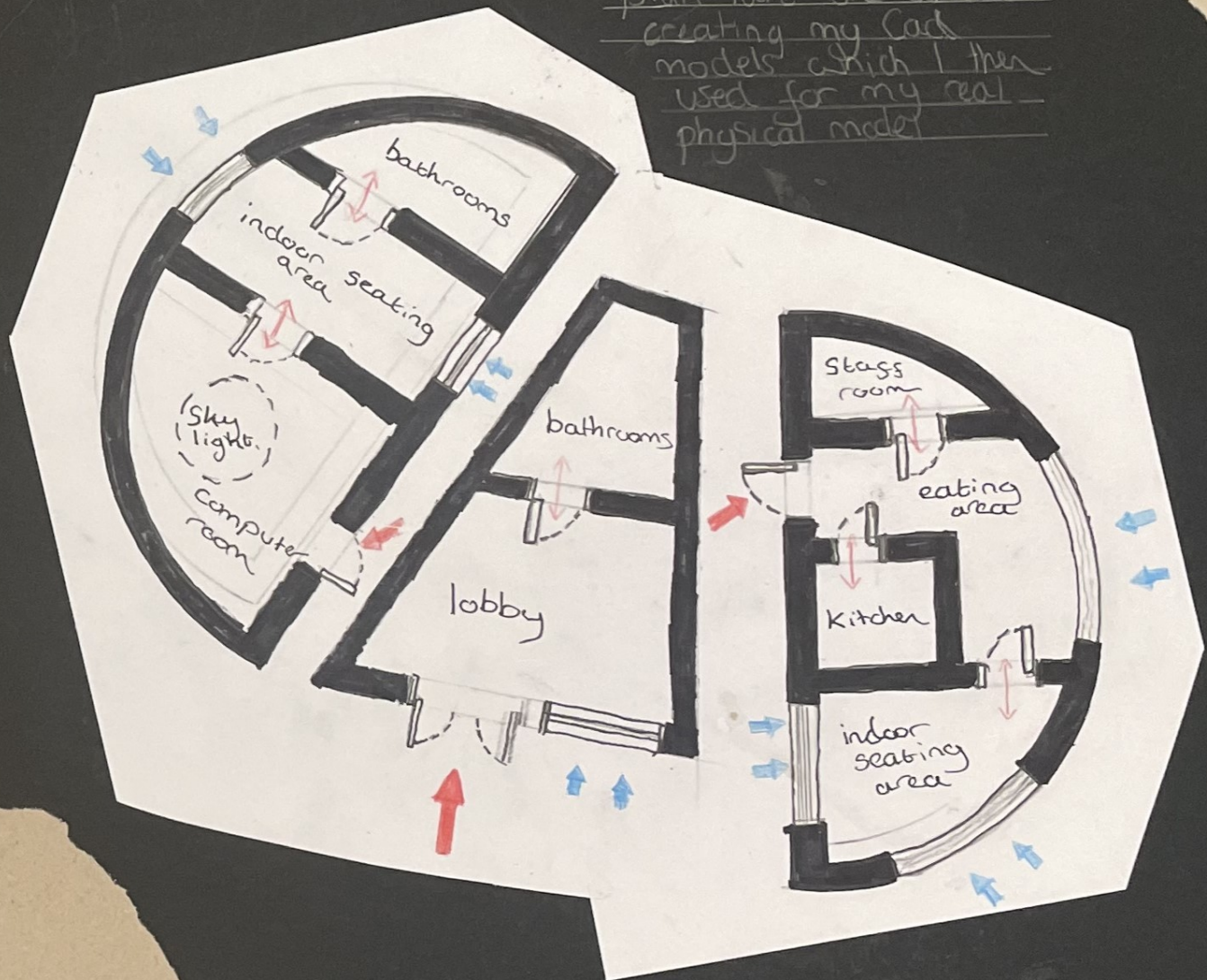
Spaces  
in my  
building





# FINAL FLOOR PLAN

I used this floor plan later on when creating my Card models which I then used for my real physical model





# 3D VISUALISATION

## & SCALE

### concept 1



This design is great because it hides a lot of the empty space behind it, while also maintaining a clear view of the treeline. I like how the middle room on the right building the tallest and doesn't repeat that on the left. It gives the structure an irregular feel.

This design fits into the surrounding area because it doesn't ruin the surrounding park because it isn't boxy. What I like about this design is the clear variation in heights of each room especially the kitchen however I don't like how chunky the middle building is.

### concept 2





concept 3

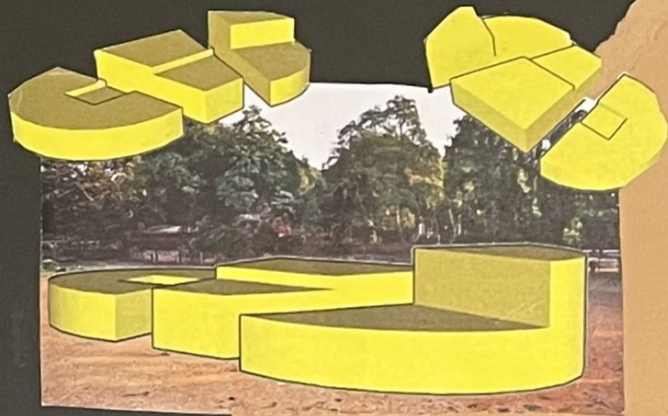


I like this design is that it looks not too boxy and not too uniform, it's definitely a step up from the yellow design that had one level.

This design may or may not fit into the surrounding area because on one hand, it's sleek. The low design gives a nice view of the trees, but on the other hand the lack in variation makes it look weird.

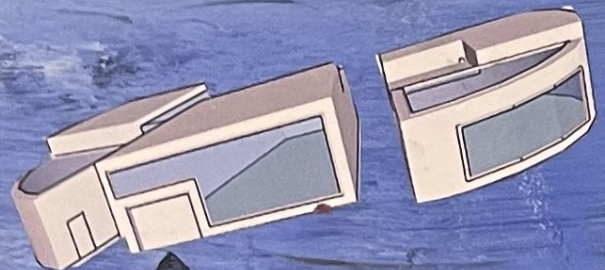
concept 4

the main purpose of this page is to compare 4 different variations of the same building to see which one i'll take forward.

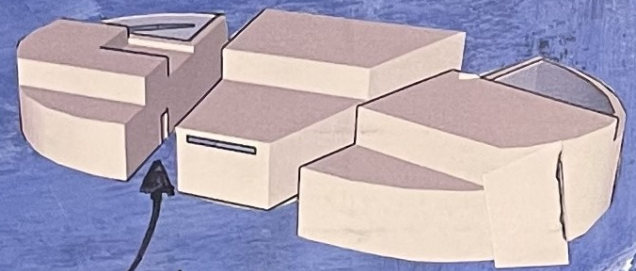




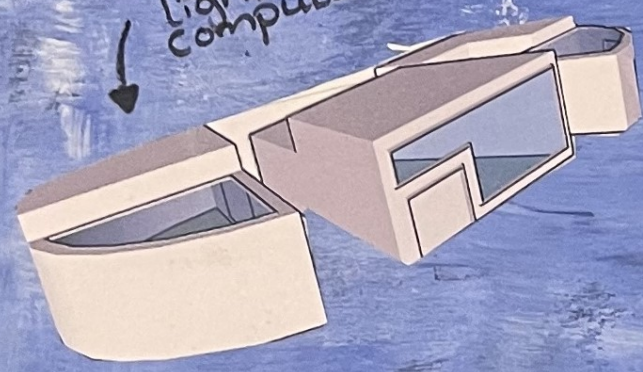
# 3D Concepts



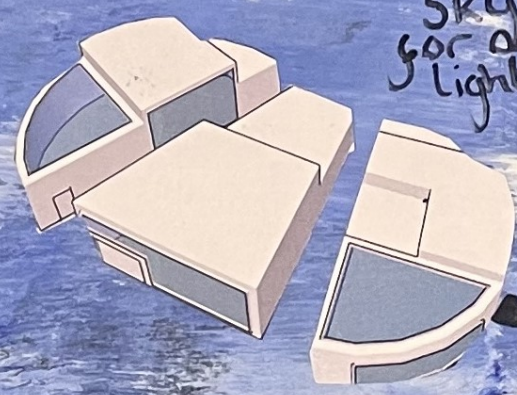
main entrance to lobby and toilets.



small entrances to the two buildings either side of the main one.



skylight for natural light in the computer room.



skylight for natural light in seating area.

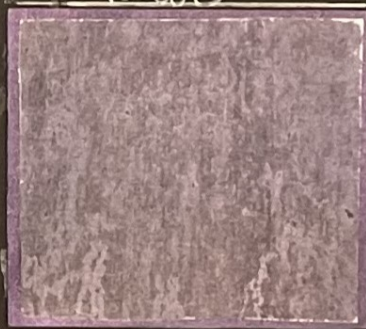


# Materials Research

Brick



Concrete



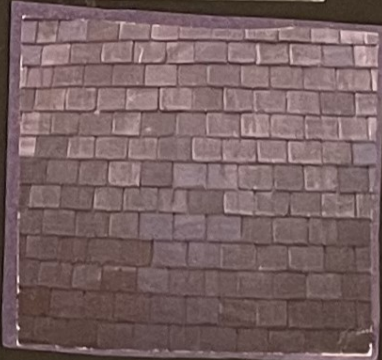
Zinc Roof



Stone Brick



Slate



Steel Roof



Stone Bricks are good as they will stand out because they move away from the uniform green and brown of the surrounding area.

Slate roofs, similar to stone, though hopefully, it will be dark enough as to not ruin the green tall tree line above while also providing a new colour to the area.

Metal roofs are good because when they rust, they add a nice new colour to the surrounding green and brown area.





Cladding

• The cladding here is made by gluing thin strips of veneer. I chose to add cladding because it's cheap and can be appealing to look at. It's not over-used on one building.

Concrete



• I have created my concrete from grey foam. Concrete is a good material to use in my design because of how it's cheap and easy to make.

Steel Roof

My steel roof is just painted veneer. The steel roof is a concept for my building as it would sit well.



Zinc Roof

• My zinc roof is made from strips of aluminium. It's to stand out against the dull nature surrounding it.

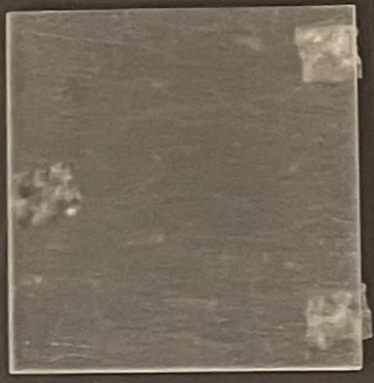


Bricks

• I have made bricks by carving brick designs into grey foam then painting over it with red and brown paints to create a red brick colour on top.

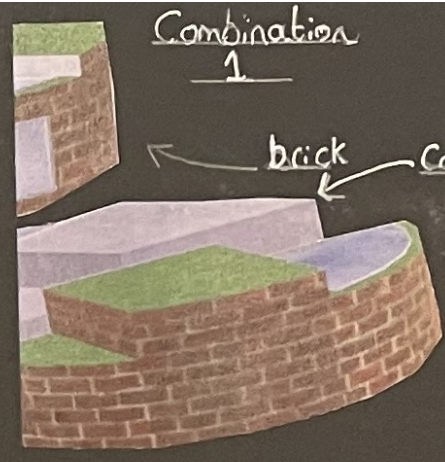
Frosted Glass

• My frosted glass is sanded down clear acrylic. I decided to add this because the area my building is, is quite populated so privacy is a must in this area.

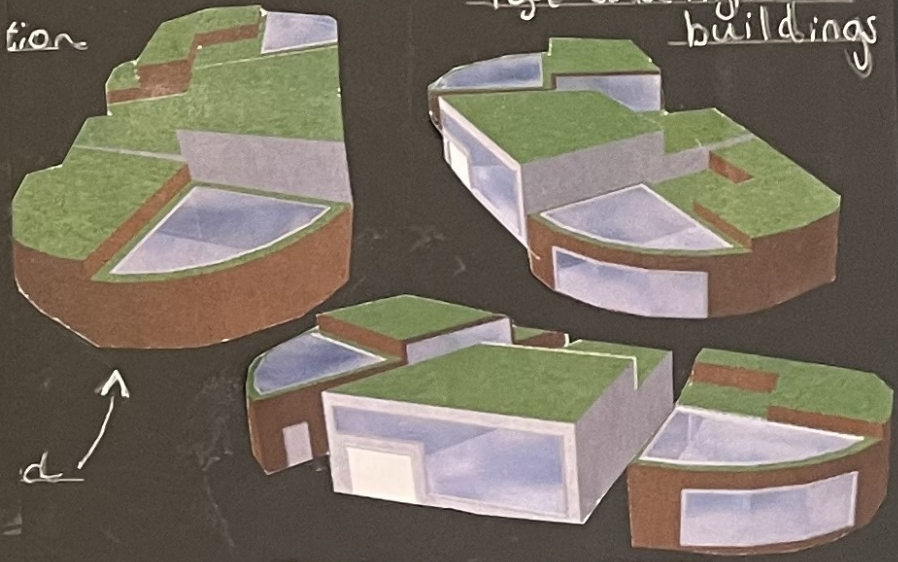




Material combinations

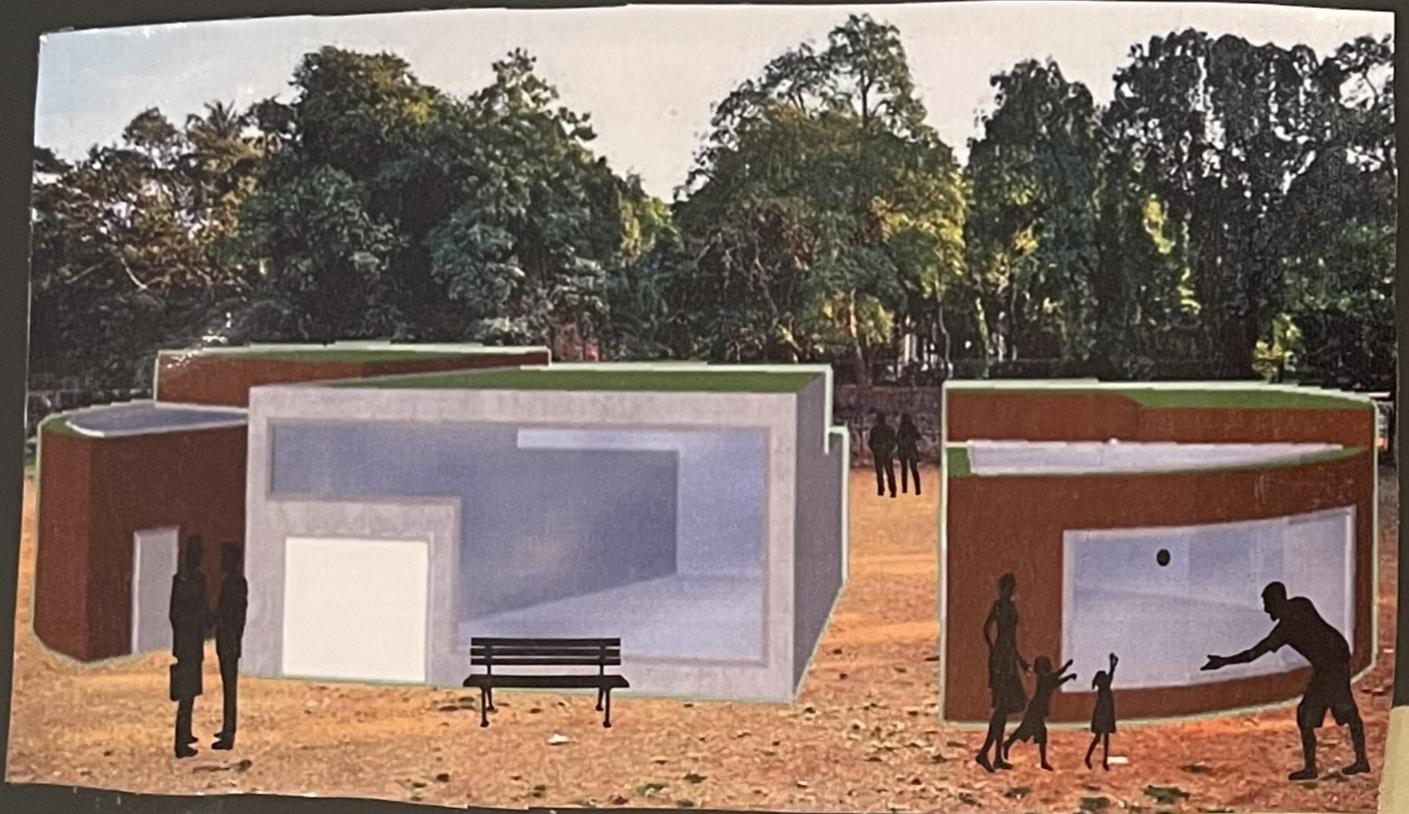


Combination 1 is made from brick and concrete with a living roof on the left and right buildings



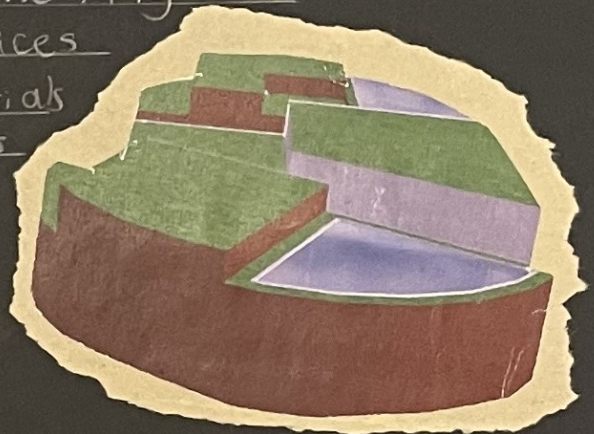
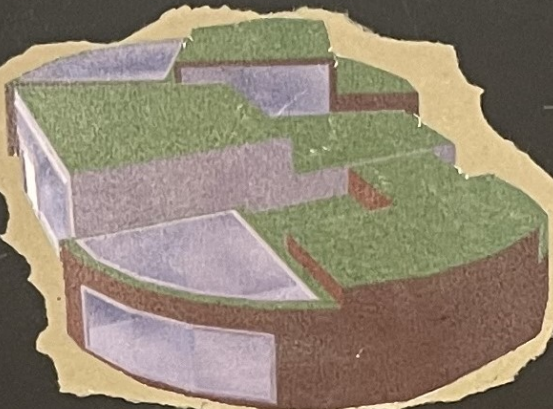


# Final Visualisation

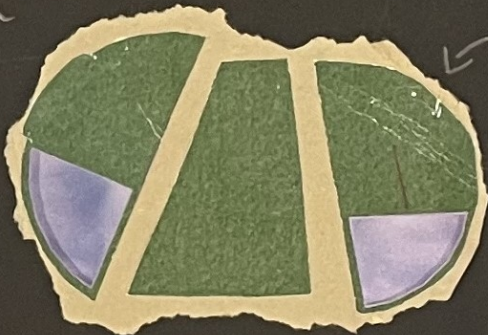




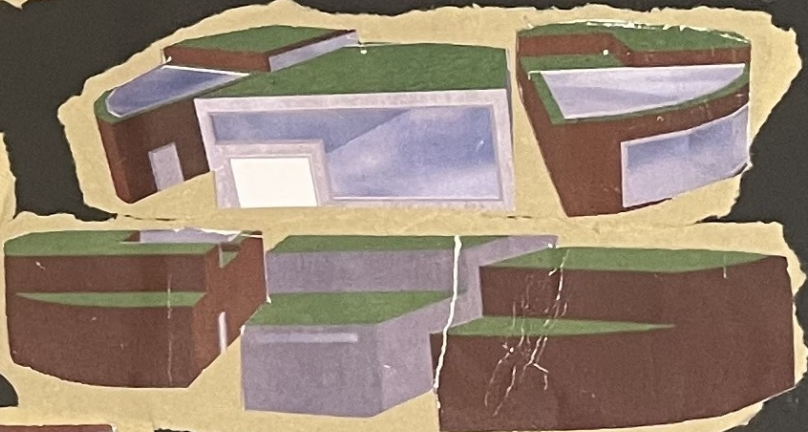
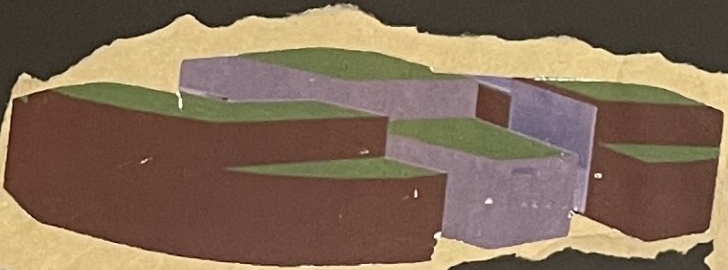
My whole building overall reflects the organic nature theme. My colour choices and materials reflect this.



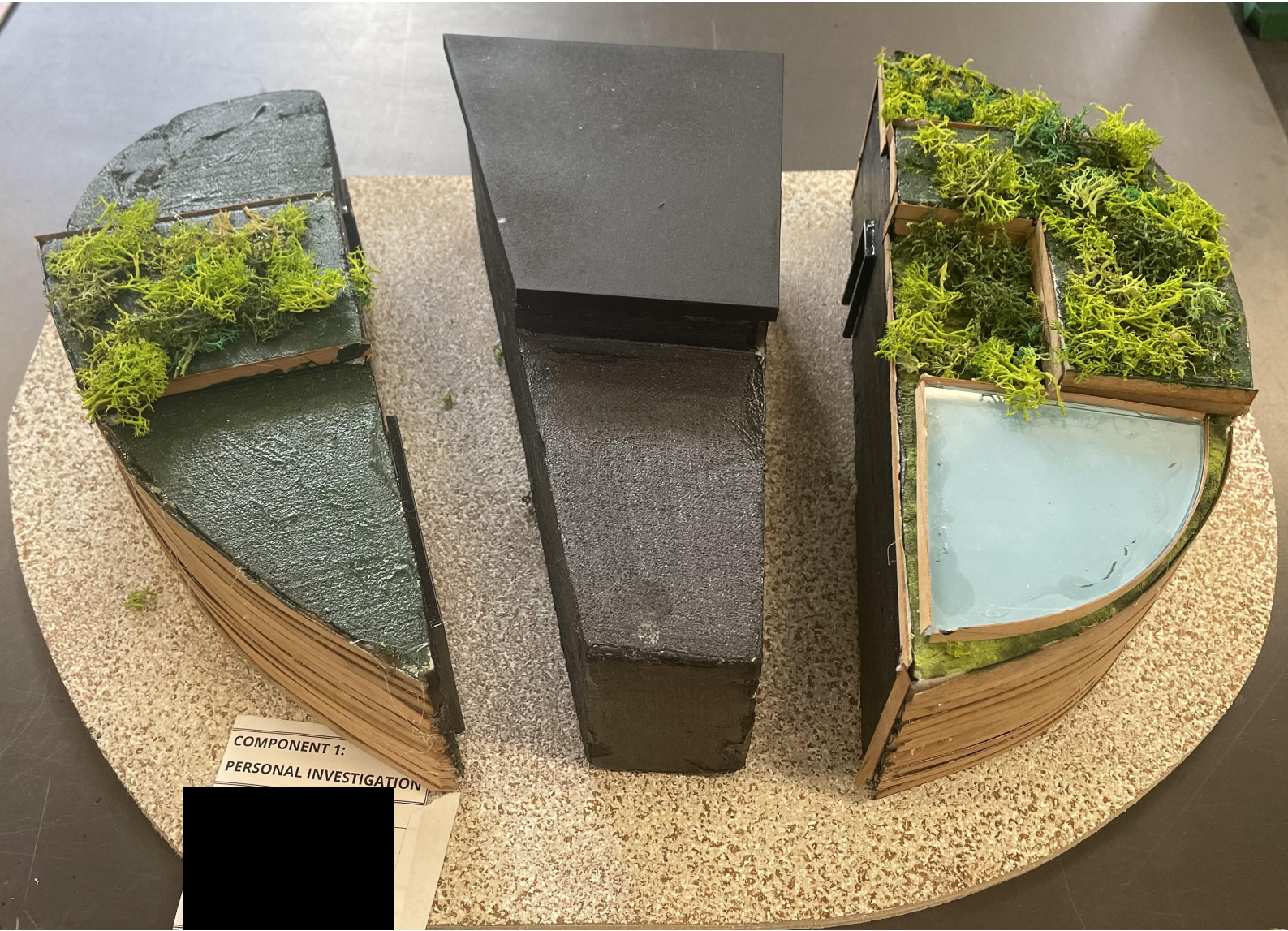
I have also used a brown to mimic the brown colour of the wood on the trees around the park.



I have used living walls to allow the building to blend into its natural park greenery. Shown in the 3D visualisation on the prev page.

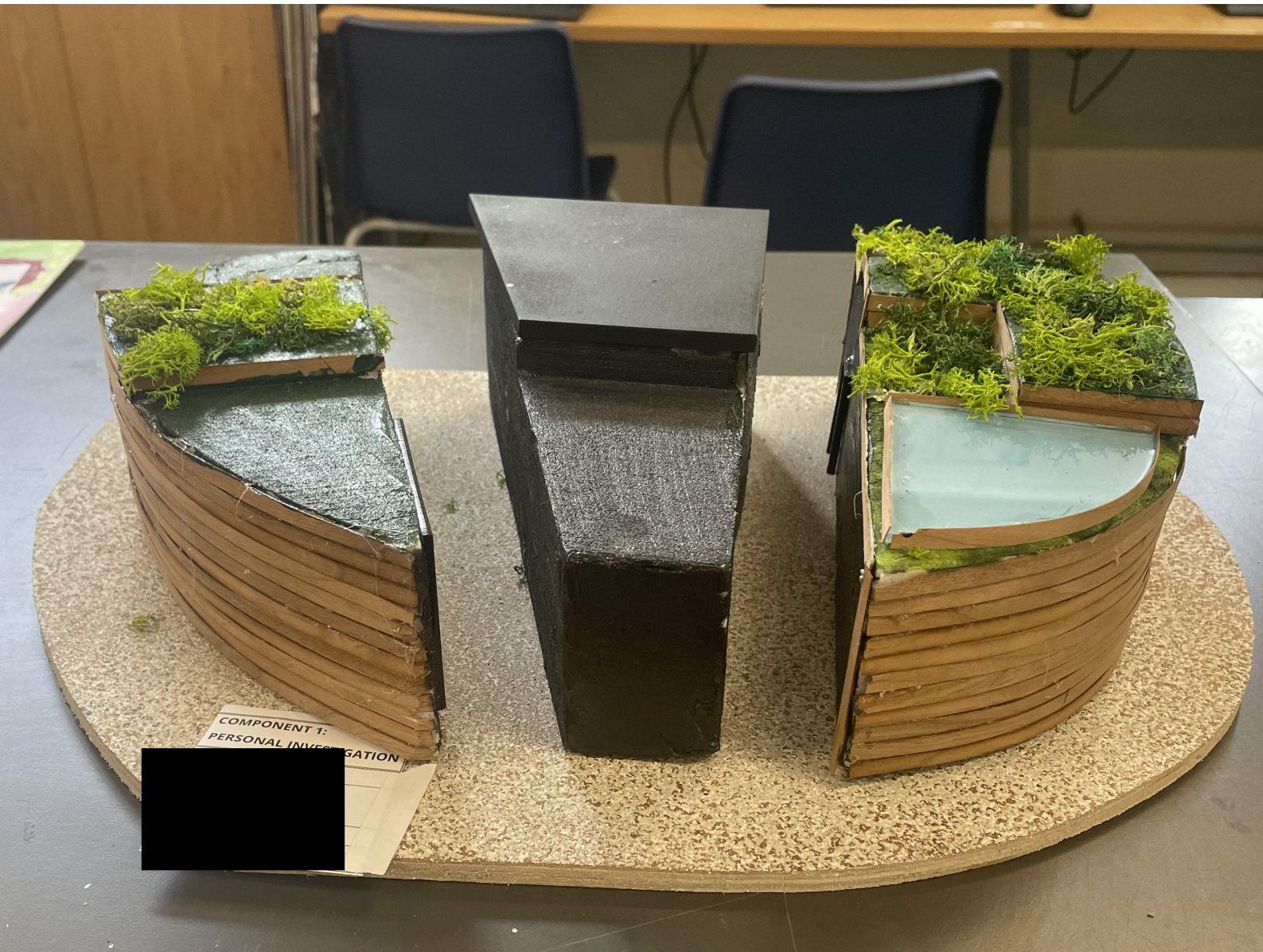






COMPONENT 1:  
PERSONAL INVESTIGATION



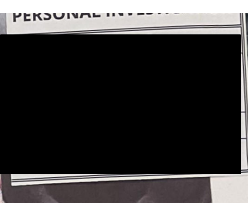




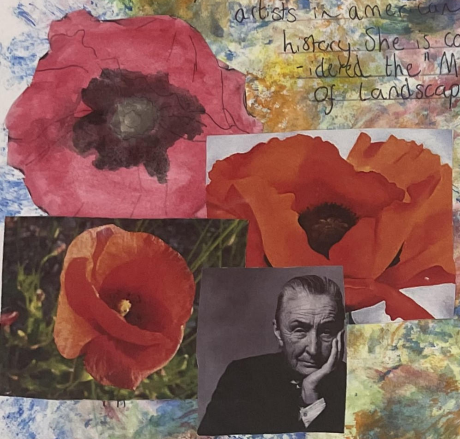
O'Keefe was born Nov 15<sup>th</sup>, 1887 on a wheat farm in Wisconsin USA. Her parents had 7 children. O'Keefe was the second of the 7. O'Keefe was known as one of the most influential artists in American history. She is considered the "Mother of Landscape art."



Here I have drawn a flower, and a flower O'Keefe used quite frequently in her art, a hibiscus flower. I added depth with my lines, also how O'Keefe used to draw with detailed line work.



'Black Iris'



In my painting O'Keefe has had a large influence as I've mimiced the use of sketching up the work before using paint. I've clearly set defined boundaries for the colours I've used, just as O'Keefe did in her artwork.



'Hibiscus with Plumeria'

O'Keefe's art work is considered one of the pillars of modernism, her unique style mostly focusing on very colorful things such as landscapes and flowers assured she'll be remembered forever. O'Keefe used a range of techniques in her work. She used pastel colours, charcoal, watercolours and oils to produce simple yet amazing art work.



'Lake Georgia'



'Oriental poppies'