

Locating Practice

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Rationale

This project was created due to the lack of information about exhibition displays and the lack of sustainable displays within the art world. The idea is to create sustainable Exhibition displays, not just to make them sustainable in the way they are manufactured and used, but to create an experience where the creation of these displays are a part of the exhibition. Therefore people would be able to go into this exhibition before it is launched and view the way these displays are being created, which will educate people on ways that objects can be created without having to use the factories and processes which greatly affect our planet.

2020 Proposal

Project Growth

By Teo Ramallo

01

Introduction

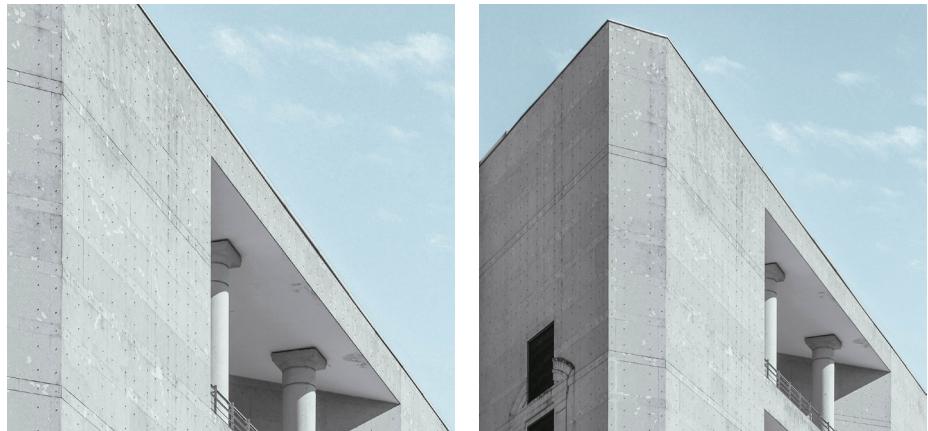
This project was created due to the lack of information about exhibition displays and the lack of sustainable displays within the art world. The idea is to create sustainable Exhibition displays, not just to make them sustainable in the way they are manufactured and used, but to create an experience where the creation of these displays are a part of the exhibition. Therefore people would be able to go into this exhibition before it is launched and view the way these displays are being created, which will educate people on ways that objects can be created without having to use the factories and processes which greatly affect our planet.

We also want to promote the materials that are being created by companies/studios/labs such as Faber Futures, MIT Media Lab Mediated Matter, and Ecovative.





Project Vision



The first goal we want to achieve is to successfully grow exhibition displays in a museum setting, and we have already chosen the material we will use and from where we are going to get it. All we need is to calculate the temperature in the rooms and how it is affected by other people coming in to see if it would grow there.

But the overall goal of this project is not just to construct Exhibition displays with someone else's materials. We want to have the people with the knowledge on how to create our own materials and expand into manufacturing that material, to reach as many businesses as possible and to hopefully change the materials used in many products to our own.

To do so the plan would be to start off by producing a certain amount of displays using Ecovative's material, and hopefully sell enough displays to create a partnership with Ecovative which will allow this project to get enough capital and recognition to start a company. If that all goes to plan the next step would be to contact MIT Mediated Matter group again to see if they would now be willing to collaborate in creating a new material. Which will work and could be used for many other products and objects not just Exhibition displays.



Budget estimate

The budget needed this early on will not be much, as this will mainly be a test on the amount of Hemp material we would need to create prototypes of the display's. Since Ecovative are not very precise and informative on how much you would need if you are not using their moulds.

Hemp Bag	Unit Price	Qty	Price
33 Litres of substrate	€125.00	6	US\$750.00
3 Litres of substrate	€31.25	0	US\$0.00
Total			US\$750.00

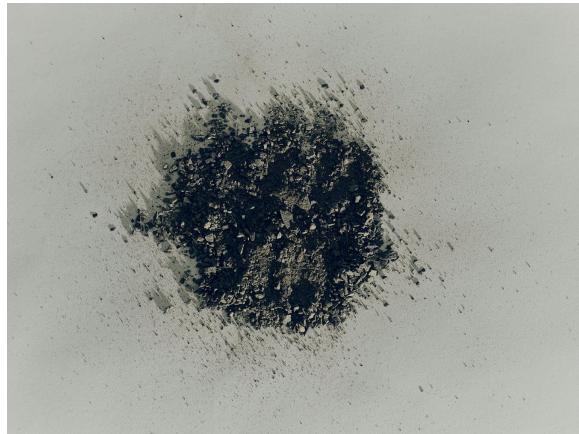
1kg of material , will fill approx 3.3 litres



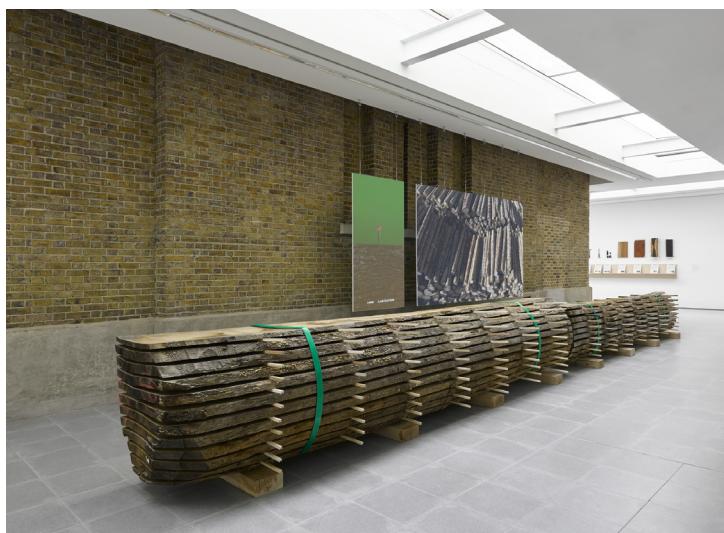
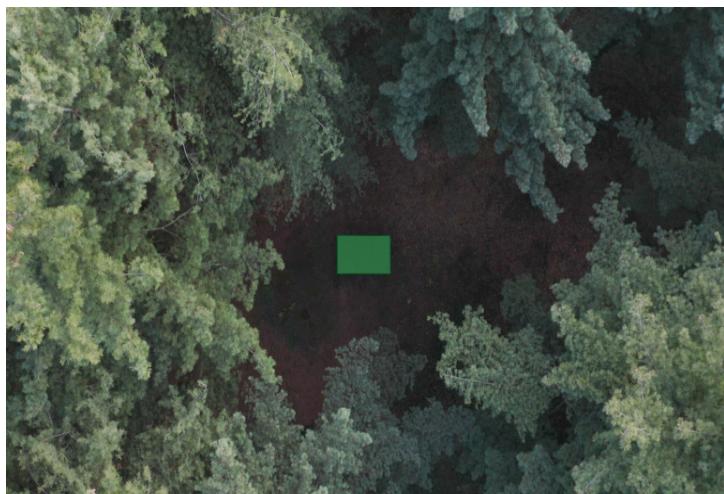
Sustainability

I've been looking into a design studio called Formafantasma who is formed by two Italian designers called Andrea Trimarchi and Simone Farresin they are based in Amsterdam, Netherlands. "Their interest in product design developed on the IM master course at Design Academy Eindhoven, where they graduated in July 2009. Since then, Formafantasma has developed a coherent body of work characterised by experimental material investigations and explored issues such as the relationship between tradition and local culture, critical approaches to sustainability and the significance of objects as cultural conduits." - From their About section on their website.

"We want to reverse the idea that humans are the only dominant species," says Simone Farresin. They're particularly interested in trees, "Whereas humans are "obsessed with the whole body", trees can lose limbs and still thrive. Then there's tree sex, which involves the intervention of insects and birds. "Within the body of a tree," also said by Farresin.

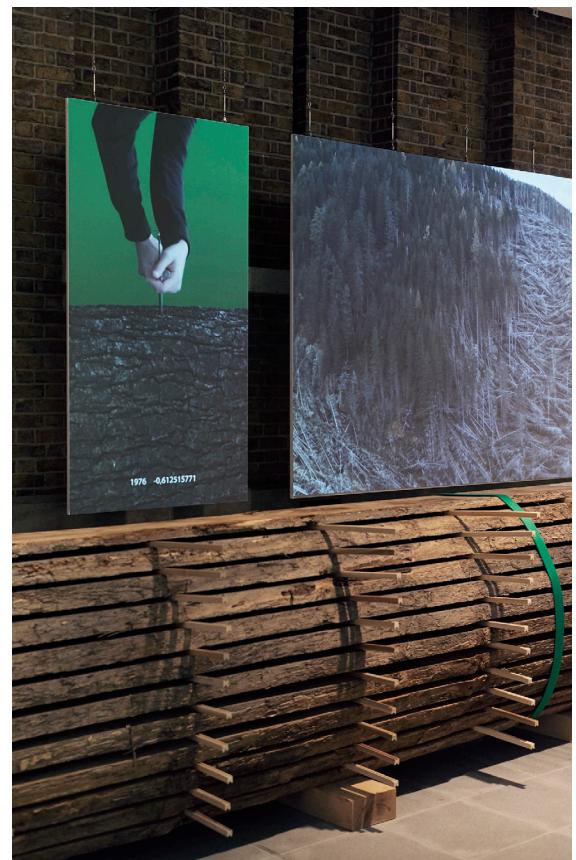


Cambio - an ongoing investigation conducted by Studio Formafantasma into the extracion, production and distribution of wood products, commissioned by Serpentine Galleries.



Cambio, from the medieval Latin cambium means “Change, Exchange”, is an ongoing investigation conducted by Formafantasma into the governance of the timber industry. The evolution of this form of commerce over time, and its tentacular expansion across the globe, has made it difficult to regulate.

The title Cambio also came from the word ‘Cambium’ which is the growing part of the trunk. It produces new bark and new wood in response to hormones that pass down. It is what helps plants to develop and to change in case of forest climate change. So the title is a wish for a change in a way design and production is approached.



“Whenever we think about the applications of timber and trees we always think of something sustainable, nevertheless we also should consider that whatever we do in the world has an impact on timber. First of all its a material extracted from living species. The first work shown in the gallery is a big trunk cut in slices, it is a way of showing the first step into the production process of the timber when a living being becomes a product.” From this comment by the formafantasma duo I extracted that they are trying to inform and remind people that trees are a living organism and even though it may be sustainable our obsessive need of timber does have an impact in the world, and will ultimatley affect the population and helath of trees (timber). A way to see how trees have been affected by climate change is to extract the coring from a tree trunk, and through the tree rings you can see how its affected the tree.

The design studio Formafantasma and their project 'Cambio' is what got me interested in the beginning of the project to do something within the topic of sustainability. But I was still very confused on what the project would actually be. I was so confused at one point that I started moving away from Formafantasma and started to look at videos and interviews about the fashion industry and the biggest sustainable brands, and I got very intrigued by Patagonia and how they have always been a company that has voiced about sustainability and have been sustainable for a long time now. But as I was looking into that I started to think about what I actually wanted to do out of all that research and Clothes was not something I was interested in making at the time, so I decided to go back to Formafantasma. This is where I stumbled upon their project in the Rijksmuseum and that they have created sustainable displays, and I thought that was very interesting and I was surprised that I hadn't seen anything like this yet. This is where I started to shape my idea of wanting to create sustainable display's but my problem was I did not want to use recycled materials, I wanted to find a material that I could use that was brand new but sustainable in the way it was created.

Formafantasma Designs Recyclable displays



The Formafantasma deisgn studio created displays for the Rijksmuseum's Baroque in Rome exhibition which will be taken apart and recycled afterwards.

The paintings are hung against panels which are covered in colourful Kvadrat fabric, some of whic will be given to local schools after the exhibition (Kvadrat is a major sponsor for this exhibition).

The Sculptures are displayed on standard-issue sheets of steel on top of plywood boxes painted to the match the fabric, all of this materials will be recycled afterwards.

To create these displays they worked very closely with the museum to make sure that nothing was wasted, and that the panels were maximised to make sure that the cutting didn't effect the beams or textile in any way which will make them useless afterwards.

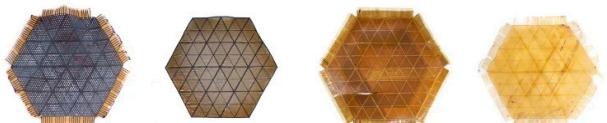
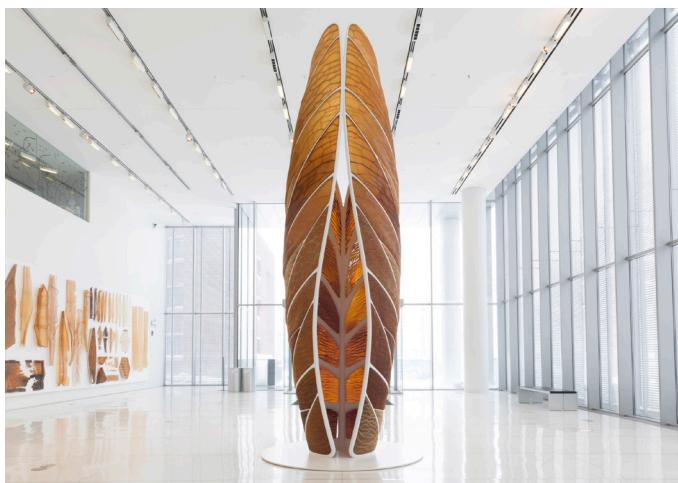
The white-painted walls behind all the panels will be used by the Rijksmuseum for two more exhibitions after the Baroque in Rome exhibition.

The glass boxes used to surround some of the sculptures were sourced from previous exhibitions.

After looking more into the creation of the Formafantasma displays for the Rijksmuseum, I decided to look more into other materials I could use other than recycled materials such as steel, and wood. As I was thinking of where to start this search I started watching the second season of abstract on netflix during my free time, and when the second episode came on it was about the MIT Media Lab group called Mediated Matter which is run by Neri Oxman. This was exactly what I was looking for and that is how my research on nature-inspired design of materials started.

MIT Media Lab - Mediated Matter

The MIT Media Lab group called Mediated Matter group focuses on Nature-inspired design and design-inspired Nature. They conduct research which intersects with computational design, digital fabrication, material science, and synthetic biology, and they than apply that knowledge to design across scales, from the micro scale to the building scale. They create biologically inspired and engineered design fabrication tools and technologies and structures that aim to enhance our relation between natural and man-made environments. So within their research area which is entitled Material Ecology, they integrate computational form-finding strategies with biologically inspired fabrication.



Notes on Neri Oxman Abstract Episode-

- Grew up in Haifa, Isreal.
- Was trained as an architect.
- Educated as a medical doctor.
- Is now a professor at MIT.
- Focuses on designing new material for, with, and by nature.
- Works and is head professor of her group called Mediated Matter.
- Believes future of design is going towards a more scientific path, "Good designers will act as alchemists that mix and match atoms to bits, to genes, and scale up these techniques and technologies."
- For thousands of years we have making and building things with single purpose materials glass for a window, brick for load bearing, wood for spanning.
- "Neri has her model, and the model is nature. Nature is full of organisms in which materials do these complex things in a most efficient way."
- Explored alternative ways with which to build and manufacture that are aligned with nature's way. That is, **growth as opposed to assembly**.
- They created the first optically transparent glass printer.

Faber Futures Design Group Research

Faber Futures is a London-based agency which operates at “the intersection of nature, design, technology and society.” They engage companies with “ecologically-driven models for holistic innovation.” They have worked on establishing alternative materials and production models, which bridges the technical with the societal and ecological realm, which creates a fully integrated pathway for the regenerative future.

Their clients include Apple, MIT Media Lab, Barcelona Design Museum, Vitra Design Museum and many more.

One of Faber Futures projects is called Assemblage 002 (pictured below). This project was created to potentially replace petrochemistry dyes with microbial dyes, this would dramatically reduce water-use and eliminate effluent in the manufacture of textiles. Each pattern piece has been dyed by pigment-producing bacteria mediated by their experimental approach of calibrating the growth conditions of the microbes. “Having established these protocols, we can now replicate them, creating a reliable system to anticipate the outcome before the colour is grown. This makes it possible to sketch the mood of a collection based on known parameters and reproduce those sketches faithfully in the lab. No two garments will ever be the same, but we can begin to build coherence over the aesthetic experience of a collection.”





After looking into these studios/companies that are the fore front of the regenerative and design future.

I started to think of why I would need to create these Exhibition Displays, and why would people want them. So I started to look into the waste created by Exhibitions in Museums.

The Rubbish Collection Exhibition

This was an exhibition which took place in the National Science Museum in 2014. The Exhibition consisted of all the rubbish that the museum itself produces in a month, these products consisted from decaying food to discarded bras. This exhibition was lead by artist Joshua Sofaer, he documented and collected the museums trash before recycling it into a series of visual displays.



The Rubbish Collection exhibition.
photography by Katherine Leedale



Over seven tonnes of paper and card displayed in huge rolls.



The cutlery thrown away during the 30-day project.



Photo from the documentation phase, featuring the waste of 460 packed breakfasts.



A portion of the types of food thrown out by the london Institution.



A creative scene made by one of the documentation volunteers.



small collection of the huge amounts of paper
the museum throws out every month.



A bra was found in one of the museum's rubbish bins.



Metak signage taken from the museum's IMAX cinema.



Some electronic waste, including lightbulbs, which are recycled regularly by the museum.



A sample of the museum's grass and garden waste.



The last photo of the project's first phase, featuring gloves and bags used by the team.

After looking into the waste created by the Science Museum per month, I started to think that although the displays weren't part of the waste. The display's I created could start a topic on changing the materials they use around the Museum such as cutlery and the plastics and papers they use for packaging of things such as breakfast.

Bauhaus

The Principles of Bauhaus

1. No border between artist and craftsman.

In a pamphlet for an April 1919 exhibition, Gropius stated that his goal was ‘to create a new guild of craftsmen, without the class distinctions which raise an arrogant barrier between craftsman and artist’. It is said in the manifesto, that ‘architects, sculptors, painters, we must all turn to the crafts’.

2. The artist is an exalted craftsman.

‘In rare moments of inspiration, moments beyond the control of his will, the grace of heaven may cause his work to blossom into art. But proficiency in his craft is essential to every artist. Therein lies a source of creative imagination’.

3. ‘Form follows function’.

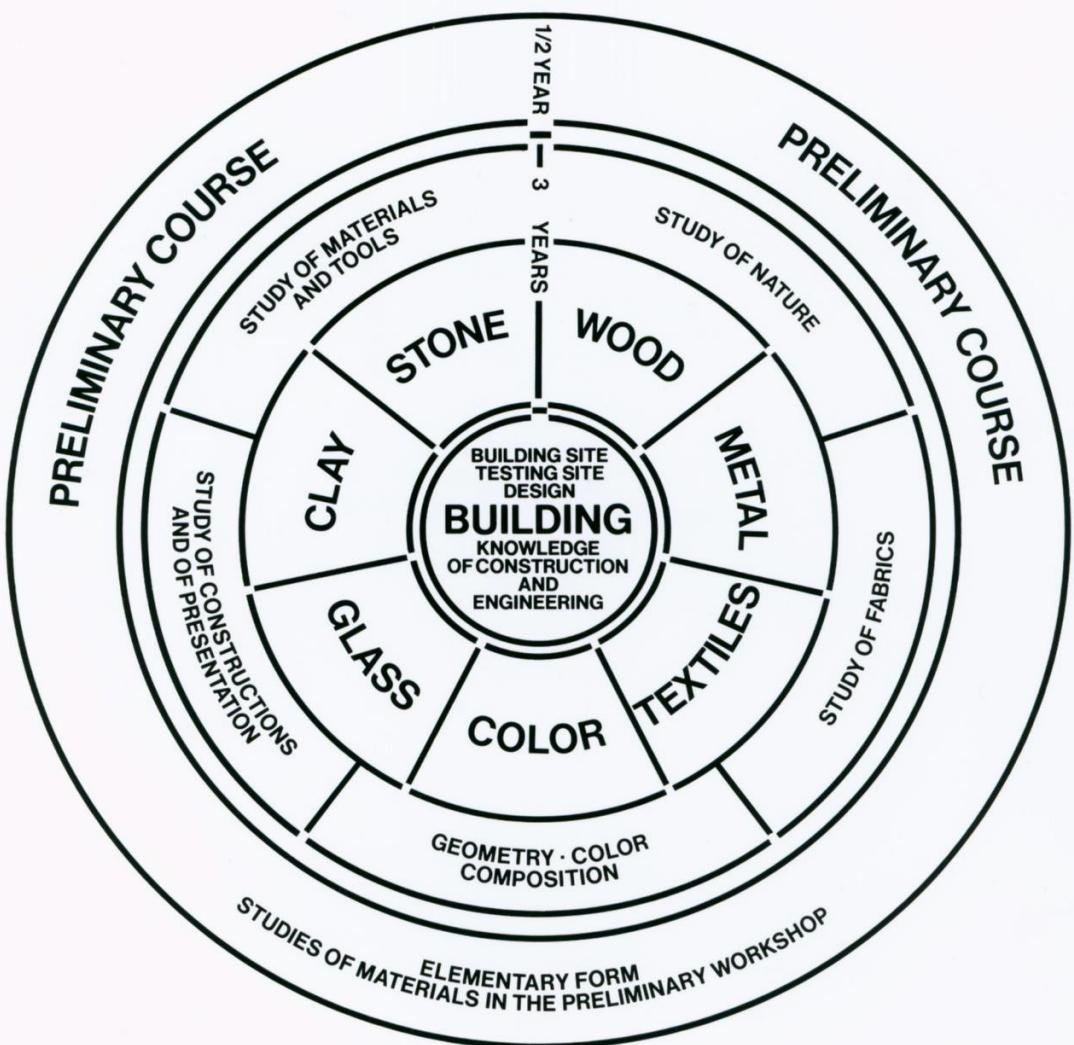
According to this idea, simple but elegant geometric shapes were designed based on the intended function or purpose of a building or an object. Though the functionality needn’t be boring as we can see from the Bauhaus buildings.

4. Gesamtkunstwerk or the ‘complete work of art’.

Gesamtkunstwerk means a synthesis of multiple art forms such as fine and decorative arts. A building and its architecture was only one part of the concept. The other part is design.

5. **True materials.** Materials should reflect the true nature of objects and buildings. Bauhaus architects didn't hide even brutal and rough materials.
6. **Minimalism.** Bauhaus artists favoured linear and geometrical forms, avoiding floral or curvilinear shapes.
7. **Emphasises on technology.** Bauhaus workshops were used for developing prototypes of products for mass production. The artists embraced the new possibilities of modern technologies.
8. **Smart use of resources.** Bauhaus ideology is characterised by the economic way of thinking. The representatives of the Bauhaus movement wanted to achieve a controlled finance, productive time-consuming projects, precise material use, and a spare space.
9. **Simplicity and Effectiveness.** There is no need for additional ornamenting and making things more and more 'beautiful'. They are just fine as they are.

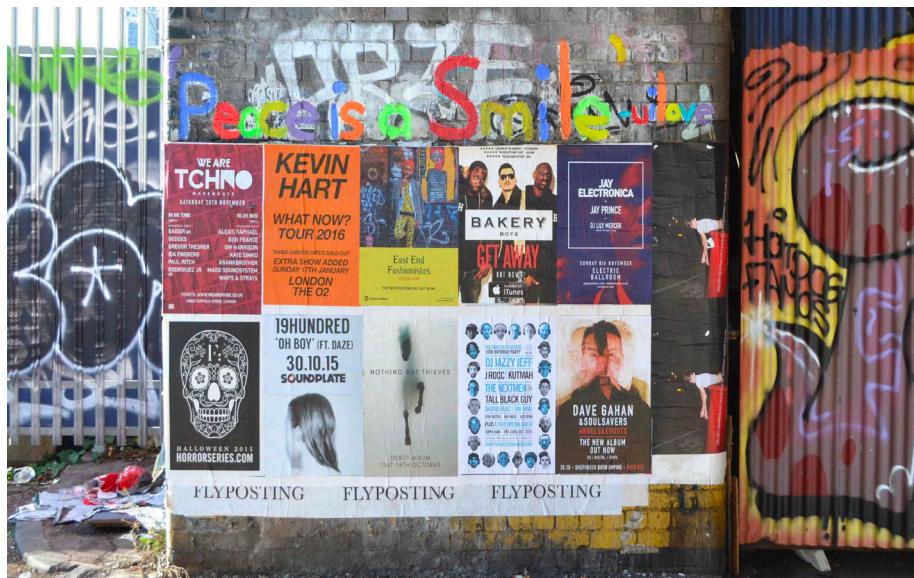
10. Constant development. Bauhaus is all about new techniques, new materials, new ways of construction, new attitude – all the time. Architects, designers, and artists have to invent something new all the time. Thus Bauhaus influenced the new forms of arts like graphic design which emerged 100 years ago. Bauhaus also led to the emergence of new forms of interior design.

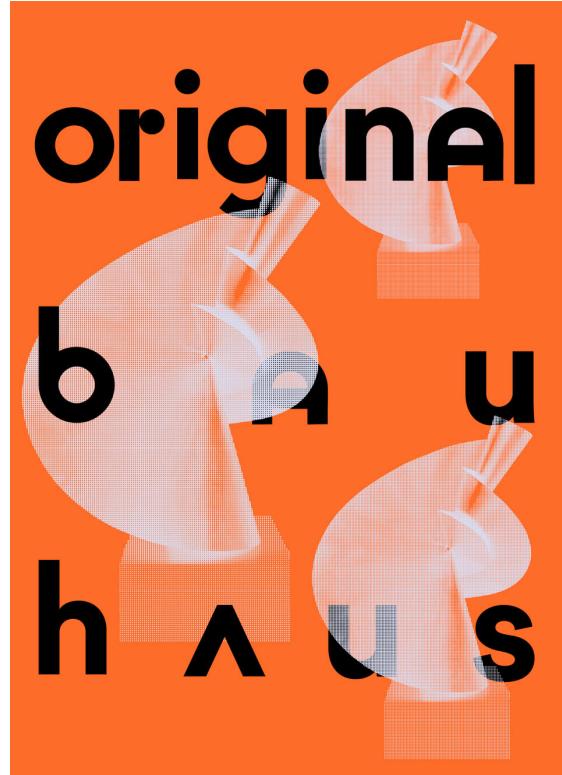
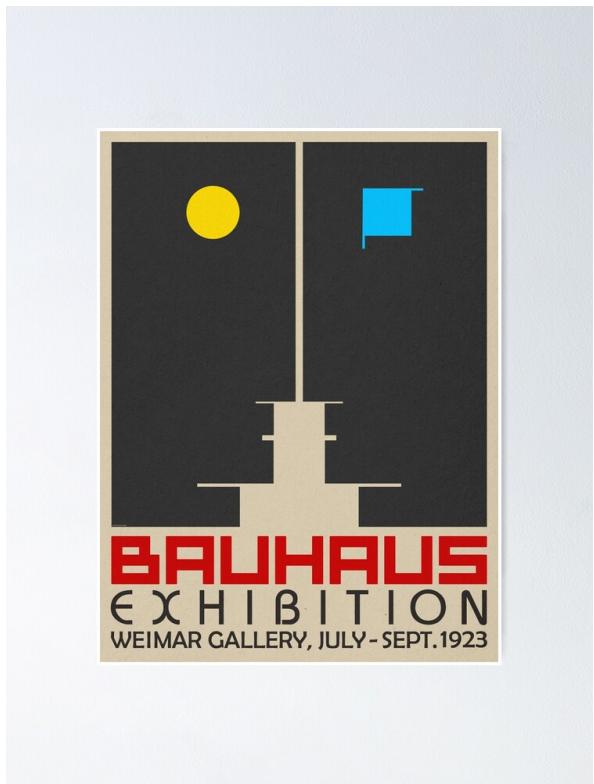


Poster Research

Before creating a poster I started to look at the most common posters you can find around London, like posters about concerts (any kind of live show) and album releases. You also see a lot of posters about upcoming exhibition which is very interesting as I started to see a great difference between the posters about exhibitions and the ones of musicians and other shows (musicals, comedy, etc.). The exhibition posters seem to be straight to the point not necessarily have much writing on it that will distract you from the image and whatever is written on it is information that is clearly needed and is not wasted. That was the first thing I wanted to do when creating my poster is find a way to minimize the amount of words used to the minimum but also be able to transmit all the important information. The second thing I notice in a lot these posters is that the images placed on the posters were usually very hectic and had too much going on in it, and that tended to confuse me and take my attention away from what the poster is actually trying to tell me. That is why I wanted to create something simple that wouldn't take all of the attention away from the rest of the poster.

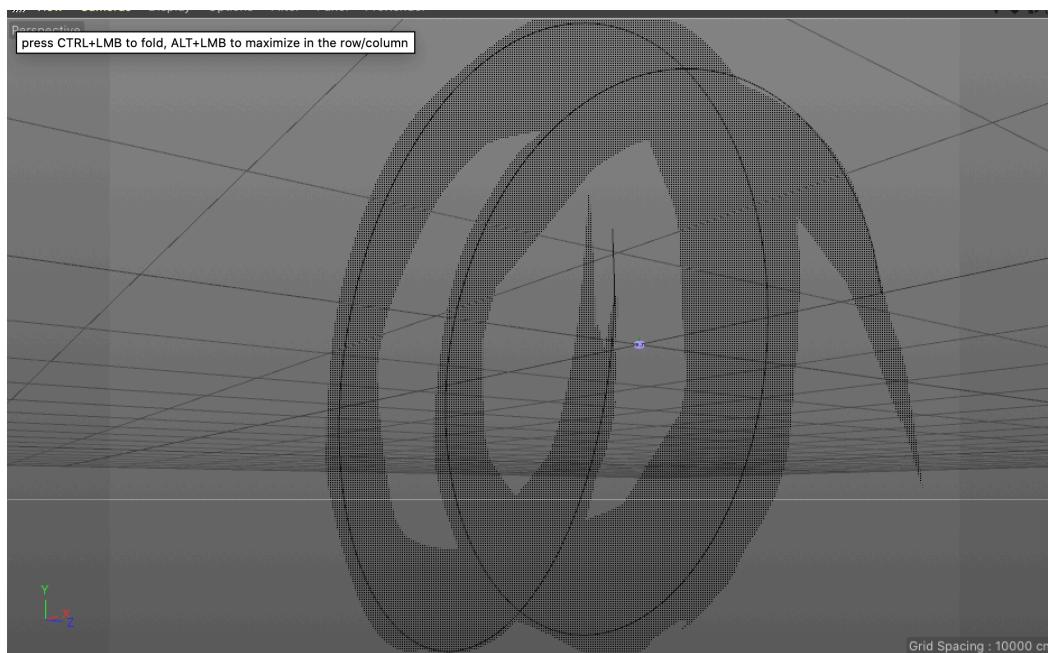
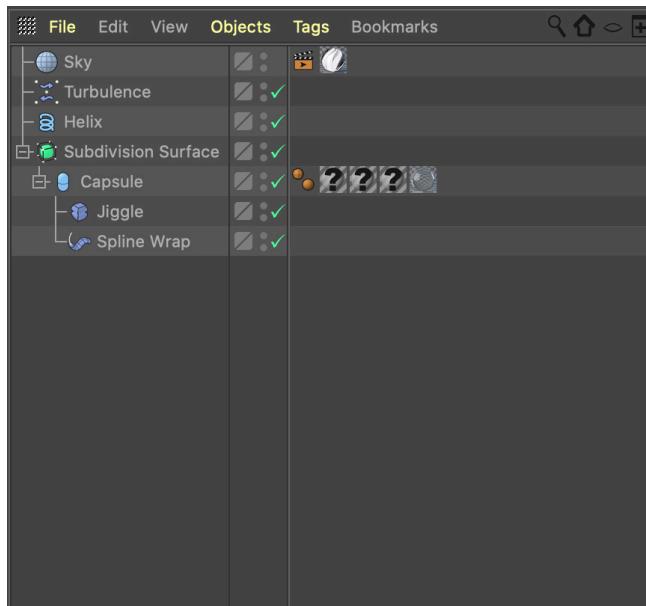
Examples of posters around London





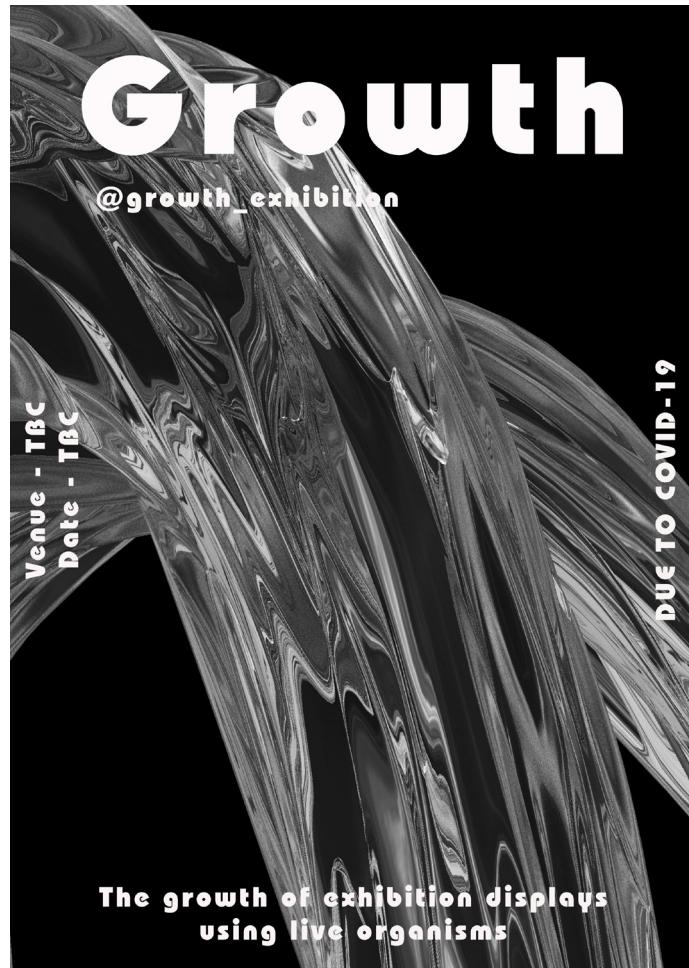
When wanting to create a layout, I started to look at the Bauhaus posters as they are very minimalist, clean, and informative which is what I wanted to create with my poster. What got me very interested in these particular posters was the use of negative space, and letter-spacing.

Cinema 4D



To create this poster I first started by creating the design (image) I wanted to put in the poster, and used Cinema 4D to create it. On Cinema 4D I started by creating a helix, I than added a capsule around it to than be able to use the jiggle, spline warp, and turbulence effect to be able to get the moving effect in order to add shape to the helix instead of just being perfectly smooth. I than created a sky where I placed the image of my choice and for that image to be the image within the helix I added the glass texture onto the capsule, therefore whatever was behind the helix would be seen on the helix and the bending of the helix also allowed the glass texture to bend the image being shown. The reason for choosing this image was because it looks as if something inside is living and that the helix itself is growing.

Poster



The poster shows the name of my project, an Instagram where like my website will have updates of the progress. There is also information that there is yet a date or venue for this exhibition due to covid 19, and at the bottom there is information about what this exhibition is about.



Project Growth

Choice of Font

ITC Bauhau by
Herbert Bayer,
Victor Caruso,
and Edward Benguiat.

ITC Bauhaus was design in 1975 by Edward Benguiat and Victor Caruso, who drew heavily on Herbert Bayer's seminal work creating the Universal typeface in 1925. Bayer was comissioned to design a typeface for all the printed material of the Bauhaus, the famous German school of architecture and design.

One of the main reasons for picking this font is because the design of these displays will be heavily influenced by Bauhaus designs, and will implement a lot of the rules that Bauhaus put in place in their school. This would also be a way to pay homage to the Bauhaus.

Bauhaus Md BT Medium

the quick brown fox jumps over the lazy dog.

1234567890

THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG.

by fontsgeek.com

Bauhaus Md BT Bold

the quick brown fox jumps over the lazy dog.

1234567890

THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG.

by fontsgeek.com

Impact + Influence Workshop

Overview

What?

The idea for this project is to create sustainable Exhibition displays, not just to make them sustainable in the way they are manufactured and used, but to create an experience where the creation of these displays are a part of the exhibition. Therefore people would be able to go into this exhibition before it is launched and view the way these displays are being created, which will educate people on ways that objects can be created without having to use the factories and processes which greatly affect our planet.

Themes

The themes I am exploring are sustainability, resource efficient production, waste as a resource, economic, social, and environment.

Approach

To create this process I will be collaborating with a synthetic biologist to either to find a new organism which will grow in an environment such as a gallery or use organisms and materials which are used very often such as fungi. With these materials the intended final outcome (product) will be exhibition displays.

Stakeholders

Production

Within the production stage I will engage with a synthetic biologist/ bio design student, I am still looking for a collaborator within these fields but have not come across any so far that have enough time to work with me due to their studies.

Outcome

For the outcome the main focus would be to engage as many groups of people (audience) as possible, I would also contact as many galleries and museums when there is a finished product (idea) to ask if they would be willing to use these displays to replace the ones they are already using.

Deliver

Challenges

- Finding a Synthetic biologist/ Biodesign student to collaborate with.
- Materials not working (not being able to grow in the environment of a gallery).
- Not being able to deliver a final product on time.

Success

- Being able to fully grow the displays in the setting of a gallery.
- When finished people engaging with the growth of displays and informing them to other materials that could be used to build such things instead of the ones that have been damaging our planet.
- Being commissioned to create these displays for other museums and exhibitions to therefore stop using displays created with non environmental materials.

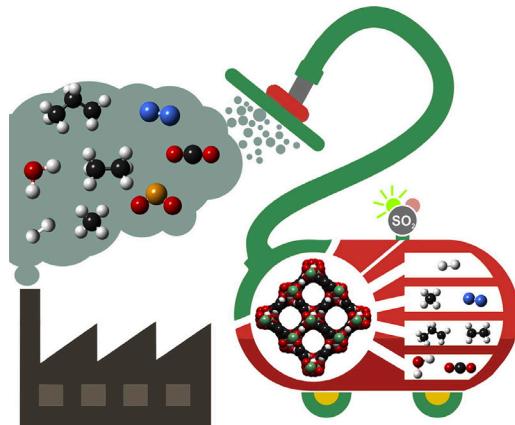
Reimagine

Toxic Air

Reimagining this project if the air would become toxic due to pollution levels rising. The first thing that would change would be the material used for the displays, I would try to get in contact with the researchers that have created a novel material that can capture the toxic air pollutant nitrogen dioxide which is produced during the combustion of fossil fuels. I would then change my product from exhibition displays to something that would be placed outside an act as a air pollution control, this object would be either something visible and act as an art piece or be tucked away and solely act as an object to capture toxic air.

An international team of scientist have developed a material that can remove nitrogen dioxide gas and other toxic greenhouse gases from the atmosphere. This discovery could lead to the invention of air filtration technologies that cost-effectively capture and convert large quantities of gases, reducing pollution and global warming. This research was led by The University of Manchester, and the discovery was confirmed at the United States Department of Energy's Oak Ridge National Laboratory using neutron-scattering technique.

The material is called MFM-300(AI), it is a metal-organic framework (MOF). MOFs are a class of porous crystalline materials that can act as sponges to trap gases in order to purify and separate them.



Question

Challenges

- Getting the attention of the researchers who have found this new material.
- Redesigning the whole project.
- Getting enough funding for this to be tested in a whole city.

Opportunities

- The entrance into a new market.
- Having a greater impact into the climate change topic.
- Meeting new people in a different field, and getting more connections within the fields of science.

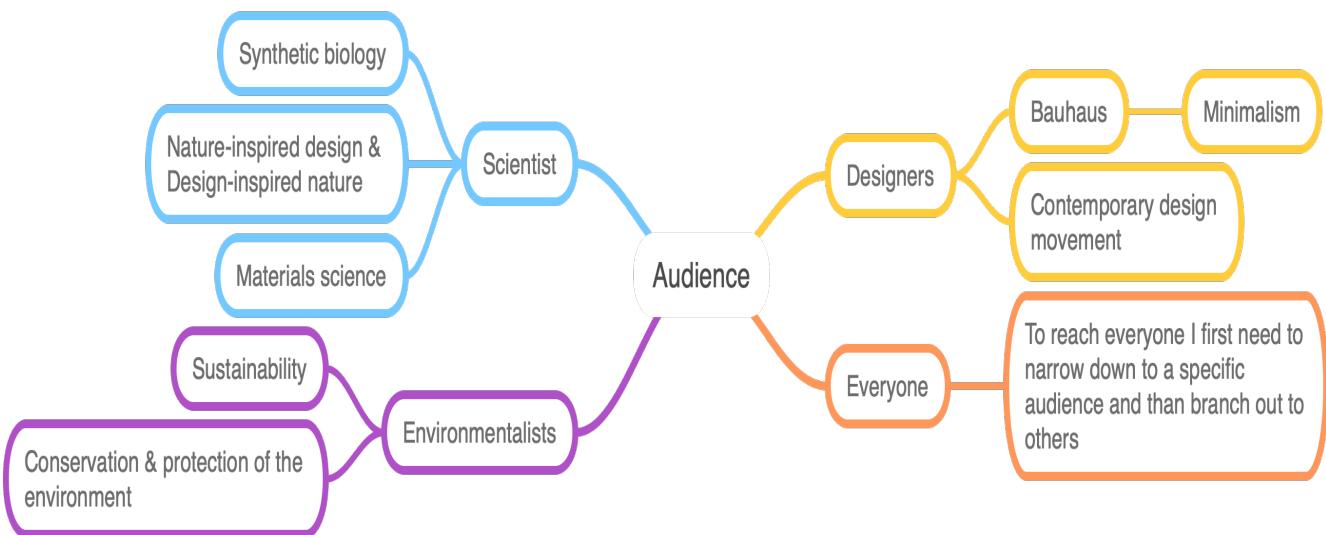
Highlight

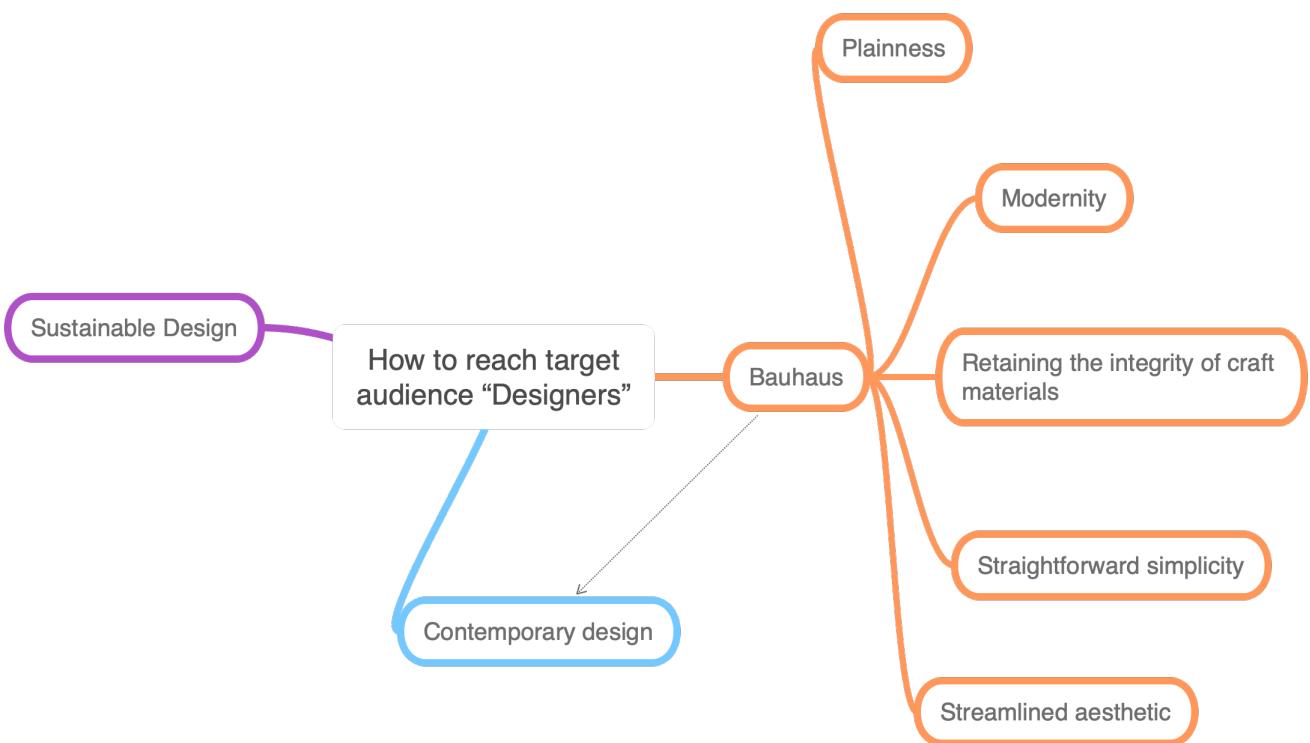
Aspects to consider for original idea

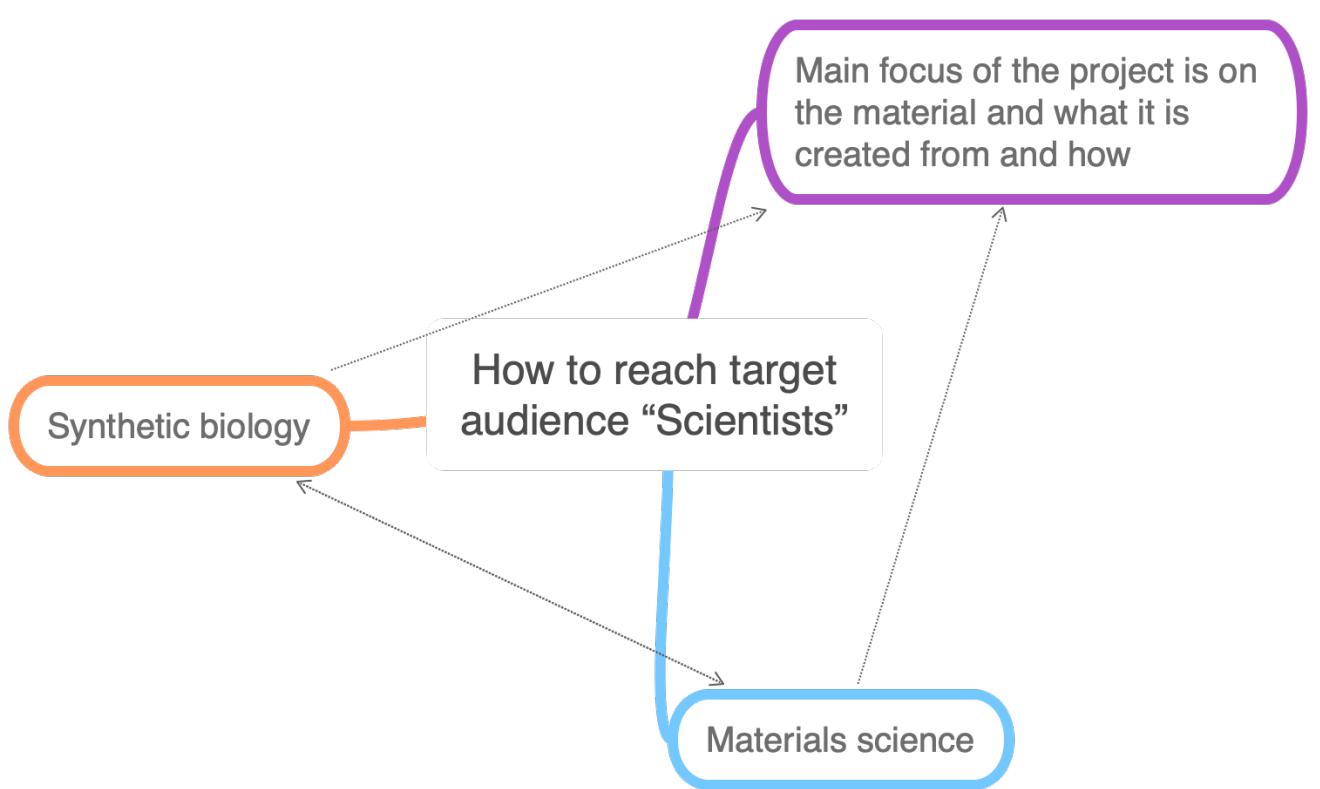
- Researching more about this material that can capture toxic air.
- Expanding into other objects other than exhibition displays.
- Expanding my idea into other markets not just the world of art.

Audience

I had a difficult time deciding and understanding what target audience would be the best. Overall I want my target audience to be everyone as I am advocating the use of less harmful and sustainable objects using the most sustainable materials. But after some of the workshops I started to think about the fact that to get everyone as a target audience you first have to narrow down to some specific audiences and reach them and only after that will the branching out towards others will work the best way. I decided to focus on three specific groups Designers, Scientists, and Environmentalists and within those groups I am going to focus on what about this project will get their attention and attract them towards the project.









Looking/Finding someone to collaborate with

Teo Ramallo

Creating Sustainable Exhibition Displays
To: A2Noxman@media.mit.edu

23 April 2020 at 19:32

TR

Dear Mediated Matter Group,

Hi my name is Teo Ramallo I am an Art Direction student studying at UAL London College of Communications, currently working on a project to create sustainable display's for exhibitions.

The idea for this project is not just to make Exhibition displays sustainable in the way they are manufactured and used, but to create an experience where the creation of these displays are a part of the exhibition. Therefore people would be able to go into this exhibition before it is launched and view the way these displays are being created, which will educate people on ways that objects can be created without having to use the factories and processes which greatly affect our planet.

While researching different materials which could be used to create these displays, I stumbled upon your research group and got very interested in the your biologically inspired materials, the underlying technology and resulting sustainability. What interested me the most was the way you view the building and manufacturing process as growth, instead of assembly, and this is what triggered the idea of including the process of growing these displays as an integral element of an exhibition.

The reason I am sending this email is to enquire if the Mediated Matter group would consider collaborating in this project to create a material which would successfully grow in the environment of a gallery where viewers could visit and witness the growth of these objects.

Kind Regards,

Teo.

Teo Ramallo

Student at UAL LCC

BA Design For Art Direction Year 1

University [Email: t.ramallo0220191@arts.ac.uk](mailto:t.ramallo0220191@arts.ac.uk)

Personal [Email: teoramallo@mac.com](mailto:teoramallo@mac.com)

Becca Bly 

Re: Creating Sustainable Exhibition Displays
To: Teo Ramallo

15:46

BB

Dear Teo,

I hope this note finds you well.

I am writing in regards to the kind invitation you extended to Prof. Neri Oxman and The Mediated Matter Group to participate in your exhibition project.

Prof. Oxman and The Mediated Matter Group was honored to receive the invitation. While we did our best to accommodate their schedule in order to take part in, and contribute to your project; it is due to other academic commitments that Prof. Oxman and The Mediated Matter Group will be unable to participate.

We send you our most sincere gratitude for your invitation and wish great success during your research.

Kind regards,
Becca

For this project the collaborator I was looking for had to be studying the field of biology, this was already a very hard task to do as I don't know anyone myself that studies biology and UAL is an Arts only University. Therefore it was hard to meet someone who did, the first thing I tried was use instagram I posted a story letting people know that I am looking for someone within that field. From that post I was only contacted by one of my friends from foundation which knew someone studying biology but when he contacted his friend he did not want to collaborate as he had no time to do so because of his Uni work. I than took a leap and decided to email the MIT mediated matter group to see if they would at least answer and maybe they would be interested. I was very surprised when I got an email back, at first I was very excited as the beginning of the email seemed very positive but they decided to not accept my invitation due to their workload, but even though they said no at least I had tried to work with them. I than contacted tara to see if she could get in contact with MA Biodesign on my behalf but they ended up not responding. And since than I've been trying to find someone but it has been very difficult during these times because of the fact that I can't just go to public spaces and meet people who could potentially be the collaborator I am looking for.

Materials

Living systems as a design tool.

Materials that could be used,

- Fungus + Agricultural waste

Developed by Ecovative as an alternative to expanded polystyrene, or EPS. Mycofoam is made from agricultural waste placed into moulds and mixed with live mycelium fungus, which essentially grows the material into a finished shape that can be dried and used as a stable packaging material. Mycofoam material is impact resistant and can be formed into a variety of shapes to suit customers' needs, yet it biodegrades in nature and is made from renewable resources. Companies have already used it to replace EPS, including Dell Computers.

- Milk

Milk has been used to make plastics since the early 20th century. The casein protein found in milk was used for buttons and synthetic fabrics. It was quickly replaced by fossil-based plastics.

- Plant leaves

Plant leaves have been used as plates in many communities around the world for centuries but have now been replaced by single-use plastic plates and bowls in many parts of the world. Leaf Republic is a German start-up that sells food packaging produced in the method of traditional Indian Patraveli plates. The leaves are pressed and dried and stitched into plates and containers.







The material I have chosen to work with to create these displays is the fungus + agricultural waste. I have chosen this organism because it is the best one overall to grow sustainable displays. It is the fastest growing material, can grow in just 7 days, and it is also the most sustainable as it can be put back straight to nature since it turns into compost after around 48 days.

I have found a company called Ecovative which create this material and they have a program where companies can buy packaging for their products from this company. But they also sell DIY kits where you can create your own object and grow it yourself with their own hemp and fungus material. They also have a brother company which is called grown, and this is the same company but for the EU. So after finding this company I saw that if I were to have the funding to make these displays come to life I could contact Ecovative and create a partnership with them to be able to have the material created for us. Instead we would put most of our time into creating the moulds that define the size, and shape of what we want to create.

How to create a tile with the DIY Kit

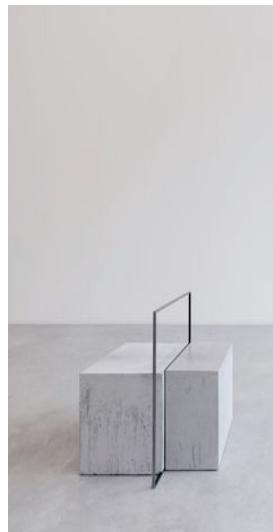
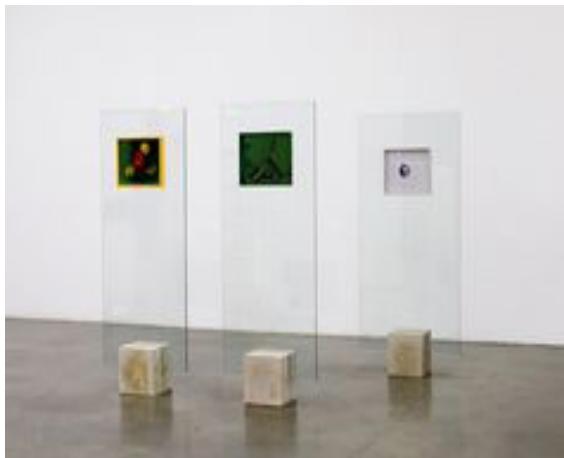
Reactivating Dry Material

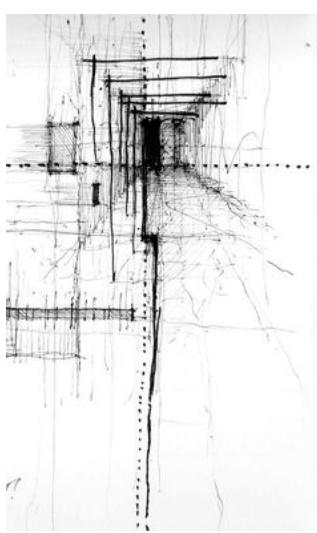
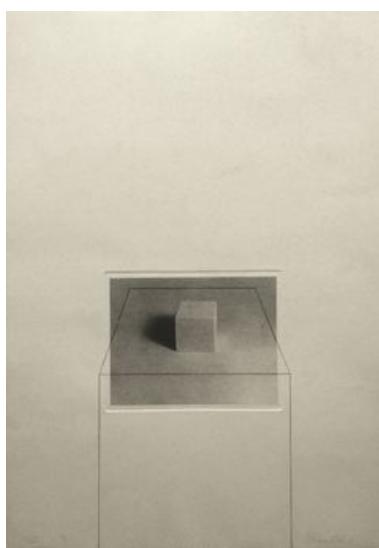
1. Open material bag by cutting the top off above the white filter patch.
2. In a separate container, add 4 tablespoons of flour and 3 cups (700ml) of tap water. Stir thoroughly for 1 minute.
3. Pour the flour and water mixture directly into the bag of dry mushroom material. Shake vigorously for 1 minute. When there are no longer any dry patches of material, or clumps of flour, the material is ready to grow.
4. Fold the top of the bag over several times and secure shut with tape or a clip. (Do not fold over the white filter patch.
This will prevent respiration.)
5. In a clean area (at room temperature and not in direct sunlight). allow the bag to grow out for 3-4 days.
6. When the bag appears fully white, the material is ready to use. (If you do not plan on using the material right away, place it in the refrigerator for up to 2 weeks.)

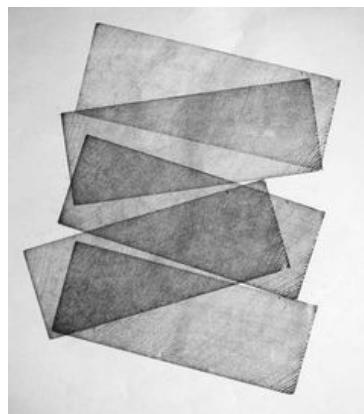
Growing Something

1. With gloves on, sanitize your gloves, working area, and mixing bowl with a small amount of rubbing alcohol.
2. Remove the mushroom material from bag and place in mixing bowl or clean container large enough for mixing.
3. Break up material by hand until particles are loose. (material will lose most of its white coloring during this stage.)
4. Add 4 tablespoons of flour and mix thoroughly for 1 minute.
- 5 Sanitize your growing container/s with rubbing alcohol and allow to dry. Pack cavity/s with loose material.
6. Cover top surface of cavity with plastic wrap and secure with tape to keep material from drying out. Poke holes in wrap 1 inch apart with a sharp object to allow for respiration.
7. In a clean area (at room temperature and not in direct sunlight), let material grow until fully white again (about 5-6 days).
8. Carefully remove your project from its cavity. Weigh part/s and place on a baking sheet. Bake at 200°F. Parts are dry when they weigh about 35% of their original weight (check every half hour). This will prevent additional growth.
9. Remove from oven and allow to cool. After it's cool you are done.

Display Designs Research

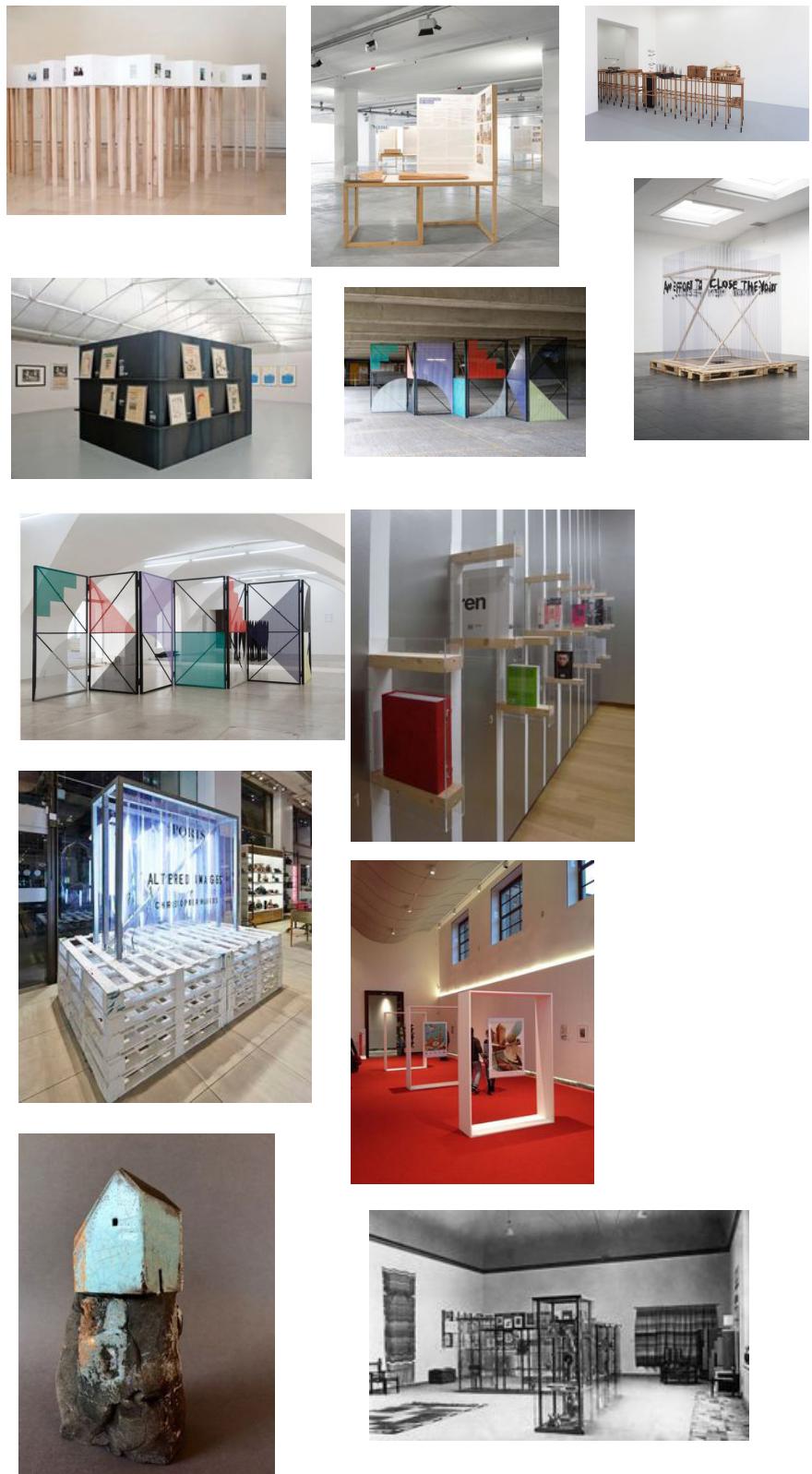






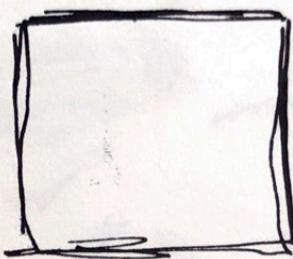






Display Designs

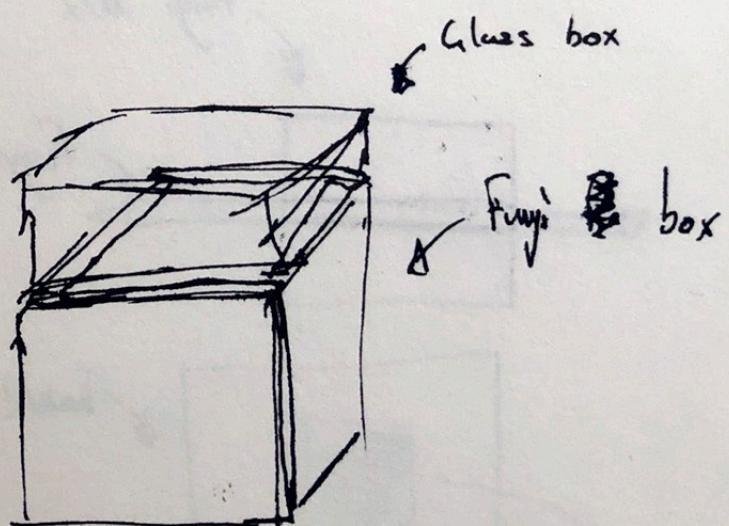
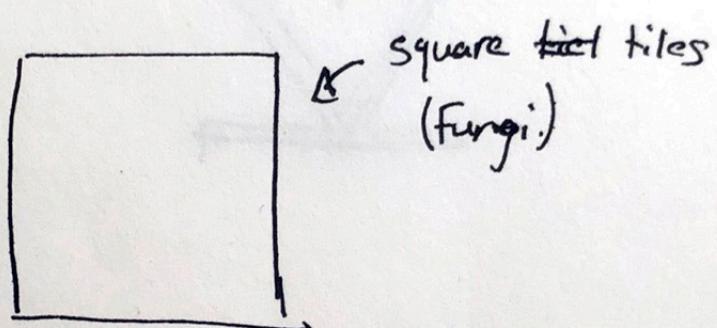
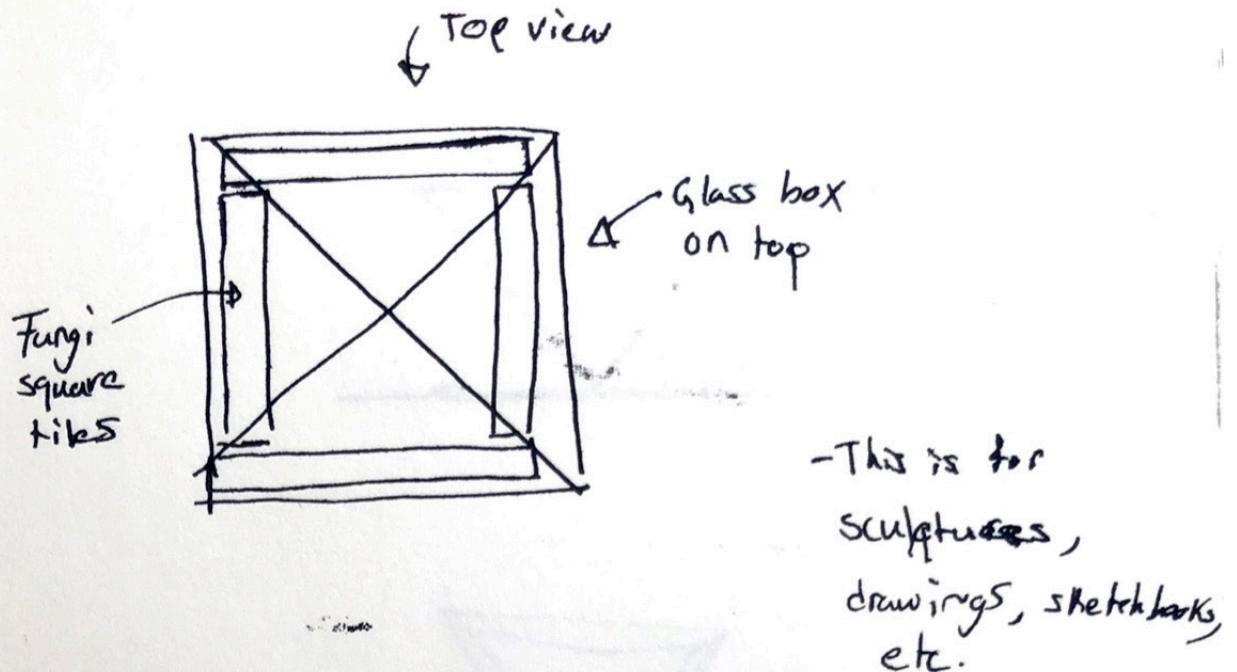
Shelfs

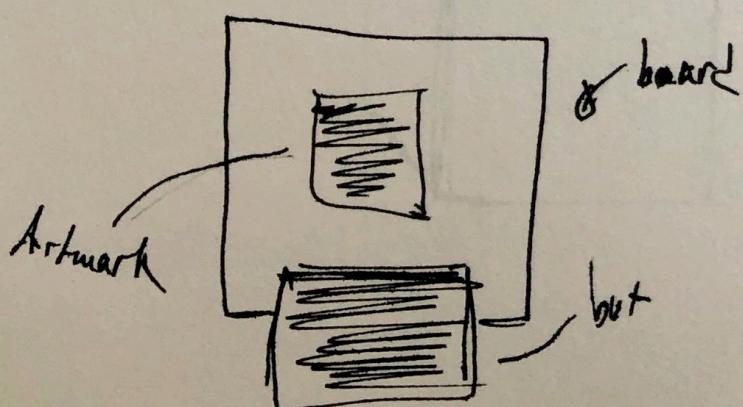
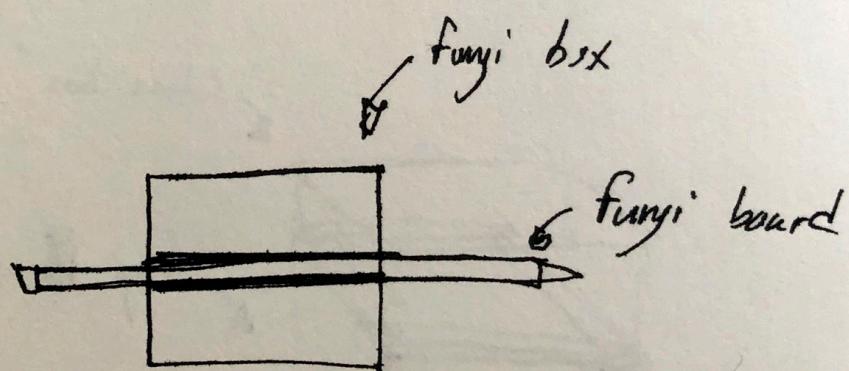
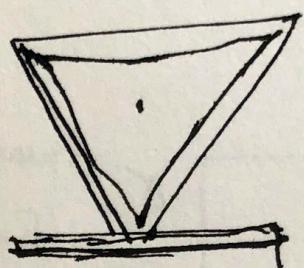
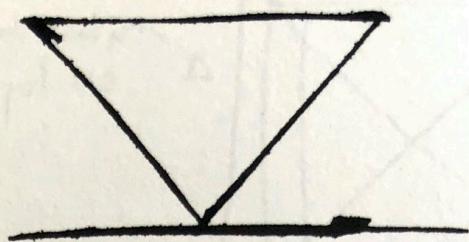


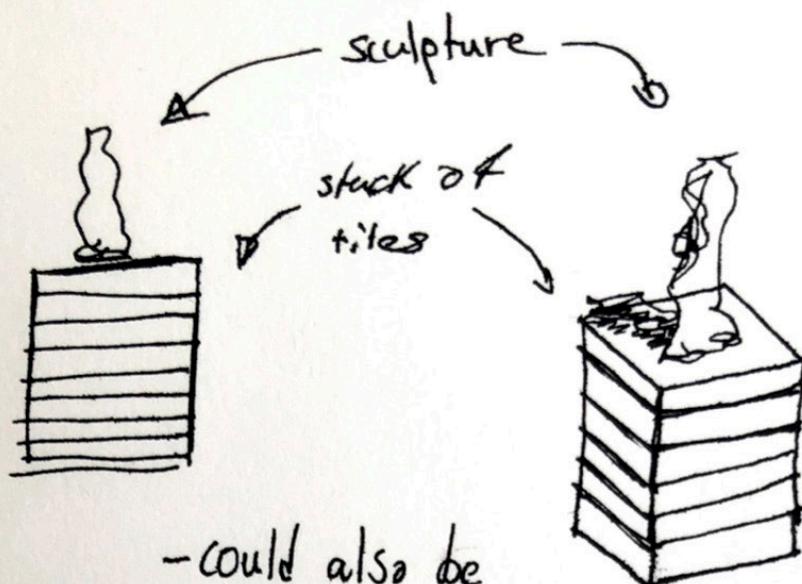
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design one
perfect square
tile and make
all Displays out
of the square
tiles



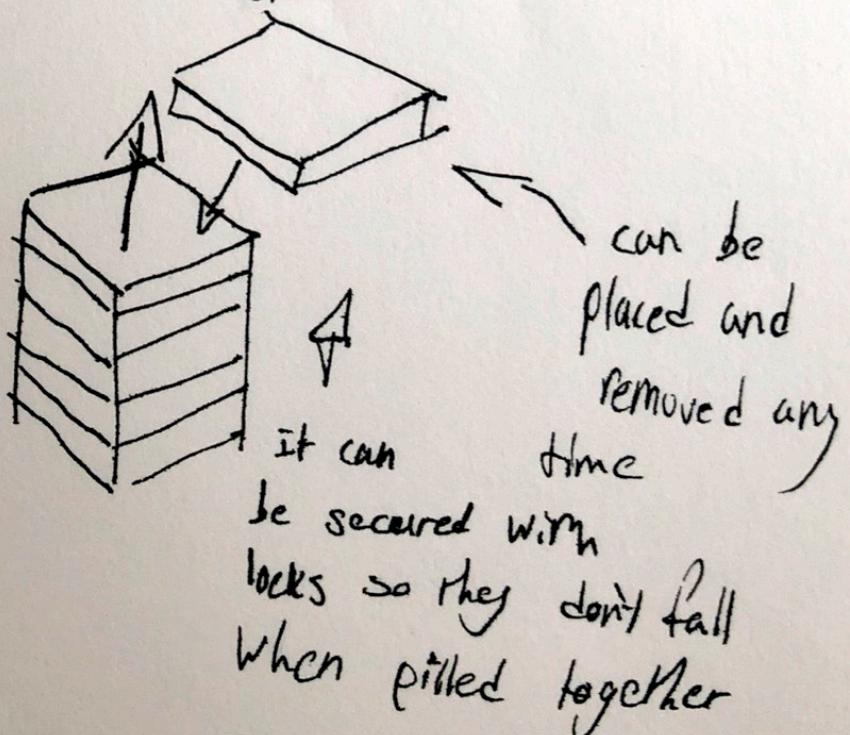
- shelves for
sculptures

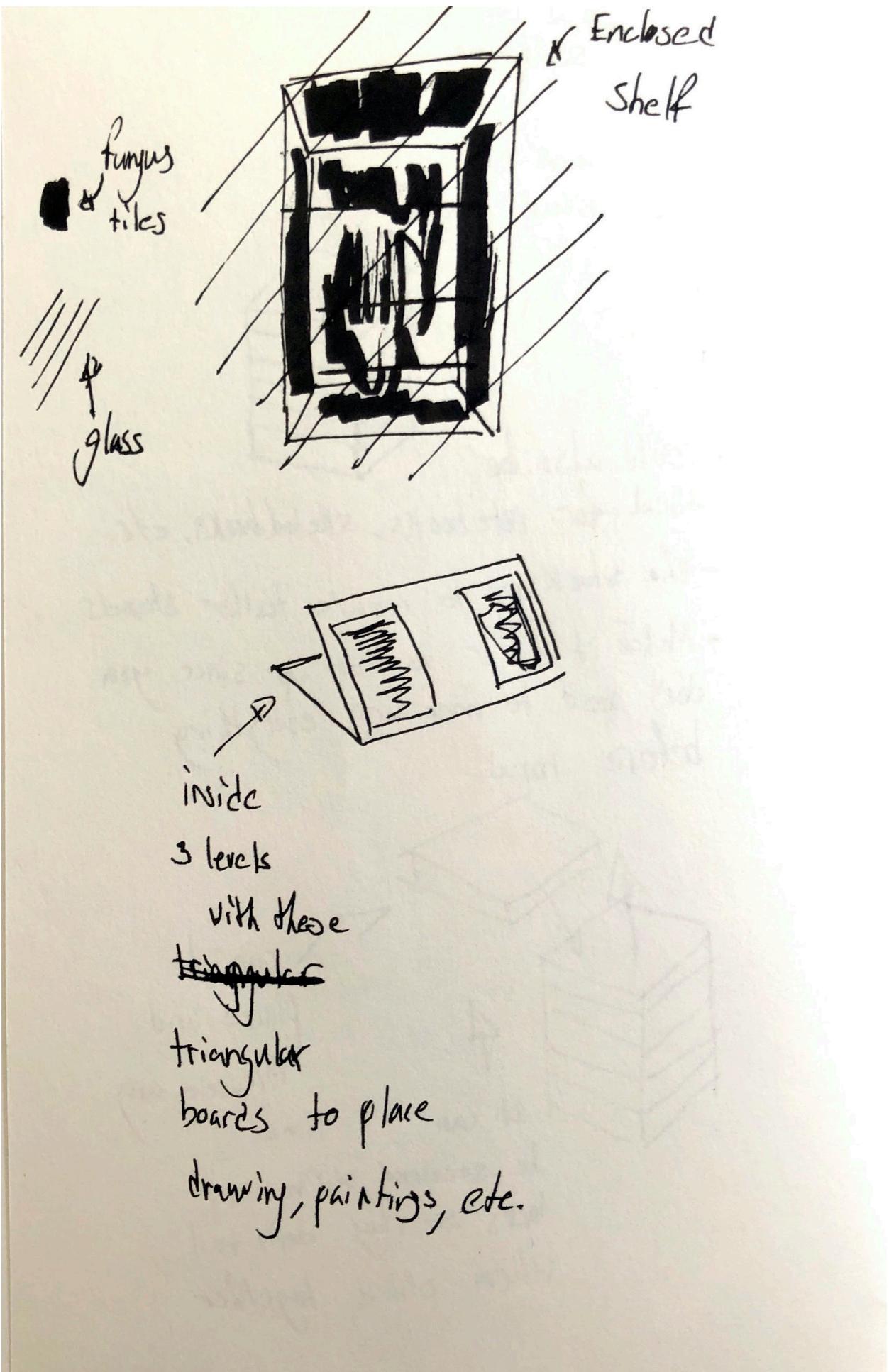




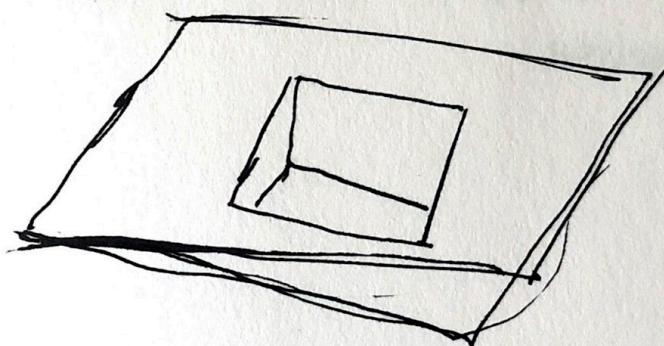
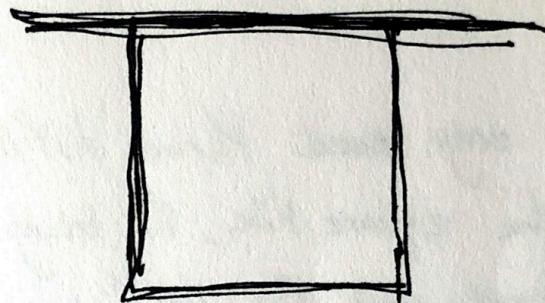
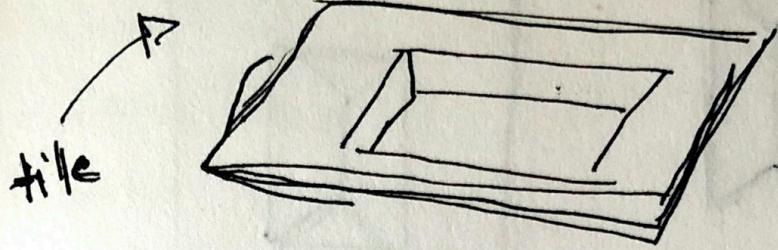
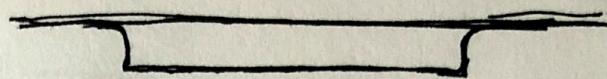


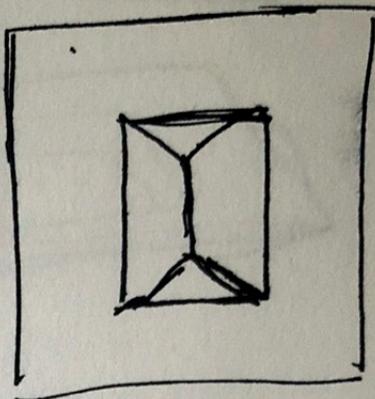
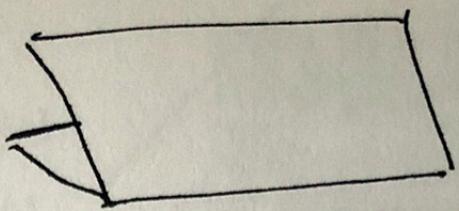
- could also be used for notebooks, sketchbooks, etc.
- The stack is to create taller stands
- Makes it easier to set up since you don't need to measure everything before hand.





Mold





-For now only need three different molds. the square tile, the triangular shelf board, and the shelf boards themselves.

Portfolio

I created my portfolio on cargo.site, where I have almost of all the work that I have done over the course of 4 years. There is also a section about this project which will be updated as I progress with this project, because hopefully I will be able to keep on working on this and someday I create something out of it.

<https://teoramallo.com/>